

U.S. ARMY
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—COMMITTED TO PROTECTION OF THE ENVIRONMENT—

FINAL DETAILED ANALYSIS OF ALTERNATIVES REPORT

Version 4.1

Soil DAA
Volume IV of VII

October 1995

Contract No. DAAA 05-92-D-0002

FOSTER WHEELER ENVIRONMENTAL CORPORATION

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TECHNICAL SUPPORT FOR
ROCKY MOUNTAIN ARSENAL

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LIST OF ACRONYMS AND ABBREVIATIONS

14DCLB	1,4-Dichlorobenzene
3-D	three-dimensional
ACGIH	American Conference of Governmental Industrial Hygienists
ACM	asbestos–containing material
ALDRN	Aldrin
AMC	Army Materiel Command
AOC	Area of Contamination
AOPs	advanced oxidation processes
AR	Army Regulations
ARARs	applicable or relevant and appropriate requirements
Army	U.S. Army
atm-m^3/mol	atmospheres per cubic meter per mole
ATP	Anaerobic Thermal Processor
ATSDR	Agency for Toxic Substances and Disease Registry
B	Soil Density
BCRL	Below Certified Reporting Limit
BCS	Boundary Containment System
BCY	bank cubic yard
BDA	Bilateral Destruction Agreement
BDAT	best demonstrated available technology
BEST	Basic Extraction Sludge Treatment
BFI	Browning Ferris Industries
BOD	Biological Oxygen Demand
BRRN	North Bedrock Ridge Plume
BRRS	South Bedrock Ridge Plume
BTEX	benzene, toluene, ethylbenzene, and xylenes
BTU	British thermal unit
CAMU	Corrective Action Management Unit
CAR	Contamination Assessment Report
CCA	chromated-copper-arsenate
CCR	Code of Colorado Regulations
CD	Cadmium
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CFS	Confined Flow System
CH2CL2	Methylene Chloride
CHCL3	Chloroform
CL6BZ	Hexachlorobenzene
CLC2A	Chloroacetic Acid
cm/sec	centimeters per second

cm^2	centimeters squared
CMP	Comprehensive Monitoring Program
COC	contaminant of concern
CPE	chlorinated polyethylene
CPMS	p-Chlorophenylmethyl Sulfide
CPRP	Chemical Personnel Reliability Program
CRL	certified reporting limit
CSI	Conservation Services, Inc.
CSPE	chlorosulfonated polyethylene
Cu	copper
CWA	Clean Water Act
CWC	Chemical Weapons Convention
CY	cubic yards
DA	Department of the Army
DAA	Detailed Analysis of Alternatives
DADS	Denver Arapahoe Disposal Service, Inc.
db(A)	decibels
DBCP	dibromochloropropane
DCE	Dichoroethylene
DCPD	dicyclopentadiene
DDE	2,2-bis(p-Chlorophenyl)-1,1-dichloroethene
DDT	2,2-bis(p-Chlorophenyl)-1,1,1-trichloroethane
DHHS	Department of Health and Human Services
DIMP	diisopropylmethyl phosphonate
DMMP	Dimethylmethylphosponate
DNAPL	dense nonaqueous phase liquid
DOD	Department of Defense
DOT	Department of Transportation
DRE	destruction/removal efficiency
DRMO	Defense Reutilization and Marketing Office
DSA	Development and Screening of Alternatives
DTG	Design treatment goal
DWELS	Drinking Water Equivalent Levels
EA	Endangerment Assessment
Ecology	U.S. Ecology, Inc.
EDSVEP	Enhanced Deep Soil Vapor Extraction Process
EIF	enter into force
ENSCO	Environmental Systems Company
Envirosafe	Envirosafe Services of Idaho, Inc.
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
ERC	Ecological Risk Characterization
ESSVEP	Enhanced Surface Soil Vapor Extraction Process

ETTS	Ecotechniek Thermal Treatment System
FC2A	fluoroacetic acid
FFA	Federal Facility Agreement
FML	flexible membrane liner
foc	Fraction Organic Carbon in Soil
fpm	feet per minute
FRP	fiber - reinforced plastic
FRG	final remediation goal
FS	feasibility study
ft	feet or foot
ft/day	feet per day
ft^3	cubic feet
GAA	granulated activated alumina
GAC	granular activated carbon
GB	isopropylmethylphosphonofluoridate (nerve agent-sarin)
GIS	Geographical Information System
GMP	Groundwater Monitoring Program
gpm	gallons per minute
H:V	horizontal to vertical
H_2O_2	hydrogen peroxide
HA	Health Advisories
HBCs	Health based criteria
HBr	hydrogen bromide
HCCPD	hexachlorocyclopentadiene
HCL	hydrochloric acid
HCPD	Hexachloropentadiene
HD	mustard
HDPE	high-density polyethylene
HE	high explosive(s)
HEP	habitat evaluation protocol
HEPA	high efficiency particulate air
HF	hydrofluoric acid
HHEA	Human Health Exposure Assessment
HHRC	Human Health Risk Characterization
HI	hazard index
ICP	inductively coupled plasma
ICS	Irondale Containment System
IDLH	Immediately Dangerous to Life and Health
IEA	Integrated Endangerment Assessment
IITRI	IIT Research Institute
IMPA	Isopropyl Methylphosponic Acid
INCS	Internal Containment System
IRA	interim response action

IT	International Technology
IWT	International Waste Technologies
Kg	Kilogram
K_{oc}	partition coefficient
Kp	Partitioning Coefficient for Soil
kW	Kilowatt
kWh	Kilowatt hour
L	Lewisite
lbs	pounds
lbs/acre	pounds per acre
LCY/hr	loose cubic yards per hour
LCY	loose cubic yards
LDR	land disposal restriction
LF	linear foot
LNAPL	light nonaqueous phase liquid
LT^3	Low-Temperature Thermal Treatment
LTTA	Low-Temperature Thermal Aeration
MCL	Maximum Containment Level
MEXCLR	Methoxychlor
mg/l	milligrams per liter
mg/m^3	milligrams per cubic meter
mg/kg	milligrams per kilogram
mg/cm^3	milligrams per cubic centimeter
MGL	milligrams per liter
MKE	Morrison–Knudsen Engineering
ml/g	milliliters per gram
mm	millimeters
MMBTU	million British thermal units
MOU	Memorandum of Understanding
MPA	Methylphosphonic Acid
mph	miles per hour
MTR	minimum technology requirement
n	Total Porosity
NaOH	sodium hydroxide
NAPL	Nonaqueous Phase Liquid
NBCS	North Boundary Containment System
NCP	National Contingency Plan
NDMA	Nitrosodimethylamine
NEPA	National Environmental Policy Act
NNDMEA	N-Nitrosodimethylamine
NWBCS	Northwest Boundary Containment System
O&M	operations and maintenance
OAS	Organizations and State

°C	degrees Centigrade
OCP	organochlorine pesticides
°F	degrees Fahrenheit
OPHGB	organophosphorus compounds, GB-agent related
OPHP	organophosphorus compounds; pesticide related
OSCH	organosulfur compounds; herbicide related
OSCM	organosulfur compounds; mustard agent related
OSHA	Occupational Safety and Health Administration
PAHs	polynuclear aromatic hydrocarbons
PBC	probabalistic biota criteria
PCB	polychlorinated biphenyl
pcf	pounds per cubic foot
PCP	pentachlorophenol
PDA	Pilot Demolition Assessment
PEC	plume evaluation criteria
PKPP	potassium pyrophosphate
ppb	parts per billion
PPDDE	dichlorodiphenyldichloroethylene
PPDDT	dichlorodiphenyltrichloroethane
PPE	personal protective equipment
PPLV	preliminary pollutant limit value
ppm	parts per million
ppt	Parts per Trillion
PQL	practical quantitation limit
PRG	preliminary remediation goal
psi	pounds per square inch
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RAO	remedial action objective
RC	Risk Characterization
RCRA	Resource Conservation and Recovery Act
RF	radio frequency
Ri	Retardation Factor
RI	remedial investigation
RISR	Remedial Investigation Summary Report
RMA	Rocky Mountain Arsenal
ROD	Record of Decision
RPO	representative process option
SACWSD	South Adams County Water and Sanitation District
SAR	Study Area Report
SARA	Superfund Amendments and Reauthorization Act
SCC	Secondary Combustion Chamber
SEC	Site evaluation criteria

SF	square feet
SFS	Supplemental Field Study
Shell	Shell Oil Company
SHO	Semivolatile halogenated organics
SITE	Superfund Innovative Technology Evaluation
SPNP	South Plants North Plume
SPNS	South Plants North Source Plume
SPSE	South Plants Southeast Plume
SQI	submerged quench incinerator
STC	Silicate Technology Corporation
STF	South Plants Tank Farm
SVE	soil vapor extraction
SVOCs	semivolatile organic compounds
SY	square yards
TBCs	to be considered criteria
TCLP	toxicity characteristic leaching procedure
TEA	triethylamine
TEC	Target Effluent Concentration
TIS	transportable incineration system
TMV	toxicity, mobility, and volume
TOC	total organic carbon
tpd	tons per day
TSCA	Toxic Substances Control Act
TSD	Treatment Storage and Disposal
TSGM	two-step geometric mean
UFS	Unconfined Flow System
µg/g	micrograms per gram
µg/l	micrograms per liter
USCS	Unified Soil Classification System
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USPCI	U.S. Pollution Control, Inc.
UST	Underground Storage Program
UV	ultraviolet
UXO	unexploded ordnance
VAO	volatile aromatic organic compounds
VHC	volatile hydrocarbon compounds
VHO	volatile halogenated organics
Vi	Velocity of Component i in Aquifer
VOC	volatile organic compound
VX	ethyl s-dimethyl aminoethyl methyl phosphonothiolate
WES	Waterways Experimental Station

Appendix A

APPENDIX A

VOLUME AND AREA ESTIMATES

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A-3 Exceedance Areas and Volumes For Principal Threat Criteria

A-4 Potential Biota Risk Areas and Volumes

LIST OF ACRONYMS AND ABBREVIATIONS

As	arsenic
BCY	bank cubic yard
CLC2A	chloroacetic acid
COCs	contaminants of concern
CY	cubic yard
DBCP	dibromochloropropane
DCPD	dicyclopentadiene
DAA	Detailed Analysis of Alternatives
ft	feet
Hg	mercury
OCP	organochlorine pesticide
OSCM	organosulfur compound - mustard related
Pb	lead
PRG	preliminary remediation goal
RI	remedial investigation
RISR	Remedial Investigation Summary Report
RMA	Rocky Mountain Arsenal
SAR	study area report
SEC	site evaluation criteria
SY	square yard
UXO	unexploded ordnance
VHC	volatile hydrocarbon

A.1 INTRODUCTION

The analysis of remedial alternatives requires an estimate of the amount of soil that each alternative must address. Most remedial alternatives evaluated in the DAA use a volume estimate for developing costs, but some alternatives are based on area (e.g., capping, landfarm/agricultural practices). This appendix explains estimation methods and summarizes volume and area estimates that were generated for Rocky Mountain Arsenal (RMA) soil exceedance sites.

As discussed in Section 1.4.2.4, 114 exceedance sites have been identified as requiring consideration for remediation in the DAA. These sites were organized into 25 medium groups/subgroups. Exceedance volumes and areas were estimated separately for each of the sites. The estimates for each site were summed into medium group or subgroup totals to allow sites with similar remediation characteristics to be evaluated together.

The medium subgroups are classified into four categories based on the predominant exceedance for the subgroup. These categories are the Potential Unexploded Ordnance (UXO) Presence, Potential Agent Presence, Biota Risk, and Human Health Exceedance Categories. The 25 medium groups/subgroups are listed below by exceedance category.

Potential UXO Presence Category

- Munitions Testing Medium Group

Potential Agent Presence Category

- North Plants Subgroup
- Toxic Storage Yards Subgroup

Biota Risk Category

- Lake Sediments Medium Group
- Surficial Soil Medium Group
- Ditches/Drainage Areas Medium Group

Human Health Exceedance Category

- Basin A Medium Group
- Basin F Wastepile Subgroup
- Former Basin F Subgroup
- Secondary Basins Medium Group
- Sanitary/Process Water Sewers Subgroup
- Chemical Sewers Subgroup
- Complex Trenches Subgroup
- Shell Trenches Subgroup
- Hex Pit Subgroup
- Sanitary Landfills Medium Group
- Section 36 Lime Basins Subgroup
- Buried M-1 Pits Subgroup
- South Plants Central Processing Area Subgroup
- South Plants Ditches Subgroup
- South Plants Balance of Areas Subgroup
- Buried Sediments Subgroup
- Sand Creek Lateral Subgroup
- Section 36 Balance of Areas Subgroup
- Burial Trenches Subgroup

A summary of the sites within each medium group/subgroup and a description of the groups is presented in Table 3.1-1.

A.2 ESTIMATION FOR POTENTIAL UXO AND AGENT PRESENCE CATEGORIES

The sites included in the UXO or agent exceedance categories potentially contain agent and/or UXO but do not exceed Human Health Site Evaluation Criteria (SEC) except as isolated exceedances. Area estimates for sites in these groups are determined from boundaries on maps presented in the Remedial Investigation Summary Report (RISR) (EBASCO 1992). Potential depth of contamination for the agent category sites are based on the distribution of analytes as presented in the study area reports (SARs) (EBASCO 1989a-g). The potential depth of contamination used for UXO calculations is assumed to be 2 ft except for the impact area of Site ESA-4A which is assumed to be 6 ft. These depths are used with the area estimates to calculate potential volumes for the UXO and agent categories. The estimated volume of soil reflects a 0.1 percent factor to account for actual agent or UXO occurrence within the potential soil volume.

Further characterization for both the agent and UXO categories is ongoing and will be used for remedial design purposes.

A.3 ESTIMATION FOR BIOTA RISK AND HUMAN HEALTH EXCEEDANCE CATEGORIES

Exceedance volume estimates for sites in the Human Health Exceedance Category are generated by one of two methods. The distributions of contaminants in larger sites are modeled using a commercial software package (TECHBASE). Modeled sites account for the majority of contaminated area and volume in the Human Health Exceedance Categories and include the basins, lakes, South Plants complex, and other selected sites. Section A.4 presents a detailed description of the TECHBASE modeling procedure and Section A.5 presents the resulting estimates.

Volume and area estimates from the SARs (EBASCO 1989a-g) are used for small sites or sites that are not considered amenable to modeling by computer. In general, if modeling is subject to great uncertainty due to the particular physical characteristics of a site or limited data availability, volume estimates from the SARs are utilized. This is the case for disposal trenches/pits or landfills, where the contaminants are highly heterogenous; for the chemical and sanitary sewers where there is highly uneven spatial contamination; and for ditches where the site configuration is extremely long and narrow. The specific assumptions made in calculating estimates for these various sites are detailed in each SAR document (EBASCO 1989a-g).

Exceedance volumes are generated for human health exceedance sites based on the Human Health SEC which consists of a 10^{-4} cumulative cancer risk, a chronic noncarcinogenic hazard index of one and an acute or subchronic noncarcinogenic hazard index of one. Site Evaluation Criteria (SEC) used to determine Human Health exceedance volumes, including Human Health and Principal Threat exceedance volumes and Human Health Acute exceedance volumes, are listed in Table 1.4-1. Exceedance volumes between the soil surface and a depth of 10 ft (or to 1 ft for acute exceedance volumes) are estimated independently for each COC exceeding the Human Health SEC (EBASCO 1994) within a site. Exceedance volumes are estimated to the water table

if shallower than 10 ft. Under both estimation methods used, contaminant-specific exceedance volumes are subsequently combined to generate additive totals for contaminant groups (i.e., OCPs, VOCs), contaminant types (i.e., organic or inorganic), and for the total contaminants. These totals are calculated by taking into account overlapping volumes among contaminants in order to avoid counting the same soil volume more than once in the total volume estimates. Estimates of the surface area corresponding to the total human health exceedance volumes (0 to 10 ft in depth) are also generated for each site.

Volumes and areas are also estimated for the Principal Threat Criteria of 1000 times PRGs. Estimation methods are the same as for the Human Health SEC. For the Complex Trenches subgroup, principal threat areas are considered to be all anomalies in which trenches were discovered. Volumes are estimated using the anomaly area projected over the trench depth as determined in the RI. The depth used for Anomaly G is based on the maximum of encountered depths for other anomalies investigated.

Potential biota risk area estimates for sites in both the Biota Exceedance Category and Human Health exceedance category are determined through use of the foraging range model as described in Section 1.4 and in the Integrated Endangerment Assessment/Risk Characterization (EBASCO 1994). The risk area within Human Health exceedance sites is considered as biota volume, to a depth of one foot, for areas that do not exceed Human Health SEC. In addition, portions of human health exceedance sites do not exceed Human Health SEC (EBASCO 1994) but are of concern because of potential agent or UXO presence. The volumes and areas that potentially contain UXO or agent are estimated by the same approach as that used for the agent and UXO categories discussed in Section A.2. It should be clearly noted, therefore, that exceedances for any category (biota, UXO or agent) may be present within the human health exceedance medium groups.

A.4 COMPUTERIZED MODELING AND ESTIMATION PROCEDURES

Computerized models provide the capability to readily generate exceedance volumes for individual contaminants and totals for combinations of contaminants under a variety of scenarios in an efficient and timely manner. Because of this need to modify scenarios in the DAA, a computer software program was selected to model the exceedance volumes. TECHBASE, developed by MINEsoft, Ltd., is a relational database management system that features statistics, graphics, and two- and three-dimensional modeling capabilities. This software is used to create models of soil contamination at the RMA sites where modeling is considered appropriate.

A database is set up for each site, and the analytical data from all soil investigation programs borings are loaded into the TECHBASE databases. A three-dimensional model is created for each site, bounded vertically by the ground surface and the depth of the water table, and bounded laterally by the site boundary as defined in the RI. Setting up a site model in TECHBASE requires defining various model parameters as described below.

A.4.1 MODELING PARAMETERS

Each model can be visualized as a three-dimensional stack of blocks; the number and dimensions of the blocks are specified by the user. Block sizes are chosen to be a constant 1 ft in thickness with side length equal to at most one-third the average distance between soil borings. This block sizing is chosen to allow for a distribution of model values between the boring locations. Block sizes range from 10 ft square to 60 ft square in the RMA sites modeled.

A concentration for each contaminant is then estimated for each block in the model using the analytical data collected during all soil investigations. The TECHBASE routine searches within a predefined volume around each block for detected concentrations in soil borings as well as samples below the certified reporting limit (BCRL). BRCL samples are treated as zero for the concentration estimation. An inverse distance squared algorithm is used to calculate the concentration at the center of the block based on all data found in the search volume (i.e., measured concentrations at a distance of 2X ft from the center of the block were weighted one-quarter as much as concentrations at X ft from the center of the block). The search volume is

defined based on the density of analytical data available for a site. The vertical search radius is chosen as the average distance between samples in a standard soil boring (5 ft). The horizontal search radius is chosen as twice the approximate average distance between soil borings in a site (100 ft to 750 ft in the sites modeled), which allows for complete site coverage by the model.

A.4.2 VOLUME ESTIMATION TECHNIQUE

The concentration estimate for each contaminant in a block is divided by the Human Health PRG (Table 1.4-1) to produce an exceedance factor. These exceedance factors are summed separately for carcinogenic contaminants and for noncarcinogenic contaminants. If the respective additive sum is greater than one for noncarcinogenic contaminants or 100 for carcinogenic contaminants, then that block is counted into the total human health exceedance volume for the site. In addition, for blocks with a depth of 1 ft or less, the estimated contaminant concentrations are divided by the respective acute criteria (Table 1.4-1). Blocks are counted as human health exceedance if the additive sum of acute exceedance factors is greater than one.

The soil exceedance volumes in the 0 to 10 ft (or water table) depth range are calculated for each analyte by using a filter to identify the number of blocks in the model in exceedance and multiplying this number by the volume of a block. Fractional block volumes are calculated for blocks partially contained within the site. The total soil volume in exceedance for all contaminants in a site is calculated accounting for additivity among contaminants. Additivity accounts for the potential cumulative effect of multiple contaminants, none of which, by themselves, generate exceedances. This procedure for handling additivity among contaminants is based on the methodology used in the Exposure Assessment (EBASCO 1990). Principal threat volumes are estimated using the same additivity exceedance. Model blocks counted as principal threat exceedances are those with the additive sum of exceedance factors greater than 1000 for either carcinogenic or noncarcinogenic contaminants. Biota volume is calculated by projecting the potential biota risk area, based on the exposure range model, to a depth of 1 ft.

Areas for human health sites are determined by projecting exceedance blocks to the surface and contouring around the surface projection. In some cases, the contours are adjusted or "smoothed" to produce a less irregular shape in order to reflect areas over which an alternative would realistically be applied. Perimeters are estimated from these adjusted projected areas also. The surface projection contours are digitized and stored with the site database. This allows the software to calculate areas and perimeters from the stored contours.

It is important to note that the inverse distance squared algorithm used in TECHBASE to estimate analyte concentrations between soil borings is one of many possible ways to generate a contaminant model and estimate exceedance volumes for the sites. For example, the TECHBASE method described in this section tends to be more conservative and generate larger exceedance volumes than a two-dimensional Thiessen polygon method of extending contamination halfway between soil boring hits and nonhits. For contaminants with low SEC (which account for the majority of exceedance volume), the inverse distance squared algorithm will tend to extend the area of exceedance more than halfway to adjacent non-exceedance borings, resulting in a larger estimate of exceedance area and volume than the half-distance Thiessen polygon approach. The TECHBASE methodology resulting in conservative estimates is considered appropriate for alternative evaluation in the DAA.

A.5 EXCEEDANCE VOLUMES AND AREAS

Tables A-1 through A-4 summarize the areas and volumes that were calculated for the 112 exceedance sites and present subtotals by medium group/subgroup. Table A-1 lists the exceedance volume and area estimates for medium groups/subgroups in the Potential Agent Presence and Potential UXO Presence Categories in addition to sites with the Human Health Exceedance Category that have the potential for agent or UXO presence. Table A-2 lists the human health exceedance volume estimates for OCPs, volatiles (VHC), total organic, total inorganic, and overall exceedance volumes and areas for each site and medium group/subgroup that contain human health exceedance soil. Table A-3 presents the exceedance volumes and areas

for those sites containing principal threat exceedances. Table A-4 presents the potential risk areas and volumes for the medium groups containing soil contaminants with potential risk to biota.

A.6 REFERENCES

EBASCO (Ebasco Services Incorporated)

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1989c (June) Remedial Investigation Report Volume VII, Eastern Study Area, Final Version 3.3, 4 parts. RTIC 89166R02.

1989d (July) Remedial Investigation Report Volume VIII, South Plants Study Area, Final Version 3.3, 4 parts. RTIC 89166R04.

1989e (July) Remedial Investigation Report Volume IX, North Plants Study Area, Final. Version 3.3, 3 parts. RTIC 89166R05.

1989f (July) Remedial Investigation Report Volume X, Central Study Area, Final. Version 3.3, 8 parts. RTIC 89166R06.

1989g (July) Remedial Investigation Report Volume XI, North Central Study Area, Final. Version 3.3, 14 parts. RTIC 89166R07.

Medium Group or Subgroup	SARSite Number	Potential Agent Area (sy)	Depth (ft)	Estimated Volume (cy)	Potential UXO Area (sy)	Depth (ft)	Estimated Volume (cy)	Estimated Debris Volume (cy)
Munitions Testing Medium Group	ESA-1a	--	--	--	8,134	2	5	2,711
	ESA-1b	--	--	--	6,593	2	4	2,198
	ESA-1c	--	--	--	5,442	2	4	1,814
	ESA-1d	--	--	--	8,045	2	5	2,682
	ESA-4a	--	--	--	205,975	6	412	68,658
	ESA-4b	--	--	--	29,544	2	20	9,848
	CSA-2c	--	--	--	2,589	2	2	863
	CSA-2d	--	--	--	1,186	2	1	395
	Subtotal				**270,000**		**450**	**89,000**
Toxic Storage Yards Subgroup	ESA -3a	10,566	5	18	--	--	--	--
	ESA-3b	121,423	5	202	--	--	--	--
	Subtotal	**130,000**	**5**	**220**				
North Plants Subgroup	NPSA-3	3,399	10	11	--	--	--	--
	NPSA-5	2,738	10	9	--	--	--	--
	NPSA-6	2,604	10	9	--	--	--	--

Medium Group or Subgroup	SARSite Number	Potential Agent Area (sy)	Depth (ft)	Estimated Volume (cy)	Potential UXO Area (sy)	Depth (ft)	Estimated Volume (cy)	Estimated Debris Volume (cy)
	Bldg 1601	10,837	5	18	--	--	--	--
	Bldg 1606	4,998	5	8	--	--	--	--
	Bldg 1607	3,199	5	5	--	--	--	--
	Subtotal	**28,000**		**61**				
Basin A Medium Group	NCSA-1a	412,985	5	688	127,121	2	85	42,374
	NCSA-1e	13,425	5	22	13,425	2	9	4,475
	Subtotal	**430,000**		**710**	**140,000**		**94**	**47,000**
Complex Trenches Subgroup	CSA-1c	386,000	10	1,286	389,000	10	1,296	129,577
Chemical Sewers Subgroup	CSA-3	63,450	2	42	--	--	--	--
	NPSA-1	131,130	2	87	--	--	--	--
	SPSA-10	121,000	3	121	--	--	--	--
	Subtotal	**320,000**		**250**				
Section 36 Lime Basins Subgroup	NCSA-1b	34,000	8	91	--	--	--	--

Medium Group or Subgroup	SARSite Number	Potential Agent Area (sy)	Depth (ft)	Estimated Volume (cy)	Potential UXO Area (sy)	Depth (ft)	Estimated Volume (cy)	Estimated Debris Volume (cy)
Buried M-1 Pits Subgroup	SPSA-1e	8,697	10	29	--	--	--	--
South Plants Central Processing Area Subgroup	SPSA-1a	97,910	5	163	--	--	--	--
South Plants Balance of Areas Subgroup	SPSA-1b	13,399	10	45	--	--	--	--
	SPSA-1g	18,868	10	63	--	--	--	--
	SPSA-5b	15,647	10	52	--	--	--	--
	SPSA-7c	--	--	--	15,080	10	50	5,027
	Subtotal	**48,000**		**160**	**15,000**		**50**	**5,000**
Section 36 Balance of Areas Subgroup	CSA-1b	87,729	10	293	87,729	2	59	29,251
	CSA-2A	6,186	5	10	--	--	--	--
	CSA-4	--	--	--	145,732	2	97	48,569
	Subtotal	**94,000**		**300**	**233,000**		**160**	**78,000**
Burial Trenches Subgroup	ESA-2a	--	--	--	163,362	10	545	54,454

Medium Group or Subgroup	SARSite Number	Potential Agent Area (sy)	Depth (ft)	Estimated Volume (cy)	Potential UXO Area (sy)	Depth (ft)	Estimated Volume (cy)	Estimated Debris Volume (cy)
	ESA-2c	7,080	5	12	7,080	2	5	2,360
	Subtotal	**7,100**		**12**	**170,000**		**550**	**57,000**
	Total	**1,700,000**		**3,500**	**1,200,000**		**2,600**	**410,000**

ft - feet
cy-cubic yards
sy - square yards
UXO - unexploded ordnance

Note: The estimated volumes for agent and UXO presence use a 0.1% factor to estimate the occurrence of agent and UXO within the potential area.

Debris volume is estimated to be present to a depth of 1 foot over the potential UXO area.

Table A-2 Exceedance Areas and Volumes for Human Health Site Evaluation Criteria

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	VHC	Organic	Inorganic	Total	Predominant COCs
North Plants Subgroup	NPSA-5	SAR/RI	250	0	0	0	170	170	As
	NPSA-6	SAR/RI	78	0	0	0	52	52	As
	Subtotal		**330**	**0**	**0**	**0**	**220**	**220**	
Toxic Storage Yards Subgroup	ESA-3a	SAR/RI	1,060	0	0	2,100	0	2,100	CLC2A
	ESA-3b	SAR/RI	210	0	0	0	310	310	As, Cr
	ESA-3g	SAR/RI	280	0	0	280	0	280	CLC2A
	Subtotal		**1,800**	**0**	**0**	**2,400**	**310**	**2,700**	
Lake Sediments	SSA-1b	Computer	19,359	7,006	0	7,006	0	7,006	OCPs
	SSA-1c	Computer	25,909	9,722	0	9,722	0	9,722	OCPs
	Subtotal		**45,000**	**19,000**	**0**	**19,000**	**0**	**19,000**	
Surficial Soil	NCSA-4b	Computer	236,617	81,192	0	81,192	0	81,192	Aldrin, Dieldrin
	Surf. Soil	SAR/RI	18,514	3,872	0	3,872	2,300	6,172	Dieldrin, Pb
	Subtotal		**260,000**	**85,000**	**0**	**85,000**	**2,300**	**87,000**	
Basin A Medium Group	NCSA-1a	Computer	305,687	159,593	0	159,593	30,636	173,559	OCPs, As, Hg

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	VHC	Organic	Inorganic	Total	Predominant COCs
	NCSA-1e	Computer	6,737	1,050	0	1,050	1,318	2,392	OCPs, As
	Subtotal		**310,000**	**160,000**	**0**	**160,000**	**32,000**	**180,000**	
Basin F Wastepile Subgroup		Survey	75,000	580,000	580,000	580,000	0	580,000	OCPs, VHC, CLC2A
Former Basin F Subgroup	NCSA-3	Computer	346,746	394,420	44,379	742,612	0	742,612	OCPs, CLC2A
Secondary Basins Medium Group	NCSA-2a	Computer	67,705	25,332	0	25,332	0	25,448	OCPs
	NCSA-2b	Computer	9,400	2,472	0	2,472	0	2,472	OCPs
	NCSA-4a	Computer	10,852	2,958	0	2,957	102	3,381	OCPs
	NCSA-5a	Computer	4,078	320	0	320	0	920	OCPs
	Subtotal		**92,000**	**31,000**	**0**	**31,000**	**100**	**32,000**	
Chemical Sewers Subgroup	CSA-3	SAR/RI	8,000	0	0	5,300	0	5,300	CLC2A
	NCSA-6a	SAR/RI	23,556	17,700	0	17,700	0	17,700	OCPs
	NCSA-6b	SAR/RI	2,222	0	0	1,500	0	1,500	CLC2A
	NPSA-1	SAR/RI	17,000	0	0	11,300	0	11,300	CLC2A

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	VHC	Organic	Inorganic	Total	Predominant COCs
	SPSA-10	SAR/RI	48,778	46,500	46,500	46,500	46,500	46,500	OCPs, DBCP, Hg, As, CLC2A
	Subtotal		**100,000**	**64,000**	**47,000**	**82,000**	**47,000**	**82,000**	
Complex Trenches Subgroup	CSA-1c	SAR/RI	128,215	445,000	0	445,000	440,900	445,000	OCPs, As, Hg
Shell Trenches Subgroup	CSA-1a	SAR/RI	32,370	100,000	0	100,000	0	100,000	OCPs, DBCP
Hex Pit Subgroup	SPSA-1f	SAR/RI	900	3,300	0	3,300	3,300	3,300	OCPs
Sanitary Landfills Medium Group	CSA-1d	SAR/RI	2,020	2,350	0	2,350	0	2,350	OCPs
	ESA-2b	SAR/RI	870	1,160	0	1,160	0	1,160	Dieldrin
	SSA-4	SAR/RI	5,220	3,650	0	3,650	0	3,650	OCPs
	WSA-2	SAR/RI	1,750	2,180	0	2,180	1,890	2,180	Cr, Dieldrin
	WSA-3c	SAR/RI	670	0	0	0	450	450	Cd
	WSA-5d	SAR/RI	1,440	2,670	0	2,670	4,000	4,000	Isodrin, Pb, Cr

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	VHC	Organic	Inorganic	Total	Predominant COCs
	Subtotal		**12,000**	**12,000**	**0**	**12,000**	**6,300**	**14,000**	
Section 36 Lime Basins Subgroup	NCSA-1b	Computer	33,699	51,965	0	52,012	2,071	54,151	OCPs
Buried M-1 Pits Subgroup	SPSA-1e	Computer	8,700	974	668	1,743	25,662	25,740	As, Hg
South Plants Central Processing Area Subgroup	SPSA-1a	Computer	139,437	84,703	296	92,997	21,450	110,154	OCPs, As, Hg, DBCP
South Plants Ditches Subgroup		Computer	50,398	33,305	0	33,305	0	33,364	OCPs, Chlordane
South Plants Balance of Areas Subgroup		Computer	173,548	63,091	3,556	68,365	60,585	127,528	OCPs, Cr
Buried Sediments Subgroup	SSA-3b	Computer	7,865	15,715	0	15,715	0	15,715	Dieldrin
Sand Creek Lateral Subgroup	NCSA-2d	SAR/RI	267	89	0	89	0	89	Dieldrin
	NCSA-5c	SAR/RI	13,089	5,103	0	5,103	0	5,103	Dieldrin
	NCSA-8b	SAR/RI	5,938	1,979	0	1,979	0	1,979	OCPs
	NPSA-4	SAR/RI	389	0	0	130	0	130	CLC2A

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	VHC	Organic	Inorganic	Total	Predominant COCs
	NCSA-5b	SAR/RI	244	81	0	81	0	81	Dieldrin
	SSA-2a	SAR/RI	2,211	737	0	737	0	737	OCPs
	SSA-2b	SAR/RI	10,167	5,352	0	5,352	0	5,352	OCPs
	WSA-1f	SAR/RI	314	105	0	105	0	105	Dieldrin
	WSA-6a	SAR/RI	1,577	0		0	1,111	1,111	Cr, Pb
	Subtotal		**34,000**	**14,000**	**0**	**14,000**	**1,100**	**15,000**	
Section 36 Balance of Areas Subgroup	CSA-1b	Computer	93,707	32,285	0	62,040	0	62,040	OCPs
	CSA-2a	SAR/RI	0	0	0	0	0	0	None
	CSA-4	Computer	51,805	15,229	0	15,229	0	15,229	OCPs
	NSCA-1g		5,648	1,882	0	1,882	0	1,882	OCPs
	Subtotal		**150,000**	**49,000**	**0**	**79,000**	**0**	**79,000**	
Burial Trenches Subgroup	ESA-2a	SAR/RI	11,876	0	0	0	31,880	31,880	Cr, Pb
	ESA-2c	SAR/RI		0	0	0	0	0	None
	Subtotal		**12,000**	**0**	**0**	**0**	**32,000**	**32,000**	

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	VHC	Organic	Inorganic	Total	Predominant COCs
	Total		**2,000,000**	**2,200,000**	**700,000**	**2,600,000**	**670,000**	**2,800,000**	

Subtotals and totals rounded to 2 significant figures.
Predominant COCs column indicates the contaminant(s) driving volume at each site.

As - arsenic
bcy - bank cubic yard
CLC2A - chloroacetic acid
DBCP - dibromochloropropane
Hg - mercury
OCPs - organochlorine pesticides
sy - square yard
SAR/RI - Study Area Reports issued as part of the Remedial Investigation (EBASCO 1989a-g)
VHC - volatile hydrocarbon

Table A-3 Exceedance Areas and Volumes for Principal Threat Criteria

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	Organic	Inorganic	Total	Predominant COCs
Basin A Medium Group	NCSA-1a	Computer	34,914	22,685	22,685	1,986	31,994	OCPs, As
	NCSA-1e	Computer	0	0	0	0	0	
	Subtotal		**35,000**	**23,000**	**23,000**	**2,000**	**32,000**	
Basin F Wastepile Subgroup			75,000	580,000	580,000	0	580,000	OCPs, DBCP, CLC2A
Former Basin F Subgroup	NCSA-3	Computer	109,365	181,660	182,060	0	248,328	Aldrin, Dieldrin
Chemical Sewers Subgroup	SPSA-10	SAR/RI	57,000	46,500	46,500	46,500	46,500	OCPs, DBCP CLC2A, As, Hg
Complex Trenches Subgroup	CSA-1c	SAR/RI	122,000	440,000	440,900	440,900	440,900	OCPs, As, Hg
Shell Trenches Subgroup	CSA-1a	SAR/RI	32,370	100,000	100,000	0	100,000	OCPs, DBCP
Hex Pit Subgroup	SPSA-1f	SAR/RI	900	3,300	3,300	3,300	3,300	OCPs

Medium Group or Subgroup	SARSite Number	Source of Estimate	Exceedance Area (sy)	Exceedance Volumes by Contaminant Group (bcy) OCPs	Organic	Inorganic	Total	Predominant COCs
Section 36 Lime Basins Subgroup	NCSA-1b	Computer	6,689	5,420	5,420	0	9,015	OCPs
Buried M-1 Pits Subgroup	SPSA-1e	Computer	8,697	0	0	16,318	21,613	Arsenic
South Plants Central Processing Area Subgroup	SPSA-1a	Computer	41,944	20,314	26,221	1,481	38,264	OCPs, Arsenic, DBCP
South Plants Ditches Subgroup		Computer	5,474	3,411	3,411	0	3,411	Aldrin
South Plants Balance of Areas Subgroup		Computer	8,089	6,172	6,344	0	10,548	Aldrin, Dieldrin
Total			**510,000**	**1,400,000**	**1,400,000**	**510,000**	**1,500,000**	

Subtotals and totals rounded to two significant figures.

Predominant COCs column indicates the contaminant(s) driving volume at each site.

As - arsenic
bcy - bank cubic yard
CLC2A - chloroacetic acid
DBCP - dibromochloropropane
Hg - mercury
OCPs - organochlorine pesticides
sy - square yard
SAR/RI - Study Area Reports issued as part of the Remedial Investigation (EBASCO, 1989a-g)

Medium Group or Subgroup	SARSite Number	Source of Estimate	Excess Potential Risk Area (sy)	Excess Potential Risk Volume (bcy)	Predominant COCs
North Plants	NPSA-3	Computer	18,169	6,056	As
	NPSA-5	Computer	16,362	5,454	As
	NPSA-6	Computer	14,983	4,994	As
	Subtotal		**50,000**	**17,000**	
Lake Sediments	SSA-1b	Computer	56,843	18,948	OCPs
Surficial Soil	NCSA-4b	Computer	1,040,451	346,817	Dieldrin
	Surf. Soil	Computer	311,823	103,941	Dieldrin
	Subtotal		**1,400,000**	**450,000**	
Ditches/Drainage Areas	CSA-2b	SAR/RI	26,005	8,668	Dieldrin, Hg
	NCSA-1c	SAR/RI	11,711	7,209	OCPs, As
	NCSA-1d	SAR/RI	9,506	3,169	Dieldrin, Endrin
	NCSA-1f	SAR/RI	24,429	8,143	OCPs, As
	NCSA-5d	SAR/RI	35,963	14,393	Dieldrin
	NPSA-8c	SAR/RI	5,530	5,530	As
	NPSA-9f	SAR/RI	852	284	As

Medium Group or Subgroup	SARSite Number	Source of Estimate	Excess Potential Risk Area (sy)	Excess Potential Risk Volume (bcy)	Predominant COCs
	SSA-2c	SAR/RI	23,421	7,807	DDE
	Subtotal		**150,000**	**52,000**	
Basin A Medium Group	NCSA-1a	Computer	347,092	115,697	OCPs, As, Hg
	NCSA-1e	Computer	6,688	2,229	OCPs, As, Hg
	Subtotal		**350,000**	**120,000**	
Secondary Basins Medium Group	NCSA-2a	Computer	290,083	96,694	Aldrin, Dieldrin
	NCSA-2b	Computer	88,126	29,375	Aldrin, Dieldrin
	NCSA-4a	Computer	14,267	4,756	Aldrin, Dieldrin, Hg
	NCSA-5a	Computer	16,383	5,461	Dieldrin, Hg
	Subtotal		**410,000**	**140,000**	
Complex Trenches Subgroup	CSA-1c	SAR/RI	260,517	86,839	OCPs, Hg
Sanitary Landfills Medium Group	CSA-1d	SAR/RI	66,153	22,051	Dieldrin
	SSA-4	SAR/RI	2,748	916	OCPs
	Subtotal		**69,000**	**23,000**	

Medium Group or Subgroup	SARSite Number	Source of Estimate	Excess Potential Risk Area (sy)	Excess Potential Risk Volume (bcy)	Predominant COCs
South Plants Central Processing Area Subgroup	SPSA-1a	Computer	80,339	26,780	OCPs, As, Hg
South Plants Ditches Subgroup		Computer	65,179	21,726	OCPs, As, Hg
South Plants Balance of Areas Subgroup		Computer	1,543,064	514,355	OCPs, As, Hg
Sand Creek Lateral Subgroup	NCSA-5b	SAR/RI	19,534	6,511	Aldrin, Dieldrin, As, Hg
	NCSA-2d	SAR/RI	10,992	3,664	Aldrin, Dieldrin
	NCSA-5c	SAR/RI	68,466	22,822	Aldrin, Dieldrin
	NCSA-8b	SAR/RI	55,997	18,666	Aldrin, Dieldrin
	SSA-2a	SAR/RI	47,682	15,157	Aldrin, Dieldrin
	SSA-2b	SAR/RI	50,818	16,939	OCPs, Hg
	WSA-1f	SAR/RI	558	186	Dieldrin
	WSA-6a	SAR/RI	18,930	6,310	As, Cd
	Subtotal		**270,000**	**90,000**	
Section 36 Balance of Areas Subgroup	CSA-1b	Computer	139,460	46,487	OCPs, Hg
	CSA-2a	SAR/RI	6,186	2,062	Dieldrin

Medium Group or Subgroup	SARSite Number	Source of Estimate	Excess Potential Risk Area (sy)	Excess Potential Risk Volume (bcy)	Predominant COCs
	CSA-4	Computer	357,128	119,043	Dieldrin
	NSCA-1g	Computer	92,326	30,775	Aldrin, Dieldrin
	Subtotal		**600,000**	**200,000**	
	Total		**5,300,000**	**1,800,000**	

Subtotals and totals rounded to 2 significant figures.
Predominant COCs column indicates the contaminant(s) driving volume at each site.

As - arsenic
bcy - bank cubic yard
CLC2A - chloroacetic acid
DBCP - dibromochloropropane
Hg - mercury
OCPs - organochlorine pesticides
sy - square yard
SAR/RI - Study Area Reports issued as part of the Remedial Investigation (EBASCO 1989a-g)

Note: Volume is based on a depth of 1 foot over the potential risk area.

Appendix B

APPENDIX B

COST ESTIMATES FOR REMEDIAL ALTERNATIVES

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B3.2-B9a Alternative B9a: Landfill (On-Post Landfill); In Situ Biological Treatment (Landfarm/Agricultural Practice)

Ditches/Drainage Areas Medium Group
B3.3-B1 Alternative B1: No Additional Action (Provisions of FFA)
B3.3-B2 Alternative B2: Biota Management (Exclusion, Habitat Modification)
B3.3-B3 Alternative B3: Landfill (On-Post Landfill)
B3.3-B5a Alternative B5a: Caps/Covers (Multilayer Cap) with Consolidation
B3.3-B9 Alternative B9: In Situ Biological Treatment (Landfarm/Agricultural Practice)

APPENDIX B4 - COST ESTIMATES FOR HUMAN HEALTH EXCEEDANCE CATEGORY

Basin A Medium Group
B4.1-1 Alternative 1: No Additional Action (Provisions of FFA)
B4.1-1a Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)
B4.1-3b Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multilayer Cap)
B4.1-3c Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multilayer Cap)
B4.1-6 Alternative 6: Caps/Covers (Multilayer Cap)
B4.1-6c Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multilayer Cap)

B4.1-8b Alternative 8b: Direct Soil Washing (Solvent Washing with Caustic Pretreatment); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multilayer Cap)

B4.1-13d Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multilayer Cap)

B4.1-17 Alternative 17: In Situ Physical/Chemical Treatment (Soil Flushing); In Situ Thermal Treatment (Surface Soil Heating)

B4.1-19b Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In Situ Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multilayer Cap)

Basin F Medium Group - Basin F Wastepile Subgroup

B4.2-1 Alternative 1: No Additional Action (Provisions of FFA)

B4.2-2 Alternative 2: Access Restrictions (Modifications to FFA)

B4.2-3 Alternative 3: Landfill (On-Post Landfill)

B4.2-6d Alternative 6d: Caps/Covers (Composite Cap)

B4.2-8a Alternative 8a: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

B4.2-13b Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Basin F Medium Group - Former Basin F Subgroup

B4.3-1 Alternative 1: No Additional Action (Provisions of FFA)

B4.3-1a Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

B4.3-2a Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

B4.3-3b Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multilayer Cap)

B4.3-3c Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multilayer Cap)

B4.3-6 Alternative 6: Caps/Covers (Multilayer Cap)

B4.3-6b Alternative 6b: In Situ Solidification/Stabilization (Silica-Based Solidification) of Principal Threat Volume; Caps/Covers (Multilayer Cap)

B4.3-6c Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multilayer Cap)

B4.3-13c Alternative 13c: Direct Thermal Desorption (Direct Heating); Caps/Covers (Multilayer Cap)

B4.3-19c Alternative 19c: In Situ Thermal Treatment (RF/Microwave Heating); Caps/Covers (Multilayer Cap)

Secondary Basins Medium Group

B4.4-1	Alternative 1: No Additional Action (Provisions of FFA)
B4.4-2	Alternative 2: Access Restrictions (Modifications to FFA)
B4.4-3	Alternative 3: Landfill (On-Post Landfill)
B4.4-3b	Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multilayer Cap)
B4.4-3f	Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multilayer Cap) With Consolidation
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B4.4-13a	Alternative 13a: Direct Thermal Desorption (Direct Heating)
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Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup

B4.5-1	Alternative 1: No Additional Action (Provisions of FFA)
B4.5-2	Alternative 2: Access Restrictions (Modifications to FFA)
B4.5-3	Alternative 3: Landfill (On-Post Landfill)

Sewer Systems Medium Group - Chemical Sewers Subgroup

B4.6-1	Alternative 1: No Additional Action (Provisions of FFA)
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B4.6-2	Alternative 2: Access Restrictions (Modifications to FAA)
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B4.6-3a	Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)
B4.6-3e	Alternative 3e: Access Restrictions (Modifications to FFA); Landfill (On-Post Landfill)
B4.6-8a	Alternative 8a: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)
B4.6-13a	Alternative 13a: Direct Thermal Desorption (Direct Heating)

Disposal Trenches Medium Group - Complex Trenches Subgroup

B4.7-1	Alternative 1: No Additional Action (Provisions of FFA)
B4.7-5	Alternative 5b: Caps/Covers (Multilayer Cap); Vertical Barriers (Slurry Walls)
B4.7-14	Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Disposal Trenches Medium Group - Shell Trenches Subgroup

B4.8-1	Alternative 1: No Additional Action (Provisions of FFA)
B4.8-3	Alternative 3: Landfill (On-Post Landfill)
B4.8-5a	Alternative 5a: Caps/Covers (Multilayer Cap); Vertical Barriers (Slurry Walls) with Modifications to Existing System

B4.8-14 Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Disposal Trenches Medium Group - Hex Pit Subgroup

B4.9-1 Alternative 1: No Additional Action (Provisions of FFA)
B4.9-3 Alternative 3: Landfill (On-Post Landfill)
B4.9-5 Alternative 5: Caps/Covers (Multilayer Cap); Vertical Barriers (Slurry Walls)
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B4.9-22 In Situ Solidification/Stabilization (Silica/Proprietary Agent-Based Solidification)

Sanitary Landfills Medium Group

B4.10-1 Alternative 1: No Additional Action (Provisions of FFA)
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Lime Basins Medium Group - Section 36 Lime Basins Subgroup

B4.11-1 Alternative 1: No Additional Action (Provisions of FFA)
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Lime Basins Medium Group - Buried M-1 Pits Subgroup

B4.12-1 Alternative 1: No Additional Action (Provisions of FFA)
B4.12-3 Alternative 3: Landfill (On-Post Landfill)
B4.12-5 Alternative 5: Caps/Covers (Multilayer Cap); Vertical Barriers (Slurry Walls)
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B4.12-21 Alternative 21: In Situ Thermal Treatment (In Situ Vitrification)
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South Plants Medium Group - South Plants Central Processing Area Subgroup

B4.13-1	Alternative 1: No Additional Action (Provisions of FFA)
B4.13-1b	Alternative 1b: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; No Additional Action (Provisions of FFA)
B4.13-3b	Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multilayer Cap)
B4.13-3d	Alternative 3d: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multilayer Cap)
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South Plants Medium Group - South Plants Ditches Subgroup

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South Plants Medium Group - South Plants Balance of Areas Subgroup

B4.15-1	Alternative 1: No Additional Action (Provisions of FFA)
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B4.15-13 Alternative 13: Direct Thermal Desorption (Direct Heating): Direct Solidification/Stabilization (Cement-Based Solidification)

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Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup

B4.16-1 Alternative 1: No Additional Action (Provisions of FFA)

B4.16-2 Alternative 2: Access Restrictions (Modifications to FFA)

B4.16-3 Alternative 3: Landfill (On-Post Landfill)

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Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup

B4.17-1 Alternative 1: No Additional Action (Provisions of FFA)

B4.17-3 Alternative 3: Landfill (On-Post Landfill)

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B4.17-6 Alternative 6: Caps/Covers (Multilayer Cap)

B4.17-13 Alternative 13: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification)

Undifferentiated Medium Group - Section 36 Balance of Areas Subgroup

B4.18-1 Alternative 1: No Additional Action (Provisions of FFA)

B4.18-2 Alternative 2: Access Restrictions (Modifications to FFA)

B4.18-3 Alternative 3: Landfill (On-Post Landfill)

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B4.18-6 Alternative 6: Caps/Covers (Multilayer Cap)

B4.18-13a Alterative 13a: Direct Thermal Desorption (Direct Heating)

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Undifferentiated Medium Group - Burial Trenches Subgroup

B4.19-1 Alternative 1: No Additional Action (Provisions of FFA)

B4.19-3 Alternative 3: Landfill (On-Post Landfill)

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LIST OF ACRONYMS AND ABBREVIATIONS

A	annual cost type (costs incurred over more than one year)
BCY	bank cubic yard (i.e., volume of in-place soil)
BEMA	Bald Eagle Management Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm/s	centimeters per second
CY	Cubic yard
DAA	detailed analysis of alternatives
EA	each
EPA	U.S. Environmental Protection Agency
F	Fahrenheit
FS	feasibility study
GAL	gallon
HE	high explosive
HH	human health
HLA	Harding Lawson Associates
IO&P	indirect, overhead, and profit
IRO	interim response action
lbs	pounds
LF	linear feet
LL	liquid limit
LS	lump sum cost type (costs incurred in one year)
MCACES	Microcomputer-Aided Cost Engineering Support
MH	manhole
NaOH	sodium hydroxide
NTSY	New Toxic Storage Yard
O&M	operations and maintenance
OMB	Office of Management and Budget
PI	plasticity index
PMRMA	Program Manager for Rocky Mountain Arsenal
PRG	preliminary remediation goal
PT	principle threat
RACER	Remedial Action Cost Engineering and Requirements
RCC	Resources Conservation Company
RCRA	Resource Conservation and Recovery Act
RDTE	Research, Development, Test and Evaluation
RMA	Rocky Mountain Arsenal
ROD	record of decision
SF	square feet
SVRP	Soil Volume Refinement Program
SY	square yard
TCLP	toxicity characteristic leaching procedure

TXSY	toxic storage yards
UXO	unexploded ordnance
YR	year

Prefixes for exceedance categories used at the beginning of every cost item description shown of the cost estimates:

A-	agent
B-	biota
H-	human health
HA-	human health and agent
HAU-	human health, agent, and UXO
HB-	human health and biota
HBA-	human health, biota, and agent
HBAU-	human health, biota, agent, and UXO
U-	UXO

B.1.0 INTRODUCTION

This appendix contains the cost estimates for the Final Soil DAA. A cost estimate was developed for every alternative considered for each medium group or subgroup in the Final Soil DAA, as well as for the five sitewide alternatives discussed in Section 20 of the report. The alternative costs were developed in a manner consistent with EPA cost estimating guidelines and are estimated to be within +50 percent and -30 percent of the total alternative cost. In accordance with guidance, a present worth analysis was used to present all estimates for alternatives in a consistent manner for comparison; however, the present worth analysis is not consistent with Army budget requirements and the cost estimates developed in the DAA are not to be considered government budget estimates. Once the final alternatives are selected in the Record of Decision, a detailed government estimate should be prepared for each alternative selected.

A total of 149 cost estimates for individual alternatives were prepared for munitions, agent, biota, and human health exceedance categories, and can be found in Appendix B1 through B4 (Tables B1.1-U1 through B4.19-10). The format for these estimates was developed to provide a realistic estimate of costs given the uncertainties still inherent at this pre-design stage of the remediation. Many forms of uncertainty exist in the estimates due to the developmental stage of some of the proposed technologies, the pre-remedial design stage of the project, uncertainties in annual inflation rates, and availability of resources. Other forms of uncertainty are presented in the discussion of indirect costs. Sections B.2.0 through B.4.0 explain the format of these cost estimate tables and the methodology for development of the unit rates and indirect cost factors that appear in the tables.

Sections B.5.0 through B.8.0 of Appendix B discuss the cost estimates prepared for the five sitewide alternatives developed in Section 20 of the Final Soil DAA. The schedules required for each sitewide alternative are also presented and discussed.

B.2.0 FORMAT OF THE COST ESTIMATE TABLES FOR INDIVIDUAL ALTERNATIVES

The soil cost tables for each alternative presented in Appendix B1 through B4 are divided into multiple sections based on the type of cost. The three main cost categories are capital, operations, and long-term operations and maintenance (O&M) costs. These main categories are further divided into the following sections:

Capital Costs	Operations Costs	Long-Term O&M Costs
- Direct Costs	- Direct Costs	- Direct Costs
- Indirect Costs	- Indirect Costs	- Indirect Costs
- Direct Subcontract Costs	- Direct Subcontract Costs	
- Indirect Subcontract Costs	- Indirect Subcontract Costs	

Direct capital costs are those costs incurred to prepare facilities to be used in the remediation of the contaminated soil, such as the construction of a landfill or a water treatment facility. Costs incurred by specialty subcontractors for the construction of major treatment facilities, such as an incineration facility, are included under direct subcontract capital costs. Direct operations costs are those costs incurred to actually remediate the contaminated soil, such as excavation and placement of contaminated soil in a landfill. Direct subcontract operations costs are the operations costs incurred by specialty subcontractors during the treatment of the contaminated soil, such as operating a thermal desorber. Costs incurred during monitoring and/or routine maintenance after remediation is accomplished (for example, monitoring and maintenance of a landfill) are included under the direct long-term O&M costs.

Indirect costs for the categories listed above include mobilization/demobilization; indirects, overhead, and profits; engineering design; resident engineering; and contingency. It should be noted that the cost estimates are structured solely to represent comparative costs between alternatives and are not stand-alone estimates. Caution should be exercised in comparing indirect costs of alternatives since costs represent only a comparative percentage of any individual

alternative. Prior to implementation of the preferred alternatives developed in the Final Soil DAA, it will be necessary to re-evaluate and develop a more detailed cost assessment. A detailed discussion of indirect costs is included in Section B.4.0.

The headings, as they appear across the top of each cost estimate, are explained as follows:

Cost Item:	Each horizontal line represents a cost item. The cost item begins with a prefix which designates the exceedance category being addressed (e.g., munitions (U), agent (A), biota (B), and/or human health (H) exceedance categories).
Cost Type:	There are two types of costs – lump sum (LS) or annual (A). Lump sum designates a unit operation which occurs in only one year, while an annual cost for a unit operation occurs in more than one year.
Start Year:	The starting year for the unit operation. Ordinal numbers are used to specify the calendar year, with year 1 representing 1995.
End Year:	The ending year for the unit operation. Ordinal numbers are used to specify the calendar year, with year 1 representing 1995. (Note: No ending year is specified for the lump sum cost type.) Start year along with end year estimate the duration of a unit operation, but do not account for interrelationships with activities for other medium groups/subgroups, and do not represent a schedule for the unit operation as part of a sitewide remediation project.
1994 ($) Unit Cost:	The unit cost for each cost item in 1994 dollars.
Units:	The units associated with the 1994 ($) unit cost.
Quantity:	The quantity for which each unit cost will be applied to.
Units:	The units associated with the quantity.
Volume Factor:	The volume factor accounts for any expansion or reduction of a volume quantity if appropriate. An example is the expansion of solidified soil since 1 bank cubic yard (BCY) of soil expands to 1.38 BCY after solidification. (Note: A volume factor of 1.000 for non-volume cost items has no effect on the computed costs.)
Mileage Factor:	The mileage factor specifies the one-way mileage for each transportation cost item from the remediation site to the fixed

facility. (Note: A mileage factor of 1.000 for non-transportation cost items has no effect on the computed costs.)

Other Factor: This factor is reserved for miscellaneous factors. An example is odor control for which costs are increased by 20 percent (1.070) to account for maintaining a daily soil cover or liner during excavation. (Note: Another factor of 1.000 has no effect on the computed costs.)

Other Factor Description: A description associated with the other factor.

1995 ($) Annual Cost: These costs are an approximation of the annual costs for long-term O&M after the actual remediation is complete. These costs are presented only for the long-term O&M cost category and are provided for informational purposes only. (Note: Each cost item may have a different timeframe, thereby rendering the sum of the annual cost an approximate amount.)

1995 ($) Total Cost: The total cost in 1995 dollars is calculated by multiplying the following items: 1994 ($) Unit cost; Quantity; Volume Factor; Mileage Factor; Other Factor; and a single payment compound amount factor to convert the 1994 ($) Unit Cost to a 1995 ($) Unit Cost using a 2.7 percent escalation rate.

1995 ($) PW Cost: The present worth cost in 1995 dollars is calculated by applying the appropriate fraction of the 1995 ($) Total Cost to the specified years, then discounting the applied value at each year back to year 1 (1995) using a 3 percent discount rate (AMC 1995).

Additional explanations for subtotal calculations and all indirect costs are given on the cost estimate tables in the form of alphabetical references to computed values.

B.3.0 UNIT RATE DEVELOPMENT

Each cost estimate contains a number of detailed cost items. The resulting cost associated with each cost item is calculated by multiplying a quantity or volume, a unit rate, and factors (volume, mileage, and/or other). The rationale for the development of unit costs used in the estimates are described in the following sections. Note that all costs listed in the following sections are unburdened (i.e., they do not include indirect costs).

B.3.1 NO ADDITIONAL ACTION/INSTITUTIONAL CONTROLS

A number of process options are evaluated for the no additional action and institutional controls alternatives. The line items for no additional action do not involve any capital, operations, or long-term O&M costs. These are used as place holders in the cost tables where no additional action is proposed for all or portions of a site. Several different types of institutional controls can be applied to a site including – installation of fences, gates, and signs; habitat modification; public education; access restrictions; site reviews; and annual soil monitoring.

B.3.1.1 Fencing

The estimated capital cost for installation of fencing is $15.90/linear foot (LF). Annual maintenance costs for fencing are estimated to be 5 percent of the installation cost or $0.79/LF.

B.3.1.2 Habitat Modification

Habitat modification includes the cost of mowing, herbiciding, plowing, discing, fertilizing, harrowing, and drill seeding areas to establish grasses that are unappealing to biota. Estimated operations costs for habitat modification are $0.18/square yard (SY) assuming a three-year timeframe to fully establish the vegetation. Annual long-term maintenance includes mowing and spot herbiciding at an estimated cost of $0.0059/SY.

B.3.1.3 Public Education

Public education includes the cost of exhibits, videos, brochures, visitor center, open houses, public meetings. etc., to emphasize the reasons for, and the importance of, restricting access to areas where contaminants remain in place at concentrations above acceptable risk levels. The capital cost to implement these programs (amortized on a per-medium-group basis) is estimated to be $1,700.00 with an annual operations cost of $570.00.

B.3.1.4 Sewer Access Restrictions

Access restrictions for sewers involves plugging of the manholes and sewers and posting of warning signs. Mixing and pumping cement into manholes or throughout the length of the sewers is estimated to cost $96.09/BCY or $174.00/BCY, respectively. Installation of warning

signs every 1,000 LF along the sewers is estimated to cost $0.10/LF with a long-term maintenance cost of 5 percent of the installation cost or $0.0052/LF.

B.3.1.5 Site Reviews

Sites where soil with exceedances above risk criteria remain in place are required by CERCLA to have a site review every five years to assess the residual contamination. The cost of the review is estimated to be $2,700.00/year (YR) prorated over a five-year review period.

B.3.1.6 Long-Term Monitoring

Sites with no additional action or institutional controls alternatives that contain biota risk or human health exceedances will have long-term soil sampling to monitor natural attenuation/degradation of contaminants and potential contaminant migration. Costs for long-term monitoring are estimated at $1,850.00 per sample with the number of samples varying, depending on the area and distribution of contamination.

B.3.1.7 Leachate Handling

One control is specific to the Basin F Wastepile Subgroup: disposal of wastepile leachate. The long-term disposal cost of wastepile leachate is $6.43/gallon (GAL) based on drumming the estimated volume and transporting it to an off-site RCRA incinerator for disposal. The estimated volume after installation of a composite cap is 13,300 GAL/YR. During intrusive activities, such as excavation for thermal desorption or landfilling, the estimated volume of leachate is 45,000 GAL/YR.

B.3.2 EARTHWORK AND TRANSPORTATION

A number of costs have been developed for earthwork and transportation of soil or operations associated with the movement of soil. These unit costs include conventional and modified excavation, dredging, loading, transportation, backfilling, and grading and are applied to borrow, overburden, contaminated, and treated soil. Miscellaneous costs associated with the earthwork include construction dewatering, cut-off walls, and wetlands restoration. These costs are explained in the following sections.

B.3.2.1 Conventional Excavation

The unit cost to remove overburden from sewers, covers, and landfills includes the labor and equipment necessary to excavate and stockpile the overburden. It is assumed that all work associated with overburden is performed in Level D. Depending upon the type of construction equipment used, the unit cost to remove overburden is $1.91/BCY for soil covers and the Basin F wastepile, and $1.52/BCY for sewers.

The unit cost for excavation of contaminated soil or UXO debris includes the labor and equipment necessary to excavate and load contaminated soil into trucks as well as sampling during excavation. The unit cost does not include transportation, dumping or grading of the contaminated soil at the destination site. A loss of productivity due to Level C working conditions of between 20 to 25 percent is assumed for handling of contaminated soil or debris. Depending upon the type of equipment used, the unit cost to excavate contaminated soil or debris is $3.87/BCY for sewer and ditch excavation or $3.96/BCY for conventional and landfill excavation.

The unit cost for excavation of borrow materials is $1.91/BCY. The unit cost includes the labor and equipment necessary to excavate and load soil from a clean on-post borrow area. This cost does not include transportation, dumping or grading of the borrow material at the destination site. It is assumed that all work associated with borrow materials is performed in Level D.

The unit cost to excavate and load soil containing agent is higher than for non-agent soil based on a loss of productivity (due to Level B personal protective equipment) of 50 percent, as well as the costs for confirmatory sampling during excavation. Depending upon the type of equipment used, the unit cost to excavate agent-contaminated soil is $7.33/BCY for sewer excavation or $4.61/BCY for conventional excavation.

B.3.2.2 Vapor Domes

Modified excavation involves the excavation of contaminated soil in a rigid framed enclosure equipped with an air emissions control system to contain noxious odors emitted during excavation activities. The rigid frame enclosure permits a negative pressure within the structure which will decrease the possibility of any fugitive emissions to the outside environment. The estimated capital cost for enclosures associated with the Basin F Wastepile excavation is $12.29/BCY, which includes the fabrication and utilization of 2 movable enclosures. The estimated operations cost is $14.90/BCY assuming an excavation timeframe of 3 years. This cost includes the expenses for a total of 49 structure moves, and the operation and maintenance of the emissions control system.

The excavation costs for the Former Basin F subgroup include similar movable enclosures. For the principal threat volume only, 2 movable enclosures will be used at a capital cost of $13.20/BCY and $15.56/BCY for operating costs. For the entire human health exceedance area, 2 movable enclosures are also used at a capital cost of $7.07/BCY and an operating cost of $13.64/BCY. Operating costs include expenses for structure moves, and maintenance of the emissions control systems.

The excavation of the Hex Pits and the Buried M1 Pits subgroups will be performed using 1 movable enclosure. Capital costs are $212.49/BCY and $32.53/BCY for the Hex Pits and Buried M1 Pits, respectively. Operating costs are $10.28/BCY and $8.74/BCY. The excavation of the Shell Trenches subgroup requires two moveable structures. The capital cost of this structure is $17.65/BCY and operating costs are $9.72/BCY. These enclosures are all equipped with air pollution control systems and the costs of these systems are reflected in both the capital and operating costs.

The excavation of the Complex Trenches includes the purchase and utilization of 2 movable enclosures, each equipped with an emissions control system to treat contaminant emissions during excavation activities. The estimated capital cost for the enclosures is $8.06/BCY. The operating

cost of $19.96/BCY includes the expenses for moving the enclosures, and the operation and maintenance of the emissions control system.

B.3.2.3 Dredging

Dredging includes both capital and operational costs. Mobilization of the dredge and construction of the settling ponds for dewatering of the dredged material is estimated to cost $12,600.00. The operational cost for labor and equipment necessary to dredge the sediments from the lakes and to pump the material to settling basins is $8.30/BCY.

B.3.2.4 Drum Handling

Based on historical information, the Hex Pit and Shell Trenches contain drums. For cost estimating purposes, it is assumed that 75 percent of the drums recovered will have corroded and have no contents remaining; these drums can be crushed and placed in the on-post hazardous waste landfill. Drums which do have contents (assumed 25 percent), are first overpacked before being placed in the landfill. The average total cost for drums that are empty and with contents is $498.58/BCY.

B.3.2.5 Loading

The loading of hazardous and nonhazardous treated soil costs $1.56/BCY and $1.29/BCY, respectively. The unit cost includes labor and equipment necessary to load treated soil but does not include excavation or transportation costs. It is assumed that the loading of the hazardous treated soil will be performed in Level C with a productivity loss of 20 percent and loading of nonhazardous treated soil will be performed in Level D.

B.3.2.6 Transportation

The operational cost for transportation of contaminated material includes the cost of labor and equipment necessary to transport contaminated material from the originating site and dump at the designated treatment/disposal facility. Costs associated with dumping, wheel washing/decontamination, dust suppression, and reduced size loads to prevent spillage are also included in the transport cost. The estimated operational cost is $1.08/BCY-load mile and is

based on a 2-mile one-way, loaded trip. It assumed that the work will be performed in Level C with a productivity loss of 20 percent. Transportation of nonhazardous materials includes the same items and assumptions as listed above but is performed in Level D. The estimated operational cost is $0.87/BCY-load mile.

B.3.2.7 Backfilling

The operational cost of backfilling is $1.71/BCY and includes the labor and equipment necessary to spread and compact treated soil, borrow material, gradefill for caps, and cover overburden into or over the originating excavation. The cost to backfill treated soil, borrow material, and overburden into sewers is $1.58/BCY. It is assumed that all backfill work with be performed in Level D.

B.3.2.8 Grading

The operational cost of grading includes the labor and equipment necessary to grade and compact soil displaced during installation of slurry walls or material from existing dikes. This soil is used as fill to achieve the required design grade prior to capping. It is assumed that all work will be done in Level C with a productivity loss of 20 percent. The operational cost to grade and compact this consolidated soil is $3.44/BCY. The unit cost includes the same assumptions as above but also incorporates additional costs for confirmatory sampling.

B.3.2.9 Construction Dewatering

Portions of Section 36 were determined to require dewatering by comparing excavation depths against both existing water levels and estimated future water levels from the Basin A and South Plants subregional groundwater modeling efforts. The specific soil medium groups and subgroups in this area are Basin A, Section 36 Lime Basins, Complex Trenches, Shell Trenches, and Section 36 Balance of Areas.

The estimated future water levels account for the removal of man-made recharge sources (i.e., leaking water lines) which eliminates the need for excavation dewatering in South Plants. Dewatering systems include operational and capital costs. The capital costs vary from $58,500

to $236,000 and include the cost for well and piping installation. The operational costs vary from $52,900/year to $829,000/year and include the costs for pumping and water treatment at the CERCLA Wastewater Facility.

B.3.2.10 Pipe and Manhole Removal

Two soil subgroups, Chemical and Sanitary Sewers, require the removal of existing piping and manholes. Some of the manholes may have been previously plugged through IRAs. The steel or cast iron pipe is removed from the excavation with a backhoe and then cut into 2-ft segments using a duley shear mounted on a backhoe. The resulting piping segments are then treated or disposed in conjunction with the contaminated soil below the sewer lines. Sections of the piping in the Chemical Sewers may contain agent; therefore, level B PPE is required during removal activities with an associated 50 percent loss in productivity. Due to the nature of contaminants in the Sanitary Sewers, Level C PPE, with a productivity loss of 20 percent, is expected to be required. Differences in the length, type of piping, and type of contamination result in a cost of $25.59/LF and $15.05/LF for the Chemical and Sanitary Sewers, respectively, for removal of pipe.

It was assumed that excavation of manholes in the Sanitary Sewers involves excavating the immediate area of the manhole using a combination of a backhoe and hand digging. Due to the nature of contaminants potentially occurring in the Sanitary Sewers. Level C PPE with a productivity loss of 20 percent, is expected. After the manhole is exposed, it is pulled to the surface, crushed or demolished, and loaded onto waiting trucks for transportation. The cost to remove unplugged manholes is $865.36/BCY and the cost for plugged manholes is $1,300.72/BCY.

B.3.2.11 Subgrade Preparation

Prior to placement of a cap/cover, the existing ground surface is prepared. The ground surface is compacted through two passes with a sheepsfoot roller which eliminates 'soft spots' in the subgrade. The cost for subgrade preparation is $0.06/SY assuming that the work is performed in Level C with a productivity loss of 20 percent.

B.3.2.12 Grubbing and Clearing

For specific areas of the Arsenal with a medium to high density of vegetation, such as the Lake Sediments Medium Group, the ground surface may require grubbing and clearing prior to excavation. The areas are cleared of vegetation by dragging a ball and chain behind a bulldozer. All work will be performed in Level C assuming a productivity loss of 20 percent. The cost for grubbing and clearing is $0.22/SY.

B.3.2.13 Cut-Off Walls

Cut-off walls will be used during excavation of sediments at lake inlets to prevent the migration of contaminants and during sewer excavations which are at a depth below the groundwater table. The operational (installation) cost is $155.10/LF. It is assumed that installation of the cut-off wall will be performed in Level C with a 20 percent loss of productivity.

B.3.2.14 Wetlands Restoration

After excavation and treatment of soil associated with the Lake Sediments Medium Group, the surrounding area is restored into a wetland habitat. Common fill from on-post is conditioned with compost/peat/manure to promote wetlands plant growth. The area is then revegetated with natural habitat, such as cattails. The cost to restore the area to wetland conditions through revegetation is $1.59/SY.

B.3.3 CONTAINMENT

A number of costs have been developed for the containment of contaminated soil. The sections below describe briefly the unit cost development for the installation of composite caps, multilayer caps, soil covers. and slurry walls plus the construction of an on-post hazardous waste landfill. Miscellaneous cost associated with the containment of soil includes hydraulic dewatering. This cost is also explained in the following section.

B.3.3.1 Composite Cap

A composite cap is used for the Basin F Wastepile and is designed according EPA guidance under RCRA specifications for a landfill final cover system. The operational cost for the installation of a composite cap is estimated to be $31.63/SY. The composite cap consists of the following layers: geogrid, 1-ft-thick soil layer, gas collection layer, very low density polyethylene synthetic flexible membrane liner (60 mil), 1-ft-thick drainage layer of coarse material (sand or geogrid), geotextile filter layer, 1-ft-thick biota barrier of cobbles, and a 2-ft-thick layer of common fill obtained on post of which the top 6 inches is augmented with conditioners to promote the growth of vegetation.

Long-term costs for the composite cap include periodic monitoring for settlement and maintenance due to erosion, deep-rooted vegetation, and burrowing animals. The annual long-term monitoring and maintenance cost of the cap is estimated to be $0.12/SY-YR.

B.3.3.2 Multilayer Cap

Installation of a multilayer cap limits infiltration and interrupts the exposure pathways for humans and biota. Prior to capping, the site must be graded and/or crowned by the placement of gradefill (cost not included in this cost item) to provide positive drainage of rain water. The total operational (installation) cost for a multilayer cap is estimated to be $19.01/SY and includes excavation, transportation, grading, and compaction of low-permeability soil and common borrow materials obtained from on-post areas. The multilayer cap consists of the following: a 2-ft-thick low-permeability soil layer, a 1-ft-thick biota barrier of crushed concrete, and a 4-ft-thick layer of common fill material of which the top 6 inches is augmented with conditioners to promote the growth of vegetation. Long-term costs for the multilayer cap include periodic monitoring for settlement and maintenance due to erosion, deep-rooted vegetation, and burrowing animals. The annual long-term monitoring and maintenance cost of the cap is estimated to be $0.07/SY. The multilayer cap for Complex Trenches under one alternative substitutes a poured concrete barrier for the crushed concrete biota barrier. The operating cost for the installation of this multilayer cap over the Complex Trenches is $28.47/SY and the long-term cost is $0.10/SY-YR.

For areas of the Arsenal which already have an existing soil cover as part of an IRA, the soil cover may be modified into a standard multilayer cap. The existing soil cover materials are stripped, stockpiled, and used in the multilayer cap. The use of these materials eliminates the need for conditioning topsoil and reduces the required common fill to 2-3 feet. The operational (installation) cost is estimated to be $18.82/SY. The annual long-term monitoring and maintenance cost of the modified soil cover or multilayer cap is estimated to be $0.07/SY.

B.3.3.3 Soil Cover

The installation of a soil cover serves two purposes. The first purpose is to interrupt potential exposure pathways for humans over specific areas of RMA, and the second is to provide freeze-thaw protection over solidified soil in addition to exposure pathway interruption. The standard soil cover is comprised of a 4-ft-thick layer of common fill material of which the top 6 inches is augmented with conditioners to promote the growth of vegetation. The operational (installation) cost of this soil cover for areas with potential UXO or agent presence and over solidified soil is estimated to be $7.55/SY, $7.79/SY, and $6.92/SY, respectively. The difference in costs is due to the level of protection required during installation of the first foot of the cover: Level C with a productivity loss of 20 percent for potential UXO areas, Level B with a productivity loss of 50 percent for potential agent areas, and Level D for solidified soil. The annual long-term monitoring and maintenance costs of $0.03/SY-YR for UXO/agent covers and $0.17/SY-YR for solidified soil includes quarterly inspections, repairing any erosion damage, and soil sampling cost to monitor solidified soil.

Soil cover costs associated with specific areas of RMA are as follows. A 4-ft soil cover with a concrete carrier for Basin A has an operating cost of $22.96/SY with a long-term cost of $0.09/SY-YR. Installation of a 2-ft soil cover without a biota barrier for Secondary Basins is estimated at $3.75/SY for operating with a long-term cost of $0.02/SY-YR. A 4-ft soil cover with a biota barrier for South Plants Central has an operating cost of $12.78/SY with a long-term cost of $0.05/SY-YR. A 1-ft to 2-ft soil cover without a biota barrier for Section 36 Balance has an operating cost of $6.04/BCY and a long-term cost of $0.06/BCY-YR. Installation of a 1-ft to 3-ft soil cover without a biota barrier for South Plants Ditches/Balance is estimated at

$6.01/BCY with a long-term cost of $0.04/BCY-YR. Long-term cost includes monitoring and maintaining the soil cover.

Areas of the Arsenal may require maintenance and monitoring of an existing soil cover which was part of an Interim Response Action. The cover is monitored through quarterly inspections for erosion damage. The annual cost to monitor soil and maintain the soil cover is estimated to be $0.03/SY.

B.3.3.4 Slurry Walls

Slurry walls provide a vertical barrier to horizontal contaminant migration and, when combined with a multilayer cap, virtually eliminate the potential for infiltration of surface or groundwater into the contained soil volume and the generation of leachate: they also completely interrupt exposure pathways. The slurry walls are keyed six feet into competent bedrock and the cap is keyed into the top of the slurry wall. Because the depth to bedrock varies from zero to 90 feet, several different types of equipment are used for trenching. A detailed description of slurry wall installation is provided in Section 6.3 of the Technology Description Volume (Volume VII). Operational (installation) costs for slurry walls include trenching around the perimeter of the site into bedrock, material costs, and placement of the soil/bentonite slurry into the excavated trench. Depending on the types of equipment used, the costs per square yard of one-sided wall face are as follows: $33.77/SY for 0 to 20 feet; $47.72/SY for 20 to 65 feet; and $100.59/SY for depths greater than 65 feet. The soil displaced during trenching operations are incorporated into the design grade of the multilayer cover.

B.3.3.5 On-Post Hazardous Waste Landfill

The on-post landfill costs were estimated based in part on the design and siting specifications contained in the Task 27 Hazardous Waste Land Disposal Facility Assessment (EBASCO 1988), hereafter referred to as the Task 27 Report. The Task 27 Report contains a detail design of the waste cell including the liner and cover; some modifications to the Task 27 Report were made to arrive at the waste cell dimensions for the on-post landfill. A detailed description of the

design specifications for the landfill is presented in Section 6.5 of the Technology Description Volume (Volume VII).

The maximum landfill size is designed to contain four hazardous waste cells, each with a 1.275-million CY capacity. The cover of the hazardous waste cells (from the bottom up) consists of the following: geosynthetic filter fabric, geonet for vapor collection, 2-ft-thick layer of low-permeability soil, high density polyethylene synthetic flexible membrane liner (60 mil), 1-ft-thick layer of sand, geosynthetic filter fabric, 1-ft-thick biota barrier of cobbles, geosynthetic filter fabric, and a 4-ft-thick layer of common fill of which the top 6 inches is augmented with conditioners to promote the growth of vegetation. The hazardous waste landfill bottom liner contains the following layers (from the top down): geosynthetic filter fabric, 1-ft-thick layer of sand, geosynthetic filter fabric, geonet, composite lower permeability liner consisting of 60 mil HDPE liner, 3-ft-thick layer of low-permeability soil, 1-ft-thick layer of sand, and another composite low-permeability liner. The total construction (capital) costs for the four cell (1.275 million CY each) landfill is approximately $8.26/BCY. This cost includes facility and cell construction, and cover and liner installation. The operating cost for the hazardous waste landfill is $5.78/BCY, which represents on the costs for placing and compacting contaminated soil and waste materials during operation. The landfill requires annual long-term operations, which include post-closure monitoring and maintenance, at a cost of $0.02/BCY.

A 750,000-CY hazardous waste landfill with a triple composite liner has also been developed for the disposal of material from specific sites. The liner contains an additional layer of sand, geomembrane, and low permeability soil. The total capital cost is $13.02/BCY and the operating cost is $5.80/BCY closure costs include a capital cost of $5.11/BCY and a long-term cost of $0.04/BCY-YR.

B.3.3.6 Hydraulic Dewatering

Hydraulic dewatering is necessary when slurry walls are installed at sites where the estimated future water levels are within the zone of containment. The dewatering system lowers the groundwater level within the cell, minimizing the potential for further contaminant migration via

groundwater. Groundwater removed from the cell is pumped to the CERCLA Wastewater Treatment Plant for treatment. The capital and operational costs are estimated in a similar manner as for construction dewatering systems. The capital costs vary from $99,000.00 to $111,000.00 and the long-term operating costs vary from $23,000.00/yr to $69,000.00/yr (depending on the site).

B.3.4 DIRECT TREATMENT

Several direct treatment process options have been considered for the DAA and each includes a capital and operational cost. These are described in detail below.

B.3.4.1 UXO Clearance

Clearing of soil that may contain UXO is performed by two methods, which are depth dependent. Surface soil is cleared through the use of geophysics at a cost of $0.07/SY. In order to clear subsurface soil, geophysics and drilling augmented by field and analytical verification are used, resulting in an operational cost of $0.66/SY. UXO clearance costs are obtained from the Decontamination Assessment for Land and Facilities at RMA, Draft Final Report (USATHAMA 1984).

B.3.4.2 UXO Removal

Once the area has been cleared and the UXOs has been identified, the UXO must be removed. The operating cost for UXO removal includes excavation of the UXO and, on average, the surrounding one cubic yard of soil. The unit cost for this activity, based on excavation costs for digging test pits partially by hand, is $71.16/BCY. It is assumed that the work will be performed in Level C with a productivity loss of 25 percent.

B.3.4.3 Transportation of UXO

The operational cost for transportation of agent-filled UXO on-post includes handling of the UXO, separation of the fuse from the agent-filled UXO, and transportation of the fuse for detonation and the agent-filled UXO to the on-post rotary kiln incinerator. The operational cost for transportation off post includes handling, packaging of the agent-filled UXO for

transportation, obtaining permits for off-post transportation, and transportation of the agent-filled UXO to an off-post Army facility for demilitarization. It is assumed that demilitarization of the agent-filled UXO will be at the Tooele Army Depot near Tooele, Utah. The operational costs for on-post and off-post transportation are $1,022.00/BCY and $2,220.00/BCY, respectively (note that one UXO is assumed to be present within each one BCY of soil found to contain UXO).

It has been assumed that the Army's Technical Escort Unit will handle both on-post and off-post transportation and that all agent-filled UXO discovered will be able to be packaged and transported. All transportation costs for agent-filled UXO have been obtained through discussions with the Army's Technical Escort Unit.

The transportation costs for high-explosive(HE)-filled UXO are estimated in a similar manner as discussed above. The off-post demilitarization of HE-filled UXO is assumed to be at Fort Carson Army Base, near Colorado Springs, Colorado. The transportation costs for HE-filled UXO are based on discussions with the Army's Explosive Ordnance Detail, and it has been assumed that Explosive Ordnance Detail personnel will handle HE-filled UXO. The cost to transport HE-filled UXO is $59.50/BCY.

B.3.4.4 Detonation of UXO

The capital costs for UXO detonation include the construction of an on-post rotary kiln incinerator for treatment of casings and drained agent after the on-post demilitarization of the UXO. The rotary kiln incinerator must be capable of accomplishing 5X decontamination which involves treated the demilitarized UXO at a minimum of 1,000°F for 15 minutes. The assumptions and unit cost development for rotary kiln incineration are summarized in Section B.3.4.11. The capital and operating costs for rotary kiln incineration are $76.00/BCY and $115.00/BCY, respectively. The operating cost plus the on-post detonation cost of $110.00/BCY gives a total cost of $225.00/BCY. The cost for detonation is obtained from the Decontamination Assessment for Land and Facilities at RMA, Draft Final Report (USATHAMA 1984).

The on-post detonation of HE-filled UXO involves the handling, packaging, transport, and detonation of the HE-filled UXO by trained Explosive Ordnance Division personnel. A three-person team will be used to perform this task. The HE-filled UXO will be transported to an existing on-post site specifically designed for detonation. Detonation will take place at least once each working day. The estimated cost is $51.15/BCY.

The off-post detonation of HE-filled UXO, like on-post detonation, involves the handling, packaging, transport, and detonation of the HE-filled UXO by trained Explosive Ordnance Division personnel. A three-person team will be used to perform this task. The HE-filled UXO will be transported to Fort Carson for detonation. Detonation will take place at least once each working day. The estimated cost is $59.50/BCY.

B.3.4.5 Agent Screening

Soil can be screened for agent by two methods: collecting samples by drilling prior to in situ treatment, or sampling during the ongoing excavation operation. The cost for screening an area for agent as part of a drilling program is based on the sampling costs from the recently-completed Soil Volume Refinement Program (SVRP) (EBASCO 1994). The density of the borings is based on the SVRP boring curve, assuming the size of the smallest site with potential agent presence is 1,000 SF. The cost for agent screening by drilling is $4.94/SY; it is assumed that four samples will be collected per boring (based on a boring depth of 10 feet) and that the work will be performed in Level B.

Screening an area for agent as part of the excavation operation consists of testing soil samples during excavation using real-time field analytical equipment in addition to air monitoring. The cost is based on field costs from the SVRP, adjusted to remove the drilling costs. The cost for agent screening during excavation is $0.30/BCY. It is assumed that the work will be performed in Level B.

B.3.4.6 Solvent Washing

Costs for this technology include feed preparation by screening and size reduction, pH adjustment to alkaline conditions, solvent extraction, solvent recycle, pH adjustment back to neutral, and product oil side stream treatment. Costs are based on an assumption of nine sequential extraction steps, which were required to achieve PRGs in pilot scale testing at RMA (HLA 1994). Costs were developed by the pilot scale vendor, Resources Conservation Company (RCC) and are based on data from the referenced treatability study, similar treatability studies, and full-scale systems designed by RCC. These costs are amortized over the treatment of 3,000,000 BCY of material. Total capital and operating costs are $35.50/BCY and $144.54/BCY, respectively.

B.3.4.7 Solvent Washing with Caustic Pretreatment

The total cost for solvent/caustic soil washing is divided into capital and operational costs. The capital cost is estimated to be $35.50/BCY, based on a total anticipated agent-contaminated soil volume of 4,700 BCY, and on an eight month rental of required equipment for a 10 year period. The operational cost is estimated to be $211.12/BCY and includes the following: material handling/feeding: labor; chemical surfactants and floculants; caustics (773 lbs NaOH beads/CY soil); utilities, maintenance and supplies; facility modification, repair, and replacement; and laboratory analysis.

B.3.4.8 Caustic Washing of Agent Soil

The estimated capital cost of $525,127 includes the purchase of all process equipment, electrical equipment, and an enclosed structure to house the operation. Operating costs are estimated to be $435,126 for the duration of treatment. Operating costs are based upon Level B PPE and 120 days of operation. The corresponding unit costs are $149.57/BCY for capital and $123.93/BCY for operating costs. The total combined unit cost is $273.50/BCY.

B.3.4.9 Cement-Based Solidification

The capital cost for cement-based solidification is based on vendor quotes for pugmill systems. The capital cost for soil handling, cement storage and handling, and materials mixing equipment is $1.84/BCY based on solidifying 173,000 BCY.

The operational cost of $36.11/BCY, based on the Hazcon Solidification Applications Analysis Report (RREL 1989), includes the following: labor and daily expenses, utilities, maintenance, consumable supplies, cement binder, water truck and driver, and laboratory analysis. The operational cost is based on a density of 1.42 tons/BCY and single shift operation with a five-day work week. For handling purposes, it is assumed that the soil volume will expand by a factor of 1.15 after excavation, and as a result of the cement addition, the volume of treated soil will expand by a factor of 1.38. The transportable treatment unit will be located close to the excavation so that separate transportation costs are insignificant. Portland cement will be mixed with excavated soil at a ration of 0.2 tons of cement per ton of soil. This formulation has proven effective in the screening test conducted on RMA soil by the U.S. Army Corps of Engineers Waterways Experiment Station (WES 1992).

The backfilled solidified soil is monitored to ensure the integrity of the mass. The annual monitoring cost of $0.25/SY is based on performing scheduled TCLP and physical property analyses. A detailed description of the unit costs for cement-based solidification can be found in Section 10.1 of the Technology Description Volume (Volume VII).

B.3.4.10 Thermal Desorption

The capital cost for thermal desorption is based on the economics developed in the Draft Concept Engineering Study Report for a Thermal Desorption System for RMA Soil (Weston 1992a). Weston's conceptual design postulates the construction of a large central thermal desorption facility using a common soil processing building and parallel rotary dryers. The central facility is sized to process 2,500,000 BCY of contaminated soil, assuming a soil moisture content of 20 percent. in a 10 year time frame. On stream time for the equipment was set by Weston at 65 percent or approximately 237 days per year. The two rotary dryers are capable of processing about 1,251 BCY of saturated soil per day based on a density of 1.42 tons/BCY. Based on the

assumptions above, the unit capital cost for thermal desorption is $17.55/BCY. The operating unit cost includes operating and maintenance labor, utilities, chemicals, analytical expenses, and other expenses and is $76.00/BCY.

For a soil moisture content of 10 percent, the processing capacity of the rotary dryers in Weston's central facility is increased substantially over the base design case of 20 percent moisture. If the equipment gas flow is held constant, the central facility is capable of processing about 1,961/BCY per day. Since the total volume of soil remains unchanged, the unit capital cost is still the same as the 20 percent moisture case ($17.55/BCY). Except for the chemical consumption and brine disposal costs, other yearly operating costs remain the same as for the 20 percent case. However, a small correction is required for the amount of fuel consumed. The total operating cost for the 10 percent moisture case is $44.61/BCY. For a complete description of the unit cost development for thermal desorption see Section 7.1 of the Technology Description Volume (Volume VII).

B.3.4.11 Rotary Kiln Incineration

The capital cost for incineration is adapted from the economics developed in the Draft Concept Engineering Study Report for a Thermal Desorption System for Rocky Mountain Arsenal Soil (Weston 1992a). As with thermal desorption, the design case assumes a soil moisture content of 20 percent; however, the volume of contaminated soil to be treated is only approximately 550,000 BCY (rather than the 3,100,000 BCY used in the Weston design).

The rotary kiln incinerator discharges soil at 1,400°F, whereas the rotary dryer discharges soil at 575°F. If velocity parameters of the equipment are held constant, the rotary kiln incinerator is almost 50 percent larger in diameter than the rotary dryer, but the rest of the soil handling and off-gas treatment facilities are identical to the thermal desorption facility. The larger kilns add an estimated $1,100,000 to Weston's base case of $43,000,000 to yield a cost of $44,000,000 for a two-train facility. Because a single train incineration facility is more appropriate for a remediation volume of 550,000 BCY, half of the adjusted capital cost ($22,000,000) is used as the basis for a single-train design. Based on the assumptions above, the unit capital cost for incineration is $76.00/BCY. The operating unit cost includes operating and maintenance labor,

maintenance materials, utilities, chemicals, analytical expenses, and other expenses and is $115.00/BCY. For a complete description of the unit cost development for incineration see Section 7.2 in the Technology Description Volume (Volume VII).

B.3.5 IN SITU TREATMENT

A number of in situ treatment process operations are considered for the DAA, each having an associated capital and operational cost. These process operations are discussed below.

B.3.5.1 Landfarming

The cost estimate of $0.20/SY for landfarming consists of the operating and maintenance costs of the agricultural tilling and revegetation activities. Landfarming includes the costs of ripping the soil to a depth of 6 to 8 inches to break up the surface hard pan, plowing to a depth of 10 to 12 inches to facilitate further mixing, and three passes with a disk to thoroughly mix the soil. Fertilizer is then added to the soil and the surface is harrowed to prepare the soil for revegetation. The prepared soil in revegetated with a native seed mixture. A surface mulch is used to minimize wind dispersion and erosion while the seed takes hold.

B.3.5.2 In Situ Solidification

There is no capital cost for in situ cement-based solidification since the mixing/boring unit is proprietary and is generally leased from a supplier or operator. It is assumed that the treatment unit is a transportable, track-mounted, boring/mixing system and is equipped with a cement batching plant capable of processing about 600 BCY of soil per day. The operational cost of $60.93/BCY includes the following: equipment lease consisting of labor, expenses, and utilities; water trucks and drivers; laboratory analyses; consumable supplies; and cement binder materials. It is assumed that the soil volume will expand by a factor of 1.20 as a result of the cement addition. Portland cement will be mixed with excavated soil at a ratio of 0.2 tons of cement per ton of soil. This formulation has proven effective in the screening test conducted on RMA soil by the U.S. Army Corps of Engineers Waterways Experiment Station (WES 1992).

The solidified soil is monitored to ensure the integrity of the mass. The annual cost of $0.25/SY is based on performing periodic TCLP and physical property analyses. A detailed description of the unit costs for in situ cement-based solidification can be found in Section 10.3 of the Technology Description Volume (Volume VII).

In situ silicate-based solidification is also considered as a process option. The equipment and operating procedures are identical to those described above for in situ cement-based solidification. The additional cost associated with the silicate material raises the total operating cost to $123.08/BCY.

B.3.5.3 RF/Microwave Heating

The capital cost for microwave heating is estimated to be $8,200,000, and is based on the treatment of Basin F as developed in the Draft In Situ Radio Frequency Heating/Vapor Extraction Concept Engineering Report (Weston 1992b). The capital cost includes the purchase cost of equipment, transmission recabling, and engineering. The operational costs for microwave heating are based on the depth of contamination and the moisture content of the soil. The operational costs have been classified as follows:

- Deep - $205.02/BCY for contamination detected down to depths of 10 feet in soil with a moisture content of approximately 10 percent;
- Deep/Saturated - $236.75/BCY for contamination detected down to depths of 10 feet in soil with a moisture content of approximately 20 percent;
- Shallow - $224.63/BCY for contamination detected down to depths of 5 feet in soil with moisture content of approximately 10 percent; and
- Shallow-Saturated - $259.64/BCY for contamination detected down to depths of 5 feet in soil with a moisture content of approximately 20 percent.

The deep and shallow operations unit cost includes treatment costs, materials for installation, labor, and liquid sidestream treatment. A complete description of microwave heating can be found in Section 8.2 of the Technology Description Volume (Volume VII).

B.3.5.4 Surface Soil Heating

The capital cost for surface soil heating is estimated to be $1,000,000 per unit, based on the capital cost developed in the Enhanced Surface Soil Vacuum Extraction Process Pilot Scale Field Demonstration Report (MKE/Shell 1995). The capital cost was modified due to the incorporation of contingency factors which are already included elsewhere in the cost estimate. The operational cost developed by MKE and Shell (1995) was reduced to $28.92/SY due to the incorporation of revegetation, capacity charge, and general facility costs which are also already included in the development of the cost estimate. For complete description of surface soil heating see Section 8.1 of the Technology Description Volume (Volume VII).

B.3.5.5 Vitrification

The cost for vitrification is based on information from the EPA Superfund Innovative Technology Evaluation program (EPA 1995). The capital cost of $29.36/BCY includes site preparation, mobilization/demobilization, construction of a staging facility, transmission recabling, and the removal of support items. The operational cost of $603.49/BCY includes site administration, sampling and analysis, and treatment costs. For a complete description of vitrification see Section 8.3 of the Technology Description Volume (Volume VII).

B.3.5.6 Soil Flushing

The capital cost for in situ soil flushing is based on the human health exceedance soil volume of Basin A which includes 300,000 BCY over an area of 670,000 SY. The capital cost of $3,350,000 includes earthen barriers, piping, sprinkler flushing distribution system, and an expansion of the Basin A Neck groundwater collection and treatment system. Operational costs were calculated based on 3 pore volumes of surfactant flush and 1 pore volume of fresh water flush, and a flushing system rate of 70 gallons per minute, requiring a flushing life of 3 years with continued groundwater treatment through year 5. The operational cost of $84.31/BCY includes surfactants, utilities, maintenance and supplies, soil and groundwater monitoring, and groundwater treatment costs.

B.3.7.7 Augmented Topsoil

Common fill, obtained on-post, does not have the essential nutrients or components to effectively promote the growth of vegetation. Generally, the soil is excavated from depths below which topsoil typically forms in the Colorado Front Range climate. Results of chemical analyses on several soil samples collected prior to the construction of the soil/vegetative cover for the Shell Trenches IRA indicated that the soil did not have a sufficient nutrient level to allow establishment of the desired type of vegetative growth. The soil was supplemented, at a cost of $0.07/SY, through discing amendments of nitrogen, phosphorus, and organic matter (manure) into the upper 6 inches of soil.

B.3.7.8 Revegetation

The cost estimate of $0.18/SY for revegetation includes the costs of ripping the soil to a depth of 6 to 8 inches to break up the surface, plowing to a depth of 10 to 12 inches to facilitate further mixing, and one pass with a disk to thoroughly mix the soil. Fertilizer is added to the soil and the surface is harrowed preparing the soil for revegetation. The prepared soil in revegetated with a native seed mixture. A surface mulch is used to minimize wind dispersion and erosion while the seed takes hold.

B.4.0 INDIRECT COSTS

Indirect costs are applied as a percentage of the direct costs for the three main cost groups: direct capital costs, direct O&M costs, and direct O&M long-term activities costs. To better estimate indirect costs, the capital and O&M operating costs were further subdivided into direct costs and direct subcontract costs.

Indirect cost categories include: mobilization/demobilization; indirect, overhead, and profit (contractor markup); engineering design; resident engineering; and contingency. A series of indirect cost percentages were developed for each indirect cost category based on four factors: level of contamination, complexity of technology, size of project, and project duration. The indirect cost matrix for the four factors is presented in Table B.4.0-1.

The indirect cost percentages for a particular alternative are developed by rating it for the four consideration factors to develop an indirect cost code (such as MLMS for medium level of contamination, low complexity of technology, medium job size, and short duration). The overall indirect cost percentage for a particular indirect cost category (such as contingency) is then calculated as the average of the four percentages indicated on Table B.4.0-1 for the four consideration factors. In the example, MLMS, the contingency percentages for capital costs under the four factors are 35 percent, 27.5 percent, 35 percent, and 27.5 percent. These average to 31.25 percent, which would be the overall contingency applied to the capital costs of an alternative rated MLMS.

The indirect cost factors have been modified to distinguish cost differences between on-post and off-post activities. and direct work versus subcontracts. In some instances, these factors were individually adjusted for an alternative to be more representative of the alternative's complexity. The following sections explain the indirect cost categories.

B.4.1 MOBILIZATION/DEMOBILIZATION

Mobilization activities include construction/setup of a contractor's support facilities, mobilization of heavy equipment, and relocation of management/supervisory personnel. Demobilization consists of decontamination and removal of a contractor's equipment and facilities from the site. Costs for these activities are applied as a percentage of direct cost and vary from 2 to 7 percent as shown in the markup matrix (Table B.4.0-1). For subcontractor costs these percentages have been adjusted on a case-by-case basis, based on vendor quotes and past knowledge and experience with similar projects.

B.4.2 INDIRECTS, OVERHEAD, AND PROFIT

Indirect. overhead. and profit (IO&P) costs are calculated as a percentage of the sum of direct and mobilization/demobilization costs. IO&P costs cover the cost of on-site management; administrative, technical, health and safety, and supervisory staff; utilities for site support facilities (excluding production facilities); engineering tests; QA/QC program; preparation of work plans, submittals. and as-built drawings; bonding costs; support facilities: and vehicle maintenance

and operation. The range of IO&P as a percent of direct plus mobilization/demobilization varies from 34 to 44 percent (Table B.4.0-1).

Subcontract IO&P are labeled as contractor markup in the estimates. These costs include only on-site management; administrative, technical, health and safety, supervisory staff; and subcontractor profit. The contractor's markup ranges from 6 to 12 percent.

B.4.3 ENGINEERING DESIGN

The engineering design costs are estimated as a percentage of the sum of direct costs, mobilization/demobilization costs, and IO&P. In general, engineering design costs were developed based on past experience on similar projects. These percentages are dependent upon the degree of complexity associated with the particular alternative and the complexity of the treatment technology selected. Standard percentages range from 3 to 6 percent for capital costs and 1 to 3 percent for operating costs (Table B.4.0-1). Certain alternatives required adjustments to reflect extenuating circumstances in the required design effort.

B.4.4 RESIDENT ENGINEERING

The resident engineering costs are estimated as a percentage of the sum of direct costs, mobilization/demobilization, and IO&P. The alternative size, estimated project duration, and the remedial technology selected determine the level of effort required for inspection and field engineering support to assure conformance with the approved remedial design. Standard percentages range from 1 to 3 percent (Table B.4.0-1).

B.4.5 CONTINGENCY

Contingency is a factor which is routinely used in cost estimating to cover unforeseeable elements of costs within the defined project scope. It is applied as a percentage of the sum of direct cost, mobilization/demobilization, IO&P, engineering design, and resident engineering costs. Contingency is particularly important when previous experience relating estimates and actual costs has shown that events which will increase costs are likely to occur.

A contingency range for cost estimates of this level of detail is typically 20 to 50 percent. The contingency factors for each alternative are based on the levels of contamination, the complexity of the treatment technology, the size of the project, and the estimated duration of the activity (Table B.4.0-1). The contingency applied to the estimates in this document ranged from 27.5 to 42.5 percent based on these factors and on past experience and knowledge of similar remedial projects.

B.5.0 SITEWIDE ALTERNATIVE COSTING

As discussed in Section 20.0 of the Final Soil DAA, five sitewide alternatives, consisting of combinations of retained alternatives for each soil medium group/subgroup, were developed to represent different approaches for the remediation of RMA soil. Each sitewide alternative also includes the preferred alternatives selected for remediation of groundwater and structures. Comprehensive estimates of the cost of the five sitewide alternatives were developed for comparative purposes to evaluate cost-effectiveness in selecting the preferred sitewide alternative. Costing the sitewide alternatives as a package allows the interactions among remedial activities being conducted across RMA for soil, water, and structures to be addressed in the most effective manner. The following section presents the costing method and results for sitewide alternative costing.

B.5.1 COST ESTIMATING PROGRAMS

The first four sections of this appendix discussed the linked spreadsheets that were used to develop costs for analyzing and retaining soil remedial alternatives at individual sites or groups of sites (medium groups and subgroups) at RMA. Two commercially available cost estimating programs were used to check the DAA costing spreadsheets and to further evaluate, as a package, the costs of the sitewide alternatives. These programs are MCACES (MicroComputer-Aided Cost Engineering Support system) developed by Building Systems Design Company for the U.S. Army Corps of Engineers and RACER (Remedial Action Cost Engineering and Requirements system) developed by Delta Research Corporation for the U.S. Air Force.

RACER is a parametric cost system that was developed to assist in evaluating remedial alternatives for Air Force sites. The basic concept is that predefined engineering relationships link primary parameters that the user enters to detailed quantities of material, labor, etc. These quantities are then priced using the Corps of Engineers Unit Price Book or other established cost databases to generate a cost estimate. The RACER approach facilitates cost estimates in early stages of a project when minimal information about a site is known. Only a few primary parameters regarding a site need to be entered to generate an estimate. If more information is available, secondary parameters (that automatically default based on the primary parameter values) can be modified to more accurately reflect site conditions and refine the estimate.

In contrast, MCACES is a highly detailed cost estimating system that allows a "bottoms up" estimate to be created from the detail items that are entered. The user can define a work breakdown structure with up to six nested levels to compartmentalize the detailed cost items into work categories. Detailed unit costs can be imported from the Corps of Engineers Unit Price Book or equipment and labor rate databases that are included in the system. MCACES provides considerable capability to customize an estimate to site-specific conditions, but requires that enough information be known by the user to generate the appropriate detailed cost items.

To compare costs from the systems, Sitewide Alternative 4 from the Draft Final Soil DAA, (Consolidation/Caps/Treatment/Landfill), was costed using both MCACES and RACER. After some adjustments for the way costs for planning, documents, design, and overhead and contingency factors were accounted for in the two systems, the overall soil remediation costs were very close, with the RACER estimate being three percent higher than the MCACES estimate. Cost differences were greater for some medium groups/subgroups, but only four out of 27 had cost differences greater than 20 percent. The analysis indicates that with similar inputs, based on the level of knowledge of soil sites at RMA, the systems will generate comparable estimates of overall cost.

The MCACES system was selected to conduct costing for the five sitewide alternatives. MCACES provides a more detailed cost breakdown and allows the grouping of costs under a user

defined structure for presentation and summary. Where multiple similar activities are being performed across the five alternatives, it is easier to copy groups of detailed remedial activities and customize them for site-specific conditions with MCACES. Costs for the preferred alternatives for groundwater and structures, as well as Army support costs, can also readily be entered into MCACES as line item costs, where required, to generate a complete cost estimate for each sitewide alternative. Finally, MCACES can be linked to Primavera software (see Section B.6.0) to generate a cost-loaded remediation schedule for each alternative.

B.5.2 MCACES COSTING

The MCACES system has the capability for detailed modeling of earth moving and other heavy construction activities. Soil DAA activities modeled in MCACES include soil, debris, and backfill excavation; overburden removal and replacement; transportation; backfill and gradefill installation; cap installation; and landfilling. Parameter worksheets were linked within these activities to perform cycle-time analyses in costing equipment and labor for excavation, transportation, and backfill of material. Parameters were adjusted for each medium group/subgroup depending on the type of excavation and estimated productivity, haul distance, and level of health and safety protection to generate a site-specific estimate of material handling and transportation costs.

Costs associated with centralized fixed facilities that serve all sites were grouped into fixed facility costs and not prorated to each medium group/subgroup (as was done in the DAA costing spreadsheets). The landfill, borrow areas, thermal desorber, incinerator, solidification facility, and caustic wash facility, as applicable to the remediation approach, were costed as separate fixed facilities. This approach allows the facilities to be easily sized to the specific requirements of each of the five sitewide alternatives.

Specialized activities such as UXO clearance and handling, slurry wall installation, and vapor enclosures for excavation were not built up from detail items in MCACES, but were brought in as line-items from costs developed in the DAA cost spreadsheets for individual alternatives. Other costs entered into MCACES as line items were thermal desorption and other treatment

costs, Army Mission Support costs, "sunk costs" (representing money spent by the Army through 1995), and preferred alternative costs for groundwater and structures remediation.

Indirect costs for mobilization/demobilization; contractor indirects, overhead, and profit; and contingency were applied as percentages of direct cost in the same manner as discussed in Section B.4.0 for the DAA cost spreadsheets. Costs for design, plans and reports, and project support were detailed for each medium group/subgroup in MCACES based on the remediation alternative performed. An escalation factor of 2.7 percent was applied to all soil and fixed facility costs in MCACES to escalate 1994 dollars to 1995 dollars. This factor is based on inflation guidance issued by the U.S. Army Materiel Command (AMC) (1995). Costs imported to MCACES from the DAA costing spreadsheets for groundwater and structures remediation are already in 1995 dollars.

B.5.3 SITEWIDE ALTERNATIVE COST ESTIMATES

The remedial actions for every medium group/subgroup in each of the five sitewide alternatives were summarized in Chapter 20 of the Soil DAA. The cost of these actions for soil, along with associated sitewide alternative costs for fixed facilities, groundwater, structures, and Army programs, were organized in MCACES in a hierarchical work breakdown structure. Figures B.5.3-1 through B.5.3-30 detail the work breakdown structures set up in MCACES for costing of the five sitewide alternatives.

Table B.5.3-1 presents summary cost results by medium group/subgroup for the sitewide alternatives. MCACES generates fixed facility costs as separate cost items. Table B.5.3-2 shows sitewide alternative costs with the fixed facility costs prorated back to the medium groups/subgroups in soil and structures where material originates. These costs were evaluated in Chapter 20 along with the other EPA statutory requirements and preferences in selecting the preferred sitewide alternative, Consolidation/Caps/Treatment/Landfill. Costs from MCACES do not include cost uncertainties associated with the sitewide alternatives as discussed in Section 20.6.7 of the Soil DAA. It is important to emphasize that the MCACES costs were developed

to compare cost effectiveness among the sitewide alternatives only, and should not be considered government budget estimates for completing the complex task of remediation of RMA.

MCACES reports showing more detailed costs for the five sitewide alternatives are attached as tables. Tables B.5.3-3 through B.5.3-7 present total costs for each activity at level four of the work breakdown structures, the first level above detail cost line items. Tables B.5.3-8 through B.5.3-12 show the dollars added into the total cost of each medium group/subgroup in the five sitewide alternatives for contractor indirects, overhead, and profit; contingency; and escalation.

Reports showing complete details of MCACES costs for each of the five sitewide alternatives are prohibitively long for inclusion in this document. However, compressed MCACES project files (3 disks) and Primavera scheduling estimates (10 disks), can be made available if requested through PMRMA.

B.6.0 SITEWIDE ALTERNATIVE SCHEDULING

The time required to complete remediation under the sitewide alternatives is another important factor for consideration in selecting the preferred alternative. Primavera Project Planner is a versatile scheduling tool by which an overall project schedule can be generated by entering a series of activities, assigning them durations, and creating predecessor/successor relationships to reflect the logic that interconnects activities. Costs, including those generated in MCACES, can be resource-loaded to specific activities in Primavera to show the cash flow required over time to implement a project. Primavera was used to develop schedules and cash flow requirements for the five sitewide alternatives.

B.6.1 PRIMAVERA SCHEDULING

The sitewide alternative schedules developed are "early start" schedules, meaning each activity commences at its earliest possible start date. The activities in each subproject follow in sequence without delay, so there is zero "free float" in the schedules with multiple critical paths. Long-term activities, such as cap maintenance, monitoring of the landfill, and groundwater remediation

were not scheduled in Primavera to shorten the overall length of the schedules and, therefore, allow greater schedule detail to be shown for short-term remedial activities.

It was assumed that contracts for engineering and procurement are established prior to completion of the Record of Decision (ROD), but no remedial design or remedial action activities commence in the schedules until after the assumed ROD date of May 31, 1996.

Remedial activities were set up in Primavera to correspond to level four activities in the work breakdown structure in MCACES. These were assigned durations based on the total work hours for the activity from MCACES and the number of crews that could complete the activity in an efficient manner. In some cases, crews were chosen to maintain a certain productivity to match a treatment or disposal processing rate. Durations for activities such as remedial design, mobilization, and demobilization were based on the complexity of the associated remedial activity.

Sequencing of remedial activities was a function of the multiple constraining relationships among activities, but was largely determined by interactions with the shared fixed facilities in each sitewide alternative. Sites were scheduled for completion, as necessary, to maintain relatively constant flows of material from the borrow area, to the landfill, and to treatment facilities like the thermal desorber and incinerator, where applicable. This mass balance approach optimized fixed facility operations.

Costs were loaded from MCACES into Primavera for the remedial activities in each sitewide alternative. Initial schedule development assumed that unlimited funds were available for the completion of remedial activities. Primavera also has the capability to limit funding to a certain dollar amount per year and reschedule activities to level out the yearly cost to fit within this constraint. Cost-leveled schedules with a constraint of $100 million per year were developed for the five sitewide alternatives to examine the impact of funding constraints on the time frame required for completion of remediation.

B.6.2 SITEWIDE ALTERNATIVE SCHEDULES

Schedules with the assumption of unlimited funding resulted in overall time frames for remediation of seven years for the Caps/Covers Sitewide Alternative, 6 years for the Landfill/ Caps Sitewide Alternative, 7 years for the Landfill Sitewide Alternative, 9 years for the Consolidation/Caps/Treatment/Landfill Sitewide Alternative, and 14 years for the Caps/Treatment/ Landfill Sitewide Alternative. Figures B.6.2-1 through B.6.2-5 are summary cost histograms showing the dollars spent by year to complete remediation under the schedules for the five sitewide alternatives. It should be noted that the schedules do not allow for any delays related to technical or regulatory issues, and costs do not include the cost uncertainties discussed in Section 20.6.7 of the Soil DAA.

Cost-leveled schedules expand the time required for remediation. as well as the total remediation cost (due to additional management expenses that are incurred over the longer time period). Figures B.6.2-6 through B.2.6-10 show the capital and operating costs, expended by year under the sitewide alternative schedules leveled at a $125 million annual limit. When schedules are leveled under the $125 million annual budget limit, the remediation time frames become 13 years, 9 years, 12 years, 13 years, and 18 years, respectively, for the five sitewide alternatives.

B.7.0 MASS BALANCE RESOURCES

In addition to costs, resource utilization must be considered for selecting an implementable sitewide alternative. The mass balance logic-flow diagram (attached Plate) and description presented here provide additional detail for resources that will be utilized during the remediation at Rocky Mountain Arsenal (RMA). The diagram is based upon the preferred alternatives presented in the Final DAA.

Due to the complexity of the cleanup of RMA, interrelationships between sites, and coordination required between various site remediation activities, the mass balance logic-flow diagram was developed to evaluate required resources. The diagram provides a "roadmap" detailing resource classification, quantities, the treatment or disposal destination or the location and availability of "clean" resources required for remediation. The mass balance diagram identifies potential borrow

sources based on preliminary geotechnical site assessments. Exceedance volumes, including debris volumes, are based on calculations as presented in Appendix A.

The mass balance logic-flow diagram illustrates the groups/subgroups designated for cleanup as well as areas identified to provide required resources. The diagram uses five figures and a color scheme to depict different site classifications and track material movement throughout RMA. The figures and color scheme used on the diagram are defined in Section B.7.1. Sections B.7.2 through B.7.6 present estimated material quantities being moved, separated by destination and group of origin.

B.7.1 MASS BALANCE GROUP DESCRIPTIONS

The mass balance logic-flow diagram is organized according to material destination utilizing labeling consistent with the work breakdown structure developed in the MCACES cost effort. Material originating from each group/subgroup (excavation volume, borrow requirements, structural material) is tracked to its destination at the RCRA Landfill, Enhanced RCRA Landfill, Basin A consolidation, treatment facility or off-post transport. The following figures appear on the flow diagram with each shape representing a type of site designation:

Figures

- Hexagon—structures to be demolished according to the conceptual remedy
- Rectangle—remediation sites which will receive soil cover or RCRA capping
- Square—remediation groups/subgroups requiring excavation
- Double Square—material quantities whose origin or destination is off-post
- Half-Circle Box—areas throughout RMA where soil borrow material may be taken from.

A color line system was utilized to distinguish between material movement from varying destination groups/subgroups to each separate final destination as follows:

Color Scheme

- Green Line- material quantities designated for the RCRA landfill

- Red Line- material quantities designated for the Enhanced RCRA landfill
- Blue Line- agent material quantities designated for caustic wash treatment prior to landfilling
- Purple Line- material quantities designated for Basin A consolidation
- Brown Line- borrow/backfill/gradefill material quantities designated for various RMA remediation sites
- Black Line- UXO material quantities designated for transport to an off-post facility
- Brown Dashed Line- low permeability soil quantities designated for RMA remediation sites
- Black Dashed Line- material quantities transported from off-post to various RMA remediation sites
- Red Dashed Line- Bald Eagle Management Area (BEMA) designation.

B.7.2 RCRA LANDFILL

Table B.7-1 lists the groups/subgroups, materials, and material quantities designated for the RCRA landfill. The materials listed are human health/principal threat exceedances, UXO debris and structural debris. Human health/principal threat volumes have been adjusted to reflect any overlap with UXO debris and associated soil. Agent contaminated materials are included in the human health volume for groups that have potential agent presence. A breakdown of all agent groups and material quantities is presented in Section B.7.3. Table B.7-2 lists the groups/subgroups, materials, and material quantities designated for the enhanced RCRA landfill cell. This includes human health/principal threat exceedances and agent contaminated materials from the Basin F Wastepile and Section 36 Lime Basin sites only.

B.7.3 CAUSTIC AGENT TREATMENT FACILITY

Materials that are found to be agent contaminated will treated using caustic solution washing prior to landfilling. Table B.7-3 lists the agent groups/subgroups with agent materials and estimated agent material quantities designated for the RCRA Landfill and the Enhanced RCRA Landfill after caustic solution washing. Five percent (9,372 BCY) of the transported structures volume

is assumed to be agent contaminated and will be sent to the Caustic Agent Treatment Facility prior to its being placed in the RCRA landfill.

B.7.4 BASIN A CONSOLIDATION

Materials that are not designated for either the RCRA landfill or enhanced RCRA landfill cell may be used for consolidation. These types of materials consist of structural debris, non-human health/principal threat material (debris from sanitary landfills), and soil posing risk to biota. The primary consolidation site is Basin A, with consolidation also occurring at the Former Basin F and South Plants sites. Table B.7-4 lists the groups/subgroups, materials, and material quantities designated for consolidation to Basin A and Former Basin F. Soil excavated during landfill construction is also utilized as borrow material.

In the South Plants Balance of Areas subgroup, there is 509,427 BCY of potential biota risk soil available for consolidation. Of the 509,427 BCY available, 237,553 BCY is used for backfilling excavated human health/principal threat soil (127,505 BCY in South Plants Balance of Areas and 110,048 BCY in South Plants Central Processing Area). The remaining volume (271,874 BCY) will be used as gradefill for the South Plants Central Processing Area soil cover. In addition, the South Plants Ditches subgroup has 22,726 BCY of potential biota risk soil available for backfill of excavations within the subgroup.

B.7.5 BORROW MATERIAL AREAS

The areas designated for remediation in the preferred alternative include capping, soil cover, and backfill/gradefill borrow following excavation. These activities require movement of borrow materials which can be obtained from on-post sources. Potential borrow areas used on the mass balance logic-flow diagram are the areas designated in the Draft Final Feasibility Study Soils Support Program Report (Harding Lawson Associates (HLA), 1994) and the Final Report: Geotechnical Sampling in the New Toxic Storage Yard, Section 31 (Foster Wheeler, 1995), prepared under the Feasibility Study Soil Refinement Program. The HLA report presents the results of a geotechnical soil boring program performed by HLA in support of Task 93-03 Feasibility Study Soils Support Program at RMA. The Foster Wheeler report presents the results

of a geotechnical soil boring program performed by Foster Wheeler Environmental Corporation in the New Toxic Storage Yard in support of Task 92-14 Feasibility Study Soils Support Program at RMA.

Both geotechnical soil boring programs provided information regarding the use of on-site low-permeability soil for cap/liner and cover material and for borrow material used as structural, revegetative, backfill, and gradefill material. In addition, the reports recommended areas for on-site potential borrow for low permeability soil and structural borrow materials. The HLA report identified four low permeability material borrow areas and one structural borrow/gradefill material. The Foster Wheeler report was an investigation of the New Toxic Storage Yard (NTSY) to identify areas where both low- permeability and structural borrow/gradefill material may be used for borrow. Of the six potential borrow material areas designated in the reports, only three areas were utilized in this mass balance. Borrow areas within the Bald Eagle Management Area (BEMA) were avoided to reduce adverse habitat impacts. The only borrow area utilized within the BEMA boundary is the NTSY (Borrow Area 6, Section 31). A breakdown showing the type of borrow material, destination, quantity used, and remaining borrow material available for use is presented for each borrow area on the mass balance diagram.

The Geotechnical analyses portion of both soil boring programs were conducted in two stages. Stage 1 evaluated whether the tested soil at RMA met specific criteria for use as low permeability soil and structural borrow material. Soil samples passing Stage 1 satisfied the following criteria:

- More than 50 percent by weight passed through a No. 200 sieve
- Atterberg limits:
  - — Liquid limit (LL) equal to or greater than 35 percent
  - — Plasticity index (PI) equal to or greater than 15 percent, but not exceeding 35 percent

Those samples were then submitted for Stage 2 testing to measure for additional geotechnical parameters such as moisture content, strength, maximum remolded density, pH and cation exchange capacity, organic carbon content, shrink/swell potential, and remolded permeability.

The target criteria for potentially suitable low permeability cap/liner materials was a remolded hydraulic conductivity (permeability) of 1×10^{-7} centimeters per second (cm/s).

The six potential borrow sites, as identified in the Draft Final Feasibility Study Soils Support Program Report and the Geotechnical Sampling in the New Toxic Storage Yard Report are:

- Borrow Area 1, Section 24; Low Permeability Material, 1,247,000 BCY available.
- Borrow Area 2, Sections 25 & 36; Low Permeability Material, 768,000 BCY available.
- Borrow Area 3, Section 29; Low Permeability Material, 5,454,000 BCY available.
- Borrow Area 4, Section 20, Low Permeability Material, 4,999,000 BCY available.
- Borrow Area 5, Section 34, Borrow/Gradefill Material, 8,889,000 BCY available.
- Toxic Storage Yards- Borrow Area 6, Section 31; Low Permeability Material, 1,030,000 BCY; Borrow/Gradefill Material, 5,980,000 BCY available.

The suitability of the NTSY as a borrow area for two target soil types for use during remedial action activities is evaluated based upon the results of the geotechnical soil boring program. The soil types of interest are low permeability liner/cap materials identified as fine-grained soil with geotechnical properties consistent with its target use as a landfill liner and capping material. Soil identified as potential common fill material needs well-graded soil above the standing water table and must have geotechnical properties consistent with a variety of engineering design requirements, including potential use as fill, vegetative cover, and surface material.

B.7.6 OFF-POST/ON-POST TRANSPORT

Some of the remediation sites with cap or soil cover remedy selections have other material requirements not available on-post including crushed concrete (biota barrier), poured concrete and sand. These materials must be transported from off-post facilities and are detailed in the off-post quantity box on the mass balance diagram. In addition, UXO materials encountered during remediation of RMA sites will be excavated and disposed off-post. Off-post transport is indicated

on the mass balance diagram for all groups that have expected UXO with a disposal summary in the off-post transport box.

B.8.0 PRESENT WORTH COSTING OF SITEWIDE ALTERNATIVES

Sitewide alternative costs, as generated in MCACES and scheduled in Primavera, were utilized to develop estimated annual funding requirements based on unlimited funding or resources. Historical and future inflation indices guidance was used in calculating the present worth costs in 1995 dollars. These indices reflect the latest Office of Management and Budget (OMB) economic assumptions. Based on the Research, Development, Test and Evaluation (RDTE) Army Appropriation table, a constant inflation rate of 3 percent was utilized for cost escalation. Since the prime lending rate effects the discount rate and it is not known what the discount rate will be in the future, a discount rate of 3 percent was assumed.

Expenditures from the schedules for short-term or "active" remediation costs were given a present worth by discounting the total annual remediation costs generated by the Primavera scheduling software. Annual expenditures were discounted to 1995 present worth costs to provide an equal, comparative analysis between sitewide alternatives.

Long-Term Monitoring Costs are based on a 30-year duration. Once a specific site has been remediated, long-term monitoring and/or maintenance of the site is assumed to begin. In many instances, some long-term monitoring costs will be incurred during the "active remediaiton" of the Rocky Mountain Arsenal. The present worth values of long-term costs were calculated by determining the dollar amount remaining after "active remediation." An annuity equivalent to yearly long-term costs for the remainder of the 30 years of long-term costs was discounted to 1995 present worth costs.

Present worth costs were calculated for each of the soil sitewide alternatives and are presented with the comparison of alternatives on Table 20.6-1. These costs reflect the total remediation and long-term costs for all soil medium groups/subgroups with fixed facilities prorated as discussed

in Section B.5.3. Present worth costs for the five sitewide soil alternatives are $429,000,000, $308,000,000, $484,000,000, $451,000,000, and $812,000,000, respectively.

B.9.0 REFERENCES

AMC (U.S. Army Materiel Command)
1995 Inflation Guidance. Memorandum HQ, AMC, AMCRM-E, 1 February 1995.

EBASCO (Ebasco Services Incorporated)
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EPA (Environmental Protection Agency)
1995 Geosafe Corporation In Situ Vitrification, Innovative Technology Evaluation Report. March 1995. EPA/540/R-94/520.

Foster Wheeler Environmental Corporation
1994 (June) Final Report Feasibility Study Soil Volume Refinement Program, Geotechnical Sampling in the New Toxic Storage Yard, Section 31, Rocky Mountain Arsenal, Version 2.0.

HLA (Harding-Lawson Associates)
1994 (September 14) Pilot-Scale Solvent Extraction Treatability Study, Rocky Mountain Arsenal, Commerce City, Colorado, Task 93-07, Draft Final Technical Report.

1994 (June) Draft Final Feasibility Study Soils Support Program Report, Rocky Mountain Arsenal, Commerce City, Colorado.

MKE/Shell (Morrison-Knudsen Environmental and Shell Oil Company)
1995 (October) Final Enhanced Soil Vacuum Extraction Process Pilot Scale Field Demonstration Report. Prepared by: MK-Environmental Services, Prepared for: Shell Oil/Holme Roberts Owens.

RREL (Risk Reduction Engineering Laboratory, Office of Research and Development, EPA)
1989 (May) Applications Analysis Report. Hazcon Solidification Process, Douglasville, PA. EPA/540/A5-89/001.

USATHAMA (U.S. Army Toxic and Hazardous Materials Agency)
1984 (January) Decontamination Assessment of Land and Facilities at Rocky Mountain Arsenal, Draft Final Report. RTIC 84034R01.

WES

1992 Record of Telephone Conversation between Norm Scheaffer of Rust Environment & Infrastructure and M. Bricka of U.S. Army Waterways Experiment Station. July 20, 1992.

Weston (Roy F. Weston, Inc.)

1992a (November) Concept Engineering Study Report for Thermal Desorption System for Rocky Mountain Arsenal Soils, Task 008, Final Version 1.2. RTIC 92346R01.

1992b (November) Rocky Mountain Arsenal, In Situ Radio Frequency Heating/Vapor Extraction Concept Engineering Report, Final. RTIC 92339R02.

Table B.4.0-1 Markup Matrix for Capital, Operations and Maintenance, and Long-Term Cost

Consideration Factors	Level	Examples	Mob/ Demob	Indirects O&P	Design Engineering	Resident Engineering	Contingency
CAPITAL COST							
Contamination	Low	Level D or no protection Up to 10% Level C No Level A or B	2.00%	34.00%		1.00%	27.50%
	Medium	No Level A or B From 10% to 25% Level C No Level A or B	4.50%	39.00%		2.00%	32.50%
	High	26% or greater Level C Level A or B	7.00%	44.00%		3.00%	42.50%
Technology	Low	Excavation, Backfill, Transportation, Normal Civil/Structural Construction Vapor Extraction, Landfill	2.00%	39.00%	3.00%	1.00%	27.50%
	Medium	Demolition, Proven Decon Methods, Pump & Treat Facilities, Mechanical & Electrical Construction, UXO D&D, Solidification	4.50%	39.00%	4.50%	2.00%	32.50%
	High	Incineration, Thermal Desorption In-Situ Vitrification, Unproven Decon Methods	7.00%	39.00%	6.50%	3.00%	42.50%
Job Size	Small	Less than 20 Craft Personnel	4.50%	44.00%		2.00%	32.50%
	Medium	20 to 60 Craft Personnel	4.50%	39.00%		2.00%	32.50%
	Large	More than 60 Craft Personnel	4.50%	34.00%		2.00%	32.50%
Duration	Short	< 3 Years	4.50%	39.00%		1.00%	27.50%
	Medium	3 to 7 Years	4.50%	39.00%		2.00%	32.50%
	Long	> 7 Years	4.50%	39.00%		3.00%	42.50%

O&P - Overhead and Profit

UXO D&D - Unexploded Ordinance Detonation and Disposal

Table B.4.0-1 Markup Matrix for Capital, Operations and Maintenance, and Long-Term Cost

Consideration Factors	Level	Examples	Mob/ Demob	Indirects O&P	Design Engineering	Resident Engineering	Contingency
OPERATIONS AND MAINTENANCE COST							
Contamination	Low	Level D or no protection Up to 10% Level C No Level A or B	2.00%	34.00%		1.00%	27.50%
	Medium	No Level A or B From 10% to 25% Level C No Level A or B	4.50%	39.00%		2.00%	32.50%
	High	26% or greater Level C Level A or B	7.00%	44.00%		3.00%	42.50%
Technology	Low	Excavation, Backfill, Transportation, Normal Civil/Structural Construction Vapor Extraction, Landfill	2.00%	39.00%	1.00%	1.00%	27.50%
	Medium	Demolition, Proven Decon Methods, Pump & Treat Facilities, Mechanical & Electrical Construction, UXO D&D, Solidification	4.50%	39.00%	1.75%	2.00%	32.50%
	High	Incineration, Thermal Desorption In-Situ Vitrification, Unproven Decon Methods	7.00%	39.00%	3.00%	3.00%	42.50%
Job Size	Small	Less than 20 Craft Personnel	4.50%	44.00%		2.00%	32.50%
	Medium	20 to 60 Craft Personnel	4.50%	39.00%		2.00%	32.50%
	Large	More than 60 Craft Personnel	4.50%	34.00%		2.00%	32.50%
Duration	Short	< 3 Years	4.50%	39.00%		1.00%	27.50%
	Medium	3 to 7 Years	4.50%	39.00%		2.00%	32.50%
	Long	> 7 Years	4.50%	39.00%		3.00%	42.50%

O&P - Overhead and Profit

UXO D&D - Unexploded Ordinance Detonation and Disposal

Table B.4.0-1 Markup Matrix for Capital, Operations and Maintenance, and Long-Term Cost

Consideration Factors	Level	Examples	Indirects O&P	Contingency
LONG-TERM COST				
Contamination	Low	Level D or no protection Up to 10% Level C No Level A or B	34.00%	27.50%
	Medium	From 10% to 25% Level C No Level A or B	39.00%	32.50%
	High	26% or greater Level C Level A or B	44.00%	42.50%
Technology	Low	Fencing, Cap Repair, Erosion Control Soil Monitoring, Leachate Collection	39.00%	27.50%
	Medium	None	39.00%	32.50%
	High	None	39.00%	42.50%
Job Size	Small	Less than 20 Craft Personnel	44.00%	32.50%
	Medium	20 to 60 Craft Personnel	39.00%	32.50%
	Large	More than 60 Craft Personnel	34.00%	32.50%
Duration	Short	< 3 Years	39.00%	27.50%
	Medium	3 to 7 Years	39.00%	32.50%
	Long	> 7 Years	39.00%	42.50%

O&P - Overhead and Profit

UXO D&D - Unexploded Ordinance Detonation and Disposal

Table B.5.3-1 Cost in 1995 Dollars of Sitewide Alternatives with Fixed Facilities Separate

	Caps/Covers	Landfill/Caps	Landfill	Consolidation/Caps/ Treatment/Landfill	Caps/Treatment/ Landfill
PROJECT SUNK COSTS	$750,000,000	$750,000,000	$750,000,000	$750,000,000	$750,000,000
FIXED FACILITIES					
RCRA Landfill	$22,800,000	$71,400,000	$106,000,000	$92,300,000	$120,000,000
Borrow Area	$79,400,000	$37,400,000	$39,800,000	$35,200,000	$40,300,000
Caustic Agent Treatment	$10,300,000	$10,600,000	$11,100,000	$10,700,000	$11,100,000
Incineration	$0	$0	$0	$0	$60,200,000
Thermal Desorption	$0	$0	$0	$0	$309,000,000
Solidification/Stabilization	$0	$0	$0	$0	$13,500,000
Subtotal	$112,000,000	$119,000,000	$157,000,000	$138,000,000	$553,000,000
SOIL MEDIUM GROUP					
Basin A	$51,200,000	$51,200,000	$67,400,000	$51,900,000	$67,700,000
Former Basin F	$32,000,000	$32,000,000	$108,000,000	$78,400,000	$116,000,000
Chemical Sewers	$3,580,000	$9,490,000	$15,000,000	$9,490,000	$15,600,000
South Plants Central Processing	$23,200,000	$15,800,000	$23,200,000	$15,700,000	$23,400,000
South Plants Balance of Areas	$112,000,000	$26,100,000	$26,100,000	$30,700,000	$26,200,000
South Plants Ditches	$8,690,000	$2,930,000	$2,930,000	$1,910,000	$2,960,000
Complex Trenches	$38,900,000	$38,900,000	$38,900,000	$47,700,000	$38,900,000
Sanitary Landfill	$13,000,000	$15,800,000	$16,700,000	$12,800,000	$16,700,000
Section 36 Balance of Areas	$42,000,000	$16,100,000	$16,100,000	$15,100,000	$16,100,000
Basin F Wastepile	$14,100,000	$14,100,000	$14,100,000	$86,000,000	$56,100,000
Secondary Basins	$46,400,000	$7,330,000	$7,330,000	$7,430,000	$7,330,000
Munitions Testing	$3,290,000	$3,290,000	$3,290,000	$3,290,000	$3,290,000
Shell Trenches	$5,410,000	$5,410,000	$32,200,000	$6,030,000	$27,500,000
Lake Sediments	$2,510,000	$2,510,000	$3,150,000	$3,070,000	$3,150,000
Burial Trenches	$4,280,000	$4,280,000	$4,280,000	$4,280,000	$4,280,000
Section 36 Lime Basins	$5,120,000	$5,120,000	$8,760,000	$3,980,000	$8,760,000
Buried Sediments	$3,920,000	$1,370,000	$1,370,000	$1,270,000	$1,370,000
Buried M-1 Pits	$2,620,000	$2,620,000	$6,050,000	$22,700,000	$8,780,000
Sanitary/Process Water Sewers	$344,000	$344,000	$9,930,000	$344,000	$344,000
Hex Pits	$1,660,000	$1,660,000	$4,660,000	$10,000,000	$4,680,000
Surficial Soils	$8,550,000	$8,550,000	$8,550,000	$17,000,000	$9,070,000
Toxic Storage Yards	$2,680,000	$2,680,000	$2,680,000	$2,680,000	$2,680,000
Sand Creek Lateral	$16,200,000	$5,900,000	$5,900,000	$3,910,000	$5,900,000
Ditches/Drainage Areas	$0	$0	$2,640,000	$2,240,000	$2,640,000
North Plants	$2,930,000	$2,930,000	$2,930,000	$2,930,000	$2,930,000
Contingent Soil Volume	$0	$0	$0	$4,560,000	$0
Subtotal	$444,000,000	$276,000,000	$432,000,000	$445,000,000	$473,000,000
WATER MEDIUM GROUP	$146,000,000	$146,000,000	$146,000,000	$146,000,000	$146,000,000
STRUCTURES MEDIUM GROUP	$137,000,000	$137,000,000	$137,000,000	$137,000,000	$137,000,000
PMRMA MISSION SUPPORT	$315,000,000	$270,000,000	$315,000,000	$405,000,000	$630,000,000
TOTAL ALTERNATIVE COST	$1,900,000,000	$1,700,000,000	$1,940,000,000	$2,020,000,000	$2,690,000,000

Table B.5.3-2 Cost of Sitewide Alternatives with Fixed Facility Costs Prorated to Medium Groups

	Caps/Covers	Landfill/Caps	Landfill	Consolidation/Caps/ Treatment/Landfill	Caps/Treatment/ Landfill
PROJECT SUNK COSTS	$750,000,000	$750,000,000	$750,000,000	$750,000,000	$750,000,000
SOIL MEDIUM GROUP					
Basin A	$62,000,000	$59,500,000	$79,100,000	$57,200,000	$86,600,000
Former Basin F	$39,100,000	$40,900,000	$142,000,000	$87,400,000	$205,000,000
Chemical Sewers	$3,580,000	$12,600,000	$18,200,000	$12,600,000	$32,100,000
South Plants Central Processing	$28,200,000	$19,300,000	$30,800,000	$21,900,000	$42,800,000
South Plants Balance of Areas	$134,000,000	$49,700,000	$48,100,000	$39,800,000	$49,800,000
South Plants Ditches	$10,000,000	$4,940,000	$4,830,000	$3,160,000	$5,520,000
Complex Trenches	$45,400,000	$47,100,000	$47,500,000	$55,400,000	$47,700,000
Sanitary Landfill	$15,300,000	$30,900,000	$30,900,000	$14,700,000	$30,500,000
Section 36 Balance of Areas	$50,700,000	$27,500,000	$26,400,000	$22,600,000	$26,100,000
Basin F Wastepile	$14,500,000	$14,600,000	$14,700,000	$132,000,000	$293,000,000
Secondary Basins	$56,900,000	$13,400,000	$13,000,000	$9,850,000	$12,900,000
Munitions Testing	$7,820,000	$6,180,000	$5,990,000	$6,520,000	$5,890,000
Shell Trenches	$5,590,000	$5,630,000	$35,600,000	$6,250,000	$89,100,000
Lake Sediments	$3,510,000	$3,160,000	$4,400,000	$3,870,000	$4,380,000
Burial Trenches	$8,970,000	$7,170,000	$6,970,000	$7,480,000	$6,880,000
Section 36 Lime Basins	$5,720,000	$5,880,000	$11,600,000	$8,500,000	$11,500,000
Buried Sediments	$4,370,000	$1,930,000	$1,900,000	$1,890,000	$1,890,000
Buried M-1 Pits	$2,680,000	$2,690,000	$6,980,000	$24,200,000	$22,700,000
Sanitary/Process Water Sewers	$344,000	$344,000	$10,300,000	$344,000	$344,000
Hex Pits	$1,660,000	$1,660,000	$4,780,000	$10,000,000	$6,710,000
Surficial Soils	$13,100,000	$11,600,000	$11,400,000	$20,400,000	$11,900,000
Toxic Storage Yards	$5,640,000	$3,620,000	$3,240,000	$3,500,000	$3,240,000
Sand Creek Lateral	$18,700,000	$9,670,000	$9,460,000	$4,780,000	$9,350,000
Ditches/Drainage Areas	$0	$0	$4,390,000	$2,410,000	$4,330,000
North Plants	$3,980,000	$3,520,000	$3,430,000	$3,460,000	$3,440,000
Contingent Soil Volume	$0	$0	$0	$10,500,000	$0
Subtotal	$542,000,000	$383,000,000	$576,000,000	$570,000,000	$1,010,000,000
WATER MEDIUM GROUP	$146,000,000	$146,000,000	$146,000,000	$146,000,000	$146,000,000
STRUCTURES MEDIUM GROUP	$152,000,000	$149,000,000	$149,000,000	$150,000,000	$149,000,000
PMRMA MISSION SUPPORT	$315,000,000	$270,000,000	$315,000,000	$405,000,000	$630,000,000
TOTAL ALTERNATIVE COST	$1,900,000,000	$1,700,000,000	$1,940,000,000	$2,020,000,000	$2,690,000,000

Note: Cost are presented in 1995 dollars.

Sitewide Alternative 1
Caps/Covers

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

M C A C E S G O L D E D I T I O N
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		CONTRACT COST	TOTAL COST
01 Project Sunk Costs			
01.01 Project Sunk Costs			
01.01.01 Project Sunk Costs			
01.01.01.001	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
02 Fixed Facility/Treatment Costs			
02.01 RCRA Landfill			
02.01.01 Design			
02.01.01.001	Prepare/Submit 30% Design	617,955	617,955
02.01.01.002	Prepare/Submit 60% Design	617,955	617,955
02.01.01.003	Prepare/Submit 90% Design	617,955	617,955
02.01.01.004	Prepare/Submit CFC Design	346,429	346,429
	Design	2,200,294	2,200,294
02.01.02 Construction			
02.01.02.001	Plans/Submittals/Workplans	259,167	259,167
02.01.02.002	Mobilization	1,642,376	1,642,376
02.01.02.003	Construction - Cell 1	4,943,296	4,943,296
02.01.02.004	Operation - Cell 1	5,356,941	5,356,941
02.01.02.005	Closure - Cell 1	3,117,304	3,117,304
02.01.02.006	Demobilization	222,016	222,016
02.01.02.007	Site Closure and Final Reports	37,452	37,452
02.01.02.008	Project Support	1,420,428	1,420,428
	Construction	16,998,978	16,998,978
02.01.03 Long-Term Activities			
02.01.03.001	Plans/Submittals/Workplans	119,846	119,846
02.01.03.002	Mobilization	73,262	73,262
02.01.03.003	Long-Term Monitor/Maintenance	2,669,282	2,669,282
02.01.03.004	Demobilization	39,449	39,449
02.01.03.005	Prepare/Submit Final Reports	18,726	18,726

		CONTRACT COST	TOTAL COST
02.01.03.006	Project Support	663,538	663,538
	Long-Term Activities	3,584,102	3,584,102
	RCRA Landfill	22,783,375	22,783,375
02.02	Borrow Area		
02.02.01	Design		
02.02.01.001	Prepare/Submit 30% Design	269,653	269,653
02.02.01.002	Prepare/Submit 60% Design	269,653	269,653
02.02.01.003	Prepare/Submit 90% Design	269,653	269,653
02.02.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.02.02	Construction		
02.02.02.001	Plans/Submittals/Workplans	259,167	259,167
02.02.02.002	Mobilization	1,581,580	1,581,580
02.02.02.003	Strip/Stockpile Topsoil	2,368,428	2,368,428
02.02.02.004	Haul Road Construction	2,378,696	2,378,696
02.02.02.005	Facility Operations	69,066,705	69,066,705
02.02.02.006	Revegetate Disturbed Areas	908,275	908,275
02.02.02.007	Demobilization	854,537	854,537
02.02.02.008	Prepare/Submit Final Reports	37,452	37,452
02.02.02.009	Project Support	960,639	960,639
	Construction	78,415,479	78,415,479
	Borrow Area	79,374,246	79,374,246
02.03	Caustic Agent Treatment Facility		
02.03.01	Design		
02.03.01.001	Prepare/Submit 30% Design	269,653	269,653
02.03.01.002	Prepare/Submit 60% Design	269,653	269,653
02.03.01.003	Prepare/Submit 90% Design	269,653	269,653
02.03.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.03.02	Construction		
02.03.02.001	Plans/Submittals/Workplans	202,240	202,240

		CONTRACT COST	TOTAL COST
02.03.02.002	Mobilization	248,846	248,846
02.03.02.003	Construction	2,632,257	2,632,257
02.03.02.004	Systems Testing	425,377	425,377
02.03.02.005	Facility Operations	4,922,057	4,922,057
02.03.02.006	Demobilization	133,993	133,993
02.03.02.007	Prepare/Submit Final Reports	37,452	37,452
02.03.02.008	Project Support	721,817	721,817
	Construction	9,324,038	9,324,038
	Caustic Agent Treatment Facility	10,282,805	10,282,805
	Fixed Facility/Treatment Costs	112,440,425	112,440,425
03	Soil Medium Group Costs		
03.01	Basin A		
03.01.01	Design		
03.01.01.001	Prepare/Submit 30% Design	155,272	155,272
03.01.01.002	Prepare/Submit 60% Design	155,272	155,272
03.01.01.003	Prepare/Submit 90% Design	155,272	155,272
03.01.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.01.02	Remediation		
03.01.02.001	Plans/Submittals/Workplans	232,908	232,908
03.01.02.002	Mobilization	962,069	962,069
03.01.02.003	Install Gradefill	24,519,019	24,519,019
03.01.02.004	Install Clay/Soil Cap	19,628,169	19,628,169
03.01.02.005	Revegetate Disturbed Areas	333,695	333,695
03.01.02.006	Demobilization	518,036	518,036
03.01.02.007	Prepare/Submit Final Reports	43,131	43,131
03.01.02.008	Project Support	829,153	829,153
	Remediation	47,066,180	47,066,180
03.01.03	Long-Term Activities		
03.01.03.001	Plans/Submittals/Workplans	138,020	138,020
03.01.03.002	Mobilization	73,274	73,274
03.01.03.003	Short-Term Monitor/Maintenance	424,702	424,702
03.01.03.004	Long-Term Monitor/Maintenance	2,123,511	2,123,511
03.01.03.005	Demobilization	39,456	39,456
03.01.03.006	Prepare/Submit Final Reports	21,566	21,566

		CONTRACT COST	TOTAL COST
03.01.03.007	Project Support	764,159	764,159
	Long-Term Activities	3,584,687	3,584,687
	Basin A	51,202,945	51,202,945
03.02	Former Basin F		
03.02.01	Design		
03.02.01.001	Prepare/Submit 30% Design	155,272	155,272
03.02.01.002	Prepare/Submit 60% Design	155,272	155,272
03.02.01.003	Prepare/Submit 90% Design	155,272	155,272
03.02.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.02.02	Remediation		
03.02.02.001	Plans/Submittals/Workplans	232,908	232,908
03.02.02.002	Mobilization	587,336	587,336
03.02.02.003	Install Gradefill	13,240,261	13,240,261
03.02.02.004	Install Clay/Soil Cap	13,259,079	13,259,079
03.02.02.005	Revegetate Disturbed Areas	225,400	225,400
03.02.02.006	Demobilization	316,258	316,258
03.02.02.007	Prepare/Submit Final Reports	43,131	43,131
03.02.02.008	Project Support	829,153	829,153
	Remediation	28,733,526	28,733,526
03.02.03	Long-Term Activities		
03.02.03.001	Plans/Submittals/Workplans	138,020	138,020
03.02.03.002	Mobilization	55,821	55,821
03.02.03.003	Short-Term Monitor/Maintenance	286,873	286,873
03.02.03.004	Long-Term Monitor/Maintenance	1,434,366	1,434,366
03.02.03.005	Demobilization	30,057	30,057
03.02.03.006	Prepare/Submit Final Reports	21,566	21,566
03.02.03.007	Project Support	764,159	764,159
	Long-Term Activities	2,730,861	2,730,861
	Former Basin F	32,016,466	32,016,466
03.03	Chemical Sewers		
03.03.01	Design		

		CONTRACT COST	TOTAL COST
03.03.01.001	Prepare/Submit 30% Design	55,958	55,958
03.03.01.002	Prepare/Submit 60% Design	55,958	55,958
03.03.01.003	Prepare/Submit 90% Design	55,958	55,958
03.03.01.004	Prepare/Submit CFC Design	33,575	33,575
	Design	201,450	201,450
03.03.02	Remediation		
03.03.02.001	Plans/Submittals/Workplans	111,917	111,917
03.03.02.002	Mobilization	18,215	18,215
03.03.02.003	Plugging of Sewer Lines	319,076	319,076
03.03.02.004	Sewer Signs	5,671	5,671
03.03.02.005	Demobilization	9,808	9,808
03.03.02.006	Prepare/Submit Final Reports	44,767	44,767
03.03.02.007	Project Support	141,909	141,909
	Remediation	651,362	651,362
03.03.03	Long-Term Activities		
03.03.03.001	Plans/Submittals/Workplans	143,253	143,253
03.03.03.002	Mobilization	55,663	55,663
03.03.03.003	Short-Term Monitor/Maintenance	279,791	279,791
03.03.03.004	Long-Term Monitor/Maintenance	1,398,957	1,398,957
03.03.03.005	Demobilization	29,972	29,972
03.03.03.006	Prepare/Submit Final Reports	22,383	22,383
03.03.03.007	Project Support	793,135	793,135
	Long-Term Activities	2,723,155	2,723,155
	Chemical Sewers	3,575,966	3,575,966
03.04	South Plants Central Processing		
03.04.01	Design		
03.04.01.001	Prepare/Submit 30% Design	155,272	155,272
03.04.01.002	Prepare/Submit 60% Design	155,272	155,272
03.04.01.003	Prepare/Submit 90% Design	155,272	155,272
03.04.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.04.02	Remediation		

		CONTRACT COST	TOTAL COST
03.04.02.001	Plans/Submittals/Workplans	232,908	232,908
03.04.02.002	Mobilization	425,749	425,749
03.04.02.003	Install Gradefill	12,117,061	12,117,061
03.04.02.004	Install Clay/Soil Cap	6,841,094	6,841,094
03.04.02.005	Revegetate Disturbed Areas	110,084	110,084
03.04.02.006	Demobilization	229,249	229,249
03.04.02.007	Prepare/Submit Final Reports	43,131	43,131
03.04.02.008	Project Support	829,153	829,153
	Remediation	20,828,429	20,828,429
03.04.03	Long-Term Activities		
03.04.03.001	Plans/Submittals/Workplans	138,020	138,020
03.04.03.002	Mobilization	37,237	37,237
03.04.03.003	Short-Term Monitor/Maintenance	140,106	140,106
03.04.03.004	Long-Term Monitor/Maintenance	700,531	700,531
03.04.03.005	Demobilization	20,050	20,050
03.04.03.006	Prepare/Submit Final Reports	21,566	21,566
03.04.03.007	Project Support	764,159	764,159
	Long-Term Activities	1,821,669	1,821,669
	South Plants Central Processing	23,202,176	23,202,176
03.05	South Plants Balance of Areas		
03.05.01	Design		
03.05.01.001	Prepare/Submit 30% Design	155,272	155,272
03.05.01.002	Prepare/Submit 60% Design	155,272	155,272
03.05.01.003	Prepare/Submit 90% Design	155,272	155,272
03.05.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.05.02	Remediation		
03.05.02.001	Plans/Submittals/Workplans	232,908	232,908
03.05.02.002	Mobilization	2,112,843	2,112,843
03.05.02.003	Install Gradefill	43,260,816	43,260,816
03.05.02.004	Install Clay/Soil Cap	54,853,739	54,853,739
03.05.02.005	Revegetate Disturbed Areas	859,833	859,833
03.05.02.006	Demobilization	1,137,298	1,137,298
03.05.02.007	Prepare/Submit Final Reports	43,131	43,131
03.05.02.008	Project Support	829,153	829,153
	Remediation	103,329,721	103,329,721

		CONTRACT COST	TOTAL COST
03.05.03	Long-Term Activities		
03.05.03.001	Plans/Submittals/Workplans	138,020	138,020
03.05.03.002	Mobilization	158,066	158,066
03.05.03.003	Short-Term Monitor/Maintenance	1,094,333	1,094,333
03.05.03.004	Long-Term Monitor/Maintenance	5,471,665	5,471,665
03.05.03.005	Demobilization	85,113	85,113
03.05.03.006	Prepare/Submit Final Reports	21,566	21,566
03.05.03.007	Project Support	764,159	764,159
	Long-Term Activities	7,732,921	7,732,921
	South Plants Balance of Areas	111,614,720	111,614,720
03.06	South Plants Ditches		
03.06.01	Design		
03.06.01.001	Prepare/Submit 30% Design	155,272	155,272
03.06.01.002	Prepare/Submit 60% Design	155,272	155,272
03.06.01.003	Prepare/Submit 90% Design	155,272	155,272
03.06.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.06.02	Remediation		
03.06.02.001	Plans/Submittals/Workplans	232,908	232,908
03.06.02.002	Mobilization	137,433	137,433
03.06.02.003	Install Gradefill	2,271,514	2,271,514
03.06.02.004	Install Clay/Soil Cap	3,693,483	3,693,483
03.06.02.005	Revegetate Disturbed Areas	57,891	57,891
03.06.02.006	Demobilization	74,002	74,002
03.06.02.007	Prepare/Submit Final Reports	43,131	43,131
03.06.02.008	Project Support	213,127	213,127
	Remediation	6,723,490	6,723,490
03.06.03	Long-Term Activities		
03.06.03.001	Plans/Submittals/Workplans	138,020	138,020
03.06.03.002	Mobilization	28,826	28,826
03.06.03.003	Short-Term Monitor/Maintenance	73,680	73,680
03.06.03.004	Long-Term Monitor/Maintenance	368,399	368,399
03.06.03.005	Demobilization	15,520	15,520
03.06.03.006	Prepare/Submit Final Reports	21,566	21,566
03.06.03.007	Project Support	764,159	764,159

		CONTRACT COST	TOTAL COST
	Long-Term Activities	1,410,169	1,410,169
	South Plants Ditches	8,685,738	8,685,738
03.07	Complex Trenches		
03.07.01	Design		
03.07.01.001	Prepare/Submit 30% Design	164,230	164,230
03.07.01.002	Prepare/Submit 60% Design	164,230	164,230
03.07.01.003	Prepare/Submit 90% Design	164,230	164,230
03.07.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.07.02	Remediation		
03.07.02.001	Plans/Submittals/Workplans	246,344	246,344
03.07.02.002	Mobilization	993,033	993,033
03.07.02.003	UXO Clearance by Geophysics	49,427	49,427
03.07.02.004	Exca. UXO and Transport Off-Post	573,807	573,807
03.07.02.005	Install Slurry Walls	2,491,362	2,491,362
03.07.02.006	Install Gradefill	13,233,470	13,233,470
03.07.02.007	Install Clay/Soil Cap	12,115,714	12,115,714
03.07.02.008	Revegetate Disturbed Areas	205,944	205,944
03.07.02.009	Demobilization	534,711	534,711
03.07.02.010	Prepare/Submit Final Reports	45,619	45,619
03.07.02.011	Project Support	876,985	876,985
	Remediation	31,366,417	31,366,417
03.07.03	Long-Term Activities		
03.07.03.001	Plans/Submittals/Workplans	145,982	145,982
03.07.03.002	Mobilization	142,493	142,493
03.07.03.003	Short-Term Monitor/Maintenance	262,111	262,111
03.07.03.004	Long-Term Monitor/Maintenance	5,512,661	5,512,661
03.07.03.005	Demobilization	76,726	76,726
03.07.03.006	Prepare/Submit Final Reports	22,810	22,810
03.07.03.007	Project Support	808,242	808,242
	Long-Term Activities	6,971,025	6,971,025
	Complex Trenches	38,921,369	38,921,369
03.08	Sanitary Landfill		

		CONTRACT COST	TOTAL COST
03.08.01	Design		
03.08.01.001	Prepare/Submit 30% Design	155,272	155,272
03.08.01.002	Prepare/Submit 60% Design	155,272	155,272
03.08.01.003	Prepare/Submit 90% Design	155,272	155,272
03.08.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.08.02	Remediation		
03.08.02.001	Plans/Submittals/Workplans	232,908	232,908
03.08.02.002	Mobilization	234,487	234,487
03.08.02.003	Install Gradefill	3,446,800	3,446,800
03.08.02.004	Install Clay/Soil Cap	6,454,904	6,454,904
03.08.02.005	Revegetate Disturbed Areas	103,886	103,886
03.08.02.006	Demobilization	126,262	126,262
03.08.02.007	Prepare/Submit Final Reports	43,131	43,131
03.08.02.008	Project Support	829,153	829,153
	Remediation	11,471,533	11,471,533
03.08.03	Long-Term Activities		
03.08.03.001	Plans/Submittals/Workplans	138,020	138,020
03.08.03.002	Mobilization	20,462	20,462
03.08.03.003	Short-Term Monitor/Maintenance	7,631	7,631
03.08.03.004	Long-Term Monitor/Maintenance	38,154	38,154
03.08.03.005	Demobilization	11,018	11,018
03.08.03.006	Prepare/Submit Final Reports	21,566	21,566
03.08.03.007	Project Support	764,159	764,159
	Long-Term Activities	1,001,009	1,001,009
	Sanitary Landfill	13,024,620	13,024,620
03.09	Section 36 Balance of Areas		
03.09.01	Design		
03.09.01.001	Prepare/Submit 30% Design	155,272	155,272
03.09.01.002	Prepare/Submit 60% Design	155,272	155,272
03.09.01.003	Prepare/Submit 90% Design	155,272	155,272
03.09.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079

		CONTRACT COST	TOTAL COST
03.09.02	Remediation		
03.09.02.001	Plans/Submittals/Workplans	232,908	232,908
03.09.02.002	Mobilization	766,785	766,785
03.09.02.003	Install Gradefill	12,248,428	12,248,428
03.09.02.004	Install Clay/Soil Cap	22,605,480	22,605,480
03.09.02.005	Revegetate Disturbed Areas	373,794	373,794
03.09.02.006	Demobilization	412,884	412,884
03.09.02.007	Prepare/Submit Final Reports	43,131	43,131
03.09.02.008	Project Support	829,153	829,153
	Remediation	37,512,564	37,512,564
03.09.03	Long-Term Activities		
03.09.03.001	Plans/Submittals/Workplans	138,020	138,020
03.09.03.002	Mobilization	79,736	79,736
03.09.03.003	Short-Term Monitor/Maintenance	475,738	475,738
03.09.03.004	Long-Term Monitor/Maintenance	2,378,688	2,378,688
03.09.03.005	Demobilization	42,934	42,934
03.09.03.006	Prepare/Submit Final Reports	21,566	21,566
03.09.03.007	Project Support	764,159	764,159
	Long-Term Activities	3,900,840	3,900,840
	Section 36 Balance of Areas	41,965,483	41,965,483
03.10	Basin F Wastepile		
03.10.01	Design		
03.10.01.001	Prepare/Submit 30% Design	310,544	310,544
03.10.01.002	Prepare/Submit 60% Design	310,544	310,544
03.10.01.003	Prepare/Submit 90% Design	310,544	310,544
03.10.01.004	Prepare/Submit CFC Design	172,525	172,525
	Design	1,104,157	1,104,157
03.10.02	Remediation		
03.10.02.001	Plans/Submittals/Workplans	298,468	298,468
03.10.02.002	Mobilization	135,078	135,078
03.10.02.003	Install RCRA (Composite) Cap	5,192,142	5,192,142
03.10.02.004	Revegetate Disturbed Areas	37,567	37,567
03.10.02.005	Demobilization	72,735	72,735
03.10.02.006	Prepare/Submit Final Reports	43,131	43,131
03.10.02.007	Project Support	829,153	829,153

		CONTRACT COST	TOTAL COST
	Remediation	6,608,273	6,608,273
03.10.03	Long-Term Activities		
03.10.03.001	Plans/Submittals/Workplans	138,020	138,020
03.10.03.002	Mobilization	129,978	129,978
03.10.03.003	Short-Term Monitor/Maintenance	872,504	872,504
03.10.03.004	Long-Term Monitor/Maintenance	4,362,520	4,362,520
03.10.03.005	Demobilization	69,988	69,988
03.10.03.006	Prepare/Submit Final Reports	21,566	21,566
03.10.03.007	Project Support	764,159	764,159
	Long-Term Activities	6,358,735	6,358,735
	Basin F Wastepile	14,071,165	14,071,165
03.11	Secondary Basins		
03.11.01	Design		
03.11.01.001	Prepare/Submit 30% Design	155,272	155,272
03.11.01.002	Prepare/Submit 60% Design	155,272	155,272
03.11.01.003	Prepare/Submit 90% Design	155,272	155,272
03.11.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.11.02	Remediation		
03.11.02.001	Plans/Submittals/Workplans	232,908	232,908
03.11.02.002	Mobilization	877,657	877,657
03.11.02.003	Install Gradefill	24,637,273	24,637,273
03.11.02.004	Install Clay/Soil Cap	15,592,954	15,592,954
03.11.02.005	Revegetate Disturbed Areas	250,893	250,893
03.11.02.006	Demobilization	472,585	472,585
03.11.02.007	Prepare/Submit Final Reports	43,131	43,131
03.11.02.008	Project Support	829,153	829,153
	Remediation	42,936,553	42,936,553
03.11.03	Long-Term Activities		
03.11.03.001	Plans/Submittals/Workplans	138,020	138,020
03.11.03.002	Mobilization	59,930	59,930
03.11.03.003	Short-Term Monitor/Maintenance	319,318	319,318
03.11.03.004	Long-Term Monitor/Maintenance	1,596,589	1,596,589

		CONTRACT COST	TOTAL COST
03.11.03.005	Demobilization	32,270	32,270
03.11.03.006	Prepare/Submit Final Reports	21,566	21,566
03.11.03.007	Project Support	764,159	764,159
	Long-Term Activities	2,931,851	2,931,851
	Secondary Basins	46,420,483	46,420,483
03.12	Munitions Testing		
03.12.01	Design		
03.12.01.001	Prepare/Submit 30% Design	159,723	159,723
03.12.01.002	Prepare/Submit 60% Design	159,723	159,723
03.12.01.003	Prepare/Submit 90% Design	159,723	159,723
03.12.01.004	Prepare/Submit CFC Design	88,735	88,735
	Design	567,906	567,906
03.12.02	Remediation		
03.12.02.001	Plans/Submittals/Workplans	239,585	239,585
03.12.02.002	Mobilization	76,176	76,176
03.12.02.003	UXO Clearance by Geophysics	330,800	330,800
03.12.02.004	Exca. UXO and Transport Off-Post	110,898	110,898
03.12.02.005	Excavate Debris from Surf. Soil	1,524,118	1,524,118
03.12.02.007	Revegetate Disturbed Areas	137,833	137,833
03.12.02.008	Demobilization	41,018	41,018
03.12.02.009	Prepare/Submit Final Reports	44,368	44,368
03.12.02.010	Project Support	219,237	219,237
	Remediation	2,724,034	2,724,034
	Munitions Testing	3,291,940	3,291,940
03.13	Shell Trenches		
03.13.01	Design		
03.13.01.001	Prepare/Submit 30% Design	159,625	159,625
03.13.01.002	Prepare/Submit 60% Design	159,625	159,625
03.13.01.003	Prepare/Submit 90% Design	159,625	159,625
03.13.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.13.02	Remediation		

		CONTRACT COST	TOTAL COST
03.13.02.001	Plans/Submittals/Workplans	239,437	239,437
03.13.02.002	Mobilization	52,941	52,941
03.13.02.003	Upgrade Existing Slurry Wall	598,676	598,676
03.13.02.004	Install Clay/Soil Cap	985,657	985,657
03.13.02.005	Revegetate Disturbed Areas	16,668	16,668
03.13.02.006	Demobilization	28,507	28,507
03.13.02.007	Prepare/Submit Final Reports	44,340	44,340
03.13.02.008	Project Support	219,102	219,102
	Remediation	2,185,328	2,185,328
03.13.03	Long-Term Activities		
03.13.03.001	Plans/Submittals/Workplans	141,889	141,889
03.13.03.002	Mobilization	54,255	54,255
03.13.03.003	Short-Term Monitor/Maintenance	21,214	21,214
03.13.03.004	Long-Term Monitor/Maintenance	1,599,893	1,599,893
03.13.03.005	Demobilization	29,214	29,214
03.13.03.006	Prepare/Submit Final Reports	22,170	22,170
03.13.03.007	Project Support	785,581	785,581
	Long-Term Activities	2,654,217	2,654,217
	Shell Trenches	5,407,100	5,407,100
03.14	Lake Sediments		
03.14.01	Design		
03.14.01.001	Prepare/Submit 30% Design	159,625	159,625
03.14.01.002	Prepare/Submit 60% Design	159,625	159,625
03.14.01.003	Prepare/Submit 90% Design	159,625	159,625
03.14.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.14.02	Remediation		
03.14.02.001	Plans/Submittals/Workplans	239,437	239,437
03.14.02.002	Mobilization	47,091	47,091
03.14.02.003	Grub & Clear Aquatic Vegetation	15,664	15,664
03.14.02.004	Install Cutoff Wall	667,969	667,969
03.14.02.005	Excavate HH Soils	519,508	519,508
03.14.02.007	Backfill w/Borrow Material	75,238	75,238
03.14.02.008	Revegetate or Restore Wetlands	90,192	90,192
03.14.02.009	Demobilization	25,357	25,357
03.14.02.010	Prepare/Submit Final Reports	44,340	44,340

		CONTRACT COST	TOTAL COST
03.14.02.011	Project Support	219,102	219,102
	Remediation	1,943,898	1,943,898
	Lake Sediments	2,511,454	2,511,454
03.15	Burial Trenches		
03.15.01	Design		
03.15.01.001	Prepare/Submit 30% Design	164,230	164,230
03.15.01.002	Prepare/Submit 60% Design	164,230	164,230
03.15.01.003	Prepare/Submit 90% Design	164,230	164,230
03.15.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.15.02	Remediation		
03.15.02.001	Plans/Submittals/Workplans	246,344	246,344
03.15.02.002	Mobilization	117,115	117,115
03.15.02.003	UXO Clearance by Geophysics	216,714	216,714
03.15.02.004	Exca. UXO and Transport Off-Post	138,192	138,192
03.15.02.005	Drill/Screen for Agent Soil	67,379	67,379
03.15.02.006	Excavate Agent/HH/UXO Deb. Soil	1,685,080	1,685,080
03.15.02.009	Backfill w/Borrow Material	152,455	152,455
03.15.02.010	Revegetate Disturbed Areas	90,298	90,298
03.15.02.011	Demobilization	63,062	63,062
03.15.02.012	Prepare/Submit Final Reports	45,619	45,619
03.15.02.013	Project Support	876,985	876,985
	Remediation	3,699,244	3,699,244
	Burial Trenches	4,283,171	4,283,171
03.16	Section 36 Lime Basins		
03.16.01	Design		
03.16.01.001	Prepare/Submit 30% Design	155,272	155,272
03.16.01.002	Prepare/Submit 60% Design	155,272	155,272
03.16.01.003	Prepare/Submit 90% Design	155,272	155,272
03.16.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.16.02	Remediation		

		CONTRACT COST	TOTAL COST
03.16.02.001	Plans/Submittals/Workplans	232,908	232,908
03.16.02.002	Mobilization	68,893	68,893
03.16.02.003	Install Gradefill	813,999	813,999
03.16.02.004	Install Clay/Soil Cap	1,930,213	1,930,213
03.16.02.005	Revegetate Disturbed Areas	31,055	31,055
03.16.02.006	Demobilization	37,097	37,097
03.16.02.007	Prepare/Submit Final Reports	43,131	43,131
03.16.02.008	Project Support	213,127	213,127
	Remediation	3,370,424	3,370,424
03.16.03	Long-Term Activities		
03.16.03.001	Plans/Submittals/Workplans	138,020	138,020
03.16.03.002	Mobilization	24,500	24,500
03.16.03.003	Short-Term Monitor/Maintenance	39,525	39,525
03.16.03.004	Long-Term Monitor/Maintenance	197,624	197,624
03.16.03.005	Demobilization	13,193	13,193
03.16.03.006	Prepare/Submit Final Reports	21,566	21,566
03.16.03.007	Project Support	764,159	764,159
	Long-Term Activities	1,198,585	1,198,585
	Section 36 Lime Basins	5,121,087	5,121,087
03.17	Buried Sediments		
03.17.01	Design		
03.17.01.001	Prepare/Submit 30% Design	156,681	156,681
03.17.01.002	Prepare/Submit 60% Design	156,681	156,681
03.17.01.003	Prepare/Submit 90% Design	156,681	156,681
03.17.01.004	Prepare/Submit CFC Design	87,045	87,045
	Design	557,088	557,088
03.17.02	Remediation		
03.17.02.001	Plans/Submittals/Workplans	235,022	235,022
03.17.02.002	Mobilization	48,349	48,349
03.17.02.003	Install Gradefill	1,521,398	1,521,398
03.17.02.004	Install Clay/Soil Cap	271,962	271,962
03.17.02.005	Revegetate Disturbed Areas	3,975	3,975
03.17.02.006	Demobilization	26,034	26,034
03.17.02.007	Prepare/Submit Final Reports	43,523	43,523
03.17.02.008	Project Support	215,061	215,061

		CONTRACT COST	TOTAL COST
	Remediation	2,365,324	2,365,324
03.17.03	Long-Term Activities		
03.17.03.001	Plans/Submittals/Workplans	139,272	139,272
03.17.03.002	Mobilization	20,313	20,313
03.17.03.003	Short-Term Monitor/Maintenance	5,059	5,059
03.17.03.004	Long-Term Monitor/Maintenance	25,297	25,297
03.17.03.005	Demobilization	10,938	10,938
03.17.03.006	Prepare/Submit Final Reports	21,761	21,761
03.17.03.007	Project Support	771,093	771,093
	Long-Term Activities	993,734	993,734
	Buried Sediments	3,916,146	3,916,146
03.18	Buried M-1 Pits		
03.18.01	Design		
03.18.01.001	Prepare/Submit 30% Design	159,625	159,625
03.18.01.002	Prepare/Submit 60% Design	159,625	159,625
03.18.01.003	Prepare/Submit 90% Design	159,625	159,625
03.18.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.18.02	Remediation		
03.18.02.001	Plans/Submittals/Workplans	239,437	239,437
03.18.02.002	Mobilization	25,028	25,028
03.18.02.003	Install Slurry Wall	158,084	158,084
03.18.02.004	Install Gradefill	46,348	46,348
03.18.02.005	Install Clay/Soil Cap	282,830	282,830
03.18.02.006	Revegetate Disturbed Areas	4,478	4,478
03.18.02.007	Demobilization	13,476	13,476
03.18.02.008	Prepare/Submit Final Reports	44,340	44,340
03.18.02.009	Project Support	219,102	219,102
	Remediation	1,033,124	1,033,124
03.18.03	Long-Term Activities		
03.18.03.001	Plans/Submittals/Workplans	141,889	141,889
03.18.03.002	Mobilization	20,764	20,764
03.18.03.003	Short-Term Monitor/Maintenance	5,700	5,700

		CONTRACT COST	TOTAL COST
03.18.03.004	Long-Term Monitor/Maintenance	28,499	28,499
03.18.03.005	Demobilization	11,181	11,181
03.18.03.006	Prepare/Submit Final Reports	22,170	22,170
03.18.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,015,783	1,015,783
	Buried M-1 Pits	2,616,463	2,616,463
03.19	Sanitary/Process Water Sewers		
03.19.01	Design		
03.19.01.001	Prepare/Submit 30% Design	8,705	8,705
03.19.01.002	Prepare/Submit 60% Design	8,705	8,705
03.19.01.003	Prepare/Submit 90% Design	8,705	8,705
03.19.01.004	Prepare/Submit CFC Design	5,223	5,223
	Design	31,336	31,336
03.19.02	Remediation		
03.19.02.001	Plans/Submittals/Workplans	54,403	54,403
03.19.02.002	Mobilization	6,389	6,389
03.19.02.003	Plugging of Manholes	133,516	133,516
03.19.02.004	Demobilization	3,441	3,441
03.19.02.005	Prepare/Submit Final Reports	43,523	43,523
03.19.02.006	Project Support	71,253	71,253
	Remediation	312,523	312,523
	Sanitary/Process Water Sewers	343,860	343,860
03.20	Hex Pits		
03.20.01	Design		
03.20.01.001	Prepare/Submit 30% Design	55,425	55,425
03.20.01.002	Prepare/Submit 60% Design	55,425	55,425
03.20.01.003	Prepare/Submit 90% Design	55,425	55,425
03.20.01.004	Prepare/Submit CFC Design	33,255	33,255
	Design	199,531	199,531
03.20.02	Remediation		
03.20.02.001	Plans/Submittals/Workplans	110,851	110,851

		CONTRACT COST	TOTAL COST
03.20.02.002	Mobilization	11,426	11,426
03.20.02.003	Install Slurry Wall	125,096	125,096
03.20.02.004	Install Clay/Soil Cap	32,753	32,753
03.20.02.005	Revegetate Disturbed Areas	463	463
03.20.02.006	Demobilization	6,153	6,153
03.20.02.007	Prepare/Submit Final Reports	44,340	44,340
03.20.02.008	Project Support	140,558	140,558
	Remediation	471,640	471,640
03.20.03	Long-Term Activities		
03.20.03.001	Plans/Submittals/Workplans	141,889	141,889
03.20.03.002	Mobilization	20,116	20,116
03.20.03.003	Short-Term Monitor/Maintenance	590	590
03.20.03.004	Long-Term Monitor/Maintenance	2,949	2,949
03.20.03.005	Demobilization	10,832	10,832
03.20.03.006	Prepare/Submit Final Reports	22,170	22,170
03.20.03.007	Project Support	785,581	785,581
	Long-Term Activities	984,127	984,127
	Hex Pits	1,655,299	1,655,299
03.21	Surficial Soils		
03.21.01	Design		
03.21.01.001	Prepare/Submit 30% Design	79,812	79,812
03.21.01.002	Prepare/Submit 60% Design	79,812	79,812
03.21.01.003	Prepare/Submit 90% Design	79,812	79,812
03.21.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.21.02	Remediation		
03.21.02.001	Plans/Submittals/Workplans	173,814	173,814
03.21.02.002	Mobilization	198,653	198,653
03.21.02.003	Excavate HH Soils	1,800,127	1,800,127
03.21.02.005	Backfill w/Borrow Material	611,787	611,787
03.21.02.006	Revegetate Disturbed Areas	127,822	127,822
03.21.02.007	Demobilization	106,967	106,967
03.21.02.008	Prepare/Submit Final Reports	44,340	44,340
03.21.02.009	Project Support	219,102	219,102
03.21.02.010	Potential USFWS Remedial Act. #1	2,490,395	2,490,395
03.21.02.011	Potential USFWS Remedial Act. #2	2,490,395	2,490,395

		CONTRACT COST	TOTAL COST
	Remediation	8,263,404	8,263,404
	Surficial Soils	8,547,182	8,547,182
03.22	Toxic Storage Yards		
03.22.01	Design		
03.22.01.001	Prepare/Submit 30% Design	56,995	56,995
03.22.01.002	Prepare/Submit 60% Design	56,995	56,995
03.22.01.003	Prepare/Submit 90% Design	56,995	56,995
03.22.01.004	Prepare/Submit CFC Design	34,197	34,197
	Design	205,181	205,181
03.22.02	Remediation		
03.22.02.001	Plans/Submittals/Workplans	113,989	113,989
03.22.02.002	Mobilization	69,335	69,335
03.22.02.003	Demolition/Landfill Storage Pads	377,877	377,877
03.22.02.004	Agent Screening	1,602,072	1,602,072
03.22.02.005	Excavate Agent/HH Soil	74,209	74,209
03.22.02.008	Backfill w/Borrow Material	13,521	13,521
03.22.02.009	Revegetate Disturbed Areas	927	927
03.22.02.010	Demobilization	37,333	37,333
03.22.02.011	Prepare/Submit Final Reports	45,596	45,596
03.22.02.012	Project Support	144,537	144,537
	Remediation	2,479,397	2,479,397
	Toxic Storage Yards	2,684,578	2,684,578
03.23	Sand Creek Lateral		
03.23.01	Design		
03.23.01.001	Prepare/Submit 30% Design	155,272	155,272
03.23.01.002	Prepare/Submit 60% Design	155,272	155,272
03.23.01.003	Prepare/Submit 90% Design	155,272	155,272
03.23.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.23.02	Remediation		
03.23.02.001	Plans/Submittals/Workplans	232,908	232,908

		CONTRACT COST	TOTAL COST
03.23.02.002	Mobilization	275,764	275,764
03.23.02.003	Install Gradefill	2,677,552	2,677,552
03.23.02.004	Install Clay/Soil Cap	9,747,160	9,747,160
03.23.02.005	Revegetate Disturbed Areas	152,752	152,752
03.23.02.006	Demobilization	148,489	148,489
03.23.02.007	Prepare/Submit Final Reports	43,131	43,131
03.23.02.008	Project Support	213,127	213,127
	Remediation	13,490,884	13,490,884
03.23.03	Long-Term Activities		
03.23.03.001	Plans/Submittals/Workplans	138,020	138,020
03.23.03.002	Mobilization	44,113	44,113
03.23.03.003	Short-Term Monitor/Maintenance	194,412	194,412
03.23.03.004	Long-Term Monitor/Maintenance	972,060	972,060
03.23.03.005	Demobilization	23,753	23,753
03.23.03.006	Prepare/Submit Final Reports	21,566	21,566
03.23.03.007	Project Support	764,159	764,159
	Long-Term Activities	2,158,082	2,158,082
	Sand Creek Lateral	16,201,045	16,201,045
03.24	Ditch/Drainage Areas (No Action)		
03.25	North Plants		
03.25.01	Design		
03.25.01.001	Prepare/Submit 30% Design	55,425	55,425
03.25.01.002	Prepare/Submit 60% Design	55,425	55,425
03.25.01.003	Prepare/Submit 90% Design	55,425	55,425
03.25.01.004	Prepare/Submit CFC Design	33,255	33,255
	Design	199,531	199,531
03.25.02	Remediation		
03.25.02.001	Plans/Submittals/Workplans	110,851	110,851
03.25.02.002	Mobilization	35,762	35,762
03.25.02.003	Drill/Screen for Agent Soil	256,929	256,929
03.25.02.004	Excavate Agent/HH Soil	7,045	7,045
03.25.02.007	Backfill w/Borrow Material	2,639	2,639
03.25.02.008	Install Soil Cover	778,271	778,271
03.25.02.009	Revegetate Disturbed Areas	80,620	80,620
03.25.02.010	Demobilization	19,257	19,257
03.25.02.011	Prepare/Submit Final Reports	44,340	44,340

		CONTRACT COST	TOTAL COST
03.25.02.012	Project Support	140,558	140,558
	Remediation	1,476,271	1,476,271
03.25.03	Long-Term Activities		
03.25.03.001	Plans/Submittals/Workplans	141,889	141,889
03.25.03.002	Mobilization	25,610	25,610
03.25.03.003	Short-Term Monitor/Maintenance	43,974	43,974
03.25.03.004	Long-Term Monitor/Maintenance	219,872	219,872
03.25.03.005	Demobilization	13,791	13,791
03.25.03.006	Prepare/Submit Final Reports	22,170	22,170
03.25.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,252,887	1,252,887
	North Plants	2,928,690	2,928,690
	Soil Medium Group Costs	444,209,147	444,209,147
04	Water Medium Group Costs		
04.01	Northwest Boundary System		
04.01.01	Long-Term Monitoring/Operations		
04.01.01.001	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Northwest Boundary System	30,861,475	30,861,475
04.02	Irondale System & Linked IRAs		
04.02.01	Long-Term Monitoring/Operations		
04.02.01.001	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Irondale System & Linked IRAs	2,844,461	2,844,461
04.03	North Boundary System		
04.03.01	Long-Term Monitoring/Operations		
04.03.01.001	Long-Term Monitoring/Operations	47,779,513	47,779,513

		CONTRACT COST	TOTAL COST
	Long-Term Monitoring/Operations	47,779,513	47,779,513
	North Boundary System	47,779,513	47,779,513
04.04	Basin A Neck/Bedrock Ridge Syst.		
04.04.01	Design Bedrock Ridge System		
04.04.01.001	Design Bedrock Ridge System	156,681	156,681
	Design Bedrock Ridge System	156,681	156,681
04.04.02	Construction Bedrock Ridge Syst.		
04.04.02.001	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
04.04.03	Long-Term Monitoring/Operations		
04.04.03.001	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Basin A Neck/Bedrock Ridge Syst.	30,962,383	30,962,383
04.05	On-Post Water Supply		
04.05.01	Design		
	Design	800,000	800,000
04.05.02	Construction		
	Construction	14,200,000	14,200,000
04.05.03	Long-Term Monitoring/Operations		
	On-Post Water Supply	15,000,000	15,000,000
04.06	Hydrologic Controls		

		CONTRACT COST	TOTAL COST
04.06.01	Long-Term Monitoring/Operations		
04.07	S. P. Tank Farm Plume Monitoring		
04.07.01	Long-Term Monitoring/Operations		
04.07.01.001	Long-Term Monitoring/Operations	3,829,798	3,829,798
	Long-Term Monitoring/Operations	3,829,798	3,829,798
	S. P. Tank Farm Plume Monitoring	3,829,798	3,829,798
04.08	Deep Well Monitoring/Abandonment		
04.08.01	Long-Term Monitoring/Operations		
04.08.01.001	Long-Term Monitoring/Operations	1,240,916	1,240,916
	Long-Term Monitoring/Operations	1,240,916	1,240,916
	Deep Well Monitoring/Abandonment	1,240,916	1,240,916
04.09	Site-Wide Plume Monitoring		
04.09.01	Long-Term Monitoring/Operations		
04.09.01.001	Long-Term Monitoring/Operations	13,553,021	13,553,021
	Long-Term Monitoring/Operations	13,553,021	13,553,021
	Site-Wide Plume Monitoring	13,553,021	13,553,021
	Water Medium Group Costs	146,071,566	146,071,566
05	Structures Medium Group Costs		
05.01	Significant Contamination Struc.		
05.01.01	Design		
05.01.01.001	Prepare/Submit 30% Design	74,861	74,861
05.01.01.002	Prepare/Submit 60% Design	74,861	74,861
05.01.01.003	Prepare/Submit 90% Design	74,861	74,861
05.01.01.004	Prepare/Submit CFC Design	41,589	41,589

		CONTRACT COST	TOTAL COST
	Design	266,173	266,173
05.01.02	Remediation		
05.01.02.001	Plans/Submittals/Workplans	146,395	146,395
05.01.02.002	Mobilization	166,314	166,314
05.01.02.003	Dust and Safety Sampling	1,531,505	1,531,505
05.01.02.004	Structures Demolition	10,590,564	10,590,564
05.01.02.006	Demobilization	89,554	89,554
05.01.02.007	Prepare/Submit Final Reports	41,589	41,589
05.01.02.008	Project Support	841,603	841,603
	Remediation	13,407,525	13,407,525
	Significant Contamination Struc.	13,673,698	13,673,698
05.02	Agent Structures Demolition		
05.02.01	Design		
05.02.01.001	Prepare/Submit 30% Design	466,573	466,573
05.02.01.002	Prepare/Submit 60% Design	466,573	466,573
05.02.01.003	Prepare/Submit 90% Design	466,573	466,573
05.02.01.004	Prepare/Submit CFC Design	172,805	172,805
	Design	1,572,524	1,572,524
05.02.02	Remediation		
05.02.02.001	Plans/Submittals/Workplans	345,610	345,610
05.02.02.002	Mobilization	602,890	602,890
05.02.02.003	Air Monitoring	4,469,719	4,469,719
05.02.02.004	Structures Demolition	41,595,750	41,595,750
05.02.02.007	Backfill Demolished Areas	304,671	304,671
05.02.02.008	Demobilization	324,633	324,633
05.02.02.009	Prepare/Submit Final Reports	43,201	43,201
05.02.02.010	Project Support	915,753	915,753
	Remediation	48,602,226	48,602,226
	Agent Structures Demolition	50,174,750	50,174,750
05.03	Other Contaminant Structures		
05.03.01	Design		

		CONTRACT COST	TOTAL COST
05.03.01.001	Prepare/Submit 30% Design	305,124	305,124
05.03.01.002	Prepare/Submit 60% Design	305,124	305,124
05.03.01.003	Prepare/Submit 90% Design	305,124	305,124
05.03.01.004	Prepare/Submit CFC Design	169,513	169,513
	Design	1,084,885	1,084,885
05.03.02	Remediation		
05.03.02.001	Plans/Submittals/Workplans	276,307	276,307
05.03.02.002	Mobilization	444,058	444,058
05.03.02.003	Dust and Safety Sampling	4,366,685	4,366,685
05.03.02.004	Structures Demolition	28,097,113	28,097,113
05.03.02.005	Consolidate Demolition Material	1,474,651	1,474,651
05.03.02.006	Demobilization	239,108	239,108
05.03.02.007	Prepare/Submit Final Reports	42,378	42,378
05.03.02.008	Project Support	857,566	857,566
	Remediation	35,797,866	35,797,866
	Other Contaminant Structures	36,882,751	36,882,751
05.04	Post-ROD Removal Actions		
05.04.01	Post-ROD Removal Actions		
05.04.01.001	Non-Agent Process Equipment Rem	14,200,000	14,200,000
05.04.01.002	Agent Process Equipment Removal	4,800,000	4,800,000
05.04.01.003	Asbestos/PCB Removal	11,800,000	11,800,000
05.04.01.004	Tank Removal	5,200,000	5,200,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Structures Medium Group Costs	136,731,198	136,731,198
06	PMRMA Mission Support Costs		
06.01	PMRMA Mission Support Costs		
06.01.01	PMRMA Remediation Mission Costs		
06.01.01.001	Fiscal Year 1996	45,000,000	45,000,000
06.01.01.002	Fiscal Year 1997	45,000,000	45,000,000
06.01.01.003	Fiscal Year 1998	45,000,000	45,000,000
06.01.01.004	Fiscal Year 1999	45,000,000	45,000,000
06.01.01.005	Fiscal Year 2000	45,000,000	45,000,000

		CONTRACT COST	TOTAL COST
06.01.01.006	Fiscal Year 2001	45,000,000	45,000,000
06.01.01.007	Fiscal Year 2002	45,000,000	45,000,000
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	PMRMA Remediation Mission Costs	315,000,000	315,000,000
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	PMRMA Mission Support Costs	315,000,000	315,000,000
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	PMRMA Mission Support Costs	315,000,000	315,000,000
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	Sitewide Alternative 1	1,904,452,337	1,904,452,337

Sitewide Alternative 2
Landfill/Caps

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA002: Sitewide Alternative 2 - Landfill/Caps

TABLE B.5.3-4 Activity Costs for Alternative 2

** PROJECT OWNER SUMMARY - LEVEL 4 **

		CONTRACT COST	TOTAL COST
01	Project Sunk Costs		
01.01	Project Sunk Costs		
01.01.01	Project Sunk Costs		
01.01.01.001	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
02	Fixed Facility/Treatment Costs		
02.01	RCRA Landfill		
02.01.01	Design		
02.01.01.001	Prepare/Submit 30% Design	617,955	617,955
02.01.01.002	Prepare/Submit 60% Design	617,955	617,955
02.01.01.003	Prepare/Submit 90% Design	617,955	617,955
02.01.01.004	Prepare/Submit CFC Design	346,429	346,429
	Design	2,200,294	2,200,294
02.01.02	Construction		
02.01.02.001	Plans/Submittals/Workplans	259,167	259,167
02.01.02.002	Mobilization	2,907,733	2,907,733
02.01.02.003	Construction - Cell 1	5,284,847	5,284,847
02.01.02.004	Operation - Cell 1	5,726,244	5,726,244
02.01.02.005	Closure - Cell 1	3,326,638	3,326,638
02.01.02.006	Construction - Cell 2	5,284,847	5,284,847
02.01.02.007	Operation - Cell 2	5,726,244	5,726,244
02.01.02.008	Closure - Cell 2	3,326,638	3,326,638
02.01.02.009	Construction - Cell 3	5,284,847	5,284,847
02.01.02.010	Operation - Cell 3	5,726,244	5,726,244
02.01.02.011	Closure - Cell 3	3,326,638	3,326,638
02.01.02.012	Construction - Cell 4	5,284,847	5,284,847
02.01.02.013	Operation - Cell 4	5,726,244	5,726,244
02.01.02.014	Closure - Cell 4	3,326,638	3,326,638
02.01.02.015	Demobilization	820,147	820,147
02.01.02.016	Site Closure and Final Reports	37,452	37,452
02.01.02.017	Project Support	1,420,428	1,420,428
	Construction	62,795,843	62,795,843

		CONTRACT COST	TOTAL COST
02.01.03	Long-Term Activities		
02.01.03.001	Plans/Submittals/Workplans	119,846	119,846
02.01.03.002	Mobilization	130,041	130,041
02.01.03.003	Long-Term Monitor/Maintenance	5,359,692	5,359,692
02.01.03.004	Demobilization	70,023	70,023
02.01.03.005	Prepare/Submit Final Reports	18,726	18,726
02.01.03.006	Project Support	663,538	663,538
	Long-Term Activities	6,361,864	6,361,864
	RCRA Landfill	71,358,002	71,358,002
02.02	Borrow Area		
02.02.01	Design		
02.02.01.001	Prepare/Submit 30% Design	269,653	269,653
02.02.01.002	Prepare/Submit 60% Design	269,653	269,653
02.02.01.003	Prepare/Submit 90% Design	269,653	269,653
02.02.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.02.02	Construction		
02.02.02.001	Plans/Submittals/Workplans	259,167	259,167
02.02.02.002	Mobilization	745,492	745,492
02.02.02.003	Strip/Stockpile Topsoil	1,970,134	1,970,134
02.02.02.004	Haul Road Construction	2,378,696	2,378,696
02.02.02.005	Facility Operations	28,964,640	28,964,640
02.02.02.006	Revegetate Disturbed Areas	755,532	755,532
02.02.02.007	Demobilization	401,419	401,419
02.02.02.008	Prepare/Submit Final Reports	37,452	37,452
02.02.02.009	Project Support	960,639	960,639
	Construction	36,473,172	36,473,172
	Borrow Area	37,431,938	37,431,938
02.03	Caustic Agent Treatment Facility		
02.03.01	Design		
02.03.01.001	Prepare/Submit 30% Design	269,653	269,653
02.03.01.002	Prepare/Submit 60% Design	269,653	269,653
02.03.01.003	Prepare/Submit 90% Design	269,653	269,653
02.03.01.004	Prepare/Submit CFC Design	149,807	149,807

		CONTRACT COST	TOTAL COST
	Design	958,766	958,766
02.03.02	Construction		
02.03.02.001	Plans/Submittals/Workplans	202,240	202,240
02.03.02.002	Mobilization	257,870	257,870
02.03.02.003	Construction	2,632,257	2,632,257
02.03.02.004	Systems Testing	440,804	440,804
02.03.02.005	Facility Operations	5,230,906	5,230,906
02.03.02.006	Demobilization	138,853	138,853
02.03.02.007	Prepare/Submit Final Reports	37,452	37,452
02.03.02.008	Project Support	721,817	721,817
	Construction	9,662,199	9,662,199
	Caustic Agent Treatment Facility	10,620,966	10,620,966
	Fixed Facility/Treatment Costs	119,410,905	119,410,905
03	Soil Medium Group Costs		
03.01	Basin A		
03.01.01	Design		
03.01.01.001	Prepare/Submit 30% Design	155,272	155,272
03.01.01.002	Prepare/Submit 60% Design	155,272	155,272
03.01.01.003	Prepare/Submit 90% Design	155,272	155,272
03.01.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.01.02	Remediation		
03.01.02.001	Plans/Submittals/Workplans	232,908	232,908
03.01.02.002	Mobilization	962,069	962,069
03.01.02.003	Install Gradefill	24,519,019	24,519,019
03.01.02.004	Install Clay/Soil Cap	19,628,169	19,628,169
03.01.02.005	Revegetate Disturbed Areas	333,695	333,695
03.01.02.006	Demobilization	518,036	518,036
03.01.02.007	Prepare/Submit Final Reports	43,131	43,131
03.01.02.008	Project Support	829,153	829,153
	Remediation	47,066,180	47,066,180
03.01.03	Long-Term Activities		

		CONTRACT COST	TOTAL COST
03.01.03.001	Plans/Submittals/Workplans	138,020	138,020
03.01.03.002	Mobilization	73,274	73,274
03.01.03.003	Short-Term Monitor/Maintenance	424,702	424,702
03.01.03.004	Long-Term Monitor/Maintenance	2,123,511	2,123,511
03.01.03.005	Demobilization	39,456	39,456
03.01.03.006	Prepare/Submit Final Reports	21,566	21,566
03.01.03.007	Project Support	764,159	764,159
	Long-Term Activities	3,584,687	3,584,687
	Basin A	51,202,945	51,202,945
03.02	Former Basin F		
03.02.01	Design		
03.02.01.001	Prepare/Submit 30% Design	155,272	155,272
03.02.01.002	Prepare/Submit 60% Design	155,272	155,272
03.02.01.003	Prepare/Submit 90% Design	155,272	155,272
03.02.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.02.02	Remediation		
03.02.02.001	Plans/Submittals/Workplans	232,908	232,908
03.02.02.002	Mobilization	587,336	587,336
03.02.02.003	Install Gradefill	13,240,261	13,240,261
03.02.02.004	Install Clay/Soil Cap	13,259,079	13,259,079
03.02.02.005	Revegetate Disturbed Areas	225,400	225,400
03.02.02.006	Demobilization	316,258	316,258
03.02.02.007	Prepare/Submit Final Reports	43,131	43,131
03.02.02.008	Project Support	829,153	829,153
	Remediation	28,733,526	28,733,526
03.02.03	Long-Term Activities		
03.02.03.001	Plans/Submittals/Workplans	138,020	138,020
03.02.03.002	Mobilization	55,821	55,821
03.02.03.003	Short-Term Monitor/Maintenance	286,873	286,873
03.02.03.004	Long-Term Monitor/Maintenance	1,434,366	1,434,366
03.02.03.005	Demobilization	30,057	30,057
03.02.03.006	Prepare/Submit Final Reports	21,566	21,566
03.02.03.007	Project Support	764,159	764,159
	Long-Term Activities	2,730,861	2,730,861

		CONTRACT COST	TOTAL COST
	Former Basin F	32,016,466	32,016,466
03.03	Chemical Sewers		
03.03.01	Design		
03.03.01.001	Prepare/Submit 30% Design	325,389	325,389
03.03.01.002	Prepare/Submit 60% Design	325,389	325,389
03.03.01.003	Prepare/Submit 90% Design	325,389	325,389
03.03.01.004	Prepare/Submit CFC Design	180,772	180,772
	Design	1,156,940	1,156,940
03.03.02	Remediation		
03.03.02.001	Plans/Submittals/Workplans	312,735	312,735
03.03.02.002	Mobilization	232,994	232,994
03.03.02.003	Survey Lines	22,544	22,544
03.03.02.004	Excavate/Strip Overburden	2,686,647	2,686,647
03.03.02.005	Excavate Sewers Outside S Plants	1,877,913	1,877,913
03.03.02.008	Backfill w/Borrow Material	442,448	442,448
03.03.02.009	Backfill w/Overburden	1,460,912	1,460,912
03.03.02.010	Revegetate Disturbed Areas	39,188	39,188
03.03.02.011	Sewer Plugging (South Plants)	132,831	132,831
03.03.02.012	Demobilization	125,458	125,458
03.03.02.013	Prepare/Submit Final Reports	45,193	45,193
03.03.02.014	Project Support	952,916	952,916
	Remediation	8,331,778	8,331,778
	Chemical Sewers	9,488,718	9,488,718
03.04	South Plants Central Processing		
03.04.01	Design		
03.04.01.001	Prepare/Submit 30% Design	155,272	155,272
03.04.01.002	Prepare/Submit 60% Design	155,272	155,272
03.04.01.003	Prepare/Submit 90% Design	155,272	155,272
03.04.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.04.02	Remediation		
03.04.02.001	Plans/Submittals/Workplans	232,908	232,908

		CONTRACT COST	TOTAL COST
03.04.02.002	Mobilization	274,083	274,083
03.04.02.003	Install Gradefill	4,930,580	4,930,580
03.04.02.004	Install Clay/Soil Cap	6,841,094	6,841,094
03.04.02.005	Revegetate Disturbed Areas	110,084	110,084
03.04.02.006	Demobilization	147,582	147,582
03.04.02.007	Prepare/Submit Final Reports	43,131	43,131
03.04.02.008	Project Support	829,153	829,153
	Remediation	13,408,615	13,408,615
03.04.03	Long-Term Activities		
03.04.03.001	Plans/Submittals/Workplans	138,020	138,020
03.04.03.002	Mobilization	37,237	37,237
03.04.03.003	Short-Term Monitor/Maintenance	140,106	140,106
03.04.03.004	Long-Term Monitor/Maintenance	700,531	700,531
03.04.03.005	Demobilization	20,050	20,050
03.04.03.006	Prepare/Submit Final Reports	21,566	21,566
03.04.03.007	Project Support	764,159	764,159
	Long-Term Activities	1,821,669	1,821,669
	South Plants Central Processing	15,782,363	15,782,363
03.05	South Plants Balance of Areas		
03.05.01	Design		
03.05.01.001	Prepare/Submit 30% Design	325,532	325,532
03.05.01.002	Prepare/Submit 60% Design	325,532	325,532
03.05.01.003	Prepare/Submit 90% Design	325,532	325,532
03.05.01.004	Prepare/Submit CFC Design	180,851	180,851
	Design	1,157,446	1,157,446
03.05.02	Remediation		
03.05.02.001	Plans/Submittals/Workplans	312,872	312,872
03.05.02.002	Mobilization	788,849	788,849
03.05.02.003	UXO Clearance by Geophysics	19,003	19,003
03.05.02.004	Exca. UXO and Transport Off-Post	12,474	12,474
03.05.02.005	Drill/Screen for Agent Soils	451,952	451,952
03.05.02.006	Excavate Agent/HH/Biota Soil	14,013,569	14,013,569
03.05.02.009	Backfill w/Borrow Material	6,248,877	6,248,877
03.05.02.010	Revegetate Disturbed Areas	901,330	901,330
03.05.02.011	Demobilization	424,765	424,765
03.05.02.012	Prepare/Submit Final Reports	45,213	45,213
03.05.02.013	Project Support	1,698,046	1,698,046

		CONTRACT COST	TOTAL COST
	Remediation	24,916,949	24,916,949
	South Plants Balance of Areas	26,074,395	26,074,395
03.06	South Plants Ditches		
03.06.01	Design		
03.06.01.001	Prepare/Submit 30% Design	79,101	79,101
03.06.01.002	Prepare/Submit 60% Design	79,101	79,101
03.06.01.003	Prepare/Submit 90% Design	79,101	79,101
03.06.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.06.02	Remediation		
03.06.02.001	Plans/Submittals/Workplans	172,265	172,265
03.06.02.002	Mobilization	64,080	64,080
03.06.02.003	Excavate HH/Biota Soils	1,523,564	1,523,564
03.06.02.005	Backfill w/Borrow Material	530,679	530,679
03.06.02.006	Revegetate Disturbed Areas	58,984	58,984
03.06.02.007	Demobilization	34,505	34,505
03.06.02.008	Prepare/Submit Final Reports	43,945	43,945
03.06.02.009	Project Support	217,149	217,149
	Remediation	2,645,171	2,645,171
	South Plants Ditches	2,926,420	2,926,420
03.07	Complex Trenches		
03.07.01	Design		
03.07.01.001	Prepare/Submit 30% Design	164,230	164,230
03.07.01.002	Prepare/Submit 60% Design	164,230	164,230
03.07.01.003	Prepare/Submit 90% Design	164,230	164,230
03.07.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.07.02	Remediation		
03.07.02.001	Plans/Submittals/Workplans	246,344	246,344
03.07.02.002	Mobilization	993,033	993,033
03.07.02.003	UXO Clearance by Geophysics	49,427	49,427

		CONTRACT COST	TOTAL COST
03.07.02.004	Exca. UXO and Transport Off-Post	573,807	573,807
03.07.02.005	Install Slurry Walls	2,491,362	2,491,362
03.07.02.006	Install Gradefill	13,233,470	13,233,470
03.07.02.007	Install Clay/Soil Cap	12,115,714	12,115,714
03.07.02.008	Revegetate Disturbed Areas	205,944	205,944
03.07.02.009	Demobilization	534,711	534,711
03.07.02.010	Prepare/Submit Final Reports	45,619	45,619
03.07.02.011	Project Support	876,985	876,985
	Remediation	31,366,417	31,366,417
03.07.03	Long-Term Activities		
03.07.03.001	Plans/Submittals/Workplans	145,982	145,982
03.07.03.002	Mobilization	142,493	142,493
03.07.03.003	Short-Term Monitor/Maintenance	262,111	262,111
03.07.03.004	Long-Term Monitor/Maintenance	5,512,661	5,512,661
03.07.03.005	Demobilization	76,726	76,726
03.07.03.006	Prepare/Submit Final Reports	22,810	22,810
03.07.03.007	Project Support	808,242	808,242
	Long-Term Activities	6,971,025	6,971,025
	Complex Trenches	38,921,369	38,921,369
03.08	Sanitary Landfill		
03.08.01	Design		
03.08.01.001	Prepare/Submit 30% Design	158,202	158,202
03.08.01.002	Prepare/Submit 60% Design	158,202	158,202
03.08.01.003	Prepare/Submit 90% Design	158,202	158,202
03.08.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.08.02	Remediation		
03.08.02.001	Plans/Submittals/Workplans	237,303	237,303
03.08.02.002	Mobilization	370,011	370,011
03.08.02.003	Excavate HH Soils/Debris	9,922,599	9,922,599
03.08.02.005	Backfill w/Borrow Material	3,588,713	3,588,713
03.08.02.006	Revegetate Disturbed Areas	67,179	67,179
03.08.02.007	Demobilization	199,236	199,236
03.08.02.008	Prepare/Submit Final Reports	43,945	43,945
03.08.02.009	Project Support	844,800	844,800
	Remediation	15,273,786	15,273,786

		CONTRACT COST	TOTAL COST
	Sanitary Landfill	15,836,283	15,836,283
03.09	Section 36 Balance of Areas		
03.09.01	Design		
03.09.01.001	Prepare/Submit 30% Design	328,459	328,459
03.09.01.002	Prepare/Submit 60% Design	328,459	328,459
03.09.01.003	Prepare/Submit 90% Design	328,459	328,459
03.09.01.004	Prepare/Submit CFC Design	182,477	182,477
	Design	1,167,855	1,167,855
03.09.02	Remediation		
03.09.02.001	Plans/Submittals/Workplans	315,686	315,686
03.09.02.002	Mobilization	473,522	473,522
03.09.02.003	UXO Clearance by Geophysics	296,839	296,839
03.09.02.004	Exca. UXO and Transport Off-Post	688,568	688,568
03.09.02.005	Drill/Screen for Agent Soils	894,005	894,005
03.09.02.006	Excavate Agent/HH/Biota Soil	8,152,417	8,152,417
03.09.02.009	Backfill w/Borrow Material	2,562,906	2,562,906
03.09.02.010	Revegetate Disturbed Areas	395,357	395,357
03.09.02.011	Demobilization	254,973	254,973
03.09.02.012	Prepare/Submit Final Reports	45,619	45,619
03.09.02.013	Project Support	876,985	876,985
	Remediation	14,956,879	14,956,879
	Section 36 Balance of Areas	16,124,733	16,124,733
03.10	Basin F Wastepile		
03.10.01	Design		
03.10.01.001	Prepare/Submit 30% Design	310,544	310,544
03.10.01.002	Prepare/Submit 60% Design	310,544	310,544
03.10.01.003	Prepare/Submit 90% Design	310,544	310,544
03.10.01.004	Prepare/Submit CFC Design	172,525	172,525
	Design	1,104,157	1,104,157
03.10.02	Remediation		
03.10.02.001	Plans/Submittals/Workplans	298,468	298,468
03.10.02.002	Mobilization	135,078	135,078

		CONTRACT COST	TOTAL COST
03.10.02.003	Install RCRA (Composite) Cap	5,192,142	5,192,142
03.10.02.004	Revegetate Disturbed Areas	37,567	37,567
03.10.02.005	Demobilization	72,735	72,735
03.10.02.006	Prepare/Submit Final Reports	43,131	43,131
03.10.02.007	Project Support	829,153	829,153
	Remediation	6,608,273	6,608,273
03.10.03	Long-Term Activities		
03.10.03.001	Plans/Submittals/Workplans	138,020	138,020
03.10.03.002	Mobilization	129,978	129,978
03.10.03.003	Short-Term Monitor/Maintenance	872,504	872,504
03.10.03.004	Long-Term Monitor/Maintenance	4,362,520	4,362,520
03.10.03.005	Demobilization	69,988	69,988
03.10.03.006	Prepare/Submit Final Reports	21,566	21,566
03.10.03.007	Project Support	764,159	764,159
	Long-Term Activities	6,358,735	6,358,735
	Basin F Wastepile	14,071,165	14,071,165
03.11	Secondary Basins		
03.11.01	Design		
03.11.01.001	Prepare/Submit 30% Design	158,202	158,202
03.11.01.002	Prepare/Submit 60% Design	158,202	158,202
03.11.01.003	Prepare/Submit 90% Design	158,202	158,202
03.11.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.11.02	Remediation		
03.11.02.001	Plans/Submittals/Workplans	237,303	237,303
03.11.02.002	Mobilization	163,966	163,966
03.11.02.003	Excavate HH/Biota Soil	3,609,532	3,609,532
03.11.02.005	Backfill w/Borrow Material	1,524,933	1,524,933
03.11.02.006	Revegetate Disturbed Areas	255,627	255,627
03.11.02.007	Demobilization	88,289	88,289
03.11.02.008	Prepare/Submit Final Reports	43,945	43,945
03.11.02.009	Project Support	844,800	844,800
	Remediation	6,768,397	6,768,397
	Secondary Basins	7,330,894	7,330,894

		CONTRACT COST	TOTAL COST
03.12	Munitions Testing		
03.12.01	Design		
03.12.01.001	Prepare/Submit 30% Design	159,723	159,723
03.12.01.002	Prepare/Submit 60% Design	159,723	159,723
03.12.01.003	Prepare/Submit 90% Design	159,723	159,723
03.12.01.004	Prepare/Submit CFC Design	88,735	88,735
	Design	567,906	567,906
03.12.02	Remediation		
03.12.02.001	Plans/Submittals/Workplans	239,585	239,585
03.12.02.002	Mobilization	76,176	76,176
03.12.02.003	UXO Clearance by Geophysics	330,800	330,800
03.12.02.004	Exca. UXO and Transport Off-Post	110,898	110,898
03.12.02.005	Excavate Debris from Surf. Soil	1,524,118	1,524,118
03.12.02.007	Revegetate Disturbed Areas	137,833	137,833
03.12.02.008	Demobilization	41,018	41,018
03.12.02.009	Prepare/Submit Final Reports	44,368	44,368
03.12.02.010	Project Support	219,237	219,237
	Remediation	2,724,034	2,724,034
	Munitions Testing	3,291,940	3,291,940
03.13	Shell Trenches		
03.13.01	Design		
03.13.01.001	Prepare/Submit 30% Design	159,625	159,625
03.13.01.002	Prepare/Submit 60% Design	159,625	159,625
03.13.01.003	Prepare/Submit 90% Design	159,625	159,625
03.13.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.13.02	Remediation		
03.13.02.001	Plans/Submittals/Workplans	239,437	239,437
03.13.02.002	Mobilization	52,941	52,941
03.13.02.003	Upgrade Existing Slurry Wall	598,676	598,676
03.13.02.004	Install Clay/Soil Cap	985,657	985,657
03.13.02.005	Revegetate Disturbed Areas	16,668	16,668
03.13.02.006	Demobilization	28,507	28,507
03.13.02.007	Prepare/Submit Final Reports	44,340	44,340

		CONTRACT COST	TOTAL COST
03.13.02.008	Project Support	219,102	219,102
	Remediation	2,185,328	2,185,328
03.13.03	Long-Term Activities		
03.13.03.001	Plans/Submittals/Workplans	141,889	141,889
03.13.03.002	Mobilization	54,255	54,255
03.13.03.003	Short-Term Monitor/Maintenance	21,214	21,214
03.13.03.004	Long-Term Monitor/Maintenance	1,599,893	1,599,893
03.13.03.005	Demobilization	29,214	29,214
03.13.03.006	Prepare/Submit Final Reports	22,170	22,170
03.13.03.007	Project Support	785,581	785,581
	Long-Term Activities	2,654,217	2,654,217
	Shell Trenches	5,407,100	5,407,100
03.14	Lake Sediments		
03.14.01	Design		
03.14.01.001	Prepare/Submit 30% Design	159,625	159,625
03.14.01.002	Prepare/Submit 60% Design	159,625	159,625
03.14.01.003	Prepare/Submit 90% Design	159,625	159,625
03.14.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.14.02	Remediation		
03.14.02.001	Plans/Submittals/Workplans	239,437	239,437
03.14.02.002	Mobilization	47,091	47,091
03.14.02.003	Grub & Clear Aquatic Vegetation	15,664	15,664
03.14.02.004	Install Cutoff Wall	667,969	667,969
03.14.02.005	Excavate HH Soils	519,508	519,508
03.14.02.007	Backfill w/Borrow Material	75,238	75,238
03.14.02.008	Revegetate or Restore Wetlands	90,192	90,192
03.14.02.009	Demobilization	25,357	25,357
03.14.02.010	Prepare/Submit Final Reports	44,340	44,340
03.14.02.011	Project Support	219,102	219,102
	Remediation	1,943,898	1,943,898
	Lake Sediments	2,511,454	2,511,454
03.15	Burial Trenches		

		CONTRACT COST	TOTAL COST
03.15.01	Design		
03.15.01.001	Prepare/Submit 30% Design	164,230	164,230
03.15.01.002	Prepare/Submit 60% Design	164,230	164,230
03.15.01.003	Prepare/Submit 90% Design	164,230	164,230
03.15.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.15.02	Remediation		
03.15.02.001	Plans/Submittals/Workplans	246,344	246,344
03.15.02.002	Mobilization	117,115	117,115
03.15.02.003	UXO Clearance by Geophysics	216,714	216,714
03.15.02.004	Exca. UXO and Transport Off-Post	138,192	138,192
03.15.02.005	Drill/Screen for Agent Soil	67,379	67,379
03.15.02.006	Excavate Agent/HH/UXO Deb. Soil	1,685,080	1,685,080
03.15.02.009	Backfill w/Borrow Material	152,455	152,455
03.15.02.010	Revegetate Disturbed Areas	90,298	90,298
03.15.02.011	Demobilization	63,062	63,062
03.15.02.012	Prepare/Submit Final Reports	45,619	45,619
03.15.02.013	Project Support	876,985	876,985
	Remediation	3,699,244	3,699,244
	Burial Trenches	4,283,171	4,283,171
03.16	Section 36 Lime Basins		
03.16.01	Design		
03.16.01.001	Prepare/Submit 30% Design	155,272	155,272
03.16.01.002	Prepare/Submit 60% Design	155,272	155,272
03.16.01.003	Prepare/Submit 90% Design	155,272	155,272
03.16.01.004	Prepare/Submit CFC Design	86,262	86,262
	Design	552,079	552,079
03.16.02	Remediation		
03.16.02.001	Plans/Submittals/Workplans	232,908	232,908
03.16.02.002	Mobilization	68,893	68,893
03.16.02.003	Install Gradefill	813,999	813,999
03.16.02.004	Install Clay/Soil Cap	1,930,213	1,930,213
03.16.02.005	Revegetate Disturbed Areas	31,055	31,055
03.16.02.006	Demobilization	37,097	37,097
03.16.02.007	Prepare/Submit Final Reports	43,131	43,131
03.16.02.008	Project Support	213,127	213,127

		CONTRACT COST	TOTAL COST
	Remediation	3,370,424	3,370,424
03.16.03	Long-Term Activities		
03.16.03.001	Plans/Submittals/Workplans	138,020	138,020
03.16.03.002	Mobilization	24,500	24,500
03.16.03.003	Short-Term Monitor/Maintenance	39,525	39,525
03.16.03.004	Long-Term Monitor/Maintenance	197,624	197,624
03.16.03.005	Demobilization	13,193	13,193
03.16.03.006	Prepare/Submit Final Reports	21,566	21,566
03.16.03.007	Project Support	764,159	764,159
	Long-Term Activities	1,198,585	1,198,585
	Section 36 Lime Basins	5,121,087	5,121,087
03.17	Buried Sediments		
03.17.01	Design		
03.17.01.001	Prepare/Submit 30% Design	79,812	79,812
03.17.01.002	Prepare/Submit 60% Design	79,812	79,812
03.17.01.003	Prepare/Submit 90% Design	79,812	79,812
03.17.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.17.02	Remediation		
03.17.02.001	Plans/Submittals/Workplans	173,814	173,814
03.17.02.002	Mobilization	26,284	26,284
03.17.02.003	Excavate HH Soils	438,682	438,682
03.17.02.005	Backfill w/Borrow Material	164,590	164,590
03.17.02.006	Revegetate Disturbed Areas	4,050	4,050
03.17.02.007	Demobilization	14,154	14,154
03.17.02.008	Prepare/Submit Final Reports	44,340	44,340
03.17.02.009	Project Support	219,102	219,102
	Remediation	1,085,017	1,085,017
	Buried Sediments	1,368,794	1,368,794
03.18	Buried M-1 Pits		
03.18.01	Design		

		CONTRACT COST	TOTAL COST
03.18.01.001	Prepare/Submit 30% Design	159,625	159,625
03.18.01.002	Prepare/Submit 60% Design	159,625	159,625
03.18.01.003	Prepare/Submit 90% Design	159,625	159,625
03.18.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.18.02	Remediation		
03.18.02.001	Plans/Submittals/Workplans	239,437	239,437
03.18.02.002	Mobilization	25,028	25,028
03.18.02.003	Install Slurry Wall	158,084	158,084
03.18.02.004	Install Gradefill	46,348	46,348
03.18.02.005	Install Clay/Soil Cap	282,830	282,830
03.18.02.006	Revegetate Disturbed Areas	4,478	4,478
03.18.02.007	Demobilization	13,476	13,476
03.18.02.008	Prepare/Submit Final Reports	44,340	44,340
03.18.02.009	Project Support	219,102	219,102
	Remediation	1,033,124	1,033,124
03.18.03	Long-Term Activities		
03.18.03.001	Plans/Submittals/Workplans	141,889	141,889
03.18.03.002	Mobilization	20,764	20,764
03.18.03.003	Short-Term Monitor/Maintenance	5,700	5,700
03.18.03.004	Long-Term Monitor/Maintenance	28,499	28,499
03.18.03.005	Demobilization	11,181	11,181
03.18.03.006	Prepare/Submit Final Reports	22,170	22,170
03.18.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,015,783	1,015,783
	Buried M-1 Pits	2,616,463	2,616,463
03.19	Sanitary/Process Water Sewers		
03.19.01	Design		
03.19.01.001	Prepare/Submit 30% Design	8,705	8,705
03.19.01.002	Prepare/Submit 60% Design	8,705	8,705
03.19.01.003	Prepare/Submit 90% Design	8,705	8,705
03.19.01.004	Prepare/Submit CFC Design	5,223	5,223
	Design	31,336	31,336
03.19.02	Remediation		

		CONTRACT COST	TOTAL COST
03.19.02.001	Plans/Submittals/Workplans	54,403	54,403
03.19.02.002	Mobilization	6,389	6,389
03.19.02.003	Plugging of Manholes	133,516	133,516
03.19.02.004	Demobilization	3,441	3,441
03.19.02.005	Prepare/Submit Final Reports	43,523	43,523
03.19.02.006	Project Support	71,253	71,253
	Remediation	312,523	312,523
	Sanitary/Process Water Sewers	343,860	343,860
03.20	Hex Pit		
03.20.01	Design		
03.20.01.001	Prepare/Submit 30% Design	55,425	55,425
03.20.01.002	Prepare/Submit 60% Design	55,425	55,425
03.20.01.003	Prepare/Submit 90% Design	55,425	55,425
03.20.01.004	Prepare/Submit CFC Design	33,255	33,255
	Design	199,531	199,531
03.20.02	Remediation		
03.20.02.001	Plans/Submittals/Workplans	110,851	110,851
03.20.02.002	Mobilization	11,426	11,426
03.20.02.003	Install Slurry Wall	125,096	125,096
03.20.02.004	Install Clay/Soil Cap	32,753	32,753
03.20.02.005	Revegetate Disturbed Areas	463	463
03.20.02.006	Demobilization	6,153	6,153
03.20.02.007	Prepare/Submit Final Reports	44,340	44,340
03.20.02.008	Project Support	140,558	140,558
	Remediation	471,640	471,640
03.20.03	Long-Term Activities		
03.20.03.001	Plans/Submittals/Workplans	141,889	141,889
03.20.03.002	Mobilization	20,116	20,116
03.20.03.003	Short-Term Monitor/Maintenance	590	590
03.20.03.004	Long-Term Monitor/Maintenance	2,949	2,949
03.20.03.005	Demobilization	10,832	10,832
03.20.03.006	Prepare/Submit Final Reports	22,170	22,170
03.20.03.007	Project Support	785,581	785,581
	Long-Term Activities	984,127	984,127

		CONTRACT COST	TOTAL COST
	Hex Pit	1,655,299	1,655,299
03.21	Surficial Soils		
03.21.01	Design		
03.21.01.001	Prepare/Submit 30% Design	79,812	79,812
03.21.01.002	Prepare/Submit 60% Design	79,812	79,812
03.21.01.003	Prepare/Submit 90% Design	79,812	79,812
03.21.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.21.02	Remediation		
03.21.02.001	Plans/Submittals/Workplans	173,814	173,814
03.21.02.002	Mobilization	198,653	198,653
03.21.02.003	Excavate HH Soils	1,800,127	1,800,127
03.21.02.005	Backfill w/Borrow Material	611,787	611,787
03.21.02.006	Revegetate Disturbed Areas	127,822	127,822
03.21.02.007	Demobilization	106,967	106,967
03.21.02.008	Prepare/Submit Final Reports	44,340	44,340
03.21.02.009	Project Support	219,102	219,102
03.21.02.010	Potential USFWS Remedial Act. #1	2,490,395	2,490,395
03.21.02.011	Potential USFWS Remedial Act. #2	2,490,395	2,490,395
	Remediation	8,263,404	8,263,404
	Surficial Soils	8,547,182	8,547,182
03.22	Toxic Storage Yards		
03.22.01	Design		
03.22.01.001	Prepare/Submit 30% Design	56,995	56,995
03.22.01.002	Prepare/Submit 60% Design	56,995	56,995
03.22.01.003	Prepare/Submit 90% Design	56,995	56,995
03.22.01.004	Prepare/Submit CFC Design	34,197	34,197
	Design	205,181	205,181
03.22.02	Remediation		
03.22.02.001	Plans/Submittals/Workplans	113,989	113,989
03.22.02.002	Mobilization	69,335	69,335
03.22.02.003	Demolition/Landfill Storage Pads	377,877	377,877

		CONTRACT COST	TOTAL COST
03.22.02.004	Agent Screening	1,602,072	1,602,072
03.22.02.005	Excavate Agent/HH Soil	74,209	74,209
03.22.02.008	Backfill w/Borrow Material	13,521	13,521
03.22.02.009	Revegetate Disturbed Areas	927	927
03.22.02.010	Demobilization	37,333	37,333
03.22.02.011	Prepare/Submit Final Reports	45,596	45,596
03.22.02.012	Project Support	144,537	144,537
	Remediation	2,479,397	2,479,397
	Toxic Storage Yards	2,684,578	2,684,578
03.23	Sand Creek Lateral		
03.23.01	Design		
03.23.01.001	Prepare/Submit 30% Design	79,101	79,101
03.23.01.002	Prepare/Submit 60% Design	79,101	79,101
03.23.01.003	Prepare/Submit 90% Design	79,101	79,101
03.23.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.23.02	Remediation		
03.23.02.001	Plans/Submittals/Workplans	172,265	172,265
03.23.02.002	Mobilization	136,120	136,120
03.23.02.003	Excavate HH/Biota Soils	3,824,786	3,824,786
03.23.02.005	Backfill w/Borrow Material	995,765	995,765
03.23.02.006	Revegetate Disturbed Areas	155,635	155,635
03.23.02.007	Demobilization	73,296	73,296
03.23.02.008	Prepare/Submit Final Reports	43,945	43,945
03.23.02.009	Project Support	217,149	217,149
	Remediation	5,618,961	5,618,961
	Sand Creek Lateral	5,900,210	5,900,210
03.24	Ditches/Drain. Areas (No Action)		
03.25	North Plants		
03.25.01	Design		
03.25.01.001	Prepare/Submit 30% Design	55,425	55,425
03.25.01.002	Prepare/Submit 60% Design	55,425	55,425
03.25.01.003	Prepare/Submit 90% Design	55,425	55,425
03.25.01.004	Prepare/Submit CFC Design	33,255	33,255

		CONTRACT COST	TOTAL COST
	Design	199,531	199,531
03.25.02	Remediation		
03.25.02.001	Plans/Submittals/Workplans	110,851	110,851
03.25.02.002	Mobilization	35,762	35,762
03.25.02.003	Drill/Screen for Agent Soil	256,929	256,929
03.25.02.004	Excavate Agent/HH Soil	7,045	7,045
03.25.02.007	Backfill w/Borrow Material	2,639	2,639
03.25.02.008	Install Soil Cover	778,271	778,271
03.25.02.009	Revegetate Disturbed Areas	80,620	80,620
03.25.02.010	Demobilization	19,257	19,257
03.25.02.011	Prepare/Submit Final Reports	44,340	44,340
03.25.02.012	Project Support	140,558	140,558
	Remediation	1,476,271	1,476,271
03.25.03	Long-Term Activities		
03.25.03.001	Plans/Submittals/Workplans	141,889	141,889
03.25.03.002	Mobilization	25,610	25,610
03.25.03.003	Short-Term Monitor/Maintenance	43,974	43,974
03.25.03.004	Long-Term Monitor/Maintenance	219,872	219,872
03.25.03.005	Demobilization	13,791	13,791
03.25.03.006	Prepare/Submit Final Reports	22,170	22,170
03.25.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,252,887	1,252,887
	North Plants	2,928,690	2,928,690
	Soil Medium Group Costs	276,435,579	276,435,579
04	Water Medium Group Costs		
04.01	Northwest Boundary System		
04.01.01	Long-Term Monitoring/Operations		
04.01.01.001	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Northwest Boundary System	30,861,475	30,861,475
04.02	Irondale System & Linked IRAs		

		CONTRACT COST	TOTAL COST
04.02.01	Long-Term Monitoring/Operations		
04.02.01.001	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Irondale System & Linked IRAs	2,844,461	2,844,461
04.03	North Boundary System		
04.03.01	Long-Term Monitoring/Operations		
04.03.01.001	Long-Term Monitoring/Operations	47,779,513	47,779,513
	Long-Term Monitoring/Operations	47,779,513	47,779,513
	North Boundary System	47,779,513	47,779,513
04.04	Basin A Neck/Bedrock Ridge Syst.		
04.04.01	Design Bedrock Ridge System		
04.04.01.001	Design Bedrock Ridge System	156,681	156,681
	Design Bedrock Ridge System	156,681	156,681
04.04.02	Construction Bedrock Ridge Syst.		
04.04.02.001	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
04.04.03	Long-Term Monitoring/Operations		
04.04.03.001	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Basin A Neck/Bedrock Ridge Syst.	30,962,383	30,962,383
04.05	On-Post Water Supply		
04.05.01	Design		
	Design	800,000	800,000

	CONTRACT COST	TOTAL COST
04.05.02 Construction		
Construction	14,200,000	14,200,000
04.05.03 Long-Term Monitoring/Operations		
On-Post Water Supply	15,000,000	15,000,000
04.06 Hydrologic Controls		
04.06.01 Long-Term Monitoring/Operations		
04.07 S. P. Tank Farm Plume Monitoring		
04.07.01 Long-Term Monitoring/Operations		
04.07.01.001 Long-Term Monitoring/Operations	3,829,798	3,829,798
Long-Term Monitoring/Operations	3,829,798	3,829,798
S. P. Tank Farm Plume Monitoring	3,829,798	3,829,798
04.08 Deep Well Monitoring/Abandonment		
04.08.01 Long-Term Monitoring/Operations		
04.08.01.001 Long-Term Monitoring/Operations	1,240,916	1,240,916
Long-Term Monitoring/Operations	1,240,916	1,240,916
Deep Well Monitoring/Abandonment	1,240,916	1,240,916
04.09 Site-Wide Plume Monitoring		
04.09.01 Long-Term Monitoring/Operations		
04.09.01.001 Long-Term Monitoring/Operations	13,553,021	13,553,021
Long-Term Monitoring/Operations	13,553,021	13,553,021
Site-Wide Plume Monitoring	13,553,021	13,553,021
Water Medium Group Costs	146,071,566	146,071,566

		CONTRACT COST	TOTAL COST
05	Structures Medium Group Costs		
05.01	Significant Contamination Struc.		
05.01.01	Design		
05.01.01.001	Prepare/Submit 30% Design	74,861	74,861
05.01.01.002	Prepare/Submit 60% Design	74,861	74,861
05.01.01.003	Prepare/Submit 90% Design	74,861	74,861
05.01.01.004	Prepare/Submit CFC Design	41,589	41,589
	Design	266,173	266,173
05.01.02	Remediation		
05.01.02.001	Plans/Submittals/Workplans	146,395	146,395
05.01.02.002	Mobilization	166,314	166,314
05.01.02.003	Dust and Safety Sampling	1,531,505	1,531,505
05.01.02.004	Structures Demolition	10,590,564	10,590,564
05.01.02.006	Demobilization	89,554	89,554
05.01.02.007	Prepare/Submit Final Reports	41,589	41,589
05.01.02.008	Project Support	841,603	841,603
	Remediation	13,407,525	13,407,525
	Significant Contamination Struc.	13,673,698	13,673,698
05.02	Agent Structures Demolition		
05.02.01	Design		
05.02.01.001	Prepare/Submit 30% Design	466,573	466,573
05.02.01.002	Prepare/Submit 60% Design	466,573	466,573
05.02.01.003	Prepare/Submit 90% Design	466,573	466,573
05.02.01.004	Prepare/Submit CFC Design	172,805	172,805
	Design	1,572,524	1,572,524
05.02.02	Remediation		
05.02.02.001	Plans/Submittals/Workplans	345,610	345,610
05.02.02.002	Mobilization	602,890	602,890
05.02.02.003	Air Monitoring	4,469,719	4,469,719
05.02.02.004	Structures Demolition	41,595,750	41,595,750
05.02.02.007	Backfill Demolished Areas	304,671	304,671
05.02.02.008	Demobilization	324,633	324,633
05.02.02.009	Prepare/Submit Final Reports	43,201	43,201

		CONTRACT COST	TOTAL COST
05.02.02.010	Project Support	915,753	915,753
	Remediation	48,602,226	48,602,226
	Agent Structures Demolition	50,174,750	50,174,750
05.03	Other Contaminant Structures		
05.03.01	Design		
05.03.01.001	Prepare/Submit 30% Design	305,124	305,124
05.03.01.002	Prepare/Submit 60% Design	305,124	305,124
05.03.01.003	Prepare/Submit 90% Design	305,124	305,124
05.03.01.004	Prepare/Submit CFC Design	169,513	169,513
	Design	1,084,885	1,084,885
05.03.02	Remediation		
05.03.02.001	Plans/Submittals/Workplans	276,307	276,307
05.03.02.002	Mobilization	444,058	444,058
05.03.02.003	Dust and Safety Sampling	4,366,685	4,366,685
05.03.02.004	Structures Demolition	28,097,113	28,097,113
05.03.02.005	Consolidate Demolition Material	1,474,651	1,474,651
05.03.02.006	Demobilization	239,108	239,108
05.03.02.007	Prepare/Submit Final Reports	42,378	42,378
05.03.02.008	Project Support	857,566	857,566
	Remediation	35,797,866	35,797,866
	Other Contaminant Structures	36,882,751	36,882,751
05.04	Post-ROD Removal Actions		
05.04.01	Post-ROD Removal Actions		
05.04.01.001	Non-Agent Process Equipment Rem	14,200,000	14,200,000
05.04.01.002	Agent Process Equipment Removal	4,800,000	4,800,000
05.04.01.003	Asbestos/PCB Removal	11,800,000	11,800,000
05.04.01.004	Tank Removal	5,200,000	5,200,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Structures Medium Group Costs	136,731,198	136,731,198
06	PMRMA Mission Support Costs		

		CONTRACT COST	TOTAL COST
06.01	PMRMA Mission Support Costs		
06.01.01	PMRMA Remediation Mission Costs		
06.01.01.001	Fiscal Year 1996	45,000,000	45,000,000
06.01.01.002	Fiscal Year 1997	45,000,000	45,000,000
06.01.01.003	Fiscal Year 1998	45,000,000	45,000,000
06.01.01.004	Fiscal Year 1999	45,000,000	45,000,000
06.01.01.005	Fiscal Year 2000	45,000,000	45,000,000
06.01.01.006	Fiscal Year 2001	45,000,000	45,000,000
	PMRMA Remediation Mission Costs	270,000,000	270,000,000
	PMRMA Mission Support Costs	270,000,000	270,000,000
	PMRMA Mission Support Costs	270,000,000	270,000,000
	Sitewide Alternative 2	1,698,649,248	1,698,649,248

Sitewide Alternative 3
Landfill

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

M C A C E S G O L D E D I T I O N
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		CONTRACT COST	TOTAL COST
01	Project Sunk Costs		
01.01	Project Sunk Costs		
01.01.01	Project Sunk Costs		
01.01.01.001	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
02	Fixed Facility/Treatment Costs		
02.01	RCRA Landfill		
02.01.01	Design		
02.01.01.001	Prepare/Submit 30% Design	617,955	617,955
02.01.01.002	Prepare/Submit 60% Design	617,955	617,955
02.01.01.003	Prepare/Submit 90% Design	617,955	617,955
02.01.01.004	Prepare/Submit CFC Design	346,429	346,429
	Design	2,200,294	2,200,294
02.01.02	Construction		
02.01.02.001	Plans/Submittals/Workplans	259,167	259,167
02.01.02.002	Mobilization	3,843,999	3,843,999
02.01.02.003	Construction - Cell 1	6,605,029	6,605,029
02.01.02.004	Operation - Cell 1	7,162,481	7,162,481
02.01.02.005	Closure - Cell 1	4,133,213	4,133,213
02.01.02.006	Construction - Cell 2	6,605,029	6,605,029
02.01.02.007	Operation - Cell 2	7,162,481	7,162,481
02.01.02.008	Closure - Cell 2	4,133,213	4,133,213
02.01.02.009	Construction - Cell 3	6,605,029	6,605,029
02.01.02.010	Operation - Cell 3	7,162,481	7,162,481
02.01.02.011	Closure - Cell 3	4,133,213	4,133,213
02.01.02.012	Construction - Cell 4	6,605,029	6,605,029
02.01.02.013	Operation - Cell 4	7,162,481	7,162,481
02.01.02.014	Closure - Cell 4	4,133,213	4,133,213
02.01.02.015	Construction - Cell 5	6,605,029	6,605,029
02.01.02.016	Operation - Cell 5	7,162,481	7,162,481
02.01.02.017	Closure - Cell 5	4,133,213	4,133,213
02.01.02.018	Demobilization	1,257,967	1,257,967
02.01.02.019	Site Closure and Final Reports	37,452	37,452

		CONTRACT COST	TOTAL COST
02.01.02.020	Project Support	1,420,428	1,420,428
	Construction	96,322,628	96,322,628
02.01.03	Long-Term Activities		
02.01.03.001	Plans/Submittals/Workplans	119,846	119,846
02.01.03.002	Mobilization	159,053	159,053
02.01.03.003	Long-Term Monitor/Maintenance	6,734,338	6,734,338
02.01.03.004	Demobilization	85,644	85,644
02.01.03.005	Prepare/Submit Final Reports	18,726	18,726
02.01.03.006	Project Support	663,538	663,538
	Long-Term Activities	7,781,144	7,781,144
	RCRA Landfill	106,304,067	106,304,067
02.02	Borrow Area		
02.02.01	Design		
02.02.01.001	Prepare/Submit 30% Design	269,653	269,653
02.02.01.002	Prepare/Submit 60% Design	269,653	269,653
02.02.01.003	Prepare/Submit 90% Design	269,653	269,653
02.02.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.02.02	Construction		
02.02.02.001	Plans/Submittals/Workplans	259,167	259,167
02.02.02.002	Mobilization	794,668	794,668
02.02.02.003	Strip/Stockpile Topsoil	2,104,668	2,104,668
02.02.02.004	Haul Road Construction	2,378,696	2,378,696
02.02.02.005	Facility Operations	31,098,326	31,098,326
02.02.02.006	Revegetate Disturbed Areas	807,125	807,125
02.02.02.007	Demobilization	427,898	427,898
02.02.02.008	Prepare/Submit Final Reports	37,452	37,452
02.02.02.009	Project Support	960,639	960,639
	Construction	38,868,640	38,868,640
	Borrow Area	39,827,406	39,827,406
02.03	Caustic Agent Treatment Facility		
02.03.01	Design		

		CONTRACT COST	TOTAL COST
02.03.01.001	Prepare/Submit 30% Design	269,653	269,653
02.03.01.002	Prepare/Submit 60% Design	269,653	269,653
02.03.01.003	Prepare/Submit 90% Design	269,653	269,653
02.03.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.03.02	Construction		
02.03.02.001	Plans/Submittals/Workplans	202,240	202,240
02.03.02.002	Mobilization	269,715	269,715
02.03.02.003	Construction	2,632,257	2,632,257
02.03.02.004	Systems Testing	461,050	461,050
02.03.02.005	Facility Operations	5,636,217	5,636,217
02.03.02.006	Demobilization	145,230	145,230
02.03.02.007	Prepare/Submit Final Reports	37,452	37,452
02.03.02.008	Project Support	721,817	721,817
	Construction	10,105,977	10,105,977
	Caustic Agent Treatment Facility	11,064,744	11,064,744
	Fixed Facility/Treatment Costs	157,196,216	157,196,216
03	Soil Medium Group Costs		
03.01	Basin A		
03.01.01	Design		
03.01.01.001	Prepare/Submit 30% Design	325,532	325,532
03.01.01.002	Prepare/Submit 60% Design	325,532	325,532
03.01.01.003	Prepare/Submit 90% Design	325,532	325,532
03.01.01.004	Prepare/Submit CFC Design	180,851	180,851
	Design	1,157,446	1,157,446
03.01.02	Remediation		
03.01.02.001	Plans/Submittals/Workplans	312,872	312,872
03.01.02.002	Mobilization	1,985,694	1,985,694
03.01.02.003	UXO Clearance by Geophysics	177,109	177,109
03.01.02.004	Exca. UXO and Transport Off-Post	411,209	411,209
03.01.02.005	Drill/Screen for Agent Soils	4,022,033	4,022,033
03.01.02.006	Excavate Agent/HH Soils	4,667,544	4,667,544
03.01.02.009	Backfill w/Borrow Material	1,489,239	1,489,239
03.01.02.010	Install Gradefill	25,702,350	25,702,350

		CONTRACT COST	TOTAL COST
03.01.02.011	Install Clay/Soil Cap	20,575,459	20,575,459
03.01.02.012	Revegetate Disturbed Areas	349,799	349,799
03.01.02.013	Demobilization	1,065,363	1,065,363
03.01.02.014	Prepare/Submit Final Reports	45,213	45,213
03.01.02.015	Project Support	1,698,046	1,698,046
	Remediation	62,501,931	62,501,931
03.01.03	Long-Term Activities		
03.01.03.001	Plans/Submittals/Workplans	144,681	144,681
03.01.03.002	Mobilization	76,810	76,810
03.01.03.003	Short-Term Monitor/Maintenance	445,199	445,199
03.01.03.004	Long-Term Monitor/Maintenance	2,225,996	2,225,996
03.01.03.005	Demobilization	41,360	41,360
03.01.03.006	Prepare/Submit Final Reports	22,606	22,606
03.01.03.007	Project Support	801,039	801,039
	Long-Term Activities	3,757,690	3,757,690
	Basin A	67,417,067	67,417,067
03.02	Former Basin F		
03.02.01	Design		
03.02.01.001	Prepare/Submit 30% Design	479,384	479,384
03.02.01.002	Prepare/Submit 60% Design	479,384	479,384
03.02.01.003	Prepare/Submit 90% Design	479,384	479,384
03.02.01.004	Prepare/Submit CFC Design	177,550	177,550
	Design	1,615,701	1,615,701
03.02.02	Remediation		
03.02.02.001	Plans/Submittals/Workplans	372,854	372,854
03.02.02.002	Mobilization	2,886,680	2,886,680
03.02.02.003	Excavate/Strip Overburden	8,477,773	8,477,773
03.02.02.004	Excavate HH Soils w/Vapor Cont.	52,483,616	52,483,616
03.02.02.006	Backfill w/Borrow Material	6,144,279	6,144,279
03.02.02.007	Backfill w/Overburden	1,951,282	1,951,282
03.02.02.008	Install Gradefill	12,921,168	12,921,168
03.02.02.009	Install Clay/Soil Cap	13,260,052	13,260,052
03.02.02.010	Revegetate Disturbed Areas	231,965	231,965
03.02.02.011	Demobilization	1,552,391	1,552,391
03.02.02.012	Prepare/Submit Final Reports	44,387	44,387
03.02.02.013	Project Support	2,773,065	2,773,065

		CONTRACT COST	TOTAL COST
	Remediation	103,099,513	103,099,513
03.02.03	Long-Term Activities		
03.02.03.001	Plans/Submittals/Workplans	142,040	142,040
03.02.03.002	Mobilization	57,447	57,447
03.02.03.003	Short-Term Monitor/Maintenance	295,229	295,229
03.02.03.004	Long-Term Monitor/Maintenance	1,476,143	1,476,143
03.02.03.005	Demobilization	30,932	30,932
03.02.03.006	Prepare/Submit Final Reports	22,194	22,194
03.02.03.007	Project Support	786,416	786,416
	Long-Term Activities	2,810,400	2,810,400
	Former Basin F	107,525,615	107,525,615
03.03	Chemical Sewers		
03.03.01	Design		
03.03.01.001	Prepare/Submit 30% Design	325,389	325,389
03.03.01.002	Prepare/Submit 60% Design	325,389	325,389
03.03.01.003	Prepare/Submit 90% Design	325,389	325,389
03.03.01.004	Prepare/Submit CFC Design	180,772	180,772
	Design	1,156,940	1,156,940
03.03.02	Remediation		
03.03.02.001	Plans/Submittals/Workplans	312,735	312,735
03.03.02.002	Mobilization	385,927	385,927
03.03.02.003	Survey Lines	22,544	22,544
03.03.02.004	Excavate/Strip Overburden	6,263,849	6,263,849
03.03.02.005	Excavate Agent/HH Soils	2,997,418	2,997,418
03.03.02.008	Backfill w/Borrow Material	696,239	696,239
03.03.02.009	Backfill w/Overburden	1,947,882	1,947,882
03.03.02.010	Revegetate Disturbed Areas	52,250	52,250
03.03.02.011	Demobilization	207,806	207,806
03.03.02.012	Prepare/Submit Final Reports	45,193	45,193
03.03.02.013	Project Support	868,789	868,789
	Remediation	13,800,632	13,800,632
	Chemical Sewers	14,957,572	14,957,572
03.04	South Plants Central Processing		

		CONTRACT COST	TOTAL COST
03.04.01	Design		
03.04.01.001	Prepare/Submit 30% Design	322,489	322,489
03.04.01.002	Prepare/Submit 60% Design	322,489	322,489
03.04.01.003	Prepare/Submit 90% Design	322,489	322,489
03.04.01.004	Prepare/Submit CFC Design	179,161	179,161
	Design	1,146,629	1,146,629
03.04.02	Remediation		
03.04.02.001	Plans/Submittals/Workplans	309,948	309,948
03.04.02.002	Mobilization	561,691	561,691
03.04.02.003	Drill/Screen for Agent Soils	591,506	591,506
03.04.02.004	Excavate Agent/HH Soils	2,922,926	2,922,926
03.04.02.007	Backfill w/Borrow Material	1,017,028	1,017,028
03.04.02.008	Install Gradefill	5,120,234	5,120,234
03.04.02.009	Install Clay/Soil Cap	7,413,942	7,413,942
03.04.02.010	Revegetate Disturbed Areas	119,286	119,286
03.04.02.011	Demobilization	302,449	302,449
03.04.02.012	Prepare/Submit Final Reports	44,790	44,790
03.04.02.013	Project Support	1,682,177	1,682,177
	Remediation	20,085,978	20,085,978
03.04.03	Long-Term Activities		
03.04.03.001	Plans/Submittals/Workplans	143,329	143,329
03.04.03.002	Mobilization	39,469	39,469
03.04.03.003	Short-Term Monitor/Maintenance	151,819	151,819
03.04.03.004	Long-Term Monitor/Maintenance	759,095	759,095
03.04.03.005	Demobilization	21,253	21,253
03.04.03.006	Prepare/Submit Final Reports	22,395	22,395
03.04.03.007	Project Support	793,552	793,552
	Long-Term Activities	1,930,912	1,930,912
	South Plants Central Processing	23,163,519	23,163,519
03.05	South Plants Balance of Areas		
03.05.01	Design		
03.05.01.001	Prepare/Submit 30% Design	325,532	325,532
03.05.01.002	Prepare/Submit 60% Design	325,532	325,532
03.05.01.003	Prepare/Submit 90% Design	325,532	325,532
03.05.01.004	Prepare/Submit CFC Design	180,851	180,851

		CONTRACT COST	TOTAL COST
	Design	1,157,446	1,157,446
03.05.02	Remediation		
03.05.02.001	Plans/Submittals/Workplans	312,872	312,872
03.05.02.002	Mobilization	788,849	788,849
03.05.02.003	UXO Clearance by Geophysics	19,003	19,003
03.05.02.004	Exca. UXO and Transport Off-Post	12,474	12,474
03.05.02.005	Drill/Screen for Agent Soils	451,937	451,937
03.05.02.006	Excavate Agent/HH/Biota Soil	14,013,569	14,013,569
03.05.02.009	Backfill w/Borrow Material	6,248,877	6,248,877
03.05.02.010	Revegetate Disturbed Areas	901,330	901,330
03.05.02.011	Demobilization	424,765	424,765
03.05.02.012	Prepare/Submit Final Reports	45,213	45,213
03.05.02.013	Project Support	1,698,046	1,698,046
	Remediation	24,916,934	24,916,934
	South Plants Balance of Areas	26,074,380	26,074,380
03.06	South Plants Ditches		
03.06.01	Design		
03.06.01.001	Prepare/Submit 30% Design	79,101	79,101
03.06.01.002	Prepare/Submit 60% Design	79,101	79,101
03.06.01.003	Prepare/Submit 90% Design	79,101	79,101
03.06.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.06.02	Remediation		
03.06.02.001	Plans/Submittals/Workplans	172,265	172,265
03.06.02.002	Mobilization	64,080	64,080
03.06.02.003	Excavate HH/Biota Soils	1,523,564	1,523,564
03.06.02.005	Backfill w/Borrow Material	530,679	530,679
03.06.02.006	Revegetate Disturbed Areas	58,984	58,984
03.06.02.007	Demobilization	34,505	34,505
03.06.02.008	Prepare/Submit Final Reports	43,945	43,945
03.06.02.009	Project Support	217,149	217,149
	Remediation	2,645,171	2,645,171
	South Plants Ditches	2,926,420	2,926,420
03.07	Complex Trenches		

		CONTRACT COST	TOTAL COST
03.07.01	Design		
03.07.01.001	Prepare/Submit 30% Design	164,230	164,230
03.07.01.002	Prepare/Submit 60% Design	164,230	164,230
03.07.01.003	Prepare/Submit 90% Design	164,230	164,230
03.07.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.07.02	Remediation		
03.07.02.001	Plans/Submittals/Workplans	246,344	246,344
03.07.02.002	Mobilization	992,887	992,887
03.07.02.003	UXO Clearance by Geophysics	49,427	49,427
03.07.02.004	Exca. UXO and Transport Off-Post	569,393	569,393
03.07.02.005	Install Slurry Walls	2,491,362	2,491,362
03.07.02.006	Install Gradefill	13,233,470	13,233,470
03.07.02.007	Install Clay/Soil Cap	12,115,714	12,115,714
03.07.02.008	Revegetate Disturbed Areas	205,944	205,944
03.07.02.009	Demobilization	534,632	534,632
03.07.02.010	Prepare/Submit Final Reports	45,619	45,619
03.07.02.011	Project Support	876,985	876,985
	Remediation	31,361,777	31,361,777
03.07.03	Long-Term Activities		
03.07.03.001	Plans/Submittals/Workplans	145,982	145,982
03.07.03.002	Mobilization	142,493	142,493
03.07.03.003	Short-Term Monitor/Maintenance	262,111	262,111
03.07.03.004	Long-Term Monitor/Maintenance	5,512,661	5,512,661
03.07.03.005	Demobilization	76,726	76,726
03.07.03.006	Prepare/Submit Final Reports	22,810	22,810
03.07.03.007	Project Support	808,242	808,242
	Long-Term Activities	6,971,025	6,971,025
	Complex Trenches	38,916,730	38,916,730
03.08	Sanitary Landfill		
03.08.01	Design		
03.08.01.001	Prepare/Submit 30% Design	158,202	158,202
03.08.01.002	Prepare/Submit 60% Design	158,202	158,202
03.08.01.003	Prepare/Submit 90% Design	158,202	158,202

		CONTRACT COST	TOTAL COST
03.08.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.08.02	Remediation		
03.08.02.001	Plans/Submittals/Workplans	237,303	237,303
03.08.02.002	Mobilization	390,499	390,499
03.08.02.003	Excavate HH/Biota/Debris Soil	10,496,009	10,496,009
03.08.02.005	Backfill w/Borrow Material	3,794,394	3,794,394
03.08.02.006	Revegetate Disturbed Areas	102,342	102,342
03.08.02.007	Demobilization	210,268	210,268
03.08.02.008	Prepare/Submit Final Reports	43,945	43,945
03.08.02.009	Project Support	844,800	844,800
	Remediation	16,119,561	16,119,561
	Sanitary Landfill	16,682,058	16,682,058
03.09	Section 36 Balance of Areas		
03.09.01	Design		
03.09.01.001	Prepare/Submit 30% Design	328,459	328,459
03.09.01.002	Prepare/Submit 60% Design	328,459	328,459
03.09.01.003	Prepare/Submit 90% Design	328,459	328,459
03.09.01.004	Prepare/Submit CFC Design	182,477	182,477
	Design	1,167,855	1,167,855
03.09.02	Remediation		
03.09.02.001	Plans/Submittals/Workplans	315,686	315,686
03.09.02.002	Mobilization	473,522	473,522
03.09.02.003	UXO Clearance by Geophysics	296,839	296,839
03.09.02.004	Exca. UXO and Transport Off-Post	688,568	688,568
03.09.02.005	Drill/Screen for Agent Soils	894,005	894,005
03.09.02.006	Excavate Agent/HH/Biota Soil	8,152,417	8,152,417
03.09.02.009	Backfill w/Borrow Material	2,562,906	2,562,906
03.09.02.010	Revegetate Disturbed Areas	395,357	395,357
03.09.02.011	Demobilization	254,973	254,973
03.09.02.012	Prepare/Submit Final Report	45,619	45,619
03.09.02.013	Project Support	876,985	876,985
	Remediation	14,956,879	14,956,879
	Section 36 Balance of Areas	16,124,733	16,124,733

		CONTRACT COST	TOTAL COST
03.10	Basin F Wastepile		
03.10.01	Design		
03.10.01.001	Prepare/Submit 30% Design	310,544	310,544
03.10.01.002	Prepare/Submit 60% Design	310,544	310,544
03.10.01.003	Prepare/Submit 90% Design	310,544	310,544
03.10.01.004	Prepare/Submit CFC Design	172,525	172,525
	Design	1,104,157	1,104,157
03.10.02	Remediation		
03.10.02.001	Plans/Submittals/Workplans	298,468	298,468
03.10.02.002	Mobilization	135,078	135,078
03.10.02.003	Install RCRA (Composite) Cap	5,192,142	5,192,142
03.10.02.004	Revegetate Disturbed Areas	37,567	37,567
03.10.02.005	Demobilization	72,735	72,735
03.10.02.006	Prepare/Submit Final Reports	43,131	43,131
03.10.02.007	Project Support	829,153	829,153
	Remediation	6,608,273	6,608,273
03.10.03	Long-Term Activities		
03.10.03.001	Plans/Submittals/Workplans	138,020	138,020
03.10.03.002	Mobilization	129,978	129,978
03.10.03.003	Short-Term Monitor/Maintenance	872,504	872,504
03.10.03.004	Long-Term Monitor/Maintenance	4,362,520	4,362,520
03.10.03.005	Demobilization	69,988	69,988
03.10.03.006	Prepare/Submit Final Reports	21,566	21,566
03.10.03.007	Project Support	764,159	764,159
	Long-Term Activities	6,358,735	6,358,735
	Basin F Wastepile	14,071,165	14,071,165
03.11	Secondary Basins		
03.11.01	Design		
03.11.01.001	Prepare/Submit 30% Design	158,202	158,202
03.11.01.002	Prepare/Submit 60% Design	158,202	158,202
03.11.01.003	Prepare/Submit 90% Design	158,202	158,202
03.11.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497

		CONTRACT COST	TOTAL COST
03.11.02	Remediation		
03.11.02.001	Plans/Submittals/Workplans	237,303	237,303
03.11.02.002	Mobilization	163,966	163,966
03.11.02.003	Excavate HH/Biota Soil	3,609,532	3,609,532
03.11.02.005	Backfill w/Borrow Material	1,524,933	1,524,933
03.11.02.006	Revegetate Disturbed Areas	255,627	255,627
03.11.02.007	Demobilization	88,289	88,289
03.11.02.008	Prepare/Submit Final Reports	43,945	43,945
03.11.02.009	Project Support	844,800	844,800
	Remediation	6,768,397	6,768,397
	Secondary Basins	7,330,894	7,330,894
03.12	Munitions Testing		
03.12.01	Design		
03.12.01.001	Prepare/Submit 30% Design	159,723	159,723
03.12.01.002	Prepare/Submit 60% Design	159,723	159,723
03.12.01.003	Prepare/Submit 90% Design	159,723	159,723
03.12.01.004	Prepare/Submit CFC Design	88,735	88,735
	Design	567,906	567,906
03.12.02	Remediation		
03.12.02.001	Plans/Submittals/Workplans	239,585	239,585
03.12.02.002	Mobilization	76,195	76,195
03.12.02.003	UXO Clearance by Geophysics	331,283	331,283
03.12.02.004	Exca. UXO and Transport Off-Post	110,898	110,898
03.12.02.005	Excavate Debris from Surf. Soil	1,524,118	1,524,118
03.12.02.007	Revegetate Disturbed Areas	138,035	138,035
03.12.02.008	Demobilization	41,029	41,029
03.12.02.009	Prepare/Submit Final Reports	44,368	44,368
03.12.02.010	Project Support	219,237	219,237
	Remediation	2,724,749	2,724,749
	Munitions Testing	3,292,655	3,292,655
03.13	Shell Trenches		
03.13.01	Design		
03.13.01.001	Prepare/Submit 30% Design	488,084	488,084
03.13.01.002	Prepare/Submit 60% Design	488,084	488,084

		CONTRACT COST	TOTAL COST
03.13.01.003	Prepare/Submit 90% Design	488,084	488,084
03.13.01.004	Prepare/Submit CFC Design	180,772	180,772
	Design	1,645,024	1,645,024
03.13.02	Remediation		
03.13.02.001	Plans/Submittals/Workplans	379,621	379,621
03.13.02.002	Mobilization	853,769	853,769
03.13.02.003	Excavate/Strip Overburden	1,151,915	1,151,915
03.13.02.004	Shell Trench Exc. w/Vapor Cont.	7,931,059	7,931,059
03.13.02.005	Material Handling/Stabilization	18,417,376	18,417,376
03.13.02.007	Backfill w/Borrow Material	843,816	843,816
03.13.02.008	Backfill w/Overburden	186,815	186,815
03.13.02.009	Revegetate Disturbed Areas	16,989	16,989
03.13.02.010	Demobilization	459,722	459,722
03.13.02.011	Prepare/Submit Final Reports	45,193	45,193
03.13.02.012	Project Support	244,347	244,347
	Remediation	30,530,622	30,530,622
	Shell Trenches	32,175,646	32,175,646
03.14	Lake Sediments		
03.14.01	Design		
03.14.01.001	Prepare/Submit 30% Design	159,625	159,625
03.14.01.002	Prepare/Submit 60% Design	159,625	159,625
03.14.01.003	Prepare/Submit 90% Design	159,625	159,625
03.14.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.14.02	Remediation		
03.14.02.001	Plans/Submittals/Workplans	239,437	239,437
03.14.02.002	Mobilization	62,616	62,616
03.14.02.003	Grub & Clear Aquatic Vegetation	15,664	15,664
03.14.02.004	Install Cutoff Wall	667,969	667,969
03.14.02.005	Excavate HH/Biota Soils	903,631	903,631
03.14.02.007	Backfill w/Borrow Material	270,460	270,460
03.14.02.008	Revegetate or Restore Wetlands	127,828	127,828
03.14.02.009	Demobilization	33,716	33,716
03.14.02.010	Prepare/Submit Final Reports	44,340	44,340
03.14.02.011	Project Support	219,102	219,102
	Remediation	2,584,764	2,584,764

		CONTRACT COST	TOTAL COST
	Lake Sediments	3,152,320	3,152,320
03.15	Burial Trenches		
03.15.01	Design		
03.15.01.001	Prepare/Submit 30% Design	164,230	164,230
03.15.01.002	Prepare/Submit 60% Design	164,230	164,230
03.15.01.003	Prepare/Submit 90% Design	164,230	164,230
03.15.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.15.02	Remediation		
03.15.02.001	Plans/Submittals/Workplans	246,344	246,344
03.15.02.002	Mobilization	117,115	117,115
03.15.02.003	UXO Clearance by Geophysics	216,714	216,714
03.15.02.004	Exca. UXO and Transport Off-Post	138,192	138,192
03.15.02.005	Drill/Screen for Agent Soil	67,379	67,379
03.15.02.006	Excavate Agent/HH/UXO Deb. Soil	1,685,080	1,685,080
03.15.02.009	Backfill w/Borrow Material	152,455	152,455
03.15.02.010	Revegetate Disturbed Areas	90,298	90,298
03.15.02.011	Demobilization	63,062	63,062
03.15.02.012	Prepare/Submit Final Reports	45,619	45,619
03.15.02.013	Project Support	876,985	876,985
	Remediation	3,699,244	3,699,244
	Burial Trenches	4,283,171	4,283,171
03.16	Section 36 Lime Basins		
03.16.01	Design		
03.16.01.001	Prepare/Submit 30% Design	158,202	158,202
03.16.01.002	Prepare/Submit 60% Design	158,202	158,202
03.16.01.003	Prepare/Submit 90% Design	158,202	158,202
03.16.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.16.02	Remediation		
03.16.02.001	Plans/Submittals/Workplans	237,303	237,303
03.16.02.002	Mobilization	169,094	169,094

		CONTRACT COST	TOTAL COST
03.16.02.003	Drill/Screen for Agent Soils	311,983	311,983
03.16.02.004	Excavate/Strip Overburden	515,588	515,588
03.16.02.005	Excavate Agent/HH Soils	1,321,843	1,321,843
03.16.02.008	Backfill w/Borrow Material	491,140	491,140
03.16.02.009	Backfill w/Overburden	125,701	125,701
03.16.02.010	Install Gradefill	829,360	829,360
03.16.02.011	Install Clay/Soil Cap	1,966,638	1,966,638
03.16.02.012	Revegetate Disturbed Areas	31,641	31,641
03.16.02.013	Demobilization	91,051	91,051
03.16.02.014	Prepare/Submit Final Reports	43,945	43,945
03.16.02.015	Project Support	844,800	844,800
	Remediation	6,980,086	6,980,086
03.16.03	Long-Term Activities		
03.16.03.001	Plans/Submittals/Workplans	140,624	140,624
03.16.03.002	Mobilization	24,962	24,962
03.16.03.003	Short-Term Monitor/Maintenance	40,271	40,271
03.16.03.004	Long-Term Monitor/Maintenance	201,353	201,353
03.16.03.005	Demobilization	13,441	13,441
03.16.03.006	Prepare/Submit Final Reports	21,973	21,973
03.16.03.007	Project Support	778,580	778,580
	Long-Term Activities	1,221,204	1,221,204
	Section 36 Lime Basins	8,763,787	8,763,787
03.17	Buried Sediments		
03.17.01	Design		
03.17.01.001	Prepare/Submit 30% Design	79,812	79,812
03.17.01.002	Prepare/Submit 60% Design	79,812	79,812
03.17.01.003	Prepare/Submit 90% Design	79,812	79,812
03.17.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.17.02	Remediation		
03.17.02.001	Plans/Submittals/Workplans	173,814	173,814
03.17.02.002	Mobilization	26,520	26,520
03.17.02.003	Excavate HH Soils	438,664	438,664
03.17.02.005	Backfill w/Borrow Material	164,590	164,590
03.17.02.006	Revegetate Disturbed Areas	4,050	4,050
03.17.02.007	Demobilization	14,280	14,280
03.17.02.008	Prepare/Submit Final Reports	44,340	44,340

		CONTRACT COST	TOTAL COST
03.17.02.009	Project Support	219,102	219,102
	Remediation	1,085,360	1,085,360
	Buried Sediments	1,369,137	1,369,137
03.18	Buried M-1 Pits		
03.18.01	Design		
03.18.01.001	Prepare/Submit 30% Design	328,289	328,289
03.18.01.002	Prepare/Submit 60% Design	328,289	328,289
03.18.01.003	Prepare/Submit 90% Design	328,289	328,289
03.18.01.004	Prepare/Submit CFC Design	182,383	182,383
	Design	1,167,251	1,167,251
03.18.02	Remediation		
03.18.02.001	Plans/Submittals/Workplans	315,523	315,523
03.18.02.002	Mobilization	136,535	136,535
03.18.02.003	Drill/Screen for Agent Soils	82,725	82,725
03.18.02.004	M-1 Pit Excav. w/Vapor Controls	3,019,014	3,019,014
03.18.02.007	Backfill w/Borrow Material	243,507	243,507
03.18.02.008	Revegetate Disturbed Areas	4,605	4,605
03.18.02.009	Demobilization	73,519	73,519
03.18.02.010	Prepare/Submit Final Reports	45,596	45,596
03.18.02.011	Project Support	961,409	961,409
	Remediation	4,882,433	4,882,433
	Buried M-1 Pits	6,049,685	6,049,685
03.19	Sanitary/Process Water Sewers		
03.19.01	Design		
03.19.01.001	Prepare/Submit 30% Design	79,101	79,101
03.19.01.002	Prepare/Submit 60% Design	79,101	79,101
03.19.01.003	Prepare/Submit 90% Design	79,101	79,101
03.19.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.19.02	Remediation		
03.19.02.001	Plans/Submittals/Workplans	172,265	172,265

		CONTRACT COST	TOTAL COST
03.19.02.002	Mobilization	233,787	233,787
03.19.02.003	Survey Lines	21,922	21,922
03.19.02.004	Excavate/Strip Overburden	1,885,629	1,885,629
03.19.02.005	Excavate Sewers	5,202,260	5,202,260
03.19.02.007	Backfill w/Borrow Material	116,573	116,573
03.19.02.008	Backfill w/Overburden	1,559,667	1,559,667
03.19.02.009	Revegetate Disturbed Areas	71,448	71,448
03.19.02.010	Demobilization	125,886	125,886
03.19.02.011	Prepare/Submit Final Reports	43,945	43,945
03.19.02.012	Project Support	217,149	217,149
	Remediation	9,650,530	9,650,530
	Sanitary/Process Water Sewers	9,931,779	9,931,779
03.20	Hex Pit		
03.20.01	Design		
03.20.01.001	Prepare/Submit 30% Design	328,289	328,289
03.20.01.002	Prepare/Submit 60% Design	328,289	328,289
03.20.01.003	Prepare/Submit 90% Design	328,289	328,289
03.20.01.004	Prepare/Submit CFC Design	182,383	182,383
	Design	1,167,251	1,167,251
03.20.02	Remediation		
03.20.02.001	Plans/Submittals/Workplans	315,523	315,523
03.20.02.002	Mobilization	97,794	97,794
03.20.02.003	Hex Pit Excav. w/Vapor Controls	1,521,443	1,521,443
03.20.02.004	Material Handling/Stabilization	473,606	473,606
03.20.02.006	Backfill w/Borrow Material	28,587	28,587
03.20.02.007	Revegetate Disturbed Areas	477	477
03.20.02.008	Demobilization	52,658	52,658
03.20.02.009	Prepare/Submit Final Reports	45,596	45,596
03.20.02.010	Project Support	961,409	961,409
	Remediation	3,497,092	3,497,092
	Hex Pit	4,664,343	4,664,343
03.21	Surficial Soils		
03.21.01	Design		
03.21.01.001	Prepare/Submit 30% Design	79,812	79,812
03.21.01.002	Prepare/Submit 60% Design	79,812	79,812

		CONTRACT COST	TOTAL COST
03.21.01.003	Prepare/Submit 90% Design	79,812	79,812
03.21.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.21.02	Remediation		
03.21.02.001	Plans/Submittals/Workplans	173,814	173,814
03.21.02.002	Mobilization	198,653	198,653
03.21.02.003	Excavate HH Soils	1,800,127	1,800,127
03.21.02.005	Backfill w/Borrow Material	611,787	611,787
03.21.02.006	Revegetate Disturbed Areas	127,822	127,822
03.21.02.007	Demobilization	106,967	106,967
03.21.02.008	Prepare/Submit Final Reports	44,340	44,340
03.21.02.009	Project Support	219,102	219,102
03.21.02.010	Potential USFWS Remedial Act. #1	2,490,395	2,490,395
03.21.02.011	Potential USFWS Remedial Act. #2	2,490,395	2,490,395
	Remediation	8,263,404	8,263,404
	Surficial Soils	8,547,182	8,547,182
03.22	Toxic Storage Yards		
03.22.01	Design		
03.22.01.001	Prepare/Submit 30% Design	56,995	56,995
03.22.01.002	Prepare/Submit 60% Design	56,995	56,995
03.22.01.003	Prepare/Submit 90% Design	56,995	56,995
03.22.01.004	Prepare/Submit CFC Design	34,197	34,197
	Design	205,181	205,181
03.22.02	Remediation		
03.22.02.001	Plans/Submittals/Workplans	113,989	113,989
03.22.02.002	Mobilization	69,335	69,335
03.22.02.003	Demolition/Landfill Storage Pads	377,877	377,877
03.22.02.004	Agent Screening	1,602,072	1,602,072
03.22.02.005	Excavate Agent/HH Soil	74,209	74,209
03.22.02.008	Backfill w/Borrow Material	13,521	13,521
03.22.02.009	Revegetate Disturbed Areas	927	927
03.22.02.010	Demobilization	37,333	37,333
03.22.02.011	Prepare/Submit Final Reports	45,596	45,596
03.22.02.012	Project Support	144,537	144,537
	Remediation	2,479,397	2,479,397

		CONTRACT COST	TOTAL COST
	Toxic Storage Yards	2,684,578	2,684,578
03.23	Sand Creek Lateral		
03.23.01	Design		
03.23.01.001	Prepare/Submit 30% Design	79,101	79,101
03.23.01.002	Prepare/Submit 60% Design	79,101	79,101
03.23.01.003	Prepare/Submit 90% Design	79,101	79,101
03.23.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.23.02	Remediation		
03.23.02.001	Plans/Submittals/Workplans	172,265	172,265
03.23.02.002	Mobilization	136,120	136,120
03.23.02.003	Excavate HH/Biota Soils	3,824,786	3,824,786
03.23.02.005	Backfill w/Borrow Material	995,765	995,765
03.23.02.006	Revegetate Disturbed Areas	155,635	155,635
03.23.02.007	Demobilization	73,296	73,296
03.23.02.008	Prepare/Submit Final Reports	43,945	43,945
03.23.02.009	Project Support	217,149	217,149
	Remediation	5,618,961	5,618,961
	Sand Creek Lateral	5,900,210	5,900,210
03.24	Ditches/Drainage Areas		
03.24.01	Design		
03.24.01.001	Prepare/Submit 30% Design	79,812	79,812
03.24.01.002	Prepare/Submit 60% Design	79,812	79,812
03.24.01.003	Prepare/Submit 90% Design	79,812	79,812
03.24.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.24.02	Remediation		
03.24.02.001	Plans/Submittals/Workplans	173,814	173,814
03.24.02.002	Mobilization	57,064	57,064
03.24.02.003	Excavate Biota Soils	1,302,920	1,302,920
03.24.02.005	Backfill w/Borrow Material	448,010	448,010
03.24.02.006	Revegetate Disturbed Areas	79,581	79,581

		CONTRACT COST	TOTAL COST
03.24.02.007	Demobilization	30,727	30,727
03.24.02.008	Prepare/Submit Final Reports	44,340	44,340
03.24.02.009	Project Support	219,102	219,102
	Remediation	2,355,559	2,355,559
	Ditches/Drainage Areas	2,639,336	2,639,336
03.25	North Plants		
03.25.01	Design		
03.25.01.001	Prepare/Submit 30% Design	55,425	55,425
03.25.01.002	Prepare/Submit 60% Design	55,425	55,425
03.25.01.003	Prepare/Submit 90% Design	55,425	55,425
03.25.01.004	Prepare/Submit CFC Design	33,255	33,255
	Design	199,531	199,531
03.25.02	Remediation		
03.25.02.001	Plans/Submittals/Workplans	110,851	110,851
03.25.02.002	Mobilization	35,762	35,762
03.25.02.003	Drill/Screen for Agent Soil	256,929	256,929
03.25.02.004	Excavate Agent/HH Soil	7,045	7,045
03.25.02.007	Backfill w/Borrow Material	2,639	2,639
03.25.02.008	Install Soil Cover	778,271	778,271
03.25.02.009	Revegetate Disturbed Areas	80,620	80,620
03.25.02.010	Demobilization	19,257	19,257
03.25.02.011	Prepare/Submit Final Reports	44,340	44,340
03.25.02.012	Project Support	140,558	140,558
	Remediation	1,476,271	1,476,271
03.25.03	Long-Term Activities		
03.25.03.001	Plans/Submittals/Workplans	141,889	141,889
03.25.03.002	Mobilization	25,610	25,610
03.25.03.003	Short-Term Monitor/Maintenance	43,974	43,974
03.25.03.004	Long-Term Monitor/Maintenance	219,872	219,872
03.25.03.005	Demobilization	13,791	13,791
03.25.03.006	Prepare/Submit Final Reports	22,170	22,170
03.25.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,252,887	1,252,887
	North Plants	2,928,690	2,928,690

	CONTRACT COST	TOTAL COST
Soil Medium Group Costs	431,572,672	431,572,672
04 Water Medium Group Costs		
04.01 Northwest Boundary System		
04.01.01 Long-Term Monitoring/Operations		
04.01.01.001 Long-Term Monitoring/Operations	30,861,475	30,861,475
Long-Term Monitoring/Operations	30,861,475	30,861,475
Northwest Boundary System	30,861,475	30,861,475
04.02 Irondale System & Linked IRAs		
04.02.01 Long-Term Monitoring/Operations		
04.02.01.001 Long-Term Monitoring/Operations	2,844,461	2,844,461
Long-Term Monitoring/Operations	2,844,461	2,844,461
Irondale System & Linked IRAs	2,844,461	2,844,461
04.03 North Boundary System		
04.03.01 Long-Term Monitoring/Operations		
04.03.01.001 Long-Term Monitoring/Operations	47,779,513	47,779,513
Long-Term Monitoring/Operations	47,779,513	47,779,513
North Boundary System	47,779,513	47,779,513
04.04 Basin A Neck/Bedrock Ridge Syst.		
04.04.01 Design Bedrock Ridge System		
04.04.01.001 Design Bedrock Ridge System	156,681	156,681
Design Bedrock Ridge System	156,681	156,681
04.04.02 Construction Bedrock Ridge Syst.		
04.04.02.001 Construction Bedrock Ridge Syst.	3,476,564	3,476,564

		CONTRACT COST	TOTAL COST
	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
04.04.03	Long-Term Monitoring/Operations		
04.04.03.001	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Basin A Neck/Bedrock Ridge Syst.	30,962,383	30,962,383
04.05	On-Post Water Supply		
04.05.01	Design		
	Design	800,000	800,000
04.05.02	Construction		
	Construction	14,200,000	14,200,000
04.05.03	Long-Term Monitoring/Operations		
	On-Post Water Supply	15,000,000	15,000,000
04.06	Hydrologic Controls		
04.06.01	Long-Term Monitoring/Operations		
04.07	S. P. Tank Farm Plume Monitoring		
04.07.01	Long-Term Monitoring/Operations		
04.07.01.001	Long-Term Monitoring/Operations	3,829,798	3,829,798
	Long-Term Monitoring/Operations	3,829,798	3,829,798
	S. P. Tank Farm Plume Monitoring	3,829,798	3,829,798
04.08	Deep Well Monitoring/Abandonment		

		CONTRACT COST	TOTAL COST
04.08.01	Long-Term Monitoring/Operations		
04.08.01.001	Long-Term Monitoring/Operations	1,240,916	1,240,916
	Long-Term Monitoring/Operations	1,240,916	1,240,916
	Deep Well Monitoring/Abandonment	1,240,916	1,240,916
04.09	Site-Wide Plume Monitoring		
04.09.01	Long-Term Monitoring/Operations		
04.09.01.001	Long-Term Monitoring/Operations	13,553,021	13,553,021
	Long-Term Monitoring/Operations	13,553,021	13,553,021
	Site-Wide Plume Monitoring	13,553,021	13,553,021
	Water Medium Group Costs	146,071,566	146,071,566
05	Structures Medium Group Costs		
05.01	Significant Contamination Struc.		
05.01.01	Design		
05.01.01.001	Prepare/Submit 30% Design	74,861	74,861
05.01.01.002	Prepare/Submit 60% Design	74,861	74,861
05.01.01.003	Prepare/Submit 90% Design	74,861	74,861
05.01.01.004	Prepare/Submit CFC Design	41,589	41,589
	Design	266,173	266,173
05.01.02	Remediation		
05.01.02.001	Plans/Submittals/Workplans	146,395	146,395
05.01.02.002	Mobilization	166,314	166,314
05.01.02.003	Dust and Safety Sampling	1,531,505	1,531,505
05.01.02.004	Structures Demolition	10,590,564	10,590,564
05.01.02.006	Demobilization	89,554	89,554
05.01.02.007	Prepare/Submit Final Reports	41,589	41,589
05.01.02.008	Project Support	841,603	841,603
	Remediation	13,407,525	13,407,525
	Significant Contamination Struc.	13,673,698	13,673,698
05.02	Agent Structures Demolition		

		CONTRACT COST	TOTAL COST
05.02.01	Design		
05.02.01.001	Prepare/Submit 30% Design	466,573	466,573
05.02.01.002	Prepare/Submit 60% Design	466,573	466,573
05.02.01.003	Prepare/Submit 90% Design	466,573	466,573
05.02.01.004	Prepare/Submit CFC Design	172,805	172,805
	Design	1,572,524	1,572,524
05.02.02	Remediation		
05.02.02.001	Plans/Submittals/Workplans	345,610	345,610
05.02.02.002	Mobilization	602,890	602,890
05.02.02.003	Air Monitoring	4,469,719	4,469,719
05.02.02.004	Structures Demolition	41,595,750	41,595,750
05.02.02.007	Backfill Demolished Areas	304,671	304,671
05.02.02.008	Demobilization	324,633	324,633
05.02.02.009	Prepare/Submit Final Reports	43,201	43,201
05.02.02.010	Project Support	915,753	915,753
	Remediation	48,602,226	48,602,226
	Agent Structures Demolition	50,174,750	50,174,750
05.03	Other Contaminant Structures		
05.03.01	Design		
05.03.01.001	Prepare/Submit 30% Design	305,124	305,124
05.03.01.002	Prepare/Submit 60% Design	305,124	305,124
05.03.01.003	Prepare/Submit 90% Design	305,124	305,124
05.03.01.004	Prepare/Submit CFC Design	169,513	169,513
	Design	1,084,885	1,084,885
05.03.02	Remediation		
05.03.02.001	Plans/Submittals/Workplans	276,307	276,307
05.03.02.002	Mobilization	444,058	444,058
05.03.02.003	Dust and Safety Sampling	4,366,685	4,366,685
05.03.02.004	Structures Demolition	28,097,113	28,097,113
05.03.02.005	Consolidate Demolition Material	1,474,651	1,474,651
05.03.02.006	Demobilization	239,108	239,108
05.03.02.007	Prepare/Submit Final Reports	42,378	42,378
05.03.02.008	Project Support	857,566	857,566

		CONTRACT COST	TOTAL COST
	Remediation	35,797,866	35,797,866
	Other Contaminant Structures	36,882,751	36,882,751
05.04	Post-ROD Removal Actions		
05.04.01	Post-ROD Removal Actions		
05.04.01.001	Non-Agent Process Equipment Rem	14,200,000	14,200,000
05.04.01.002	Agent Process Equipment Removal	4,800,000	4,800,000
05.04.01.003	Asbestos/PCB Removal	11,800,000	11,800,000
05.04.01.004	Tank Removal	5,200,000	5,200,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Structures Medium Group Costs	136,731,198	136,731,198
06	PMRMA Mission Support Costs		
06.01	PMRMA Mission Support Costs		
06.01.01	PMRMA Remediation Mission Costs		
06.01.01.001	Fiscal Year 1996	45,000,000	45,000,000
06.01.01.002	Fiscal Year 1997	45,000,000	45,000,000
06.01.01.003	Fiscal Year 1998	45,000,000	45,000,000
06.01.01.004	Fiscal Year 1999	45,000,000	45,000,000
06.01.01.005	Fiscal Year 2000	45,000,000	45,000,000
06.01.01.006	Fiscal Year 2001	45,000,000	45,000,000
06.01.01.007	Fiscal Year 2002	45,000,000	45,000,000
	PMRMA Remediation Mission Costs	315,000,000	315,000,000
	PMRMA Mission Support Costs	315,000,000	315,000,000
	PMRMA Mission Support Costs	315,000,000	315,000,000
	Sitewide Alternative 3	1,936,571,653	1,936,571,653

Sitewide Alternative 4
Consolidation/Caps/Treatment/
Landfill

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA004: Sitewide Alternative 4 - Consolidation/Caps/Treatment/

TABLE B.5.3-6 Activity Costs for Alternative 4

** PROJECT OWNER SUMMARY - LEVEL 4 **

		CONTRACT COST	TOTAL COST
01	Project Sunk Costs		
01.01	Project Sunk Costs		
01.01.01	Project Sunk Costs		
01.01.01.001	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
02	Fixed Facility/Treatment Costs		
02.01	RCRA Landfill		
02.01.01	Design		
02.01.01.001	Prepare/Submit 30% Design	617,955	617,955
02.01.01.002	Prepare/Submit 60% Design	617,955	617,955
02.01.01.003	Prepare/Submit 90% Design	617,955	617,955
02.01.01.004	Prepare/Submit CFC Design	346,429	346,429
	Design	2,200,294	2,200,294
02.01.02	Construction		
02.01.02.001	Plans/Submittals/Workplans	259,167	259,167
02.01.02.002	Mobilization	2,157,750	2,157,750
02.01.02.003	Construction - Cell 1	3,872,916	3,872,916
02.01.02.004	Operation - Cell 1	4,143,175	4,143,175
02.01.02.005	Closure - Cell 1	2,459,294	2,459,294
02.01.02.006	Construction - Cell 2	3,872,916	3,872,916
02.01.02.007	Operation - Cell 2	4,143,175	4,143,175
02.01.02.008	Closure - Cell 2	2,459,294	2,459,294
02.01.02.009	Construction - Cell 3	3,872,916	3,872,916
02.01.02.010	Operation - Cell 3	4,143,175	4,143,175
02.01.02.011	Closure - Cell 3	2,459,294	2,459,294
02.01.02.012	Demobilization	467,150	467,150
02.01.02.013	Site Closure and Final Reports	37,452	37,452
02.01.02.014	Project Support	1,420,428	1,420,428
	Construction	35,768,097	35,768,097
02.01.03	Long-Term Activities		

		CONTRACT COST	TOTAL COST
02.01.03.001	Plans/Submittals/Workplans	119,846	119,846
02.01.03.002	Mobilization	103,046	103,046
02.01.03.003	Long-Term Monitor/Maintenance	4,080,605	4,080,605
02.01.03.004	Demobilization	55,487	55,487
02.01.03.005	Prepare/Submit Final Reports	18,726	18,726
02.01.03.006	Project Support	663,538	663,538
	Long-Term Activities	5,041,247	5,041,247
	RCRA Landfill	43,009,638	43,009,638
02.02	Enhanced RCRA Landfill		
02.02.01	Design		
02.02.01.001	Prepare/Submit 30% Design	908,206	908,206
02.02.01.002	Prepare/Submit 60% Design	908,206	908,206
02.02.01.003	Prepare/Submit 90% Design	908,206	908,206
02.02.01.004	Prepare/Submit CFC Design	514,962	514,962
	Design	3,239,582	3,239,582
02.02.02	Construction		
02.02.02.001	Plans/Submittals/Workplans	314,595	314,595
02.02.02.002	Mobilization	2,540,808	2,540,808
02.02.02.003	Construction - Enhanced Cell 1	2,911,578	2,911,578
02.02.02.004	Operation - Enhanced Cell 1	5,518,419	5,518,419
02.02.02.005	Closure - Enhanced Cell 1	1,267,505	1,267,505
02.02.02.006	Construction - Enhanced Cell 2	2,911,578	2,911,578
02.02.02.007	Operation - Enhanced Cell 2	5,518,419	5,518,419
02.02.02.008	Closure - Enhanced Cell 2	1,267,505	1,267,505
02.02.02.009	Construction - Enhanced Cell 3	2,911,578	2,911,578
02.02.02.010	Operation - Enhanced Cell 3	5,518,419	5,518,419
02.02.02.011	Closure - Enhanced Cell 3	1,267,505	1,267,505
02.02.02.012	Construction - Enhanced Cell 4	2,911,578	2,911,578
02.02.02.013	Operation - Enhanced Cell 4	5,518,419	5,518,419
02.02.02.014	Closure - Enhanced Cell 4	1,267,505	1,267,505
02.02.02.015	Demobilization	570,402	570,402
02.02.02.016	Site Closure and Final Reports	37,452	37,452
02.02.02.017	Project Support	1,420,428	1,420,428
	Construction	43,673,693	43,673,693
02.02.03	Long-Term Activities		
02.02.03.001	Plans/Submittals/Workplans	119,846	119,846

		CONTRACT COST	TOTAL COST
02.02.03.002	Mobilization	48,471	48,471
02.02.03.003	Long-Term Monitor/Maintenance	1,494,593	1,494,593
02.02.03.004	Demobilization	26,099	26,099
02.02.03.005	Prepare/Submit Final Reports	18,726	18,726
02.02.03.006	Project Support	663,538	663,538
	Long-Term Activities	2,371,272	2,371,272
	Enhanced RCRA Landfill	49,284,548	49,284,548
02.03	Borrow Areas		
02.03.01	Design		
02.03.01.001	Prepare/Submit 30% Design	269,653	269,653
02.03.01.002	Prepare/Submit 60% Design	269,653	269,653
02.03.01.003	Prepare/Submit 90% Design	269,653	269,653
02.03.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.03.02	Construction		
02.03.02.001	Plans/Submittals/Workplans	202,240	202,240
02.03.02.002	Mobilization	697,879	697,879
02.03.02.003	Strip/Stockpile Topsoil	1,854,989	1,854,989
02.03.02.004	Haul Road Construction	2,378,696	2,378,696
02.03.02.005	Facility Operations	26,986,959	26,986,959
02.03.02.006	Revegetate Disturbed Areas	711,375	711,375
02.03.02.007	Demobilization	375,780	375,780
02.03.02.008	Prepare/Submit Final Reports	37,452	37,452
02.03.02.009	Project Support	960,639	960,639
	Construction	34,206,008	34,206,008
	Borrow Areas	35,164,775	35,164,775
02.04	Caustic Agent Treatment Facility		
02.04.01	Design		
02.04.01.001	Prepare/Submit 30% Design	269,653	269,653
02.04.01.002	Prepare/Submit 60% Design	269,653	269,653
02.04.01.003	Prepare/Submit 90% Design	269,653	269,653
02.04.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766

		CONTRACT COST	TOTAL COST
02.04.02	Construction		
02.04.02.001	Plans/Submittals/Workplans	202,240	202,240
02.04.02.002	Mobilization	260,727	260,727
02.04.02.003	Construction	2,632,257	2,632,257
02.04.02.004	Systems Testing	445,688	445,688
02.04.02.005	Facility Operations	5,328,665	5,328,665
02.04.02.006	Demobilization	140,392	140,392
02.04.02.007	Prepare/Submit Final Reports	37,452	37,452
02.04.02.008	Project Support	721,817	721,817
	Construction	9,769,237	9,769,237
	Caustic Agent Treatment Facility	10,728,004	10,728,004
	Fixed Facility/Treatment Costs	138,186,964	138,186,964
03	Soil Medium Group Costs		
03.01	Basin A		
03.01.01	Design		
03.01.01.001	Prepare/Submit 30% Design	316,574	316,574
03.01.01.002	Prepare/Submit 60% Design	316,574	316,574
03.01.01.003	Prepare/Submit 90% Design	316,574	316,574
03.01.01.004	Prepare/Submit CFC Design	175,875	175,875
	Design	1,125,597	1,125,597
03.01.02	Remediation		
03.01.02.001	Plans/Submittals/Workplans	304,263	304,263
03.01.02.002	Mobilization	1,122,600	1,122,600
03.01.02.003	Install Gradefill after Consol.	12,613,999	12,613,999
03.01.02.004	Install Concrete & Soil Cover	29,815,312	29,815,312
03.01.02.005	Revegetate Disturbed Areas	340,174	340,174
03.01.02.006	Demobilization	604,478	604,478
03.01.02.007	Prepare/Submit Final Reports	43,969	43,969
03.01.02.008	Project Support	1,651,322	1,651,322
	Remediation	46,496,117	46,496,117
03.01.03	Long-Term Activities		
03.01.03.001	Plans/Submittals/Workplans	140,700	140,700
03.01.03.002	Mobilization	88,433	88,433
03.01.03.003	Short-Term Monitor/Maintenance	185,550	185,550

		CONTRACT COST	TOTAL COST
03.01.03.004	Long-Term Monitor/Maintenance	3,063,049	3,063,049
03.01.03.005	Demobilization	47,617	47,617
03.01.03.006	Prepare/Submit Final Reports	21,984	21,984
03.01.03.007	Project Support	778,997	778,997
	Long-Term Activities	4,326,330	4,326,330
	Basin A	51,948,044	51,948,044
03.02	Former Basin F		
03.02.01	Design		
03.02.01.001	Prepare/Submit 30% Design	479,384	479,384
03.02.01.002	Prepare/Submit 60% Design	479,384	479,384
03.02.01.003	Prepare/Submit 90% Design	479,384	479,384
03.02.01.004	Prepare/Submit CFC Design	177,550	177,550
	Design	1,615,701	1,615,701
03.02.02	Remediation		
03.02.02.001	Plans/Submittals/Workplans	372,854	372,854
03.02.02.002	Mobilization	2,024,425	2,024,425
03.02.02.003	In Situ Solidification	42,002,966	42,002,966
03.02.02.004	Install Gradefill after Consol.	10,970,565	10,970,565
03.02.02.005	Install RCRA-Equivalent Cap	14,107,346	14,107,346
03.02.02.006	Revegetate Disturbed Areas	270,398	270,398
03.02.02.007	Demobilization	1,092,547	1,092,547
03.02.02.008	Prepare/Submit Final Reports	44,387	44,387
03.02.02.009	Project Support	1,667,049	1,667,049
	Remediation	72,552,538	72,552,538
03.02.03	Long-Term Activities		
03.02.03.001	Plans/Submittals/Workplans	142,040	142,040
03.02.03.002	Mobilization	86,098	86,098
03.02.03.003	Short-Term Monitor/Maintenance	341,153	341,153
03.02.03.004	Long-Term Monitor/Maintenance	2,787,847	2,787,847
03.02.03.005	Demobilization	46,361	46,361
03.02.03.006	Prepare/Submit Final Reports	22,194	22,194
03.02.03.007	Project Support	786,416	786,416
	Long-Term Activities	4,212,109	4,212,109
	Former Basin F	78,380,347	78,380,347

		CONTRACT COST	TOTAL COST
03.03	Chemical Sewers		
03.03.01	Design		
03.03.01.001	Prepare/Submit 30% Design	325,389	325,389
03.03.01.002	Prepare/Submit 60% Design	325,389	325,389
03.03.01.003	Prepare/Submit 90% Design	325,389	325,389
03.03.01.004	Prepare/Submit CFC Design	180,772	180,772
	Design	1,156,940	1,156,940
03.03.02	Remediation		
03.03.02.001	Plans/Submittals/Workplans	312,735	312,735
03.03.02.002	Mobilization	232,895	232,895
03.03.02.003	Survey Lines	22,544	22,544
03.03.02.004	Excavate/Strip Overburden	2,686,647	2,686,647
03.03.02.005	Excavate Sewers Outside S Plants	1,874,898	1,874,898
03.03.02.008	Backfill w/Borrow Material	442,092	442,092
03.03.02.009	Backfill w/Overburden	1,460,912	1,460,912
03.03.02.010	Revegetate Disturbed Areas	39,188	39,188
03.03.02.011	Sewer Plugging (South Plants)	132,831	132,831
03.03.02.012	Demobilization	125,405	125,405
03.03.02.013	Prepare/Submit Final Reports	45,193	45,193
03.03.02.014	Project Support	952,916	952,916
	Remediation	8,328,254	8,328,254
	Chemical Sewers	9,485,194	9,485,194
03.04	South Plants Central Processing		
03.04.01	Design		
03.04.01.001	Prepare/Submit 30% Design	313,559	313,559
03.04.01.002	Prepare/Submit 60% Design	313,559	313,559
03.04.01.003	Prepare/Submit 90% Design	313,559	313,559
03.04.01.004	Prepare/Submit CFC Design	174,200	174,200
	Design	1,114,877	1,114,877
03.04.02	Remediation		
03.04.02.001	Plans/Submittals/Workplans	301,365	301,365
03.04.02.002	Mobilization	295,770	295,770
03.04.02.003	Drill/Screen for Agent Soil	575,127	575,127
03.04.02.004	Excavate Agent/HH Soil	1,920,551	1,920,551

		CONTRACT COST	TOTAL COST
03.04.02.008	Install Gradefill after Consol.	2,188,851	2,188,851
03.04.02.009	Install Soil Cover	4,973,140	4,973,140
03.04.02.010	Revegetate Disturbed Areas	115,983	115,983
03.04.02.011	Demobilization	159,261	159,261
03.04.02.012	Prepare/Submit Final Reports	43,550	43,550
03.04.02.013	Project Support	1,635,596	1,635,596
	Remediation	12,209,192	12,209,192
03.04.03	Long-Term Activities		
03.04.03.001	Plans/Submittals/Workplans	139,360	139,360
03.04.03.002	Mobilization	47,611	47,611
03.04.03.003	Short-Term Monitor/Maintenance	63,264	63,264
03.04.03.004	Long-Term Monitor/Maintenance	1,260,019	1,260,019
03.04.03.005	Demobilization	25,637	25,637
03.04.03.006	Prepare/Submit Final Reports	21,775	21,775
03.04.03.007	Project Support	771,578	771,578
	Long-Term Activities	2,329,243	2,329,243
	South Plants Central Processing	15,653,313	15,653,313
03.05	South Plants Balance of Areas		
03.05.01	Design		
03.05.01.001	Prepare/Submit 30% Design	319,447	319,447
03.05.01.002	Prepare/Submit 60% Design	319,447	319,447
03.05.01.003	Prepare/Submit 90% Design	319,447	319,447
03.05.01.004	Prepare/Submit CFC Design	177,471	177,471
	Design	1,135,811	1,135,811
03.05.02	Remediation		
03.05.02.001	Plans/Submittals/Workplans	307,024	307,024
03.05.02.002	Mobilization	711,237	711,237
03.05.02.003	UXO Clearance by Geophysics	18,648	18,648
03.05.02.004	Exca. UXO and Transport Off-Post	12,240	12,240
03.05.02.005	Drill/Screen for Agent Soil	443,498	443,498
03.05.02.006	Excavate Agent/HH/Biota Soil	8,123,876	8,123,876
03.05.02.007	Consolidation of Biota Soil	2,133,465	2,133,465
03.05.02.011	Install Soil Cover	10,645,916	10,645,916
03.05.02.012	Revegetate Disturbed Areas	944,088	944,088
03.05.02.013	Demobilization	382,972	382,972
03.05.02.014	Prepare/Submit Final Reports	44,368	44,368
03.05.02.015	Project Support	1,666,307	1,666,307

		CONTRACT COST	TOTAL COST
	Remediation	25,433,640	25,433,640
03.05.03	Long-Term Activities		
03.05.03.001	Plans/Submittals/Workplans	141,976	141,976
03.05.03.002	Mobilization	85,262	85,262
03.05.03.003	Short-Term Monitor/Maintenance	514,957	514,957
03.05.03.004	Long-Term Monitor/Maintenance	2,574,786	2,574,786
03.05.03.005	Demobilization	45,910	45,910
03.05.03.006	Prepare/Submit Final Reports	22,184	22,184
03.05.03.007	Project Support	786,066	786,066
	Long-Term Activities	4,171,141	4,171,141
	South Plants Balance of Areas	30,740,592	30,740,592
03.06	South Plants Ditches		
03.06.01	Design		
03.06.01.001	Prepare/Submit 30% Design	79,101	79,101
03.06.01.002	Prepare/Submit 60% Design	79,101	79,101
03.06.01.003	Prepare/Submit 90% Design	79,101	79,101
03.06.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.06.02	Remediation		
03.06.02.001	Plans/Submittals/Workplans	172,265	172,265
03.06.02.002	Mobilization	39,558	39,558
03.06.02.003	Excavate HH/Biota Soil	961,148	961,148
03.06.02.004	Consolidation of Biota Soil	94,310	94,310
03.06.02.006	Backfill w/Borrow Material	83,256	83,256
03.06.02.007	Demobilization	21,301	21,301
03.06.02.008	Prepare/Submit Final Reports	43,945	43,945
03.06.02.009	Project Support	217,149	217,149
	Remediation	1,632,932	1,632,932
	South Plants Ditches	1,914,181	1,914,181
03.07	Complex Trenches		
03.07.01	Design		

		CONTRACT COST	TOTAL COST
03.07.01.001	Prepare/Submit 30% Design	328,459	328,459
03.07.01.002	Prepare/Submit 60% Design	328,459	328,459
03.07.01.003	Prepare/Submit 90% Design	328,459	328,459
03.07.01.004	Prepare/Submit CFC Design	182,477	182,477
	Design	1,167,855	1,167,855
03.07.02	Remediation		
03.07.02.001	Plans/Submittals/Workplans	315,686	315,686
03.07.02.002	Mobilization	1,207,321	1,207,321
03.07.02.003	UXO Clearance by Geophysics	49,428	49,428
03.07.02.004	Exca. UXO and Transport Off-Post	573,807	573,807
03.07.02.005	Install Slurry Walls	2,491,362	2,491,362
03.07.02.006	Install Gradefill	11,180,191	11,180,191
03.07.02.007	Install RCRA-Equiv. Cap w/Concr.	20,538,554	20,538,554
03.07.02.008	Revegetate Disturbed Areas	205,944	205,944
03.07.02.009	Demobilization	650,096	650,096
03.07.02.010	Prepare/Submit Final Reports	45,619	45,619
03.07.02.011	Project Support	876,985	876,985
	Remediation	38,134,993	38,134,993
03.07.03	Long-Term Activities		
03.07.03.001	Plans/Submittals/Workplans	145,982	145,982
03.07.03.002	Mobilization	171,180	171,180
03.07.03.003	Short-Term Monitor/Maintenance	262,111	262,111
03.07.03.004	Long-Term Monitor/Maintenance	6,871,911	6,871,911
03.07.03.005	Demobilization	92,173	92,173
03.07.03.006	Prepare/Submit Final Reports	22,810	22,810
03.07.03.007	Project Support	808,242	808,242
	Long-Term Activities	8,374,409	8,374,409
	Complex Trenches	47,677,257	47,677,257
03.08	Sanitary Landfill		
03.08.01	Design		
03.08.01.001	Prepare/Submit 30% Design	158,202	158,202
03.08.01.002	Prepare/Submit 60% Design	158,202	158,202
03.08.01.003	Prepare/Submit 90% Design	158,202	158,202
03.08.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497

		CONTRACT COST	TOTAL COST
03.08.02	Remediation		
03.08.02.001	Plans/Submittals/Workplans	237,303	237,303
03.08.02.002	Mobilization	296,152	296,152
03.08.02.003	Excavate HH Soil/Non HH Material	5,950,941	5,950,941
03.08.02.004	Consolidation of Non HH Material	1,684,905	1,684,905
03.08.02.006	Backfill w/Borrow Material	2,905,156	2,905,156
03.08.02.007	Revegetate Disturbed Areas	102,342	102,342
03.08.02.008	Demobilization	159,468	159,468
03.08.02.009	Prepare/Submit Final Reports	43,945	43,945
03.08.02.010	Project Support	844,800	844,800
	Remediation	12,225,013	12,225,013
	Sanitary Landfill	12,787,510	12,787,510
03.09	Section 36 Balance of Areas		
03.09.01	Design		
03.09.01.001	Prepare/Submit 30% Design	319,447	319,447
03.09.01.002	Prepare/Submit 60% Design	319,447	319,447
03.09.01.003	Prepare/Submit 90% Design	319,447	319,447
03.09.01.004	Prepare/Submit CFC Design	177,471	177,471
	Design	1,135,811	1,135,811
03.09.02	Remediation		
03.09.02.001	Plans/Submittals/Workplans	307,024	307,024
03.09.02.002	Mobilization	320,380	320,380
03.09.02.003	UXO Clearance by Geophysics	288,695	288,695
03.09.02.004	Exca. UXO and Transport Off-Post	669,676	669,676
03.09.02.005	Drill/Screen for Agent Soil	869,476	869,476
03.09.02.006	Excavate Agent/HH/Biota Soil	3,298,412	3,298,412
03.09.02.007	Consolidation of Biota Soil	603,873	603,873
03.09.02.010	Backfill w/Borrow Material	422,972	422,972
03.09.02.011	Install Soil Cover	3,167,664	3,167,664
03.09.02.012	Revegetate Disturbed Areas	438,729	438,729
03.09.02.013	Demobilization	172,513	172,513
03.09.02.014	Prepare/Submit Final Report	44,368	44,368
03.09.02.015	Project Support	852,923	852,923
	Remediation	11,456,704	11,456,704
03.09.03	Long-Term Activities		
03.09.03.001	Plans/Submittals/Workplans	141,976	141,976

		CONTRACT COST	TOTAL COST
03.09.03.002	Mobilization	50,356	50,356
03.09.03.003	Short-Term Monitor/Maintenance	239,307	239,307
03.09.03.004	Long-Term Monitor/Maintenance	1,196,533	1,196,533
03.09.03.005	Demobilization	27,115	27,115
03.09.03.006	Prepare/Submit Final Reports	22,184	22,184
03.09.03.007	Project Support	786,066	786,066
	Long-Term Activities	2,463,537	2,463,537
	Section 36 Balance of Areas	15,056,052	15,056,052
03.10	Basin F Wastepile		
03.10.01	Design		
03.10.01.001	Prepare/Submit 30% Design	488,297	488,297
03.10.01.002	Prepare/Submit 60% Design	488,297	488,297
03.10.01.003	Prepare/Submit 90% Design	488,297	488,297
03.10.01.004	Prepare/Submit CFC Design	180,851	180,851
	Design	1,645,743	1,645,743
03.10.02	Remediation		
03.10.02.001	Plans/Submittals/Workplans	379,787	379,787
03.10.02.002	Mobilization	2,673,050	2,673,050
03.10.02.003	Excavate/Strip Overburden	683,716	683,716
03.10.02.004	Excavate Wastepile w/Vapor Cont	45,950,635	45,950,635
03.10.02.005	Drying for Landfill Disposal	30,317,617	30,317,617
03.10.02.007	Backfill w/Overburden/Road Fill	969,759	969,759
03.10.02.008	Demobilization	1,437,423	1,437,423
03.10.02.009	Prepare/Submit Final Reports	45,213	45,213
03.10.02.010	Project Support	1,866,374	1,866,374
	Remediation	84,323,573	84,323,573
	Basin F Wastepile	85,969,316	85,969,316
03.11	Secondary Basins		
03.11.01	Design		
03.11.01.001	Prepare/Submit 30% Design	158,202	158,202
03.11.01.002	Prepare/Submit 60% Design	158,202	158,202
03.11.01.003	Prepare/Submit 90% Design	158,202	158,202
03.11.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497

		CONTRACT COST	TOTAL COST
03.11.02	Remediation		
03.11.02.001	Plans/Submittals/Workplans	237,303	237,303
03.11.02.002	Mobilization	120,944	120,944
03.11.02.003	Excavate HH Soil	647,714	647,714
03.11.02.005	Backfill w/Borrow Material	195,907	195,907
03.11.02.006	Install Soil Cover	2,570,028	2,570,028
03.11.02.007	Revegetate Disturbed Areas	266,696	266,696
03.11.02.008	Demobilization	65,123	65,123
03.11.02.009	Prepare/Submit Final Reports	43,945	43,945
03.11.02.010	Project Support	844,800	844,800
	Remediation	4,992,461	4,992,461
03.11.03	Long-Term Activities		
03.11.03.001	Plans/Submittals/Workplans	140,624	140,624
03.11.03.002	Mobilization	38,283	38,283
03.11.03.003	Short-Term Monitor/Maintenance	145,470	145,470
03.11.03.004	Long-Term Monitor/Maintenance	727,351	727,351
03.11.03.005	Demobilization	20,614	20,614
03.11.03.006	Prepare/Submit Final Reports	21,973	21,973
03.11.03.007	Project Support	778,580	778,580
	Long-Term Activities	1,872,895	1,872,895
	Secondary Basins	7,427,853	7,427,853
03.12	Munitions Testing		
03.12.01	Design		
03.12.01.001	Prepare/Submit 30% Design	159,723	159,723
03.12.01.002	Prepare/Submit 60% Design	159,723	159,723
03.12.01.003	Prepare/Submit 90% Design	159,723	159,723
03.12.01.004	Prepare/Submit CFC Design	88,735	88,735
	Design	567,906	567,906
03.12.02	Remediation		
03.12.02.001	Plans/Submittals/Workplans	239,585	239,585
03.12.02.002	Mobilization	76,176	76,176
03.12.02.003	UXO Clearance by Geophysics	330,800	330,800
03.12.02.004	Exca. UXO and Transport Off-Post	110,898	110,898
03.12.02.005	Excavate Debris from Surf. Soil	1,524,118	1,524,118
03.12.02.007	Revegetate Disturbed Areas	137,833	137,833
03.12.02.008	Demobilization	41,018	41,018

		CONTRACT COST	TOTAL COST
03.12.02.009	Prepare/Submit Final Reports	44,368	44,368
03.12.02.010	Project Support	219,237	219,237
	Remediation	2,724,034	2,724,034
	Munitions Testing	3,291,940	3,291,940
03.13	Shell Trenches		
03.13.01	Design		
03.13.01.001	Prepare/Submit 30% Design	159,625	159,625
03.13.01.002	Prepare/Submit 60% Design	159,625	159,625
03.13.01.003	Prepare/Submit 90% Design	159,625	159,625
03.13.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.13.02	Remediation		
03.13.02.001	Plans/Submittals/Workplans	239,437	239,437
03.13.02.002	Mobilization	50,113	50,113
03.13.02.003	Upgrade Existing Slurry Wall	598,676	598,676
03.13.02.004	Install RCRA-Equivalent Cap	873,291	873,291
03.13.02.005	Revegetate Disturbed Areas	16,668	16,668
03.13.02.006	Demobilization	26,984	26,984
03.13.02.007	Prepare/Submit Final Reports	44,340	44,340
03.13.02.008	Project Support	219,102	219,102
	Remediation	2,068,612	2,068,612
03.13.03	Long-Term Activities		
03.13.03.001	Plans/Submittals/Workplans	141,889	141,889
03.13.03.002	Mobilization	69,463	69,463
03.13.03.003	Short-Term Monitor/Maintenance	21,214	21,214
03.13.03.004	Long-Term Monitor/Maintenance	2,320,514	2,320,514
03.13.03.005	Demobilization	37,403	37,403
03.13.03.006	Prepare/Submit Final Reports	22,170	22,170
03.13.03.007	Project Support	785,581	785,581
	Long-Term Activities	3,398,234	3,398,234
	Shell Trenches	6,034,402	6,034,402
03.14	Lake Sediments		

		CONTRACT COST	TOTAL COST
03.14.01	Design		
03.14.01.001	Prepare/Submit 30% Design	159,625	159,625
03.14.01.002	Prepare/Submit 60% Design	159,625	159,625
03.14.01.003	Prepare/Submit 90% Design	159,625	159,625
03.14.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.14.02	Remediation		
03.14.02.001	Plans/Submittals/Workplans	239,437	239,437
03.14.02.002	Mobilization	60,515	60,515
03.14.02.003	Grub & Clear Aquatic Vegetation	15,664	15,664
03.14.02.004	Install Cutoff Wall	667,969	667,969
03.14.02.005	Excavate HH/Selected Biota Soil	773,734	773,734
03.14.02.006	Consolidate Selected Biota Soil	79,336	79,336
03.14.02.008	Backfill w/Borrow Material	237,486	237,486
03.14.02.009	Revegetate or Restore Wetlands	127,828	127,828
03.14.02.010	Demobilization	32,585	32,585
03.14.02.011	Prepare/Submit Final Reports	44,340	44,340
03.14.02.012	Project Support	219,102	219,102
	Remediation	2,497,997	2,497,997
	Lake Sediments	3,065,553	3,065,553
03.15	Burial Trenches		
03.15.01	Design		
03.15.01.001	Prepare/Submit 30% Design	164,230	164,230
03.15.01.002	Prepare/Submit 60% Design	164,230	164,230
03.15.01.003	Prepare/Submit 90% Design	164,230	164,230
03.15.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.15.02	Remediation		
03.15.02.001	Plans/Submittals/Workplans	246,344	246,344
03.15.02.002	Mobilization	117,115	117,115
03.15.02.003	UXO Clearance by Geophysics	216,714	216,714
03.15.02.004	Exca. UXO and Transport Off-Post	138,192	138,192
03.15.02.005	Drill/Screen for Agent Soil	67,379	67,379
03.15.02.006	Excavate Agent/HH/UXO Deb. Soil	1,685,080	1,685,080
03.15.02.009	Backfill w/Borrow Material	152,455	152,455
03.15.02.010	Revegetate Disturbed Areas	90,298	90,298

		CONTRACT COST	TOTAL COST
03.15.02.011	Demobilization	63,062	63,062
03.15.02.012	Prepare/Submit Final Reports	45,619	45,619
03.15.02.013	Project Support	876,985	876,985
	Remediation	3,699,244	3,699,244
	Burial Trenches	4,283,171	4,283,171
03.16	Section 36 Lime Basins		
03.16.01	Design		
03.16.01.001	Prepare/Submit 30% Design	162,695	162,695
03.16.01.002	Prepare/Submit 60% Design	162,695	162,695
03.16.01.003	Prepare/Submit 90% Design	162,695	162,695
03.16.01.004	Prepare/Submit CFC Design	90,386	90,386
	Design	578,470	578,470
03.16.02	Remediation		
03.16.02.001	Plans/Submittals/Workplans	244,042	244,042
03.16.02.002	Mobilization	95,144	95,144
03.16.02.003	Drill/Screen for Agent Soil	320,842	320,842
03.16.02.004	Excavate/Strip Overburden	299,951	299,951
03.16.02.005	Excavate Agent/HH Soil	967,514	967,514
03.16.02.008	Backfill w/Borrow Material	362,676	362,676
03.16.02.009	Backfill w/Overburden	129,271	129,271
03.16.02.010	Revegetate Disturbed Areas	17,686	17,686
03.16.02.011	Demobilization	51,231	51,231
03.16.02.012	Prepare/Submit Final Reports	45,193	45,193
03.16.02.013	Project Support	868,789	868,789
	Remediation	3,402,339	3,402,339
	Section 36 Lime Basins	3,980,809	3,980,809
03.17	Buried Sediments		
03.17.01	Design		
03.17.01.001	Prepare/Submit 30% Design	79,812	79,812
03.17.01.002	Prepare/Submit 60% Design	79,812	79,812
03.17.01.003	Prepare/Submit 90% Design	79,812	79,812
03.17.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778

		CONTRACT COST	TOTAL COST
03.17.02	Remediation		
03.17.02.001	Plans/Submittals/Workplans	173,814	173,814
03.17.02.002	Mobilization	23,958	23,958
03.17.02.003	Excavate HH Soil	386,904	386,904
03.17.02.005	Backfill w/Borrow Material	123,906	123,906
03.17.02.006	Revegetate Disturbed Areas	4,050	4,050
03.17.02.007	Demobilization	12,901	12,901
03.17.02.008	Prepare/Submit Final Reports	44,340	44,340
03.17.02.009	Project Support	219,102	219,102
	Remediation	988,975	988,975
	Buried Sediments	1,272,753	1,272,753
03.18	Buried M-1 Pits		
03.18.01	Design		
03.18.01.001	Prepare/Submit 30% Design	492,434	492,434
03.18.01.002	Prepare/Submit 60% Design	492,434	492,434
03.18.01.003	Prepare/Submit 90% Design	492,434	492,434
03.18.01.004	Prepare/Submit CFC Design	182,383	182,383
	Design	1,659,686	1,659,686
03.18.02	Remediation		
03.18.02.001	Plans/Submittals/Workplans	383,004	383,004
03.18.02.002	Mobilization	589,639	589,639
03.18.02.003	Drill/Screen for Agent Soils	82,725	82,725
03.18.02.004	M-1 Pit Excav. w/Vapor Controls	5,185,330	5,185,330
03.18.02.006	Solidify M-1 Pit Materials	13,032,254	13,032,254
03.18.02.007	Landfill Treated Material	301,767	301,767
03.18.02.008	Backfill w/Borrow Material	186,152	186,152
03.18.02.009	Demobilization	317,499	317,499
03.18.02.010	Prepare/Submit Final Reports	45,596	45,596
03.18.02.011	Project Support	961,409	961,409
	Remediation	21,085,376	21,085,376
	Buried M-1 Pits	22,745,062	22,745,062
03.19	Sanitary/Process Water Sewers		
03.19.01	Design		
03.19.01.001	Prepare/Submit 30% Design	8,705	8,705

		CONTRACT COST	TOTAL COST
03.19.01.002	Prepare/Submit 60% Design	8,705	8,705
03.19.01.003	Prepare/Submit 90% Design	8,705	8,705
03.19.01.004	Prepare/Submit CFC Design	5,223	5,223
	Design	31,336	31,336
03.19.02	Remediation		
03.19.02.001	Plans/Submittals/Workplans	54,403	54,403
03.19.02.002	Mobilization	6,389	6,389
03.19.02.003	Plugging of Manholes	133,516	133,516
03.19.02.004	Demobilization	3,441	3,441
03.19.02.005	Prepare/Submit Final Reports	43,523	43,523
03.19.02.006	Project Support	71,253	71,253
	Remediation	312,523	312,523
	Sanitary/Process Water Sewers	343,860	343,860
03.20	Hex Pit		
03.20.01	Design		
	Design	812,838	812,838
03.20.02	Remediation		
	Remediation	9,187,162	9,187,162
	Hex Pit	10,000,000	10,000,000
03.21	Surficial Soil		
03.21.01	Design		
03.21.01.001	Prepare/Submit 30% Design	319,447	319,447
03.21.01.002	Prepare/Submit 60% Design	319,447	319,447
03.21.01.003	Prepare/Submit 90% Design	319,447	319,447
03.21.01.004	Prepare/Submit CFC Design	177,471	177,471
	Design	1,135,811	1,135,811
03.21.02	Remediation		

		CONTRACT COST	TOTAL COST
03.21.02.001	Plans/Submittals/Workplans	307,024	307,024
03.21.02.002	Mobilization	383,164	383,164
03.21.02.003	Excavate HH/Selected Biota Soil	5,754,548	5,754,548
03.21.02.004	Consolidate Selected Biota Soil	1,888,121	1,888,121
03.21.02.006	Backfill w/Borrow Material	612,165	612,165
03.21.02.007	Revegetate Disturbed Areas	824,659	824,659
03.21.02.008	Demobilization	206,319	206,319
03.21.02.009	Prepare/Submit Final Reports	44,368	44,368
03.21.02.010	Project Support	852,923	852,923
03.21.02.011	Potential USFWS Remedial Act. #1	2,491,932	2,491,932
03.21.02.012	Potential USFWS Remedial Act. #2	2,491,932	2,491,932
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	Remediation	15,857,154	15,857,154
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	Surficial Soil	16,992,965	16,992,965
03.22	Toxic Storage Yards		
03.22.01	Design		
03.22.01.001	Prepare/Submit 30% Design	56,995	56,995
03.22.01.002	Prepare/Submit 60% Design	56,995	56,995
03.22.01.003	Prepare/Submit 90% Design	56,995	56,995
03.22.01.004	Prepare/Submit CFC Design	34,197	34,197
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	Design	205,181	205,181
03.22.02	Remediation		
03.22.02.001	Plans/Submittals/Workplans	113,989	113,989
03.22.02.002	Mobilization	69,335	69,335
03.22.02.003	Demolition/Landfill Storage Pads	377,877	377,877
03.22.02.004	Agent Screening	1,602,072	1,602,072
03.22.02.005	Excavate Agent/HH Soil	74,209	74,209
03.22.02.008	Backfill w/Borrow Material	13,521	13,521
03.22.02.009	Revegetate Disturbed Areas	927	927
03.22.02.010	Demobilization	37,333	37,333
03.22.02.011	Prepare/Submit Final Reports	45,596	45,596
03.22.02.012	Project Support	144,537	144,537
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	Remediation	2,479,397	2,479,397
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	Toxic Storage Yards	2,684,578	2,684,578
03.23	Sand Creek Lateral		
03.23.01	Design		

		CONTRACT COST	TOTAL COST
03.23.01.001	Prepare/Submit 30% Design	79,101	79,101
03.23.01.002	Prepare/Submit 60% Design	79,101	79,101
03.23.01.003	Prepare/Submit 90% Design	79,101	79,101
03.23.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.23.02	Remediation		
03.23.02.001	Plans/Submittals/Workplans	172,265	172,265
03.23.02.002	Mobilization	87,801	87,801
03.23.02.003	Excavate HH/Biota Soil	1,797,893	1,797,893
03.23.02.004	Consolidation of Biota Soil	374,468	374,468
03.23.02.006	Backfill w/Borrow Material	727,913	727,913
03.23.02.007	Revegetate Disturbed Areas	155,635	155,635
03.23.02.008	Demobilization	47,278	47,278
03.23.02.009	Prepare/Submit Final Reports	43,945	43,945
03.23.02.010	Project Support	217,149	217,149
	Remediation	3,624,348	3,624,348
	Sand Creek Lateral	3,905,596	3,905,596
03.24	Ditches/Drainage Areas		
03.24.01	Design		
03.24.01.001	Prepare/Submit 30% Design	78,341	78,341
03.24.01.002	Prepare/Submit 60% Design	78,341	78,341
03.24.01.003	Prepare/Submit 90% Design	78,341	78,341
03.24.01.004	Prepare/Submit CFC Design	43,523	43,523
	Design	278,544	278,544
03.24.02	Remediation		
03.24.02.001	Plans/Submittals/Workplans	170,608	170,608
03.24.02.002	Mobilization	40,166	40,166
03.24.02.003	Excavate Selected Biota Soil	874,256	874,256
03.24.02.004	Consolidate Selected Biota Soil	211,703	211,703
03.24.02.005	Backfill w/Borrow Material	309,962	309,962
03.24.02.006	Revegetate Disturbed Areas	78,113	78,113
03.24.02.007	Demobilization	21,629	21,629
03.24.02.008	Prepare/Submit Final Reports	43,523	43,523
03.24.02.009	Project Support	215,061	215,061
	Remediation	1,965,022	1,965,022

		CONTRACT COST	TOTAL COST
	Ditches/Drainage Areas	2,243,566	2,243,566
03.25	North Plants		
03.25.01	Design		
03.25.01.001	Prepare/Submit 30% Design	55,425	55,425
03.25.01.002	Prepare/Submit 60% Design	55,425	55,425
03.25.01.003	Prepare/Submit 90% Design	55,425	55,425
03.25.01.004	Prepare/Submit CFC Design	33,255	33,255
	Design	199,531	199,531
03.25.02	Remediation		
03.25.02.001	Plans/Submittals/Workplans	110,851	110,851
03.25.02.002	Mobilization	35,762	35,762
03.25.02.003	Drill/Screen for Agent Soil	256,929	256,929
03.25.02.004	Excavate Agent/HH Soil.	7,045	7,045
03.25.02.007	Backfill w/Borrow Material	2,639	2,639
03.25.02.008	Install Soil Cover	778,271	778,271
03.25.02.009	Revegetate Disturbed Areas	80,620	80,620
03.25.02.010	Demobilization	19,257	19,257
03.25.02.011	Prepare/Submit Final Reports	44,340	44,340
03.25.02.012	Project Support	140,558	140,558
	Remediation	1,476,271	1,476,271
03.25.03	Long-Term Activities		
03.25.03.001	Plans/Submittals/Workplans	141,889	141,889
03.25.03.002	Mobilization	25,610	25,610
03.25.03.003	Short-Term Monitor/Maintenance	43,974	43,974
03.25.03.004	Long-Term Monitor/Maintenance	219,872	219,872
03.25.03.005	Demobilization	13,791	13,791
03.25.03.006	Prepare/Submit Final Reports	22,170	22,170
03.25.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,252,887	1,252,887
	North Plants	2,928,690	2,928,690
03.26	Contingent Soil Volume		
03.26.01	Design		

		CONTRACT COST	TOTAL COST
03.26.01.001	Prepare/Submit 30% Design	79,812	79,812
03.26.01.002	Prepare/Submit 60% Design	79,812	79,812
03.26.01.003	Prepare/Submit 90% Design	79,812	79,812
03.26.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.26.02	Remediation		
03.26.02.001	Plans/Submittals/Workplans	173,814	173,814
03.26.02.002	Mobilization	103,591	103,591
03.26.02.003	Excavate Soil	2,593,113	2,593,113
03.26.02.005	Backfill w/Borrow Material	1,047,811	1,047,811
03.26.02.006	Revegetate Disturbed Areas	38,620	38,620
03.26.02.007	Demobilization	55,779	55,779
03.26.02.008	Prepare/Submit Final Reports	44,340	44,340
03.26.02.009	Project Support	219,102	219,102
	Remediation	4,276,171	4,276,171
	Contingent Soil Volume	4,559,949	4,559,949
	Soil Medium Group Costs	445,372,553	445,372,553
04	Water Medium Group Costs		
04.01	Northwest Boundary System		
04.01.01	Long-Term Monitoring/Operations		
04.01.01.001	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Northwest Boundary System	30,861,475	30,861,475
04.02	Irondale System & Linked IRAs		
04.02.01	Long-Term Monitoring/Operations		
04.02.01.001	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Irondale System & Linked IRAs	2,844,461	2,844,461
04.03	North Boundary System		

		CONTRACT COST	TOTAL COST
04.03.01	Long-Term Monitoring/Operations		
04.03.01.001	Long-Term Monitoring/Operations	47,779,513	47,779,513
	Long-Term Monitoring/Operations	47,779,513	47,779,513
	North Boundary System	47,779,513	47,779,513
04.04	Basin A Neck/Bedrock Ridge Syst.		
04.04.01	Design Bedrock Ridge System		
04.04.01.001	Design Bedrock Ridge System	156,681	156,681
	Design Bedrock Ridge System	156,681	156,681
04.04.02	Construction Bedrock Ridge Syst.		
04.04.02.001	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
	Construction Bedrock Ridge Syst.	3,476,564	3,476,564
04.04.03	Long-Term Monitoring/Operations		
04.04.03.001	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Long-Term Monitoring/Operations	27,329,138	27,329,138
	Basin A Neck/Bedrock Ridge Syst.	30,962,383	30,962,383
04.05	On-Post Water Supply		
04.05.01	Design		
	Design	800,000	800,000
04.05.02	Construction		
	Construction	14,200,000	14,200,000
04.05.03	Long-Term Monitoring/Operations		

	CONTRACT COST	TOTAL COST
On-Post Water Supply	15,000,000	15,000,000
04.06 Hydrologic Controls		
04.06.01 Long-Term Monitoring/Operations		
04.07 S. P. Tank Farm Plume Monitoring		
04.07.01 Long-Term Monitoring/Operations		
04.07.01.001 Long-Term Monitoring/Operations	3,829,798	3,829,798
Long-Term Monitoring/Operations	3,829,798	3,829,798
S. P. Tank Farm Plume Monitoring	3,829,798	3,829,798
04.08 Deep Well Monitoring/Abandonment		
04.08.01 Long-Term Monitoring/Operations		
04.08.01.001 Long-Term Monitoring/Operations	1,240,916	1,240,916
Long-Term Monitoring/Operations	1,240,916	1,240,916
Deep Well Monitoring/Abandonment	1,240,916	1,240,916
04.09 Site-Wide Plume Monitoring		
04.09.01 Long-Term Monitoring/Operations		
04.09.01.001 Long-Term Monitoring/Operations	13,553,021	13,553,021
Long-Term Monitoring/Operations	13,553,021	13,553,021
Site-Wide Plume Monitoring	13,553,021	13,553,021
Water Medium Group Costs	146,071,566	146,071,566
05 Structures Medium Group Costs		
05.01 Significant Contamination Struc.		
05.01.01 Design		
05.01.01.001 Prepare/Submit 30% Design	74,861	74,861

		CONTRACT COST	TOTAL COST
05.01.01.002	Prepare/Submit 60% Design	74,861	74,861
05.01.01.003	Prepare/Submit 90% Design	74,861	74,861
05.01.01.004	Prepare/Submit CFC Design	41,589	41,589
	Design	266,173	266,173
05.01.02	Remediation		
05.01.02.001	Plans/Submittals/Workplans	146,395	146,395
05.01.02.002	Mobilization	166,314	166,314
05.01.02.003	Dust and Safety Sampling	1,531,505	1,531,505
05.01.02.004	Structures Demolition	10,590,564	10,590,564
05.01.02.006	Demobilization	89,554	89,554
05.01.02.007	Prepare/Submit Final Reports	41,589	41,589
05.01.02.008	Project Support	841,603	841,603
	Remediation	13,407,525	13,407,525
	Significant Contamination Struc.	13,673,698	13,673,698
05.02	Agent Structures Demolition		
05.02.01	Design		
05.02.01.001	Prepare/Submit 30% Design	466,573	466,573
05.02.01.002	Prepare/Submit 60% Design	466,573	466,573
05.02.01.003	Prepare/Submit 90% Design	466,573	466,573
05.02.01.004	Prepare/Submit CFC Design	172,805	172,805
	Design	1,572,524	1,572,524
05.02.02	Remediation		
05.02.02.001	Plans/Submittals/Workplans	345,610	345,610
05.02.02.002	Mobilization	602,890	602,890
05.02.02.003	Air Monitoring	4,469,719	4,469,719
05.02.02.004	Structures Demolition	41,595,750	41,595,750
05.02.02.007	Backfill Demolished Areas	304,671	304,671
05.02.02.008	Demobilization	324,633	324,633
05.02.02.009	Prepare/Submit Final Reports	43,201	43,201
05.02.02.010	Project Support	915,753	915,753
	Remediation	48,602,226	48,602,226
	Agent Structures Demolition	50,174,750	50,174,750
05.03	Other Contaminant Structures		

		CONTRACT COST	TOTAL COST
05.03.01	Design		
05.03.01.001	Prepare/Submit 30% Design	305,124	305,124
05.03.01.002	Prepare/Submit 60% Design	305,124	305,124
05.03.01.003	Prepare/Submit 90% Design	305,124	305,124
05.03.01.004	Prepare/Submit CFC Design	169,513	169,513
	Design	1,084,885	1,084,885
05.03.02	Remediation		
05.03.02.001	Plans/Submittals/Workplans	276,307	276,307
05.03.02.002	Mobilization	444,058	444,058
05.03.02.003	Dust and Safety Sampling	4,366,685	4,366,685
05.03.02.004	Structures Demolition	28,097,113	28,097,113
05.03.02.005	Consolidate Demolition Material	1,474,651	1,474,651
05.03.02.006	Demobilization	239,108	239,108
05.03.02.007	Prepare/Submit Final Reports	42,378	42,378
05.03.02.008	Project Support	857,566	857,566
	Remediation	35,797,866	35,797,866
	Other Contaminant Structures	36,882,751	36,882,751
05.04	Post-ROD Removal Actions		
05.04.01	Post-ROD Removal Actions		
05.04.01.001	Non-Agent Process Equipment Rem	14,200,000	14,200,000
05.04.01.002	Agent Process Equipment Removal	4,800,000	4,800,000
05.04.01.003	Asbestos/PCB Removal	11,800,000	11,800,000
05.04.01.004	Tank Removal	5,200,000	5,200,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Structures Medium Group Costs	136,731,198	136,731,198
06	PMRMA Mission Support Costs		
06.01	PMRMA Mission Support Costs		
06.01.01	PMRMA Remediation Mission Costs		
06.01.01.001	Fiscal Year 1996	45,000,000	45,000,000
06.01.01.002	Fiscal Year 1997	45,000,000	45,000,000
06.01.01.003	Fiscal Year 1998	45,000,000	45,000,000

		CONTRACT COST	TOTAL COST
06.01.01.004	Fiscal Year 1999	45,000,000	45,000,000
06.01.01.005	Fiscal Year 2000	45,000,000	45,000,000
06.01.01.006	Fiscal Year 2001	45,000,000	45,000,000
06.01.01.007	Fiscal Year 2002	45,000,000	45,000,000
06.01.01.008	Fiscal Year 2003	45,000,000	45,000,000
06.01.01.009	Fiscal Year 2004	45,000,000	45,000,000
	PMRMA Remediation Mission Costs	405,000,000	405,000,000
	PMRMA Mission Support Costs	405,000,000	405,000,000
	PMRMA Mission Support Costs	405,000,000	405,000,000
	Sitewide Alternative 4	2,021,362,282	2,021,362,282

Sitewide Alternative 5
Caps/Treatment/Landfill

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA005: Sitewide Alternative 5 - Caps/Treatment/Landfill

TABLE B.5.3-7 Activity Costs for Alternative 5 SUMMARY PAGE 1

** PROJECT OWNER SUMMARY - LEVEL 4 **

		CONTRACT COST	TOTAL COST
01	Project Sunk Costs		
01.01	Project Sunk Costs		
01.01.01	Project Sunk Costs		
01.01.01.001	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
	Project Sunk Costs	750,000,000	750,000,000
02	Fixed Facility/Treatment Costs		
02.01	Incineration		
02.01.01	Design		
02.01.01.001	Prepare/Submit 30% Design	404,480	404,480
02.01.01.002	Prepare/Submit 60% Design	404,480	404,480
02.01.01.003	Prepare/Submit 90% Design	404,480	404,480
02.01.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	1,363,246	1,363,246
02.01.02	Construction		
02.01.02.001	Plans/Submittals/Workplans	314,595	314,595
02.01.02.002	Mobilization	2,024,422	2,024,422
02.01.02.003	Construction	15,174,476	15,174,476
02.01.02.004	Trial Burn	1,358,231	1,358,231
02.01.02.005	Facility Operations	38,124,073	38,124,073
02.01.02.006	Demobilization	1,093,376	1,093,376
02.01.02.007	Prepare/Submit Final Reports	37,452	37,452
02.01.02.008	Project Support	731,583	731,583
	Construction	58,858,208	58,858,208
	Incineration	60,221,454	60,221,454
02.02	Thermal Desorption		
02.02.01	Design		
02.02.01.001	Prepare/Submit 30% Design	404,480	404,480

		CONTRACT COST	TOTAL COST
02.02.01.002	Prepare/Submit 60% Design	404,480	404,480
02.02.01.003	Prepare/Submit 90% Design	404,480	404,480
02.02.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	1,363,246	1,363,246
02.02.02	Construction		
02.02.02.001	Plans/Submittals/Workplans	314,595	314,595
02.02.02.002	Mobilization	9,505,296	9,505,296
02.02.02.003	Construction	11,133,269	11,133,269
02.02.02.004	Trial Burn	7,132,926	7,132,926
02.02.02.005	Facility Operations	273,347,950	273,347,950
02.02.02.006	Demobilization	5,124,319	5,124,319
02.02.02.007	Prepare/Submit Final Reports	37,452	37,452
02.02.02.008	Project Support	731,583	731,583
	Construction	307,327,391	307,327,391
	Thermal Desorption	308,690,637	308,690,637
02.03	RCRA Landfill		
02.03.01	Design		
02.03.01.001	Prepare/Submit 30% Design	617,955	617,955
02.03.01.002	Prepare/Submit 60% Design	617,955	617,955
02.03.01.003	Prepare/Submit 90% Design	617,955	617,955
02.03.01.004	Prepare/Submit CFC Design	346,429	346,429
	Design	2,200,294	2,200,294
02.03.02	Construction		
02.03.02.001	Plans/Submittals/Workplans	259,167	259,167
02.03.02.002	Mobilization	4,215,020	4,215,020
02.03.02.003	Construction - Cell 1	9,409,361	9,409,361
02.03.02.004	Operation - Cell 1	10,278,943	10,278,943
02.03.02.005	Closure - Cell 1	5,842,360	5,842,360
02.03.02.006	Construction - Cell 2	9,409,361	9,409,361
02.03.02.007	Operation - Cell 2	10,278,943	10,278,943
02.03.02.008	Closure - Cell 2	5,842,360	5,842,360
02.03.02.009	Construction - Cell 3	9,409,361	9,409,361
02.03.02.010	Operation - Cell 3	10,278,943	10,278,943
02.03.02.011	Closure - Cell 3	5,842,360	5,842,360
02.03.02.012	Construction - Cell 4	9,409,361	9,409,361
02.03.02.013	Operation - Cell 4	10,278,943	10,278,943
02.03.02.014	Closure - Cell 4	5,842,360	5,842,360

		CONTRACT COST	TOTAL COST
02.03.02.015	Demobilization	1,429,908	1,429,908
02.03.02.016	Site Closure and Final Reports	37,452	37,452
02.03.02.017	Project Support	1,420,428	1,420,428
	Construction	109,484,627	109,484,627
02.03.03	Long-Term Activities		
02.03.03.001	Plans/Submittals/Workplans	119,846	119,846
02.03.03.002	Mobilization	164,260	164,260
02.03.03.003	Long-Term Monitor/Maintenance	6,981,064	6,981,064
02.03.03.004	Demobilization	88,447	88,447
02.03.03.005	Prepare/Submit Final Reports	18,726	18,726
02.03.03.006	Project Support	663,538	663,538
	Long-Term Activities	8,035,880	8,035,880
	RCRA Landfill	119,720,801	119,720,801
02.04	Solidification/Stabilization Fac		
02.04.01	Design		
02.04.01.001	Prepare/Submit 30% Design	134,827	134,827
02.04.01.002	Prepare/Submit 60% Design	134,827	134,827
02.04.01.003	Prepare/Submit 90% Design	134,827	134,827
02.04.01.004	Prepare/Submit CFC Design	74,904	74,904
	Design	479,383	479,383
02.04.02	Construction		
02.04.02.001	Plans/Submittals/Workplans	202,240	202,240
02.04.02.002	Mobilization	346,304	346,304
02.04.02.003	Construction	1,371,643	1,371,643
02.04.02.004	System Testing	591,973	591,973
02.04.02.005	Facility Operations	9,508,076	9,508,076
02.04.02.006	Demobilization	186,471	186,471
02.04.02.007	Prepare/Submit Final Reports	37,452	37,452
02.04.02.008	Project Support	731,583	731,583
	Construction	12,975,742	12,975,742
	Solidification/Stabilization Fac	13,455,125	13,455,125
02.05	Borrow Area		

		CONTRACT COST	TOTAL COST
02.05.01	Design		
02.05.01.001	Prepare/Submit 30% Design	269,653	269,653
02.05.01.002	Prepare/Submit 60% Design	269,653	269,653
02.05.01.003	Prepare/Submit 90% Design	269,653	269,653
02.05.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.05.02	Construction		
02.05.02.001	Plans/Submittals/Workplans	259,167	259,167
02.05.02.002	Mobilization	803,379	803,379
02.05.02.003	Strip/Stockpile Topsoil	2,126,231	2,126,231
02.05.02.004	Haul Road Construction	2,378,696	2,378,696
02.05.02.005	Facility Operations	31,491,309	31,491,309
02.05.02.006	Revegetate Disturbed Areas	815,395	815,395
02.05.02.007	Demobilization	432,589	432,589
02.05.02.008	Prepare/Submit Final Reports	37,452	37,452
02.05.02.009	Project Support	960,639	960,639
	Construction	39,304,856	39,304,856
	Borrow Area	40,263,623	40,263,623
02.06	Caustic Agent Treatment Facility		
02.06.01	Design		
02.06.01.001	Prepare/Submit 30% Design	269,653	269,653
02.06.01.002	Prepare/Submit 60% Design	269,653	269,653
02.06.01.003	Prepare/Submit 90% Design	269,653	269,653
02.06.01.004	Prepare/Submit CFC Design	149,807	149,807
	Design	958,766	958,766
02.06.02	Construction		
02.06.02.001	Plans/Submittals/Workplans	202,240	202,240
02.06.02.002	Mobilization	269,715	269,715
02.06.02.003	Construction	2,632,257	2,632,257
02.06.02.004	Systems Testing	461,050	461,050
02.06.02.005	Facility Operations	5,636,217	5,636,217
02.06.02.006	Demobilization	145,230	145,230
02.06.02.007	Prepare/Submit Final Reports	37,452	37,452
02.06.02.008	Project Support	721,817	721,817
	Construction	10,105,977	10,105,977

		CONTRACT COST	TOTAL COST
	Caustic Agent Treatment Facility	11,064,744	11,064,744
	Fixed Facility/Treatment Costs	553,416,384	553,416,384
03	Soil Medium Group Costs		
03.01	Basin A		
03.01.01	Design		
03.01.01.001	Prepare/Submit 30% Design	325,532	325,532
03.01.01.002	Prepare/Submit 60% Design	325,532	325,532
03.01.01.003	Prepare/Submit 90% Design	325,532	325,532
03.01.01.004	Prepare/Submit CFC Design	180,851	180,851
	Design	1,157,446	1,157,446
03.01.02	Remediation		
03.01.02.001	Plans/Submittals/Workplans	312,872	312,872
03.01.02.002	Mobilization	1,985,694	1,985,694
03.01.02.003	UXO Clearance by Geophysics	177,109	177,109
03.01.02.004	Exca. UXO and Transport Off-Post	411,209	411,209
03.01.02.005	Drill/Screen for Agent Soils	4,022,033	4,022,033
03.01.02.006	Excavate Agent/PT/HH Soils	4,667,544	4,667,544
03.01.02.010	Landfill Treated Material/Part.	256,580	256,580
03.01.02.011	Backfill w/Borrow Material	1,489,239	1,489,239
03.01.02.012	Install Gradefill	25,702,350	25,702,350
03.01.02.013	Install Clay/Soil Cap	20,575,459	20,575,459
03.01.02.014	Revegetate Disturbed Areas	349,799	349,799
03.01.02.015	Demobilization	1,069,961	1,069,961
03.01.02.016	Prepare/Submit Final Reports	45,213	45,213
03.01.02.017	Project Support	1,698,046	1,698,046
	Remediation	62,763,109	62,763,109
03.01.03	Long-Term Activities		
03.01.03.001	Plans/Submittals/Workplans	144,681	144,681
03.01.03.002	Mobilization	76,810	76,810
03.01.03.003	Short-Term Monitor/Maintenance	445,199	445,199
03.01.03.004	Long-Term Monitor/Maintenance	2,225,996	2,225,996
03.01.03.005	Demobilization	41,360	41,360
03.01.03.006	Prepare/Submit Final Reports	22,606	22,606
03.01.03.007	Project Support	801,039	801,039
	Long-Term Activities	3,757,690	3,757,690

		CONTRACT COST	TOTAL COST
	Basin A	67,678,245	67,678,245
03.02	Former Basin F		
03.02.01	Design		
03.02.01.001	Prepare/Submit 30% Design	479,384	479,384
03.02.01.002	Prepare/Submit 60% Design	479,384	479,384
03.02.01.003	Prepare/Submit 90% Design	479,384	479,384
03.02.01.004	Prepare/Submit CFC Design	177,550	177,550
	Design	1,615,701	1,615,701
03.02.02	Remediation		
03.02.02.001	Plans/Submittals/Workplans	372,854	372,854
03.02.02.002	Mobilization	3,111,616	3,111,616
03.02.02.003	Excavate/Strip Overburden	8,454,297	8,454,297
03.02.02.004	Excavate PT/HH Soil w/Vapor Cont	52,483,616	52,483,616
03.02.02.007	Landfill Treated Material/Part.	1,984,116	1,984,116
03.02.02.008	Backfill w/Borrow Material	6,144,279	6,144,279
03.02.02.009	Backfill w/Overburden	1,951,282	1,951,282
03.02.02.010	Install Gradefill	16,700,856	16,700,856
03.02.02.011	Install Clay/Soil Cap	15,453,534	15,453,534
03.02.02.012	Revegetate Disturbed Areas	268,049	268,049
03.02.02.013	Demobilization	1,677,795	1,677,795
03.02.02.014	Prepare/Submit Final Reports	44,387	44,387
03.02.02.015	Project Support	2,773,065	2,773,065
	Remediation	111,419,746	111,419,746
03.02.03	Long-Term Activities		
03.02.03.001	Plans/Submittals/Workplans	142,040	142,040
03.02.03.002	Mobilization	63,261	63,261
03.02.03.003	Short-Term Monitor/Maintenance	341,153	341,153
03.02.03.004	Long-Term Monitor/Maintenance	1,705,765	1,705,765
03.02.03.005	Demobilization	34,065	34,065
03.02.03.006	Prepare/Submit Final Reports	22,194	22,194
03.02.03.007	Project Support	786,416	786,416
	Long-Term Activities	3,094,894	3,094,894
	Former Basin F	116,130,341	116,130,341
03.03	Chemical Sewers		

		CONTRACT COST	TOTAL COST
03.03.01	Design		
03.03.01.001	Prepare/Submit 30% Design	328,459	328,459
03.03.01.002	Prepare/Submit 60% Design	328,459	328,459
03.03.01.003	Prepare/Submit 90% Design	328,459	328,459
03.03.01.004	Prepare/Submit CFC Design	182,477	182,477
	Design	1,167,855	1,167,855
03.03.02	Remediation		
03.03.02.001	Plans/Submittals/Workplans	315,686	315,686
03.03.02.002	Mobilization	456,126	456,126
03.03.02.003	Survey Lines	22,757	22,757
03.03.02.004	Excavate/Strip Overburden	6,322,942	6,322,942
03.03.02.005	Excavate Agent/PT/HH Soils	3,032,688	3,032,688
03.03.02.009	Landfill Treated Material/Part.	367,157	367,157
03.03.02.010	Backfill w/Borrow Material	702,808	702,808
03.03.02.011	Backfill w/Overburden	1,966,258	1,966,258
03.03.02.012	Revegetate Disturbed Areas	52,743	52,743
03.03.02.013	Demobilization	245,606	245,606
03.03.02.014	Prepare/Submit Final Reports	45,619	45,619
03.03.02.015	Project Support	876,985	876,985
	Remediation	14,407,375	14,407,375
	Chemical Sewers	15,575,230	15,575,230
03.04	South Plants Central Processing		
03.04.01	Design		
03.04.01.001	Prepare/Submit 30% Design	322,489	322,489
03.04.01.002	Prepare/Submit 60% Design	322,489	322,489
03.04.01.003	Prepare/Submit 90% Design	322,489	322,489
03.04.01.004	Prepare/Submit CFC Design	179,161	179,161
	Design	1,146,629	1,146,629
03.04.02	Remediation		
03.04.02.001	Plans/Submittals/Workplans	309,948	309,948
03.04.02.002	Mobilization	570,261	570,261
03.04.02.003	Drill/Screen for Agent Soils	591,506	591,506
03.04.02.004	Excavate Agent/PT/HH Soils	2,922,926	2,922,926
03.04.02.009	Landfill Treated Material/Part.	298,219	298,219
03.04.02.010	Backfill w/Borrow Material	1,017,028	1,017,028
03.04.02.011	Install Gradefill	5,120,234	5,120,234

		CONTRACT COST	TOTAL COST
03.04.02.012	Install Clay/Soil Cap	7,413,942	7,413,942
03.04.02.013	Revegetate Disturbed Areas	114,318	114,318
03.04.02.014	Demobilization	307,064	307,064
03.04.02.015	Prepare/Submit Final Reports	44,790	44,790
03.04.02.016	Project Support	1,682,177	1,682,177
	Remediation	20,392,414	20,392,414
03.04.03	Long-Term Activities		
03.04.03.001	Plans/Submittals/Workplans	143,329	143,329
03.04.03.002	Mobilization	38,669	38,669
03.04.03.003	Short-Term Monitor/Maintenance	145,495	145,495
03.04.03.004	Long-Term Monitor/Maintenance	727,477	727,477
03.04.03.005	Demobilization	20,821	20,821
03.04.03.006	Prepare/Submit Final Reports	22,395	22,395
03.04.03.007	Project Support	793,552	793,552
	Long-Term Activities	1,891,739	1,891,739
	South Plants Central Processing	23,430,782	23,430,782
03.05	South Plants Balance of Areas		
03.05.01	Design		
03.05.01.001	Prepare/Submit 30% Design	325,532	325,532
03.05.01.002	Prepare/Submit 60% Design	325,532	325,532
03.05.01.003	Prepare/Submit 90% Design	325,532	325,532
03.05.01.004	Prepare/Submit CFC Design	180,851	180,851
	Design	1,157,446	1,157,446
03.05.02	Remediation		
03.05.02.001	Plans/Submittals/Workplans	312,872	312,872
03.05.02.002	Mobilization	791,635	791,635
03.05.02.003	UXO Clearance by Geophysics	19,003	19,003
03.05.02.004	Exca. UXO and Transport Off-Post	12,474	12,474
03.05.02.005	Drill/Screen for Agent Soils	451,952	451,952
03.05.02.006	Excavate Agent/PT/HH/Biota Soil	14,013,569	14,013,569
03.05.02.010	Landfill Treated Material/Part.	83,735	83,735
03.05.02.011	Backfill w/Borrow Material	6,248,877	6,248,877
03.05.02.012	Revegetate Disturbed Areas	901,330	901,330
03.05.02.013	Demobilization	426,266	426,266
03.05.02.014	Prepare/Submit Final Reports	45,213	45,213
03.05.02.015	Project Support	1,698,046	1,698,046

		CONTRACT COST	TOTAL COST
	Remediation	25,004,971	25,004,971
	South Plants Balance of Areas	26,162,417	26,162,417
03.06	South Plants Ditches		
03.06.01	Design		
03.06.01.001	Prepare/Submit 30% Design	79,101	79,101
03.06.01.002	Prepare/Submit 60% Design	79,101	79,101
03.06.01.003	Prepare/Submit 90% Design	79,101	79,101
03.06.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.06.02	Remediation		
03.06.02.001	Plans/Submittals/Workplans	172,265	172,265
03.06.02.002	Mobilization	64,782	64,782
03.06.02.003	Excavate PT/HH/Biota Soils	1,523,564	1,523,564
03.06.02.006	Landfill Treated Material/Part.	27,933	27,933
03.06.02.007	Backfill w/Borrow Material	530,679	530,679
03.06.02.008	Revegetate Disturbed Areas	58,984	58,984
03.06.02.009	Demobilization	34,883	34,883
03.06.02.010	Prepare/Submit Final Reports	43,945	43,945
03.06.02.011	Project Support	217,149	217,149
	Remediation	2,674,185	2,674,185
	South Plants Ditches	2,955,433	2,955,433
03.07	Complex Trenches		
03.07.01	Design		
03.07.01.001	Prepare/Submit 30% Design	164,230	164,230
03.07.01.002	Prepare/Submit 60% Design	164,230	164,230
03.07.01.003	Prepare/Submit 90% Design	164,230	164,230
03.07.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.07.02	Remediation		
03.07.02.001	Plans/Submittals/Workplans	246,344	246,344
03.07.02.002	Mobilization	993,033	993,033

		CONTRACT COST	TOTAL COST
03.07.02.003	UXO Clearance by Geophysics	49,427	49,427
03.07.02.004	Exca. UXO and Transport Off-Post	573,807	573,807
03.07.02.005	Install Slurry Walls	2,491,362	2,491,362
03.07.02.006	Install Gradefill	13,233,470	13,233,470
03.07.02.007	Install Clay/Soil Cap	12,115,714	12,115,714
03.07.02.008	Revegetate Disturbed Areas	205,944	205,944
03.07.02.009	Demobilization	534,711	534,711
03.07.02.010	Prepare/Submit Final Reports	45,619	45,619
03.07.02.011	Project Support	876,985	876,985
	Remediation	31,366,417	31,366,417
03.07.03	Long-Term Activities		
03.07.03.001	Plans/Submittals/Workplans	145,982	145,982
03.07.03.002	Mobilization	142,493	142,493
03.07.03.003	Short-Term Monitor/Maintenance	262,111	262,111
03.07.03.004	Long-Term Monitor/Maintenance	5,512,661	5,512,661
03.07.03.005	Demobilization	76,726	76,726
03.07.03.006	Prepare/Submit Final Reports	22,810	22,810
03.07.03.007	Project Support	808,242	808,242
	Long-Term Activities	6,971,025	6,971,025
	Complex Trenches	38,921,369	38,921,369
03.08	Sanitary Landfill		
03.08.01	Design		
03.08.01.001	Prepare/Submit 30% Design	158,202	158,202
03.08.01.002	Prepare/Submit 60% Design	158,202	158,202
03.08.01.003	Prepare/Submit 90% Design	158,202	158,202
03.08.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.08.02	Remediation		
03.08.02.001	Plans/Submittals/Workplans	237,303	237,303
03.08.02.002	Mobilization	390,499	390,499
03.08.02.003	Excavate HH/Biota/Debris Soil	10,496,009	10,496,009
03.08.02.005	Backfill w/Borrow Material	3,794,394	3,794,394
03.08.02.006	Revegetate Disturbed Areas	102,342	102,342
03.08.02.007	Demobilization	210,268	210,268
03.08.02.008	Prepare/Submit Final Reports	43,945	43,945
03.08.02.009	Project Support	844,800	844,800

		CONTRACT COST	TOTAL COST
	Remediation	16,119,561	16,119,561
	Sanitary Landfill	16,682,058	16,682,058
03.09	Section 36 Balance of Areas		
03.09.01	Design		
03.09.01.001	Prepare/Submit 30% Design	328,459	328,459
03.09.01.002	Prepare/Submit 60% Design	328,459	328,459
03.09.01.003	Prepare/Submit 90% Design	328,459	328,459
03.09.01.004	Prepare/Submit CFC Design	182,477	182,477
	Design	1,167,855	1,167,855
03.09.02	Remediation		
03.09.02.001	Plans/Submittals/Workplans	315,686	315,686
03.09.02.002	Mobilization	473,522	473,522
03.09.02.003	UXO Clearance by Geophysics	296,839	296,839
03.09.02.004	Exca. UXO and Transport Off-Post	688,568	688,568
03.09.02.005	Drill/Screen for Agent Soils	894,005	894,005
03.09.02.006	Excavate Agent/HH/Biota Soil	8,152,417	8,152,417
03.09.02.009	Backfill w/Borrow Material	2,562,906	2,562,906
03.09.02.010	Revegetate Disturbed Areas	395,357	395,357
03.09.02.011	Demobilization	254,973	254,973
03.09.02.012	Prepare/Submit Final Report	45,619	45,619
03.09.02.013	Project Support	876,985	876,985
	Remediation	14,956,879	14,956,879
	Section 36 Balance of Areas	16,124,733	16,124,733
03.10	Basin F Wastepile		
03.10.01	Design		
03.10.01.001	Prepare/Submit 30% Design	483,734	483,734
03.10.01.002	Prepare/Submit 60% Design	483,734	483,734
03.10.01.003	Prepare/Submit 90% Design	483,734	483,734
03.10.01.004	Prepare/Submit CFC Design	179,161	179,161
	Design	1,630,363	1,630,363
03.10.02	Remediation		

		CONTRACT COST	TOTAL COST
03.10.02.001	Plans/Submittals/Workplans	376,238	376,238
03.10.02.002	Mobilization	1,523,738	1,523,738
03.10.02.003	Excavate/Strip Overburden	677,326	677,326
03.10.02.004	Excavate Wastepile w/Vapor Cont	44,127,863	44,127,863
03.10.02.006	Landfill Treated Material/Part.	4,603,341	4,603,341
03.10.02.007	Backfill w/Overburden	426,842	426,842
03.10.02.008	Revegetate Disturbed Areas	39,012	39,012
03.10.02.009	Demobilization	820,474	820,474
03.10.02.010	Prepare/Submit Final Reports	44,790	44,790
03.10.02.011	Project Support	1,848,931	1,848,931
	Remediation	54,488,554	54,488,554
	Basin F Wastepile	56,118,917	56,118,917
03.11	Secondary Basins		
03.11.01	Design		
03.11.01.001	Prepare/Submit 30% Design	158,202	158,202
03.11.01.002	Prepare/Submit 60% Design	158,202	158,202
03.11.01.003	Prepare/Submit 90% Design	158,202	158,202
03.11.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.11.02	Remediation		
03.11.02.001	Plans/Submittals/Workplans	237,303	237,303
03.11.02.002	Mobilization	163,966	163,966
03.11.02.003	Excavate HH/Biota Soil	3,609,532	3,609,532
03.11.02.005	Backfill w/Borrow Material	1,524,933	1,524,933
03.11.02.006	Revegetate Disturbed Areas	255,627	255,627
03.11.02.007	Demobilization	88,289	88,289
03.11.02.008	Prepare/Submit Final Reports	43,945	43,945
03.11.02.009	Project Support	844,800	844,800
	Remediation	6,768,397	6,768,397
	Secondary Basins	7,330,894	7,330,894
03.12	Munitions Testing		
03.12.01	Design		
03.12.01.001	Prepare/Submit 30% Design	159,723	159,723
03.12.01.002	Prepare/Submit 60% Design	159,723	159,723
03.12.01.003	Prepare/Submit 90% Design	159,723	159,723

		CONTRACT COST	TOTAL COST
03.12.01.004	Prepare/Submit CFC Design	88,735	88,735
	Design	567,906	567,906
03.12.02	Remediation		
03.12.02.001	Plans/Submittals/Workplans	239,585	239,585
03.12.02.002	Mobilization	76,176	76,176
03.12.02.003	UXO Clearance by Geophysics	330,800	330,800
03.12.02.004	Exca. UXO and Transport Off-Post	110,898	110,898
03.12.02.005	Excavate Debris from Surf. Soil	1,524,118	1,524,118
03.12.02.007	Revegetate Disturbed Areas	137,833	137,833
03.12.02.008	Demobilization	41,018	41,018
03.12.02.009	Prepare/Submit Final Reports	44,368	44,368
03.12.02.010	Project Support	219,237	219,237
	Remediation	2,724,034	2,724,034
	Munitions Testing	3,291,940	3,291,940
03.13	Shell Trenches		
03.13.01	Design		
03.13.01.001	Prepare/Submit 30% Design	488,297	488,297
03.13.01.002	Prepare/Submit 60% Design	488,297	488,297
03.13.01.003	Prepare/Submit 90% Design	488,297	488,297
03.13.01.004	Prepare/Submit CFC Design	180,851	180,851
	Design	1,645,743	1,645,743
03.13.02	Remediation		
03.13.02.001	Plans/Submittals/Workplans	379,787	379,787
03.13.02.002	Mobilization	819,784	819,784
03.13.02.003	Excavate/Strip Overburden	684,593	684,593
03.13.02.004	Shell Trench Exc. w/Vapor Cont.	19,833,895	19,833,895
03.13.02.006	Landfill Treated Material/Part.	774,909	774,909
03.13.02.007	Backfill w/Borrow Material	844,185	844,185
03.13.02.008	Backfill w/Overburden	186,896	186,896
03.13.02.009	Revegetate Disturbed Areas	16,996	16,996
03.13.02.010	Demobilization	441,422	441,422
03.13.02.011	Prepare/Submit Final Reports	45,213	45,213
03.13.02.012	Project Support	1,866,374	1,866,374
	Remediation	25,894,054	25,894,054
	Shell Trenches	27,539,798	27,539,798

		CONTRACT COST	TOTAL COST
03.14	Lake Sediments		
03.14.01	Design		
03.14.01.001	Prepare/Submit 30% Design	159,625	159,625
03.14.01.002	Prepare/Submit 60% Design	159,625	159,625
03.14.01.003	Prepare/Submit 90% Design	159,625	159,625
03.14.01.004	Prepare/Submit CFC Design	88,681	88,681
	Design	567,555	567,555
03.14.02	Remediation		
03.14.02.001	Plans/Submittals/Workplans	239,437	239,437
03.14.02.002	Mobilization	62,616	62,616
03.14.02.003	Grub & Clear Aquatic Vegetation	15,664	15,664
03.14.02.004	Install Cutoff Wall	667,969	667,969
03.14.02.005	Excavate HH/Biota Soils	903,631	903,631
03.14.02.007	Backfill w/Borrow Material	270,460	270,460
03.14.02.008	Revegetate or Restore Wetlands	127,828	127,828
03.14.02.009	Demobilization	33,716	33,716
03.14.02.010	Prepare/Submit Final Reports	44,340	44,340
03.14.02.011	Project Support	219,102	219,102
	Remediation	2,584,764	2,584,764
	Lake Sediments	3,152,320	3,152,320
03.15	Burial Trenches		
03.15.01	Design		
03.15.01.001	Prepare/Submit 30% Design	164,230	164,230
03.15.01.002	Prepare/Submit 60% Design	164,230	164,230
03.15.01.003	Prepare/Submit 90% Design	164,230	164,230
03.15.01.004	Prepare/Submit CFC Design	91,239	91,239
	Design	583,927	583,927
03.15.02	Remediation		
03.15.02.001	Plans/Submittals/Workplans	246,344	246,344
03.15.02.002	Mobilization	117,115	117,115
03.15.02.003	UXO Clearance by Geophysics	216,714	216,714
03.15.02.004	Exca. UXO and Transport Off-Post	138,192	138,192
03.15.02.005	Drill/Screen for Agent Soil	67,379	67,379
03.15.02.006	Excavate Agent/HH/UXO Deb. Soil	1,685,080	1,685,080

		CONTRACT COST	TOTAL COST
03.15.02.009	Backfill w/Borrow Material	152,455	152,455
03.15.02.010	Revegetate Disturbed Areas	90,298	90,298
03.15.02.011	Demobilization	63,062	63,062
03.15.02.012	Prepare/Submit Final Reports	45,619	45,619
03.15.02.013	Project Support	876,985	876,985
	Remediation	3,699,244	3,699,244
	Burial Trenches	4,283,171	4,283,171
03.16	Section 36 Lime Basins		
03.16.01	Design		
03.16.01.001	Prepare/Submit 30% Design	158,202	158,202
03.16.01.002	Prepare/Submit 60% Design	158,202	158,202
03.16.01.003	Prepare/Submit 90% Design	158,202	158,202
03.16.01.004	Prepare/Submit CFC Design	87,890	87,890
	Design	562,497	562,497
03.16.02	Remediation		
03.16.02.001	Plans/Submittals/Workplans	237,303	237,303
03.16.02.002	Mobilization	169,094	169,094
03.16.02.003	Drill/Screen for Agent Soils	311,983	311,983
03.16.02.004	Excavate/Strip Overburden	515,588	515,588
03.16.02.005	Excavate Agent/HH Soils	1,321,843	1,321,843
03.16.02.008	Backfill w/Borrow Material	491,140	491,140
03.16.02.009	Backfill w/Overburden	125,701	125,701
03.16.02.010	Install Gradefill	829,360	829,360
03.16.02.011	Install Clay/Soil Cap	1,966,638	1,966,638
03.16.02.012	Revegetate Disturbed Areas	31,641	31,641
03.16.02.013	Demobilization	91,051	91,051
03.16.02.014	Prepare/Submit Final Reports	43,945	43,945
03.16.02.015	Project Support	844,800	844,800
	Remediation	6,980,086	6,980,086
03.16.03	Long-Term Activities		
03.16.03.001	Plans/Submittals/Workplans	140,624	140,624
03.16.03.002	Mobilization	24,962	24,962
03.16.03.003	Short-Term Monitor/Maintenance	40,271	40,271
03.16.03.004	Long-Term Monitor/Maintenance	201,353	201,353
03.16.03.005	Demobilization	13,441	13,441
03.16.03.006	Prepare/Submit Final Reports	21,973	21,973
03.16.03.007	Project Support	778,580	778,580

		CONTRACT COST	TOTAL COST
	Long-Term Activities	1,221,204	1,221,204
	Section 36 Lime Basins	8,763,787	8,763,787
03.17	Buried Sediments		
03.17.01	Design		
03.17.01.001	Prepare/Submit 30% Design	79,812	79,812
03.17.01.002	Prepare/Submit 60% Design	79,812	79,812
03.17.01.003	Prepare/Submit 90% Design	79,812	79,812
03.17.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.17.02	Remediation		
03.17.02.001	Plans/Submittals/Workplans	173,814	173,814
03.17.02.002	Mobilization	26,520	26,520
03.17.02.003	Excavate HH Soils	438,664	438,664
03.17.02.005	Backfill w/Borrow Material	164,590	164,590
03.17.02.006	Revegetate Disturbed Areas	4,050	4,050
03.17.02.007	Demobilization	14,280	14,280
03.17.02.008	Prepare/Submit Final Reports	44,340	44,340
03.17.02.009	Project Support	219,102	219,102
	Remediation	1,085,360	1,085,360
	Buried Sediments	1,369,137	1,369,137
03.18	Buried M-1 Pits		
03.18.01	Design		
03.18.01.001	Prepare/Submit 30% Design	328,289	328,289
03.18.01.002	Prepare/Submit 60% Design	328,289	328,289
03.18.01.003	Prepare/Submit 90% Design	328,289	328,289
03.18.01.004	Prepare/Submit CFC Design	182,383	182,383
	Design	1,167,251	1,167,251
03.18.02	Remediation		
03.18.02.001	Plans/Submittals/Workplans	315,523	315,523
03.18.02.002	Mobilization	212,792	212,792
03.18.02.003	Drill/Screen for Agent Soils	82,725	82,725

		CONTRACT COST	TOTAL COST
03.18.02.004	M-1 Pit Excav. w/Vapor Controls	5,348,865	5,348,865
03.18.02.007	Landfill Treated Material	279,813	279,813
03.18.02.008	Backfill w/Borrow Material	243,507	243,507
03.18.02.009	Revegetate Disturbed Areas	4,605	4,605
03.18.02.010	Demobilization	114,581	114,581
03.18.02.011	Prepare/Submit Final Reports	45,596	45,596
03.18.02.012	Project Support	961,409	961,409
	Remediation	7,609,416	7,609,416
	Buried M-1 Pits	8,776,667	8,776,667
03.19	Sanitary/Process Water Sewers		
03.19.01	Design		
03.19.01.001	Prepare/Submit 30% Design	8,705	8,705
03.19.01.002	Prepare/Submit 60% Design	8,705	8,705
03.19.01.003	Prepare/Submit 90% Design	8,705	8,705
03.19.01.004	Prepare/Submit CFC Design	5,223	5,223
	Design	31,336	31,336
03.19.02	Remediation		
03.19.02.001	Plans/Submittals/Workplans	54,403	54,403
03.19.02.002	Mobilization	6,389	6,389
03.19.02.003	Plugging of Manholes	133,516	133,516
03.19.02.004	Demobilization	3,441	3,441
03.19.02.005	Prepare/Submit Final Reports	43,523	43,523
03.19.02.006	Project Support	71,253	71,253
	Remediation	312,523	312,523
	Sanitary/Process Water Sewers	343,860	343,860
03.20	Hex Pit		
03.20.01	Design		
03.20.01.001	Prepare/Submit 30% Design	331,387	331,387
03.20.01.002	Prepare/Submit 60% Design	331,387	331,387
03.20.01.003	Prepare/Submit 90% Design	331,387	331,387
03.20.01.004	Prepare/Submit CFC Design	184,104	184,104
	Design	1,178,263	1,178,263

		CONTRACT COST	TOTAL COST
03.20.02	Remediation		
03.20.02.001	Plans/Submittals/Workplans	318,499	318,499
03.20.02.002	Mobilization	110,828	110,828
03.20.02.003	Hex Pit Excav. w/Vapor Controls	1,936,554	1,936,554
03.20.02.005	Landfill Treated Material/Part.	29,256	29,256
03.20.02.006	Backfill w/Borrow Material	28,857	28,857
03.20.02.007	Revegetate Disturbed Areas	481	481
03.20.02.008	Demobilization	59,676	59,676
03.20.02.009	Prepare/Submit Final Reports	46,026	46,026
03.20.02.010	Project Support	970,479	970,479
	Remediation	3,500,656	3,500,656
	Hex Pit	4,678,919	4,678,919
03.21	Surficial Soils		
03.21.01	Design		
03.21.01.001	Prepare/Submit 30% Design	79,812	79,812
03.21.01.002	Prepare/Submit 60% Design	79,812	79,812
03.21.01.003	Prepare/Submit 90% Design	79,812	79,812
03.21.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.21.02	Remediation		
03.21.02.001	Plans/Submittals/Workplans	173,814	173,814
03.21.02.002	Mobilization	211,397	211,397
03.21.02.003	Excavate HH Soils	1,800,150	1,800,150
03.21.02.005	Backfill w/Borrow Material	611,787	611,787
03.21.02.006	Revegetate Disturbed Areas	127,822	127,822
03.21.02.007	Ag Practices for Biota Area	506,421	506,421
03.21.02.008	Demobilization	113,830	113,830
03.21.02.009	Prepare/Submit Final Reports	44,340	44,340
03.21.02.010	Project Support	219,102	219,102
03.21.02.011	Potential USFWS Remedial Act. #1	2,490,395	2,490,395
03.21.02.012	Potential USFWS Remedial Act. #2	2,490,395	2,490,395
	Remediation	8,789,454	8,789,454
	Surficial Soils	9,073,231	9,073,231
03.22	Toxic Storage Yards		
03.22.01	Design		

		CONTRACT COST	TOTAL COST
03.22.01.001	Prepare/Submit 30% Design	56,995	56,995
03.22.01.002	Prepare/Submit 60% Design	56,995	56,995
03.22.01.003	Prepare/Submit 90% Design	56,995	56,995
03.22.01.004	Prepare/Submit CFC Design	34,197	34,197
	Design	205,181	205,181
03.22.02	Remediation		
03.22.02.001	Plans/Submittals/Workplans	113,989	113,989
03.22.02.002	Mobilization	69,335	69,335
03.22.02.003	Demolition/Landfill Storage Pads	377,877	377,877
03.22.02.004	Agent Screening	1,602,072	1,602,072
03.22.02.005	Excavate Agent/HH Soil	74,209	74,209
03.22.02.008	Backfill w/Borrow Material	13,521	13,521
03.22.02.009	Revegetate Disturbed Areas	927	927
03.22.02.010	Demobilization	37,333	37,333
03.22.02.011	Prepare/Submit Final Reports	45,596	45,596
03.22.02.012	Project Support	144,537	144,537
	Remediation	2,479,397	2,479,397
	Toxic Storage Yards	2,684,578	2,684,578
03.23	Sand Creek Lateral		
03.23.01	Design		
03.23.01.001	Prepare/Submit 30% Design	79,101	79,101
03.23.01.002	Prepare/Submit 60% Design	79,101	79,101
03.23.01.003	Prepare/Submit 90% Design	79,101	79,101
03.23.01.004	Prepare/Submit CFC Design	43,945	43,945
	Design	281,249	281,249
03.23.02	Remediation		
03.23.02.001	Plans/Submittals/Workplans	172,265	172,265
03.23.02.002	Mobilization	136,120	136,120
03.23.02.003	Excavate HH/Biota Soils	3,824,786	3,824,786
03.23.02.005	Backfill w/Borrow Material	995,765	995,765
03.23.02.006	Revegetate Disturbed Areas	155,635	155,635
03.23.02.007	Demobilization	73,296	73,296
03.23.02.008	Prepare/Submit Final Reports	43,945	43,945
03.23.02.009	Project Support	217,149	217,149
	Remediation	5,618,961	5,618,961

		CONTRACT COST	TOTAL COST
	Sand Creek Lateral	5,900,210	5,900,210
03.24	Ditches/Drainage Areas		
03.24.01	Design		
03.24.01.001	Prepare/Submit 30% Design	79,812	79,812
03.24.01.002	Prepare/Submit 60% Design	79,812	79,812
03.24.01.003	Prepare/Submit 90% Design	79,812	79,812
03.24.01.004	Prepare/Submit CFC Design	44,340	44,340
	Design	283,778	283,778
03.24.02	Remediation		
03.24.02.001	Plans/Submittals/Workplans	173,814	173,814
03.24.02.002	Mobilization	57,064	57,064
03.24.02.003	Excavate Biota Soils	1,302,920	1,302,920
03.24.02.005	Backfill w/Borrow Material	448,010	448,010
03.24.02.006	Revegetate Disturbed Areas	79,581	79,581
03.24.02.007	Demobilization	30,727	30,727
03.24.02.008	Prepare/Submit Final Reports	44,340	44,340
03.24.02.009	Project Support	219,102	219,102
	Remediation	2,355,559	2,355,559
	Ditches/Drainage Areas	2,639,336	2,639,336
03.25	North Plants		
03.25.01	Design		
03.25.01.001	Prepare/Submit 30% Design	55,425	55,425
03.25.01.002	Prepare/Submit 60% Design	55,425	55,425
03.25.01.003	Prepare/Submit 90% Design	55,425	55,425
03.25.01.004	Prepare/Submit CFC Design	33,255	33,255
	Design	199,531	199,531
03.25.02	Remediation		
03.25.02.001	Plans/Submittals/Workplans	110,851	110,851
03.25.02.002	Mobilization	35,762	35,762
03.25.02.003	Drill/Screen for Agent Soil	256,929	256,929
03.25.02.004	Excavate Agent/HH Soil	7,045	7,045
03.25.02.007	Backfill w/Borrow Material	2,639	2,639

		CONTRACT COST	TOTAL COST
03.25.02.008	Install Soil Cover	778,271	778,271
03.25.02.009	Revegetate Disturbed Areas	80,620	80,620
03.25.02.010	Demobilization	19,257	19,257
03.25.02.011	Prepare/Submit Final Reports	44,340	44,340
03.25.02.012	Project Support	140,558	140,558
	Remediation	1,476,271	1,476,271
03.25.03	Long-Term Activities		
03.25.03.001	Plans/Submittals/Workplans	141,889	141,889
03.25.03.002	Mobilization	25,610	25,610
03.25.03.003	Short-Term Monitor/Maintenance	43,974	43,974
03.25.03.004	Long-Term Monitor/Maintenance	219,872	219,872
03.25.03.005	Demobilization	13,791	13,791
03.25.03.006	Prepare/Submit Final Reports	22,170	22,170
03.25.03.007	Project Support	785,581	785,581
	Long-Term Activities	1,252,887	1,252,887
	North Plants	2,928,690	2,928,690
	Soil Medium Group Costs	472,536,063	472,536,063
04	Water Medium Group Costs		
04.01	Northwest Boundary System		
04.01.01	Long-Term Monitoring/Operations		
04.01.01.001	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Long-Term Monitoring/Operations	30,861,475	30,861,475
	Northwest Boundary System	30,861,475	30,861,475
04.02	Irondale System & Linked IRAs		
04.02.01	Long-Term Monitoring/Operations		
04.02.01.001	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Long-Term Monitoring/Operations	2,844,461	2,844,461
	Irondale System & Linked IRAs	2,844,461	2,844,461
04.03	North Boundary System		

	CONTRACT COST	TOTAL COST
04.03.01 Long-Term Monitoring/Operations		
04.03.01.001 Long-Term Monitoring/Operations	47,779,513	47,779,513
Long-Term Monitoring/Operations	47,779,513	47,779,513
North Boundary System	47,779,513	47,779,513
04.04 Basin A Neck/Bedrock Ridge Syst.		
04.04.01 Design Bedrock Ridge System		
04.04.01.001 Design Bedrock Ridge System	156,681	156,681
Design Bedrock Ridge System	156,681	156,681
04.04.02 Construction Bedrock Ridge Syst.		
04.04.02.001 Construction Bedrock Ridge Syst.	3,476,564	3,476,564
Construction Bedrock Ridge Syst.	3,476,564	3,476,564
04.04.03 Long-Term Monitoring/Operations		
04.04.03.001 Long-Term Monitoring/Operations	27,329,138	27,329,138
Long-Term Monitoring/Operations	27,329,138	27,329,138
Basin A Neck/Bedrock Ridge Syst.	30,962,383	30,962,383
04.05 On-Post Water Supply		
04.05.01 Design		
Design	800,000	800,000
04.05.02 Construction		
Construction	14,200,000	14,200,000
04.05.03 Long-Term Monitoring/Operations		

	CONTRACT COST	TOTAL COST
On-Post Water Supply	15,000,000	15,000,000
04.06 Hydrologic Controls		
04.06.01 Long-Term Monitoring/Operations		
04.07 S. P. Tank Farm Plume Monitoring		
04.07.01 Long-Term Monitoring/Operations		
04.07.01.001 Long-Term Monitoring/Operations	3,829,798	3,829,798
Long-Term Monitoring/Operations	3,829,798	3,829,798
S. P. Tank Farm Plume Monitoring	3,829,798	3,829,798
04.08 Deep Well Monitoring/Abandonment		
04.08.01 Long-Term Monitoring/Operations		
04.08.01.001 Long-Term Monitoring/Operations	1,240,916	1,240,916
Long-Term Monitoring/Operations	1,240,916	1,240,916
Deep Well Monitoring/Abandonment	1,240,916	1,240,916
04.09 Site-Wide Plume Monitoring		
04.09.01 Long-Term Monitoring/Operations		
04.09.01.001 Long-Term Monitoring/Operations	13,553,021	13,553,021
Long-Term Monitoring/Operations	13,553,021	13,553,021
Site-Wide Plume Monitoring	13,553,021	13,553,021
Water Medium Group Costs	146,071,566	146,071,566
05 Structures Medium Group Costs		
05.01 Significant Contamination Struc.		
05.01.01 Design		
05.01.01.001 Prepare/Submit 30% Design	74,861	74,861

		CONTRACT COST	TOTAL COST
05.01.01.002	Prepare/Submit 60% Design	74,861	74,861
05.01.01.003	Prepare/Submit 90% Design	74,861	74,861
05.01.01.004	Prepare/Submit CFC Design	41,589	41,589
	Design	266,173	266,173
05.01.02	Remediation		
05.01.02.001	Plans/Submittals/Workplans	146,395	146,395
05.01.02.002	Mobilization	166,314	166,314
05.01.02.003	Dust and Safety Sampling	1,531,505	1,531,505
05.01.02.004	Structures Demolition	10,590,564	10,590,564
05.01.02.006	Demobilization	89,554	89,554
05.01.02.007	Prepare/Submit Final Reports	41,589	41,589
05.01.02.008	Project Support	841,603	841,603
	Remediation	13,407,525	13,407,525
	Significant Contamination Struc.	13,673,698	13,673,698
05.02	Agent Structures Demolition		
05.02.01	Design		
05.02.01.001	Prepare/Submit 30% Design	466,573	466,573
05.02.01.002	Prepare/Submit 60% Design	466,573	466,573
05.02.01.003	Prepare/Submit 90% Design	466,573	466,573
05.02.01.004	Prepare/Submit CFC Design	172,805	172,805
	Design	1,572,524	1,572,524
05.02.02	Remediation		
05.02.02.001	Plans/Submittals/Workplans	345,610	345,610
05.02.02.002	Mobilization	602,890	602,890
05.02.02.003	Air Monitoring	4,469,719	4,469,719
05.02.02.004	Structures Demolition	41,595,750	41,595,750
05.02.02.007	Backfill Demolished Areas	304,671	304,671
05.02.02.008	Demobilization	324,633	324,633
05.02.02.009	Prepare/Submit Final Reports	43,201	43,201
05.02.02.010	Project Support	915,753	915,753
	Remediation	48,602,226	48,602,226
	Agent Structures Demolition	50,174,750	50,174,750
05.03	Other Contaminant Structures		

		CONTRACT COST	TOTAL COST
05.03.01	Design		
05.03.01.001	Prepare/Submit 30% Design	305,124	305,124
05.03.01.002	Prepare/Submit 60% Design	305,124	305,124
05.03.01.003	Prepare/Submit 90% Design	305,124	305,124
05.03.01.004	Prepare/Submit CFC Design	169,513	169,513
	Design	1,084,885	1,084,885
05.03.02	Remediation		
05.03.02.001	Plans/Submittals/Workplans	276,307	276,307
05.03.02.002	Mobilization	444,058	444,058
05.03.02.003	Dust and Safety Sampling	4,366,685	4,366,685
05.03.02.004	Structures Demolition	28,097,113	28,097,113
05.03.02.005	Consolidate Demolition Material	1,474,651	1,474,651
05.03.02.006	Demobilization	239,108	239,108
05.03.02.007	Prepare/Submit Final Reports	42,378	42,378
05.03.02.008	Project Support	857,566	857,566
	Remediation	35,797,866	35,797,866
	Other Contaminant Structures	36,882,751	36,882,751
05.04	Post-ROD Removal Actions		
05.04.01	Post-ROD Removal Actions		
05.04.01.001	Non-Agent Process Equipment Rem	14,200,000	14,200,000
05.04.01.002	Agent Process Equipment Removal	4,800,000	4,800,000
05.04.01.003	Asbestos/PCB Removal	11,800,000	11,800,000
05.04.01.004	Tank Removal	5,200,000	5,200,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Post-ROD Removal Actions	36,000,000	36,000,000
	Structures Medium Group Costs	136,731,198	136,731,198
06	PMRMA Mission Support Costs		
06.01	PMRMA Mission Support Costs		
06.01.01	PMRMA Remediation Mission Costs		
06.01.01.001	Fiscal Year 1996	45,000,000	45,000,000
06.01.01.002	Fiscal Year 1997	45,000,000	45,000,000
06.01.01.003	Fiscal Year 1998	45,000,000	45,000,000

		CONTRACT COST	TOTAL COST
06.01.01.004	Fiscal Year 1999	45,000,000	45,000,000
06.01.01.005	Fiscal Year 2000	45,000,000	45,000,000
06.01.01.006	Fiscal Year 2001	45,000,000	45,000,000
06.01.01.007	Fiscal Year 2002	45,000,000	45,000,000
06.01.01.008	Fiscal Year 2003	45,000,000	45,000,000
06.01.01.009	Fiscal Year 2004	45,000,000	45,000,000
06.01.01.010	Fiscal Year 2005	45,000,000	45,000,000
06.01.01.011	Fiscal Year 2006	45,000,000	45,000,000
06.01.01.012	Fiscal Year 2007	45,000,000	45,000,000
06.01.01.013	Fiscal Year 2008	45,000,000	45,000,000
06.01.01.014	Fiscal Year 2009	45,000,000	45,000,000
		630,000,000	630,000,000
	PMRMA Remediation Mission Costs	630,000,000	630,000,000
	PMRMA Mission Support Costs	630,000,000	630,000,000
	PMRMA Mission Support Costs	2,688,755,211	2,688,755,211
	Sitewide Alternative 5		

Sitewide Alternative 1
Caps/Covers

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA001: Sitewide Alternative 1 - Caps/Covers

TABLE B.5.3-8 Indirect Costs for Alternative 1

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Project Sunk Costs					
AR PMRMA Costs	750,000,000	0	0	0	750,000,000
Fixed Facility/Treatment Costs					
PM Prime Remediation Contractor					
LF RCRA Landfill Contractor	14,405,452	1,440,545	6,338,399	598,979	22,783,375
BO Borrow Area Contractor	50,186,678	5,018,668	22,082,138	2,086,762	79,374,246
AT Caustic Agent Treatment Facility	6,501,603	650,160	2,860,705	270,337	10,282,805
Subtotal Subcontract Work	71,093,732	7,109,373	31,281,242	2,956,077	112,440,425
Indirect on Subcontracts	112,440,425	0	0	0	112,440,425
PM Prime Remediation Contractor	112,440,425	0	0	0	112,440,425
Soil Medium Group Costs					
PM Prime Remediation Contractor					
BA Basin A Contractor	28,111,606	10,612,131	11,133,074	1,346,134	51,202,945
FF Former Basin F Contractor	17,577,783	6,635,613	6,961,351	841,718	32,016,466
CS Chemical Sewer Contractor	1,891,563	761,354	829,037	94,013	3,575,966
CP S. Plants Central Proc. Contract	12,738,534	4,808,796	5,044,857	609,989	23,202,176
SB S. Plants Balance of Areas Contr	61,279,073	23,132,850	24,268,428	2,934,369	111,614,720
SD S. Plants Ditches Contractor	4,768,672	1,800,174	1,888,543	228,349	8,685,738
CT Complex Trenches Contractor	20,203,239	8,131,804	9,563,077	1,023,249	38,921,369
SL Sanitary Landfill Contractor	7,150,819	2,699,434	2,831,948	342,419	13,024,620
SA Section 36 Balance Contractor	23,040,024	8,697,609	9,124,570	1,103,279	41,965,483
BW Basin F Wastepile Contractor	7,725,396	2,916,337	3,059,498	369,933	14,071,165
SC Secondary Basins Contractor	25,485,923	9,620,936	10,093,222	1,220,402	46,420,483
MT Munition Testing Contractor	1,756,982	685,223	763,189	86,546	3,291,940
TR Shell Trench Contractor	2,887,671	1,162,288	1,214,988	142,154	5,407,100
LS Lake Sediments Contractor	1,341,246	539,852	564,329	66,027	2,511,454
BT Burial Trenches Contractor	2,223,301	894,879	1,052,386	112,605	4,283,171
LB Sect. 36 Lime Basins Contractor	2,811,596	1,061,377	1,113,480	134,634	5,121,087
BS Buried Sediments Contractor	2,130,720	830,981	851,489	102,956	3,916,146
BM Buried M-1 Pits Contractor	1,397,327	562,424	587,925	68,787	2,616,463
SS Sanitary Sewers/Proc. Contractor	187,089	72,965	74,765	9,040	343,860
HX Hex Pit Contractor	884,015	355,816	371,949	43,518	1,655,299
SF Surficial Soils Contractor	4,564,637	1,837,267	1,920,571	224,707	8,547,182
TY Toxic Storage Yard Contractor	1,394,226	578,604	641,170	70,578	2,684,578
CL Sand Creek Lateral	8,894,750	3,357,768	3,522,599	425,928	16,201,045
NP North Plants Contractor	1,564,072	629,539	658,083	76,996	2,928,690
Subtotal Subcontract Work	242,010,265	92,386,020	98,134,529	11,678,332	444,209,147
Indirect on Subcontracts	444,209,147	0	0	0	444,209,147
M Prime Remediation Contractor	444,209,147	0	0	0	444,209,147

PROJECT SWA001: Sitewide Alternative 1 - Caps/Covers

TABLE B.5.3-8 Indirect Costs for Alternative 1

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Water Medium Group Costs					
PM Prime Remediation Contractor					
AP Additional Water Treatment	70,501,750	27,495,683	33,074,133	0	131,071,566
WS Water Supply/Hydrologic Controls	15,000,000	0	0	0	15,000,000
Subtotal Subcontract Work	85,501,750	27,495,683	33,074,133	0	146,071,566
Indirect on Subcontracts	146,071,566	0	0	0	146,071,566
PM Prime Remediation Contractor	146,071,566	0	0	0	146,071,566
Structures Medium Group Costs					
PM Prime Remediation Contractor					
PD Sig. Cont. Demolition Contractor	7,785,458	2,939,010	2,949,229	0	13,673,698
AD Agent Demolition Contractor	27,502,432	10,725,949	11,946,369	0	50,174,750
ND Other Cont. Demo. Contractor	20,609,206	8,037,590	8,235,954	0	36,882,751
SI Sturctures Post-ROD Removal Cont	36,000,000	0	0	0	36,000,000
Subtotal Subcontract Work	91,897,097	21,702,550	23,131,552	0	136,731,198
Indirect on Subcontracts	136,731,198	0	0	0	136,731,198
PM Prime Remediation Contractor	136,731,198	0	0	0	136,731,198
PMRMA Mission Support Costs					
AR PMRMA Costs	315,000,000	0	0	0	315,000,000

Sitewide Alternative 2
Landfill/Caps

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA002: Sitewide Alternative 2 - Landfill/Caps

TABLE B.5.3-9 Indirect Costs for Alternative 2 SUMMARY PAGE 1

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Project Sunk Costs					
AR PMRMA Costs	750,000,000	0	0	0	750,000,000
Fixed Facility/Treatment Costs					
PM Prime Remediation Contractor					
LF RCRA Landfill Contractor	45,118,174	4,511,817	19,851,997	1,876,014	71,358,002
BO Borrow Area Contractor	23,667,433	2,366,743	10,413,670	984,092	37,431,938
AT Caustic Agent Treatment Facility	6,715,415	671,541	2,954,782	279,227	10,620,966
Subtotal Subcontract Work	75,501,021	7,550,102	33,220,449	3,139,332	119,410,905
Indirect on Subcontracts	119,410,905	0	0	0	119,410,905
PM Prime Remediation Contractor	119,410,905	0	0	0	119,410,905
Soil Medium Group Costs					
PM Prime Remediation Contractor					
BA Basin A Contractor	28,111,606	10,612,131	11,133,074	1,346,134	51,202,945
FF Former Basin F Contractor	17,577,783	6,635,613	6,961,351	841,718	32,016,466
CS Chemical Sewer Contractor	4,971,854	2,001,171	2,266,233	249,460	9,488,718
CP S. Plants Central Proc. Contract	8,664,884	3,270,994	3,431,565	414,921	15,782,363
SB S. Plants Balance of Areas Contr	13,656,368	5,325,983	6,406,544	685,500	26,074,395
SD S. Plants Ditches Contractor	1,576,914	614,997	657,573	76,936	2,926,420
CT Complex Trenches Contractor	20,203,239	8,131,804	9,563,077	1,023,249	38,921,369
SL Sanitary Landfill Contractor	8,533,450	3,328,046	3,558,449	416,339	15,836,283
SA Section 36 Balance Contractor	8,370,000	3,368,925	3,961,887	423,922	16,124,733
BW Basin F Wastepile Contractor	7,725,396	2,916,337	3,059,498	369,933	14,071,165
SC Secondary Basins Contractor	3,950,284	1,540,611	1,647,268	192,730	7,330,894
MT Munition Testing Contractor	1,756,982	685,223	763,189	86,546	3,291,940
TR Shell Trench Contractor	2,887,671	1,162,288	1,214,988	142,154	5,407,100
LS Lake Sediments Contractor	1,341,246	539,852	564,329	66,027	2,511,454
BT Burial Trenches Contractor	2,223,301	894,879	1,052,386	112,605	4,283,171
LB Sect. 36 Lime Basins Contractor	2,811,596	1,061,377	1,113,480	134,634	5,121,087
BS Buried Sediments Contractor	731,007	294,230	307,571	35,986	1,368,794
BM Buried M-1 Pits Contractor	1,397,327	562,424	587,925	68,787	2,616,463
SS Sanitary Sewers/Proc. Contractor	187,089	72,965	74,765	9,040	343,860
HX Hex Pit Contractor	884,015	355,816	371,949	43,518	1,655,299
SF Surficial Soils Contractor	4,564,637	1,837,267	1,920,571	224,707	8,547,182
TY Toxic Storage Yard Contractor	1,394,226	578,604	641,170	70,578	2,684,578
CL Sand Creek Lateral	3,179,354	1,239,948	1,325,790	155,117	5,900,210
NP North Plants Contractor	1,564,072	629,539	658,083	76,996	2,928,690
Subtotal Subcontract Work	148,264,302	57,661,022	63,242,718	7,267,537	276,435,579
Indirect on Subcontracts	276,435,579	0	0	0	276,435,579
PM Prime Remediation Contractor	276,435,579	0	0	0	276,435,579

PROJECT SWA002: Sitewide Alternative 2 - Landfill/Caps

TABLE B.5.3-9 Indirect Costs for Alternative 2

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Water Medium Group Costs					
PM Prime Remediation Contractor					
AP Additional On-Post Treatment	70,501,750	27,495,683	33,074,133	0	131,071,566
WS Water Supply/Hydrologic Controls	15,000,000	0	0	0	15,000,000
Subtotal Subcontract Work	85,501,750	27,495,683	33,074,133	0	146,071,566
Indirect on Subcontracts	146,071,566	0	0	0	146,071,566
PM Prime Remediation Contractor	146,071,566	0	0	0	146,071,566
Structures Medium Group Costs					
PM Prime Remediation Contractor					
PD Sig. Cont. Demolition Contractor	7,785,458	2,939,010	2,949,229	0	13,673,698
AD Agent Demolition Contractor	27,502,432	10,725,949	11,946,369	0	50,174,750
ND Other Cont. Demo. Contractor	20,609,206	8,037,590	8,235,954	0	36,882,751
SI Structures Post-ROD Removal Cont	36,000,000	0	0	0	36,000,000
Subtotal Subcontract Work	91,897,097	21,702,550	23,131,552	0	136,731,198
Indirect on Subcontracts	136,731,198	0	0	0	136,731,198
PM Prime Remediation Contractor	136,731,198	0	0	0	136,731,198
PMRMA Mission Support Costs					
AR PMRMA Costs	270,000,000	0	0	0	270,000,000

Sitewide Alternative 3
Landfill

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA003: Sitewide Alternative 3 - Landfill

TABLE B.5.3-10 Indirect Costs for Alternative 3 SUMMARY PAGE 1

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Project Sunk Costs					
AR PMRMA Costs	750,000,000	0	0	0	750,000,000
Fixed Facility/Treatment Costs					
PM Prime Remediation Contractor					
LF RCRA Landfill Contractor	67,213,841	6,721,384	29,574,090	2,794,752	106,304,067
BO Borrow Area Contractor	25,182,037	2,518,204	11,080,096	1,047,069	39,827,406
AT Caustic Agent Treatment Facility	6,996,006	699,601	3,078,243	290,894	11,064,744
Subtotal Subcontract Work	99,391,884	9,939,188	43,732,429	4,132,715	157,196,216
Indirect on Subcontracts	157,196,216	0	0	0	157,196,216
PM Prime Remediation Contractor	157,196,216	0	0	0	157,196,216
Soil Medium Group Costs					
PM Prime Remediation Contractor					
BA Basin A Contractor	35,309,439	13,770,681	16,564,541	1,772,406	67,417,067
FF Former Basin F Contractor	57,363,284	21,654,640	25,680,825	2,826,866	107,525,615
CS Chemical Sewer Contractor	7,837,398	3,154,553	3,572,384	393,237	14,957,572
CP S. Plants Central Proc. Contract	12,246,258	4,776,041	5,532,247	608,973	23,163,519
SB S. Plants Balance of Areas Contr	13,656,360	5,325,980	6,406,540	685,500	26,074,380
SD S. Plants Ditches Contractor	1,576,914	614,997	657,573	76,936	2,926,420
CT Complex Trenches Contractor	20,200,831	8,130,835	9,561,937	1,023,127	38,916,730
SL Sanitary Landfill Contractor	8,989,200	3,505,788	3,748,496	438,574	16,682,058
SA Section 36 Balance Contractor	8,370,000	3,368,925	3,961,887	423,922	16,124,733
BW Basin F Wastepile Contractor	7,725,396	2,916,337	3,059,498	369,933	14,071,165
SC Secondary Basins Contractor	3,950,284	1,540,611	1,647,268	192,730	7,330,894
MT Munition Testing Contractor	1,757,364	685,372	763,355	86,564	3,292,655
TR Shell Trench Contractor	16,859,244	6,785,846	7,684,654	845,903	32,175,646
LS Lake Sediments Contractor	1,683,502	677,609	708,333	82,875	3,152,320
BT Burial Trenches Contractor	2,223,301	894,879	1,052,386	112,605	4,283,171
LB Sect. 36 Lime Basins Contractor	4,722,405	1,841,738	1,969,243	230,401	8,763,787
BS Buried Sediments Contractor	731,190	294,304	307,648	35,995	1,369,137
BM Buried M-1 Pits Contractor	3,141,883	1,303,881	1,444,873	159,047	6,049,685
SS Sanitary Sewers/Proc. Contractor	5,351,782	2,087,195	2,231,693	261,108	9,931,779
HX Hex Pit Contractor	2,422,410	1,005,300	1,114,006	122,626	4,664,343
SF Surficial Soils Contractor	4,564,637	1,837,267	1,920,571	224,707	8,547,182
TY Toxic Storage Yard Contractor	1,394,226	578,604	641,170	70,578	2,684,578
CL Sand Creek Lateral	3,179,354	1,239,948	1,325,790	155,117	5,900,210
DD Ditches/Drainage Contractor	1,409,542	567,341	593,065	69,389	2,639,336
NP North Plants Contractor	1,564,072	629,539	658,083	76,996	2,928,690
Subtotal Subcontract Work	228,230,277	89,188,209	102,808,069	11,346,117	431,572,672
Indirect on Subcontracts	431,572,672	0	0	0	431,572,672
PM Prime Remediation Contractor	431,572,672	0	0	0	431,572,672

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Water Medium Group Costs					
PM Prime Remediation Contractor					
AP Additional On-Post Treatment	70,501,750	27,495,683	33,074,133	0	131,071,566
WS Water Supply/Hydrologic Controls	15,000,000	0	0	0	15,000,000
Subtotal Subcontract Work	85,501,750	27,495,683	33,074,133	0	146,071,566
Indirect on Subcontracts	146,071,566	0	0	0	146,071,566
PM Prime Remediation Contractor	146,071,566	0	0	0	146,071,566
Structures Medium Group Costs					
PM Prime Remediation Contractor					
PD Sig. Cont. Demolition Contractor	7,785,458	2,939,010	2,949,229	0	13,673,698
AD Agent Demolition Contractor	27,502,432	10,725,949	11,946,369	0	50,174,750
ND Other Cont. Demo. Contractor	20,609,206	8,037,590	8,235,954	0	36,882,751
SI Structures Post-ROD Removal Cont	36,000,000	0	0	0	36,000,000
Subtotal Subcontract Work	91,897,097	21,702,550	23,131,552	0	136,731,198
ndirect on Subcontracts	136,731,198	0	0	0	136,731,198
PM Prime Remediation Contractor	136,731,198	0	0	0	136,731,198
PMRMA Mission Support Costs					
AR PMRMA Costs	315,000,000	0	0	0	315,000,000

Sitewide Alternative 4
Consolidation/Caps/Treatment/
Landfill

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA004: Sitewide Alternative 4 - Consolidation/Caps/Treatment/

TABLE B.5.3-11 Indirect Costs for Alternative 4 SUMMARY PAGE 1

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Project Sunk Costs					
AR PMRMA Costs	750,000,000	0	0	0	750,000,000
Fixed Facility/Treatment Costs					
PM Prime Remediation Contractor					
LF RCRA Landfill Contractor	58,355,686	5,835,569	25,676,502	2,426,429	92,294,186
BO Borrow Area Contractor	22,233,953	2,223,395	9,782,939	924,488	35,164,775
AT Caustic Agent Treatment Facility	6,783,093	678,309	2,984,561	282,041	10,728,004
Subtotal Subcontract Work	87,372,731	8,737,273	38,444,002	3,632,958	138,186,964
Indirect on Subcontracts	138,186,964	0	0	0	138,186,964
PM Prime Remediation Contractor	138,186,964	0	0	0	138,186,964
Soil Medium Group Costs					
PM Prime Remediation Contractor					
BA Basin A Contractor	27,977,431	10,561,480	12,043,410	1,365,723	51,948,044
FF Former Basin F Contractor	41,814,726	15,785,059	18,719,930	2,060,632	78,380,347
CS Chemical Sewer Contractor	4,970,007	2,000,428	2,265,391	249,367	9,485,194
CP S. Plants Central Proc. Contract	8,511,397	3,213,052	3,517,335	411,528	15,653,313
SB S. Plants Balance of Areas Contr	16,406,943	6,398,708	7,126,766	808,175	30,740,592
SD S. Plants Ditches Contractor	1,031,465	402,271	430,121	50,324	1,914,181
CT Complex Trenches Contractor	24,748,231	9,961,163	11,714,420	1,253,443	47,677,257
SL Sanitary Landfill Contractor	6,890,605	2,687,336	2,873,382	336,186	12,787,510
SA Section 36 Balance Contractor	8,035,753	3,133,944	3,490,530	395,826	15,056,052
BW Basin F Wastepile Contractor	45,026,111	17,560,183	21,122,874	2,260,148	85,969,316
SC Secondary Basins Contractor	4,002,531	1,560,987	1,669,055	195,279	7,427,853
MT Munition Testing Contractor	1,756,982	685,223	763,189	86,546	3,291,940
TR Shell Trench Contractor	3,222,683	1,297,130	1,355,944	158,645	6,034,402
LS Lake Sediments Contractor	1,637,164	658,958	688,837	80,594	3,065,553
BT Burial Trenches Contractor	2,223,301	894,879	1,052,386	112,605	4,283,171
LB Sect. 36 Lime Basins Contractor	2,085,846	839,553	950,755	104,656	3,980,809
BS Buried Sediments Contractor	679,716	273,586	285,991	33,461	1,272,753
BM Buried M-1 Pits Contractor	11,812,569	4,902,216	5,432,305	597,971	22,745,062
SS Sanitary Sewers/Proc. Contractor	187,089	72,965	74,765	9,040	343,860
HX Hex Pit Contractor	5,050,526	2,095,968	2,590,604	262,902	10,000,000
SF Surficial Soils Contractor	9,069,526	3,537,115	3,939,576	446,748	16,992,965
TY Toxic Storage Yard Contractor	1,394,226	578,604	641,170	70,578	2,684,578
CL Sand Creek Lateral	2,104,548	820,774	877,596	102,679	3,905,596
DD Ditches/Drainage Contractor	1,220,693	476,070	487,819	58,984	2,243,566
NP North Plants Contractor	1,564,072	629,539	658,083	76,996	2,928,690
CV Contingent Soil Contractor	2,435,249	980,188	1,024,631	119,882	4,559,949
Subtotal Subcontract Work	235,859,390	92,007,379	105,796,866	11,708,918	445,372,553
Indirect on Subcontracts	445,372,553	0	0	0	445,372,553
PM Prime Remediation Contractor	445,372,553	0	0	0	445,372,553

PROJECT SWA004: Sitewide Alternative 4 - Consolidation/Caps/Treatment/

TABLE B.5.3-11 Indirect Costs for Alternative 4 SUMMARY PAGE 2

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Water Medium Group Costs					
PM Prime Remediation Contractor					
AP On-Post Water Treatment	70,501,750	27,495,683	33,074,133	0	131,071,566
WS Water Supply/Hydrologic Controls	15,000,000	0	0	0	15,000,000
Subtotal Subcontract Work	85,501,750	27,495,683	33,074,133	0	146,071,566
Indirect on Subcontracts	146,071,566	0	0	0	146,071,566
PM Prime Remediation Contractor	146,071,566	0	0	0	146,071,566
Structures Medium Group Costs					
PM Prime Remediation Contractor					
PD Sig. Cont. Demolition Contractor	7,785,458	2,939,010	2,949,229	0	13,673,698
AD Agent Demolition Contractor	27,502,432	10,725,949	11,946,369	0	50,174,750
ND Other Cont. Demo. Contractor	20,609,206	8,037,590	8,235,954	0	36,882,751
SI Structures Post-ROD Removal Cont	36,000,000	0	0	0	36,000,000
Subtotal Subcontract Work	91,897,097	21,702,550	23,131,552	0	136,731,198
Indirect on Subcontracts	136,731,198	0	0	0	136,731,198
PM Prime Remediation Contractor	136,731,198	0	0	0	136,731,198
PMRMA Mission Support Costs					
AR PMRMA Costs	405,000,000	0	0	0	405,000,000

Sitewide Alternative 5
Caps/Treatment/Landfill

Designed By: Foster Wheeler Environmental
Estimated By: Foster Wheeler Environmental

Prepared By: Foster Wheeler Environmental

Date: 10/16/95

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PROJECT SWA005: Sitewide Alternative 5 - Caps/Treatment/Landfill

TABLE B.5.3-12 Indirect Costs for Alternative 5 SUMMARY PAGE 1

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
Project Sunk Costs					
AR PMRMA Costs	750,000,000	0	0	0	750,000,000
Fixed Facility/Treatment Costs					
PM Prime Remediation Contractor					
TD Thermal Desorption Subcontractor	195,178,642	19,517,864	85,878,602	8,115,528	308,690,637
IN Incineration Subcontrator	38,076,768	3,807,677	16,753,778	1,583,232	60,221,454
SO Solidification Contractor	8,507,395	850,739	3,743,254	353,737	13,455,125
LF RCRA Landfill Contractor	75,696,962	7,569,696	33,306,663	3,147,480	119,720,801
BO Borrow Area Contractor	25,457,848	2,545,785	11,201,453	1,058,537	40,263,623
AT Caustic Agent Treatment Facility	6,996,006	699,601	3,078,243	290,894	11,064,744
Subtotal Subcontract Work	349,913,621	34,991,362	153,961,993	14,549,408	553,416,384
Indirect on Subcontracts	553,416,384	0	0	0	553,416,384
PM Prime Remediation Contractor	553,416,384	0	0	0	553,416,384
Soil Medium Group Costs					
PM Prime Remediation Contractor					
BA Basin A Contractor	35,446,230	13,824,030	16,628,713	1,779,272	67,678,245
FF Former Basin F Contractor	61,953,775	23,387,550	27,735,931	3,053,086	116,130,341
CS Chemical Sewer Contracter	8,084,764	3,254,118	3,826,873	409,475	15,575,230
CP S. Plants Central Proc. Contract	12,387,557	4,831,147	5,596,079	615,999	23,430,782
SB S. Plants Balance of Areas Contr	13,702,469	5,343,963	6,428,171	687,814	26,162,417
SD S. Plants Ditches Contractor	1,592,548	621,094	664,093	77,699	2,955,433
CT Complex Trenches Contractor	20,203,239	8,131,804	9,563,077	1,023,249	38,921,369
SL Sanitary Landfill Contractor	8,989,200	3,505,788	3,748,496	438,574	16,682,058
SA Section 36 Balance Contractor	8,370,000	3,368,925	3,961,887	423,922	16,124,733
BW Basin F Wastepile Contractor	29,669,359	11,571,050	13,403,133	1,475,376	56,118,917
SC Secondary Basins Contractor	3,950,284	1,540,611	1,647,268	192,730	7,330,894
MT Munition Testing Contractor	1,756,982	685,223	763,189	86,546	3,291,940
TR Shell Trench Contractor	14,423,867	5,625,308	6,766,597	724,026	27,539,798
LS Lake Sediments Contractor	1,683,502	677,609	708,333	82,875	3,152,320
BT Burial Trenches Contractor	2,223,301	894,879	1,052,386	112,605	4,283,171
LB Sect. 36 Lime Basins Contractor	4,722,405	1,841,738	1,969,243	230,401	8,763,787
BS Buried Sediments Contractor	731,190	294,304	307,648	35,995	1,369,137
BM Buried M-1 Pits Contractor	4,558,132	1,891,625	2,096,171	230,740	8,776,667
SS Sanitary Sewers/Proc. Contractor	187,089	72,965	74,765	9,040	343,860
HX Hex Pit Contractor	2,407,270	999,017	1,149,622	123,010	4,678,919
SF Surficial Soils Contractor	4,845,575	1,950,344	2,038,776	238,537	9,073,231
TY Toxic Storage Yard Contractor	1,394,226	578,604	641,170	70,578	2,684,578
CL Sand Creek Lateral Contractor	3,179,354	1,239,948	1,325,790	155,117	5,900,210
DD Ditches/Drainage Contractor	1,409,542	567,341	593,065	69,389	2,639,336
NP North Plants Contractor	1,564,072	629,539	658,083	76,996	2,928,690
Subtotal Subcontract Work	249,435,932	97,328,522	113,348,558	12,423,051	472,536,063
Indirect on Subcontracts	472,536,063	0	0	0	472,536,063

PROJECT SWA005: Sitewide Alternative 5 - Caps/Treatment/Landfill

TABLE B.5.3-12 Indirect Costs for Alternative 5

** CONTRACTOR INDIRECT SUMMARY - LEVEL 1 **

	TOTAL DIRECT	OVERHEAD	CONTINGN	ESCALATN	TOTAL COST
PM Prime Remediation Contractor	472,536,063	0	0	0	472,536,063
Water Medium Group Costs					
PM Prime Remediation Contractor					
AP Additional On-Post Treatment	70,501,750	27,495,683	33,074,133	0	131,071,566
WS Water Supply/Hydrologic Controls	15,000,000	0	0	0	15,000,000
Subtotal Subcontract Work	85,501,750	27,495,683	33,074,133	0	146,071,566
Indirect on Subcontracts	146,071,566	0	0	0	146,071,566
PM Prime Remediation Contractor	146,071,566	0	0	0	146,071,566
Structures Medium Group Costs					
PM Prime Remediation Contractor					
PD Sig. Cont. Demolition Contractor	7,785,458	2,939,010	2,949,229	0	13,673,698
AD Agent Demolition Contractor	27,502,432	10,725,949	11,946,369	0	50,174,750
ND Other Cont. Demo. Contractor	20,609,206	8,037,590	8,235,954	0	36,882,751
SI Structures Post-ROD Removal Cont	36,000,000	0	0	0	36,000,000
Subtotal Subcontract Work	91,897,097	21,702,550	23,131,552	0	136,731,198
Indirect on Subcontracts	136,731,198	0	0	0	136,731,198
PM Prime Remediation Contractor	136,731,198	0	0	0	136,731,198
PMRMA Mission Support Costs					
AR PMRMA Costs	630,000,000	0	0	0	630,000,000

Table B.7-1 RCRA Landfill Material Volumes

Site	Structural Debris Volume (BCY)	Human Health/ Principal Threat Volume (BCY)	UXO Debris Volume (BCY)
3.03 Chemical Sewers	0	61,537	0
3.04 S. P. Central Processing	0	110,048	0
3.05 S. P. Balance of Areas	0	127,505	5,027
3.06 S. P. Ditches	0	33,364	0
3.08 Sanitary Landfills	0	13,790	0
3.09 Section 36 Balance of Areas	0	64,074	77,820
3.11 Secondary Basins	0	32,221	0
3.12 Munitions Testing	0	0	89,169
3.14 Lake Sediments	0	19,228	0
3.15 Burial Trenches	0	27,913	56,814
3.17 Buried Sediments	0	15,715	0
3.18 Buried M-1 Pits	0	35,481	0
3.21 Surficial Soil	0	85,064	0
3.22 Toxic Storage Yard	0	4,689	0
3.23 Sand Creek Lateral	0	14,687	0
3.25 North Plants	0	221	0
3.26 Contingent Soil Volume	0	150,000	0
5.01 Significant Contaminated Structures Demolition *	42,098	0	0
5.02 Agent Structures Demolition *	119,955	0	0
Total	**162,053**	**795,537**	**228,830**
2.01 RCRA Landfill Daily Cover Volume	130,617		
2.04 Caustic Agent Treatment Facility	10,393		
Grand Total Volume (BCY)	**1,327,430**		

* Structures landfill volumes are assumed to be 64% of the loose demolished volume which is transported to the landfill. This factor is applied to account for compaction of the structural material at the landfill and is based on preliminary information from the structures demolition treatability study.

Table B.7-2 Enhanced RCRA Landfill Material Volumes

Site	Structural Debris Volume (BCY)	Human Health/ Principal Threat Volume (BCY)	UXO Debris Volume (BCY)
3.10 Basin F Wastepile	0	600,000	0
3.16 Section 36 Lime Basins	0	54,074	0
Total	**0**	**654,074**	**0**
2.01 RCRA Landfill Daily Cover Volume	92,000		
2.04 Caustic Agent Treatment Facility	91		
Grand Total Volume (BCY)	**746,165**		

Table B.7-3 Caustic Agent Treatment Facility Material Volumes

Site	Agent Structural Debris Volume (BCY)	Caustic Wash/Agent Volume (BCY)
3.03 Chemical Sewers	0	130
3.04 South Plants Central Processing	0	106
3.05 South Plants Balance of Areas	0	160
3.09 Section 36 Balance of Areas	0	303
3.15 Burial Trenches	0	12
3.16 Section 36 Lime Basins	0	91
3.18 Buried M-1 Pits	0	29
3.22 Toxic Storage Yard	0	220
3.25 North Plants	0	61
5.02 Agent Structures Demolition	9,372	0
Total	**9,372**	**1,112**
Grand Total Volume (BCY)	**10,484**	
2.01 RCRA Landfill Volume	10,393	
2.01 Enhance RCRA Landfill Volume	91	

Table B.7-4 Basin A and Former Basin F Consolidation Material Volumes

Site	Structural Debris (BCY)	Non-Human Health/Principal Threat Volume (BCY)	Soil To Basin A (BCY)	Soil To Former Basin F (BCY)
3.08 Sanitary Landfills	0	383,140	22,967	0
3.09 Section 36 Balance of Areas	0	0	144,163	0
3.14 Lake Sediments	0	0	18,948	0
3.21 Surficial Soil	0	0	103,941	346,817
3.23 Sand Creek Lateral	0	0	90,255	0
3.24 Ditches Drainage Areas	0	0	51,516	0
5.03 Other Contaminated Structures Demolition	159,256	0	0	0
Total	**159,256**	**383,140**	**431,790**	**346,817**
2.01 RCRA Landfill	0	0	747,376	0
2.02 Enhanced RCRA Landfill	0	0	627,379	0
5.03 Other Contaminated Structures Demolition	0	0	159,256	0
3.08 Sanitary Landfills	0	0	383,140	0
Total Material To Basin A			**2,348,941**	

Table B1.1-U1 Cost Estimate - Munitions Testing Medium Group
Alternative U1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
U - No Action			LS	1	--	0.00	/SY	270,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

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Table B1.1-U1 Cost Estimate - Munitions Testing Medium Group
Alternative U1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
U - No Action			LS	1	–	0.00	/SY	270,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
U - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												3,000	85,000	45,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSS													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	33,000	17,000
Contingency	28.5%	R = 0.285 * (P+Q)												1,000	34,000	18,000
		Subtotal (S)												2,000	67,000	35,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														5,000	151,000	80,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															151,000	80,100

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Table B1.1-U2 Cost Estimate - Munitions Testing Medium Group
Alternative U2: Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B1.1-U2 Cost Estimate - Munitions Testing Medium Group
Alternative U2: Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
U - UXO Clearance In Surface Soil by Geophysics			LS	1	--	0.07	/SY	270,000	SY	1.000	1.000	1.000			20,000	20,000
U - Excavation of Borrow Material			LS	1	--	1.91	/BCY	490,000	BCY	1.000	1.000	1.000			978,000	978,000
U - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	490,000	BCY	1.000	1.500	1.000			668,000	668,000
U - Backfill with Borrow Material			LS	1	--	1.71	/BCY	490,000	BCY	1.000	1.000	1.000			876,000	876,000
U - Soil Cover for Potential UXO Areas			LS	1	--	7.55	/SY	270,000	SY	1.000	1.000	1.000			2,130,000	2,130,000
U - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	270,000	SY	1.000	1.000	1.100	Disturbance		56,000	56,000
		Subtotal (I)													4,728,000	4,728,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MMMS													
Mob/Demob	4.5%	J = 0.045 * (I)													213,000	213,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													1,927,000	1,927,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													120,000	120,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													120,000	120,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													2,221,000	2,221,000
		Subtotal (O = J+K+L+M+N)													4,601,000	4,601,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
U - Soil Cover for Potential UXO Areas			A	2	30	0.03	/SY-YR	270,000	SY	1.000	1.000	1.000		8,000	245,000	128,000
U - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												11,000	327,000	171,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	128,000	67,000
Contingency	32.5%	R = 0.325 * (P+Q)												5,000	148,000	77,000
		Subtotal (S)												9,000	275,000	144,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														21,000	9,931,000	9,643,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															9,930,000	9,640,000

Table B1.1-U3a Cost Estimate - Munitions Testing Medium Group
Alternative U3a: Detonation (On-Post Detonation)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	90,000	BCY	1.000	1.000	1.000			777,000	777,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	90,000	BCY	1.000	1.000	1.000			463,000	441,000
		Subtotal (A)													1,240,000	1,218,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													40,000	40,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													499,000	490,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													53,000	52,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													22,000	22,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													529,000	519,000
		Subtotal (G = B+C+D+E+F)													1,144,000	1,123,000
DIRECT SUBCONTRACT CAPITAL COSTS																
		Subtotal (A1)													0	0
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: 0														
Mob/Demob	0.0%	B1 = 0.000 * (A1)													0	0
Contractor Markup	0.0%	C1 = 0.000 * (A1+B1)													0	0
Engineering Design	0.0%	D1 = 0.000 * (A1+B1+C1)													0	0
Resident Engineering	0.0%	E1 = 0.000 * (A1+B1+C1)													0	0
Contingency	0.0%	F1 = 0.000 * (A1+B1+C1+D1+E1)													0	0
		Subtotal (G1 = B1+C1+D1+E1+F1)													0	0
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,383,000	2,341,000

Table B1.1-U3a Cost Estimate - Munitions Testing Medium Group
Alternative U3a: Detonation (On-Post Detonation)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
U - UXO Clearance by Geophysics			LS	1	--	0.66	/SY	270,000	SY	1.000	1.000	1.000			186,000	186,000
U - Removal of Soil with UXO			LS	2	--	71.16	/BCY	450	BCY	1.000	1.000	1.000			33,000	32,000
U - Excavation of Debris from Surface Soil			LS	2	--	3.07	/BCY	90,000	BCY	1.000	1.000	1.300	Productivity		375,000	357,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	90,000	BCY	1.000	3.000	1.300	Productivity		396,000	377,000
U - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	90,000	BCY	1.000	1.000	1.000			544,000	518,000
U - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	270,000	SY	1.000	1.000	1.000			20,000	19,000
U - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	270,000	SY	1.000	1.000	1.100	Disturbance		56,000	53,000
		Subtotal (I)													1,610,000	1,543,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMMS														
Mob/Demob	4.5%	J = 0.045 * (I)													72,000	69,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													656,000	629,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													41,000	39,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													41,000	39,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													757,000	725,000
		Subtotal (O = J+K+L+M+N)													1,567,000	1,501,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
U - On-Post Detonation of HE Filled UXO			LS	1	--	51.15	/BCY	450	BCY	1.000	1.000	1.000			24,000	24,000
		Subtotal (I1)													24,000	24,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: E														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	0.0%	K1 = 0.000 * (I1+J1)													0	0
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	0.0%	M1 = 0.000 * (I1+J1+K1)													0	0
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													7,000	7,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													7,000	7,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															3,209,000	3,075,000

Table B1.1-U3a st Estimate - Munitions Testing Medium Group
Alternative U3a: Detonation (On-Post Detonation)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	90,000	BCY	1.000	1.000	1.000	2,000	65,000	34,000
		Subtotal (P)											2,000	65,000	34,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											1,000	26,000	13,000
Contingency	32.5%	R = 0.325 * (P+Q)											1,000	30,000	15,000
		Subtotal (S = Q+R)											2,000	55,000	29,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)													4,000	121,000	63,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)														5,710,000	5,480,000

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Table B1.1-U4a Cost Estimate - Munitions Testing Medium Group
Alternative U4a: Detonation (Off-Post Army Facility)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	90,000	BCY	1.000	1.000	1.000			777,000	777,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	90,000	BCY	1.000	1.000	1.000			463,000	441,000
		Subtotal (A)													1,240,000	1,218,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													40,000	40,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													499,000	490,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													53,000	52,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													22,000	22,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													529,000	519,000
		Subtotal (G = B+C+D+E+F)													1,144,000	1,123,000
DIRECT SUBCONTRACT CAPITAL COSTS																
		Subtotal (A1)													0	0
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: 0														
Mob/Demob	0.0%	B1 = 0.000 * (A1)													0	0
Contractor Markup	0.0%	C1 = 0.000 * (A1+B1)													0	0
Engineering Design	0.0%	D1 = 0.000 * (A1+B1+C1)													0	0
Resident Engineering	0.0%	E1 = 0.000 * (A1+B1+C1)													0	0
Contingency	0.0%	F1 = 0.000 * (A1+B1+C1+D1+E1)													0	0
		Subtotal (G1 = B1+C1+D1+E1+F1)													0	0
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,383,000	2,341,000

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Table B1.1-U4a Cost Estimate - Munitions Testing Medium Group
Alternative U4a: Detonation (Off-Post Army Facility)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
U - UXO Clearance by Geophysics		LS	1	--	0.66	/SY	270,000	SY	1.000	1.000	1.000			186,000	186,000
U - Removal of Soil with UXO		LS	2	--	71.16	/BCY	450	BCY	1.000	1.000	1.000			33,000	32,000
U - Excavation of Debris from Surface Soil		LS	2	--	3.07	/BCY	90,000	BCY	1.000	1.000	1.300	Productivity		375,000	357,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	90,000	BCY	1.000	3.000	1.300	Productivity		396,000	377,000
U - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	90,000	BCY	1.000	1.000	1.000			544,000	518,000
U - Supplementation of Soil With Conditioners		LS	2	--	0.07	/SY	270,000	SY	1.000	1.000	1.000			20,000	19,000
U - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	270,000	SY	1.000	1.000	1.100	Disturbance		56,000	53,000
	Subtotal (I)													1,610,000	1,543,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMMS													
Mob/Demob	4.5%	J = 0.045 * (I)												72,000	69,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												656,000	629,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)												41,000	39,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)												41,000	39,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)												757,000	725,000
	Subtotal (O = J+K+L+M+N)													1,567,000	1,501,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Fa		LS	1	--	59.50	/BCY	450	BCY	1.000	1.000	1.000			28,000	28,000
	Subtotal (I1)													28,000	28,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: E													
Mob/Demob	0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup	0.0%	K1 = 0.000 * (I1+J1)												0	0
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	0.0%	M1 = 0.000 * (I1+J1+K1)												0	0
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												8,000	8,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													8,000	8,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														3,214,000	3,080,000

Table B1.1-U4a Cost Estimate - Munitions Testing Medium Group
Alternative U4a: Detonation (Off-Post Army Facility)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	90,000	BCY	1.000	1.000	1.000		2,000	65,000	34,000
		Subtotal (P)												2,000	65,000	34,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	26,000	13,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	30,000	15,000
		Subtotal (S = Q+R)												2,000	55,000	29,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														4,000	121,000	63,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															5,720,000	5,480,000

Table B2.1-A1 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - No Action			LS	1	--	0.00	/SY	28,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

ANP-A1.WQ1
SOILS DAA

13-Oct-95

Table B2.1-A1 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - No Action			LS	1	--	0.00	/SY	28,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
A - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												3,000	85,000	45,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	33,000	17,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	38,000	20,000
		Subtotal (S)												2,000	71,000	38,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														5,000	156,000	83,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															156,000	82,600

Table B2.1-A2 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A2: Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B2.1-A2 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A2: Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Excavation of Borrow Material			LS	1	--	1.91	/BCY	43,000	BCY	1.000	1.000	1.000			86,000	86,000
A - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	43,000	BCY	1.000	1.000	1.000			39,000	39,000
A - Backfill with Borrow Material			LS	1	--	1.71	/BCY	43,000	BCY	1.000	1.000	1.000			77,000	77,000
A - Subgrade Preparation Prior to Installing Cover			LS	1	--	0.06	/SY	50,000	SY	1.000	1.000	1.000			3,000	3,000
A - Soil Cover for Potential Agent Areas			LS	1	--	7.79	/SY	50,000	SY	1.000	1.000	1.000			407,000	407,000
A - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	50,000	SY	1.000	1.000	1.100	Disturbance		10,000	10,000
		Subtotal (I)													622,000	622,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													20,000	20,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													251,000	251,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													9,000	9,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													11,000	11,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													260,000	260,000
		Subtotal (O = J+K+L+M+N)													551,000	551,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
A - Soil Cover for Potential Agent Areas			A	1	30	0.03	/SY-YR	50,000	SY	1.000	1.000	1.000		2,000	47,000	25,000
A - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												4,000	132,000	70,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	51,000	27,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	59,000	32,000
		Subtotal (S)												4,000	111,000	59,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														8,000	1,416,000	1,302,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,420,000	1,300,000

Table B2.1-A3 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A3: Direct Soil Washing (Caustic Solution Washing); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HA - On-Post Hazardous Waste Landfill (Salts,Treated Soils,Isolated Exc			LS	1	--	8.26	/BCY	281	BCY	1.000	1.000	1.000			2,000	2,000
HA - On-Post Hazardous Waste Landfill Closure (Salts,Treated Soils,Isol			LS	2	--	4.92	/BCY	281	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													4,000	4,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,000	2,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													200	200
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													100	100
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													2,000	2,000
		Subtotal (G = B+C+D+E+F)													4,000	4,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	61	BCY	1.000	1.000	1.000			10,000	10,000
		Subtotal (A1)													10,000	10,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													1,000	1,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													1,000	1,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													200	200
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													4,000	4,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													6,000	6,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															24,000	24,000

Table B2.1-A3 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A3: Direct Soil Washing (Caustic Solution Washing); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HA - Agent Screening During Excavation			LS	2	--	0.30	/BCY	281	BCY	1.000	1.000	1.000			100	100
HA - Excavation of Soil with Agent and Isolated Exceedances			LS	2	--	4.61	/BCY	281	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	61	BCY	1.000	2.000	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	61	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	281	BCY	1.000	1.000	1.000			300	300
HA - On-Post Hazardous Waste Landfill (Salts, Treated Soils, Isolated Exc			LS	2	--	5.78	/BCY	281	BCY	1.000	1.000	1.000			2,000	2,000
HA - Excavation of Borrow Material			LS	2	--	1.91	/BCY	281	BCY	1.000	1.000	1.000			1,000	1,000
HA - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	281	BCY	1.000	1.500	1.000			400	400
HA - Backfill with Borrow Material			LS	2	--	1.71	/BCY	281	BCY	1.000	1.000	1.000			1,000	500
B - Subgrade Preparation Prior to Installing Cover			LS	2	--	0.06	/SY	160,000	SY	1.000	1.000	1.000			10,000	10,000
B - Installation of 2 ft Soil Cover (Without Biota Barrier)			LS	2	--	3.75	/SY	160,000	SY	1.000	1.000	1.000			627,000	597,000
B - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	160,000	SY	1.000	1.000	1.100	Disturbance		33,000	32,000
		Subtotal (I)													675,000	643,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													30,000	29,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													293,000	279,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													10,000	10,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													17,000	17,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													333,000	318,000
		Subtotal (O = J+K+L+M+N)													684,000	652,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	61	BCY	1.000	1.000	1.000			17,000	17,000
		Subtotal (I1)													17,000	17,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													1,000	1,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													2,000	2,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													400	400
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													6,000	6,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													9,000	9,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															1,386,000	1,320,000

Table B2.1-A3 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A3: Direct Soil Washing (Caustic Solution Washing); Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
HA - On-Post Hazardous Waste Landfill Closure (Salts,Treated Soils,Isol	A	2	30	0.02	/BCY-YR	281	BCY	1.000	1.000	1.000		10	200	100
B - Installation of 2 ft Soil Cover (Without Biota Barrier)	A	2	30	0.02	/SY-YR	160,000	SY	1.000	1.000	1.000		3,000	97,000	51,000
A - Site Reviews	A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
Subtotal (P)												6,000	179,000	93,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI COST CODE: LLSL														
Indirects, Overhead & Profit 39.0% Q = 0.390 * (P)												2,000	70,000	36,000
Contingency 32.5% R = 0.325 * (P+Q)												3,000	81,000	42,000
Subtotal (S = Q+R)												5,000	151,000	79,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												11,000	330,000	172,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													1,740,000	1,520,000

ANP-A3.WQ1
SOILS DAA

12-Oct-95

Table B2.1-A4 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A4: Incineration/Pyrolysis (Rotary Kiln)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	220	BCY	1.000	1.000	1.000			2,000	2,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	220	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													3,000	3,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													100	100
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G = B+C+D+E+F)													3,000	3,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Incineration			A	1	2	76.00	/BCY	61	BCY	1.000	1.000	1.000			5,000	5,000
		Subtotal (A1)													5,000	5,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													100	100
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													500	500
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													500	500
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													200	200
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													2,000	2,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													3,000	3,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															14,000	13,000

Table B2.1-A4 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A4: Incineration/Pyrolysis (Rotary Kiln)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Drilling and Agent Screening Prior to Excavation			LS	2	--	4.94	/SY	28,000	SY	1.000	1.000	1.000			145,000	138,000
HA - Excavation of Soil with Agent and Isolated Exceedances			LS	3	--	4.61	/BCY	280	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Incineration Facility			LS	3	--	1.08	/BCY-MILE	61	BCY	1.000	2.000	1.000			100	100
A - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	61	BCY	1.000	1.000	1.000			100	100
A - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	61	BCY	1.000	1.000	1.000			100	100
A - Backfill with Treated Soil			LS	3	--	1.71	/BCY	61	BCY	1.000	1.000	1.000			100	100
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	220	BCY	1.000	1.000	1.000			200	200
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	220	BCY	1.000	1.000	1.000			1,000	1,000
H - Excavation of Borrow Material			LS	3	--	1.91	/BCY	220	BCY	1.000	1.000	1.000			400	400
H - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	220	BCY	1.000	1.500	1.000			300	300
H - Backfill with Borrow Material			LS	3	--	1.71	/BCY	220	BCY	1.000	1.000	1.000			400	400
B - Subgrade Preparation Prior to Installing Cover			LS	3	--	0.06	/SY	50,000	SY	1.000	1.000	1.000			3,000	3,000
B - Installation of 2 ft Soil Cover (Without Biota Barrier)			LS	3	--	3.75	/SY	50,000	SY	1.000	1.000	1.000			196,000	178,000
B - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	50,000	SY	1.000	1.000	1.100	Disturbance		10,000	9,000
		Subtotal (I)													358,000	332,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													16,000	15,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													155,000	144,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													5,000	5,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													9,000	9,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													177,000	164,000
		Subtotal (O = J+K+L+M+N)													363,000	336,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Incineration			LS	3	--	115.00	/BCY	61	BCY	1.000	1.000	1.000			7,000	7,000
		Subtotal (I1)													7,000	7,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,000	1,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													200	100
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													3,000	3,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													4,000	4,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															733,000	678,000

Table B2.1-A4 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A4: Incineration/Pyrolysis (Rotary Kiln)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	220	BCY	1.000	1.000	1.000		10	200	100
B - Installation of 2 ft Soil Cover (Without Biota Barrier)			A	3	30	0.02	/SY-YR	50,000	SY	1.000	1.000	1.000		1,000	29,000	15,000
A - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												4,000	108,000	55,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	42,000	21,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	49,000	25,000
		Subtotal (S = Q+R)												3,000	91,000	46,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														7,000	200,000	101,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															946,000	792,000

Table B2.1-A5 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A5: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HA - On-Post Hazardous Waste Landfill (Salts,Treated Soils,Isolated Exc			LS	1	--	8.26	/BCY	280	BCY	1.000	1.000	1.000			2,000	2,000
HA - On-Post Hazardous Waste Landfill Closure (Salts,Treated Soils,Isol			LS	2	--	4.92	/BCY	280	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													4,000	4,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,000	2,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													200	200
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													100	100
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													2,000	2,000
		Subtotal (G = B+C+D+E+F)													4,000	3,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Solvent/Caustic Washing of Agent Soil			LS	1	--	35.50	/BCY	61	BCY	1.000	1.000	1.000			2,000	2,000
		Subtotal (A1)													2,000	2,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													100	100
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													200	200
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													100	100
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													100	100
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,000	1,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													1,000	1,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															11,000	11,000

ANP-A5.WQ1
SOILS DAA

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Table B2.1-A5 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A5: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Drilling and Agent Screening Prior to Excavation			LS	1	--	4.94	/SY	28,000	SY	1.000	1.000	1.000			145,000	145,000
HA - Excavation of Soil with Agent and Isolated Exceedances			LS	2	--	4.61	/BCY	280	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	61	BCY	1.000	2.000	1.000			100	100
A - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	2	--	1.29	/BCY	61	BCY	1.000	1.000	1.000			100	100
HA - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	280	BCY	1.000	1.000	1.000			300	300
HA - On-Post Hazardous Waste Landfill (Salts,Treated Soils,Isolated Exc			LS	2	--	5.78	/BCY	280	BCY	1.000	1.000	1.000			2,000	2,000
HA - Excavation of Borrow Material			LS	2	--	1.91	/BCY	280	BCY	1.000	1.000	1.000			1,000	1,000
HA - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	280	BCY	1.000	1.500	1.000			400	400
HA - Backfill with Borrow Material			LS	2	--	1.71	/BCY	280	BCY	1.000	1.000	1.000			1,000	500
B - Subgrade Preparation Prior to Installing Cover			LS	2	--	0.06	/SY	50,000	SY	1.000	1.000	1.000			3,000	3,000
B - Installation of 2 ft Soil Cover (Without Biota Barrier)			LS	2	--	3.75	/SY	50,000	SY	1.000	1.000	1.000			196,000	187,000
B - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	50,000	SY	1.000	1.000	1.100	Disturbance		10,000	10,000
		Subtotal (I)													359,000	349,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													16,000	16,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													156,000	151,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													5,000	5,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													9,000	9,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													177,000	172,000
		Subtotal (O = J+K+L+M+N)													364,000	353,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Solvent/Caustic Washing of Agent Soil			LS	2	--	211.12	/BCY	61	BCY	1.000	1.000	1.000			13,000	13,000
		Subtotal (I1)													13,000	13,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													1,000	1,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,000	1,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													300	300
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													5,000	5,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													7,000	7,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															743,000	722,000

Table B2.1-A5 Cost Estimate - Agent Storage Medium Group - North Plants Subgroup
Alternative A5: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HA - On-Post Hazardous Waste Landfill Closure (Salts,Treated Soils,Isol			A	2	30	0.02	/BCY-YR	280	BCY	1.000	1.000	1.000		10	200	100
B - Installation of 2 ft Soil Cover (Without Biota Barrier)			A	2	30	0.02	/SY-YR	50,000	SY	1.000	1.000	1.000		1,000	30,000	16,000
A - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												4,000	112,000	59,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	44,000	23,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	51,000	26,000
		Subtotal (S = Q+R)												3,000	95,000	49,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														7,000	207,000	108,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															961,000	841,000

Table B2.2-A1 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - No Action			LS	1	--	0.00	/SY	130,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B2.2-A1 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - No Action			LS	1	--	0.00	/SY	130,000	SY	1.000	1.000	1.000		0	0
		Subtotal (I)												0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0												
Mob/Demob	0.0%	J = 0.000 * (I)												0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)												0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)												0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)												0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)												0	0
		Subtotal (O = J+K+L+M+N)												0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
A - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000	3,000	85,000	45,000
		Subtotal (P)											3,000	85,000	45,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL												
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											1,000	33,000	17,000
Contingency	32.5%	R = 0.325 * (P+Q)											1,000	38,000	20,000
		Subtotal (S)											2,000	71,000	38,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]													5,000	156,000	83,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)														156,000	82,600

Table B2.2-A2 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A2: Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B2.2-A2 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A2: Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Excavation of Borrow Material			LS	1	--	1.91	/BCY	360,000	BCY	1.000	1.000	1.000			719,000	719,000
A - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	360,000	BCY	1.000	1.500	1.000			491,000	491,000
A - Backfill with Borrow Material			LS	1	--	1.71	/BCY	360,000	BCY	1.000	1.000	1.000			643,000	643,000
A - Subgrade Preparation Prior to Installing Cover			LS	1	--	0.06	/SY	130,000	SY	1.000	1.000	1.000			8,000	8,000
A - Soil Cover for Potential Agent Areas			LS	1	--	7.79	/SY	130,000	SY	1.000	1.000	1.000			1,058,000	1,058,000
A - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	130,000	SY	1.000	1.000	1.100	Disturbance		27,000	27,000
		Subtotal (I)													2,946,000	2,946,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	3.3%	J = 0.033 * (I)													96,000	96,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													1,186,000	1,186,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													42,000	42,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													53,000	53,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													1,232,000	1,232,000
		Subtotal (O = J+K+L+M+N)													2,609,000	2,609,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
A - Soil Cover for Potential Agent Areas			A	2	30	0.03	/SY-YR	130,000	SY	1.000	1.000	1.000		4,000	118,000	62,000
A - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												7,000	200,000	104,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	78,000	41,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	90,000	47,000
		Subtotal (S)												6,000	168,000	88,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														13,000	5,924,000	5,748,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															5,920,000	5,750,000

Table B2.2-A3 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A3: Direct Soil Washing (Caustic Solution Washing); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HA - On-Post Hazardous Waste Landfill (Salts,Treated Soils,Isolated Exc			LS	1	--	8.26	/BCY	2,900	BCY	1.000	1.000	1.000			25,000	25,000
HA - On-Post Hazardous Waste Landfill Closure (Salts,Treated Soils,Isol			LS	2	--	4.92	/BCY	2,900	BCY	1.000	1.000	1.000			15,000	14,000
		Subtotal (A)													40,000	39,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													1,000	1,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													16,000	16,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													2,000	2,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													1,000	1,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													17,000	17,000
		Subtotal (G = B+C+D+E+F)													37,000	36,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	220	BCY	1.000	1.000	1.000			37,000	37,000
		Subtotal (A1)													37,000	37,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													2,000	2,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													4,000	4,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													2,000	2,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													14,000	14,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													22,000	22,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															135,000	134,000

ATSY-A3.WQ1
SOILS DAA

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Table B2.2-A3 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A3: Direct Soil Washing (Caustic Solution Washing); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HA - Agent Screening During Excavation			LS	2	--	0.30	/BCY	2,900	BCY	1.000	1.000	1.000			1,000	1,000
HA - Excavation of Soil with Agent and Isolated Exceedances			LS	2	--	4.61	/BCY	2,900	BCY	1.000	1.000	1.000			14,000	13,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	220	BCY	1.000	2.500	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	220	BCY	1.000	1.000	1.000			400	300
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	2,900	BCY	1.000	2.000	1.000			7,000	6,000
HA - On-Post Hazardous Waste Landfill (Salts,Treated Soils,Isolated Exc			LS	2	--	5.78	/BCY	2,900	BCY	1.000	1.000	1.000			18,000	17,000
HA - Excavation of Borrow Material			LS	2	--	1.91	/BCY	2,900	BCY	1.000	1.000	1.000			6,000	6,000
HA - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	2,900	BCY	1.000	1.500	1.000			4,000	4,000
HA - Backfill with Borrow Material			LS	2	--	1.71	/BCY	2,900	BCY	1.000	1.000	1.000			5,000	5,000
A - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	600	SY	1.000	1.000	1.000			40	40
A - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	600	SY	1.000	1.000	1.100	Disturbance		100	100
A - Grubbing & Clearing			LS	2	--	0.22	/SY	990,000	SY	1.000	1.000	1.000			228,000	217,000
		Subtotal (I)													283,000	269,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													13,000	12,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													123,000	117,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													4,000	4,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													7,000	7,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													140,000	133,000
		Subtotal (O = J+K+L+M+N)													286,000	273,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	220	BCY	1.000	1.000	1.000			63,000	60,000
		Subtotal (I1)													63,000	60,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													3,000	3,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													7,000	6,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													1,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													22,000	21,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													33,000	32,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															665,000	634,000

Table B2.2-A3 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A3: Direct Soil Washing (Caustic Solution Washing); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HA - On-Post Hazardous Waste Landfill Closure (Salts,Treated Soils,Isol			A	2	30	0.02	/BCY-YR	2,900	BCY	1.000	1.000	1.000		100	2,000	1,000
		Subtotal (P)												100	2,000	1,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												30	1,000	400
Contingency	32.5%	R = 0.325 * (P+Q)												30	1,000	500
		Subtotal (S = Q+R)												100	2,000	1,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														100	4,000	2,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															804,000	770,000

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Table B2.2-A4 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A4: Incineration/Pyrolysis (Rotary Kiln)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HA - On-Post Hazardous Waste Landfill (Isolated Exceedances and Partic			LS	2	--	8.26	/BCY	2,700	BCY	1.000	1.000	1.000			23,000	22,000
A - On-Post Hazardous Waste Landfill Closure (Isolated Exceedances and			LS	3	--	4.92	/BCY	2,700	BCY	1.000	1.000	1.000			14,000	13,000
		Subtotal (A)													37,000	35,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													1,000	1,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													15,000	14,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													2,000	1,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													1,000	1,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													16,000	15,000
		Subtotal (G = B+C+D+E+F)													34,000	32,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Incineration			A	1	2	TOTAL	115.00	220	BCY	1.000	1.000	1.000			0	0
		Subtotal (A1)													0	0
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													0	0
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													0	0
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													0	0
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													0	0
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													0	0
		Subtotal (G1 = B1+C1+D1+E1+F1)													0	0
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															71,000	67,000

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Table B2.2-A4 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A4: Incineration/Pyrolysis (Rotary Kiln)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Drilling and Agent Screening Prior to Excavation			LS	2	--	4.94	/SY	130,000	SY	1.000	1.000	1.000			671,000	639,000
HA - Excavation of Soil with Agent and Isolated Exceedances			LS	3	--	4.61	/BCY	2,900	BCY	1.000	1.000	1.000			14,000	13,000
A - Transportation of Contaminated Soil to On-Post Incineration Facility			LS	3	--	1.08	/BCY-MILE	220	BCY	1.000	2.500	1.000			1,000	1,000
A - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	220	BCY	1.000	1.000	1.000			300	300
A - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	220	BCY	1.000	2.500	1.000			1,000	500
A - Backfill with Treated Soil			LS	3	--	1.71	/BCY	220	BCY	1.000	1.000	1.000			400	400
HA - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	3	--	1.08	/BCY-MILE	2,900	BCY	1.000	2.000	1.000			7,000	6,000
HA - On-Post Hazardous Waste Landfill (Isolated Exceedances and Partic			LS	3	--	5.78	/BCY	2,900	BCY	1.000	1.000	1.000			18,000	16,000
HA - Excavation of Borrow Material			LS	3	--	1.91	/BCY	2,900	BCY	1.000	1.000	1.000			6,000	5,000
HA - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	2,900	BCY	1.000	1.500	1.000			4,000	4,000
HA - Backfill with Borrow Material			LS	3	--	1.71	/BCY	2,900	BCY	1.000	1.000	1.000			5,000	5,000
A - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	600	SY	1.000	1.000	1.000			40	40
A - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	600	SY	1.000	1.000	1.100	Disturbance		100	100
A - Grubbing & Clearing			LS	3	--	0.22	/SY	990,000	SY	1.000	1.000	1.000			228,000	206,000
		Subtotal (I)													954,000	895,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													43,000	40,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													414,000	388,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													14,000	13,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													25,000	23,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													471,000	442,000
		Subtotal (O = J+K+L+M+N)													966,000	907,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Incineration			LS	3	--	115.00	/BCY	220	BCY	1.000	1.000	1.000			26,000	24,000
		Subtotal (I1)													26,000	24,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													3,000	2,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													1,000	1,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													12,000	11,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													15,000	14,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															1,961,000	1,840,000

Table B2.2-A4 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A4: Incineration/Pyrolysis (Rotary Kiln)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
A - On-Post Hazardous Waste Landfill Closure (Isolated Exceedances and			A	3	30	0.02	/BCY-YR	2,900	BCY	1.000	1.000	1.000		100	2,000	1,000
		Subtotal (P)												100	2,000	1,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												30	1,000	400
Contingency	32.5%	R = 0.325 * (P+Q)												30	1,000	500
		Subtotal (S = Q+R)												100	2,000	1,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														100	4,000	2,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															2,040,000	1,910,000

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Table B2.2-A5 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A5: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Other Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HA - On-Post Hazardous Waste Landfill (Isolated Exceedances and Partic			LS	1	--	8.26	/BCY	2,900	BCY	1.000	1.000	1.000			25,000	25,000
A - On-Post Hazardous Waste Landfill Closure (Isolated Exceedances and			LS	2	--	4.92	/BCY	2,900	BCY	1.000	1.000	1.000			15,000	14,000
		Subtotal (A)													40,000	39,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													1,000	1,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													16,000	16,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													2,000	2,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													1,000	1,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													17,000	17,000
		Subtotal (G = B+C+D+E+F)													37,000	36,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Solvent/Caustic Washing of Agent Soil			A	1	2	35.50	/BCY	220	BCY	1.000	1.000	1.000			8,000	8,000
		Subtotal (A1)													8,000	8,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													400	400
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													1,000	1,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													400	400
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													200	200
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,000	3,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													5,000	5,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															90,000	88,000

Table B2.2-A5 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A5: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Drilling and Agent Screening Prior to Excavation		LS	1	--	4.94	/SY	130,000	SY	1.000	1.000	1.000			671,000	671,000
HA - Excavation of Soil with Agent and Isolated Exceedances		LS	2	--	4.61	/BCY	2,900	BCY	1.000	1.000	1.000			14,000	13,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	220	BCY	1.000	2.500	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	220	BCY	1.000	1.000	1.000			400	300
A - Transportation of Treated Soil to Backfill Excavation		LS	2	--	0.87	/BCY-MILE	220	BCY	1.000	2.500	1.000			1,000	500
A - Backfill with Treated Soil		LS	2	--	1.71	/BCY	220	BCY	1.000	1.000	1.000			400	400
HA - Transportation of Contaminated Soil to On-Post Hazardous Waste		LS	2	--	1.08	/BCY-MILE	2,900	BCY	1.000	2.000	1.000			7,000	6,000
HA - On-Post Hazardous Waste Landfill (Isolated Exceedances and Partic		LS	2	--	5.78	/BCY	2,900	BCY	1.000	1.000	1.000			18,000	17,000
HA - Excavation of Borrow Material		LS	2	--	1.91	/BCY	2,900	BCY	1.000	1.000	1.000			6,000	6,000
HA - Transportation of Borrow Material to Backfill Area		LS	2	--	0.87	/BCY-MILE	2,900	BCY	1.000	1.500	1.000			4,000	4,000
HA - Backfill with Borrow Material		LS	2	--	1.71	/BCY	2,900	BCY	1.000	1.000	1.000			5,000	5,000
A - Supplementation of Soil With Conditioners		LS	2	--	0.07	/SY	600	SY	1.000	1.000	1.000			40	40
A - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	600	SY	1.000	1.000	1.100	Disturbance		100	100
A - Grubbing & Clearing		LS	2	--	0.22	/SY	990,000	SY	1.000	1.000	1.000			228,000	217,000
	Subtotal (I)													954,000	940,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS													
Mob/Demob	4.5%	J = 0.045 * (I)												43,000	42,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)												414,000	408,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												14,000	14,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)												25,000	24,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)												471,000	464,000
	Subtotal (O = J+K+L+M+N)													966,000	953,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
A - Solvent/Caustic Washing of Agent Soil		LS	2	--	211.12	/BCY	220	BCY	1.000	1.000	1.000			49,000	46,000
	Subtotal (I1)													49,000	46,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F													
Mob/Demob	5.0%	J1 = 0.050 * (I1)												2,000	2,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												5,000	5,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												1,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												17,000	16,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													26,000	25,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														1,994,000	1,964,000

Table B2.2-A5 Cost Estimate - Agent Storage Medium Group - Toxic Storage Yards Subgroup
Alternative A5: Direct Soil Washing (Solvent Washing with Caustic Pretreatment)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
A - On-Post Hazardous Waste Landfill Closure (Isolated Exceedances and			A	2	30	0.02	/BCY-YR	2,900	BCY	1.000	1.000	1.000		100	2,000	1,000
		Subtotal (P)												100	2,000	1,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												30	1,000	400
Contingency	32.5%	R = 0.325 * (P+Q)												30	1,000	500
		Subtotal (S = Q+R)												100	2,000	1,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														100	4,000	2,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															2,090,000	2,050,000

Table B3.1-B1 Cost Estimate - Lake Sediments Medium Group
Alternative B1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - No Action			LS	1	--	0.00	/SY	57,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B3.1-B1 Cost Estimate - Lake Sediments Medium Group
Alternative B1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - No Action			LS	1	--	0.00	/SY	57,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - Long Term Soil Monitoring, Lake Sediments			A	1	30	24,000.00	/EA-YR	1	EA	1.000	1.000	1.000		25,000	752,000	399,000
B - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												28,000	837,000	444,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												11,000	326,000	173,000
Contingency	32.5%	R = 0.325 * (P+Q)												13,000	378,000	200,000
		Subtotal (S)												23,000	705,000	373,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														51,000	1,542,000	817,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,540,000	817,000

Table B3.1-B1a Cost Estimate - Lake Sediments Medium Group
Alternative B1a: Landfill (On-Post Landfill); No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	19,000	BCY	1.000	1.000	1.000			164,000	164,000
HB - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	19,000	BCY	1.000	1.000	1.000			98,000	89,000
		Subtotal (A)													262,000	253,000
INDIRECT CAPITAL COSTS		COST CODE LLSL														
Mob/Demob	3.3%	B = 0.033 * (A)													9,000	8,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													105,000	102,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													11,000	11,000
Resident Engineering	1.8%	E = 0.018 * (A+B+C)													7,000	6,000
Contingency	32.5%	F = 0.325 * (A+B+C+D+E)													128,000	123,000
		Subtotal (G =B+C+D+E+F)													260,000	251,000
TOTAL CAPITAL COSTS (H = A+G)															521,000	503,000

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Table B3.1-B1a Cost Estimate - Lake Sediments Medium Group
Alternative B1a: Landfill (On-Post Landfill); No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Grubbing & Clearing			LS	2	--	0.22	/SY	45,000	SY	1.000	1.000	1.000			10,000	10,000
HB - Temporary Cutoff Wall			LS	2	--	155.10	/LF	2,300	LF	1.000	1.000	1.000			373,000	355,000
HB - Dredging and Dewatering			LS	2	--	8.30	/BCY	5,800	BCY	1.000	1.000	1.000			50,000	48,000
HB - Soil Excavation			LS	2	--	3.96	/BCY	13,200	BCY	1.000	1.000	1.000			55,000	52,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	19,000	BCY	1.000	2.000	1.000			43,000	41,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	19,000	BCY	1.000	1.000	1.000			115,000	109,000
HB - Backfill of Topsoil With Humic			LS	2	--	6.79	/BCY	19,000	BCY	1.000	1.000	1.000			135,000	128,000
HB - Wetlands Restoration			LS	2	--	1.59	/SY	45,000	SY	1.000	1.000	1.000			75,000	71,000
		Subtotal (I)													855,000	815,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLML													
Mob/Demob	3.3%	J = 0.033 * (I)													28,000	26,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													333,000	317,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													12,000	12,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													21,000	20,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													406,000	387,000
		Subtotal (O = J+K+L+M+N)													801,000	763,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	1	30	0.02	/BCY-YR	19,000	BCY	1.000	1.000	1.000		500	14,000	8,000
B - Long Term Soil Monitoring, Lake Sediments			A	1	30	24,000.00	/EA-YR	1	EA	1.000	1.000	1.000		25,000	752,000	399,000
B - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												28,000	851,000	451,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												11,000	332,000	176,000
Contingency	32.5%	R = 0.325 * (P+Q)												13,000	385,000	204,000
		Subtotal (S)												24,000	717,000	380,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														52,000	3,224,000	2,408,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,750,000	2,910,000

Table B3.1-B3 Cost Estimate - Lake Sediments Medium Group
Alternative B3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	38,000	BCY	1.000	1.000	1.000			328,000	328,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	38,000	BCY	1.000	1.000	1.000			195,000	186,000
		Subtotal (A)													523,000	514,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													17,000	17,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													211,000	207,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													23,000	22,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													9,000	9,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													223,000	219,000
		Subtotal (G =B+C+D+E+F)													483,000	474,000
TOTAL CAPITAL COSTS (H = A+G)															1,006,000	988,000

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Table B3.1-B3 Cost Estimate - Lake Sediments Medium Group
Alternative B3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Grubbing & Clearing			LS	2	--	0.22	/SY	100,000	SY	1.000	1.000	1.000			23,000	22,000
HB - Temporary Cutoff Wall			LS	2	--	155.10	/LF	2,300	LF	1.000	1.000	1.000			373,000	355,000
HB - Dredging and Dewatering			LS	2	--	8.30	/BCY	5,800	BCY	1.000	1.000	1.000			50,000	48,000
HB - Soil Excavation			LS	2	--	3.96	/BCY	36,000	BCY	1.000	1.000	1.000			149,000	142,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	36,000	BCY	1.000	2.000	1.000			81,000	77,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	36,000	BCY	1.000	1.000	1.000			217,000	207,000
HB - Backfill of Topsoil With Humic			LS	2	--	6.79	/BCY	38,000	BCY	1.000	1.000	1.000			270,000	257,000
HB - Wetlands Restoration			LS	2	--	1.59	/SY	100,000	SY	1.000	1.000	1.000			166,000	158,000
		Subtotal (I)													1,330,000	1,266,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLML													
Mob/Demob	3.3%	J = 0.033 * (I)													43,000	41,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													518,000	494,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													19,000	18,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													33,000	32,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													631,000	601,000
		Subtotal (O = J+K+L+M+N)													1,245,000	1,186,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	38,000	BCY	1.000	1.000	1.000		1,000	28,000	14,000
B - Long Term Soil Monitoring, Lake Sediments			A	2	30	24,000.00	/EA-YR	1	EA	1.000	1.000	1.000		25,000	727,000	380,000
B - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												29,000	837,000	437,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												11,000	326,000	170,000
Contingency	32.5%	R = 0.325 * (P+Q)												13,000	378,000	197,000
		Subtotal (S)												24,000	704,000	368,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														53,000	4,116,000	3,256,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															5,120,000	4,240,000

Table B3.1-B5a Cost Estimate - Lake Sediments Medium Group
Alternative B5a: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	19,000	BCY	1.000	1.000	1.000			164,000	164,000
HB - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	19,000	BCY	1.000	1.000	1.000			98,000	89,000
		Subtotal (A)													262,000	253,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													9,000	8,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													105,000	102,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													11,000	11,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													5,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													112,000	108,000
		Subtotal (G =B+C+D+E+F)													241,000	233,000
TOTAL CAPITAL COSTS (H = A+G)															503,000	486,000

Table B3.1-B5a Cost Estimate - Lake Sediments Medium Group
Alternative B5a: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Grubbing & Clearing			LS	2	--	0.22	/SY	100,000	SY	1.000	1.000	1.000			23,000	22,000
HB - Temporary Cutoff Wall			LS	2	--	155.10	/LF	2,300	LF	1.000	1.000	1.000			373,000	355,000
HB - Dredging and Dewatering			LS	2	--	8.30	/BCY	5,800	BCY	1.000	1.000	1.000			50,000	48,000
HB - Soil Excavation			LS	2	--	3.96	/BCY	36,000	BCY	1.000	1.000	1.000			149,000	142,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	19,000	BCY	1.000	2.000	1.000			43,000	41,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	19,000	BCY	1.000	1.000	1.000			115,000	109,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	19,000	BCY	1.000	1.500	1.000			32,000	31,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	19,000	BCY	1.000	1.000	1.000			68,000	65,000
HB - Backfill of Topsoil With Humic			LS	2	--	6.79	/BCY	38,000	BCY	1.000	1.000	1.000			270,000	257,000
HB - Wetlands Restoration			LS	2	--	1.59	/SY	100,000	SY	1.000	1.000	1.000			166,000	158,000
		Subtotal (I)													1,289,000	1,228,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLML													
Mob/Demob	3.3%	J = 0.033 * (I)													42,000	40,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													502,000	478,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													18,000	17,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													32,000	31,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													612,000	583,000
		Subtotal (O = J+K+L+M+N)													1,207,000	1,149,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	1	30	0.02	/BCY-YR	19,000	BCY	1.000	1.000	1.000		500	14,000	8,000
B - Long Term Soil Monitoring, Lake Sediments			A	2	30	24,000.00	/EA-YR	1	EA	1.000	1.000	1.000		25,000	727,000	380,000
B - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												28,000	823,000	430,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												11,000	321,000	168,000
Contingency	32.5%	R = 0.325 * (P+Q)												13,000	372,000	194,000
		Subtotal (S)												24,000	693,000	362,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														52,000	4,012,000	3,169,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,520,000	3,650,000

Table B3.2-B1 st Estimate - Surficial Soils Medium Group
Alternative B1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - No Action			LS	1	--	0.00	/SY	1,660,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B3.2-B1 Cost Estimate - Surficial Soils Medium Group
Alternative B1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - No Action			LS	1	--	0.00	/SY	1,660,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - Long Term Soil Monitoring, Surficial Soils			A	1	30	4,000.00	/EA-YR	1	EA	1.000	1.000	1.000		4,000	125,000	66,000
B - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												7,000	210,000	111,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	82,000	43,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	95,000	50,000
		Subtotal (S)												6,000	177,000	94,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														13,000	387,000	205,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															387,000	205,000

Table B3.2-B1a Cost Estimate - Surficial Soils Medium Group
Alternative B1a: Landfill (On-Post Landfill); No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	87,000	BCY	1.000	1.000	1.000			751,000	751,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	87,000	BCY	1.000	1.000	1.000			447,000	426,000
B-No Action (Limited)			LS	1	--	0.00	/SY	1,400,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													1,198,000	1,177,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													39,000	38,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													483,000	474,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													52,000	51,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													22,000	22,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													505,000	496,000
		Subtotal (G =B+C+D+E+F)													1,100,000	1,080,000
TOTAL CAPITAL COSTS (H = A+G)															2,298,000	2,257,000

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Table B3.2-B1a Cost Estimate - Surficial Soils Medium Group
Alternative B1a: Landfill (On-Post Landfill); No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B-No Action (Limited)			LS	1	--	0.00	/SY	1,400,000	SY	1.000	1.000	1.000			0	0
HB - Soil Excavation			LS	2	--	3.96	/BCY	87,000	BCY	1.000	1.000	1.000			360,000	343,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	87,000	BCY	1.000	2.000	1.000			196,000	187,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	87,000	BCY	1.000	1.000	1.000			525,000	500,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	87,000	BCY	1.000	1.000	1.000			174,000	165,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	87,000	BCY	1.000	1.500	1.100			131,000	124,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	87,000	BCY	1.000	1.000	1.000			155,000	148,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	260,000	SY	1.000	1.000	1.000			19,000	18,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	260,000	SY	1.000	1.000	1.100	Disturbance		54,000	51,000
		Subtotal (I)													1,614,000	1,537,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													52,000	50,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													629,000	599,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													23,000	22,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													29,000	28,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													667,000	635,000
		Subtotal (O = J+K+L+M+N)													1,400,000	1,334,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - Long Term Soil Monitoring, Surficial Soils			A	1	30	4,000.00	/EA-YR	1	EA	1.000	1.000	1.000		4,000	125,000	66,000
B - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
B - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	87,000	BCY	1.000	1.000	1.000			63,000	33,000
		Subtotal (P)												7,000	273,000	144,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	107,000	56,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	123,000	65,000
		Subtotal (S)												6,000	230,000	122,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														13,000	3,518,000	3,137,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															5,820,000	5,390,000

Table B3.2-B3 Cost Estimate - Surficial Soils Medium Group
Alternative B3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	540,000	BCY	1.000	1.000	1.000			4,661,000	4,661,000
HB - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	540,000	BCY	1.000	1.000	1.000			2,776,000	2,518,000
		Subtotal (A)													7,437,000	7,179,000
INDIRECT CAPITAL COSTS		COST CODE LLMS														
Mob/Demob	3.3%	B = 0.033 * (A)													242,000	233,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													2,899,000	2,798,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													317,000	306,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													136,000	131,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													3,132,000	3,024,000
		Subtotal (G =B+C+D+E+F)													6,727,000	6,493,000
TOTAL CAPITAL COSTS (H = A+G)															14,164,000	13,672,000

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Table B3.2-B. Cost Estimate - Surficial Soils Medium Group
Alternative B3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Exp/Red Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Soil Excavation			A	2	3	3.96	/BCY	540,000	BCY	1.000	1.000	1.000			2,235,000	2,078,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			A	2	3	1.08	/BCY-MILE	540,000	BCY	1.000	2.000	1.000			1,219,000	1,133,000
HB - On-Post Hazardous Waste Landfill			A	2	3	5.78	/BCY	540,000	BCY	1.000	1.000	1.000			3,262,000	3,032,000
HB - Supplementation of Soil With Conditioners			A	2	3	0.07	/SY	1,660,000	SY	1.000	1.000	1.000			121,000	113,000
HB - Revegetation of Disturbed Areas			A	2	3	0.18	/SY	1,660,000	SY	1.000	1.000	1.100	Disturbance		343,000	319,000
		Subtotal (I)													7,180,000	6,675,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													278,000	259,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													2,909,000	2,704,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													104,000	96,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													157,000	146,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													3,141,000	2,920,000
		Subtotal (O = J+K+L+M+N)													6,589,000	6,126,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	540,000	BCY	1.000	1.000	1.000		14,000	379,000	192,000
B - Long Term Soil Monitoring, Surficial Soils			A	3	30	4,000.00	/EA-YR	1	EA	1.000	1.000	1.000		4,000	117,000	59,000
B - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												21,000	575,000	292,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												8,000	224,000	114,000
Contingency	32.5%	R = 0.325 * (P+Q)												9,000	260,000	132,000
		Subtotal (S)												17,000	484,000	245,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														38,000	14,828,000	13,338,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															29,000,000	27,000,000

Table B3.2-B5a Cost Estimate - Surficial Soils Medium Group

Alternative B5a: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	87,000	BCY	1.000	1.000	1.000			751,000	751,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	87,000	BCY	1.000	1.000	1.000			447,000	426,000
		Subtotal (A)													1,198,000	1,177,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													39,000	38,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													483,000	474,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													52,000	51,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													21,000	21,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													511,000	502,000
		Subtotal (G =B+C+D+E+F)													1,105,000	1,086,000
TOTAL CAPITAL COSTS (H = A+G)															2,304,000	2,263,000

Table B3.2-B5a .st Estimate - Surficial Soils Medium Group
Alternative B5a: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Soil Excavation			LS	2	--	3.96	/BCY	87,000	BCY	1.000	1.000	1.000			360,000	343,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	87,000	BCY	1.000	2.000	1.000			196,000	187,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	87,000	BCY	1.000	1.000	1.000			525,000	500,000
B - Soil Excavation			LS	2	--	3.96	/BCY	450,000	BCY	1.000	1.000	1.000			1,862,000	1,774,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	450,000	BCY	1.000	2.000	1.000			1,016,000	967,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	450,000	BCY	1.000	1.000	1.000			1,618,000	1,541,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	1,660,000	SY	1.000	1.000	1.000			121,000	116,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	1,660,000	SY	1.000	1.000	1.100	Disturbance		343,000	327,000
		Subtotal (I)													6,042,000	5,755,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													234,000	223,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													2,448,000	2,331,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													87,000	83,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													131,000	125,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													2,683,000	2,555,000
		Subtotal (O = J+K+L+M+N)													5,583,000	5,317,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	87,000	BCY	1.000	1.000	1.000		2,000	63,000	33,000
B - Long Term Soil Monitoring, Surficial Soils			A	1	30	4,000.00	/EA-YR	1	EA	1.000	1.000	1.000		4,000	125,000	66,000
B - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												9,000	273,000	144,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	107,000	56,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	123,000	65,000
		Subtotal (S)												8,000	230,000	122,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														17,000	12,129,000	11,337,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															14,400,000	13,600,000

Table B3.2-B9A ost Estimate - Surficial Soils Medium Group
Alternative B9a: Landfill (On-Post Landfill); In Situ Biological Treatment (Landfarm/Agricultural Practice)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	–	8.26	/BCY	87,000	BCY	1.000	1.000	1.000			751,000	751,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	–	4.92	/BCY	87,000	BCY	1.000	1.000	1.000			447,000	426,000
		Subtotal (A)													1,198,000	1,177,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													39,000	38,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													483,000	474,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													52,000	51,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													21,000	21,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													511,000	502,000
		Subtotal (G =B+C+D+E+F)													1,105,000	1,086,000
TOTAL CAPITAL COSTS (H = A+G)															2,304,000	2,263,000

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Table B3.2-B9A ost Estimate - Surficial Soils Medium Group
Alternative B9a: Landfill (On-Post Landfill); In Situ Biological Treatment (Landfarm/Agricultural Practice)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Soil Excavation			LS	2	--	3.96	/BCY	87,000	BCY	1.000	1.000	1.000			360,000	343,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	87,000	BCY	1.000	2.000	1.000			196,000	187,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	87,000	BCY	1.000	1.000	1.000			525,000	500,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	87,000	BCY	1.000	1.000	1.000			174,000	165,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	87,000	BCY	1.000	1.500	1.000			119,000	113,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	87,000	BCY	1.000	1.000	1.000			155,000	148,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	260,000	SY	1.000	1.000	1.000			19,000	18,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	260,000	SY	1.000	1.000	1.100	Disturbance		54,000	51,000
B - Agricultural Practices			A	1	5	0.20	/SY	1,400,000	SY	1.000	1.000	1.000			293,000	266,000
		Subtotal (I)													1,895,000	1,792,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													62,000	58,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													763,000	722,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													27,000	26,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													34,000	32,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													793,000	750,000
		Subtotal (O = J+K+L+M+N)													1,678,000	1,587,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	87,000	BCY	1.000	1.000	1.000		2,000	63,000	33,000
B - Long Term Soil Monitoring, Surficial Soils			A	5	30	4,000.00	/EA-YR	1	EA	1.000	1.000	1.000		4,000	109,000	52,000
B - Site Reviews			A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
		Subtotal (P)												9,000	245,000	120,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	96,000	47,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	111,000	54,000
		Subtotal (S)												8,000	206,000	101,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														17,000	4,025,000	3,600,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															6,330,000	5,860,000

Table B3.3-L Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
B - No Action			LS	1	--	0.00	/SY	150,000	SY	1.000	1.000	1.000		0	0
		Subtotal (A)												0	0
INDIRECT CAPITAL COSTS		COST CODE	0												
Mob/Demob	0.0%	B = 0.000 * (A)												0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)												0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)												0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)												0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)												0	0
		Subtotal (G =B+C+D+E+F)												0	0
TOTAL CAPITAL COSTS (H = A+G)														0	0

Table B3.3-B1 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - No Action			LS	1	--	0.00	/SY	150,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - Long Term Soil Monitoring, Ditches and Drainage Areas			A	1	30	36,000.00	/EA-YR	1	EA	1.000	1.000	1.000		38,000	1,129,000	598,000
B - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												40,000	1,213,000	643,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												16,000	473,000	251,000
Contingency	32.5%	R = 0.325 * (P+Q)												18,000	548,000	290,000
		Subtotal (S)												34,000	1,021,000	541,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														74,000	2,234,000	1,184,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															2,230,000	1,180,000

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Table B3.3-B2 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B2: Biota Management (Exclusion, Habitat Modification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - Fences			LS	1	--	15.90	/LF	17,000	LF	1.000	1.000	1.000			282,000	282,000
		Subtotal (A)													282,000	282,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													9,000	9,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													114,000	114,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													12,000	12,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													5,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													120,000	120,000
		Subtotal (G =B+C+D+E+F)													261,000	261,000
TOTAL CAPITAL COSTS (H = A+G)															543,000	543,000

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Table B3.3-B2 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B2: Biota Management (Exclusion, Habitat Modification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - Habitat Modification			A	1	3	0.18	/SY	150,000	SY	1.000	1.000	1.000			28,000	27,000
		Subtotal (I)													28,000	27,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE LLSS														
Mob/Demob	3.3%	J = 0.033 * (I)													1,000	1,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													11,000	11,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													400	400
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													1,000	500
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													12,000	11,000
		Subtotal (O = J+K+L+M+N)													25,000	24,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - Fences			A	2	30	0.79	/LF-YR	17,000	LF	1.000	1.000	1.000		14,000	407,000	212,000
B - Habitat Modification			A	3	30	0.01	/SY-YR	150,000	SY	1.000	1.000	1.000		1,000	26,000	13,000
B - Long Term Soil Monitoring, Ditches and Drainage Areas			A	3	30	36,000.00	/EA-YR	1	EA	1.000	1.000	1.000		38,000	1,053,000	534,000
B - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												55,000	1,565,000	799,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												22,000	610,000	312,000
Contingency	32.5%	R = 0.325 * (P+Q)												25,000	707,000	361,000
		Subtotal (S)												47,000	1,318,000	673,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														102,000	2,936,000	1,523,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,480,000	2,070,000

Table B3.3-B3 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	52,000	BCY	1.000	1.000	1.000			449,000	449,000
B - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	52,000	BCY	1.000	1.000	1.000			267,000	255,000
		Subtotal (A)													716,000	703,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													23,000	23,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													288,000	283,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													31,000	30,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													13,000	13,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													305,000	300,000
		Subtotal (G =B+C+D+E+F)													661,000	649,000
TOTAL CAPITAL COSTS (H = A+G)															1,377,000	1,352,000

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Table B3.3-B3 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Exp/Red Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - Soil Excavation			LS	2	--	3.96	/BCY	52,000	BCY	1.000	1.000	1.000			215,000	205,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	52,000	BCY	1.000	4.500	1.000			264,000	252,000
B - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	52,000	BCY	1.000	1.000	1.000			314,000	299,000
B - Excavation of Borrow Material			LS	2	--	1.91	/BCY	52,000	BCY	1.000	1.000	1.000			104,000	99,000
B - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	52,000	BCY	1.000	1.500	1.000			71,000	68,000
B - Backfill with Borrow Material			LS	2	--	1.71	/BCY	52,000	BCY	1.000	1.000	1.000			93,000	88,000
B - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	150,000	SY	1.000	1.000	1.000			11,000	10,000
B - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	150,000	SY	1.000	1.000	1.100	Disturbance		31,000	30,000
		Subtotal (I)													1,103,000	1,050,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													43,000	41,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													461,000	439,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													16,000	15,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													24,000	23,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													494,000	471,000
		Subtotal (O = J+K+L+M+N)													1,038,000	989,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	52,000	BCY	1.000	1.000	1.000		1,000	38,000	20,000
		Subtotal (P)												1,000	38,000	20,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	15,000	8,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	17,000	9,000
		Subtotal (S)												1,000	32,000	17,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														2,000	2,211,000	2,076,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,590,000	3,430,000

Table B3.3-B5a Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B5a: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	0	BCY	1.000	1.000	1.000			0	0
B - On-Post Hazardous Waste Landfill Closure			LS	1	--	4.92	/BCY	0	BCY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B3.3-B5a Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B5a: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - Soil Excavation			LS	1	--	3.96	/BCY	52,000	BCY	1.000	1.000	1.000			215,000	215,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	1	--	1.08	/BCY-MILE	52,000	BCY	1.000	3.500	1.000			205,000	205,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	1	--	3.44	/BCY	52,000	BCY	1.000	1.000	1.000			187,000	187,000
B - Excavation of Borrow Material			LS	1	--	1.91	/BCY	52,000	BCY	1.000	1.000	1.000			104,000	104,000
B - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	52,000	BCY	1.000	1.500	1.000			71,000	71,000
B - Backfill with Borrow Material			LS	1	--	1.71	/BCY	52,000	BCY	1.000	1.000	1.000			93,000	93,000
B - Supplementation of Soil With Conditioners			LS	1	--	0.07	/SY	150,000	SY	1.000	1.000	1.000			11,000	11,000
B - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	150,000	SY	1.000	1.000	1.100	Disturbance		31,000	31,000
		Subtotal (I)													917,000	917,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													36,000	36,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													383,000	383,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													13,000	13,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													20,000	20,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													411,000	411,000
		Subtotal (O = J+K+L+M+N)													863,000	863,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - On-Post Hazardous Waste Landfill Closure			A	1	30	0.02	/BCY-YR	0	BCY	1.000	1.000	1.000			0	0
		Subtotal (P)												0	0	0
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	0													
Indirects, Overhead & Profit	0.0%	Q = 0.000 * (P)												0	0	0
Contingency	0.0%	R = 0.000 * (P+Q)												0	0	0
		Subtotal (S)												0	0	0
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														0	1,780,000	1,780,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,780,000	1,780,000

Table B3.3-B9 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B9: In Situ Biological Treatment (Landfarm/Agricultural Practice)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B3.3-B9 Cost Estimate - Ditches/Drainage Areas Medium Group
Alternative B9: In Situ Biological Treatment (Landfarm/Agricultural Practice)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - Agricultural Practices			LS	1	--	0.20	/SY	150,000	SY	1.000	1.000	1.000			31,000	31,000
B - Habitat Modification			A	1	3	0.18	/SY	150,000	SY	1.000	1.000	1.000			28,000	27,000
		Subtotal (I)													60,000	58,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													2,000	2,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													24,000	23,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													1,000	1,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													25,000	24,000
		Subtotal (O = J+K+L+M+N)													53,000	52,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - Long Term Soil Monitoring, Ditches and Drainage Areas			A	4	30	36,000.00	/EA-YR	1	EA	1.000	1.000	1.000		38,000	1,016,000	500,000
B - Site Reviews			A	4	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	76,000	37,000
B - Habitat Modification			A	4	30	0.01	/SY-YR	150,000	SY	1.000	1.000	1.000		1,000	25,000	12,000
		Subtotal (P)												41,000	1,117,000	549,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												16,000	436,000	214,000
Contingency	32.5%	R = 0.325 * (P+Q)												19,000	505,000	248,000
		Subtotal (S)												35,000	940,000	462,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														76,000	2,169,000	1,122,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															2,170,000	1,120,000

Table B4.1-1 Cost Estimate - Basin A Medium Group
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	310,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	430,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

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Table B4.1-1 Cost Estimate - Basin A Medium Group
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	310,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	430,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
	0															
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Basin A			A	1	30	149,000.00	/EA-YR	1	EA	1.000	1.000	1.000		156,000	4,671,000	2,475,000
H - Long-Term Groundwater Monitoring, Basin A			A	1	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,160,000	615,000
HBAU - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												197,000	5,916,000	3,135,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												77,000	2,307,000	1,223,000
Contingency	32.5%	R = 0.325 * (P+Q)												89,000	2,672,000	1,416,000
		Subtotal (S)												166,000	4,980,000	2,639,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														363,000	10,895,000	5,774,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															10,900,000	5,770,000

Table B4.1-1a Cost Estimate - Basin A Medium Group
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action (Limited)			LS	1	--	0.00	/SY	280,000	SY	1.000	1.000	1.000			0	0
H - Excavation Dewatering, Basin A			LS	1	--	235,774.00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	320	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	320	BCY	1.000	1.000	1.000			2,000	1,000
B - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	57	BCY	1.000	1.000	1.000			500	500
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	57	BCY	1.000	1.000	1.000			300	300
		Subtotal (A)													252,000	251,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													8,000	8,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													101,000	101,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													11,000	11,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													5,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													107,000	107,000
		Subtotal (G = B+C+D+E+F)													232,000	232,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	32,000	BCY	1.000	1.000	1.000			587,000	573,000
AP - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	57	BCY	1.000	1.000	1.000			9,000	9,000
		Subtotal (A1)													596,000	582,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													12,000	12,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													61,000	59,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													60,000	59,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													20,000	20,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													225,000	219,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													378,000	369,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,458,000	1,434,000

Table B4.1-1a Cost Estimate - Basin A Medium Group
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
AP - Agent Screening During Excavation			LS	2	--	0.30	/BCY	32,000	BCY	1.000	1.000	1.000			10,000	10,000
H - No Action (Limited)			LS	1	--	0.00	/SY	280,000	SY	1.000	1.000	1.000			0	0
H - Excavation Dewatering, Basin A			A	1	3	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			2,598,000	2,476,000
H - Soil Excavation			LS	3	--	3.96	/BCY	32,000	BCY	1.000	1.000	1.040	Odor Control		138,000	125,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			45,000	41,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	320	BCY	1.000	1.000	1.000			1,000	500
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	320	BCY	1.000	1.000	1.000			400	300
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	320	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	32,000	BCY	1.000	1.000	1.000			43,000	39,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			36,000	33,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	52,000
A-No Action (Limited)			LS	1	--	0.00	/SY	430,000	SY	1.000	1.000	1.000			0	0
AP - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	57	BCY	1.000	1.000	1.040	Odor Control		300	300
AP - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	57	BCY	1.000	1.250	1.000			100	100
AP - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	57	BCY	1.000	1.000	1.000			100	100
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	57	BCY	1.000	1.000	1.000			100	100
AP - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	57	BCY	1.000	1.000	1.000			300	300
HA - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	35,000	SY	1.000	1.000	1.000			3,000	2,000
HA - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	35,000	SY	1.000	1.000	1.100	Disturbance		7,000	7,000
B - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													2,941,000	2,788,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLSS														
Mob/Demob	3.9%	J = 0.039 * (I)													114,000	108,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													1,230,000	1,165,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													43,000	41,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													64,000	61,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													1,317,000	1,249,000
		Subtotal (O = J+K+L+M+N)													2,768,000	2,624,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Saturated Soil)			LS	3	--	76.00	/BCY	32,000	BCY	1.000	1.000	1.000			2,541,000	2,305,000
AP - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	57	BCY	1.000	1.000	1.000			16,000	15,000
		Subtotal (I1)													2,558,000	2,320,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													256,000	232,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													56,000	51,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													1,148,000	1,041,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													1,460,000	1,324,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															9,726,000	9,056,000

Table B4.1-1a Cost Estimate - Basin A Medium Group
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	320	BCY	1.000	1.000	1.000		10	200	100
HB - Long Term Soil Monitoring, Basin A			A	3	30	149,000.00	/EA-YR	1	EA	1.000	1.000	1.000		156,000	4,360,000	2,209,000
H - Long-Term Groundwater Monitoring, Basin A			A	3	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,083,000	549,000
HBAU - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
AP - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	57	BCY	1.000	1.000	1.000		1	40	20
		Subtotal (P)												197,000	5,522,000	2,798,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												77,000	2,153,000	1,091,000
Contingency	32.5%	R = 0.325 * (P+Q)												89,000	2,494,000	1,264,000
		Subtotal (S = Q+R)												166,000	4,648,000	2,355,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														363,000	10,169,000	5,153,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															21,400,000	15,600,000

Table B4.1-3b Cost Estimate - Basin A Medium Group
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Basin A			LS	1	--	235,774.00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160,000	BCY	1.000	1.000	1.000			1,381,000	1,315,000
H - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	160,000	BCY	1.000	1.000	1.000			823,000	711,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	710	BCY	1.000	1.000	1.000			6,000	6,000
A - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	710	BCY	1.000	1.000	1.000			4,000	3,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	47,000	BCY	1.000	1.000	1.000			406,000	386,000
U - On-Post Hazardous Waste Landfill, Closure			LS	4	--	4.92	/BCY	47,000	BCY	1.000	1.000	1.000			242,000	209,000
		Subtotal (A)													3,107,000	2,876,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													120,000	111,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													1,218,000	1,128,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													200,000	185,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													67,000	62,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													1,414,000	1,309,000
		Subtotal (G = B+C+D+E+F)													3,019,000	2,795,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			A	1	2	159.13	/BCY	710	BCY	1.000	1.000	1.000			118,000	115,000
		Subtotal (A1)													118,000	115,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													6,000	6,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													12,000	12,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													6,000	6,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													3,000	3,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													44,000	43,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													71,000	69,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															6,315,000	5,856,000

Table B4.1-3b Cost Estimate - Basin A Medium Group
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Other Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
H - Excavation Dewatering, Basin A	A	1	3	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			2,598,000	2,476,000
A - Agent Screening During Excavation	LS	3	--	0.30	/BCY	160,000	BCY	1.000	1.000	1.000			50,000	45,000
U - UXO Clearance by Geophysics	LS	3	--	0.66	/SY	140,000	SY	1.000	1.000	1.000			97,000	88,000
H - Soil Excavation	LS	3	--	3.96	/BCY	160,000	BCY	1.000	1.000	1.040	Odor Control		689,000	625,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	160,000	BCY	1.000	0.500	1.000			90,000	82,000
H - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	160,000	BCY	1.000	1.000	1.000			966,000	877,000
HB - Excavation of Borrow Material	A	1	4	1.91	/BCY	2,700,000	BCY	1.000	1.000	1.000			5,389,000	5,016,000
HB - Transportation of Borrow Material to Backfill Area	A	1	4	0.87	/BCY-MILE	2,700,000	BCY	1.000	1.500	1.000			3,682,000	3,427,000
HB - Backfill with Borrow Material	A	1	4	1.71	/BCY	2,700,000	BCY	1.000	1.000	1.000			4,825,000	4,491,000
HB - Subgrade Preparation Prior to Installing Cap/Cover	A	2	4	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	38,000
HBAU - Installation of Soil Cover (with Concrete Barrier)	A	2	4	22.96	/SY	670,000	SY	1.000	1.000	1.000			16,075,000	14,592,000
HB - Revegetation of Disturbed Areas	A	2	4	0.18	/SY	670,000	SY	1.000	1.000	1.100	Disturbance		139,000	126,000
A - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	710	BCY	1.000	1.000	1.040	Odor Control		4,000	3,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.250	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	710	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	710	BCY	1.000	1.000	1.000			4,000	4,000
U - Removal of Soil with UXO	LS	3	--	71.16	/BCY	94	BCY	1.000	1.000	1.000			7,000	6,000
U - Excavation of Debris from Surface Soil	LS	3	--	3.07	/BCY	47,000	BCY	1.000	1.000	1.300	Productivity		196,000	178,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	47,000	BCY	1.000	0.500	1.300	Productivity		34,000	31,000
U - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	257,000
Subtotal (I)													35,174,000	32,366,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMLS													
Mob/Demob 5.1%	J = 0.051 * (I)												1,803,000	1,659,000
Indirects, Overhead & Profit 39.0%	K = 0.390 * (I+J)												14,421,000	13,270,000
Engineering Design 1.8%	L = 0.018 * (I+J+K)												899,000	828,000
Resident Engineering 2.0%	M = 0.020 * (I+J+K)												1,028,000	946,000
Contingency 33.8%	N = 0.338 * (I+J+K+L+M)												17,997,000	16,560,000
Subtotal (O = J+K+L+M+N)													36,148,000	33,262,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
A - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	710	BCY	1.000	1.000	1.000			203,000	184,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO	LS	3	--	2,220.00	/BCY	94	BCY	1.000	1.000	1.000			218,000	198,000
Subtotal (I1)													421,000	382,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: F													
Mob/Demob 5.0%	J1 = 0.050 * (I1)												21,000	19,000
Contractor Markup 10.0%	K1 = 0.100 * (I1+J1)												44,000	40,000
Engineering Design 0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering 2.0%	M1 = 0.020 * (I1+J1+K1)												10,000	9,000
Contingency 30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												149,000	135,000
Subtotal (O1 = J1+K1+L1+M1+N1)													224,000	203,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													71,967,000	66,213,000

Table B4.1-3b Cost Estimate - Basin A Medium Group
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	4	30	0.02	/BCY-YR	160,000	BCY	1.000	1.000	1.000		4,000	108,000	53,000
HBAU - Installation of Soil Cover (with Concrete Barrier)			A	5	30	0.09	/SY-YR	670,000	SY	1.000	1.000	1.000		63,000	1,638,000	782,000
HB - Site Reviews			A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
A - On-Post Hazardous Waste Landfill Closure			A	4	30	0.02	/BCY-YR	710	BCY	1.000	1.000	1.000		20	500	200
U - On-Post Hazardous Waste Landfill, Closure			A	4	30	0.02	/BCY-YR	47,000	BCY	1.000	1.000	1.000		1,000	32,000	16,000
		Subtotal (P)												71,000	1,852,000	887,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												28,000	722,000	346,000
Contingency	32.5%	R = 0.325 * (P+Q)												32,000	837,000	401,000
		Subtotal (S = Q+R)												60,000	1,559,000	746,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														131,000	3,412,000	1,633,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															81,700,000	73,700,000

Table B4.1-3c Cost Estimate - Basin A Medium Group
Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Basin A			LS	1	--	235,774.00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	320	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	4	--	4.92	/BCY	320	BCY	1.000	1.000	1.000			2,000	1,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160,000	BCY	1.000	1.000	1.000			1,381,000	1,315,000
H - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	160,000	BCY	1.000	1.000	1.000			823,000	711,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	710	BCY	1.000	1.000	1.000			6,000	6,000
A - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	710	BCY	1.000	1.000	1.000			4,000	3,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	47,000	BCY	1.000	1.000	1.000			406,000	386,000
U - On-Post Hazardous Waste Landfill, Closure			LS	4	--	4.92	/BCY	47,000	BCY	1.000	1.000	1.000			242,000	209,000
		Subtotal (A)													3,112,000	2,880,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													121,000	112,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													1,220,000	1,130,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													200,000	185,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													67,000	62,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													1,416,000	1,311,000
		Subtotal (G = B+C+D+E+F)													3,024,000	2,799,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	32,000	BCY	1.000	1.000	1.000			587,000	573,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	710	BCY	1.000	1.000	1.000			118,000	112,000
		Subtotal (A1)													705,000	685,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													14,000	14,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													72,000	70,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													71,000	69,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													24,000	23,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													266,000	258,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													447,000	434,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															7,287,000	6,799,000

Table B4.1-3c Cost Estimate - Basin A Medium Group
Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	3	--	0.30	/BCY	160,000	BCY	1.000	1.000	1.000			50,000	45,000
U - UXO Clearance by Geophysics			LS	2	--	0.66	/SY	140,000	SY	1.000	1.000	1.000			97,000	92,000
H - Excavation Dewatering, Basin A			A	1	3	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			2,598,000	2,476,000
H - Soil Excavation			LS	3	--	3.96	/BCY	160,000	BCY	1.000	1.000	1.040	Odor Control		689,000	625,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			45,000	41,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	320	BCY	1.000	1.000	1.000			1,000	500
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	320	BCY	1.000	1.000	1.000			400	300
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	320	BCY	1.000	1.000	1.000			2,000	2,000
H - Lead Nonhazardous Treated Soil from Stockpile to Landfill			LS	3	--	1.29	/BCY	32,000	BCY	1.000	1.000	1.000			43,000	39,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.000	1.000			36,000	33,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	32,000	BCY	1.000	1.000	1.000			193,000	175,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	150,000	BCY	1.000	0.500	1.000			85,000	77,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	150,000	BCY	1.000	1.000	1.000			906,000	822,000
HB - Excavation of Borrow Material			A	1	4	1.91	/BCY	2,700,000	BCY	1.000	1.000	1.000			5,389,000	5,016,000
HB - Transportation of Borrow Material to Backfill Area			A	1	4	0.87	/BCY-MILE	2,700,000	BCY	1.000	1.500	1.000			3,682,000	3,427,000
HB - Backfill with Borrow Material			A	1	4	1.71	/BCY	2,700,000	BCY	1.000	1.000	1.000			4,825,000	4,491,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			A	2	4	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	38,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	4	19.01	/SY	670,000	SY	1.000	1.000	1.000			13,310,000	12,082,000
HB - Revegetation of Disturbed Areas			A	2	4	0.18	/SY	670,000	SY	1.000	1.000	1.100	Distrubance		139,000	126,000
A - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	710	BCY	1.000	1.000	1.040	Odor Control		4,000	3,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.250	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	710	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	710	BCY	1.000	1.000	1.000			4,000	4,000
U - Removal of Soil with UXO			LS	3	--	71.16	/BCY	94	BCY	1.000	1.000	1.000			7,000	6,000
U - Excavation of Debris from Surface Soil			LS	3	--	3.07	/BCY	47,000	BCY	1.000	1.000	1.300	Productivity		196,000	178,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	47,000	BCY	1.000	0.500	1.300	Productivity		34,000	31,000
U - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	257,000
		Subtotal (I)													32,663,000	30,090,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLS														
Mob/Demob	5.1%	J = 0.051 * (I)													1,674,000	1,542,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													13,391,000	12,337,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													835,000	769,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													955,000	879,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													16,712,000	15,396,000
		Subtotal (O = J+K+L+M+N)													33,567,000	30,924,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Saturated Soil)			LS	3	--	76.00	/BCY	32,000	BCY	1.000	1.000	1.000			2,541,000	2,305,000
A - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	710	BCY	1.000	1.000	1.000			203,000	184,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UX			LS	3	--	2,220.00	/BCY	94	BCY	1.000	1.000	1.000			218,000	198,000
		Subtotal (I1)													2,962,000	2,687,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													296,000	269,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													65,000	59,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													1,330,000	1,206,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													1,691,000	1,534,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															70,883,000	65,235,000

Table B4.1-3c **Cost Estimate - Basin A Medium Group**

Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	4	30	0.02	/BCY-YR	320	BCY	1.000	1.000	1.000		10	200	100
H - On-Post Hazardous Waste Landfill Closure			A	4	30	0.02	/BCY-YR	160,000	BCY	1.000	1.000	1.000		4,000	108,000	53,000
A - On-Post Hazardous Waste Landfill Closure			A	4	30	0.02	/BCY-YR	710	BCY	1.000	1.000	1.000		20	500	200
U - On-Post Hazardous Waste Landfill, Closure			A	4	30	0.02	/BCY-YR	47,000	BCY	1.000	1.000	1.000		1,000	32,000	16,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	5	30	0.07	/SY-YR	670,000	SY	1.000	1.000	1.000		49,000	1,274,000	609,000
HB - Site Reviews			A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
		Subtotal (P)												57,000	1,489,000	713,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIE		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												22,000	581,000	278,000
Contingency	32.5%	R = 0.325 * (P+Q)												26,000	672,000	322,000
		Subtotal (S = Q+R)												48,000	1,253,000	600,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														105,000	2,741,000	1,313,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															80,900,000	73,300,000

Table B4.1-6 Cost Estimate - Basin A Medium Group
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
		Subtotal (A)												0	0
INDIRECT CAPITAL COSTS		COST CODE	0												
Mob/Demob	0.0%	B = 0.000 • (A)												0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 • (A+B)												0	0
Engineering Design	0.0%	D = 0.000 • (A+B+C)												0	0
Resident Engineering	0.0%	E = 0.000 • (A+B+C)												0	0
Contingency	0.0%	F = 0.000 • (A+B+C+D+E)												0	0
		Subtotal (G =B+C+D+E+F)												0	0
TOTAL CAPITAL COSTS (H = A+G)														0	0

Table B4.1-6 Cost Estimate - Basin A Medium Group
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
U - UXO Clearance In Surface Soil by Geophysics			LS	1	–	0.07	/SY	140,000	SY	1.000	1.000	1.000			10,000	10,000
HBAU - Excavation of Borrow Material			A	1	4	1.91	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,990,000	4,645,000
HBAU - Transportation of Borrow Material to Backfill Area			A	1	4	0.87	/BCY-MILE	2,500,000	BCY	1.000	1.500	1.000			3,409,000	3,173,000
HBAU - Backfill with Borrow Material			A	1	4	1.71	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,467,000	4,158,000
HBAU - Subgrade Preparation Prior to Installing Cap/Cover			A	2	4	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	38,000
HBAU - Installation of Soil Cover (with Concrete Barrier)			A	2	4	22.96	/SY	670,000	SY	1.000	1.000	1.000			16,075,000	14,592,000
HBAU - Revegetation of Disturbed Areas			A	2	4	0.18	/SY	670,000	SY	1.000	1.000	1.100	Disturbance		139,000	126,000
		Subtotal (I)													29,133,000	26,743,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													947,000	869,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													11,355,000	10,424,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													414,000	380,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													518,000	475,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													12,181,000	11,181,000
		Subtotal (O = J+K+L+M+N)													25,415,000	23,330,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HBAU - Installation of Soil Cover (with Concrete Barrier)			A	5	30	0.09	/SY-YR	670,000	SY	1.000	1.000	1.000		63,000	1,638,000	782,000
HBAU - Site Reviews			A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
		Subtotal (P)												66,000	1,712,000	818,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												26,000	668,000	319,000
Contingency	32.5%	R = 0.325 * (P+Q)												30,000	773,000	369,000
		Subtotal (S)												55,000	1,441,000	688,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														121,000	57,700,000	51,579,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															57,700,000	51,600,000

Table B4.1-6c Cost Estimate - Basin A Medium Group
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Basin A			LS	1	--	235,774.00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	320	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	320	BCY	1.000	1.000	1.000			2,000	1,000
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	57	BCY	1.000	1.000	1.000			500	500
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	57	BCY	1.000	1.000	1.000			300	300
		Subtotal (A)													252,000	251,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													8,000	8,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													101,000	101,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													11,000	11,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													5,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													107,000	107,000
		Subtotal (G = B+C+D+E+F)													232,000	232,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	32,000	BCY	1.000	1.000	1.000			587,000	573,000
AP - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	57	BCY	1.000	1.000	1.000			9,000	9,000
		Subtotal (A1)													596,000	582,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													12,000	12,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													61,000	59,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													60,000	59,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													20,000	20,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													225,000	219,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													378,000	369,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,458,000	1,434,000

Table B4.1-6c Cost Estimate - Basin A Medium Group
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Basin A			A	1	3	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			2,598,000	2,476,000
AP - Agent Screening During Excavation			LS	2	--	0.30	/BCY	32,000	BCY	1.000	1.000	1.000			10,000	10,000
U - UXO Clearance In Surface Soil by Geophysics			LS	2	--	0.07	/SY	140,000	SY	1.000	1.000	1.000			10,000	10,000
H - Soil Excavation			LS	3	--	3.96	/BCY	32,000	BCY	1.000	1.000	1.040	Odor Control		138,000	125,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			45,000	41,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	320	BCY	1.000	1.000	1.000			1,000	500
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	320	BCY	1.000	1.000	1.000			400	300
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	320	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	32,000	BCY	1.000	1.000	1.000			43,000	39,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			36,000	33,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	52,000
HB - Excavation of Borrow Material			A	2	4	1.91	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,990,000	4,530,000
HB - Transportation of Borrow Material to Backfill Area			A	2	4	0.87	/BCY-MILE	2,500,000	BCY	1.000	1.500	1.000			3,409,000	3,095,000
HB - Backfill with Borrow Material			A	2	4	1.71	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,467,000	4,055,000
HBAU - Subgrade Preparation Prior to Installing Cap/Cover			A	2	4	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	38,000
HBAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	4	19.01	/SY	670,000	SY	1.000	1.000	1.000			13,310,000	12,082,000
HBAU - Revegetation of Disturbed Areas			A	2	4	0.18	/SY	670,000	SY	1.000	1.000	1.100	Disturbance		139,000	126,000
AP - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	57	BCY	1.000	1.000	1.040	Odor Control		300	300
AP - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	57	BCY	1.000	1.250	1.000			100	100
AP - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	57	BCY	1.000	1.000	1.000			100	100
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	57	BCY	1.000	1.000	1.000			100	100
AP - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	57	BCY	1.000	1.000	1.000			300	300
		Subtotal (I)													29,298,000	26,714,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLLS														
Mob/Demob	3.9%	J = 0.039 * (I)													1,135,000	1,035,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													11,489,000	10,475,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													419,000	382,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													629,000	573,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													12,891,000	11,754,000
		Subtotal (O = J+K+L+M+N)													26,563,000	24,220,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Saturated Soil)			LS	3	--	76.00	/BCY	32,000	BCY	1.000	1.000	1.000			2,541,000	2,305,000
AP - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	57	BCY	1.000	1.000	1.000			16,000	15,000
		Subtotal (I1)													2,558,000	2,320,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													256,000	232,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													56,000	51,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													1,148,000	1,041,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													1,460,000	1,324,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															59,879,000	54,578,000

Table B4.1-6c Cost Estimate - Basin A Medium Group
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure (Particulates)	A	3	30	0.02	/BCY-YR	320	BCY	1.000	1.000	1.000		10	200	100
A - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	57	BCY	1.000	1.000	1.000		1	40	20
HBAU - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	5	30	0.07	/SY-YR	670,000	SY	1.000	1.000	1.000		49,000	1,274,000	609,000
H - Long-Term Groundwater Monitoring, Basin A	A	5	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,005,000	480,000
HBAU - Site Reviews	A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
Subtotal (P)												91,000	2,353,000	1,124,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI COST CODE: LLSL														
Indirects, Overhead & Profit 39.0% Q = 0.390 * (P)												35,000	918,000	438,000
Contingency 32.5% R = 0.325 * (P+Q)												41,000	1,063,000	508,000
Subtotal (S = Q+R)												76,000	1,981,000	946,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												167,000	4,334,000	2,070,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													65,700,000	58,100,000

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Table B4.1-8b Cost Estimate - Basin A Medium Group

Alternative 8b: Direct Soil Washing (Solvent Washing); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Basin A			LS	1	--	235,774 00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8 26	/BCY	710	BCY	1.000	1.000	1.000			6,000	6,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4 92	/BCY	710	BCY	1.000	1.000	1.000			4,000	3,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8 26	/BCY	47,000	BCY	1.000	1.000	1.000			406,000	386,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4 92	/BCY	47,000	BCY	1.000	1.000	1.000			242,000	219,000
		Subtotal (A)													903,000	861,000
INDIRECT CAPITAL COSTS		COST CODE: LMSS														
Mob/Demob	3.9%	B = 0.039 * (A)													35,000	33,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													366,000	349,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													59,000	56,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													20,000	19,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													415,000	395,000
		Subtotal (G = B+C+D+E+F)													894,000	852,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	32,000	BCY	1.000	1.000	1.000			62,000	59,000
H - Solvent Washing			LS	2	--	35.50	/BCY	140,000	BCY	1.000	1.000	1.000			5,194,000	4,946,000
A - Solvent/Caustic Washing of Agent Soil			LS	2	--	35.50	/BCY	710	BCY	1.000	1.000	1.000			26,000	25,000
		Subtotal (A1)													5,282,000	5,030,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													264,000	252,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													555,000	528,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													275,000	261,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													122,000	116,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,949,000	1,856,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													3,164,000	3,013,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															10,243,000	9,757,000

Table B4.1-8b Cost Estimate - Basin A Medium Group
Alternative 8b: Direct Soil Washing (Solvent Washing); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	2	--	0.30	/BCY	160,000	BCY	1.000	1.000	1.000			50,000	48,000
U - UXO Clearance by Geophysics		LS	2	--	0.66	/SY	140,000	SY	1.000	1.000	1.000			97,000	92,000
H - Excavation Dewatering, Basin A		A	1	3	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			2,598,000	2,476,000
H - Soil Excavation		LS	3	--	3.96	/BCY	160,000	BCY	1.000	1.000	1.040	Odor Control		689,000	625,000
H - Transportation of Contaminated Soil to Soil Washing Unit		LS	3	--	1.08	/BCY-MILE	140,000	BCY	1.000	1.250	1.000			198,000	179,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	3	--	1.29	/BCY	140,000	BCY	1.000	1.000	1.000			189,000	171,000
H - Transportation of Treated Soil to Backfill Excavation		LS	3	--	0.87	/BCY-MILE	140,000	BCY	1.000	1.250	1.000			159,000	144,000
H - Backfill with Treated Soil		LS	3	--	1.71	/BCY	140,000	BCY	1.000	1.000	1.000			250,000	227,000
H - Transportation of Contaminated Soil to Solidification Facility		LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			45,000	41,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	3	--	1.29	/BCY	32,000	BCY	1.380	1.000	1.000			60,000	54,000
H - Transportation of Treated Soil to Backfill Excavation		LS	3	--	0.87	/BCY-MILE	32,000	BCY	1.380	1.250	1.000			50,000	46,000
H - Backfill with Treated Soil		LS	3	--	1.71	/BCY	32,000	BCY	1.380	1.000	1.000			79,000	72,000
HB - Excavation of Borrow Material		LS	1	--	1.91	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,990,000	4,990,000
HB - Transportation of Borrow Material to Backfill Area		LS	1	--	0.87	/BCY-MILE	2,500,000	BCY	1.000	1.500	1.000			3,409,000	3,409,000
HB - Backfill with Borrow Material		LS	1	--	1.71	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,467,000	4,467,000
HB - Subgrade Preparation Prior to Installing Cap/Cover		LS	2	--	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	40,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)		LS	2	--	19.01	/SY	670,000	SY	1.000	1.000	1.000			13,310,000	12,676,000
HB - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	670,000	SY	1.000	1.000	1.100	Disturbance		139,000	132,000
A - Excavation of Soil with Agent		LS	3	--	4.61	/BCY	710	BCY	1.000	1.000	1.040	Odor Control		4,000	3,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.250	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	710	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Hazardous Waste L		LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	710	BCY	1.000	1.000	1.000			4,000	4,000
U - Removal of Soil with UXO		LS	3	--	71.16	/BCY	94	BCY	1.000	1.000	1.000			7,000	6,000
U - Excavation of Debris from Surface Soil		LS	3	--	3.07	/BCY	47,000	BCY	1.000	1.000	1.300	Productivity		196,000	178,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste L		LS	3	--	1.08	/BCY-MILE	47,000	BCY	1.000	0.500	1.300	Productivity		34,000	31,000
U - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	257,000
	Subtotal (I)													31,352,000	30,371,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMLM														
Mob/Demob	5.1% J = 0.051 * (I)													1,607,000	1,557,000
Indirects, Overhead & Profit	39.0% K = 0.390 * (I+J)													12,854,000	12,452,000
Engineering Design	1.8% L = 0.018 * (I+J+K)													802,000	777,000
Resident Engineering	2.3% M = 0.023 * (I+J+K)													1,031,000	999,000
Contingency	35.0% N = 0.350 * (I+J+K+L+M)													16,676,000	16,154,000
	Subtotal (O = J+K+L+M+N)													32,969,000	31,938,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Solvent Washing		LS	3	--	144.54	/BCY	140,000	BCY	1.000	1.000	1.000			21,146,000	19,180,000
H - Cement-Based Solidification		LS	3	--	36.11	/BCY	32,000	BCY	1.000	1.000	1.000			1,208,000	1,095,000
A - Solvent/Caustic Washing of Agent Soil		LS	3	--	211.12	/BCY	710	BCY	1.000	1.000	1.000			157,000	142,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UX		LS	3	--	2,220.00	/BCY	94	BCY	1.000	1.000	1.000			218,000	198,000
	Subtotal (I1)													22,728,000	20,615,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: F														
Mob/Demob	5.0% J1 = 0.050 * (I1)													1,136,000	1,031,000
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													2,386,000	2,165,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													525,000	476,000
Contingency	30.0% N1 = 0.300 * (I1+J1+K1+L1+M1)													8,033,000	7,286,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													12,081,000	10,958,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														99,129,000	93,882,000

Table B4.1-8b Cost Estimate - Basin A Medium Group
Alternative 8b: Direct Soil Washing (Solvent Washing); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of Solidified Soil			A	5	30	0.25	/SY-YR	53,000	SY	1.000	1.000	1.000		14,000	360,000	172,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	5	30	0.07	/SY-YR	670,000	SY	1.000	1.000	1.000		49,000	1,274,000	609,000
HB - Site Reviews			A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	710	BCY	1.000	1.000	1.000		20	500	300
U - On-Post Hazardous Waste Landfill, Closure			A	3	30	0.02	/BCY-YR	47,000	BCY	1.000	1.000	1.000		1,000	33,000	17,000
	Subtotal (P)													67,000	1,741,000	833,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIE		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												26,000	679,000	325,000
Contingency	32.5%	R = 0.325 * (P+Q)												30,000	787,000	376,000
	Subtotal (S = Q+R)													56,000	1,466,000	701,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														123,000	3,207,000	1,533,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															113,000,000	105,000,000

Table B4.1-13d Cost Estimate - Basin A Medium Group
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Basin A			LS	1	--	235,774.00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	1,400	BCY	1.000	1.000	1.000			12,000	12,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	1,400	BCY	1.000	1.000	1.000			7,000	7,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	710	BCY	1.000	1.000	1.000			6,000	6,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	710	BCY	1.000	1.000	1.000			4,000	3,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	47,000	BCY	1.000	1.000	1.000			406,000	386,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4.92	/BCY	47,000	BCY	1.000	1.000	1.000			242,000	219,000
		Subtotal (A)													923,000	879,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													36,000	34,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													362,000	345,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													59,000	57,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													20,000	19,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													420,000	400,000
		Subtotal (G = B+C+D+E+F)													897,000	854,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	32,000	BCY	1.000	1.000	1.000			62,000	59,000
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	140,000	BCY	1.000	1.000	1.000			2,568,000	2,506,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	710	BCY	1.000	1.000	1.000			118,000	112,000
		Subtotal (A1)													2,747,000	2,677,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													55,000	54,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													280,000	273,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													277,000	270,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													92,000	90,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,036,000	1,009,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													1,741,000	1,697,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															6,307,000	6,107,000

Table B4.1-13d Cost Estimate - Basin A Medium Group
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	LS	40	--	0.30	/BCY	160,000	BCY	1.000	1.000	1.000			50,000	12,000
U - UXO Clearance by Geophysics	LS	2	--	0.66	/SY	140,000	SY	1.000	1.000	1.000			97,000	92,000
H - Excavation Dewatering, Basin A	A	1	3	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			2,598,000	2,476,000
H - Soil Excavation	LS	3	--	3.96	/BCY	160,000	BCY	1.000	1.000	1.040	Odor Control		689,000	625,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility	LS	3	--	1.08	/BCY-MILE	140,000	BCY	1.000	1.250	1.000			198,000	179,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	1,400	BCY	1.000	1.000	1.000			2,000	2,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	1,400	BCY	1.000	1.000	1.000			2,000	1,000
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	1,400	BCY	1.000	1.000	1.000			8,000	8,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	140,000	BCY	1.000	1.000	1.000			189,000	171,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	140,000	BCY	1.000	1.250	1.000			159,000	144,000
H - Backfill with Treated Soil	LS	3	--	1.71	/BCY	140,000	BCY	1.000	1.000	1.000			250,000	227,000
H - Transportation of Contaminated Soil to Solidification Facility	LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.250	1.000			45,000	41,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	32,000	BCY	1.380	1.000	1.000			60,000	54,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	32,000	BCY	1.380	1.250	1.000			50,000	46,000
H - Backfill with Treated Soil	LS	3	--	1.71	/BCY	32,000	BCY	1.380	1.000	1.000			79,000	72,000
HB - Excavation of Borrow Material	A	1	4	1.91	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,990,000	4,645,000
HB - Transportation of Borrow Material to Backfill Area	A	1	4	0.87	/BCY-MILE	2,500,000	BCY	1.000	1.500	1.000			3,409,000	3,173,000
HB - Backfill with Borrow Material	A	1	4	1.71	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,467,000	4,158,000
HB - Subgrade Preparation Prior to Installing Cap/Cover	A	2	4	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	38,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	2	4	19.01	/SY	670,000	SY	1.000	1.000	1.000			13,310,000	12,082,000
HB - Revegetation of Disturbed Areas	A	2	4	0.18	/SY	670,000	SY	1.000	1.000	1.100	Disturbance		139,000	126,000
A - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	710	BCY	1.000	1.000	1.040	Odor Control		4,000	3,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.250	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	710	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	710	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	710	BCY	1.000	1.000	1.000			4,000	4,000
U - Removal of Soil with UXO	LS	3	--	71.16	/BCY	94	BCY	1.000	1.000	1.000			7,000	6,000
U - Excavation of Debris from Surface Soil	LS	3	--	3.07	/BCY	47,000	BCY	1.000	1.000	1.300	Productivity		196,000	178,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	47,000	BCY	1.000	0.500	1.300	Productivity		34,000	31,000
U - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	257,000
Subtotal (I)													31,364,000	28,854,000
INDIRECT O&M COSTS (OPERATIONS) COST CODE: HMLM														
Mob/Demob 5.1%	J = 0.051 * (I)												1,607,000	1,479,000
Indirects, Overhead & Profit 39.0%	K = 0.390 * (I+J)												12,859,000	11,830,000
Engineering Design 1.8%	L = 0.018 * (I+J+K)												802,000	738,000
Resident Engineering 2.3%	M = 0.023 * (I+J+K)												1,031,000	949,000
Contingency 35.0%	N = 0.350 * (I+J+K+L+M)												16,682,000	15,347,000
Subtotal (O = J+K+L+M+N)													32,982,000	30,343,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Cement-Based Solidification	LS	3	--	36.11	/BCY	32,000	BCY	1.000	1.000	1.000			1,208,000	1,095,000
H - Thermal Desorption (Saturated Soil)	LS	3	--	76.00	/BCY	140,000	BCY	1.000	1.000	1.000			11,119,000	10,085,000
A - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	710	BCY	1.000	1.000	1.000			203,000	184,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO	LS	3	--	2,220.00	/BCY	94	BCY	1.000	1.000	1.000			218,000	198,000
Subtotal (I1)													12,747,000	11,562,000
INDIRECT SUBCONTR. O&M COSTS (OPERATION COST CODE: D														
Mob/Demob 0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup 10.0%	K1 = 0.100 * (I1+J1)												1,275,000	1,156,000
Engineering Design 0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering 2.0%	M1 = 0.020 * (I1+J1+K1)												280,000	254,000
Contingency 40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												5,721,000	5,189,000
Subtotal (O1 = J1+K1+L1+M1+N1)													7,276,000	6,600,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													84,369,000	77,359,000

Table B4.1-13d Cost Estimate - Basin A Medium Group
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of Solidified Soil			A	4	30	0.25	/SY-YR	53,000	SY	1.000	1.000	1.000		14,000	374,000	184,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	4	30	0.02	/BCY-YR	1,400	BCY	1.000	1.000	1.000		40	1,000	500
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	30	0.07	/SY-YR	670,000	SY	1.000	1.000	1.000		49,000	1,323,000	651,000
HB - Site Reviews			A	4	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	76,000	37,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	710	BCY	1.000	1.000	1.000		20	500	300
U - On-Post Hazardous Waste Landfill, Closure			A	3	30	0.02	/BCY-YR	47,000	BCY	1.000	1.000	1.000		1,000	33,000	17,000
		Subtotal (P)												67,000	1,808,000	890,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIES		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												26,000	705,000	347,000
Contingency	32.5%	R = 0.325 * (P+Q)												30,000	817,000	402,000
		Subtotal (S = Q+R)												56,000	1,522,000	749,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														123,000	3,329,000	1,639,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															94,000,000	85,100,000

Table B4.1-17 Cost Estimate - Basin A Medium Group

Alternative 17: In Situ Physical/Chemical Treatment (Soil Flushing); In Situ Thermal Treatment (Surface Soil Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - In Situ Soil Flushing			LS	10	--	3,350,000.00	/EA	1	UNIT	1.000	1.000	1.000			3,501,000	2,257,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	710	BCY	1.000	1.000	1.000			6,000	6,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	710	BCY	1.000	1.000	1.000			4,000	3,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	47,000	BCY	1.000	1.000	1.000			406,000	406,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	47,000	BCY	1.000	1.000	1.000			242,000	230,000
		Subtotal (A)													4,158,000	2,902,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													161,000	112,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													1,630,000	1,138,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													268,000	187,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													89,000	62,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													1,892,000	1,320,000
		Subtotal (G = B+C+D+E+F)													4,040,000	2,820,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ Surface Soil Heating			LS	1	--	1,007,627.00	/UNIT	2	UNITS	1.000	1.000	1.000			2,106,000	2,106,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	710	BCY	1.000	1.000	1.000			118,000	118,000
		Subtotal (A1)													2,224,000	2,224,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: I														
Mob/Demob	0.2%	B1 = 0.002 * (A1)													4,000	4,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													134,000	134,000
Engineering Design	0.0%	D1 = 0.000 * (A1+B1+C1)													0	0
Resident Engineering	0.5%	E1 = 0.005 * (A1+B1+C1)													12,000	12,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													712,000	712,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													862,000	862,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															11,284,000	8,808,000

Table B4.1-17 Cost Estimate - Basin A Medium Group
Alternative 17: In Situ Physical/Chemical Treatment (Soil Flushing); In Situ Thermal Treatment (Surface Soil Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	1	--	0.30	/BCY	47,000	BCY	1.000	1.000	1.000			15,000	15,000
U - UXO Clearance by Geophysics			LS	1	--	0.66	/SY	140,000	SY	1.000	1.000	1.000			97,000	97,000
HB - In Situ Soil Flushing			A	11	20	84.31	/BCY	160,000	BCY	1.000	1.000	1.000			140,966,000	70,166,000
HB - Supplementation of Soil With Conditioners			LS	20	--	0.07	/SY	660,000	SY	1.000	1.000	1.000			48,000	19,000
HB - Revegetation of Disturbed Areas			LS	20	--	0.18	/SY	660,000	SY	1.000	1.000	1.100	Disturbance		137,000	54,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	710	BCY	1.000	1.000	1.040	Odor Control		4,000	3,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	710	BCY	1.000	1.250	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	710	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	710	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	710	BCY	1.000	1.000	1.000			4,000	4,000
U - Removal of Soil with UXO			LS	2	--	71.16	/BCY	94	BCY	1.000	1.000	1.000			7,000	7,000
U - Excavation of Debris from Surface Soil			LS	2	--	3.07	/BCY	47,000	BCY	1.000	1.000	1.300	Productivity		196,000	187,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	47,000	BCY	1.000	0.500	1.300	Productivity		34,000	33,000
U - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	270,000
		Subtotal (I)													141,795,000	70,857,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMSL														
Mob/Demob	4.5%	J = 0.045 * (I)													6,381,000	3,189,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													59,641,000	29,803,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													3,637,000	1,817,000
Resident Engineering	2.3%	M = 0.023 * (I+J+K)													4,676,000	2,337,000
Contingency	35.0%	N = 0.350 * (I+J+K+L+M)													75,645,000	37,801,000
		Subtotal (O = J+K+L+M+N)													149,979,000	74,947,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ Surface Soil Heating			A	2	10	28.92	/SY	310,000	SY	1.000	1.000	1.000			9,369,000	7,399,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	710	BCY	1.000	1.000	1.000			203,000	193,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO			LS	2	--	2,220.00	/BCY	94	BCY	1.000	1.000	1.000			218,000	208,000
		Subtotal (I1)													9,790,000	7,800,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: J														
Mob/Demob	0.2%	J1 = 0.002 * (I1)													19,000	15,000
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													588,000	469,000
Engineering Design	0.1%	L1 = 0.001 * (I1+J1+K1)													5,000	4,000
Resident Engineering	0.6%	M1 = 0.006 * (I1+J1+K1)													62,000	50,000
Contingency	30.5%	N1 = 0.305 * (I1+J1+K1+L1+M1)													3,192,000	2,543,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													3,866,000	3,080,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															305,430,000	156,685,000

Table B4.1-17 Cost Estimate - Basin A Medium Group
Alternative 17: In Situ Physical/Chemical Treatment (Soil Flushing); In Situ Thermal Treatment (Surface Soil Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long-Term Groundwater Monitoring, Basin A			A	10	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	812,000	336,000
H - Site Reviews			A	20	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	31,000	10,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	710	BCY	1.000	1.000	1.000		20	1,000	300
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	47,000	BCY	1.000	1.000	1.000		1,000	34,000	18,000
		Subtotal (P)												43,000	878,000	363,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												17,000	342,000	142,000
Contingency	32.5%	R = 0.325 * (P+Q)												19,000	397,000	164,000
		Subtotal (S = Q+R)												36,000	739,000	306,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														79,000	1,617,000	669,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															318,000,000	166,000,000

Table B4.1-19b Cost Estimate - Basin A Medium Group
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Basin A			LS	1	--	235,774.00	/EA	1	EA	1.000	1.000	1.000			246,000	246,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	710	BCY	1.000	1.000	1.000			6,000	6,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	710	BCY	1.000	1.000	1.000			4,000	3,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	47,000	BCY	1.000	1.000	1.000			406,000	386,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4.92	/BCY	47,000	BCY	1.000	1.000	1.000			242,000	219,000
		Subtotal (A)													903,000	861,000
INDIRECT CAPITAL COSTS		COST CODE: MMSS														
Mob/Demob	4.5%	B = 0.045 * (A)													41,000	39,000
Indirects, Overhead & Profit	40.3%	C = 0.403 * (A+B)													380,000	362,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													60,000	57,000
Resident Engineering	1.8%	E = 0.018 * (A+B+C)													23,000	22,000
Contingency	31.3%	F = 0.313 * (A+B+C+D+E)													440,000	419,000
		Subtotal (G = B+C+D+E+F)													943,000	899,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep/Saturated			LS	1	--	7,959,000.00	/UNIT	1	UNITS	1.000	1.000	1.000			8,317,000	8,317,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	710	BCY	1.000	1.000	1.000			118,000	112,000
		Subtotal (A1)													8,435,000	8,430,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: M														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													169,000	169,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													516,000	516,000
Engineering Design	10.0%	D1 = 0.100 * (A1+B1+C1)													912,000	911,000
Resident Engineering	1.6%	E1 = 0.016 * (A1+B1+C1)													146,000	146,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,053,000	3,051,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,796,000	4,793,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															15,078,000	14,983,000

Table B4.1-19b Cost Estimate - Basin A Medium Group
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	1	--	0.30	/BCY	47,000	BCY	1.000	1.000	1.000			15,000	15,000
U - UXO Clearance by Geophysics			LS	1	--	0.66	/SY	140,000	SY	1.000	1.000	1.000			97,000	97,000
H - Excavation Dewatering, Basin A			A	1	5	828,613.00	/EA-YR	1	EA	1.000	1.000	1.000			4,330,000	3,936,000
HB - Excavation of Borrow Material			A	5	8	1.91	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,990,000	3,821,000
HB - Transportation of Borrow Material to Backfill Area			A	5	8	0.87	/BCY-MILE	2,500,000	BCY	1.000	1.500	1.000			3,409,000	2,611,000
HB - Backfill with Borrow Material			A	5	8	1.71	/BCY	2,500,000	BCY	1.000	1.000	1.000			4,467,000	3,421,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			A	4	8	0.06	/SY	670,000	SY	1.000	1.000	1.000			42,000	33,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	8	19.01	/SY	670,000	SY	1.000	1.000	1.000			13,310,000	10,453,000
HB - Revegetation of Disturbed Areas			A	4	8	0.18	/SY	670,000	SY	1.000	1.000	1.000			126,000	99,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	710	BCY	1.000	1.000	1.040	Odor Control		4,000	3,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	710	BCY	1.000	1.250	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	710	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	710	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	710	BCY	1.000	1.000	1.000			4,000	4,000
U - Removal of Soil with UXO			LS	2	--	71.16	/BCY	94	BCY	1.000	1.000	1.000			7,000	7,000
U - Excavation of Debris from Surface Soil			LS	2	--	3.07	/BCY	47,000	BCY	1.000	1.000	1.300	Productivity		196,000	187,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	47,000	BCY	1.000	0.500	1.300	Productivity		34,000	33,000
U - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	270,000
		Subtotal (I)													31,317,000	24,993,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMML														
Mob/Demob	5.1%	J = 0.051 * (I)													1,605,000	1,281,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													13,251,000	10,575,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													808,000	645,000
Resident Engineering	2.5%	M = 0.025 * (I+J+K)													1,154,000	921,000
Contingency	37.5%	N = 0.375 * (I+J+K+L+M)													18,051,000	14,406,000
		Subtotal (O = J+K+L+M+N)													34,870,000	27,828,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep/Saturated			A	2	5	236.75	/BCY	140,000	BCY	1.000	1.000	1.000			34,637,000	30,705,000
H - In Situ Cement-Based Solidification			LS	2	--	60.93	/BCY	32,000	BCY	1.000	1.000	1.000			2,037,000	1,940,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	710	BCY	1.000	1.000	1.000			203,000	193,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO			LS	2	--	2,220.00	/BCY	94	BCY	1.000	1.000	1.000			218,000	208,000
		Subtotal (I1)													37,095,000	33,046,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													2,226,000	1,983,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													197,000	175,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													393,000	350,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													15,964,000	14,222,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													18,780,000	16,730,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															122,062,000	102,597,000

Table B4.1-19b Cost Estimate - Basin A Medium Group
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of In Situ Solidified Soil			A	2	30	0.25	/SY-YR	3,000	SY	1.000	1.000	1.000		1,000	23,000	12,000
H - Long-Term Groundwater Monitoring, Basin A			A	8	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	889,000	389,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	8	30	0.07	/SY-YR	670,000	SY	1.000	1.000	1.000		49,000	1,127,000	493,000
HB - Site Reviews			A	8	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	65,000	28,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	710	BCY	1.000	1.000	1.000		20	1,000	300
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	47,000	BCY	1.000	1.000	1.000		1,000	34,000	18,000
		Subtotal (P)												92,000	2,139,000	941,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												36,000	834,000	367,000
Contingency	32.5%	R = 0.325 * (P+Q)												42,000	966,000	425,000
		Subtotal (S = Q+R)												78,000	1,800,000	792,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														170,000	3,939,000	1,733,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															141,000,000	119,000,000

Table B4.2-1 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	75,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.2-1 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	75,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Treatment and Disposal of Wastepile Leachate			A	1	30	6.43	/GAL	13,000	GAL/YR	1.000	1.000	1.000		87,000	2,621,000	1,389,000
H - Long-Term Groundwater Monitoring, Basin F Wastepile			A	1	30	10,000.00	/EA-YR	1	EA	1.000	1.000	1.000		10,000	314,000	166,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
H - Maintenance of Existing Soil Cover			A	1	30	0.03	/SY-YR	75,000	SY	1.000	1.000	1.000		2,000	71,000	37,000
		Subtotal (P)												103,000	3,089,000	1,637,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												40,000	1,205,000	638,000
Contingency	32.5%	R = 0.325 * (P+Q)												47,000	1,396,000	740,000
		Subtotal (S)												87,000	2,600,000	1,378,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														190,000	5,690,000	3,015,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															5,690,000	3,020,000

Table B4.2-2 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
		Subtotal (A)													2,000	2,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													30	30
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G =B+C+D+E+F)													2,000	2,000
TOTAL CAPITAL COSTS (H = A+G)															3,000	3,000

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Table B4.2-2 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
H - Habitat Modification			A	1	3	0.18	/SY	75,000	SY	1.000	1.000	1.000			14,000	13,000
		Subtotal (I)													32,000	23,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													1,000	1,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													13,000	9,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													500	300
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													1,000	400
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													13,000	10,000
		Subtotal (O = J+K+L+M+N)													28,000	20,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Fences			A	1	30	0.79	/LF-YR	3,700	LF	1.000	1.000	1.000		3,000	92,000	49,000
H - Habitat Modification			A	3	30	0.01	/SY-YR	75,000	SY	1.000	1.000	1.000		500	13,000	7,000
H - Treatment and Disposal of Wastepile Leachate			A	1	30	6.43	/GAL	13,000	GAL/YR	1.000	1.000	1.000		87,000	2,621,000	1,389,000
H - Long-Term Groundwater Monitoring, Basin F Wastepile			A	1	30	10,000.00	/EA-YR	1	EA	1.000	1.000	1.000		10,000	314,000	166,000
H - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
H - Maintenance of Existing Soil Cover			A	3	30	0.03	/SY-YR	75,000	SY	1.000	1.000	1.000		2,000	66,000	33,000
		Subtotal (P)												106,000	3,183,000	1,683,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												42,000	1,242,000	657,000
Contingency	32.5%	R = 0.325 * (P+Q)												48,000	1,438,000	760,000
		Subtotal (S)												90,000	2,680,000	1,417,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														196,000	5,923,000	3,144,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															5,930,000	3,150,000

Table B4.2-3 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Basin F Wasepile			LS	1	--	12.29	/BCY	180,000	BCY	1.000	1.000	1.000			2,312,000	2,312,000
H - On-Post Hazardous Waste Landfill (Enhanced Cells)			LS	1	--	13.02	/BCY	180,000	BCY	1.000	1.000	1.000			2,449,000	2,449,000
H - On-Post Hazardous Waste Landfill Closure (Enhanced Cells)			LS	4	--	5.11	/BCY	180,000	BCY	1.000	1.000	1.000			961,000	830,000
		Subtotal (A)													5,722,000	5,591,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													222,000	217,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													2,244,000	2,192,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													368,000	360,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													123,000	120,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													2,604,000	2,544,000
		Subtotal (G = B+C+D+E+F)													5,560,000	5,433,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Materials Handling (Drying) Prior to Landfilling			LS	1	--	15.79	/BCY	100,000	BCY	1.000	1.000	1.000			1,650,000	1,650,000
		Subtotal (A1)													1,650,000	1,650,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													33,000	33,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													168,000	168,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													167,000	167,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													56,000	56,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													622,000	622,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													1,046,000	1,046,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															13,978,000	13,720,000

Table B4.2-3 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Wastepile Overburden			A	2	3	1.91	/BCY	75,000	BCY	1.000	1.000	1.000			150,000	139,000
H - Vapor Dome and Controls for Basin F Wasepile			A	2	3	14.90	/BCY	180,000	BCY	1.000	1.000	1.000			2,803,000	2,606,000
H - Excavation of Soil within Vapor Enclosure			A	2	3	8.69	/BCY	180,000	BCY	1.000	1.000	1.000			1,635,000	1,520,000
H - Load Soil for Transport to Hazardous Landfill			A	2	3	1.56	/BCY	180,000	BCY	1.000	1.000	1.000			293,000	273,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			A	2	3	1.08	/BCY-MILE	180,000	BCY	1.000	2.000	1.000			406,000	378,000
H - On-Post Hazardous Waste Landfill (Enhanced Cells)			A	2	3	5.80	/BCY	180,000	BCY	1.000	1.000	1.000			1,091,000	1,014,000
H - Treatment and Disposal of Wastepile Leachate			A	1	3	6.43	/GAL	149,000	GAL	1.000	1.000	1.000			1,001,000	954,000
H - Excavation of Borrow Material			A	2	3	1.91	/BCY	93,200	BCY	1.000	1.000	1.000			186,000	173,000
H - Transportation of Borrow Material to Backfill Area			A	2	3	0.87	/BCY-MILE	93,200	BCY	1.000	1.500	1.000			127,000	118,000
H - Backfill with Borrow Material			A	2	3	1.71	/BCY	93,200	BCY	1.000	1.000	1.000			167,000	155,000
H - Backfill of Wastepile Overburden			A	2	3	1.71	/BCY	75,000	BCY	1.000	1.000	1.000			134,000	125,000
H - Revegetation of Disturbed Areas			A	2	3	0.18	/SY	310,000	SY	1.000	1.000	1.100	Distrubance		64,000	60,000
		Subtotal (I)													8,057,000	7,514,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS														
Mob/Demob	5.1%	J = 0.051 * (I)													413,000	385,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													3,409,000	3,179,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													208,000	194,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													238,000	222,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													4,159,000	3,879,000
		Subtotal (O = J+K+L+M+N)													8,427,000	7,859,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Materials Handling (Drying) Prior to Landfilling			A	2	3	91.46	/BCY	100,000	BCY	1.000	1.000	1.000			9,558,000	8,886,000
		Subtotal (I1)													9,558,000	8,886,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													956,000	889,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													210,000	195,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													4,289,000	3,988,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													5,455,000	5,072,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															31,496,000	29,330,000

Table B4.2-3 Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Enhanced Cells)			A	4	30	0.04	/BCY-YR	180,000	BCY	1.000	1.000	1.000		8,000	203,000	100,000
		Subtotal (P)												8,000	203,000	100,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSS														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	79,000	39,000
Contingency	28.5%	R = 0.285 * (P+Q)												3,000	80,000	40,000
		Subtotal (S = Q+R)												6,000	160,000	79,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														13,000	363,000	178,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															45,800,000	43,200,000

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Table B4.2-6d Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 6d: Caps/Covers (Composite Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE														
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.2-6d Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 6d: Caps/Covers (Composite Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	75,000	SY	1.000	1.000	1.000			5,000	5,000
H - Installation of Composite Cap			LS	1	--	31.63	/SY	75,000	SY	1.000	1.000	1.000			2,479,000	2,479,000
H - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	75,000	SY	1.000	1.000	1.100	Disturbance		16,000	16,000
		Subtotal (I)													2,499,000	2,499,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													81,000	81,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													974,000	974,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													36,000	36,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													44,000	44,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													1,045,000	1,045,000
		Subtotal (O = J+K+L+M+N)													2,180,000	2,180,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Installation of Composite Cap			A	1	30	0.16	/SY-YR	75,000	SY	1.000	1.000	1.000		13,000	376,000	199,000
H - Long-Term Groundwater Monitoring, Basin F Wastepile			A	1	30	10,000.00	/EA-YR	1	EA	1.000	1.000	1.000		10,000	314,000	166,000
H - Treatment and Disposal of Wastepile Leachate			A	1	30	6.43	/GAL	13,300	GAL/YR	1.000	1.000	1.000		89,000	2,681,000	1,421,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												115,000	3,455,000	1,831,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												45,000	1,348,000	714,000
Contingency	32.5%	R = 0.325 * (P+Q)												52,000	1,561,000	827,000
		Subtotal (S)												97,000	2,909,000	1,541,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														212,000	11,043,000	8,052,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															11,000,000	8,050,000

Table B4.2-8a Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 8a: Direct Soil Washing (Solvent Washing)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
H - Vapor Dome and Controls for Basin F Wastepile			LS	1	--	12.29	/BCY	600,000	BCY	1.000	1.000	1.000		7,706,000	7,706,000
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	600,000	BCY	1.000	1.000	1.000		5,179,000	5,179,000
H - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	600,000	BCY	1.000	1.000	1.000		3,085,000	2,665,000
		Subtotal (A)												15,970,000	15,550,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS													
Mob/Demob	3.9%	B = 0.039 * (A)												619,000	603,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)												6,262,000	6,097,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)												1,028,000	1,001,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)												343,000	334,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)												7,267,000	7,075,000
		Subtotal (G = B+C+D+E+F)												15,519,000	15,110,000
DIRECT SUBCONTRACT CAPITAL COSTS															
H - Solvent Washing			LS	1	--	35.50	/BCY	600,000	BCY	1.000	1.000	1.000		22,259,000	22,259,000
		Subtotal (A1)												22,259,000	22,259,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F													
Mob/Demob	5.0%	B1 = 0.050 * (A1)												1,113,000	1,113,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)												2,337,000	2,337,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)												1,157,000	1,157,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)												514,000	514,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)												8,214,000	8,214,000
		Subtotal (G1 = B1+C1+D1+E1+F1)												13,335,000	13,335,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)														67,082,000	66,254,000

Table B4.2-8a Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 8a: Direct Soil Washing (Solvent Washing)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Wastepile Overburden			A	2	4	1.91	/BCY	75,000	BCY	1.000	1.000	1.000			150,000	136,000
H - Vapor Dome and Controls for Basin F Wastepile			A	2	4	14.90	/BCY	600,000	BCY	1.000	1.000	1.000			9,342,000	8,480,000
H - Excavation of Soil within Vapor Enclosure			A	2	4	8.69	/BCY	600,000	BCY	1.000	1.000	1.000			5,449,000	4,946,000
H - Load Soil for Transport to Hazardous Landfill			A	2	4	1.56	/BCY	600,000	BCY	1.000	1.000	1.000			978,000	888,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			A	2	4	1.08	/BCY-MILE	600,000	BCY	1.000	1.000	1.000			677,000	615,000
H - On-Post Hazardous Waste Landfill			A	2	4	5.78	/BCY	600,000	BCY	1.000	1.000	1.000			3,624,000	3,290,000
H - Treatment and Disposal of Wastepile Leachate			A	1	4	6.43	/GAL	201,000	GAL	1.000	1.000	1.000			1,351,000	1,257,000
H - Backfill of Wastepile Overburden			A	2	4	1.71	/BCY	75,000	BCY	1.000	1.000	1.000			134,000	122,000
H - Excavation of Borrow Material			A	2	4	1.91	/BCY	93,200	BCY	1.000	1.000	1.000			186,000	169,000
H - Transportation of Borrow Material to Backfill Area			A	2	4	0.87	/BCY-MILE	93,200	BCY	1.000	1.500	1.000			127,000	115,000
H - Backfill with Borrow Material			A	2	4	1.71	/BCY	93,200	BCY	1.000	1.000	1.000			167,000	151,000
H - Revegetation of Disturbed Areas			A	2	4	0.18	/SY	75,000	SY	1.000	1.000	1.100	Disturbance		16,000	14,000
		Subtotal (I)													22,200,000	20,183,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLLS														
Mob/Demob	4.5%	J = 0.045 * (I)													999,000	908,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													9,048,000	8,226,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													322,000	293,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													564,000	513,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													10,768,000	9,790,000
		Subtotal (O = J+K+L+M+N)													21,702,000	19,730,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Solvent Washing			A	1	2	144.54	/BCY	600,000	BCY	1.000	1.000	1.000			90,627,000	88,469,000
		Subtotal (I1)													90,627,000	88,469,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													4,531,000	4,423,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													9,516,000	9,289,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													2,093,000	2,044,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													32,030,000	31,268,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													48,171,000	47,024,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															182,699,000	175,406,000

Table B4.2-8a Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 8a: Direct Soil Washing (Solvent Washing)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	4	30	0.02	/BCY-YR	600,000	BCY	1.000	1.000	1.000		15,000	406,000	200,000
		Subtotal (P)												15,000	406,000	200,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												6,000	158,000	78,000
Contingency	32.5%	R = 0.325 * (P+Q)												7,000	184,000	90,000
		Subtotal (S = Q+R)												13,000	342,000	168,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														28,000	748,000	368,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															251,000,000	242,000,000

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Table B4.2-13b Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Basin F Wastepile			LS	2	--	12.29	/BCY	600,000	BCY	1.000	1.000	1.000			7,706,000	7,339,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	600,000	BCY	1.000	1.000	1.000			5,179,000	4,932,000
H - On-Post Hazardous Waste Landfill Closure			LS	5	--	4.92	/BCY	600,000	BCY	1.000	1.000	1.000			3,085,000	2,538,000
		Subtotal (A)													15,970,000	14,809,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													619,000	574,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													6,262,000	5,807,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													1,028,000	954,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													343,000	318,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													7,267,000	6,738,000
		Subtotal (G = B+C+D+E+F)													15,519,000	14,391,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	600,000	BCY	1.000	1.000	1.000			11,004,000	10,742,000
		Subtotal (A1)													11,004,000	10,742,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													220,000	215,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													1,122,000	1,096,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													1,111,000	1,085,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													370,000	362,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													4,148,000	4,050,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													6,972,000	6,806,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															49,464,000	46,748,000

Table B4.2-13b Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Excavation of Wastepile Overburden			A	3	5	1.91	/BCY	75,000	BCY	1.000	1.000	1.000		150,000	129,000
H - Vapor Dome and Controls for Basin F Wastepile			A	3	5	14.90	/BCY	600,000	BCY	1.000	1.000	1.000		9,342,000	8,077,000
H - Excavation of Soil within Vapor Enclosure			A	3	5	8.69	/BCY	600,000	BCY	1.000	1.000	1.000		5,449,000	4,710,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			A	3	5	1.08	/BCY-MILE	600,000	BCY	1.000	2.000	1.000		1,354,000	1,171,000
H - Load Treated Soil for Transport to Hazardous Landfill			A	3	5	1.56	/BCY	600,000	BCY	1.000	1.000	1.000		978,000	846,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			A	3	5	1.08	/BCY-MILE	600,000	BCY	1.000	1.000	1.000		677,000	585,000
H - On-Post Hazardous Waste Landfill			A	3	5	5.78	/BCY	600,000	BCY	1.000	1.000	1.000		3,624,000	3,133,000
H - Treatment and Disposal of Wastepile Leachate			A	1	5	6.43	/GAL	246,000	GAL	1.000	1.000	1.000		1,653,000	1,503,000
H - Backfill of Wastepile Overburden			A	3	5	1.71	/BCY	75,000	BCY	1.000	1.000	1.000		134,000	116,000
H - Excavation of Borrow Material			A	3	5	1.91	/BCY	93,200	BCY	1.000	1.000	1.000		186,000	161,000
H - Transportation of Borrow Material to Backfill Area			A	3	5	0.87	/BCY-MILE	93,200	BCY	1.000	1.500	1.000		127,000	110,000
H - Backfill with Borrow Material			A	3	5	1.71	/BCY	93,200	BCY	1.000	1.000	1.000		167,000	144,000
H - Revegetation of Disturbed Areas			A	3	5	0.18	/SY	75,000	SY	1.000	1.000	1.100 Disturbance		16,000	13,000
		Subtotal (I)												23,856,000	20,698,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLLS													
Mob/Demob	4.5%	J = 0.045 * (I)												1,074,000	931,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												9,723,000	8,436,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												347,000	301,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)												606,000	526,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)												11,572,000	10,040,000
		Subtotal (O = J+K+L+M+N)												23,321,000	20,234,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Saturated Soil)			A	3	5	76.00	/BCY	600,000	BCY	1.000	1.000	1.300 Fouling		61,948,000	53,555,000
		Subtotal (I1)												61,948,000	53,555,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D													
Mob/Demob	0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												6,195,000	5,356,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												1,363,000	1,178,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												27,802,000	24,036,000
		Subtotal (O1 = J1+K1+L1+M1+N1)												35,360,000	30,569,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														144,485,000	125,056,000

Table B4.2-13b Cost Estimate - Basin F Medium Group - Basin F Wastepile Subgroup
Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1992 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	5	30	0.02	/BCY-YR	600,000	BCY	1.000	1.000	1.000		15,000	391,000	187,000
		Subtotal (P)												15,000	391,000	187,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												6,000	153,000	73,000
Contingency	32.5%	R = 0.325 * (P+Q)												7,000	177,000	84,000
		Subtotal (S = Q+R)												13,000	329,000	157,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														28,000	721,000	344,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															195,000,000	172,000,000

Table B4.3-1 Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

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Table B4.3-1 Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Soil Monitoring, Former Basin F			A	1	30	78,000.00	/EA-YR	1	EA	1.000	1.000	1.000		82,000	2,445,000	1,296,000
H - Long-Term Groundwater Monitoring, Former Basin F			A	1	30	19,000.00	/EA-YR	1	EA	1.000	1.000	1.000		20,000	596,000	316,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
H - Maintenance of Existing Soil Cover			A	1	30	0.03	/SY-YR	350,000	SY	1.000	1.000	1.000		11,000	329,000	174,000
		Subtotal (P)												115,000	3,455,000	1,831,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												45,000	1,347,000	714,000
Contingency	32.5%	R = 0.325 * (P+Q)												52,000	1,561,000	827,000
		Subtotal (S)												97,000	2,908,000	1,541,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														212,000	6,363,000	3,372,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															6,360,000	3,370,000

Table B4.3-1a Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action (Limited)			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
H - Vapor Dome and Controls for Former Basin F PTV			LS	2	--	13.20	/BCY	250,000	BCY	1.000	1.000	1.000			3,449,000	3,284,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250,000	BCY	1.000	1.000	1.000			1,285,000	1,166,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250,000	BCY	1.000	1.000	1.000			2,158,000	2,055,000
		Subtotal (A)													6,892,000	6,505,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													224,000	211,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,775,000	2,620,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													297,000	280,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													124,000	117,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													2,939,000	2,774,000
		Subtotal (G = B+C+D+E+F)													6,358,000	6,002,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	250,000	BCY	1.000	1.000	1.000			4,585,000	4,476,000
		Subtotal (A1)													4,585,000	4,476,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													92,000	90,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													468,000	457,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													463,000	452,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													154,000	151,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,728,000	1,687,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													2,905,000	2,836,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															20,740,000	19,819,000

Table B4.3-1a Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action (Limited)			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
H - Excavation of Cover Overburden			LS	3	--	1.91	/BCY	94,000	BCY	1.000	1.000	1.000			188,000	170,000
H - Vapor Dome and Controls for Former Basin F PTV			LS	3	--	15.56	/BCY	250,000	BCY	1.000	1.000	1.000			4,065,000	3,687,000
H - Excavation of Soil within Vapor Enclosure			LS	3	--	8.69	/BCY	250,000	BCY	1.000	1.000	1.000			2,270,000	2,059,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	250,000	BCY	1.000	2.000	1.000			564,000	512,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	2,500	BCY	1.000	1.000	1.000			4,000	4,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	2,500	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	2,500	BCY	1.000	1.000	1.000			15,000	14,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	250,000	BCY	1.000	1.000	1.000			408,000	370,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	250,000	BCY	1.000	1.000	1.000			282,000	256,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	250,000	BCY	1.000	1.000	1.000			1,510,000	1,370,000
H - Excavation of Borrow Material			LS	3	--	1.91	/BCY	250,000	BCY	1.000	1.000	1.000			499,000	453,000
H - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	250,000	BCY	1.000	1.500	1.000			341,000	309,000
H - Backfill with Borrow Material			LS	3	--	1.71	/BCY	250,000	BCY	1.000	1.000	1.000			447,000	405,000
H - Backfill of Cover Overburden			LS	3	--	1.71	/BCY	94,000	BCY	1.000	1.000	1.000			168,000	152,000
H - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	110,000	SY	1.000	1.000	1.100	Disturbance		23,000	21,000
		Subtotal (I)													10,786,000	9,784,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLMS														
Mob/Demob	3.9%	J = 0.039 * (I)													418,000	379,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													4,370,000	3,963,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													156,000	141,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													234,000	212,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													4,789,000	4,344,000
		Subtotal (O = J+K+L+M+N)													9,966,000	9,039,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	250,000	BCY	1.000	1.000	1.000			11,654,000	10,571,000
		Subtotal (I1)													11,654,000	10,571,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,165,000	1,057,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													256,000	233,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													5,230,000	4,744,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													6,652,000	6,034,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															39,059,000	35,428,000

Table B4.3-1a Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	250,000	BCY	1.000	1.000	1.000		6,000	176,000	89,000
H - Long Term Soil Monitoring, Former Basin F			A	3	30	78,000.00	/EA-YR	1	EA	1.000	1.000	1.000		82,000	2,282,000	1,157,000
H - Long-Term Groundwater Monitoring, Former Basin F			A	3	30	19,000.00	/EA-YR	1	EA	1.000	1.000	1.000		20,000	556,000	282,000
H - Maintenance of Existing Soil Cover			A	3	30	0.03	/SY-YR	350,000	SY	1.000	1.000	1.000		11,000	307,000	156,000
H - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												121,000	3,400,000	1,723,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												47,000	1,326,000	672,000
Contingency	32.5%	R = 0.325 * (P+Q)												55,000	1,536,000	778,000
		Subtotal (S = Q+R)												102,000	2,862,000	1,450,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														224,000	6,262,000	3,173,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															66,100,000	58,400,000

Table B4.3-2a Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
H - Fences			LS	3	--	15.90	/LF	12,000	LF	1.000	1.000	1.000			199,000	181,000
H - Vapor Dome and Controls for Former Basin F PTV			LS	2	--	13.20	/BCY	250,000	BCY	1.000	1.000	1.000			3,449,000	3,284,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250,000	BCY	1.000	1.000	1.000			2,158,000	2,055,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250,000	BCY	1.000	1.000	1.000			1,285,000	1,166,000
		Subtotal (A)													7,093,000	6,688,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													231,000	217,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,856,000	2,693,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													305,000	288,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													127,000	120,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													3,024,000	2,852,000
		Subtotal (G = B+C+D+E+F)													6,544,000	6,170,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	250,000	BCY	1.000	1.000	1.000			4,585,000	4,476,000
		Subtotal (A1)													4,585,000	4,476,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													92,000	90,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													468,000	457,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													463,000	452,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													154,000	151,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,728,000	1,687,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													2,905,000	2,836,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															21,127,000	20,170,000

Table B4.3-2a Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Cover Overburden			LS	3	--	1.91	/BCY	94,000	BCY	1.000	1.000	1.000			188,000	170,000
H - Vapor Dome and Controls for Former Basin F PTV			LS	3	--	15.56	/BCY	250,000	BCY	1.000	1.000	1.000			4,065,000	3,687,000
H - Excavation of Soil within Vapor Enclosure			LS	3	--	8.69	/BCY	250,000	BCY	1.000	1.000	1.000			2,270,000	2,059,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	250,000	BCY	1.000	2.000	1.000			564,000	512,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	2,500	BCY	1.000	1.000	1.000			4,000	4,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	2,500	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	2,500	BCY	1.000	1.000	1.000			15,000	14,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	250,000	BCY	1.000	1.000	1.000			408,000	370,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	250,000	BCY	1.000	1.000	1.000			282,000	256,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	250,000	BCY	1.000	1.000	1.000			1,510,000	1,370,000
H - Excavation of Borrow Material			LS	3	--	1.91	/BCY	250,000	BCY	1.000	1.000	1.000			499,000	453,000
H - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	250,000	BCY	1.000	1.500	1.000			341,000	309,000
H - Backfill with Borrow Material			LS	3	--	1.71	/BCY	250,000	BCY	1.000	1.000	1.000			447,000	405,000
H - Backfill of Cover Overburden			LS	3	--	1.71	/BCY	94,000	BCY	1.000	1.000	1.000			168,000	152,000
H - Habitat Modification			A	1	3	0.18	/SY	350,000	SY	1.000	1.000	1.000			66,000	63,000
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
		Subtotal (I)													10,847,000	9,835,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLMS														
Mob/Demob	3.9%	J = 0.039 * (I)													420,000	381,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													4,394,000	3,984,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													157,000	142,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													235,000	213,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													4,816,000	4,367,000
		Subtotal (O = J+K+L+M+N)													10,022,000	9,087,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	250,000	BCY	1.000	1.000	1.000			11,654,000	10,571,000
		Subtotal (I1)													11,654,000	10,571,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,165,000	1,057,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													256,000	233,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													5,230,000	4,744,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													6,652,000	6,034,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															39,176,000	35,527,000

Table B4.3-2a Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	250,000	BCY	1.000	1.000	1.000		6,000	176,000	89,000
H - Fences	A	3	30	0.79	/LF-YR	12,000	LF	1.000	1.000	1.000		10,000	277,000	141,000
H - Habitat Modification	A	3	30	0.01	/SY-YR	350,000	SY	1.000	1.000	1.000		2,000	60,000	31,000
H - Long Term Soil Monitoring, Former Basin F	A	3	30	78,000.00	/EA-YR	1	EA	1.000	1.000	1.000		82,000	2,282,000	1,157,000
H - Long-Term Groundwater Monitoring, Former Basin F	A	3	30	19,000.00	/EA-YR	1	EA	1.000	1.000	1.000		20,000	556,000	282,000
H - Maintenance of Existing Soil Cover	A	3	30	0.03	/SY-YR	350,000	SY	1.000	1.000	1.000		11,000	307,000	156,000
H - Site Reviews	A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
Subtotal (P)												133,000	3,738,000	1,894,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL												
Indirects, Overhead & Profit 39.0%		Q = 0.390 * (P)										52,000	1,458,000	739,000
Contingency 32.5%		R = 0.325 * (P+Q)										60,000	1,689,000	856,000
Subtotal (S = Q+R)												112,000	3,146,000	1,594,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												246,000	6,884,000	3,488,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													67,200,000	59,200,000

Table B4.3-3b Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Former Basin F			LS	1	--	7.07	/BCY	740,000	BCY	1.000	1.000	1.000			5,467,000	5,467,000
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	740,000	BCY	1.000	1.000	1.000			6,387,000	6,387,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	740,000	BCY	1.000	1.000	1.000			3,805,000	3,451,000
		Subtotal (A)													15,659,000	15,306,000
INDIRECT CAPITAL COSTS		COST CODE	LLSS													
Mob/Demob	3.3%	B = 0.033 * (A)													509,000	497,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													6,306,000	6,163,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													674,000	659,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													281,000	275,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													6,677,000	6,526,000
		Subtotal (G =B+C+D+E+F)													14,447,000	14,121,000
TOTAL CAPITAL COSTS (H = A+G)															30,106,000	29,426,000

Table B4.3-3b Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Cover Overburden			A	2	3	1.91	/BCY	350,000	BCY	1.000	1.000	1.000			699,000	649,000
H - Vapor Dome and Controls for Former Basin F			A	2	3	13.64	/BCY	740,000	BCY	1.000	1.000	1.000			10,548,000	9,806,000
H - Excavation of Soil within Vapor Enclosure			A	2	3	8.69	/BCY	740,000	BCY	1.000	1.000	1.000			6,720,000	6,248,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			A	2	3	1.08	/BCY-MILE	740,000	BCY	1.000	1.000	1.000			835,000	776,000
H - On-Post Hazardous Waste Landfill			A	2	3	5.78	/BCY	740,000	BCY	1.000	1.000	1.000			4,470,000	4,155,000
H - Excavation of Borrow Material			A	2	3	1.91	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,591,000	4,268,000
H - Transportation of Borrow Material to Backfill Area			A	2	3	0.87	/BCY-MILE	2,300,000	BCY	1.000	1.500	1.000			3,137,000	2,916,000
H - Backfill with Borrow Material			A	2	3	1.71	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,110,000	3,821,000
H - Excavation of Cover Overburden			A	2	3	1.91	/BCY	350,000	BCY	1.000	1.000	1.000			699,000	649,000
H - Subgrade Preparation Prior to Installing Cap/Cover			A	3	3	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	26,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	3	3	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	8,108,000
H - Revegetation of Disturbed Areas			A	3	3	0.18	/SY	450,000	SY	1.000	1.000	1.100	Disturbance		93,000	84,000
		Subtotal (I)													44,868,000	41,508,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													1,739,000	1,608,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													18,759,000	17,355,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													654,000	605,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													980,000	907,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													20,100,000	18,595,000
		Subtotal (O = J+K+L+M+N)													42,232,000	39,070,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.024	/BCY-YR	740,000	BCY	1.000	1.000	1.000		19,000	520,000	263,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	3	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000		33,000	922,000	467,000
H - Site Reviews			A	3	30	2700	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												54,000	1,520,000	770,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												21,000	593,000	300,000
Contingency	32.5%	R = 0.325 * (P+Q)												25,000	687,000	348,000
		Subtotal (S)												46,000	1,280,000	649,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														100,000	89,900,000	81,997,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															120,000,000	111,000,000

Table B4.3-3c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
H - Vapor Dome and Controls for Former Basin F			LS	2	--	7.07	/BCY	740,000	BCY	1.000	1.000	1.000		5,467,000	5,207,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	740,000	BCY	1.000	1.000	1.000		6,387,000	6,083,000
H - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	740,000	BCY	1.000	1.000	1.000		3,805,000	3,287,000
		Subtotal (A)												15,659,000	14,577,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS													
Mob/Demob	3.3%	B = 0.033 * (A)												509,000	474,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)												6,306,000	5,870,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)												674,000	628,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)												281,000	262,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)												6,677,000	6,216,000
		Subtotal (G = B+C+D+E+F)												14,447,000	13,448,000
DIRECT SUBCONTRACT CAPITAL COSTS															
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	250,000	BCY	1.000	1.000	1.000		4,585,000	4,476,000
		Subtotal (A1)												4,585,000	4,476,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F													
Mob/Demob	5.0%	B1 = 0.050 * (A1)												229,000	224,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)												481,000	470,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)												238,000	233,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)												106,000	103,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)												1,692,000	1,652,000
		Subtotal (G1 = B1+C1+D1+E1+F1)												2,747,000	2,681,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)														37,438,000	35,182,000

Table B4.3-3c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Cover Overburden			A	3	4	1.91	/BCY	350,000	BCY	1.000	1.000	1.000			699,000	619,000
H - Vapor Dome and Controls for Former Basin F			A	3	4	13.64	/BCY	740,000	BCY	1.000	1.000	1.000			10,548,000	9,339,000
H - Excavation of Soil within Vapor Enclosure			A	3	4	8.69	/BCY	740,000	BCY	1.000	1.000	1.000			6,720,000	5,950,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			A	3	4	1.08	/BCY-MILE	250,000	BCY	1.000	2.000	1.000			564,000	500,000
H - Load Treated Soil for Transport to Hazardous Landfill			A	3	4	1.56	/BCY	2,500	BCY	1.000	1.000	1.000			4,000	4,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			A	3	4	1.08	/BCY-MILE	2,500	BCY	1.000	1.000	1.000			3,000	2,000
H - On-Post Hazardous Waste Landfill (Particulates)			A	3	4	5.78	/BCY	2,500	BCY	1.000	1.000	1.000			15,000	13,000
H - Load Treated Soil for Transport to Hazardous Landfill			A	3	4	1.56	/BCY	740,000	BCY	1.000	1.000	1.000			1,206,000	1,068,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			A	3	4	1.08	/BCY-MILE	740,000	BCY	1.000	1.000	1.000			835,000	739,000
H - On-Post Hazardous Waste Landfill			A	3	4	5.78	/BCY	740,000	BCY	1.000	1.000	1.000			4,470,000	3,958,000
H - Excavation of Borrow Material			A	3	5	1.91	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,591,000	3,969,000
H - Transportation of Borrow Material to Backfill Area			A	3	5	0.87	/BCY-MILE	2,300,000	BCY	1.000	1.500	1.000			3,137,000	2,712,000
H - Backfill with Borrow Material			A	3	5	1.71	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,110,000	3,553,000
H - Backfill of Cover Overburden			A	3	5	1.71	/BCY	350,000	BCY	1.000	1.000	1.000			625,000	541,000
H - Subgrade Preparation Prior to Installing Cap/Cover			A	4	5	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	24,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	5	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	7,538,000
H - Revegetation of Disturbed Areas			A	4	5	0.18	/SY	450,000	SY	1.000	1.000	1.100	Disturbance		93,000	79,000
		Subtotal (I)													46,587,000	40,607,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLSS														
Mob/Demob	3.9%	J = 0.039 * (I)													1,805,000	1,574,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													19,478,000	16,978,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													679,000	592,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													1,018,000	887,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													20,870,000	18,191,000
		Subtotal (O = J+K+L+M+N)													43,850,000	38,222,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	250,000	BCY	1.000	1.000	1.000			11,654,000	10,571,000
		Subtotal (I1)													11,654,000	10,571,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													583,000	529,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,224,000	1,110,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													269,000	244,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													4,119,000	3,736,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													6,195,000	5,619,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															108,287,000	95,018,000

Table B4.3-3c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 3c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	4	30	0.024	/BCY-YR	740,000	BCY	1.000	1.000	1.000		19,000	501,000	246,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000		33,000	889,000	437,000
H - Site Reviews			A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
		Subtotal (P)												54,000	1,463,000	719,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												21,000	571,000	280,000
Contingency	32.5%	R = 0.325 * (P+Q)												25,000	661,000	325,000
		Subtotal (S = Q+R)												46,000	1,232,000	605,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														100,000	2,695,000	1,324,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															148,000,000	132,000,000

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Table B4.3-6 Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.3-6 Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Borrow Material			A	1	3	1.91	/BCY	1,600,000	BCY	1.000	1.000	1.000			3,194,000	3,044,000
H - Transportation of Borrow Material to Backfill Area			A	1	3	0.87	/BCY-MILE	1,600,000	BCY	1.000	1.500	1.000			2,182,000	2,080,000
H - Backfill with Borrow Material			A	1	3	1.71	/BCY	1,600,000	BCY	1.000	1.000	1.000			2,859,000	2,725,000
H - Subgrade Preparation Prior to Installing Cap/Cover			A	2	3	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	26,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	3	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	8,311,000
H - Revegetation of Disturbed Areas			A	2	3	0.18	/SY	450,000	SY	1.000	1.000	1.100	Disturbance		93,000	87,000
		Subtotal (I)													17,295,000	16,273,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													562,000	529,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													6,741,000	6,343,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													246,000	231,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													307,000	289,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													7,231,000	6,804,000
		Subtotal (O = J+K+L+M+N)													15,088,000	14,196,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	3	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000		33,000	922,000	467,000
H - Long-Term Groundwater Monitoring, Former Basin F			A	3	30	19000	/EA-YR	1	EA	1.000	1.000	1.000		20,000	556,000	282,000
H - Site Reviews			A	3	30	2700	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												56,000	1,557,000	789,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												22,000	607,000	308,000
Contingency	32.5%	R = 0.325 * (P+Q)												25,000	703,000	356,000
		Subtotal (S)												47,000	1,310,000	664,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														102,000	35,250,000	31,921,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															35,300,000	31,900,000

Table B4.3-6b Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6b: In Situ Solidification/Stabilization (Silica-Based, Proprietary Agent Solidification) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													0	0
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													0	0
Engineering Design	3.0%	D = 0.030 * (A+B+C)													0	0
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													0	0
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													0	0
		Subtotal (G = B+C+D+E+F)													0	0
DIRECT SUBCONTRACT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	350,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A1)													0	0
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													0	0
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													0	0
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													0	0
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													0	0
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													0	0
		Subtotal (G1 = B1+C1+D1+E1+F1)													0	0
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															0	0

Table B4.3-6b Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6b: In Situ Solidification/Stabilization (Silica-Based, Proprietary Agent Solidification) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Borrow Material			A	3	5	1.91	/BCY	1,600,000	BCY	1.000	1.000	1.000			3,194,000	2,761,000
H - Transportation of Borrow Material to Backfill Area			A	3	5	0.87	/BCY-MILE	1,600,000	BCY	1.000	1.500	1.000			2,182,000	1,886,000
H - Backfill with Borrow Material			A	3	5	1.71	/BCY	1,600,000	BCY	1.000	1.000	1.000			2,859,000	2,472,000
H - Subgrade Preparation Prior to Installing Cap/Cover			A	4	5	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	24,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	5	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	7,538,000
H - Revegetation of Disturbed Areas			A	4	5	0.18	/SY	450,000	SY	1.000	1.000	1.100	Disturbance		93,000	79,000
		Subtotal (I)													17,295,000	14,760,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLSS														
Mob/Demob	3.9%	J = 0.039 * (I)													670,000	572,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													7,231,000	6,171,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													252,000	215,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													378,000	323,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													7,748,000	6,612,000
		Subtotal (O = J+K+L+M+N)													16,279,000	13,893,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ Silica-Based Solidification			LS	1	–	123.08	/BCY	180,000	BCY	1.000	1.000	1.000			23,151,000	23,151,000
		Subtotal (I1)													23,151,000	23,151,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													1,389,000	1,389,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													123,000	123,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													245,000	245,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													9,963,000	9,963,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													11,721,000	11,721,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															68,447,000	63,524,000

Table B4.3-6b Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6b: In Situ Solidification/Stabilization (Silica-Based, Proprietary Agent Solidification) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of In Situ Solidified Soil			A	2	30	0.25	/SY-YR	180,000	BCY	1.000	1.000	1.000		47,000	1,364,000	712,000
H - Long-Term Groundwater Monitoring, Former Basin F			A	2	30	19,000	/EA-YR	1	EA	1.000	1.000	1.000		20,000	576,000	301,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000		33,000	955,000	498,000
H - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												103,000	2,976,000	1,554,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												40,000	1,161,000	606,000
Contingency	32.5%	R = 0.325 * (P+Q)												46,000	1,344,000	702,000
		Subtotal (S = Q+R)												86,000	2,505,000	1,308,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														189,000	5,481,000	2,862,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															73,900,000	66,400,000

Table B4.3-6c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Former Basin F PTV			LS	2	--	13.20	/BCY	250,000	BCY	1.000	1.000	1.000			3,449,000	3,284,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250,000	BCY	1.000	1.000	1.000			2,158,000	2,055,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250,000	BCY	1.000	1.000	1.000			1,285,000	1,166,000
		Subtotal (A)													6,892,000	6,505,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													224,000	211,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,775,000	2,620,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													297,000	280,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													124,000	117,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													2,939,000	2,774,000
		Subtotal (G = B+C+D+E+F)													6,358,000	6,002,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	250,000	BCY	1.000	1.000	1.000			4,585,000	4,476,000
		Subtotal (A1)													4,585,000	4,476,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													92,000	90,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													468,000	457,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													463,000	452,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													154,000	151,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,728,000	1,687,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													2,905,000	2,836,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															20,740,000	19,819,000

Table B4.3-6c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Excavation of Cover Overburden		LS	3	--	1.91	/BCY	94,000	BCY	1.000	1.000	1.000			188,000	170,000
H - Vapor Dome and Controls for Former Basin F PTV		LS	3	--	15.56	/BCY	250,000	BCY	1.000	1.000	1.000			4,065,000	3,687,000
H - Excavation of Soil within Vapor Enclosure		LS	3	--	8.69	/BCY	250,000	BCY	1.000	1.000	1.000			2,270,000	2,059,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility		LS	3	--	1.08	/BCY-MILE	250,000	BCY	1.000	2.000	1.000			564,000	512,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	2,500	BCY	1.000	1.000	1.000			4,000	4,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	2,500	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	2,500	BCY	1.000	1.000	1.000			15,000	14,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	250,000	BCY	1.000	1.000	1.000			408,000	370,000
H - Transportation of Treated Soil to On-Post Hazardous Waste Landfill		LS	3	--	0.87	/BCY-MILE	250,000	BCY	1.000	1.000	1.000			227,000	206,000
H - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	250,000	BCY	1.000	1.000	1.000			1,510,000	1,370,000
H - Excavation of Borrow Material		A	3	5	1.91	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,591,000	3,969,000
H - Transportation of Borrow Material to Backfill Area		A	3	5	0.87	/BCY-MILE	2,300,000	BCY	1.000	1.500	1.000			3,137,000	2,712,000
H - Backfill with Borrow Material		A	3	5	1.71	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,110,000	3,553,000
H - Backfill of Cover Overburden		A	3	5	1.71	/BCY	94,000	BCY	1.000	1.000	1.000			168,000	145,000
H - Subgrade Preparation Prior to Installing Cap/Cover		A	4	5	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	24,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)		A	4	5	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	7,538,000
H - Revegetation of Disturbed Areas		A	4	5	0.18	/SY	450,000	SY	1.000	1.000	1.100	Disturbance		93,000	79,000
	Subtotal (I)													30,320,000	26,413,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: MLLS														
Mob/Demob	3.9% J = 0.039 * (I)													1,175,000	1,024,000
Indirects, Overhead & Profit	37.8% K = 0.378 * (I+J)													11,889,000	10,357,000
Engineering Design	1.0% L = 0.010 * (I+J+K)													434,000	378,000
Resident Engineering	1.5% M = 0.015 * (I+J+K)													651,000	567,000
Contingency	30.0% N = 0.300 * (I+J+K+L+M)													13,341,000	11,622,000
	Subtotal (O = J+K+L+M+N)													27,490,000	23,947,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Dry Soil)		LS	3	--	44.61	/BCY	250,000	BCY	1.000	1.000	1.000			11,654,000	10,571,000
	Subtotal (I1)													11,654,000	10,571,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0% J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													1,165,000	1,057,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													256,000	233,000
Contingency	40.0% N1 = 0.400 * (I1+J1+K1+L1+M1)													5,230,000	4,744,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													6,652,000	6,034,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														76,116,000	66,965,000

Table B4.3-6c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	250,000	BCY	1.000	1.000	1.000		6,000	176,000	89,000
H - Long-Term Groundwater Monitoring, Former Basin F	A	5	30	19,000.00	/EA-YR	1	EA	1.000	1.000	1.000		20,000	516,000	247,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	5	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000		33,000	856,000	409,000
H - Site Reviews	A	5	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	73,000	35,000
Subtotal (P)												62,000	1,621,000	779,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI	COST CODE: LLSL													
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											24,000	632,000	304,000
Contingency 32.5%	R = 0.325 * (P+Q)											28,000	732,000	352,000
Subtotal (S = Q+R)												52,000	1,364,000	656,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												114,000	2,985,000	1,435,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													99,800,000	88,200,000

Table B4.3-13c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 13c: Direct Thermal Desorption (Direct Heating); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Former Basin F			LS	2	--	7.07	/BCY	740,000	BCY	1.000	1.000	1.000			5,467,000	5,207,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	740,000	BCY	1.000	1.000	1.000			6,387,000	6,083,000
H - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	740,000	BCY	1.000	1.000	1.000			3,805,000	3,287,000
		Subtotal (A)													15,659,000	14,577,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													509,000	474,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													6,306,000	5,870,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													674,000	628,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													281,000	262,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													6,677,000	6,216,000
		Subtotal (G = B+C+D+E+F)													14,447,000	13,448,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	740,000	BCY	1.000	1.000	1.000			13,571,000	13,248,000
		Subtotal (A1)													13,571,000	13,248,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													271,000	265,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													1,384,000	1,351,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													1,370,000	1,338,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													457,000	446,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													5,116,000	4,994,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													8,599,000	8,395,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															52,277,000	49,668,000

Table B4.3-13c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 13c: Direct Thermal Desorption (Direct Heating); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Cover Overburden			LS	2	--	1.91	/BCY	350,000	BCY	1.000	1.000	1.000			699,000	665,000
H - Vapor Dome and Controls for Former Basin F			A	3	4	13.64	/BCY	740,000	BCY	1.000	1.000	1.000			10,548,000	9,339,000
H - Excavation of Soil within Vapor Enclosure			A	3	4	8.69	/BCY	740,000	BCY	1.000	1.000	1.000			6,720,000	5,950,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			A	3	4	1.08	/BCY-MILE	740,000	BCY	1.000	2.000	1.000			1,670,000	1,479,000
H - Load Treated Soil for Transport to Hazardous Landfill			A	3	4	1.56	/BCY	7,400	BCY	1.000	1.000	1.000			12,000	11,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			A	3	4	1.08	/BCY-MILE	7,400	BCY	1.000	1.000	1.000			8,000	7,000
H - On-Post Hazardous Waste Landfill (Particulates)			A	3	4	5.78	/BCY	7,400	BCY	1.000	1.000	1.000			45,000	40,000
H - Load Treated Soil for Transport to Hazardous Landfill			A	3	4	1.56	/BCY	740,000	BCY	1.000	1.000	1.000			1,206,000	1,068,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			A	3	4	1.08	/BCY-MILE	740,000	BCY	1.000	1.000	1.000			835,000	739,000
H - On-Post Hazardous Waste Landfill			A	3	4	5.78	/BCY	740,000	BCY	1.000	1.000	1.000			4,470,000	3,958,000
H - Excavation of Borrow Material			A	4	6	1.91	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,591,000	3,780,000
H - Transportation of Borrow Material to Backfill Area			A	4	6	0.87	/BCY-MILE	2,300,000	BCY	1.000	1.500	1.000			3,137,000	2,583,000
H - Backfill with Borrow Material			A	4	6	1.71	/BCY	2,300,000	BCY	1.000	1.000	1.000			4,110,000	3,384,000
H - Backfill of Cover Overburden			A	3	4	1.71	/BCY	350,000	BCY	1.000	1.000	1.000			625,000	554,000
H - Subgrade Preparation Prior to Installing Cap/Cover			A	5	6	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	23,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	5	6	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	7,179,000
H - Revegetation of Disturbed Areas			A	5	6	0.18	/SY	450,000	SY	1.000	1.000	1.100	Distrubance		93,000	75,000
		Subtotal (I)													47,736,000	40,834,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLLS														
Mob/Demob	3.9%	J = 0.039 * (I)													1,850,000	1,582,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													18,719,000	16,012,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													683,000	584,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													1,025,000	876,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													21,004,000	17,967,000
		Subtotal (O = J+K+L+M+N)													43,280,000	37,021,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			A	3	4	44.61	/BCY	740,000	BCY	1.000	1.000	1.000			34,497,000	30,545,000
		Subtotal (I1)													34,497,000	30,545,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													3,450,000	3,054,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													759,000	672,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													15,482,000	13,708,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													19,691,000	17,435,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															145,204,000	125,835,000

Table B4.3-13c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 13c: Direct Thermal Desorption (Direct Heating); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	4	30	0.024	/BCY-YR	740,000	BCY	1.000	1.000	1.000		19,000	501,000	246,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	6	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000		33,000	823,000	382,000
H - Site Reviews			A	6	30	2,700	/EA-YR	1	EA	1.000	1.000	1.000		3,000	71,000	33,000
		Subtotal (P)												54,000	1,395,000	661,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												21,000	544,000	258,000
Contingency	32.5%	R = 0.325 * (P+Q)												25,000	630,000	299,000
		Subtotal (S = Q+R)												46,000	1,174,000	556,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														100,000	2,568,000	1,217,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															200,000,000	177,000,000

Table B4.3-19c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 19c: In Situ Thermal Treatment (RF/Microwave Heating); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE: 0														
Mob/Demob	5.8%	B = 0.058 * (A)													0	0
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													0	0
Engineering Design	6.5%	D = 0.065 * (A+B+C)													0	0
Resident Engineering	2.8%	E = 0.028 * (A+B+C)													0	0
Contingency	40.0%	F = 0.400 * (A+B+C+D+E)													0	0
		Subtotal (G = B+C+D+E+F)													0	0
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep			LS	1	--	7,959,000.00	/UNIT	2	UNITS	1.000	1.000	1.000			16,634,000	16,634,000
		Subtotal (A1)													16,634,000	16,634,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													333,000	333,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													1,018,000	1,018,000
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													2,158,000	2,158,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													270,000	270,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													6,124,000	6,124,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													9,903,000	9,903,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															26,537,000	26,537,000

Table B4.3-19c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 19c: In Situ Thermal Treatment (RF/Microwave Heating); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Borrow Material			A	6	8	1.91	/BCY	1,600,000	BCY	1.000	1.000	1.000			3,194,000	2,385,000
H - Transportation of Borrow Material to Backfill Area			A	6	8	0.87	/BCY-MILE	1,600,000	BCY	1.000	1.500	1.000			2,182,000	1,630,000
H - Backfill with Borrow Material			A	6	8	1.71	/BCY	1,600,000	BCY	1.000	1.000	1.000			2,859,000	2,135,000
H - Subgrade Preparation Prior to Installing Cap/Cover			A	7	8	0.06	/SY	450,000	SY	1.000	1.000	1.000			28,000	21,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	7	8	19.01	/SY	450,000	SY	1.000	1.000	1.000			8,939,000	6,512,000
H - Revegetation of Disturbed Areas			A	7	8	0.18	/SY	450,000	SY	1.000	1.000	1.100	Disturbance		93,000	68,000
		Subtotal (I)													17,295,000	12,750,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLLS														
Mob/Demob	3.9%	J = 0.039 * (I)													670,000	494,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													6,782,000	5,000,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													247,000	182,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													371,000	274,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													7,610,000	5,610,000
		Subtotal (O = J+K+L+M+N)													15,681,000	11,560,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep			A	1	6	205.02	/BCY	740,000	BCY	1.000	1.000	1.000			158,542,000	140,824,000
		Subtotal (I1)													158,542,000	140,824,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													9,513,000	8,449,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													840,000	746,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													1,681,000	1,493,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													68,230,000	60,605,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													80,263,000	71,294,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															271,782,000	236,428,000

Table B4.3-19c Cost Estimate - Basin F Medium Group - Former Basin F Subgroup
Alternative 19c: In Situ Thermal Treatment (RF/Microwave Heating); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	8	30	0.07	/SY-YR	450,000	SY	1.000	1.000	1.000	33,000	757,000	331,000
H - Site Reviews			A	8	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000	3,000	65,000	28,000
		Subtotal (P)											36,000	822,000	360,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											14,000	321,000	140,000
Contingency	32.5%	R = 0.325 * (P+Q)											16,000	371,000	163,000
		Subtotal (S = Q+R)											30,000	692,000	303,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)													66,000	1,514,000	663,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)														300,000,000	264,000,000

Table B4.4-1 Cost Estimate - Secondary Basins Medium Group
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	92,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	410,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.4-1 Cost Estimate - Secondary Basins Medium Group
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	92,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	410,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Secondary Basins			A	1	30	111,000.00	/EA-YR	1	EA	1.000	1.000	1.000		116,000	3,480,000	1,844,000
H - Long-Term Groundwater Monitoring, Secondary Basins			A	1	30	35,000.00	/EA-YR	1	EA	1.000	1.000	1.000		37,000	1,097,000	581,000
HB - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												155,000	4,662,000	2,470,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												61,000	1,818,000	963,000
Contingency	32.5%	R = 0.325 * (P+Q)												70,000	2,106,000	1,116,000
		Subtotal (S)												131,000	3,924,000	2,079,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														286,000	8,586,000	4,550,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															8,590,000	4,550,000

Table B4.4-2 Cost Estimate - Secondary Basins Medium Group
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
HB - Fences			LS	1	--	15.90	/LF	27,000	LF	1.000	1.000	1.000			449,000	449,000
		Subtotal (A)													450,000	450,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													15,000	15,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													181,000	181,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													19,000	19,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													8,000	8,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													192,000	192,000
		Subtotal (G =B+C+D+E+F)													416,000	416,000
TOTAL CAPITAL COSTS (H = A+G)															866,000	866,000

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Table B4.4-2 Cost Estimate - Secondary Basins Medium Group
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Habitat Modification			A	1	3	0.18	/SY	500,000	SY	1.000	1.000	1.000			94,000	90,000
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
		Subtotal (I)													112,000	99,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE LLSS														
Mob/Demob	3.3%	J = 0.033 * (I)													4,000	3,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													45,000	40,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													2,000	1,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													2,000	2,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													47,000	41,000
		Subtotal (O = J+K+L+M+N)													99,000	88,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Fences			A	2	30	0.79	/LF-YR	27,000	LF	1.000	1.000	1.000		22,000	646,000	337,000
HB - Habitat Modification			A	3	30	0.01	/SY-YR	500,000	SY	1.000	1.000	1.000		3,000	86,000	44,000
HB - Long Term Soil Monitoring, Secondary Basins			A	3	30	111,000.00	/EA-YR	1	EA	1.000	1.000	1.000		116,000	3,248,000	1,646,000
H - Long-Term Groundwater Monitoring, Secondary Basins			A	3	30	35,000.00	/EA-YR	1	EA	1.000	1.000	1.000		37,000	1,024,000	519,000
HB - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												181,000	5,084,000	2,586,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												70,000	1,983,000	1,009,000
Contingency	32.5%	R = 0.325 * (P+Q)												82,000	2,297,000	1,168,000
		Subtotal (S)												152,000	4,279,000	2,177,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														333,000	9,574,000	4,950,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															10,400,000	5,820,000

Table B4.4-3 Cost Estimate - Secondary Basins Medium Group
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	170,000	BCY	1.000	1.000	1.000			1,467,000	1,467,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	170,000	BCY	1.000	1.000	1.000			874,000	832,000
		Subtotal (A)													2,341,000	2,300,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													76,000	75,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													943,000	926,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													101,000	99,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													42,000	41,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													998,000	981,000
		Subtotal (G =B+C+D+E+F)													2,160,000	2,122,000
TOTAL CAPITAL COSTS (H = A+G)															4,502,000	4,422,000

Table B4.4-3 Cost Estimate - Secondary Basins Medium Group
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Soil Excavation			LS	2	--	3.96	/BCY	170,000	BCY	1.000	1.000	1.000			703,000	670,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	170,000	BCY	1.000	0.500	1.000			96,000	91,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	170,000	BCY	1.000	1.000	1.000			1,027,000	978,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	170,000	BCY	1.000	1.000	1.000			339,000	323,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	170,000	BCY	1.000	1.500	1.000			232,000	221,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	170,000	BCY	1.000	1.000	1.000			304,000	289,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	500,000	SY	1.000	1.000	1.000			37,000	35,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	500,000	SY	1.000	1.000	1.100	Disturbance		103,000	99,000
		Subtotal (I)													2,841,000	2,706,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													110,000	105,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													1,151,000	1,096,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													41,000	39,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													62,000	59,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													1,261,000	1,201,000
		Subtotal (O = J+K+L+M+N)													2,625,000	2,500,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.024	/BCY-YR	170,000	BCY	1.000	1.000	1.000		4,000	124,000	65,000
		Subtotal (P)												4,000	124,000	65,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	48,000	25,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	56,000	29,000
		Subtotal (S)												4,000	104,000	54,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														8,000	5,694,000	5,325,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															10,200,000	9,750,000

Table B4.4-3b Cost Estimate - Secondary Basins Medium Group
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	32,000	BCY	1.000	1.000	1.000			276,000	276,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	32,000	BCY	1.000	1.000	1.000			165,000	157,000
		Subtotal (A)													441,000	433,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													14,000	14,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													177,000	174,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													19,000	19,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													8,000	8,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													188,000	185,000
		Subtotal (G =B+C+D+E+F)													407,000	399,000
TOTAL CAPITAL COSTS (H = A+G)															847,000	832,000

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Table B4.4-3b Cost Estimate - Secondary Basins Medium Group
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Dike Materials			LS	2	--	3.96	/BCY	100,000	BCY	1.000	1.000	1.000			414,000	394,000
H - Backfill with Dike Material			LS	2	--	3.63	/BCY	100,000	BCY	1.000	1.000	1.000			379,000	361,000
H - Soil Excavation			LS	2	--	3.96	/BCY	32,000	BCY	1.000	1.000	1.000			132,000	126,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	32,000	BCY	1.000	0.500	1.000			18,000	17,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	32,000	BCY	1.000	1.000	1.000			193,000	184,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	32,000	BCY	1.000	1.000	1.000			64,000	61,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	32,000	BCY	1.000	1.500	1.000			44,000	42,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	54,000
HB - Installation of 2 ft Soil Cover (Without Biota Barrier)			LS	2	--	3.75	/SY	520,000	SY	1.000	1.000	1.000			2,038,000	1,941,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	520,000	SY	1.000	1.000	1.100	Disturbance		108,000	102,000
		Subtotal (I)													3,447,000	3,283,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													134,000	127,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													1,396,000	1,330,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													50,000	47,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													75,000	71,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													1,530,000	1,458,000
		Subtotal (O = J+K+L+M+N)													3,185,000	3,033,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Installation of 2 ft Soil Cover (Without Biota Barrier)			A	2	30	0.02	/SY-YR	520,000	SY	1.000	1.000	1.000		11,000	315,000	165,000
H - Long-Term Groundwater Monitoring, Secondary Basins			A	2	30	35,000.00	/EA-YR	1	EA	1.000	1.000	1.000		37,000	1,061,000	554,000
HB - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												50,000	1,458,000	761,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												20,000	568,000	297,000
Contingency	32.5%	R = 0.325 * (P+Q)												23,000	659,000	344,000
		Subtotal (S)												42,000	1,227,000	641,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														93,000	9,316,000	7,718,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															10,200,000	8,550,000

Table B4.4-3f Cost Estimate - Secondary Basins Medium Group
Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	32,000	BCY	1.000	1.000	1.000			276,000	276,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	32,000	BCY	1.000	1.000	1.000			165,000	157,000
		Subtotal (A)													441,000	433,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													14,000	14,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													177,000	174,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													19,000	19,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													8,000	8,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													188,000	185,000
		Subtotal (G =B+C+D+E+F)													407,000	399,000
TOTAL CAPITAL COSTS (H = A+G)															847,000	832,000

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Table B4.4-3f Cost Estimate - Secondary Basins Medium Group
Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Excavation			LS	2	--	3.96	/BCY	32,000	BCY	1.000	1.000	1.000			132,000	126,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	32,000	BCY	1.000	0.500	1.000			18,000	17,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	32,000	BCY	1.000	1.000	1.000			193,000	184,000
B - Soil Excavation			LS	2	--	3.96	/BCY	140,000	BCY	1.000	1.000	1.000			579,000	552,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			237,000	226,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	140,000	BCY	1.000	1.000	1.000			503,000	479,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	170,000	BCY	1.000	1.000	1.000			339,000	323,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	170,000	BCY	1.000	1.500	1.000			232,000	221,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	170,000	BCY	1.000	1.000	1.000			304,000	289,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	500,000	SY	1.000	1.000	1.000			37,000	35,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	500,000	SY	1.000	1.000	1.100	Disturbance		103,000	99,000
		Subtotal (I)													2,678,000	2,551,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													104,000	99,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													1,085,000	1,033,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													39,000	37,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													58,000	55,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													1,189,000	1,133,000
		Subtotal (O = J+K+L+M+N)													2,475,000	2,357,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	32,000	BCY	1.000	1.000	1.000		1,000	23,000	12,000
		Subtotal (P)												1,000	23,000	12,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												300	9,000	5,000
Contingency	32.5%	R = 0.325 * (P+Q)												400	11,000	5,000
		Subtotal (S)												1,000	20,000	10,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														1,000	5,196,000	4,930,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															6,040,000	5,760,000

Table B4.4-6 Cost Estimate - Secondary Basins Medium Group
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE 0														
Mob/Demob	5.8%	B = 0.058 * (A)													0	0
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													0	0
Engineering Design	6.5%	D = 0.065 * (A+B+C)													0	0
Resident Engineering	2.8%	E = 0.028 * (A+B+C)													0	0
Contingency	40.0%	F = 0.400 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.4-6 Cost Estimate - Secondary Basins Medium Group
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
HB - Excavation of Dike Materials			LS	1	--	3.96	/BCY	100,000	BCY	1.000	1.000	1.000		414,000	414,000
HB - Backfill with Dike Material			LS	1	--	3.63	/BCY	100,000	BCY	1.000	1.000	1.000		379,000	379,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	500,000	SY	1.000	1.000	1.000		31,000	31,000
HB - Excavation of Borrow Material			LS	1	--	1.91	/BCY	2,700,000	BCY	1.000	1.000	1.000		5,389,000	5,389,000
HB - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	2,700,000	BCY	1.000	1.500	1.000		3,682,000	3,682,000
HB - Backfill with Borrow Material			LS	1	--	1.71	/BCY	2,700,000	BCY	1.000	1.000	1.000		4,825,000	4,825,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	520,000	SY	1.000	1.000	1.000		10,330,000	10,330,000
HB - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	500,000	SY	1.000	1.000	1.100 Disturbance		103,000	103,000
		Subtotal (I)												25,154,000	25,154,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS												
Mob/Demob	3.9%	J = 0.039 * (I)												975,000	975,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												10,190,000	10,190,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												363,000	363,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)												545,000	545,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)												11,168,000	11,168,000
		Subtotal (O = J+K+L+M+N)												23,241,000	23,241,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	500,000	SY	1.000	1.000	1.000	37,000	1,061,000	554,000
H - Long-Term Groundwater Monitoring, Secondary Basins			A	2	30	35,000.00	/EA-YR	1	EA	1.000	1.000	1.000	37,000	1,061,000	554,000
HB - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000	3,000	82,000	43,000
		Subtotal (P)											76,000	2,203,000	1,150,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL												
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											30,000	859,000	449,000
Contingency	32.5%	R = 0.325 * (P+Q)											34,000	995,000	520,000
		Subtotal (S)											64,000	1,855,000	968,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]													140,000	52,452,000	50,513,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)														52,500,000	50,500,000

Table B4.4-13a Cost Estimate - Secondary Basins Medium Group
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	320	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	320	BCY	1.000	1.000	1.000			2,000	1,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	140,000	BCY	1.000	1.000	1.000			1,208,000	1,151,000
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	140,000	BCY	1.000	1.000	1.000			720,000	653,000
		Subtotal (A)													1,933,000	1,808,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													63,000	59,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													778,000	728,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													83,000	78,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													35,000	32,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													824,000	771,000
		Subtotal (G = B+C+D+E+F)													1,783,000	1,668,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	32,000	BCY	1.000	1.000	1.000			587,000	573,000
		Subtotal (A1)													587,000	573,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													12,000	11,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													60,000	58,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													59,000	58,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													20,000	19,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													221,000	216,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													372,000	363,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															4,674,000	4,412,000

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Table B4.4-13a Cost Estimate - Secondary Basins Medium Group
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Excavation			LS	3	--	3.96	/BCY	32,000	BCY	1.000	1.000	1.000			132,000	120,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	32,000	BCY	1.000	1.500	1.000			54,000	49,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	320	BCY	1.000	1.000	1.000			1,000	500
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	320	BCY	1.000	1.000	1.000			400	300
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	320	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	32,000	BCY	1.000	1.000	1.000			43,000	39,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	32,000	BCY	1.000	1.500	1.000			44,000	40,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	52,000
B - Soil Excavation			LS	3	--	3.96	/BCY	140,000	BCY	1.000	1.000	1.000			579,000	525,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	140,000	BCY	1.000	1.000	1.000			158,000	143,000
B - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	140,000	BCY	1.000	0.500	1.000			423,000	383,000
B - Excavation of Borrow Material			LS	3	--	1.91	/BCY	140,000	BCY	1.000	1.000	1.000			279,000	253,000
B - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			191,000	173,000
B - Backfill with Borrow Material			LS	3	--	1.71	/BCY	140,000	BCY	1.000	1.000	1.000			250,000	227,000
HB - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	500,000	SY	1.000	1.000	1.000			37,000	33,000
HB - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	500,000	SY	1.000	1.000	1.100	Disturbance		103,000	94,000
		Subtotal (I)													2,354,000	2,135,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMMS														
Mob/Demob	4.5%	J = 0.045 * (I)													106,000	96,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													959,000	870,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													60,000	54,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													60,000	54,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													1,106,000	1,003,000
		Subtotal (O = J+K+L+M+N)													2,291,000	2,078,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	32,000	BCY	1.000	1.000	1.000			1,492,000	1,353,000
		Subtotal (I1)													1,492,000	1,353,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													149,000	135,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													33,000	30,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													670,000	607,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													851,000	772,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															6,988,000	6,339,000

Table B4.4-13a Cost Estimate - Secondary Basins Medium Group
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	320	BCY	1.000	1.000	1.000		10	200	100
B - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	140,000	BCY	1.000	1.000	1.000		4,000	98,000	50,000
		Subtotal (P)												4,000	99,000	50,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	38,000	19,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	45,000	23,000
		Subtotal (S = Q+R)												3,000	83,000	42,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														6,000	181,000	92,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															11,800,000	10,800,000

Table B4.4-19a Cost Estimate - Secondary Basins Medium Group
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	140,000	BCY	1.000	1.000	1.000			1,208,000	1,208,000
B - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	140,000	BCY	1.000	1.000	1.000			720,000	686,000
		Subtotal (A)													1,928,000	1,894,000
INDIRECT CAPITAL COSTS		COST CODE: 0														
Mob/Demob	5.8%	B = 0.058 * (A)													111,000	109,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													795,000	781,000
Engineering Design	6.5%	D = 0.065 * (A+B+C)													184,000	181,000
Resident Engineering	2.8%	E = 0.028 * (A+B+C)													78,000	77,000
Contingency	40.0%	F = 0.400 * (A+B+C+D+E)													1,239,000	1,217,000
		Subtotal (G = B+C+D+E+F)													2,407,000	2,364,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep			LS	1	--	7,959,000.00	/UNIT	1	UNIT	1.000	1.000	1.000			8,317,000	8,317,000
		Subtotal (A1)													8,317,000	8,317,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													166,000	166,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													509,000	509,000
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													1,079,000	1,079,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													135,000	135,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,062,000	3,062,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,951,000	4,951,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															17,604,000	17,527,000

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Table B4.4-19a Cost Estimate - Secondary Basins Medium Group
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
B - Soil Excavation			LS	2	--	3.96	/BCY	140,000	BCY	1.000	1.000	1.000			579,000	552,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	140,000	BCY	1.000	0.500	1.000			79,000	75,000
B - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	140,000	BCY	1.000	1.000	1.000			846,000	805,000
B - Excavation of Borrow Material			LS	2	--	1.91	/BCY	140,000	BCY	1.000	1.000	1.000			279,000	266,000
B - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			191,000	182,000
B - Backfill with Borrow Material			LS	2	--	1.71	/BCY	140,000	BCY	1.000	1.000	1.000			250,000	238,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	500,000	SY	1.000	1.000	1.000			37,000	35,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	500,000	SY	1.000	1.000	1.100	Disturbance		103,000	99,000
		Subtotal (I)													2,365,000	2,252,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: LLSM														
Mob/Demob	3.3%	J = 0.033 * (I)													77,000	73,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													952,000	907,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													34,000	32,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													51,000	48,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													1,044,000	994,000
		Subtotal (O = J+K+L+M+N)													2,157,000	2,055,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep			LS	2	--	205.02	/BCY	32,000	BCY	1.000	1.000	1.000			6,856,000	6,529,000
		Subtotal (I1)													6,856,000	6,529,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													411,000	392,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													36,000	35,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													73,000	69,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													2,950,000	2,810,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													3,471,000	3,306,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															14,849,000	14,141,000

Table B4.4-19a Cost Estimate - Secondary Basins Medium Group
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
		Subtotal (P)												0	0	0
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: 0														
Indirects, Overhead & Profit	0.0%	Q = 0.000 * (P)												0	0	0
Contingency	0.0%	R = 0.000 * (P+Q)												0	0	0
		Subtotal (S = Q+R)												0	0	0
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														0	0	0
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															32,500,000	31,700,000

Table B4.5-1 Cost Estimate - Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	0	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.5-1 Cost Estimate - Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	0	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												3,000	85,000	45,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	33,000	17,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	38,000	20,000
		Subtotal (S)												2,000	71,000	38,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														5,000	156,000	83,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															156,000	82,600

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Table B4.5-2 Cost Estimate - Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
		Subtotal (A)													2,000	2,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													30	30
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G =B+C+D+E+F)													2,000	2,000
TOTAL CAPITAL COSTS (H = A+G)															3,000	3,000

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Table B4.5-2 Cost Estimate - Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Sewer Signs			LS	1	--	0.10	/LF	124,000	LF	1.000	1.000	2.000	Spacing		27,000	27,000
H - Plugging of Manholes			LS	1	--	96.09	/BCY	1,130	CY	1.000	1.000	1.000			113,000	113,000
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
		Subtotal (I)													158,000	150,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MMSS													
Mob/Demob	4.5%	J = 0.045 * (I)													7,000	7,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													66,000	63,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													4,000	4,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													4,000	4,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													75,000	71,000
		Subtotal (O = J+K+L+M+N)													157,000	148,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Sewer Signs			A	1	30	0.0052	/LF	124,000	LF	1.000	1.000	2.000	Spacing	1,000	40,000	21,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												4,000	125,000	66,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	49,000	26,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	57,000	30,000
		Subtotal (S)												4,000	105,000	56,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														8,000	545,000	420,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															549,000	423,000

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Table B4.5-3 Cost Estimate - Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	–	8.26	/BCY	12,000	BCY	1.000	1.000	1.000			104,000	104,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	–	4.92	/BCY	12,000	BCY	1.000	1.000	1.000			62,000	59,000
		Subtotal (A)													165,000	162,000
INDIRECT CAPITAL COSTS		COST CODE	LLSS													
Mob/Demob	3.3%	B = 0.033 * (A)													5,000	5,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													67,000	65,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													7,000	7,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													3,000	3,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													70,000	69,000
		Subtotal (G =B+C+D+E+F)													152,000	150,000
TOTAL CAPITAL COSTS (H = A+G)															318,000	312,000

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Table B4.5-3 Cost Estimate - Sewer Systems Medium Group - Sanitary/Process Water Sewers Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
H - Excavation of Sewer Overburden	LS	1	--	1.52	/BCY	280,000	BCY	1.000	1.000	1.000			445,000	445,000
H - Removal of Steel/Cast Iron Pipe	LS	2	--	15.05	/LF	94,600	LF	1.000	1.000	1.000			1,488,000	1,417,000
H - Sewer Excavation	LS	2	--	3.87	/BCY	11,000	BCY	1.000	1.000	1.000			44,000	42,000
H - Excavate, Demolish and Load Plugged Manholes	LS	2	--	1,300.72	/MH	34	MH	1.000	1.000	1.000			46,000	44,000
H - Excavate, Demolish and Load Manholes	LS	2	--	865.36	/EA	194	MH	1.000	1.000	1.000			175,000	167,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	2	--	1.08	/BCY-MILE	12,000	BCY	1.000	3.000	1.000			41,000	39,000
H - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	12,000	BCY	1.000	1.000	1.000			72,000	69,000
H - Excavation of Borrow Material	LS	2	--	1.91	/BCY	12,000	BCY	1.000	1.000	1.000			24,000	23,000
H - Transportation of Borrow Material to Backfill Area	LS	2	--	0.87	/BCY-MILE	12,000	BCY	1.000	3.000	1.000			33,000	31,000
H - Backfill Sewers with Borrow Material	LS	2	--	1.58	/BCY	12,000	BCY	1.000	1.000	1.000			20,000	19,000
H - Backfill of Sewer Overburden	LS	2	--	1.58	/BCY	280,000	BCY	1.000	1.000	1.000			462,000	440,000
H - Revegetation of Disturbed Areas	LS	2	--	0.18	/SY	140,000	SY	1.000	1.000	1.100	Disturbance		29,000	28,000
Subtotal (I)													2,880,000	2,764,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE	MLMS												
Mob/Demob 3.9%	J = 0.039 * (I)												112,000	107,000
Indirects, Overhead & Profit 39.0%	K = 0.390 * (I+J)												1,167,000	1,120,000
Engineering Design 1.0%	L = 0.010 * (I+J+K)												42,000	40,000
Resident Engineering 1.5%	M = 0.015 * (I+J+K)												62,000	60,000
Contingency 30.0%	N = 0.300 * (I+J+K+L+M)												1,278,000	1,227,000
Subtotal (O = J+K+L+M+N)													2,661,000	2,553,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure	A	2	30	0.0240	/BCY-YR	12,000	BCY	1.000	1.000	1.000		300	9,000	5,000
Subtotal (P)												300	9,000	5,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI	COST CODE	LLSL												
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											100	3,000	2,000
Contingency 32.5%	R = 0.325 * (P+Q)											100	4,000	2,000
Subtotal (S)												300	7,000	4,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]												1,000	5,556,000	5,325,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)													5,870,000	5,640,000

Table B4.6-1 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	100,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	320,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.6-1 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	100,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	320,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Soil Monitoring, Chemical Sewers			A	1	30	30,000.00	/EA-YR	1	EA	1.000	1.000	1.000		31,000	941,000	498,000
H - Long-Term Groundwater Monitoring, Chemical Sewers			A	1	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,160,000	615,000
HA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												73,000	2,185,000	1,158,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												28,000	852,000	452,000
Contingency	32.5%	R = 0.325 * (P+Q)												33,000	987,000	523,000
		Subtotal (S)												61,000	1,839,000	975,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														134,000	4,024,000	2,133,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,020,000	2,130,000

Table B4.6-1a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action (Limited)			LS	1	--	0.00	/SY	100,000	SY	1.000	1.000	1.000			0	0
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	470	BCY	1.000	1.000	1.000			4,000	4,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	470	BCY	1.000	1.000	1.000			2,000	2,000
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250	BCY	1.000	1.000	1.000			2,000	2,000
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													10,000	9,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													300	300
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													4,000	4,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													400	400
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													200	200
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													4,000	4,000
		Subtotal (G = B+C+D+E+F)													9,000	9,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	47,000	BCY	1.000	1.000	1.000			862,000	841,000
AP - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	250	BCY	1.000	1.000	1.000			42,000	40,000
		Subtotal (A1)													904,000	881,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													18,000	18,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													92,000	90,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													91,000	89,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													30,000	30,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													341,000	332,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													573,000	558,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,495,000	1,457,000

Table B4.6-1a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	3	--	0.30	/BCY	47,000	BCY	1.000	1.000	1.000			15,000	13,000
H - No Action (Limited)		LS	1	--	0.00	/SY	100,000	SY	1.000	1.000	1.000			0	0
H - Excavation of Sewer Overburden		LS	3	--	1.52	/BCY	120,000	BCY	1.000	1.000	1.000			191,000	173,000
HA - Removal of Steel/Cast Iron Pipe		LS	3	--	25.59	/LF	2,100	LF	1.000	1.000	1.040	Odor Control		58,000	53,000
HA - Excavate Chemical Sewers		LS	3	--	7.33	/BCY	47,000	BCY	1.000	1.000	1.040	Odor Control		374,000	340,000
HA - Transportation of Chemical Sewers to Thermal Desorbtion Unit		LS	3	--	1.06	/BCY-MILE	47,000	BCY	1.000	1.500	1.000			78,000	71,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	470	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	470	BCY	1.000	1.000	1.000			1,000	500
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	470	BCY	1.000	1.000	1.000			3,000	3,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	3	--	1.29	/BCY	47,000	BCY	1.000	1.000	1.000			63,000	57,000
H - Transportation of Treated Soil to Backfill Excavation		LS	3	--	0.87	/BCY-MILE	47,000	BCY	1.000	1.500	1.000			64,000	58,000
HA - Backfill of Treated Soil for Chemical Sewers		LS	3	--	1.58	/BCY	47,000	BCY	1.000	1.000	1.000			78,000	70,000
H - Backfill of Sewer Overburden		LS	3	--	1.58	/BCY	120,000	BCY	1.000	1.000	1.000			198,000	180,000
H - Revegetation of Disturbed Areas		LS	3	--	0.18	/SY	49,000	SY	1.000	1.000	1.100	Disturbance		10,000	9,000
AP-No Action (Limited)		LS	1	--	0.00	/SY	320,000	SY	1.000	1.000	1.000			0	0
AP - Excavation of Soil with Agent		LS	3	--	4.61	/BCY	250	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
AP - Transportation of Contaminated Soil to Soil Washing Unit		LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.500	1.000			400	400
AP - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	250	BCY	1.000	1.000	1.000			400	400
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste L		LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.000	1.000			300	300
AP - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	250	BCY	1.000	1.000	1.000			2,000	1,000
	Subtotal (I)													1,138,000	1,032,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMMS														
Mob/Demob	5.1% J = 0.051 * (I)													58,000	53,000
Indirects, Overhead & Profit	40.3% K = 0.403 * (I+J)													481,000	437,000
Engineering Design	1.8% L = 0.018 * (I+J+K)													29,000	27,000
Resident Engineering	2.0% M = 0.020 * (I+J+K)													34,000	30,000
Contingency	33.8% N = 0.338 * (I+J+K+L+M)													587,000	533,000
	Subtotal (O = J+K+L+M+N)													1,190,000	1,079,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Saturated Soil)		LS	3	--	76.00	/BCY	47,000	BCY	1.010	1.000	1.000			3,770,000	3,420,000
AP - Caustic Washing of Agent Soil		LS	3	--	273.50	/BCY	250	BCY	1.000	1.000	1.000			71,000	65,000
	Subtotal (I1)													3,842,000	3,484,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0% J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													384,000	348,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													85,000	77,000
Contingency	40.0% N1 = 0.400 * (I1+J1+K1+L1+M1)													1,724,000	1,564,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													2,193,000	1,989,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														8,362,000	7,584,000

Table B4.6-1a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)													
H - On-Post Hazardous Waste Landfill Closure (Particulates)	A	3	30	0.02	/BCY-YR	470	BCY	1.000	1.000	1.000	10	300	200
H - Long-Term Groundwater Monitoring, Chemical Sewers	A	3	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000	39,000	1,083,000	549,000
H - Long Term Soil Monitoring, Chemical Sewers	A	3	30	30,000.00	/EA-YR	1	EA	1.000	1.000	1.000	31,000	878,000	445,000
HA - Site Reviews	A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000	3,000	79,000	40,000
AP - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	250	BCY	1.000	1.000	1.000		200	100
Subtotal (P)											73,000	2,040,000	1,034,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI COST CODE: LLSL													
Indirects, Overhead & Profit 39.0% Q = 0.390 * (P)											28,000	796,000	403,000
Contingency 32.5% R = 0.325 * (P+Q)											33,000	922,000	467,000
Subtotal (S = Q+R)											61,000	1,717,000	870,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)											134,000	3,757,000	1,904,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)												13,600,000	10,900,000

Table B4.6-2 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
		Subtotal (A)													2,000	2,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													30	30
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G =B+C+D+E+F)													2,000	2,000
TOTAL CAPITAL COSTS (H = A+G)															3,000	3,000

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Table B4.6-2 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Plugging of Sewer Lines			LS	1	--	174.00	/CY	970	CY	1.000	1.000	1.000			176,000	176,000
H - Sewer Signs			LS	1	--	0.10	/LF	87,000	LF	1.000	1.000	2.000	Spacing		19,000	19,000
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
		Subtotal (I)													213,000	205,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MMSS													
Mob/Demob	4.5%	J = 0.045 * (I)													10,000	9,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													90,000	86,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													5,000	5,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													5,000	5,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													101,000	97,000
		Subtotal (O = J+K+L+M+N)													211,000	203,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Sewer Signs			A	1	30	0.01	/LF	87,000	LF	1.000	1.000	2.000	Spacing	1,000	28,000	15,000
H - Long-Term Groundwater Monitoring, Chemical Sewers			A	1	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,160,000	615,000
H - Long Term Soil Monitoring, Chemical Sewers			A	1	30	30,000.00	/EA-YR	1	EA	1.000	1.000	1.000		31,000	941,000	498,000
HA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												74,000	2,213,000	1,173,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												29,000	863,000	457,000
Contingency	32.5%	R = 0.325 * (P+Q)												33,000	1,000,000	530,000
		Subtotal (S)												62,000	1,863,000	987,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														136,000	4,501,000	2,568,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,500,000	2,570,000

Table B4.6-2a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup

Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	470	BCY	1.000	1.000	1.000			4,000	4,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	470	BCY	1.000	1.000	1.000			2,000	2,000
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250	BCY	1.000	1.000	1.000			2,000	2,000
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													12,000	11,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													400	400
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													5,000	4,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													1,000	500
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													200	200
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													5,000	5,000
		Subtotal (G = B+C+D+E+F)													11,000	10,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	47,000	BCY	1.000	1.000	1.000			862,000	841,000
AP - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	250	BCY	1.000	1.000	1.000			42,000	40,000
		Subtotal (A1)													904,000	881,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													18,000	18,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													92,000	90,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													91,000	89,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													30,000	30,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													341,000	332,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													573,000	558,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,499,000	1,461,000

Table B4.6-2a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
H - Excavation of Sewer Overburden	LS	3	--	1.52	/BCY	120,000	BCY	1.000	1.000	1.000			191,000	173,000
AP - Agent Screening During Excavation	LS	3	--	0.30	/BCY	47,000	BCY	1.000	1.000	1.000			15,000	13,000
HA - Removal of Steel/Cast Iron Pipe	LS	3	--	25.59	/LF	2,100	LF	1.000	1.000	1.040	Odor Control		58,000	53,000
HA - Excavate Chemical Sewers	LS	3	--	7.33	/BCY	47,000	BCY	1.000	1.000	1.040	Odor Control		374,000	340,000
HA - Transportation of Chemical Sewers to Thermal Desorbtion Unit	LS	3	--	1.06	/BCY-MILE	47,000	BCY	1.000	1.500	1.000			78,000	71,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	470	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	470	BCY	1.000	1.000	1.000			1,000	500
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	470	BCY	1.000	1.000	1.000			3,000	3,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	47,000	BCY	1.000	1.000	1.000			63,000	57,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	47,000	BCY	1.000	1.500	1.000			64,000	58,000
HA - Backfill of Treated Soil for Chemical Sewers	LS	3	--	1.58	/BCY	47,000	BCY	1.000	1.000	1.000			78,000	70,000
H - Backfill of Sewer Overburden	LS	3	--	1.58	/BCY	120,000	BCY	1.000	1.000	1.000			198,000	180,000
H - Revegetation of Disturbed Areas	LS	3	--	0.18	/SY	49,000	SY	1.000	1.000	1.100	Disturbance		10,000	9,000
H - Plugging of Sewer Lines	LS	1	--	174.00	/CY	510	CY	1.000	1.000	1.000			93,000	93,000
H - Sewer Signs	LS	1	--	0.10	/LF	87,000	LF	1.000	1.000	2.000	Spacing		19,000	19,000
H - Public Education	A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
AP - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	250	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
AP - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.500	1.000			400	400
AP - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	250	BCY	1.000	1.000	1.000			400	400
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste L	LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.000	1.000			300	300
AP - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	250	BCY	1.000	1.000	1.000			2,000	1,000
Subtotal (I)													1,267,000	1,153,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMMS													
Mob/Demob 5.1%	J = 0.051 * (I)												65,000	59,000
Indirects, Overhead & Profit 40.3%	K = 0.403 * (I+J)												536,000	488,000
Engineering Design 1.8%	L = 0.018 * (I+J+K)												33,000	30,000
Resident Engineering 2.0%	M = 0.020 * (I+J+K)												37,000	34,000
Contingency 33.8%	N = 0.338 * (I+J+K+L+M)												654,000	595,000
Subtotal (O = J+K+L+M+N)													1,325,000	1,206,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Thermal Desorption (Saturated Soil)	LS	3	--	76.00	/BCY	47,000	BCY	1.010	1.000	1.000			3,770,000	3,420,000
AP - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	250	BCY	1.000	1.000	1.000			71,000	65,000
Subtotal (I1)													3,842,000	3,484,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D													
Mob/Demob 0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup 10.0%	K1 = 0.100 * (I1+J1)												384,000	348,000
Engineering Design 0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering 2.0%	M1 = 0.020 * (I1+J1+K1)												85,000	77,000
Contingency 40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												1,724,000	1,564,000
Subtotal (O1 = J1+K1+L1+M1+N1)													2,193,000	1,989,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													8,626,000	7,832,000

Table B4.6-2a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 2a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	470	BCY	1.000	1.000	1.000		10	300	200
H - Sewer Signs			A	1	30	0.01	/LF	87,000	LF	1.000	1.000	2.000	Spacing	1,000	28,000	15,000
H - Long-Term Groundwater Monitoring, Chemical Sewers			A	3	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,083,000	549,000
H - Long Term Soil Monitoring, Chemical Sewers			A	3	30	30,000.00	/EA-YR	1	EA	1.000	1.000	1.000		31,000	878,000	445,000
HA - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
AP - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	250	BCY	1.000	1.000	1.000			200	100
		Subtotal (P)												74,000	2,068,000	1,049,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												29,000	807,000	409,000
Contingency	32.5%	R = 0.325 * (P+Q)												33,000	934,000	474,000
		Subtotal (S = Q+R)												62,000	1,741,000	883,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														136,000	3,809,000	1,932,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															13,900,000	11,200,000

Table B4.6-3 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	82,000	BCY	1.000	1.000	1.000			708,000	708,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	82,000	BCY	1.000	1.000	1.000			422,000	402,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	250	BCY	1.000	1.000	1.000			2,000	2,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	250	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													1,133,000	1,113,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													37,000	36,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													456,000	448,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													49,000	48,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													20,000	20,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													483,000	474,000
		Subtotal (G = B+C+D+E+F)													1,045,000	1,027,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	250	BCY	1.000	1.000	1.000			42,000	42,000
		Subtotal (A1)													42,000	42,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													2,000	2,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													4,000	4,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													2,000	2,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													15,000	15,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													25,000	25,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,244,000	2,206,000

Table B4.6-3 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Excavation of Sewer Overburden		LS	2	--	1.52	/BCY	340,000	BCY	1.000	1.000	1.000			540,000	514,000
HA - Removal of Steel/Cast Iron Pipe		LS	2	--	25.59	/LF	15,100	LF	1.000	1.000	1.040	Odor Control		420,000	400,000
A - Agent Screening During Excavation		LS	2	--	0.30	/BCY	82,000	BCY	1.000	1.000	1.000			26,000	24,000
HA - Excavate Chemical Sewers		LS	2	--	7.33	/BCY	82,000	BCY	1.000	1.000	1.040	Odor Control		653,000	622,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			139,000	132,000
H - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	82,000	BCY	1.000	1.000	1.000			495,000	472,000
H - Excavation of Borrow Material		LS	2	--	1.91	/BCY	82,000	BCY	1.000	1.000	1.000			164,000	156,000
H - Transportation of Borrow Material to Backfill Area		LS	2	--	0.87	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			112,000	107,000
H - Backfill with Borrow Material		LS	2	--	1.71	/BCY	82,000	BCY	1.000	1.000	1.000			147,000	140,000
H - Backfill of Sewer Overburden		LS	2	--	1.58	/BCY	340,000	BCY	1.000	1.000	1.000			561,000	535,000
H - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	100,000	SY	1.000	1.000	1.100	Disturbance		21,000	20,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	250	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	250	BCY	1.000	1.500	1.000			400	400
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	250	BCY	1.000	1.000	1.000			400	400
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	250	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	250	BCY	1.000	1.000	1.000			2,000	1,000
	Subtotal (I)													3,281,000	3,125,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS													
Mob/Demob	5.1%	J = 0.051 * (I)												168,000	160,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)												1,388,000	1,322,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)												85,000	81,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)												97,000	92,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)												1,694,000	1,613,000
	Subtotal (O = J+K+L+M+N)													3,432,000	3,268,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
A - Caustic Washing of Agent Soil		LS	3	--	273.50	/BCY	250	BCY	1.000	1.000	1.000			71,000	65,000
	Subtotal (I1)													71,000	65,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F													
Mob/Demob	5.0%	J1 = 0.050 * (I1)												4,000	3,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												8,000	7,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												2,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												25,000	23,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													38,000	34,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														6,822,000	6,492,000

Table B4.6-3 Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	82,000	BCY	1.000	1.000	1.000		2,000	60,000	31,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	250	BCY	1.000	1.000	1.000		10	200	100
		Subtotal (P)												2,000	60,000	31,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	23,000	12,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	27,000	14,000
		Subtotal (S = Q+R)												2,000	50,000	26,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														4,000	110,000	58,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															9,180,000	8,760,000

Table B4.6-3a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	470	BCY	1.000	1.000	1.000			4,000	4,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	470	BCY	1.000	1.000	1.000			2,000	2,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	82,000	BCY	1.000	1.000	1.000			708,000	674,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	82,000	BCY	1.000	1.000	1.000			422,000	382,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250	BCY	1.000	1.000	1.000			2,000	2,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													1,139,000	1,066,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													37,000	35,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													459,000	429,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													49,000	46,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													20,000	19,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													486,000	454,000
		Subtotal (G = B+C+D+E+F)													1,051,000	983,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	47,000	BCY	1.000	1.000	1.000			862,000	841,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	250	BCY	1.000	1.000	1.000			42,000	40,000
		Subtotal (A1)													904,000	881,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													18,000	18,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													92,000	90,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													91,000	89,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													30,000	30,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													341,000	332,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													573,000	558,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															3,666,000	3,488,000

Table B4.6-3a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	LS	3	--	0.30	/BCY	82,000	BCY	1.000	1.000	1.000			26,000	23,000
H - Excavation of Sewer Overburden	LS	3	--	1.52	/BCY	340,000	BCY	1.000	1.000	1.000			540,000	490,000
HA - Removal of Steel/Cast Iron Pipe	LS	3	--	25.59	/LF	15,100	LF	1.000	1.000	1.040	Odor Control		420,000	381,000
HA - Excavate Chemical Sewers	LS	3	--	7.33	/BCY	82,000	BCY	1.000	1.000	1.040	Odor Control		653,000	593,000
HA - Transportation of Chemical Sewers to Thermal Desorbtion Unit	LS	3	--	1.06	/BCY-MILE	47,000	BCY	1.000	1.500	1.000			78,000	71,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	470	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	470	BCY	1.000	1.000	1.000			1,000	500
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	470	BCY	1.000	1.000	1.000			3,000	3,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	47,000	BCY	1.000	1.000	1.000			77,000	69,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	47,000	BCY	1.000	1.000	1.000			53,000	48,000
H - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	47,000	BCY	1.000	1.000	1.000			284,000	257,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	35,000	BCY	1.000	1.000	1.000			40,000	36,000
H - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	35,000	BCY	1.000	1.000	1.000			211,000	192,000
H - Excavation of Borrow Material	LS	3	--	1.91	/BCY	82,000	BCY	1.000	1.000	1.000			164,000	148,000
H - Transportation of Borrow Material to Backfill Area	LS	3	--	0.87	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			112,000	101,000
H - Backfill with Borrow Material	LS	3	--	1.71	/BCY	82,000	BCY	1.000	1.000	1.000			147,000	133,000
H - Backfill of Sewer Overburden	LS	3	--	1.58	/BCY	340,000	BCY	1.000	1.000	1.000			561,000	509,000
H - Revegetation of Disturbed Areas	LS	3	--	0.18	/SY	100,000	SY	1.000	1.000	1.100	Disturbance		21,000	19,000
A - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	250	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.500	1.000			400	400
A - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	250	BCY	1.000	1.000	1.000			400	400
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	250	BCY	1.000	1.000	1.000			2,000	1,000
Subtotal (I)													3,394,000	3,078,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS												
Mob/Demob	5.1%	J = 0.051 * (I)											174,000	158,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)											1,436,000	1,302,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)											88,000	79,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)											100,000	91,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)											1,752,000	1,589,000
Subtotal (O = J+K+L+M+N)													3,549,000	3,219,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Thermal Desorption (Saturated Soil)	LS	3	--	76.00	/BCY	47,000	BCY	1.010	1.000	1.000			3,770,000	3,420,000
A - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	250	BCY	1.000	1.000	1.000			71,000	65,000
Subtotal (II)													3,842,000	3,484,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D												
Mob/Demob	0.0%	J1 = 0.000 * (II)											0	0
Contractor Markup	10.0%	K1 = 0.100 * (II+J1)											384,000	348,000
Engineering Design	0.0%	L1 = 0.000 * (II+J1+K1)											0	0
Resident Engineering	2.0%	M1 = 0.020 * (II+J1+K1)											85,000	77,000
Contingency	40.0%	N1 = 0.400 * (II+J1+K1+L1+M1)											1,724,000	1,564,000
Subtotal (O1 = J1+K1+L1+M1+N1)													2,193,000	1,989,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+II+O1)													12,977,000	11,771,000

Table B4.6-3a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	470	BCY	1.000	1.000	1.000		10	300	200
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	82,000	BCY	1.000	1.000	1.000		2,000	58,000	29,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	250	BCY	1.000	1.000	1.000		10	200	100
		Subtotal (P)												2,000	58,000	29,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	23,000	11,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	26,000	13,000
		Subtotal (S = Q+R)												2,000	49,000	25,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														4,000	107,000	54,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															16,800,000	15,300,000

Table B4.6-3e Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3e: Access Restrictions (Modifications to FFA); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	62,000	BCY	1.000	1.000	1.000			535,000	535,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	62,000	BCY	1.000	1.000	1.000			319,000	304,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	190	BCY	1.000	1.000	1.000			2,000	2,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	190	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													857,000	841,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													28,000	27,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													345,000	339,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													37,000	36,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													15,000	15,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													365,000	359,000
		Subtotal (G = B+C+D+E+F)													790,000	776,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	190	BCY	1.000	1.000	1.000			32,000	32,000
		Subtotal (A1)													32,000	32,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													2,000	2,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													3,000	3,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													2,000	2,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													12,000	12,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													19,000	19,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,697,000	1,668,000

Table B4.6-3e Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3e: Access Restrictions (Modifications to FFA); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	2	--	0.30	/BCY	62,000	BCY	1.000	1.000	1.000			19,000	19,000
H - Excavation of Sewer Overburden			LS	2	--	1.52	/BCY	260,000	BCY	1.000	1.000	1.000			413,000	393,000
HA - Removal of Steel/Cast Iron Pipe			LS	2	--	25.59	/LF	11,000	LF	1.000	1.000	1.040	Odor Control		306,000	291,000
H - Plugging of Sewer Lines			LS	2	--	174.00	/CY	240	BCY	1.000	1.000	1.000			44,000	42,000
HA - Excavate Chemical Sewers			LS	2	--	7.33	/BCY	62,000	BCY	1.000	1.000	1.040	Odor Control		494,000	470,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	62,000	BCY	1.000	1.500	1.000			105,000	100,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	62,000	BCY	1.000	1.000	1.000			374,000	357,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	62,000	BCY	1.000	1.000	1.000			124,000	118,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	62,000	BCY	1.000	1.500	1.000			85,000	81,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	62,000	BCY	1.000	1.000	1.000			111,000	106,000
H - Backfill of Sewer Overburden			LS	2	--	1.58	/BCY	260,000	BCY	1.000	1.000	1.000			429,000	409,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	75,000	SY	1.000	1.000	1.100	Disturbance		16,000	15,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	190	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	190	BCY	1.000	1.500	1.000			300	300
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	190	BCY	1.000	1.000	1.000			300	300
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	190	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	190	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (I)													2,522,000	2,402,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS														
Mob/Demob	5.1%	J = 0.051 * (I)													129,000	123,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													1,067,000	1,016,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													65,000	62,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													74,000	71,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													1,302,000	1,240,000
		Subtotal (O = J+K+L+M+N)													2,638,000	2,512,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	190	BCY	1.000	1.000	1.000			54,000	49,000
		Subtotal (I1)													54,000	49,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													3,000	2,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													6,000	5,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													1,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													19,000	17,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													29,000	26,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															5,243,000	4,990,000

Table B4.6-3e Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 3e: Access Restrictions (Modifications to FFA); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	62,000	BCY	1.000	1.000	1.000		2,000	45,000	24,000
H - Long-Term Groundwater Monitoring, Chemical Sewers			A	2	30	37,000.00	/EA-YR	1	EA	1.000	1.000	1.000		39,000	1,121,000	585,000
H - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	190	BCY	1.000	1.000	1.000		5	100	100
		Subtotal (P)												43,000	1,248,000	652,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												17,000	487,000	254,000
Contingency	32.5%	R = 0.325 * (P+Q)												19,000	564,000	294,000
		Subtotal (S = Q+R)												36,000	1,051,000	549,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														79,000	2,299,000	1,200,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															9,240,000	7,860,000

Table B4.6-8a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 8a: Direct Soil Washing (Solvent Washing)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	250	BCY	1.000	1.000	1.000			2,000	2,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	250	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													3,000	3,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													100	100
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G = B+C+D+E+F)													3,000	3,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Solvent Washing			LS	2	--	35.50	/BCY	82,000	BCY	1.000	1.000	1.000			3,042,000	2,897,000
A - Solvent/Caustic Washing of Agent Soil			LS	2	--	35.50	/BCY	250	BCY	1.000	1.000	1.000			9,000	9,000
		Subtotal (A1)													3,051,000	2,906,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													153,000	145,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													320,000	305,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													159,000	151,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													70,000	67,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,126,000	1,072,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													1,828,000	1,741,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															4,886,000	4,653,000

Table B4.6-8a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 8a: Direct Soil Washing (Solvent Washing)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Excavation of Sewer Overburden		LS	1	--	1.52	/BCY	340,000	BCY	1.000	1.000	1.000			540,000	540,000
HA - Removal of Steel/Cast Iron Pipe		LS	2	--	25.59	/LF	15,100	LF	1.000	1.000	1.040	Odor Control		420,000	400,000
A - Agent Screening During Excavation		LS	2	--	0.30	/BCY	82,000	BCY	1.000	1.000	1.000			26,000	24,000
HA - Excavate Chemical Sewers		LS	2	--	7.33	/BCY	82,000	BCY	1.000	1.000	1.040	Odor Control		653,000	622,000
HA - Transportation of Chemical Sewers to Soil Washing Unit		LS	2	--	1.06	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			136,000	130,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	2	--	1.29	/BCY	82,000	BCY	1.000	1.000	1.000			111,000	105,000
H - Transportation of Treated Soil to Backfill Excavation		LS	2	--	0.87	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			112,000	107,000
HA - Backfill of Treated Soil for Chemical Sewers		LS	2	--	1.58	/BCY	82,000	BCY	1.000	1.000	1.000			135,000	129,000
H - Backfill of Sewer Overburden		LS	2	--	1.58	/BCY	340,000	BCY	1.000	1.000	1.000			561,000	535,000
H - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	100,000	SY	1.000	1.000	1.100	Disturbance		21,000	20,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	250	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	250	BCY	1.000	1.500	1.000			400	400
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	250	BCY	1.000	1.000	1.000			400	400
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	250	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	250	BCY	1.000	1.000	1.000			2,000	1,000
	Subtotal (I)													2,719,000	2,615,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS													
Mob/Demob	5.1%	J = 0.051 * (I)												139,000	134,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)												1,150,000	1,107,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)												70,000	67,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)												80,000	77,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)												1,404,000	1,350,000
	Subtotal (O = J+K+L+M+N)													2,844,000	2,735,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Solvent Washing		LS	2	--	144.54	/BCY	82,000	BCY	1.010	1.000	1.000			12,509,000	11,914,000
A - Solvent/Caustic Washing of Agent Soil		LS	2	--	211.12	/BCY	250	BCY	1.000	1.000	1.000			55,000	53,000
	Subtotal (I1)													12,565,000	11,966,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F													
Mob/Demob	5.0%	J1 = 0.050 * (I1)												628,000	598,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												1,319,000	1,256,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												290,000	276,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												4,441,000	4,229,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													6,678,000	6,360,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														24,806,000	23,677,000

Table B4.6-8a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 8a: Direct Soil Washing (Solvent Washing)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	250	BCY	1.000	1.000	1.000		10	200	100
		Subtotal (P)												10	200	100
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2	100	40
Contingency	32.5%	R = 0.325 * (P+Q)												3	100	40
		Subtotal (S = Q+R)												10	200	100
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														10	300	200
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															29,700,000	28,300,000

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Table B4.6-13a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	820	BCY	1.000	1.000	1.000			7,000	7,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	820	BCY	1.000	1.000	1.000			4,000	4,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	250	BCY	1.000	1.000	1.000			2,000	2,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	250	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													15,000	14,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													500	400
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													6,000	6,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													1,000	1,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													300	200
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													6,000	6,000
		Subtotal (G = B+C+D+E+F)													14,000	13,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	82,000	BCY	1.000	1.000	1.000			1,504,000	1,468,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	250	BCY	1.000	1.000	1.000			42,000	40,000
		Subtotal (A1)													1,545,000	1,508,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													31,000	30,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													158,000	154,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													156,000	152,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													52,000	51,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													583,000	568,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													979,000	955,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,553,000	2,489,000

Table B4.6-13a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
H - Excavation of Sewer Overburden	LS	3	--	1.52	/BCY	340,000	BCY	1.000	1.000	1.000			540,000	490,000
HA - Removal of Steel/Cast Iron Pipe	LS	3	--	25.59	/LF	15,100	LF	1.000	1.000	1.040	Odor Control		420,000	381,000
A - Agent Screening During Excavation	LS	2	--	0.30	/BCY	82,000	BCY	1.000	1.000	1.000			26,000	24,000
HA - Excavate Chemical Sewers	LS	3	--	7.33	/BCY	82,000	BCY	1.000	1.000	1.040	Odor Control		653,000	593,000
HA - Transportation of Chemical Sewers to Thermal Desorbtion Unit	LS	3	--	1.06	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			136,000	124,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	820	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	820	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	820	BCY	1.000	1.000	1.000			5,000	4,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	82,000	BCY	1.000	1.000	1.000			111,000	100,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	82,000	BCY	1.000	1.500	1.000			112,000	101,000
HA - Backfill of Treated Soil for Chemical Sewers	LS	3	--	1.58	/BCY	82,000	BCY	1.000	1.000	1.000			135,000	123,000
H - Backfill of Sewer Overburden	LS	3	--	1.58	/BCY	340,000	BCY	1.000	1.000	1.000			561,000	509,000
H - Revegetation of Disturbed Areas	LS	3	--	0.18	/SY	100,000	SY	1.000	1.000	1.100	Disturbance		21,000	19,000
A - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	250	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.500	1.000			400	400
A - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	250	BCY	1.000	1.000	1.000			400	400
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	3	--	1.08	/BCY-MILE	250	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	250	BCY	1.000	1.000	1.000			2,000	1,000
Subtotal (I)													2,726,000	2,474,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS												
Mob/Demob 5.1%	J = 0.051 * (I)												140,000	127,000
Indirects, Overhead & Profit 40.3%	K = 0.403 * (I+J)												1,153,000	1,047,000
Engineering Design 1.8%	L = 0.018 * (I+J+K)												70,000	64,000
Resident Engineering 2.0%	M = 0.020 * (I+J+K)												80,000	73,000
Contingency 33.8%	N = 0.338 * (I+J+K+L+M)												1,407,000	1,277,000
Subtotal (O = J+K+L+M+N)													2,851,000	2,587,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Thermal Desorption (Saturated Soil)	LS	3	--	76.00	/BCY	82,000	BCY	1.010	1.000	1.000			6,578,000	5,966,000
A - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	250	BCY	1.000	1.000	1.000			71,000	65,000
Subtotal (I1)													6,649,000	6,031,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D												
Mob/Demob 0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup 10.0%	K1 = 0.100 * (I1+J1)												665,000	603,000
Engineering Design 0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering 2.0%	M1 = 0.020 * (I1+J1+K1)												146,000	133,000
Contingency 40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												2,984,000	2,707,000
Subtotal (O1 = J1+K1+L1+M1+N1)													3,795,000	3,442,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													16,022,000	14,535,000

Table B4.6-13a Cost Estimate - Sewer Systems Medium Group - Chemical Sewers Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	820	BCY	1.000	1.000	1.000		20	1,000	300
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	250	BCY	1.000	1.000	1.000		10	200	100
		Subtotal (P)												30	1,000	400
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: *LLSL*														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												10	300	100
Contingency	32.5%	R = 0.325 * (P+Q)												10	300	200
		Subtotal (S = Q+R)												20	1,000	300
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														50	1,000	1,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															18,600,000	17,000,000

Table B4.7-1 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	130,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	260,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	390,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	390,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.7-1 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	130,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	260,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	390,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	390,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
TOTAL O&M COSTS (P=I+O)															0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Complex Disposal Trenches			A	1	30	86,000.00	/EA-YR	1	EA	1.000	1.000	1.000		90,000	2,696,000	1,429,000
H - Long-Term Groundwater Monitoring, Complex Trenches			A	1	30	23,000.00	/EA-YR	1	EA	1.000	1.000	1.000		24,000	721,000	382,000
HBAU - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (Q)												117,000	3,502,000	1,856,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	R = 0.390 * (P)												46,000	1,366,000	724,000
Contingency	32.5%	S = 0.325 * (P+Q)												53,000	1,582,000	838,000
		Subtotal (T)												98,000	2,948,000	1,562,000
TOTAL LONG-TERM O&M COSTS (U = Q+T)														215,000	6,449,000	3,418,000
TOTAL COSTS (V = H+T)															6,450,000	3,420,000

Table B4.7-5 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Long-Term Dewatering, Complex Tenches			LS	1	--	111,222.00	/EA	1	EA	1.000	1.000	1.000			116,000	116,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	27	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	27	BCY	1.000	1.000	1.000			100	100
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	2,700	BCY	1.000	1.000	1.000			23,000	23,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	2,700	BCY	1.000	1.000	1.000			14,000	13,000
		Subtotal (A)													154,000	153,000
INDIRECT CAPITAL COSTS		COST CODE: MMSS														
Mob/Demob	4.5%	B = 0.045 * (A)													7,000	7,000
Indirects, Overhead & Profit	40.3%	C = 0.403 * (A+B)													65,000	64,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													10,000	10,000
Resident Engineering	1.8%	E = 0.018 * (A+B+C)													4,000	4,000
Contingency	31.3%	F = 0.313 * (A+B+C+D+E)													75,000	75,000
		Subtotal (G = B+C+D+E+F)													161,000	160,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	27	BCY	1.000	1.000	1.000			4,000	4,000
		Subtotal (A1)													4,000	4,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													200	200
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													500	500
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													200	200
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													100	100
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													2,000	2,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													3,000	3,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															321,000	320,000

Table B4.7-5 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	1	--	0.30	/BCY	27,000	BCY	1.000	1.000	1.000			8,000	8,000
U - UXO Clearance In Surface Soil by Geophysics		LS	1	--	0.07	/SY	390,000	SY	1.000	1.000	1.000			29,000	29,000
H - Slurry Wall (20 - 65 ft Deep)		LS	3	--	47.72	/SY	27,000	SY	1.000	1.000	1.000			1,346,000	1,221,000
H - Grade Filling w/Excav Soil from Slurry Trench Prior to Capping		LS	3	--	3.44	/BCY	27,000	BCY	1.000	1.000	1.000			97,000	88,000
HB - Excavation of Borrow Material		LS	3	--	1.91	/BCY	900,000	BCY	1.000	1.000	1.000			1,796,000	1,629,000
HB - Transportation of Borrow Material to Backfill Area		LS	3	--	0.87	/BCY-MILE	900,000	BCY	1.000	1.500	1.000			1,227,000	1,113,000
HB - Backfill with Borrow Material		LS	3	--	1.71	/BCY	900,000	BCY	1.000	1.000	1.000			1,608,000	1,459,000
HB - Subgrade Preparation Prior to Installing Cap/Cover		LS	3	--	0.06	/SY	390,000	SY	1.000	1.000	1.100			27,000	24,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap with Concrete Barrier)		LS	3	--	28.47	/SY	390,000	SY	1.000	1.000	1.000			11,603,000	10,524,000
HB - Revegetation of Disturbed Areas		LS	3	--	0.18	/SY	390,000	SY	1.000	1.000	1.100	Disturbance		81,000	73,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	27	BCY	1.000	1.000	1.040	Odor Control		100	100
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	27	BCY	1.000	1.000	1.000			30	30
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	27	BCY	1.000	1.000	1.000			40	40
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	27	BCY	1.000	1.000	1.000			30	30
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	27	BCY	1.000	1.000	1.000			200	200
U - Removal of Soil with UXO		LS	2	--	71.16	/BCY	27	BCY	1.000	1.000	1.000			2,000	2,000
U - Excavation of Debris from Surface Soil		LS	2	--	3.07	/BCY	2,700	BCY	1.000	1.000	1.300	Productivity		11,000	11,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	2,700	BCY	1.000	0.750	1.300	Productivity		3,000	3,000
U - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	2,700	BCY	1.000	1.000	1.000			16,000	16,000
	Subtotal (I)													17,856,000	16,201,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS													
Mob/Demob	5.1%	J = 0.051 * (I)												915,000	830,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)												7,555,000	6,855,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)												461,000	418,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)												527,000	478,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)												9,218,000	8,364,000
	Subtotal (O = J+K+L+M+N)													18,676,000	16,945,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
A - Caustic Washing of Agent Soil		LS	2	--	273.50	/BCY	27	BCY	1.000	1.000	1.000			8,000	7,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO		LS	2	--	2,220.00	/BCY	27	BCY	1.000	1.000	1.000			63,000	60,000
	Subtotal (I1)													70,000	67,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F													
Mob/Demob	5.0%	J1 = 0.050 * (I1)												4,000	3,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												7,000	7,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												2,000	2,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												25,000	24,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													37,000	36,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														36,640,000	33,248,000

Table B4.7-5 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - Long-Term Dewatering, Complex Tenches	A	3	30	69,056.00	/EA-YR	1	EA	1.000	1.000	1.000		72,000	2,021,000	1,024,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	3	30	0.07	/SY-YR	390,000	SY	1.000	1.000	1.000		29,000	799,000	405,000
H - Long-Term Groundwater Monitoring, Complex Trenches	A	3	30	23,000.00	/EA-YR	1	EA	1.000	1.000	1.000		24,000	673,000	341,000
HB - Site Reviews	A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
A - On-Post Hazardous Waste Landfill Closure	A	2	30	0.02	/BCY-YR	27	BCY	1.000	1.000	1.000		1	20	10
U - On-Post Hazardous Waste Landfill, Closure	A	2	30	0.02	/BCY-YR	2,700	BCY	1.000	1.000	1.000		100	2,000	1,000
Subtotal (P)												128,000	3,573,000	1,811,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL												
Indirects, Overhead & Profit 39.0%		Q = 0.390 * (P)										50,000	1,394,000	706,000
Contingency 32.5%		R = 0.325 * (P+Q)										58,000	1,614,000	818,000
Subtotal (S = Q+R)												107,000	3,008,000	1,524,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												235,000	6,581,000	3,335,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													43,500,000	36,900,000

Table B4.7-14 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Complex Trenches			LS	1	--	144,556.00	/EA	1	EA	1.000	1.000	1.000			151,000	151,000
H - Vapor Dome and Controls for Complex Trenches			LS	2	--	8.06	/BCY	450,000	BCY	1.000	1.000	1.000			3,790,000	3,610,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	450,000	BCY	1.000	1.000	1.000			3,884,000	3,699,000
H - On-Post Hazardous Waste Landfill Closure			LS	7	--	4.92	/BCY	450,000	BCY	1.000	1.000	1.000			2,314,000	1,726,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	0	BCY	1.000	1.000	1.000			0	0
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	0	BCY	1.000	1.000	1.000			0	0
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	1,300	BCY	1.000	1.000	1.000			11,000	11,000
A - On-Post Hazardous Waste Landfill Closure			LS	7	--	4.92	/BCY	1,300	BCY	1.000	1.000	1.000			7,000	5,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	130,000	BCY	1.000	1.000	1.000			1,122,000	1,069,000
U - On-Post Hazardous Waste Landfill, Closure			LS	7	--	4.92	/BCY	130,000	BCY	1.000	1.000	1.000			668,000	499,000
		Subtotal (A)													11,948,000	10,770,000
INDIRECT CAPITAL COSTS		COST CODE: LMLS														
Mob/Demob	3.9%	B = 0.039 * (A)													463,000	417,000
Indirects, Overhead & Profit	36.5%	C = 0.365 * (A+B)													4,530,000	4,083,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													762,000	687,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													254,000	229,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													5,387,000	4,856,000
		Subtotal (G = B+C+D+E+F)													11,396,000	10,273,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Incineration			A	1	2	76.00	/BCY	450,000	BCY	1.000	1.000	1.000			35,739,000	34,888,000
A - Incineration			A	1	2	76.00	/BCY	1,300	BCY	1.000	1.000	1.000			103,000	101,000
		Subtotal (A1)													35,842,000	34,989,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													717,000	700,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													3,656,000	3,569,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													3,619,000	3,533,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													1,206,000	1,178,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													13,512,000	13,191,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													22,711,000	22,170,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															81,897,000	78,201,000

Table B4.7-14 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	A	3	7	0.30	/BCY	450,000	BCY	1.000	1.000	1.000			141,000	116,000
U - UXO Clearance by Geophysics	LS	2	--	0.66	/SY	390,000	SY	1.000	1.000	1.000			269,000	256,000
H - Excavation Dewatering, Complex Trenches	A	1	7	340,927.00	/EA-YR	1	EA	1.000	1.000	1.000			2,494,000	2,165,000
H - Vapor Dome and Controls for Complex Trenches	A	3	7	19.96	/BCY	450,000	BCY	1.000	1.000	1.000			9,386,000	7,740,000
H - Excavation of Complex Trenches	A	3	7	92.56	/BCY	450,000	BCY	1.000	1.000	1.000			43,526,000	35,895,000
H - Transportation of Contaminated Soil to On-Post Incineration Facility	A	3	7	1.08	/BCY-MILE	450,000	BCY	1.000	1.000	1.000			508,000	419,000
H - Load Treated Soil for Transport to Hazardous Landfill	A	3	7	1.56	/BCY	450,000	BCY	1.000	1.000	1.000			734,000	605,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan	A	3	7	1.08	/BCY-MILE	450,000	BCY	1.000	1.000	1.300	Productivity		660,000	544,000
H - On-Post Hazardous Waste Landfill	A	3	7	5.78	/BCY	450,000	BCY	1.000	1.000	1.000			2,718,000	2,241,000
B - Load Treated Soil for Transport to Hazardous Landfill	A	3	7	1.56	/BCY	0	BCY	1.000	1.000	1.000			0	0
B - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan	A	3	7	1.08	/BCY-MILE	0	BCY	1.000	1.000	1.000			0	0
B - On-Post Hazardous Waste Landfill	A	3	7	5.78	/BCY	0	BCY	1.000	1.000	1.000			0	0
HB - Excavation of Borrow Material	A	3	7	1.91	/BCY	540,000	BCY	1.000	1.000	1.000			1,078,000	889,000
HB - Transportation of Borrow Material to Backfill Area	A	3	7	0.87	/BCY-MILE	540,000	BCY	1.000	1.500	1.000			736,000	607,000
HB - Backfill with Borrow Material	A	3	7	1.71	/BCY	540,000	BCY	1.000	1.000	1.000			965,000	796,000
HB - Supplementation of Soil With Conditioners	A	3	7	0.07	/SY	390,000	SY	1.000	1.000	1.000			29,000	24,000
HB - Revegetation of Disturbed Areas	A	3	7	0.18	/SY	390,000	SY	1.000	1.000	1.100	Disturbance		81,000	67,000
A - Excavation of Soil with Agent	A	3	7	4.61	/BCY	1,300	BCY	1.000	1.000	1.040	Odor Control		7,000	5,000
A - Transportation of Contaminated Soil to On-Post Incineration Facility	A	3	7	1.08	/BCY-MILE	1,300	BCY	1.000	1.000	1.000			1,000	1,000
A - Load Treated Soil for Transport to Hazardous Landfill	A	3	7	1.56	/BCY	1,300	BCY	1.000	1.000	1.000			2,000	2,000
A - Transportation of Treated Soil to On-Post Hazardous Waste Landfill	A	3	7	0.87	/BCY-MILE	1,300	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill	A	3	7	5.78	/BCY	1,300	BCY	1.000	1.000	1.000			8,000	6,000
U - Removal of Soil with UXO	A	3	7	71.16	/BCY	1,300	BCY	1.000	1.000	1.000			97,000	80,000
U - Excavation of Debris from Surface Soil	A	3	7	3.07	/BCY	130,000	BCY	1.000	1.000	1.300	Productivity		542,000	447,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan	A	3	7	1.08	/BCY-MILE	130,000	BCY	1.000	0.750	1.300	Productivity		143,000	118,000
U - On-Post Hazardous Waste Landfill	A	3	7	5.78	/BCY	130,000	BCY	1.000	1.000	1.000			785,000	648,000
Subtotal (I)													64,911,000	53,672,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLM												
Mob/Demob	5.1%	J = 0.051 * (I)											3,327,000	2,751,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)											26,613,000	22,005,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)											1,660,000	1,372,000
Resident Engineering	2.3%	M = 0.023 * (I+J+K)											2,134,000	1,765,000
Contingency	35.0%	N = 0.350 * (I+J+K+L+M)											34,525,000	28,548,000
Subtotal (O = J+K+L+M+N)													68,259,000	56,440,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Incineration		A	3	7	115.00	/BCY	450,000	BCY	1.000	1.000	1.000		54,079,000	44,597,000
A - Incineration		A	3	7	115.00	/BCY	1,300	BCY	1.000	1.000	1.000		156,000	129,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO		A	3	7	2,220.00	/BCY	1,300	BCY	1.000	1.000	1.000		3,016,000	2,487,000
Subtotal (I1)													57,251,000	47,213,000
INDIRECT SUBCONTR. O&M COSTS (OPERATION		COST CODE: D												
Mob/Demob	0.0%	J1 = 0.000 * (I1)											0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)											5,725,000	4,721,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)											0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)											1,260,000	1,039,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)											25,694,000	21,189,000
Subtotal (O1 = J1+K1+L1+M1+N1)													32,679,000	26,949,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													223,099,000	184,274,000

Table B4.7-14 Cost Estimate - Disposal Trenches Medium Group - Complex Trenches Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	7	30	0.02	/BCY-YR	450,000	BCY	1.000	1.000	1.000		11,000	271,000	122,000
B - On-Post Hazardous Waste Landfill Closure			A	7	30	0.02	/BCY-YR	0	BCY	1.000	1.000	1.000		0	0	0
A - On-Post Hazardous Waste Landfill Closure (Particulates)			A	7	30	0.02	/BCY-YR	13	BCY	1.000	1.000	1.000		0	10	4
U - On-Post Hazardous Waste Landfill, Closure			A	7	30	0.02	/BCY-YR	130,000	BCY	1.000	1.000	1.000		3,000	78,000	35,000
	Subtotal (P)													15,000	349,000	157,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIES		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												6,000	136,000	61,000
Contingency	32.5%	R = 0.325 * (P+Q)												7,000	158,000	71,000
	Subtotal (S = Q+R)													12,000	294,000	132,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														27,000	643,000	290,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															306,000,000	263,000,000

Table B4.8-1 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	32,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
	0															
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.8-1 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	32,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Maintenance of Existing Soil Cover			A	1	30	0.03	/SY-YR	32,000	SY	1.000	1.000	1.000		1,000	30,000	16,000
H - Long-Term Groundwater Monitoring, Shell Trenches			A	1	30	12,000.00	/EA-YR	1	EA	1.000	1.000	1.000		13,000	376,000	199,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												16,000	491,000	260,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												6,000	191,000	101,000
Contingency	32.5%	R = 0.325 * (P+Q)												7,000	222,000	118,000
		Subtotal (S)												14,000	413,000	219,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														30,000	904,000	479,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															904,000	479,000

Table B4.8-3 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Shell Trenches			LS	1	--	121,101.00	/EA	1	EA	1.000	1.000	1.000			127,000	127,000
H - Vapor Dome and Controls for Shell Trenches			LS	1	--	17.65	/BCY	1	EA	1.000	1.000	1.000			20	20
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	100,000	BCY	1.000	1.000	1.000			863,000	863,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	100,000	BCY	1.000	1.000	1.000			514,000	490,000
H - Soil Handling, Mixing, and Loading			LS	1	--	1.33	/BCY	77,500	BCY	1.000	1.000	1.000			108,000	108,000
		Subtotal (A)													1,612,000	1,587,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													52,000	52,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													649,000	639,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													69,000	68,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													29,000	28,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													687,000	677,000
		Subtotal (G =B+C+D+E+F)													1,487,000	1,464,000
TOTAL CAPITAL COSTS (H = A+G)															3,098,000	3,051,000

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Table B4.8-3 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Shell Trenches			A	1	2	501,705.00	/EA-YR	1	EA	1.000	1.000	1.000			1,049,000	1,024,000
H - Excavation of Cover Overburden			LS	2	--	1.91	/BCY	32,000	BCY	1.000	1.000	1.000			64,000	61,000
H - Vapor Dome and Controls for Shell Trenches			LS	2	--	9.72	/BCY	100,000	BCY	1.000	1.000	1.000			1,016,000	967,000
H - Excavation of Shell Trenches			LS	2	--	48.14	/BCY	100,000	BCY	1.000	1.000	1.000			5,031,000	4,791,000
H - Soil Handling, Mixing, and Loading			LS	2	--	32.85	/BCY	77,500	BCY	1.000	1.000	1.000			2,660,000	2,534,000
H - Drum Handling (Crushing & Overpacking)			LS	2	--	498.58	/BCY	22,500	BCY	1.000	1.000	1.000			11,723,000	11,165,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	100,000	BCY	1.000	1.250	1.300	Productivity		183,000	175,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	100,000	BCY	1.000	1.000	1.000			604,000	575,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	100,000	BCY	1.000	1.000	1.000			200,000	190,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	100,000	BCY	1.000	1.500	1.000			136,000	130,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	100,000	BCY	1.000	1.000	1.000			179,000	170,000
H - Backfill of Cover Overburden			LS	2	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	54,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	32,000	SY	1.000	1.000	1.000			6,000	6,000
		Subtotal (I)													22,907,000	21,842,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	HLSS													
Mob/Demob	4.5%	J = 0.045 * (I)													1,031,000	983,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													9,934,000	9,472,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													339,000	323,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													593,000	565,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													11,311,000	10,785,000
		Subtotal (O = J+K+L+M+N)													23,208,000	22,128,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	100,000	BCY	1.000	1.000	1.000		3,000	73,000	38,000
		Subtotal (P)												3,000	73,000	38,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	28,000	15,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	33,000	17,000
		Subtotal (S)												2,000	61,000	32,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														5,000	46,249,000	44,040,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															49,300,000	47,100,000

Table B4.8-5a Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 5a: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls) with Modifications to Existing System

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Long-Term Dewatering, Shell Trenches			LS	1	--	99,378.00	/EA	1	EA	1.000	1.000	1.000			104,000	104,000
		Subtotal (A)													104,000	104,000
INDIRECT CAPITAL COSTS		COST CODE MMSS														
Mob/Demob	4.5%	B = 0.045 * (A)													5,000	5,000
Indirects, Overhead & Profit	40.3%	C = 0.403 * (A+B)													44,000	44,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													7,000	7,000
Resident Engineering	1.8%	E = 0.018 * (A+B+C)													3,000	3,000
Contingency	31.3%	F = 0.313 * (A+B+C+D+E)													51,000	51,000
		Subtotal (G =B+C+D+E+F)													108,000	108,000
TOTAL CAPITAL COSTS (H = A+G)															212,000	212,000

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Table B4.8-5a Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 5a: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls) with Modifications to Existing System

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Slurry Wall (20 - 65 ft Deep)			LS	1	--	47.72	/SY	6,700	SY	1.000	1.000	1.000			334,000	334,000
H - Grade Filling w/Excav Soil from Slurry Trench Prior to Capping			LS	1	--	3.44	/BCY	6,700	BCY	1.000	1.000	1.000			24,000	24,000
H - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	6,700	BCY	1.000	1.000	1.000			400	400
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	32,000	SY	1.000	1.000	1.000			636,000	636,000
H - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	32,000	SY	1.000	1.000	1.100	Disturbance		7,000	7,000
		Subtotal (I)													1,001,000	1,001,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													39,000	39,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													418,000	418,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													15,000	15,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													22,000	22,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													448,000	448,000
		Subtotal (O = J+K+L+M+N)													942,000	942,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	32,000	SY	1.000	1.000	1.000		2,000	70,000	37,000
H - Long-Term Groundwater Monitoring, Shell Trenches			A	1	30	12,000.00	/EA-YR	1	EA	1.000	1.000	1.000		13,000	376,000	199,000
H - Long-Term Dewatering, Shell Trenches			A	1	30	23,280.00	/EA-YR	1	EA	1.000	1.000	1.000		24,000	730,000	387,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												42,000	1,261,000	668,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												16,000	492,000	261,000
Contingency	32.5%	R = 0.325 * (P+Q)												19,000	570,000	302,000
		Subtotal (S)												35,000	1,061,000	562,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														77,000	4,265,000	3,174,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,480,000	3,390,000

Table B4.8-14 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
H - Excavation Dewatering, Shell Trenches			LS	1	--	121,101.00	/EA	1	EA	1.000	1.000	1.000		127,000	127,000
H - Vapor Dome and Controls for Shell Trenches			LS	2	--	17.65	/BCY	100,000	BCY	1.000	1.000	1.000		1,844,000	1,757,000
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	100,000	BCY	1.000	1.000	1.000		863,000	822,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	100,000	BCY	1.000	1.000	1.000		514,000	466,000
		Subtotal (A)												3,348,000	3,172,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS													
Mob/Demob	3.9%	B = 0.039 * (A)												130,000	123,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)												1,313,000	1,244,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)												216,000	204,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)												72,000	68,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)												1,524,000	1,443,000
		Subtotal (G = B+C+D+E+F)												3,254,000	3,082,000
DIRECT SUBCONTRACT CAPITAL COSTS															
H - Incineration			A	1	2	76.00	/BCY	100,000	BCY	1.000	1.000	1.000		7,942,000	7,753,000
		Subtotal (A1)												7,942,000	7,753,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C													
Mob/Demob	2.0%	B1 = 0.020 * (A1)												159,000	155,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)												810,000	791,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)												802,000	783,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)												267,000	261,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)												2,994,000	2,923,000
		Subtotal (G1 = B1+C1+D1+E1+F1)												5,032,000	4,912,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)														19,576,000	18,919,000

Table B4.8-14 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Shell Trenches			A	1	3	501,705.00	/EA-YR	1	EA	1.000	1.000	1.000			1,573,000	1,499,000
H - Excavation of Cover Overburden			LS	2	--	1.91	/BCY	32,000	BCY	1.000	1.000	1.000			64,000	61,000
H - Vapor Dome and Controls for Shell Trenches			LS	3	--	9.72	/BCY	100,000	BCY	1.000	1.000	1.000			1,016,000	921,000
H - Excavation of Shell Trenches			LS	3	--	48.14	/BCY	100,000	BCY	1.000	1.000	1.000			5,031,000	4,563,000
H - Drum Handling (Crushing & Overpacking)			LS	3	--	498.58	/BCY	22,500	BCY	1.000	1.000	1.000			11,723,000	10,633,000
H - Transportation of Contaminated Soil to On-Post Incineration Facility			LS	3	--	1.08	/BCY-MILE	100,000	BCY	1.000	1.000	1.300	Productivity		147,000	133,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	100,000	BCY	1.000	1.000	1.000			163,000	148,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	100,000	BCY	1.000	1.000	1.300	Productivity		147,000	133,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	100,000	BCY	1.000	1.000	1.000			604,000	548,000
H - Excavation of Borrow Material			LS	3	--	1.91	/BCY	100,000	BCY	1.000	1.000	1.000			200,000	181,000
H - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	100,000	BCY	1.000	1.500	1.000			136,000	124,000
H - Backfill with Borrow Material			LS	3	--	1.71	/BCY	100,000	BCY	1.000	1.000	1.000			179,000	162,000
H - Backfill of Cover Overburden			LS	3	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	52,000
H - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	32,000	SY	1.000	1.000	1.100	Disturbance		7,000	6,000
		Subtotal (I)													21,045,000	19,164,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLS														
Mob/Demob	5.1%	J = 0.051 * (I)													1,079,000	982,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													8,628,000	7,857,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													538,000	490,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													615,000	560,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													10,768,000	9,805,000
		Subtotal (O = J+K+L+M+N)													21,628,000	19,694,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Incineration			LS	3	--	115.00	/BCY	100,000	BCY	1.000	1.000	1.000			12,018,000	10,900,000
		Subtotal (I1)													12,018,000	10,900,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,202,000	1,090,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													264,000	240,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													5,393,000	4,892,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													6,860,000	6,222,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															61,550,000	55,980,000

Table B4.8-14 Cost Estimate - Disposal Trenches Medium Group - Shell Trenches Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	100,000	BCY	1.000	1.000	1.000		3,000	70,000	36,000
		Subtotal (P)												3,000	70,000	36,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	27,000	14,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	32,000	16,000
		Subtotal (S = Q+R)												2,000	59,000	30,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														5,000	129,000	66,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															81,300,000	75,000,000

Table B4.9-1 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
H - No Action			LS	1	--	0.00	/SY	900	SY	1.000	1.000	1.000		0	0
		Subtotal (A)												0	0
INDIRECT CAPITAL COSTS		COST CODE	0												
Mob/Demob	0.0%	B = 0.000 * (A)												0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)												0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)												0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)												0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)												0	0
		Subtotal (G =B+C+D+E+F)												0	0
TOTAL CAPITAL COSTS (H = A+G)														0	0

Table B4.9-1 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	900	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long-Term Groundwater Monitoring, Hex Pit			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												9,000	279,000	148,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	109,000	58,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	126,000	67,000
		Subtotal (S)												8,000	235,000	124,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														17,000	514,000	272,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															514,000	272,000

Table B4.9-3 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Hex Pit			LS	1	--	212.49	/BCY	3,300	BCY	1.000	1.000	1.000			733,000	733,000
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	3,300	BCY	1.000	1.000	1.000			28,000	28,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	3,300	BCY	1.000	1.000	1.000			17,000	16,000
H - Soil Handling, Mixing, and Loading			LS	2	--	1.33	/BCY	2,600	BCY	1.000	1.000	1.000			4,000	3,000
		Subtotal (A)													782,000	781,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													25,000	25,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													315,000	314,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													34,000	34,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													14,000	14,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													333,000	333,000
		Subtotal (G =B+C+D+E+F)													721,000	720,000
TOTAL CAPITAL COSTS (H = A+G)															1,503,000	1,501,000

HXP-03.WQ1
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Table B4.9-3 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Vapor Dome and Controls for Hex Pit			A	1	2	10.28	/BCY	3,300	BCY	1.000	1.000	1.000			35,000	35,000
H - Excavation of Hex Pits			LS	2	--	48.37	/BCY	3,300	BCY	1.000	1.000	1.000			167,000	159,000
H - Soil Handling, Mixing, and Loading			LS	2	--	32.85	/BCY	2,600	BCY	1.000	1.000	1.000			89,000	85,000
H - Drum Handling (Crushing & Overpacking)			LS	2	--	498.58	/BCY	700	BCY	1.000	1.000	1.000			365,000	347,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	3,300	BCY	1.000	1.250	1.300	Productivity		6,000	6,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	3,300	BCY	1.000	1.000	1.000			20,000	19,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	3,300	BCY	1.000	1.000	1.000			7,000	6,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	3,300	BCY	1.000	1.500	1.000			5,000	4,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	3,300	BCY	1.000	1.000	1.000			6,000	6,000
H - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	900	SY	1.000	1.000	1.000			100	100
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	900	SY	1.000	1.000	1.100	Disturbance		200	200
		Subtotal (I)													17,000	16,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	HLSS													
Mob/Demob	4.5%	J = 0.045 * (I)													1,000	1,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													7,000	7,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													300	200
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													400	400
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													9,000	8,000
		Subtotal (O = J+K+L+M+N)													17,000	17,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	3,300	BCY	1.000	1.000	1.000		100	2,000	1,000
		Subtotal (P)												100	2,000	1,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												30	1,000	500
Contingency	32.5%	R = 0.325 * (P+Q)												40	1,000	1,000
		Subtotal (S)												100	2,000	1,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														200	39,000	35,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,540,000	1,540,000

Table B4.9-5 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Installation of Hydraulic Controls, Hex Pits			LS	1	--	78,165.00	/EA	1	EA	1.000	1.000	1.000			82,000	82,000
		Subtotal (A)													82,000	82,000
INDIRECT CAPITAL COSTS		COST CODE	MMSS													
Mob/Demob	4.5%	B = 0.045 * (A)													4,000	4,000
Indirects, Overhead & Profit	40.3%	C = 0.403 * (A+B)													34,000	34,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													5,000	5,000
Resident Engineering	1.8%	E = 0.018 * (A+B+C)													2,000	2,000
Contingency	31.3%	F = 0.313 * (A+B+C+D+E)													40,000	40,000
		Subtotal (G =B+C+D+E+F)													85,000	85,000
TOTAL CAPITAL COSTS (H = A+G)															167,000	167,000

HXP-05.WQ1
SOILS DAA

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Table B4.9-5 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Slurry Wall (20 - 65 ft Deep)			LS	1	--	47.72	/SY	1,400	SY	1.000	1.000	1.000			70,000	70,000
H - Grade Filling w/Excav Soil from Slurry Trench Prior to Capping			LS	1	--	3.44	/BCY	1,400	BCY	1.000	1.000	1.000			5,000	5,000
H - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	900	SY	1.000	1.000	1.000			100	100
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	900	SY	1.000	1.000	1.000			18,000	18,000
H - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	900	SY	1.000	1.000	1.100	Disturbance		200	200
		Subtotal (I)													93,000	93,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													4,000	4,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													39,000	39,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													2,000	2,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													42,000	42,000
		Subtotal (O = J+K+L+M+N)													88,000	88,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	900	SY	1.000	1.000	1.000		100	2,000	1,000
H - Long-Term Groundwater Monitoring, Hex Pit			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												9,000	281,000	149,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	110,000	58,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	127,000	67,000
		Subtotal (S)												8,000	237,000	125,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														17,000	698,000	455,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															865,000	622,000

Table B4.9-14 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	3,300	BCY	1.000	1.000	1.000			28,000	27,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	3,300	BCY	1.000	1.000	1.000			17,000	15,000
H - Vapor Dome and Controls for Hex Pit			LS	1	--	212.49	/BCY	3,300	BCY	1.000	1.000	1.000			733,000	733,000
		Subtotal (A)													778,000	775,000
INDIRECT CAPITAL COSTS		COST CODE: LMSS														
Mob/Demob	3.9%	B = 0.039 * (A)													30,000	30,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													315,000	314,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													51,000	50,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													17,000	17,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													357,000	356,000
		Subtotal (G = B+C+D+E+F)													770,000	767,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Incineration			A	1	2	76.00	/BCY	3,300	BCY	1.000	1.000	1.000			262,000	256,000
		Subtotal (A1)													262,000	256,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													5,000	5,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													27,000	26,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													26,000	26,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													9,000	9,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													99,000	96,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													166,000	162,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,977,000	1,961,000

Table B4.9-14 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Vapor Dome and Controls for Hex Pit			LS	3	--	10.28	/BCY	3,300	BCY	1.000	1.000	1.000			35,000	32,000
H - Excavation of Hex Pits			LS	3	--	48.37	/BCY	3,300	BCY	1.000	1.000	1.000			167,000	151,000
H - Drum Handling (Crushing & Overpacking)			LS	3	--	498.58	/BCY	700	BCY	1.000	1.000	1.000			365,000	331,000
H - Transportation of Contaminated Soil to On-Post Incineration Facility			LS	3	--	1.08	/BCY-MILE	3,300	BCY	1.000	0.500	1.300	Productivity		2,000	2,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	3,300	BCY	1.000	1.000	1.000			5,000	5,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	3,300	BCY	1.000	1.000	1.300	Productivity		5,000	4,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	3,300	BCY	1.000	1.000	1.000			20,000	18,000
H - Excavation of Borrow Material			LS	3	--	1.91	/BCY	3,300	BCY	1.000	1.000	1.000			7,000	6,000
H - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	3,300	BCY	1.000	1.500	1.000			5,000	4,000
H - Backfill with Borrow Material			LS	3	--	1.71	/BCY	3,300	BCY	1.000	1.000	1.000			6,000	5,000
H - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	900	SY	1.000	1.000	1.000			100	100
H - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	900	SY	1.000	1.000	1.100	Disturbance		200	200
		Subtotal (I)													617,000	559,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMSS														
Mob/Demob	5.1%	J = 0.051 * (I)													32,000	29,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													269,000	244,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													16,000	15,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													18,000	17,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													321,000	291,000
		Subtotal (O = J+K+L+M+N)													656,000	595,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Incineration			LS	3	--	115.00	/BCY	3,300	BCY	1.000	1.000	1.000			397,000	360,000
		Subtotal (I1)													397,000	360,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													40,000	36,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													9,000	8,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													178,000	161,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													226,000	205,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															1,896,000	1,720,000

Table B4.9-14 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 14: Incineration/Pyrolysis (Rotary Kiln); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	3,300	BCY	1.000	1.000	1.000		100	2,000	1,000
		Subtotal (P)												100	2,000	1,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												30	1,000	500
Contingency	32.5%	R = 0.325 * (P+Q)												40	1,000	1,000
		Subtotal (S = Q+R)												100	2,000	1,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														200	4,000	2,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															3,880,000	3,680,000

Table B4.9-22 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 22: In Situ Solidification/Stabilization (Cement-Based or Silica-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE: 0														
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G = B+C+D+E+F)													0	0
DIRECT SUBCONTRACT CAPITAL COSTS																
		Subtotal (A1)													0	0
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: 0														
Mob/Demob	0.0%	B1 = 0.000 * (A1)													0	0
Contractor Markup	0.0%	C1 = 0.000 * (A1+B1)													0	0
Engineering Design	0.0%	D1 = 0.000 * (A1+B1+C1)													0	0
Resident Engineering	0.0%	E1 = 0.000 * (A1+B1+C1)													0	0
Contingency	0.0%	F1 = 0.000 * (A1+B1+C1+D1+E1)													0	0
		Subtotal (G1 = B1+C1+D1+E1+F1)													0	0
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															0	0

Table B4.9-22 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 22: In Situ Solidification/Stabilization (Cement-Based or Silica-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Other Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Cover for Solidified Materials			LS	2	--	6.92	/SY	900	SY	1.000	1.000	1.000			7,000	6,000
H - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	900	SY	1.000	1.000	1.000			100	100
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	900	SY	1.000	1.000	1.100	Disturbance		200	200
		Subtotal (I)													7,000	6,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													300	300
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													3,000	3,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													100	100
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													200	200
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													3,000	3,000
		Subtotal (O = J+K+L+M+N)													7,000	7,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ Silica-Based Solidification			LS	2	--	123.08	/BCY	3,300	BCY	1.000	1.000	1.000			424,000	404,000
		Subtotal (I1)													424,000	404,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													25,000	24,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													2,000	2,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													4,000	4,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													183,000	174,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													215,000	205,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															653,000	622,000

Table B4.9-22 Cost Estimate - Disposal Trenches Medium Group - Hex Pit Subgroup
Alternative 22: In Situ Solidification/Stabilization (Cement-Based or Silica-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of In Situ Solidified Soil			A	2	30	0.25	/SY-YR	900	SY	1.000	1.000	1.000		200	7,000	4,000
H - Long-Term Groundwater Monitoring, Hex Pit			A	2	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	188,000	98,000
H - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												10,000	277,000	144,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	108,000	56,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	125,000	65,000
		Subtotal (S = Q+R)												8,000	233,000	122,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														18,000	509,000	266,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															1,160,000	888,000

Table B4.10-1 Cost Estimate - Sanitary Landfills Medium Group
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	12,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	69,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.10-1 Cost Estimate - Sanitary Landfills Medium Group
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	12,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	69,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Sanitary Landfills			A	1	30	27,000.00	/EA-YR	1	EA	1.000	1.000	1.000		28,000	846,000	449,000
H - Long-Term Groundwater Monitoring, Sanitary Landfills			A	1	30	33,000.00	/EA-YR	1	EA	1.000	1.000	1.000		34,000	1,035,000	548,000
HB - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												66,000	1,966,000	1,042,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												26,000	767,000	406,000
Contingency	32.5%	R = 0.325 * (P+Q)												30,000	888,000	471,000
		Subtotal (S)												55,000	1,655,000	877,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														121,000	3,620,000	1,918,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,620,000	1,920,000

Table B4.10-2 Cost Estimate - Sanitary Landfills Medium Group
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000		2,000	2,000
HB - Fences			LS	1	--	15.90	/LF	18,000	SY	1.000	1.000	1.000		299,000	299,000
		Subtotal (A)												301,000	301,000
INDIRECT CAPITAL COSTS		COST CODE LLSS													
Mob/Demob	3.3%	B = 0.033 * (A)												10,000	10,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)												121,000	121,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)												13,000	13,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)												5,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)												128,000	128,000
		Subtotal (G =B+C+D+E+F)												278,000	278,000
TOTAL CAPITAL COSTS (H = A+G)														578,000	578,000

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Table B4.10-2 Cost Estimate - Sanitary Landfills Medium Group
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Habitat Modification			A	1	3	0.18	/SY	200,000	SY	1.000	1.000	1.000			38,000	36,000
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
		Subtotal (I)													55,000	45,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													2,000	1,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													22,000	18,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													1,000	1,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													23,000	19,000
		Subtotal (O = J+K+L+M+N)													49,000	40,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Fences			A	2	30	0.79	/LF-YR	18,000	SY	1.000	1.000	1.000		15,000	431,000	225,000
HB - Habitat Modification			A	3	30	0.01	/SY-YR	200,000	SY	1.000	1.000	1.000		1,000	35,000	17,000
HB - Long Term Soil Monitoring, Sanitary Landfills			A	3	30	27,000.00	/EA-YR	1	EA	1.000	1.000	1.000		28,000	790,000	400,000
H - Long-Term Groundwater Monitoring, Sanitary Landfills			A	3	30	33,000.00	/EA-YR	1	EA	1.000	1.000	1.000		34,000	966,000	489,000
HB - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												82,000	2,300,000	1,172,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												32,000	897,000	457,000
Contingency	32.5%	R = 0.325 * (P+Q)												37,000	1,039,000	530,000
		Subtotal (S)												69,000	1,936,000	987,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														150,000	4,341,000	2,244,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,920,000	2,820,000

Table B4.10-3 Cost Estimate - Sanitary Landfills Medium Group
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	420,000	BCY	1.000	1.000	1.000			3,625,000	3,625,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	420,000	BCY	1.000	1.000	1.000			2,159,000	2,057,000
		Subtotal (A)													5,785,000	5,682,000
INDIRECT CAPITAL COSTS		COST CODE	LLMS													
Mob/Demob	3.3%	B = 0.033 * (A)													188,000	185,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													2,255,000	2,215,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													247,000	242,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													103,000	101,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													2,466,000	2,422,000
		Subtotal (G =B+C+D+E+F)													5,258,000	5,165,000
TOTAL CAPITAL COSTS (H = A+G)															11,043,000	10,847,000

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Table B4.10-3 Cost Estimate - Sanitary Landfills Medium Group
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Landfill Excavation			LS	2	--	3.96	/BCY	420,000	BCY	1.000	1.000	1.300	Productivty		2,259,000	2,152,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	420,000	BCY	1.000	3.000	1.300	Productivty		1,849,000	1,761,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	420,000	BCY	1.000	1.000	1.000			2,537,000	2,416,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	420,000	BCY	1.000	1.000	1.000			838,000	798,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	420,000	BCY	1.000	1.500	1.000			573,000	545,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	420,000	BCY	1.000	1.000	1.000			751,000	715,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	200,000	SY	1.000	1.000	1.000			15,000	14,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	200,000	SY	1.000	1.000	1.100	Disturbance		41,000	39,000
		Subtotal (I)													8,863,000	8,441,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													343,000	327,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													3,590,000	3,419,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													128,000	122,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													192,000	183,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													3,935,000	3,747,000
		Subtotal (O = J+K+L+M+N)													8,189,000	7,799,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	420,000	BCY	1.000	1.000	1.000		11,000	305,000	159,000
		Subtotal (P)												11,000	305,000	159,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	119,000	62,000
Contingency	32.5%	R = 0.325 * (P+Q)												5,000	138,000	72,000
		Subtotal (S)												9,000	257,000	134,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														19,000	17,614,000	16,533,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															28,700,000	27,400,000

Table B4.10-3f Cost Estimate - Sanitary Landfills Medium Group
Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	14,000	BCY	1.000	1.000	1.000			121,000	121,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	14,000	BCY	1.000	1.000	1.000			72,000	69,000
		Subtotal (A)													193,000	189,000
INDIRECT CAPITAL COSTS		COST CODE	LLMS													
Mob/Demob	3.3%	B = 0.033 * (A)													6,000	6,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													75,000	74,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													8,000	8,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													3,000	3,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													82,000	81,000
		Subtotal (G =B+C+D+E+F)													175,000	172,000
TOTAL CAPITAL COSTS (H = A+G)															368,000	362,000

Table B4.10-3f Cost Estimate - Sanitary Landfills Medium Group
Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Landfill Excavation			LS	2	--	3.96	/BCY	14,000	BCY	1.000	1.000	1.300	Productivty		75,000	72,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	14,000	BCY	1.000	3.000	1.300	Productivty		62,000	59,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	14,000	BCY	1.000	1.000	1.000			85,000	81,000
B - Soil Excavation			LS	2	--	3.96	/BCY	23,000	BCY	1.000	1.000	1.000			95,000	91,000
H - Landfill Excavation			LS	2	--	3.96	/BCY	380,000	BCY	1.000	1.000	1.300	Productivty		2,044,000	1,947,000
HB - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	109,000	BCY	1.000	3.000	1.300	Productivty		480,000	457,000
HB - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	409,000	BCY	1.000	1.000	1.000			1,470,000	1,400,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	420,000	BCY	1.000	1.000	1.000			838,000	798,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	420,000	BCY	1.000	1.500	1.000			573,000	545,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	420,000	BCY	1.000	1.000	1.000			751,000	715,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	200,000	SY	1.000	1.000	1.000			15,000	14,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	200,000	SY	1.000	1.000	1.100	Disturbance		41,000	39,000
		Subtotal (I)													6,529,000	6,218,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													253,000	241,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													2,645,000	2,519,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													94,000	90,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													141,000	135,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													2,899,000	2,761,000
		Subtotal (O = J+K+L+M+N)													6,032,000	5,745,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	14,000	BCY	1.000	1.000	1.000		400	10,000	5,000
		Subtotal (P)												400	10,000	5,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												100	4,000	2,000
Contingency	32.5%	R = 0.325 * (P+Q)												200	5,000	2,000
		Subtotal (S)												300	9,000	4,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														1,000	12,579,000	11,972,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															12,900,000	12,300,000

Table B4.10-6 Cost Estimate - Sanitary Landfills Medium Group
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE 0														
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.10-6 Cost Estimate - Sanitary Landfills Medium Group
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Excavation of Borrow Material			LS	1	--	1.91	/BCY	390,000	BCY	1.000	1.000	1.000			778,000	778,000
HB - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	390,000	BCY	1.000	1.500	1.000			532,000	532,000
HB - Backfill with Borrow Material			LS	1	--	1.71	/BCY	390,000	BCY	1.000	1.000	1.000			697,000	697,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	200,000	SY	1.000	1.000	1.000			13,000	13,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	200,000	SY	1.000	1.000	1.000			3,973,000	3,973,000
HB - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	200,000	SY	1.000	1.000	1.100	Disturbance		41,000	41,000
		Subtotal (I)													6,034,000	6,034,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													234,000	234,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													2,445,000	2,445,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													87,000	87,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													131,000	131,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													2,679,000	2,679,000
		Subtotal (O = J+K+L+M+N)													5,575,000	5,575,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	200,000	SY	1.000	1.000	1.000		15,000	424,000	222,000
H - Long-Term Groundwater Monitoring, Sanitary Landfills			A	2	30	33,000.00	/EA-YR	1	EA	1.000	1.000	1.000		34,000	1,000,000	522,000
HB - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												52,000	1,506,000	786,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												20,000	587,000	307,000
Contingency	32.5%	R = 0.325 * (P+Q)												23,000	680,000	355,000
		Subtotal (S)												44,000	1,268,000	662,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														96,000	14,383,000	13,058,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															14,400,000	13,100,000

Table B4.10-13b Cost Estimate - Sanitary Landfills Medium Group
Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	400,000	BCY	1.000	1.000	1.000			3,453,000	3,288,000
H - On-Post Hazardous Waste Landfill Closure			LS	4	--	4.92	/BCY	400,000	BCY	1.000	1.000	1.000			2,057,000	1,777,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	23,000	BCY	1.000	1.000	1.000			199,000	189,000
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	23,000	BCY	1.000	1.000	1.000			118,000	107,000
		Subtotal (A)													5,826,000	5,361,000
INDIRECT CAPITAL COSTS		COST CODE: LLMS														
Mob/Demob	3.3%	B = 0.033 * (A)													189,000	174,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													2,271,000	2,090,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													249,000	229,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													104,000	95,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													2,484,000	2,285,000
		Subtotal (G = B+C+D+E+F)													5,296,000	4,873,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	14,000	BCY	1.000	1.000	1.000			257,000	251,000
		Subtotal (A1)													257,000	251,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													5,000	5,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													26,000	26,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													26,000	25,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													9,000	8,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													97,000	94,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													163,000	159,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															11,541,000	10,644,000

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Table B4.10-13b Cost Estimate - Sanitary Landfills Medium Group
Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Landfill Excavation		LS	3	--	3.96	/BCY	14,000	BCY	1.000	1.000	1.300	Productivity		75,000	68,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility		LS	3	--	1.08	/BCY-MILE	14,000	BCY	1.000	3.000	1.300	Productivity		62,000	56,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	140	BCY	1.000	1.000	1.000			200	200
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	140	BCY	1.000	1.000	1.000			200	100
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	140	BCY	1.000	1.000	1.000			1,000	1,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	14,000	BCY	1.000	1.000	1.000			23,000	21,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	3	--	1.08	/BCY-MILE	14,000	BCY	1.000	1.000	1.000			16,000	14,000
H - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	14,000	BCY	1.000	1.000	1.000			85,000	77,000
H - Landfill Excavation		LS	3	--	3.96	/BCY	380,000	BCY	1.000	1.000	1.300	Productivity		2,044,000	1,854,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	3	--	1.08	/BCY-MILE	380,000	BCY	1.000	3.000	1.300	Productivity		1,673,000	1,517,000
H - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	380,000	BCY	1.000	1.000	1.000			2,295,000	2,082,000
H - Excavation of Borrow Material		LS	3	--	1.91	/BCY	400,000	BCY	1.000	1.000	1.000			798,000	724,000
H - Transportation of Borrow Material to Backfill Area		LS	3	--	0.87	/BCY-MILE	400,000	BCY	1.000	1.500	1.000			545,000	495,000
H - Backfill with Borrow Material		LS	3	--	1.71	/BCY	400,000	BCY	1.000	1.000	1.000			715,000	648,000
B - Soil Excavation		LS	3	--	3.96	/BCY	23,000	BCY	1.000	1.000	1.000			95,000	86,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	3	--	1.08	/BCY-MILE	23,000	BCY	1.000	3.000	1.000			78,000	71,000
B - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	23,000	BCY	1.000	1.000	1.000			139,000	126,000
B - Excavation of Borrow Material		LS	3	--	1.91	/BCY	23,000	BCY	1.000	1.000	1.000			46,000	42,000
B - Transportation of Borrow Material to Backfill Area		LS	3	--	0.87	/BCY-MILE	23,000	BCY	1.000	1.500	1.000			31,000	28,000
B - Backfill with Borrow Material		LS	3	--	1.71	/BCY	23,000	BCY	1.000	1.000	1.000			41,000	37,000
HB - Supplementation of Soil With Conditioners		LS	3	--	0.07	/SY	200,000	SY	1.000	1.000	1.000			15,000	13,000
HB - Revegetation of Disturbed Areas		LS	3	--	0.18	/SY	200,000	SY	1.000	1.000	1.100	Disturbance		41,000	38,000
	Subtotal (I)													8,818,000	7,999,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: MMMS														
Mob/Demob	4.5% J = 0.045 * (I)													397,000	360,000
Indirects, Overhead & Profit	39.0% K = 0.390 * (I+J)													3,594,000	3,260,000
Engineering Design	1.8% L = 0.018 * (I+J+K)													224,000	203,000
Resident Engineering	1.8% M = 0.018 * (I+J+K)													224,000	203,000
Contingency	31.3% N = 0.313 * (I+J+K+L+M)													4,143,000	3,758,000
	Subtotal (O = J+K+L+M+N)													8,582,000	7,784,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Dry Soil)		LS	3	--	44.61	/BCY	14,000	BCY	1.000	1.000	1.000			653,000	592,000
	Subtotal (I1)													653,000	592,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0% J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													65,000	59,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													14,000	13,000
Contingency	40.0% N1 = 0.400 * (I1+J1+K1+L1+M1)													293,000	266,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													373,000	338,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														18,426,000	16,713,000

Table B4.10-13b Cost Estimate - Sanitary Landfills Medium Group
Alternative 13b: Direct Thermal Desorption (Direct Heating); Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	4	30	0.02	/BCY-YR	400,000	BCY	1.000	1.000	1.000		10,000	271,000	133,000
B - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	23,000	BCY	1.000	1.000	1.000		1,000	16,000	8,000
		Subtotal (P)												11,000	287,000	141,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	112,000	55,000
Contingency	32.5%	R = 0.325 * (P+Q)												5,000	130,000	64,000
		Subtotal (S = Q+R)												9,000	242,000	119,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														20,000	529,000	260,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															30,500,000	27,600,000

Table B4.11-1 Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	34,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	34,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

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Table B4.11-1 Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	34,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	34,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Soil Monitoring, Lime Settling Basins			A	1	30	14,000.00	/EA-YR	1	EA	1.000	1.000	1.000		15,000	439,000	233,000
H - Long-Term Groundwater Monitoring, Lime Settling Basins			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
HA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
H - Maintenance of Existing Soil Cover			A	1	30	0.03	/SY-YR	34,000	SY	1.000	1.000	1.000		1,000	32,000	17,000
		Subtotal (P)												25,000	750,000	397,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												10,000	292,000	155,000
Contingency	32.5%	R = 0.325 * (P+Q)												11,000	339,000	180,000
		Subtotal (S)												21,000	631,000	335,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														46,000	1,381,000	732,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,380,000	732,000

Table B4.11-3b Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Lime Basins			LS	1	--	58,490.00	/EA	1	EA	1.000	1.000	1.000			61,000	61,000
H - On-Post Hazardous Waste Landfill (Enhanced Cells)			LS	1	--	13.02	/BCY	54,000	BCY	1.000	1.000	1.000			735,000	735,000
H - On-Post Hazardous Waste Landfill Closure (Enhanced Cells)			LS	2	--	5.11	/BCY	54,000	BCY	1.000	1.000	1.000			288,000	275,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	91	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	91	BCY	1.000	1.000	1.000			500	400
		Subtotal (A)													1,085,000	1,072,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													35,000	35,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													437,000	432,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													47,000	46,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													19,000	19,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													463,000	457,000
		Subtotal (G = B+C+D+E+F)													1,001,000	989,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	91	BCY	1.000	1.000	1.000			15,000	15,000
		Subtotal (A1)													15,000	15,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													2,000	2,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													1,000	1,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													300	300
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													6,000	6,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													9,000	9,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,111,000	2,085,000

Table B4.11-3b Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Lime Basins			LS	1	--	52,932.00	/EA-YR	1	EA	1.000	1.000	1.000			55,000	55,000
H - Excavation of Cover Overburden			LS	1	--	1.91	/BCY	23,000	BCY	1.000	1.000	1.000			46,000	46,000
A - Agent Screening During Excavation			LS	2	--	0.30	/BCY	54,000	BCY	1.000	1.000	1.000			17,000	16,000
H - Soil Excavation			LS	2	--	3.96	/BCY	54,000	BCY	1.000	1.000	1.040	Odor Control		232,000	221,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	54,000	BCY	1.000	1.000	1.000			61,000	58,000
H - On-Post Hazardous Waste Landfill (Enhanced Cells)			LS	2	--	5.80	/BCY	54,000	BCY	1.000	1.000	1.000			327,000	312,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	100,000	BCY	1.000	1.000	1.000			200,000	190,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	100,000	BCY	1.000	1.500	1.000			136,000	130,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	100,000	BCY	1.000	1.000	1.000			179,000	170,000
H - Backfill of Cover Overburden			LS	1	--	1.71	/BCY	23,000	BCY	1.000	1.000	1.000			41,000	41,000
HA-Subgrade Preparation Prior to Installing Cap/Cover			LS	2	--	0.06	/SY	62,000	SY	1.000	1.000	1.000			4,000	4,000
HA - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	62,000	SY	1.000	1.000	1.100	Disturbance		13,000	12,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	91	BCY	1.000	1.000	1.040	Odor Control		500	400
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	91	BCY	1.000	0.250	1.000			30	20
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	91	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	91	BCY	1.000	1.000	1.000			100	100
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	91	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (I)													1,313,000	1,257,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLMS														
Mob/Demob	4.5%	J = 0.045 * (I)													59,000	57,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													552,000	529,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													19,000	18,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													34,000	32,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													642,000	615,000
		Subtotal (O = J+K+L+M+N)													1,306,000	1,251,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	91	BCY	1.000	1.000	1.000			26,000	25,000
		Subtotal (I1)													26,000	25,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													1,000	1,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													3,000	3,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													1,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													9,000	9,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													14,000	13,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															2,659,000	2,546,000

Table B4.11-3b Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Enhanced Cells)			A	2	30	0.04	/BCY-YR	54,000	BCY	1.000	1.000	1.000		2,000	65,000	34,000
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	62,000	SY	1.000	1.000	1.000		5,000	132,000	69,000
HA - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	91	BCY	1.000	1.000	1.000		2	100	30
		Subtotal (P)												10,000	279,000	146,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	109,000	57,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	126,000	66,000
		Subtotal (S = Q+R)												8,000	235,000	123,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														18,000	514,000	268,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															5,280,000	4,900,000

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Table B4.11-6 Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
		Subtotal (A)												0	0
INDIRECT CAPITAL COSTS		COST CODE	0												
Mob/Demob	0.0%	B = 0.000 * (A)												0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)												0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)												0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)												0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)												0	0
		Subtotal (G =B+C+D+E+F)												0	0
TOTAL CAPITAL COSTS (H = A+G)														0	0

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Table B4.11-6 Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HA - Excavation of Borrow Material			LS	1	--	1.91	/BCY	46,000	BCY	1.000	1.000	1.000			92,000	92,000
HA - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	46,000	BCY	1.000	1.500	1.000			63,000	63,000
HA - Backfill with Borrow Material			LS	1	--	1.71	/BCY	46,000	BCY	1.000	1.000	1.000			82,000	82,000
HA-Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	62,000	SY	1.000	1.000	1.000			4,000	4,000
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	62,000	SY	1.000	1.000	1.000			1,232,000	1,232,000
HA - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	62,000	SY	1.000	1.000	1.100	Disturbance		13,000	13,000
		Subtotal (I)													1,485,000	1,485,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													48,000	48,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													598,000	598,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													21,000	21,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													27,000	27,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													621,000	621,000
		Subtotal (O = J+K+L+M+N)													1,315,000	1,315,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	62,000	SY	1.000	1.000	1.000		5,000	136,000	72,000
H - Long-Term Groundwater Monitoring, Lime Settling Basins			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
HA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												14,000	415,000	220,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												5,000	162,000	86,000
Contingency	32.5%	R = 0.325 * (P+Q)												6,000	188,000	99,000
		Subtotal (S)												12,000	349,000	185,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														25,000	3,565,000	3,206,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,560,000	3,210,000

Table B4.11-13d Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Lime Basins			LS	1	--	58,490.00	/EA	1	EA	1.000	1.000	1.000			61,000	61,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	520	BCY	1.000	1.000	1.000			4,000	4,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	520	BCY	1.000	1.000	1.000			3,000	2,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	91	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	91	BCY	1.000	1.000	1.000			500	400
		Subtotal (A)													70,000	69,000
INDIRECT CAPITAL COSTS		COST CODE: LMSS														
Mob/Demob	3.9%	B = 0.039 * (A)													3,000	3,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													28,000	28,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													5,000	4,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													2,000	1,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													32,000	32,000
		Subtotal (G = B+C+D+E+F)													69,000	68,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	52,000	BCY	1.000	1.000	1.000			954,000	931,000
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	2,100	BCY	1.000	1.000	1.000			4,000	4,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	91	BCY	1.000	1.000	1.000			15,000	14,000
		Subtotal (A1)													973,000	949,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													19,000	19,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													99,000	97,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													98,000	96,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													33,000	32,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													367,000	358,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													616,000	601,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,728,000	1,688,000

Table B4.11-13d Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Lime Basins			A	1	3	52,932.00	/EA-YR	1	EA	1.000	1.000	1.000			166,000	158,000
A - Agent Screening During Excavation			LS	3	--	0.30	/BCY	54,000	BCY	1.000	1.000	1.000			17,000	15,000
H - Excavation of Cover Overburden			LS	3	--	1.91	/BCY	23,000	BCY	1.000	1.000	1.000			46,000	42,000
H - Soil Excavation			LS	3	--	3.96	/BCY	54,000	BCY	1.000	1.000	1.040	Odor Control		232,000	211,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	54,000	BCY	1.000	0.250	1.000			15,000	14,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	520	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	520	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	520	BCY	1.000	1.000	1.000			3,000	3,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	52,000	BCY	1.000	1.000	1.000			70,000	64,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	52,000	BCY	1.000	0.250	1.000			12,000	11,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	52,000	BCY	1.000	1.000	1.000			93,000	84,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	2,100	BCY	1.380	1.000	1.000			4,000	4,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	2,100	BCY	1.380	0.250	1.000			1,000	1,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	2,100	BCY	1.380	1.000	1.000			5,000	5,000
H - Backfill of Cover Overburden			LS	3	--	1.71	/BCY	23,000	BCY	1.000	1.000	1.000			41,000	37,000
HA - Excavation of Borrow Material			LS	3	--	1.91	/BCY	46,000	BCY	1.000	1.000	1.000			92,000	83,000
HA - Backfill with Borrow Material			LS	3	--	1.71	/BCY	46,000	BCY	1.000	1.000	1.000			82,000	75,000
HA - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	46,000	BCY	1.000	1.500	1.000			63,000	57,000
HA-Subgrade Preparation Prior to Installing Cap/Cover			LS	3	--	0.06	/SY	62,000	SY	1.000	1.000	1.000			4,000	4,000
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	3	--	19.01	/SY	62,000	SY	1.000	1.000	1.000			1,232,000	1,117,000
HA - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	62,000	SY	1.000	1.000	1.100	Disturbance		13,000	12,000
A - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	91	BCY	1.000	1.000	1.040	Odor Control		500	400
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	91	BCY	1.000	0.250	1.000			30	20
A - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	91	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan			LS	3	--	1.08	/BCY-MILE	91	BCY	1.000	1.000	1.000			100	100
A - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	91	BCY	1.000	1.000	1.000			1,000	500
		Subtotal (I)													2,193,000	1,997,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS														
Mob/Demob	5.1%	J = 0.051 * (I)													112,000	102,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													928,000	845,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													57,000	52,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													65,000	59,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													1,132,000	1,031,000
		Subtotal (O = J+K+L+M+N)													2,294,000	2,089,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Saturated Soil)			LS	3	--	76.00	/BCY	54,000	BCY	1.000	1.000	1.000			4,289,000	3,890,000
A - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	91	BCY	1.000	1.000	1.000			26,000	24,000
H - Cement-Based Solidification			LS	3	--	36.11	/BCY	2,100	BCY	1.000	1.000	1.000			79,000	72,000
		Subtotal (I1)													4,394,000	3,985,000
INDIRECT SUBCONTR. O&M COSTS (OPERATION		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													439,000	399,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													97,000	88,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													1,972,000	1,789,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													2,508,000	2,275,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															11,389,000	10,346,000

Table B4.11-13d Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	520	BCY	1.000	1.000	1.000		10	400	200
H - Long Term Monitoring of Solidified Soil			A	3	30	0.25	/SY-YR	1,300	SY	1.000	1.000	1.000		300	10,000	5,000
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	3	30	0.07	/SY-YR	62,000	SY	1.000	1.000	1.000		5,000	127,000	64,000
HA - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	91	BCY	1.000	1.000	1.000		2	100	30
	Subtotal (P)													8,000	216,000	109,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIES		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	84,000	43,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	98,000	49,000
	Subtotal (S = Q+R)													6,000	182,000	92,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														14,000	398,000	202,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															13,500,000	12,200,000

Table B4.11-19b Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Lime Basins			LS	1	--	58,490.00	/EA	1	EA	1.000	1.000	1.000			61,000	61,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	91	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	91	BCY	1.000	1.000	1.000			500	400
		Subtotal (A)													62,000	62,000
INDIRECT CAPITAL COSTS		COST CODE: LMSS														
Mob/Demob	3.9%	B = 0.039 * (A)													2,000	2,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													25,000	25,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													4,000	4,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													1,000	1,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													29,000	29,000
		Subtotal (G = B+C+D+E+F)													62,000	62,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep/Saturated			LS	1	--	7,959,000.00	/UNIT	1	UNIT	1.000	1.000	1.000			8,317,000	8,317,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	91	BCY	1.000	1.000	1.000			15,000	15,000
		Subtotal (A1)													8,332,000	8,332,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: M														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													167,000	167,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													510,000	510,000
Engineering Design	10.0%	D1 = 0.100 * (A1+B1+C1)													901,000	901,000
Resident Engineering	1.6%	E1 = 0.016 * (A1+B1+C1)													144,000	144,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,016,000	3,016,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,738,000	4,738,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															13,194,000	13,194,000

Table B4.11-19b Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Lime Basins			A	1	2	52,932.00	/EA-YR	1	EA	1.000	1.000	1.000			111,000	108,000
HA - Excavation of Borrow Material			LS	2	--	1.91	/BCY	46,000	BCY	1.000	1.000	1.000			92,000	87,000
HA - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	46,000	BCY	1.000	1.500	1.000			63,000	60,000
HA - Backfill with Borrow Material			LS	2	--	1.71	/BCY	46,000	BCY	1.000	1.000	1.000			82,000	78,000
HA-Subgrade Preparation Prior to Installing Cap/Cover			LS	2	--	0.06	/SY	62,000	SY	1.000	1.000	1.000			4,000	4,000
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	2	--	19.01	/SY	62,000	SY	1.000	1.000	1.000			1,232,000	1,173,000
HA - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	62,000	SY	1.000	1.000	1.100	Disturbance		13,000	12,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	91	BCY	1.000	1.000	1.040	Odor Control		500	400
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	91	BCY	1.000	0.250	1.000			30	20
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	91	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	91	BCY	1.000	1.000	1.000			100	100
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	91	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (I)													1,597,000	1,524,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMSM														
Mob/Demob	4.5%	J = 0.045 * (I)													72,000	69,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													672,000	641,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													41,000	39,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													47,000	45,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													789,000	753,000
		Subtotal (O = J+K+L+M+N)													1,621,000	1,546,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep/Saturated			A	1	2	236.75	/BCY	52,000	BCY	1.000	1.000	1.000			12,865,000	12,559,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	91	BCY	1.000	1.000	1.000			26,000	25,000
H - In Situ Cement-Based Solidification			LS	2	--	60.93	/BCY	2,100	BCY	1.000	1.000	1.000			134,000	127,000
		Subtotal (I1)													13,025,000	12,711,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													781,000	763,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													69,000	67,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													138,000	135,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													5,605,000	5,470,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													6,594,000	6,435,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															22,836,000	22,215,000

Table B4.11-19b Cost Estimate - Lime Basins Medium Group - Section 36 Lime Basins Subgroup
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	2	30	0.07	/SY-YR	62,000	SY	1.000	1.000	1.000		5,000	132,000	69,000
H - Long-Term Groundwater Monitoring, Lime Settling Basins	A	2	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	188,000	98,000
HA - Site Reviews	A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure	A	2	30	0.02	/BCY-YR	91	BCY	1.000	1.000	1.000		2	100	30
H - Long Term Monitoring of In Situ Solidified Soil	A	2	30	0.25	/SY-YR	1,300	SY	1.000	1.000	1.000		300	10,000	5,000
Subtotal (P)												14,000	411,000	215,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL												
Indirects, Overhead & Profit 39.0%		Q = 0.390 * (P)										6,000	160,000	84,000
Contingency 32.5%		R = 0.325 * (P+Q)										6,000	186,000	97,000
Subtotal (S = Q+R)												12,000	346,000	181,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												26,000	757,000	395,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													36,800,000	35,800,000

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Table B4.12-1 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS															
H - No Action			LS	1	--	0.00	/SY	8,700	SY	1.000	1.000	1.000		0	0
A - No Action			LS	1	--	0.00	/SY	8,700	SY	1.000	1.000	1.000		0	0
		Subtotal (A)												0	0
INDIRECT CAPITAL COSTS		COST CODE	0												
Mob/Demob	0.0%	B = 0.000 * (A)												0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)												0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)												0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)												0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)												0	0
		Subtotal (G =B+C+D+E+F)												0	0
TOTAL CAPITAL COSTS (H = A+G)														0	0

Table B4.12-1 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	8,700	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	8,700	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Soil Monitoring, M-1 Pits			A	1	30	13,000.00	/EA-YR	1	EA	1.000	1.000	1.000		14,000	408,000	216,000
H - Long-Term Groundwater Monitoring, Buried M-1 Pits			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
HA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												23,000	687,000	364,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												9,000	268,000	142,000
Contingency	32.5%	R = 0.325 * (P+Q)												10,000	310,000	164,000
		Subtotal (S)												19,000	578,000	306,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														42,000	1,264,000	670,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,260,000	670,000

Table B4.12-3 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Buried M1 Pit			LS	1	--	32.53	/BCY	26,000	BCY	1.000	1.000	1.000			884,000	884,000
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	26,000	BCY	1.000	1.000	1.000			224,000	224,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	26,000	BCY	1.000	1.000	1.000			134,000	127,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	29	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	29	BCY	1.000	1.000	1.000			100	100
		Subtotal (A)													1,242,000	1,236,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													40,000	40,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													500,000	498,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													53,000	53,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													22,000	22,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													530,000	527,000
		Subtotal (G = B+C+D+E+F)													1,146,000	1,140,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	29	BCY	1.000	1.000	1.000			5,000	5,000
		Subtotal (A1)													5,000	5,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													200	200
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													1,000	1,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													300	300
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													100	100
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													2,000	2,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													3,000	3,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,396,000	2,384,000

Table B4.12-3 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	2	--	0.30	/BCY	26,000	BCY	1.000	1.000	1.000			8,000	8,000
H - Vapor Dome and Controls for Buried M1 Pit			LS	2	--	8.74	/BCY	26,000	BCY	1.000	1.000	1.000			237,000	226,000
H - Excavation of Soil within Vapor Enclosure			LS	2	--	8.69	/BCY	26,000	BCY	1.000	1.000	1.000			236,000	225,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	26,000	BCY	1.000	0.250	1.000			7,000	7,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	26,000	BCY	1.000	1.000	1.000			157,000	150,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	26,000	BCY	1.000	1.000	1.000			52,000	49,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	26,000	BCY	1.000	1.500	1.000			35,000	34,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	26,000	BCY	1.000	1.000	1.000			46,000	44,000
H - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	8,700	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	8,700	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	29	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	0.250	1.000			10	10
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	29	BCY	1.000	1.000	1.000			50	50
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	1.000	1.000			30	30
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	29	BCY	1.000	1.000	1.000			200	200
		Subtotal (I)													783,000	745,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													35,000	34,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													339,000	323,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													12,000	11,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													20,000	19,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													387,000	368,000
		Subtotal (O = J+K+L+M+N)													793,000	755,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	29	BCY	1.000	1.000	1.000			8,000	8,000
		Subtotal (I1)													8,000	8,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													400	400
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													1,000	1,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													200	200
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													3,000	3,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													4,000	4,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															1,588,000	1,513,000

Table B4.12-3 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	26,000	BCY	1.000	1.000	1.000		1,000	19,000	10,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	29	BCY	1.000	1.000	1.000		1	20	10
		Subtotal (P)												1,000	19,000	10,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												300	7,000	4,000
Contingency	32.5%	R = 0.325 * (P+Q)												300	9,000	4,000
		Subtotal (S = Q+R)												1,000	16,000	8,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														1,000	35,000	18,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															4,020,000	3,910,000

Table B4.12-5 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Installation of Hydraulic Controls, M-1 Pits			LS	1	--	80,086.00	/EA	1	EA	1.000	1.000	1.000			84,000	84,000
		Subtotal (A)													84,000	84,000
INDIRECT CAPITAL COSTS		COST CODE	MMSS													
Mob/Demob	4.5%	B = 0.045 * (A)													4,000	4,000
Indirects, Overhead & Profit	40.3%	C = 0.403 * (A+B)													35,000	35,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													6,000	6,000
Resident Engineering	1.8%	E = 0.018 * (A+B+C)													2,000	2,000
Contingency	31.3%	F = 0.313 * (A+B+C+D+E)													41,000	41,000
		Subtotal (G =B+C+D+E+F)													87,000	87,000
TOTAL CAPITAL COSTS (H = A+G)															171,000	171,000

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Table B4.12-5 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 5: Caps/Covers (Multi-Layer Cap); Vertical Barriers (Slurry Walls)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Slurry Wall (0 - 20 ft Deep)			LS	1	--	33.77	/SY	2,500	SY	1.000	1.000	1.000			88,000	88,000
H - Excavation of Borrow Material			LS	1	--	1.91	/BCY	2,500	BCY	1.000	1.000	1.000			5,000	5,000
H - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	2,500	BCY	1.000	1.500	1.000			3,000	3,000
H - Backfill with Borrow Material			LS	1	--	1.71	/BCY	2,500	BCY	1.000	1.000	1.000			4,000	4,000
H - Grade Filling w/Excav Soil from Slurry Trench Prior to Capping			LS	1	--	3.44	/BCY	2,500	BCY	1.000	1.000	1.000			9,000	9,000
HA-Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	8,700	SY	1.000	1.000	1.000			1,000	1,000
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	8,700	SY	1.000	1.000	1.000			173,000	173,000
HA - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	8,700	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
		Subtotal (I)													285,000	285,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													11,000	11,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													119,000	119,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													4,000	4,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													6,000	6,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													128,000	128,000
		Subtotal (O = J+K+L+M+N)													268,000	268,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HA - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	8,700	SY	1.000	1.000	1.000		1,000	19,000	10,000
H - Long-Term Groundwater Monitoring, Buried M-1 Pits			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
HA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												10,000	298,000	158,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	116,000	62,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	135,000	71,000
		Subtotal (S)												8,000	251,000	133,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														18,000	1,103,000	845,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,270,000	1,020,000

Table B4.12-10 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 10: Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Vapor Dome and Controls for Buried M1 Pit			LS	1	--	32.53	/BCY	26,000	BCY	1.000	1.000	1.000			884,000	884,000
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	26,000	BCY	1.000	1.000	1.000			224,000	224,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	26,000	BCY	1.000	1.000	1.000			134,000	127,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	29	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	29	BCY	1.000	1.000	1.000			100	100
		Subtotal (A)													1,242,000	1,236,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													40,000	40,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													500,000	498,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													53,000	53,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													22,000	22,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													530,000	527,000
		Subtotal (G = B+C+D+E+F)													1,146,000	1,140,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Cement-Based Solidification			LS	1	--	1.84	/BCY	26,000	BCY	1.000	1.000	1.000			50,000	50,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	29	BCY	1.000	1.000	1.000			5,000	5,000
		Subtotal (A1)													55,000	55,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													6,000	6,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													6,000	6,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													2,000	2,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													21,000	21,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													35,000	35,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,478,000	2,466,000

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Table B4.12-10 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 10: Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	2	--	0.30	/BCY	26,000	BCY	1.000	1.000	1.000			8,000	8,000
H - Vapor Dome and Controls for Buried M1 Pit			LS	2	--	8.74	/BCY	26,000	BCY	1.000	1.000	1.000			237,000	226,000
H - Excavation of Soil within Vapor Enclosure			LS	2	--	8.69	/BCY	26,000	BCY	1.000	1.000	1.000			236,000	225,000
H - Transportation of Contaminated Soil to Solidification Facility			LS	2	--	1.08	/BCY-MILE	26,000	BCY	1.000	0.250	1.000			7,000	7,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	26,000	BCY	1.380	1.000	1.000			58,000	56,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	26,000	BCY	1.380	1.000	1.000			40,000	39,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	26,000	BCY	1.380	1.000	1.000			217,000	206,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	26,000	BCY	1.000	1.000	1.000			52,000	49,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	26,000	BCY	1.000	1.500	1.000			35,000	34,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	26,000	BCY	1.000	1.000	1.000			46,000	44,000
H - Soil Cover for Solidified Materials			LS	2	--	6.92	/SY	8,700	SY	1.000	1.000	1.000			63,000	60,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	8,700	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	29	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	0.250	1.000			10	10
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	29	BCY	1.000	1.000	1.000			50	50
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	1.000	1.000			30	30
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	29	BCY	1.000	1.000	1.000			200	200
		Subtotal (I)													1,004,000	956,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													45,000	43,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													435,000	415,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													15,000	14,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													26,000	25,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													496,000	472,000
		Subtotal (O = J+K+L+M+N)													1,017,000	968,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Cement-Based Solidification			LS	2	--	36.11	/BCY	26,000	BCY	1.000	1.000	1.000			981,000	934,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	29	BCY	1.000	1.000	1.000			8,000	8,000
		Subtotal (I1)													989,000	942,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													99,000	94,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													22,000	21,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													444,000	423,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													565,000	538,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															3,575,000	3,404,000

Table B4.12-10 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 10: Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of Solidified Soil			A	2	30	0.25	/SY-YR	8,700	SY	1.000	1.000	1.000		2,000	66,000	34,000
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	26,000	BCY	1.000	1.000	1.000		1,000	19,000	10,000
HA - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	29	BCY	1.000	1.000	1.000		1	20	10
		Subtotal (P)												6,000	167,000	87,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	65,000	34,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	75,000	39,000
		Subtotal (S = Q+R)												5,000	140,000	73,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														11,000	307,000	160,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															6,360,000	6,030,000

Table B4.12-19 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 19: In Situ Thermal Treatment (RF/Microwave Heating); In Situ Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	29	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	29	BCY	1.000	1.000	1.000			100	100
		Subtotal (A)													400	400
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													10	10
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													200	200
Engineering Design	3.0%	D = 0.030 * (A+B+C)													20	20
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													10	10
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													200	200
		Subtotal (G = B+C+D+E+F)													400	400
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep/Saturated			LS	1	--	7,959,000.00	/UNIT	1	UNIT	1.000	1.000	1.000			8,317,000	8,317,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	29	BCY	1.000	1.000	1.000			5,000	5,000
		Subtotal (A1)													8,322,000	8,322,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													166,000	166,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													509,000	509,000
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													1,080,000	1,080,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													135,000	135,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,064,000	3,064,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,954,000	4,954,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															13,277,000	13,277,000

Table B4.12-19 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 19: In Situ Thermal Treatment (RF/Microwave Heating); In Situ Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Cover for Solidified Materials			LS	2	--	6.92	/SY	8,700	SY	1.000	1.000	1.000			63,000	60,000
H - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	8,700	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	8,700	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	29	BCY	1.000	1.000	1.040	Odor Control		100	100
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	0.250	1.000			10	10
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	29	BCY	1.000	1.000	1.000			50	50
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	1.000	1.000			30	30
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	29	BCY	1.000	1.000	1.000			200	200
		Subtotal (I)													66,000	63,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													3,000	3,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													29,000	27,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													2,000	2,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													32,000	31,000
		Subtotal (O = J+K+L+M+N)													67,000	63,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep/Saturated			LS	2	--	236.75	/BCY	1,700	BCY	1.000	1.000	1.000			421,000	401,000
H - In Situ Cement-Based Solidification			LS	2	--	60.93	/BCY	26,000	BCY	1.000	1.000	1.000			1,655,000	1,577,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	29	BCY	1.000	1.000	1.000			8,000	8,000
		Subtotal (I1)													2,084,000	1,985,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													125,000	119,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													11,000	11,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													22,000	21,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													897,000	854,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													1,055,000	1,005,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															3,272,000	3,116,000

Table B4.12-19 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 19: In Situ Thermal Treatment (RF/Microwave Heating), In Situ Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of In Situ Solidified Soil			A	2	30	0.25	/SY-YR	8,700	SY	1.000	1.000	1.000		2,000	66,000	34,000
H - Long-Term Groundwater Monitoring, Buried M-1 Pits			A	2	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	188,000	98,000
H - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	29	BCY	1.000	1.000	1.000		1	20	10
		Subtotal (P)												12,000	336,000	175,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												5,000	131,000	68,000
Contingency	32.5%	R = 0.325 * (P+Q)												5,000	152,000	79,000
		Subtotal (S = Q+R)												10,000	283,000	148,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														21,000	618,000	323,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															17,200,000	16,700,000

Table B4.12-21 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 21: In Situ Thermal Treatment (In Situ Vitrification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													0	0
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													0	0
Engineering Design	3.0%	D = 0.030 * (A+B+C)													0	0
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													0	0
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													0	0
		Subtotal (G = B+C+D+E+F)													0	0
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ Vitrification			LS	1	–	29.36	/BCY	26,000	BCY	1.000	1.000	1.000		798,000	798,000	798,000
		Subtotal (A1)													798,000	798,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: P														
Mob/Demob	0.0%	B1 = 0.000 * (A1)													0	0
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													48,000	48,000
Engineering Design	1.0%	D1 = 0.010 * (A1+B1+C1)													8,000	8,000
Resident Engineering	1.0%	E1 = 0.010 * (A1+B1+C1)													8,000	8,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													259,000	259,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													324,000	324,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,121,000	1,121,000

Table B4.12-21 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 21: In Situ Thermal Treatment (In Situ Vitrification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	12,000	BCY	1.000	1.000	1.000			24,000	23,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	12,000	BCY	1.000	1.500	1.000			16,000	16,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	12,000	BCY	1.000	1.000	1.000			21,000	20,000
H - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	8,700	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	8,700	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
		Subtotal (I)													64,000	61,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													3,000	3,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													28,000	27,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													2,000	2,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													32,000	30,000
		Subtotal (G = J+K+L+M+N)													65,000	62,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ Vitrification			A	1	2	603.49	/BCY	26,000	BCY	1.000	1.000	1.000			16,397,000	16,006,000
		Subtotal (I1)													16,397,000	16,006,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: P														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													984,000	960,000
Engineering Design	1.0%	L1 = 0.010 * (I1+J1+K1)													174,000	170,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													174,000	170,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													5,318,000	5,192,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													6,650,000	6,492,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															23,176,000	22,621,000

Table B4.12-21 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 21: In Situ Thermal Treatment (In Situ Vitrification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Soil Monitoring, M-1 Pits			A	2	30	13,000.00	/EA-YR	1	EA	1.000	1.000	1.000		14,000	394,000	206,000
H - Long-Term Groundwater Monitoring, Buried M-1 Pits			A	2	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	188,000	98,000
HA - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												23,000	664,000	347,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												9,000	259,000	135,000
Contingency	32.5%	R = 0.325 * (P+Q)												10,000	300,000	157,000
		Subtotal (S = Q+R)												19,000	559,000	292,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														42,000	1,222,000	638,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															25,500,000	24,400,000

HBM1-21.WQ1
SOILS DAA

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Table B4.12-22 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 22: In Situ Solidification/Stabilization (Silica-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	29	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	29	BCY	1.000	1.000	1.000			100	100
		Subtotal (A)													400	400
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													10	10
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													200	200
Engineering Design	3.0%	D = 0.030 * (A+B+C)													20	20
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													10	10
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													200	200
		Subtotal (G = B+C+D+E+F)													400	400
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	29	BCY	1.000	1.000	1.000			5,000	5,000
		Subtotal (A1)													5,000	5,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													100	100
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													300	300
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													1,000	1,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													100	100
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													2,000	2,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													3,000	3,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															8,000	8,000

HBM1-22.WQ1
SOILS DAA

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Table B4.12-22 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 22: In Situ Solidification/Stabilization (Silica-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Cover for Solidified Materials			LS	2	--	6.92	/SY	8,700	SY	1.000	1.000	1.000			63,000	60,000
H - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	8,700	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	8,700	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	29	BCY	1.000	1.000	1.040	Odor Control		100	100
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	0.250	1.000			10	10
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	29	BCY	1.000	1.000	1.000			50	50
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	29	BCY	1.000	1.000	1.000			30	30
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	29	BCY	1.000	1.000	1.000			200	200
		Subtotal (I)													66,000	63,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLSS														
Mob/Demob	4.5%	J = 0.045 * (I)													3,000	3,000
Indirects, Overhead & Profit	41.5%	K = 0.415 * (I+J)													29,000	27,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													2,000	2,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													32,000	31,000
		Subtotal (O = J+K+L+M+N)													67,000	63,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ Cement-Based Solidification			LS	2	--	60.93	/BCY	26,000	BCY	1.000	1.000	1.000			1,655,000	1,577,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	29	BCY	1.000	1.000	1.000			8,000	8,000
		Subtotal (I1)													1,664,000	1,585,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													100,000	95,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													9,000	8,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													18,000	17,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													716,000	682,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													842,000	802,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															2,638,000	2,513,000

Table B4.12-22 Cost Estimate - Lime Basins Medium Group - Buried M-1 Pits Subgroup
Alternative 22: In Situ Solidification/Stabilization (Silica-Based Solidification)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - Long Term Monitoring of In Situ Solidified Soil	A	2	30	0.25	/SY-YR	8,700	SY	1.000	1.000	1.000		2,000	66,000	34,000
H - Long-Term Groundwater Monitoring, Buried M-1 Pits	A	2	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	188,000	98,000
H - Site Reviews	A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure	A	2	30	0.02	/BCY-YR	29	BCY	1.000	1.000	1.000		1	20	10
Subtotal (P)												12,000	336,000	175,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI	COST CODE: LLSL													
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											5,000	131,000	68,000
Contingency 32.5%	R = 0.325 * (P+Q)											5,000	152,000	79,000
Subtotal (S = Q+R)												10,000	283,000	148,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												21,000	618,000	323,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													3,270,000	2,840,000

HBM1-22.WQ1
SOILS DAA

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Table B4.13-1 Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	80,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	98,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 *(A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 *(A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 *(A+B+C)													0	0
Contingency	0.0%	F = 0.000 *(A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.13-1 Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	80,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	98,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, South Plants Central Processing			A	1	30	50,000.00	/EA-YR	1	EA	1.000	1.000	1.000		52,000	1,568,000	831,000
H - Long-Term Groundwater Monitoring, South Plants Centrel Processin			A	1	30	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	533,000	282,000
HBA - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												73,000	2,185,000	1,158,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												28,000	852,000	452,000
Contingency	32.5%	R = 0.325 * (P+Q)												33,000	987,000	523,000
		Subtotal (S)												61,000	1,839,000	975,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														134,000	4,024,000	2,133,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,020,000	2,130,000

Table B4.13-1b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 1b: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action (Limited)			LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	380	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	380	BCY	1.000	1.000	1.000			2,000	2,000
B - No Action			LS	1	--	0.00	/SY	80,000	SY	1.000	1.000	1.000			0	0
A-No Action (Limited)			LS	1	--	0.00	/SY	98,000	SY	1.000	1.000	1.000			0	0
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	28	BCY	1.000	1.000	1.000			200	200
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	28	BCY	1.000	1.000	1.000			100	100
		Subtotal (A)													6,000	5,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													200	200
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,000	2,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													200	200
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													100	100
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													2,000	2,000
		Subtotal (G = B+C+D+E+F)													5,000	5,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	38,000	BCY	1.000	1.000	1.000			697,000	680,000
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	1,500	BCY	1.000	1.000	1.000			3,000	3,000
AP - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	28	BCY	1.000	1.000	1.000			5,000	4,000
		Subtotal (A1)													704,000	687,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													14,000	14,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													72,000	70,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													71,000	69,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													24,000	23,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													266,000	259,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													446,000	436,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,162,000	1,133,000

Table B4.13-1b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 1b: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
H - No Action (Limited)	LS	1	--	0.00	/SY	140,000	SY	1.000	1.000	1.000			0	0
AP - Agent Screening During Excavation	LS	3	--	0.30	/BCY	38,000	BCY	1.000	1.000	1.000			12,000	11,000
H - Soil Excavation	LS	3	--	3.96	/BCY	38,000	BCY	1.000	1.000	1.200	Odor Control		189,000	171,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility	LS	3	--	1.08	/BCY-MILE	38,000	BCY	1.000	0.250	1.000			11,000	10,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	380	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	380	BCY	1.000	1.000	1.000			400	400
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	380	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	38,000	BCY	1.000	1.000	1.000			51,000	46,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	38,000	BCY	1.000	0.250	1.000			9,000	8,000
H - Backfill with Treated Soil	LS	3	--	1.71	/BCY	38,000	BCY	1.000	1.000	1.000			68,000	62,000
H - Transportation of Contaminated Soil to Solidification Facility	LS	3	--	1.08	/BCY-MILE	1,500	BCY	1.000	0.250	1.000			400	400
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	1,500	BCY	1.380	1.000	1.000			3,000	3,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	1,500	BCY	1.380	0.250	1.000			500	400
H - Backfill with Treated Soil	LS	3	--	1.71	/BCY	1,500	BCY	1.380	1.000	1.000			4,000	3,000
H - Supplementation of Soil With Conditioners	LS	3	--	0.07	/SY	42,000	SY	1.000	1.000	1.000			3,000	3,000
H - Revegetation of Disturbed Areas	LS	3	--	0.18	/SY	42,000	SY	1.000	1.000	1.100	Disturbance		9,000	8,000
B - No Action	LS	1	--	0.00	/SY	80,000	SY	1.000	1.000	1.000			0	0
A-No Action (Limited)	LS	1	--	0.00	/SY	98,000	SY	1.000	1.000	1.000			0	0
AP - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	28	BCY	1.000	1.000	1.040	Odor Control		100	100
AP - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	28	BCY	1.000	0.250	1.000			10	10
AP - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	28	BCY	1.000	1.000	1.000			50	40
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste	LS	3	--	1.08	/BCY-MILE	28	BCY	1.000	1.000	1.000			30	30
AP - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	28	BCY	1.000	1.000	1.000			200	200
Subtotal (I)													362,000	328,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLMS												
Mob/Demob	3.9%	J = 0.039 * (I)											14,000	13,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)											147,000	133,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)											5,000	5,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)											8,000	7,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)											161,000	146,000
Subtotal (O = J+K+L+M+N)													334,000	303,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Thermal Desorption (Saturated Soil)	LS	3	--	76.00	/BCY	38,000	BCY	1.000	1.000	1.000			3,018,000	2,737,000
H - Cement-Based Solidification	LS	3	--	36.11	/BCY	1,500	BCY	1.000	1.000	1.000			57,000	51,000
A - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	28	BCY	1.000	1.000	1.000			8,000	7,000
Subtotal (I1)													3,083,000	2,796,000
INDIRECT SUBCONTR. O&M COSTS (OPERATI		COST CODE: D												
Mob/Demob	0.0%	J1 = 0.000 * (I1)											0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)											308,000	280,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)											0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)											68,000	62,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)											1,383,000	1,255,000
Subtotal (O1 = J1+K1+L1+M1+N1)													1,760,000	1,596,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													5,539,000	5,024,000

Table B4.13-1b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 1b: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	380	BCY	1.000	1.000	1.000		10	300	100
H - Long Term Monitoring of Solidified Soil			A	3	30	0.25	/SY-YR	4,600	SY	1.000	1.000	1.000		1,000	34,000	17,000
HB - Long Term Soil Monitoring, South Plants Central Processing			A	3	30	50,000.00	/EA-YR	1	EA	1.000	1.000	1.000		52,000	1,463,000	741,000
H - Long-Term Groundwater Monitoring, South Plants Central Processi			A	3	30	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	497,000	252,000
HBA - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	28	BCY	1.000	1.000	1.000		1	20	10
		Subtotal (P)												74,000	2,073,000	1,051,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												29,000	809,000	410,000
Contingency	32.5%	R = 0.325 * (P+Q)												33,000	937,000	475,000
		Subtotal (S = Q+R)												62,000	1,745,000	884,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														136,000	3,819,000	1,935,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															10,500,000	8,090,000

Table B4.13-3b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	110,000	BCY	1.000	1.000	1.000			949,000	949,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	110,000	BCY	1.000	1.000	1.000			566,000	539,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													1,517,000	1,490,000
INDIRECT CAPITAL COSTS		COST CODE: LLMS														
Mob/Demob	3.3%	B = 0.033 * (A)													49,000	48,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													591,000	581,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													65,000	64,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													27,000	26,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													647,000	635,000
		Subtotal (G = B+C+D+E+F)													1,379,000	1,355,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	25,000
		Subtotal (A1)													27,000	25,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													3,000	3,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													1,000	1,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													10,000	9,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													16,000	15,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,939,000	2,885,000

Table B4.13-3b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	2	--	0.30	/BCY	110,000	BCY	1.000	1.000	1.000			34,000	33,000
H - Soil Excavation			LS	2	--	3.96	/BCY	110,000	BCY	1.000	1.000	1.040	Odor Control		473,000	451,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	110,000	BCY	1.000	1.500	1.000			186,000	177,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	110,000	BCY	1.000	1.000	1.000			664,000	633,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	110,000	BCY	1.000	1.000	1.000			220,000	209,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	110,000	BCY	1.000	1.500	1.000			150,000	143,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	110,000	BCY	1.000	1.000	1.000			197,000	187,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	670,000	BCY	1.000	1.000	1.000			1,337,000	1,274,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	670,000	BCY	1.000	1.500	1.000			914,000	870,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	670,000	BCY	1.000	1.000	1.000			1,197,000	1,140,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			LS	2	--	0.06	/SY	220,000	SY	1.000	1.000	1.000			14,000	13,000
HB - Installation of 4 ft Soil Cover (with Biota Barrier)			LS	2	--	12.78	/SY	220,000	SY	1.000	1.000	1.000			2,938,000	2,798,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	220,000	SY	1.000	1.000	1.100	Disturbance		46,000	43,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	0.250	1.000			50	40
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (I)													8,373,000	7,974,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HLLS														
Mob/Demob	4.5%	J = 0.045 * (I)													377,000	359,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													3,412,000	3,250,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													122,000	116,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													213,000	203,000
Contingency	32.5%	N = 0.325 * (I+J+K+L+M)													4,061,000	3,868,000
		Subtotal (O = J+K+L+M+N)													8,185,000	7,795,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	44,000
		Subtotal (I1)													46,000	44,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													2,000	2,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													5,000	5,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													1,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													16,000	15,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													24,000	23,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															16,627,000	15,836,000

Table B4.13-3b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 3b: Landfill (On-Post Landfill); Caps/Covers (Soil Cover or Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	110,000	BCY	1.000	1.000	1.000		3,000	80,000	42,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	3	30	0.07	/SY-YR	220,000	SY	1.000	1.000	1.000		16,000	451,000	228,000
H - Long-Term Groundwater Monitoring, South Plants Central Processin			A	3	30	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	497,000	252,000
HB - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
		Subtotal (P)												39,000	1,107,000	562,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												15,000	432,000	219,000
Contingency	32.5%	R = 0.325 * (P+Q)												18,000	500,000	254,000
		Subtotal (S = Q+R)												33,000	932,000	473,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														73,000	2,039,000	1,036,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															21,600,000	19,800,000

Table B4.13-3d Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 3d: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Muli

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	110,000	BCY	1.000	1.000	1.000			949,000	904,000
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	110,000	BCY	1.000	1.000	1.000			566,000	513,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	380	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	380	BCY	1.000	1.000	1.000			2,000	2,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													1,522,000	1,424,000
INDIRECT CAPITAL COSTS		COST CODE: LLMS														
Mob/Demob	3.3%	B = 0.033 * (A)													49,000	46,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													593,000	555,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													65,000	61,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													27,000	25,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													649,000	607,000
		Subtotal (G = B+C+D+E+F)													1,384,000	1,295,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	38,000	BCY	1.000	1.000	1.000			697,000	680,000
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	1,500	BCY	1.000	1.000	1.000			3,000	3,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	25,000
		Subtotal (A1)													726,000	708,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													15,000	14,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													74,000	72,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													73,000	72,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													24,000	24,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													274,000	267,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													460,000	449,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															4,093,000	3,876,000

Table B4.13-3d Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 3d: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Muli

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	3	--	0.30	/BCY	110,000	BCY	1.000	1.000	1.000			34,000	31,000
H - Soil Excavation		LS	3	--	3.96	/BCY	110,000	BCY	1.000	1.000	1.040	Odor Control		473,000	429,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility		LS	3	--	1.08	/BCY-MILE	38,000	BCY	1.000	0.250	1.000			11,000	10,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	380	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	380	BCY	1.000	1.000	1.000			400	400
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	380	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	38,000	BCY	1.000	1.000	1.000			62,000	56,000
H - Transportation of Treated Soil to On-Post Hazardous Waste Landfill		LS	3	--	0.87	/BCY-MILE	38,000	BCY	1.000	1.000	1.000			35,000	31,000
H - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	38,000	BCY	1.000	1.000	1.000			230,000	208,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	1,500	BCY	1.380	1.000	1.000			3,000	3,000
H - Transportation of Treated Soil to On-Post Hazardous Waste Landfill		LS	3	--	0.87	/BCY-MILE	1,500	BCY	1.380	1.000	1.000			2,000	2,000
H - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	1,500	BCY	1.380	1.000	1.000			13,000	11,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan		LS	3	--	1.08	/BCY-MILE	72,000	BCY	1.000	1.500	1.000			122,000	111,000
H - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	72,000	BCY	1.000	1.000	1.000			435,000	394,000
H - Excavation of Borrow Material		LS	3	--	1.91	/BCY	670,000	BCY	1.000	1.000	1.000			1,337,000	1,213,000
H - Transportation of Borrow Material to Backfill Area		LS	3	--	0.87	/BCY-MILE	670,000	BCY	1.000	1.500	1.000			914,000	829,000
H - Backfill with Borrow Material		LS	3	--	1.71	/BCY	670,000	BCY	1.000	1.000	1.000			1,197,000	1,086,000
HB - Subgrade Preparation Prior to Installing Cap/Cover		LS	4	--	0.06	/SY	220,000	SY	1.000	1.000	1.000			14,000	12,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)		LS	4	--	19.01	/SY	220,000	SY	1.000	1.000	1.000			4,370,000	3,775,000
HB - Revegetation of Disturbed Areas		LS	4	--	0.18	/SY	220,000	SY	1.000	1.000	1.100	Disturbance		46,000	39,000
A - Excavation of Soil with Agent		LS	3	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	0.250	1.000			50	40
A - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan		LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
	Subtotal (I)													9,303,000	8,247,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HLLS														
Mob/Demob	4.5% J = 0.045 * (I)													419,000	371,000
Indirects, Overhead & Profit	39.0% K = 0.390 * (I+J)													3,791,000	3,361,000
Engineering Design	1.0% L = 0.010 * (I+J+K)													135,000	120,000
Resident Engineering	1.8% M = 0.018 * (I+J+K)													236,000	210,000
Contingency	32.5% N = 0.325 * (I+J+K+L+M)													4,512,000	4,000,000
	Subtotal (O = J+K+L+M+N)													9,094,000	8,061,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Saturated Soil)		LS	3	--	76.00	/BCY	38,000	BCY	1.000	1.000	1.000			3,018,000	2,737,000
H - Cement-Based Solidification		LS	3	--	36.11	/BCY	1,500	BCY	1.000	1.000	1.000			57,000	51,000
A - Caustic Washing of Agent Soil		LS	3	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	41,000
	Subtotal (I1)													3,120,000	2,830,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0% J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													312,000	283,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													69,000	62,000
Contingency	40.0% N1 = 0.400 * (I1+J1+K1+L1+M1)													1,400,000	1,270,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													1,781,000	1,615,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														23,298,000	20,754,000

Table B4.13-3d Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 3d: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Landfill (On-Post Landfill); Caps/Covers (Muli

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			LS	3	--	0.02	/BCY-YR	110,000	BCY	1.000	1.000	1.000		3,000	3,000	3,000
H - Long Term Monitoring of Solidified Soil			LS	3	--	0.25	/SY-YR	4,600	SY	1.000	1.000	1.000		1,000	1,000	1,000
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	30	0.07	/SY-YR	220,000	SY	1.000	1.000	1.000		16,000	435,000	214,000
H - Long-Term Groundwater Monitoring, South Plants Central Processing			LS	3	--	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	18,000	16,000
HB - Site Reviews			LS	3	--	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	3,000	3,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	4	4
		Subtotal (P)												41,000	459,000	236,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												16,000	179,000	92,000
Contingency	32.5%	R = 0.325 * (P+Q)												18,000	207,000	107,000
		Subtotal (S = Q+R)												34,000	386,000	199,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														75,000	845,000	435,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															28,200,000	25,100,000

Table B4.13-6 Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.13-6 Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HBA - Excavation of Borrow Material			A	1	2	1.91	/BCY	1,400,000	BCY	1.000	1.000	1.000			2,794,000	2,728,000
HBA - Transportation of Borrow Material to Backfill Area			A	1	2	0.87	/BCY-MILE	1,400,000	BCY	1.000	1.500	1.000			1,909,000	1,864,000
HBA - Backfill with Borrow Material			A	1	2	1.71	/BCY	1,400,000	BCY	1.000	1.000	1.000			2,502,000	2,442,000
HBA - Subgrade Preparation Prior to Installing Cap/Cover			A	1	2	0.06	/SY	220,000	SY	1.000	1.000	1.000			14,000	13,000
HBA - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	2	19.01	/SY	220,000	SY	1.000	1.000	1.000			4,370,000	4,266,000
HBA - Revegetation of Disturbed Areas			A	1	2	0.18	/SY	220,000	SY	1.000	1.000	1.100	Disturbance		46,000	44,000
		Subtotal (I)													11,635,000	11,358,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE LLMS														
Mob/Demob	3.3%	J = 0.033 * (I)													378,000	369,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													4,535,000	4,427,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													165,000	162,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													207,000	202,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													4,865,000	4,749,000
		Subtotal (O = J+K+L+M+N)													10,150,000	9,908,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HBA - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	220,000	SY	1.000	1.000	1.000		16,000	467,000	244,000
H - Long-Term Groundwater Monitoring, South Plants Central Processin			A	2	30	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	515,000	269,000
HBA - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												37,000	1,064,000	555,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												14,000	415,000	217,000
Contingency	32.5%	R = 0.325 * (P+Q)												17,000	481,000	251,000
		Subtotal (S)												31,000	895,000	467,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														68,000	23,744,000	22,289,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															23,700,000	22,300,000

Table B4.13-6a Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 6a: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	380	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	380	BCY	1.000	1.000	1.000			2,000	2,000
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	28	BCY	1.000	1.000	1.000			200	200
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	28	BCY	1.000	1.000	1.000			100	100
		Subtotal (A)													6,000	5,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													200	200
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,000	2,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													200	200
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													100	100
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													2,000	2,000
		Subtotal (G = B+C+D+E+F)													5,000	5,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	38,000	BCY	1.000	1.000	1.000			697,000	680,000
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	1,500	BCY	1.000	1.000	1.000			3,000	3,000
AP - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	28	BCY	1.000	1.000	1.000			5,000	4,000
		Subtotal (A1)													704,000	687,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													14,000	14,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													72,000	70,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													71,000	69,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													24,000	23,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													266,000	259,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													446,000	436,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,162,000	1,133,000

Table B4.13-6a Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 6a: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	3	--	0.30	/BCY	38,000	BCY	1.000	1.000	1.000			12,000	11,000
H - Soil Excavation			LS	3	--	3.96	/BCY	38,000	BCY	1.000	1.000	1.040	Odor Control		164,000	148,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	38,000	BCY	1.000	0.250	1.000			11,000	10,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	380	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	380	BCY	1.000	1.000	1.000			400	400
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	380	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	38,000	BCY	1.000	1.000	1.000			51,000	46,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	38,000	BCY	1.000	0.250	1.000			9,000	8,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	38,000	BCY	1.000	1.000	1.000			68,000	62,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	1,500	BCY	1.380	1.000	1.000			3,000	3,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	1,500	BCY	1.380	0.250	1.000			500	400
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	1,500	BCY	1.380	1.000	1.000			4,000	3,000
HBA - Excavation of Borrow Material			LS	3	--	1.91	/BCY	560,000	BCY	1.380	1.000	1.000			1,542,000	1,399,000
HBA - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	560,000	BCY	1.380	1.500	1.000			1,054,000	956,000
HBA - Backfill with Borrow Material			LS	3	--	1.71	/BCY	560,000	BCY	1.380	1.000	1.000			1,381,000	1,253,000
HBA - Subgrade Preparation Prior to Installing Cap/Cover			LS	3	--	0.06	/SY	220,000	SY	1.000	1.000	1.000			14,000	13,000
HBA - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	3	--	19.01	/SY	220,000	SY	1.000	1.000	1.000			4,370,000	3,964,000
HBA - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	220,000	SY	1.000	1.000	1.100	Disturbance		46,000	41,000
AP - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	28	BCY	1.000	1.000	1.040	Odor Control		100	100
AP - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	28	BCY	1.000	0.250	1.000			10	10
AP - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	28	BCY	1.000	1.000	1.000			50	40
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	3	--	1.08	/BCY-MILE	28	BCY	1.000	1.000	1.000			30	30
AP - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	28	BCY	1.000	1.000	1.000			200	200
		Subtotal (I)													8,732,000	7,920,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLLS														
Mob/Demob	3.9%	J = 0.039 * (I)													338,000	307,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													3,424,000	3,106,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													125,000	113,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													187,000	170,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													3,842,000	3,485,000
		Subtotal (O = J+K+L+M+N)													7,917,000	7,181,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Saturated Soil)			LS	3	--	76.00	/BCY	38,000	BCY	1.000	1.000	1.000			3,018,000	2,737,000
H - Cement-Based Solidification			LS	3	--	36.11	/BCY	1,500	BCY	1.000	1.000	1.000			57,000	51,000
AP - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	28	BCY	1.000	1.000	1.000			8,000	7,000
		Subtotal (I1)													3,083,000	2,796,000
INDIRECT SUBCONTR. O&M COSTS (OPERATI		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													308,000	280,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													68,000	62,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													1,383,000	1,255,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													1,760,000	1,596,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															21,490,000	19,492,000

Table B4.13-6a Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 6a: Direct Thermal Desorption (Direct Heating) and Direct Solidification/Stabilization (Cement-Based Solidification) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure (Particulates)	A	3	30	0.02	/BCY-YR	380	BCY	1.000	1.000	1.000		10	300	100
H - Long Term Monitoring of Solidified Soil	A	3	30	0.25	/SY-YR	4,600	SY	1.000	1.000	1.000		1,000	34,000	17,000
H - Long-Term Groundwater Monitoring, South Plants Central Processi	A	3	30	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	497,000	252,000
HBA - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	4	30	0.07	/SY-YR	220,000	SY	1.000	1.000	1.000		16,000	435,000	214,000
HBA - Site Reviews	A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
A - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	28	BCY	1.000	1.000	1.000		1	20	10
Subtotal (P)												38,000	1,045,000	523,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI COST CODE: LLSL														
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											15,000	407,000	204,000
Contingency 32.5%	R = 0.325 * (P+Q)											17,000	472,000	236,000
Subtotal (S = Q+R)												32,000	880,000	440,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												70,000	1,924,000	963,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													24,600,000	21,600,000

Table B4.13-13d Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	930	BCY	1.000	1.000	1.000			8,000	8,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	930	BCY	1.000	1.000	1.000			5,000	4,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													15,000	14,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													500	500
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													6,000	6,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													1,000	1,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													300	300
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													6,000	6,000
		Subtotal (G = B+C+D+E+F)													14,000	13,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	21,000	BCY	1.000	1.000	1.000			40,000	38,000
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	93,000	BCY	1.000	1.000	1.000			1,706,000	1,665,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	25,000
		Subtotal (A1)													1,773,000	1,729,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													35,000	35,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													181,000	176,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													179,000	175,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													60,000	58,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													668,000	652,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													1,123,000	1,095,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,925,000	2,851,000

Table B4.13-13d Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	LS	3	--	0.30	/BCY	110,000	BCY	1.000	1.000	1.000			34,000	31,000
H - Soil Excavation	LS	3	--	3.96	/BCY	110,000	BCY	1.000	1.000	1.040	Odor Control		473,000	429,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility	LS	3	--	1.08	/BCY-MILE	110,000	BCY	1.000	0.250	1.000			31,000	28,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	930	BCY	1.000	1.000	1.000			2,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	930	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	930	BCY	1.000	1.000	1.000			6,000	5,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	93,000	BCY	1.000	1.000	1.000			125,000	114,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	93,000	BCY	1.000	0.250	1.000			21,000	19,000
H - Backfill with Treated Soil	LS	3	--	1.71	/BCY	93,000	BCY	1.000	1.000	1.000			166,000	151,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill	LS	3	--	1.29	/BCY	21,000	BCY	1.380	1.000	1.000			39,000	35,000
H - Transportation of Treated Soil to Backfill Excavation	LS	3	--	0.87	/BCY-MILE	21,000	BCY	1.380	0.250	1.000			7,000	6,000
H - Backfill with Treated Soil	LS	3	--	1.71	/BCY	21,000	BCY	1.380	1.000	1.000			52,000	47,000
HB - Excavation of Borrow Material	LS	3	--	1.91	/BCY	560,000	BCY	1.000	1.000	1.000			1,118,000	1,014,000
HB - Transportation of Borrow Material to Backfill Area	LS	3	--	0.87	/BCY-MILE	560,000	BCY	1.000	1.500	1.000			764,000	693,000
HB - Backfill with Borrow Material	LS	3	--	1.71	/BCY	560,000	BCY	1.000	1.000	1.000			1,001,000	908,000
HB - Subgrade Preparation Prior to Installing Cap/Cover	LS	3	--	0.06	/SY	220,000	SY	1.000	1.000	1.000			14,000	13,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)	LS	3	--	19.01	/SY	220,000	SY	1.000	1.000	1.000			4,370,000	3,964,000
HB - Revegetation of Disturbed Areas	LS	3	--	0.18	/SY	220,000	SY	1.000	1.000	1.100	Disturbance		46,000	41,000
A - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	0.250	1.000			50	40
A - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste Landf	LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
Subtotal (I)													8,271,000	7,502,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLM												
Mob/Demob 5.1%	J = 0.051 * (I)												424,000	384,000
Indirects, Overhead & Profit 39.0%	K = 0.390 * (I+J)												3,391,000	3,076,000
Engineering Design 1.8%	L = 0.018 * (I+J+K)												212,000	192,000
Resident Engineering 2.3%	M = 0.023 * (I+J+K)												272,000	247,000
Contingency 35.0%	N = 0.350 * (I+J+K+L+M)												4,399,000	3,990,000
Subtotal (O = J+K+L+M+N)													8,698,000	7,889,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Thermal Desorption (Saturated Soil)	LS	3	--	76.00	/BCY	93,000	BCY	1.000	1.000	1.000			7,386,000	6,699,000
H - Cement-Based Solidification	LS	3	--	36.11	/BCY	21,000	BCY	1.000	1.000	1.000			792,000	719,000
A - Caustic Washing of Agent Soil	LS	3	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	41,000
Subtotal (I1)													8,224,000	7,460,000
INDIRECT SUBCONTR. O&M COSTS (OPERATION		COST CODE: D												
Mob/Demob 0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup 10.0%	K1 = 0.100 * (I1+J1)												822,000	746,000
Engineering Design 0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering 2.0%	M1 = 0.020 * (I1+J1+K1)												181,000	164,000
Contingency 40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												3,691,000	3,348,000
Subtotal (O1 = J1+K1+L1+M1+N1)													4,694,000	4,258,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													29,888,000	27,109,000

Table B4.13-13d Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 13d: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	930	BCY	1.000	1.000	1.000		20	1,000	300
H - Long Term Monitoring of Solidified Soil			A	3	30	0.25	/SY-YR	19,000	SY	1.000	1.000	1.000		5,000	139,000	70,000
HB - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	3	30	0.07	/SY-YR	220,000	SY	1.000	1.000	1.000		16,000	451,000	228,000
		Subtotal (P)												24,000	669,000	339,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIE		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												9,000	261,000	132,000
Contingency	32.5%	R = 0.325 * (P+Q)												11,000	302,000	153,000
		Subtotal (S = Q+R)												20,000	563,000	286,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														44,000	1,233,000	625,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															34,000,000	30,600,000

Table B4.13-19b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													2,000	2,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													40	40
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G = B+C+D+E+F)													2,000	2,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep/Saturated			LS	1	--	7,959,000.00	/UNIT	1	UNITS	1.000	1.000	1.000			8,317,000	8,317,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	27,000
		Subtotal (A1)													8,344,000	8,344,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: M														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													167,000	167,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													511,000	511,000
Engineering Design	10.0%	D1 = 0.100 * (A1+B1+C1)													902,000	902,000
Resident Engineering	1.6%	E1 = 0.016 * (A1+B1+C1)													144,000	144,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,020,000	3,020,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,744,000	4,744,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															13,092,000	13,092,000

Table B4.13-19b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	1	--	0.30	/BCY	330	BCY	1.000	1.000	1.000			100	100
HB - Excavation of Borrow Material			A	1	7	1.91	/BCY	560,000	BCY	1.000	1.000	1.000			1,118,000	970,000
HB - Transportation of Borrow Material to Backfill Area			A	1	7	0.87	/BCY-MILE	560,000	BCY	1.000	1.500	1.000			764,000	663,000
HB - Backfill with Borrow Material			A	1	7	1.71	/BCY	560,000	BCY	1.000	1.000	1.000			1,001,000	869,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			A	1	7	0.06	/SY	220,000	SY	1.000	1.000	1.000			14,000	12,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	7	19.01	/SY	220,000	SY	1.000	1.000	1.000			4,370,000	3,793,000
HB - Revegetation of Disturbed Areas			A	1	7	0.18	/SY	220,000	SY	1.000	1.000	1.100	Disturbance		46,000	40,000
A - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	0.250	1.000			50	40
A - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (I)													7,314,000	6,348,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLSL														
Mob/Demob	3.9%	J = 0.039 * (I)													283,000	246,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													3,058,000	2,654,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													107,000	92,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													213,000	185,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													3,704,000	3,215,000
		Subtotal (O = J+K+L+M+N)													7,365,000	6,393,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep/Saturated			A	1	7	236.75	/BCY	93,000	BCY	1.000	1.000	1.000			23,009,000	19,970,000
H - In Situ Cement-Based Solidification			LS	2	--	60.93	/BCY	21,000	BCY	1.000	1.000	1.000			1,337,000	1,273,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	44,000
		Subtotal (I1)													24,391,000	21,287,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													1,463,000	1,277,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													129,000	113,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													259,000	226,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													10,497,000	9,161,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													12,348,000	10,777,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															51,419,000	44,806,000

Table B4.13-19b Cost Estimate - South Plants Medium Group - South Plants Central Processing Area Subgroup
Alternative 19b: In Situ Thermal Treatment (RF/Microwave Heating); In SituSolidification/Stabilization (Cement-Based Solidification); Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of In Situ Solidified Soil			A	2	30	0.25	/SY-YR	19,000	SY	1.000	1.000	1.000		5,000	144,000	75,000
H - Long-Term Groundwater Monitoring, South Plants Central Processin			A	7	30	17,000.00	/EA-YR	1	EA	1.000	1.000	1.000		18,000	426,000	192,000
HB - Site Reviews			A	7	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	68,000	31,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	7	30	0.07	/SY-YR	220,000	SY	1.000	1.000	1.000		16,000	386,000	174,000
		Subtotal (P)												42,000	1,024,000	472,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												16,000	400,000	184,000
Contingency	32.5%	R = 0.325 * (P+Q)												19,000	463,000	213,000
		Subtotal (S = Q+R)												35,000	862,000	397,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														77,000	1,887,000	869,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															66,400,000	58,800,000

Table B4.14-1 Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	50,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	65,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.14-1 Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	50,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	65,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, South Plants Ditches			A	1	30	32,000.00	/EA-YR	1	EA	1.000	1.000	1.000		33,000	1,003,000	532,000
H - Long-Term Groundwater Monitoring, South Plants Ditches			A	1	30	7,700.00	/EA-YR	1	EA	1.000	1.000	1.000		8,000	241,000	128,000
HB - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												44,000	1,329,000	704,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												17,000	518,000	275,000
Contingency	32.5%	R = 0.325 * (P+Q)												20,000	600,000	318,000
		Subtotal (S)												37,000	1,119,000	593,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														82,000	2,448,000	1,297,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															2,450,000	1,300,000

Table B4.14-1a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action (Limited)			LS	1	--	0.00	/SY	50,000	SY	1.000	1.000	1.000			0	0
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	34	BCY	1.000	1.000	1.000			300	300
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	34	BCY	1.000	1.000	1.000			200	200
B - No Action			LS	1	--	0.00	/SY	65,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													500	400
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													20	10
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													200	200
Engineering Design	3.0%	D = 0.030 * (A+B+C)													20	20
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													10	10
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													200	200
		Subtotal (G = B+C+D+E+F)													400	400
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	3,400	BCY	1.000	1.000	1.000			62,000	61,000
		Subtotal (A1)													62,000	61,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													6,000	6,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													6,000	6,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													2,000	2,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													24,000	23,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													40,000	39,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															103,000	100,000

Table B4.14-1a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - No Action (Limited)		LS	1	--	0.00	/SY	50,000	SY	1.000	1.000	1.000			0	0
H - Ditch Excavation		LS	3	--	3.87	/BCY	3,400	BCY	1.000	1.000	1.000			14,000	12,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility		LS	3	--	1.08	/BCY-MILE	3,400	BCY	1.000	0.500	1.000			2,000	2,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	34	BCY	1.000	1.000	1.000			100	100
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	34	BCY	1.000	1.000	1.000			40	30
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	34	BCY	1.000	1.000	1.000			200	200
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	3	--	1.29	/BCY	3,400	BCY	1.000	1.000	1.000			5,000	4,000
H - Transportation of Treated Soil to Backfill Excavation		LS	3	--	0.87	/BCY-MILE	3,400	BCY	1.000	0.500	1.000			2,000	1,000
H - Backfill with Treated Soil		LS	3	--	1.71	/BCY	3,400	BCY	1.000	1.000	1.000			6,000	6,000
H - Supplementation of Soil With Conditioners		LS	3	--	0.07	/SY	5,500	SY	1.000	1.000	1.000			400	400
H - Revegetation of Disturbed Areas		LS	3	--	0.18	/SY	5,500	SY	1.000	1.000	1.100	Disturbance		1,000	1,000
B - No Action		LS	1	--	0.00	/SY	65,000	SY	1.000	1.000	1.000			0	0
	Subtotal (I)													30,000	27,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: MLSS														
Mob/Demob	3.9%	J = 0.039 * (I)												1,000	1,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)												12,000	11,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												400	400
Resident Engineering	1.5%	M = 0.015 * (I+J+K)												1,000	1,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)												13,000	12,000
	Subtotal (O = J+K+L+M+N)													28,000	25,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Dry Soil)		LS	3	--	44.61	/BCY	3,400	BCY	1.000	1.000	1.000			158,000	144,000
	Subtotal (I1)													158,000	144,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												16,000	14,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												3,000	3,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												71,000	65,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													90,000	82,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														307,000	278,000

Table B4.14-1a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	34	BCY	1.000	1.000	1.000		1	20	10
HB - Long Term Soil Monitoring, South Plants Ditches			A	3	30	32,000.00	/EA-YR	1	EA	1.000	1.000	1.000		33,000	936,000	474,000
H - Long-Term Groundwater Monitoring, South Plants Ditches			A	3	30	7,700.00	/EA-YR	1	EA	1.000	1.000	1.000		8,000	225,000	114,000
HB - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												44,000	1,241,000	629,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												17,000	484,000	245,000
Contingency	32.5%	R = 0.325 * (P+Q)												20,000	560,000	284,000
		Subtotal (S = Q+R)												37,000	1,044,000	529,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														82,000	2,285,000	1,158,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															2,690,000	1,540,000

Table B4.14-3 Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	56,000	BCY	1.000	1.000	1.000			483,000	483,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	56,000	BCY	1.000	1.000	1.000			288,000	274,000
		Subtotal (A)													771,000	758,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													25,000	25,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													311,000	305,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													33,000	33,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													14,000	14,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													329,000	323,000
		Subtotal (G =B+C+D+E+F)													712,000	699,000
TOTAL CAPITAL COSTS (H = A+G)															1,483,000	1,457,000

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Table B4.14-3 Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Ditch Excavation			LS	2	--	3.87	/BCY	56,000	BCY	1.000	1.000	1.000			226,000	216,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	56,000	BCY	1.000	1.500	1.000			95,000	90,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	56,000	BCY	1.000	1.000	1.000			338,000	322,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	56,000	BCY	1.000	1.000	1.000			112,000	106,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	56,000	BCY	1.000	1.500	1.000			76,000	73,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	56,000	BCY	1.000	1.000	1.000			100,000	95,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	120,000	SY	1.000	1.000	1.000			9,000	8,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	120,000	SY	1.000	1.000	1.100	Disturbance		25,000	24,000
		Subtotal (I)													981,000	935,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													38,000	36,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													398,000	379,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													14,000	13,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													21,000	20,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													436,000	415,000
		Subtotal (O = J+K+L+M+N)													907,000	864,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	56,000	BCY	1.000	1.000	1.000		1,000	41,000	21,000
		Subtotal (P)												1,000	41,000	21,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	16,000	8,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	18,000	10,000
		Subtotal (S)												1,000	34,000	18,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														3,000	1,963,000	1,837,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,450,000	3,290,000

Table B4.14-3a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	34	BCY	1.000	1.000	1.000			300	300
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	34	BCY	1.000	1.000	1.000			200	200
HB - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	56,000	BCY	1.000	1.000	1.000			483,000	460,000
HB - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	56,000	BCY	1.000	1.000	1.000			288,000	261,000
		Subtotal (A)													772,000	722,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													25,000	23,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													311,000	291,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													33,000	31,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													14,000	13,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													329,000	308,000
		Subtotal (G = B+C+D+E+F)													712,000	666,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	3,400	BCY	1.000	1.000	1.000			62,000	61,000
		Subtotal (A1)													62,000	61,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													6,000	6,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													6,000	6,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													2,000	2,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													24,000	23,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													40,000	39,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,586,000	1,487,000

Table B4.14-3a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Ditch Excavation			LS	3	--	3.87	/BCY	33,000	BCY	1.000	1.000	1.000			133,000	121,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	3,400	BCY	1.000	0.500	1.000			2,000	2,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	34	BCY	1.000	1.000	1.000			100	100
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	34	BCY	1.000	1.000	1.000			40	30
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	34	BCY	1.000	1.000	1.000			200	200
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	3,400	BCY	1.000	1.000	1.000			6,000	5,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	3,400	BCY	1.000	1.000	1.000			4,000	3,000
H - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	3,400	BCY	1.000	1.000	1.000			21,000	19,000
B - Soil Excavation			LS	3	--	3.96	/BCY	23,000	BCY	1.000	1.000	1.000			95,000	86,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	3	--	1.08	/BCY-MILE	53,000	BCY	1.000	1.500	1.000			90,000	81,000
HB - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	53,000	BCY	1.000	1.000	1.000			320,000	290,000
HB - Excavation of Borrow Material			LS	3	--	1.91	/BCY	56,000	BCY	1.000	1.000	1.000			112,000	101,000
HB - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	56,000	BCY	1.000	1.500	1.000			76,000	69,000
HB - Backfill with Borrow Material			LS	3	--	1.71	/BCY	56,000	BCY	1.000	1.000	1.000			100,000	91,000
HB - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	120,000	SY	1.000	1.000	1.000			9,000	8,000
HB - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	120,000	SY	1.000	1.000	1.100	Disturbance		25,000	23,000
		Subtotal (I)													992,000	900,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMMS														
Mob/Demob	4.5%	J = 0.045 * (I)													45,000	41,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													404,000	367,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													25,000	23,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													25,000	23,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													466,000	423,000
		Subtotal (O = J+K+L+M+N)													966,000	876,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	3,400	BCY	1.000	1.000	1.000			158,000	144,000
		Subtotal (I1)													158,000	144,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													16,000	14,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													3,000	3,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													71,000	65,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													90,000	82,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															2,207,000	2,002,000

Table B4.14-3a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	34	BCY	1.000	1.000	1.000		1	20	10
HB - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	56,000	BCY	1.000	1.000	1.000		1,000	39,000	20,000
		Subtotal (P)												1,000	39,000	20,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	15,000	8,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	18,000	9,000
		Subtotal (S = Q+R)												1,000	33,000	17,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														3,000	72,000	37,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															3,870,000	3,530,000

Table B4.14-3g Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	33,000	BCY	1.000	1.000	1.000			285,000	285,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	33,000	BCY	1.000	1.000	1.000			170,000	162,000
		Subtotal (A)													455,000	446,000
INDIRECT CAPITAL COSTS		COST CODE	LLSS													
Mob/Demob	3.3%	B = 0.033 *(A)													15,000	15,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													183,000	180,000
Engineering Design	3.0%	D = 0.030 *(A+B+C)													20,000	19,000
Resident Engineering	1.3%	E = 0.013 *(A+B+C)													8,000	8,000
Contingency	28.5%	F = 0.285 *(A+B+C+D+E)													194,000	190,000
		Subtotal (G =B+C+D+E+F)													419,000	412,000
TOTAL CAPITAL COSTS (H = A+G)															874,000	858,000

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Table B4.14-3g Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Ditch Excavation			LS	2	--	3.87	/BCY	33,000	BCY	1.000	1.000	1.000			133,000	127,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	33,000	BCY	1.000	1.500	1.000			56,000	53,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	33,000	BCY	1.000	1.000	1.000			199,000	190,000
H - Installation of Multi-Layer Cap (Variable Soil Cover)			LS	2	--	6.01	/BCY	76,000	BCY	1.000	1.000	1.000			477,000	455,000
B - Soil Excavation			LS	2	--	3.96	/BCY	23,000	BCY	1.000	1.000	1.000			95,000	91,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	23,000	BCY	1.000	0.750	1.000			19,000	19,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	23,000	BCY	1.000	1.000	1.000			83,000	79,000
H - Excavation of Borrow Material			LS	2	--	1.91	/BCY	33,000	BCY	1.000	1.000	1.000			66,000	63,000
H - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	33,000	BCY	1.000	1.500	1.000			45,000	43,000
H - Backfill with Borrow Material			LS	2	--	1.71	/BCY	33,000	BCY	1.000	1.000	1.000			59,000	56,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	120,000	SY	1.000	1.000	1.000			9,000	8,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	120,000	SY	1.000	1.000	1.100	Disturbance		25,000	24,000
		Subtotal (I)													1,267,000	1,206,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)													49,000	47,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													513,000	489,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													18,000	17,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													27,000	26,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													562,000	536,000
		Subtotal (O = J+K+L+M+N)													1,170,000	1,115,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	33,000	BCY	1.000	1.000	1.000		1,000	24,000	13,000
		Subtotal (P)												1,000	24,000	13,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												300	9,000	5,000
Contingency	32.5%	R = 0.325 * (P+Q)												400	11,000	6,000
		Subtotal (S)												1,000	20,000	11,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														2,000	2,481,000	2,344,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,360,000	3,200,000

Table B4.14-6 Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS																
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.14-6 Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Excavation of Borrow Material			LS	1	--	1.91	/BCY	240,000	BCY	1.000	1.000	1.000			479,000	479,000
HB - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	240,000	BCY	1.000	1.500	1.000			327,000	327,000
HB - Backfill with Borrow Material			LS	1	--	1.71	/BCY	240,000	BCY	1.000	1.000	1.000			429,000	429,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	120,000	SY	1.000	1.000	1.000			8,000	8,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	120,000	SY	1.000	1.000	1.000			2,384,000	2,384,000
HB - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	120,000	SY	1.000	1.000	1.100	Disturbance		25,000	25,000
		Subtotal (I)													3,651,000	3,651,000
INDIRECT O&M COSTS (OPERATIONS)																
Mob/Demob	3.3%	J = 0.033 * (I)													119,000	119,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													1,423,000	1,423,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													52,000	52,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													65,000	65,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													1,527,000	1,527,000
		Subtotal (O = J+K+L+M+N)													3,185,000	3,185,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	120,000	SY	1.000	1.000	1.000		9,000	255,000	133,000
H - Long-Term Groundwater Monitoring, South Plants Ditches			A	2	30	7,700.00	/EA-YR	1	EA	1.000	1.000	1.000		8,000	233,000	122,000
HB - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												20,000	570,000	297,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												8,000	222,000	116,000
Contingency	32.5%	R = 0.325 * (P+Q)												9,000	257,000	134,000
		Subtotal (S)												17,000	480,000	250,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														36,000	7,886,000	7,385,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															7,890,000	7,380,000

Table B4.14-6c Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	34	BCY	1.000	1.000	1.000			300	300
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	34	BCY	1.000	1.000	1.000			200	200
		Subtotal (A)													500	400
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													20	10
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													200	200
Engineering Design	3.0%	D = 0.030 * (A+B+C)													20	20
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													10	10
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													200	200
		Subtotal (G = B+C+D+E+F)													400	400
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	3,400	BCY	1.000	1.000	1.000			62,000	61,000
		Subtotal (A1)													62,000	61,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													6,000	6,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													6,000	6,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													2,000	2,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													24,000	23,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													40,000	39,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															103,000	100,000

Table B4.14-6c Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Ditch Excavation			LS	3	--	3.87	/BCY	3,400	BCY	1.000	1.000	1.000		14,000	12,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	3,400	BCY	1.000	0.500	1.000		2,000	2,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	34	BCY	1.000	1.000	1.000		100	100
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	34	BCY	1.000	1.000	1.000		40	30
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	34	BCY	1.000	1.000	1.000		200	200
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	3,400	BCY	1.000	1.000	1.000		5,000	4,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	3,400	BCY	1.000	1.000	1.000		3,000	3,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	3,400	BCY	1.000	1.000	1.000		6,000	6,000
HB - Excavation of Borrow Material			LS	3	--	1.91	/BCY	240,000	BCY	1.000	1.000	1.000		479,000	434,000
HB - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	240,000	BCY	1.000	1.500	1.000		327,000	297,000
HB - Backfill with Borrow Material			LS	3	--	1.71	/BCY	240,000	BCY	1.000	1.000	1.000		429,000	389,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			LS	3	--	0.06	/SY	120,000	SY	1.000	1.000	1.000		8,000	7,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	3	--	19.01	/SY	120,000	SY	1.000	1.000	1.000		2,384,000	2,162,000
HB - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	120,000	SY	1.000	1.000	1.100 Disturbance		25,000	23,000
		Subtotal (I)												3,681,000	3,339,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLMS													
Mob/Demob	3.9%	J = 0.039 * (I)												143,000	129,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												1,491,000	1,353,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												53,000	48,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)												80,000	72,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)												1,634,000	1,482,000
		Subtotal (O = J+K+L+M+N)												3,401,000	3,085,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	3,400	BCY	1.000	1.000	1.000		158,000	144,000
		Subtotal (I1)												158,000	144,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D													
Mob/Demob	0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												16,000	14,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												3,000	3,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												71,000	65,000
		Subtotal (O1 = J1+K1+L1+M1+N1)												90,000	82,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														7,331,000	6,650,000

Table B4.14-6c Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure (Particulates)	A	3	30	0.02	/BCY-YR	34	BCY	1.000	1.000	1.000		1	20	10
H - Long-Term Groundwater Monitoring, South Plants Ditches	A	3	30	7,700.00	/EA-YR	1	EA	1.000	1.000	1.000		8,000	225,000	114,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)	A	3	30	0.07	/SY-YR	120,000	SY	1.000	1.000	1.000		9,000	246,000	125,000
HB - Site Reviews	A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
Subtotal (P)												20,000	550,000	279,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI	COST CODE: LLSL													
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											8,000	215,000	109,000
Contingency 32.5%	R = 0.325 * (P+Q)											9,000	249,000	126,000
Subtotal (S = Q+R)												17,000	463,000	235,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												36,000	1,013,000	513,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													8,450,000	7,260,000

HSPD-06C.WQ1
SOILS DAA

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Table B4.14-13a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	330	BCY	1.000	1.000	1.000			3,000	3,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	330	BCY	1.000	1.000	1.000			2,000	2,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	23,000	BCY	1.000	1.000	1.000			199,000	189,000
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	23,000	BCY	1.000	1.000	1.000			118,000	107,000
		Subtotal (A)													321,000	301,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													10,000	10,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													129,000	121,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													14,000	13,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													6,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													137,000	128,000
		Subtotal (G = B+C+D+E+F)													296,000	277,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	33,000	BCY	1.000	1.000	1.000			605,000	591,000
		Subtotal (A1)													605,000	591,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													12,000	12,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													62,000	60,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													61,000	60,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													20,000	20,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													228,000	223,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													383,000	374,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,606,000	1,543,000

HSPD-13A.WQ1
SOILS DAA

10-Oct-95

Table B4.14-13a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - Soil Excavation			LS	3	--	3.96	/BCY	56,000	BCY	1.000	1.000	1.000			232,000	210,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	33,000	BCY	1.000	0.500	1.000			19,000	17,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	330	BCY	1.000	1.000	1.000			1,000	500
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	330	BCY	1.000	1.000	1.000			400	300
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	330	BCY	1.000	1.000	1.000			2,000	2,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	33,000	BCY	1.000	1.000	1.000			44,000	40,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	33,000	BCY	1.000	0.500	1.000			15,000	14,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	33,000	BCY	1.000	1.000	1.000			59,000	53,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	23,000	BCY	1.000	1.500	1.000			39,000	35,000
B - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	23,000	BCY	1.000	1.000	1.000			139,000	126,000
B - Excavation of Borrow Material			LS	3	--	1.91	/BCY	23,000	BCY	1.000	1.000	1.000			46,000	42,000
B - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	23,000	BCY	1.000	1.500	1.000			31,000	28,000
B - Backfill with Borrow Material			LS	3	--	1.71	/BCY	23,000	BCY	1.000	1.000	1.000			41,000	37,000
HB - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	120,000	SY	1.000	1.000	1.000			9,000	8,000
HB - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	120,000	SY	1.000	1.000	1.100	Disturbance		25,000	23,000
		Subtotal (I)													702,000	636,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMMS														
Mob/Demob	4.5%	J = 0.045 * (I)													32,000	29,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													286,000	259,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													18,000	16,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													18,000	16,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													330,000	299,000
		Subtotal (O = J+K+L+M+N)													683,000	619,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	33,000	BCY	1.000	1.000	1.000			1,538,000	1,395,000
		Subtotal (I1)													1,538,000	1,395,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													154,000	140,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													34,000	31,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													690,000	626,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													878,000	796,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															3,801,000	3,447,000

Table B4.14-13a Cost Estimate - South Plants Medium Group - South Plants Ditches Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	330	BCY	1.000	1.000	1.000		10	200	100
B - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	23,000	BCY	1.000	1.000	1.000		1,000	16,000	8,000
		Subtotal (P)												1,000	16,000	8,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												200	6,000	3,000
Contingency	32.5%	R = 0.325 * (P+Q)												300	7,000	4,000
		Subtotal (S = Q+R)												500	14,000	7,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														1,000	30,000	15,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															5,440,000	5,010,000

Table B4.15-1 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	170,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	1,500,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	48,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	15,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.15-1 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	170,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	1,500,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	48,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	15,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, South Plants Balance of Areas			A	1	30	379,000.00	/EA-YR	1	EA	1.000	1.000	1.000		396,000	11,882,000	6,297,000
H - Long-Term Groundwater Monitoring, South Plants Balance of Areas			A	1	30	31,000.00	/EA-YR	1	EA	1.000	1.000	1.000		32,000	972,000	515,000
HBAU - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												431,000	12,938,000	6,856,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												168,000	5,046,000	2,674,000
Contingency	32.5%	R = 0.325 * (P+Q)												195,000	5,845,000	3,097,000
		Subtotal (S)												363,000	10,891,000	5,771,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														794,000	23,829,000	12,628,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															23,800,000	12,600,000

Table B4.15-1a Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	110	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	110	BCY	1.000	1.000	1.000			1,000	1,000
B - No Action			LS	1	--	0.00	/SY	1,500,000	SY	1.000	1.000	1.000			0	0
AP - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	0	BCY	1.000	1.000	1.000			0	0
AP - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	0	BCY	1.000	1.000	1.000			0	0
		Subtotal (A)													2,000	1,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													50	50
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													30	30
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G = B+C+D+E+F)													1,000	1,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	11,000	BCY	1.000	1.000	1.000			202,000	197,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	0	BCY	1.000	1.000	1.000			0	0
		Subtotal (A1)													202,000	197,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													4,000	4,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													21,000	20,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													20,000	20,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													7,000	7,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													76,000	74,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													128,000	125,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															332,000	324,000

Table B4.15-1a Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	3	--	0.30	/BCY	11,000	BCY	1.000	1.000	1.000			3,000	3,000
H - No Action (Limited)			LS	1	--	0.00	/SY	160,000	SY	1.000	1.000	1.000			0	0
H - Soil Excavation			LS	3	--	3.96	/BCY	11,000	BCY	1.000	1.000	1.040	Odor Control		47,000	43,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	11,000	BCY	1.000	0.500	1.000			6,000	6,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	110	BCY	1.000	1.000	1.000			200	200
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	110	BCY	1.000	1.000	1.000			100	100
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	110	BCY	1.000	1.000	1.000			1,000	1,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	11,000	BCY	1.000	1.000	1.000			15,000	13,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	11,000	BCY	1.000	0.500	1.000			5,000	5,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	11,000	BCY	1.000	1.000	1.000			20,000	18,000
H - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	8,100	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	8,100	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
B - No Action			LS	1	--	0.00	/SY	1,500,000	SY	1.000	1.000	1.000			0	0
A-No Action (Limited)			LS	1	--	0.00	/SY	48,000	SY	1.000	1.000	1.000			0	0
AP - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	0	BCY	1.000	1.000	1.040	Odor Control		0	0
AP - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	0	BCY	1.000	0.500	1.000			0	0
AP - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	0	BCY	1.000	1.000	1.000			0	0
AP - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	3	--	1.08	/BCY-MILE	0	BCY	1.000	1.000	1.000			0	0
AP - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	0	BCY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	15,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													100,000	90,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLSS														
Mob/Demob	3.9%	J = 0.039 * (I)													4,000	4,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													42,000	38,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													1,000	1,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													2,000	2,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													45,000	41,000
		Subtotal (O = J+K+L+M+N)													94,000	85,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	11,000	BCY	1.000	1.000	1.000			513,000	465,000
AP - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	0	BCY	1.000	1.000	1.000			0	0
		Subtotal (I1)													513,000	465,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													51,000	47,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													11,000	10,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													230,000	209,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													293,000	265,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															999,000	906,000

Table B4.15-1a Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 1a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	110	BCY	1.000	1.000	1.000		3	100	40
HB - Long Term Soil Monitoring, South Plants Balance of Areas			A	3	30	379,000.00	/EA-YR	1	EA	1.000	1.000	1.000		396,000	11,090,000	5,620,000
H - Long-Term Groundwater Monitoring, South Plants Balance of Areas			A	3	30	31,000.00	/EA-YR	1	EA	1.000	1.000	1.000		32,000	907,000	460,000
HBAU - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
AP - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	0	BCY	1.000	1.000	1.000			0	0
		Subtotal (P)												431,000	12,076,000	6,119,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												168,000	4,710,000	2,386,000
Contingency	32.5%	R = 0.325 * (P+Q)												195,000	5,455,000	2,764,000
		Subtotal (S = Q+R)												363,000	10,165,000	5,151,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														794,000	22,240,000	11,270,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															23,600,000	12,500,000

Table B4.15-3 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	640,000	BCY	1.000	1.000	1.000			5,524,000	5,524,000
HB - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	640,000	BCY	1.000	1.000	1.000			3,290,000	2,985,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	5,000	BCY	1.000	1.000	1.000			43,000	43,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	5,000	BCY	1.000	1.000	1.000			26,000	24,000
		Subtotal (A)													8,886,000	8,579,000
INDIRECT CAPITAL COSTS		COST CODE: LLMS														
Mob/Demob	3.3%	B = 0.033 * (A)													289,000	279,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													3,463,000	3,344,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													379,000	366,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													158,000	153,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													3,788,000	3,657,000
		Subtotal (G = B+C+D+E+F)													8,077,000	7,798,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	27,000
		Subtotal (A1)													27,000	27,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													3,000	3,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													1,000	1,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													10,000	10,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													16,000	16,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															17,006,000	16,419,000

Table B4.15-3 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	LS	1	--	0.30	/BCY	640	BCY	1.000	1.000	1.000			200	200
U - UXO Clearance by Geophysics	LS	1	--	0.66	/SY	15,000	SY	1.000	1.000	1.000			10,000	10,000
HB - Soil Excavation	A	2	3	3.96	/BCY	640,000	BCY	1.000	1.000	1.040	Odor Control		2,754,000	2,561,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste	A	2	3	1.08	/BCY-MILE	640,000	BCY	1.000	1.500	1.000			1,083,000	1,007,000
HB - On-Post Hazardous Waste Landfill	A	2	3	5.78	/BCY	640,000	BCY	1.000	1.000	1.000			3,866,000	3,594,000
HB - Excavation of Borrow Material	A	2	3	1.91	/BCY	640,000	BCY	1.000	1.000	1.000			1,277,000	1,188,000
HB - Transportation of Borrow Material to Backfill Area	A	2	3	0.87	/BCY-MILE	640,000	BCY	1.000	1.500	1.000			873,000	811,000
HB - Backfill with Borrow Material	A	2	3	1.71	/BCY	640,000	BCY	1.000	1.000	1.000			1,144,000	1,063,000
HB - Supplementation of Soil With Conditioners	A	2	3	0.07	/SY	1,700,000	SY	1.000	1.000	1.000			124,000	116,000
HB - Revegetation of Disturbed Areas	A	2	3	0.18	/SY	1,700,000	SY	1.000	1.000	1.100	Disturbance		352,000	327,000
A - Excavation of Soil with Agent	LS	2	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	0.500	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill	LS	2	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - Removal of Soil with UXO	LS	2	--	71.16	/BCY	50	BCY	1.000	1.000	1.000			4,000	4,000
U - Excavation of Debris from Surface Soil	LS	2	--	3.07	/BCY	5,000	BCY	1.000	1.000	1.300	Productivity		21,000	20,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	2	--	1.08	/BCY-MILE	5,000	BCY	1.000	1.500	1.300	Productivity		11,000	10,000
U - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	5,000	BCY	1.000	1.000	1.000			30,000	29,000
Subtotal (I)													11,552,000	10,742,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLS												
Mob/Demob 5.1%	J = 0.051 * (I)												592,000	551,000
Indirects, Overhead & Profit 39.0%	K = 0.390 * (I+J)												4,736,000	4,404,000
Engineering Design 1.8%	L = 0.018 * (I+J+K)												295,000	275,000
Resident Engineering 2.0%	M = 0.020 * (I+J+K)												338,000	314,000
Contingency 33.8%	N = 0.338 * (I+J+K+L+M)												5,911,000	5,496,000
Subtotal (O = J+K+L+M+N)													11,872,000	11,040,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
A - Caustic Washing of Agent Soil	LS	2	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	44,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Fa	LS	2	--	59.50	/BCY	50	BCY	1.000	1.000	1.000			3,000	3,000
Subtotal (I1)													49,000	47,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F												
Mob/Demob 5.0%	J1 = 0.050 * (I1)												2,000	2,000
Contractor Markup 10.0%	K1 = 0.100 * (I1+J1)												5,000	5,000
Engineering Design 0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering 2.0%	M1 = 0.020 * (I1+J1+K1)												1,000	1,000
Contingency 30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												17,000	16,000
Subtotal (O1 = J1+K1+L1+M1+N1)													26,000	25,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													23,499,000	21,853,000

Table B4.15-3 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
IIB - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	640,000	BCY	1.000	1.000	1.000		16,000	449,000	228,000
A - On-Post Hazardous Waste Landfill Closure (Particulates)			A	2	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	5,000	BCY	1.000	1.000	1.000		100	4,000	2,000
		Subtotal (P)												16,000	453,000	230,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												6,000	177,000	90,000
Contingency	32.5%	R = 0.325 * (P+Q)												7,000	205,000	104,000
		Subtotal (S = Q+R)												14,000	381,000	193,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														30,000	835,000	423,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															41,300,000	38,700,000

Table B4.15-3a Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	640,000	BCY	1.000	1.000	1.000			5,524,000	5,261,000
HB - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	640,000	BCY	1.000	1.000	1.000			3,290,000	2,985,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	5,000	BCY	1.000	1.000	1.000			43,000	41,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4.92	/BCY	5,000	BCY	1.000	1.000	1.000			26,000	23,000
		Subtotal (A)													8,886,000	8,312,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													344,000	322,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													3,484,000	3,259,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													572,000	535,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													191,000	178,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													4,043,000	3,782,000
		Subtotal (G = B+C+D+E+F)													8,635,000	8,077,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	11,000	BCY	1.000	1.000	1.000			202,000	197,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	25,000
		Subtotal (A1)													228,000	222,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													5,000	4,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													23,000	23,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													23,000	22,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													8,000	7,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													86,000	84,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													145,000	141,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															17,894,000	16,753,000

Table B4.15-3a Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	LS	3	--	0.30	/BCY	640,000	BCY	1.000	1.000	1.000			201,000	182,000
U - UXO Clearance by Geophysics	LS	2	--	0.66	/SY	15,000	SY	1.000	1.000	1.000			10,000	10,000
HB - Soil Excavation	LS	3	--	3.96	/BCY	640,000	BCY	1.000	1.000	1.040	Odor Control		2,754,000	2,498,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility	LS	3	--	1.08	/BCY-MILE	11,000	BCY	1.000	0.500	1.000			6,000	6,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	110	BCY	1.000	1.000	1.000			200	200
H - Transportation of Particulates to On-Post Hazardous Waste Landfill	LS	3	--	1.08	/BCY-MILE	110	BCY	1.000	1.000	1.000			100	100
H - On-Post Hazardous Waste Landfill (Particulates)	LS	3	--	5.78	/BCY	110	BCY	1.000	1.000	1.000			1,000	1,000
H - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	11,000	BCY	1.000	1.000	1.000			18,000	16,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan	LS	3	--	1.08	/BCY-MILE	11,000	BCY	1.000	1.000	1.000			12,000	11,000
H - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	11,000	BCY	1.000	1.000	1.000			66,000	60,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste L	LS	3	--	1.08	/BCY-MILE	620,000	BCY	1.000	1.500	1.000			1,050,000	952,000
HB - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	620,000	BCY	1.000	1.000	1.000			3,745,000	3,397,000
HB - Excavation of Borrow Material	LS	3	--	1.91	/BCY	640,000	BCY	1.000	1.000	1.000			1,277,000	1,159,000
HB - Transportation of Borrow Material to Backfill Area	LS	3	--	0.87	/BCY-MILE	640,000	BCY	1.000	1.500	1.000			873,000	792,000
HB - Backfill with Borrow Material	LS	3	--	1.71	/BCY	640,000	BCY	1.000	1.000	1.000			1,144,000	1,037,000
HB - Supplementation of Soil With Conditioners	A	3	4	0.07	/SY	1,700,000	SY	1.000	1.000	1.000			124,000	110,000
HB - Revegetation of Disturbed Areas	A	3	4	0.18	/SY	1,700,000	SY	1.000	1.000	1.100	Disturbance		352,000	311,000
A - Excavation of Soil with Agent	LS	3	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	0.500	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill	LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan	LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - Removal of Soil with UXO	LS	3	--	71.16	/BCY	50	BCY	1.000	1.000	1.000			4,000	3,000
U - Excavation of Debris from Surface Soil	LS	3	--	3.07	/BCY	5,000	BCY	1.000	1.000	1.300	Productivity		21,000	19,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan	LS	3	--	1.08	/BCY-MILE	5,000	BCY	1.000	1.500	1.300	Productivity		11,000	10,000
U - On-Post Hazardous Waste Landfill	LS	3	--	5.78	/BCY	5,000	BCY	1.000	1.000	1.000			30,000	27,000
Subtotal (I)													11,702,000	10,604,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLS												
Mob/Demob	5.1%	J = 0.051 * (I)											600,000	543,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)											4,798,000	4,348,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)											299,000	271,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)											342,000	310,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)											5,987,000	5,426,000
Subtotal (O = J+K+L+M+N)													12,026,000	10,898,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
H - Thermal Desorption (Dry Soil)		LS	3	--	44.61	/BCY	11,000	BCY	1.000	1.000	1.000		513,000	465,000
A - Caustic Washing of Agent Soil		LS	3	--	273.50	/BCY	160	BCY	1.000	1.000	1.000		46,000	41,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Faci		LS	3	--	59.50	/BCY	50	BCY	1.000	1.000	1.000		3,000	3,000
Subtotal (II)													562,000	509,000
INDIRECT SUBCONTR. O&M COSTS (OPERATION		COST CODE: D												
Mob/Demob	0.0%	J1 = 0.000 * (I1)											0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)											56,000	51,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)											0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)											12,000	11,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)											252,000	229,000
Subtotal (O1 = J1+K1+L1+M1+N1)													321,000	291,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													24,610,000	22,302,000

Table B4.15-3a Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3a: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	640,000	BCY	1.000	1.000	1.000		16,000	449,000	228,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
U - On-Post Hazardous Waste Landfill, Closure			A	3	30	0.02	/BCY-YR	5,000	BCY	1.000	1.000	1.000		100	4,000	2,000
		Subtotal (P)												16,000	453,000	230,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIES		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												6,000	177,000	90,000
Contingency	32.5%	R = 0.325 * (P+Q)												7,000	205,000	104,000
		Subtotal (S = Q+R)												14,000	381,000	193,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														30,000	834,000	423,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															43,300,000	39,500,000

Table B4.15-3g Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	130,000	BCY	1.000	1.000	1.000			1,122,000	1,122,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	130,000	BCY	1.000	1.000	1.000			668,000	637,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	5,000	BCY	1.000	1.000	1.000			43,000	43,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	5,000	BCY	1.000	1.000	1.000			26,000	24,000
		Subtotal (A)													1,862,000	1,828,000
INDIRECT CAPITAL COSTS		COST CODE: LLMS														
Mob/Demob	3.3%	B = 0.033 * (A)													61,000	59,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													726,000	713,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													79,000	78,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													33,000	33,000
Contingency	28.8%	F = 0.288 * (A+B+C+D+E)													794,000	779,000
		Subtotal (G = B+C+D+E+F)													1,692,000	1,662,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	27,000
		Subtotal (A1)													27,000	27,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													3,000	3,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													1,000	1,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													10,000	10,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													16,000	16,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															3,596,000	3,533,000

Table B4.15-3g Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
A - Agent Screening During Excavation	LS	1	--	0.30	/BCY	640,000	BCY	1.000	1.000	1.000			201,000	201,000
U - UXO Clearance by Geophysics	LS	1	--	0.66	/SY	15,000	SY	1.000	1.000	1.000			10,000	10,000
H - Soil Excavation	LS	2	--	3.96	/BCY	130,000	BCY	1.000	1.000	1.040	Odor Control		559,000	533,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste L	LS	2	--	1.08	/BCY-MILE	130,000	BCY	1.000	1.500	1.000			220,000	210,000
H - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	130,000	BCY	1.000	1.000	1.000			785,000	748,000
H - Subgrade Preparation Prior to Installing Cap/Cover	LS	2	--	0.06	/SY	170,000	SY	1.000	1.000	1.000			11,000	10,000
H - Installation of Multi-Layer Cap (Variable Soil Cover)	LS	2	--	6.01	/BCY	1,087,000	BCY	1.000	1.000	1.000			6,827,000	6,502,000
B - Soil Excavation	LS	2	--	3.96	/BCY	510,000	BCY	1.000	1.000	1.000			2,110,000	2,010,000
B - Transportation of Contaminated Soil to Consolidation Area	LS	2	--	1.08	/BCY-MILE	510,000	BCY	1.000	0.750	1.000			432,000	411,000
B - Grade Filling w/Consolidated Soil Prior to Capping	LS	2	--	3.44	/BCY	510,000	BCY	1.000	1.000	1.000			1,833,000	1,746,000
H - Excavation of Borrow Material	LS	2	--	1.91	/BCY	130,000	BCY	1.000	1.000	1.000			259,000	247,000
H - Transportation of Borrow Material to Backfill Area	LS	2	--	0.87	/BCY-MILE	130,000	BCY	1.000	1.500	1.000			177,000	169,000
H - Backfill with Borrow Material	LS	2	--	1.71	/BCY	130,000	BCY	1.000	1.000	1.000			232,000	221,000
HB - Supplementation of Soil With Conditioners	LS	2	--	0.07	/SY	1,700,000	SY	1.000	1.000	1.000			124,000	118,000
HB - Revegetation of Disturbed Areas	LS	2	--	0.18	/SY	1,700,000	SY	1.000	1.000	1.100	Disturbance		352,000	335,000
A - Excavation of Soil with Agent	LS	2	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit	LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	0.500	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill	LS	2	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste L	LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - Removal of Soil with UXO	LS	2	--	71.16	/BCY	50	BCY	1.000	1.000	1.000			4,000	4,000
U - Excavation of Debris from Surface Soil	LS	2	--	3.07	/BCY	5,000	BCY	1.000	1.000	1.300	Productivity		21,000	20,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste L	LS	2	--	1.08	/BCY-MILE	5,000	BCY	1.000	1.500	1.300	Productivity		11,000	10,000
U - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	5,000	BCY	1.000	1.000	1.000			30,000	29,000
Subtotal (I)													14,202,000	13,536,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLS												
Mob/Demob	5.1%	J = 0.051 * (I)											728,000	694,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)											5,823,000	5,550,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)											363,000	346,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)											415,000	396,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)											7,267,000	6,926,000
Subtotal (O = J+K+L+M+N)													14,595,000	13,911,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)														
A - Caustic Washing of Agent Soil	LS	2	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	44,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post F	LS	2	--	59.50	/BCY	50	BCY	1.000	1.000	1.000			3,000	3,000
Subtotal (I1)													49,000	47,000
INDIRECT SUBCONTR. O&M COSTS (OPERATI		COST CODE: F												
Mob/Demob	5.0%	J1 = 0.050 * (I1)											2,000	2,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)											5,000	5,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)											0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)											1,000	1,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)											17,000	16,000
Subtotal (O1 = J1+K1+L1+M1+N1)													26,000	25,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)													28,872,000	27,518,000

Table B4.15-3g Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	130,000	BCY	1.000	1.000	1.000		3,000	95,000	49,000
A - On-Post Hazardous Waste Landfill Closure (Particulates)			A	2	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	5,000	BCY	1.000	1.000	1.000		100	4,000	2,000
		Subtotal (P)												3,000	98,000	51,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	38,000	20,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	44,000	23,000
		Subtotal (S = Q+R)												3,000	83,000	43,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														6,000	181,000	95,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															32,600,000	31,100,000

Table B4.15-6 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.15-6 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
U - UXO Clearance In Surface Soil by Geophysics			LS	1	--	0.07	/SY	15,000	SY	1.000	1.000	1.000		1,000	1,000
HBAU - Excavation of Borrow Material			A	1	2	1.91	/BCY	4,700,000	BCY	1.000	1.000	1.000		9,381,000	9,158,000
HBAU - Transportation of Borrow Material to Backfill Area			A	1	2	0.87	/BCY-MILE	4,700,000	BCY	1.000	1.500	1.000		6,410,000	6,257,000
HBAU - Backfill with Borrow Material			A	1	2	1.71	/BCY	4,700,000	BCY	1.000	1.000	1.000		8,399,000	8,199,000
HBAU - Subgrade Preparation Prior to Installing Cap/Cover			A	1	4	0.06	/SY	1,700,000	SY	1.000	1.000	1.000		107,000	99,000
HBAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	4	19.01	/SY	1,700,000	SY	1.000	1.000	1.000		33,771,000	31,435,000
HBAU - Revegetation of Disturbed Areas			A	1	4	0.18	/SY	1,700,000	SY	1.000	1.000	1.100 Disturbance		352,000	327,000
		Subtotal (I)												58,420,000	55,476,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS												
Mob/Demob	3.3%	J = 0.033 * (I)												1,899,000	1,803,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)												22,770,000	21,623,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												831,000	789,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)												1,039,000	986,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)												24,425,000	23,195,000
		Subtotal (O = J+K+L+M+N)												50,964,000	48,395,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
HBAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	4	30	0.07	/SY-YR	1,700,000	SY	1.000	1.000	1.000	124,000	3,358,000	1,652,000
H - Long-Term Groundwater Monitoring, South Plants Balance of Areas			A	4	30	31,000.00	/EA-YR	1	EA	1.000	1.000	1.000	32,000	875,000	430,000
HBAU - Site Reviews			A	4	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000	3,000	76,000	37,000
		Subtotal (P)											160,000	4,308,000	2,119,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL												
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											62,000	1,680,000	827,000
Contingency	32.5%	R = 0.325 * (P+Q)											72,000	1,946,000	957,000
		Subtotal (S)											134,000	3,627,000	1,784,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]													294,000	117,319,000	107,774,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)														117,000,000	108,000,000

Table B4.15-6c . Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	11,000	BCY	1.000	1.000	1.000			95,000	90,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	11,000	BCY	1.000	1.000	1.000			57,000	51,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	5,000	BCY	1.000	1.000	1.000			43,000	41,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4.92	/BCY	5,000	BCY	1.000	1.000	1.000			26,000	23,000
		Subtotal (A)													223,000	208,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													7,000	7,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													90,000	84,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													10,000	9,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													4,000	4,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													95,000	89,000
		Subtotal (G = B+C+D+E+F)													205,000	192,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	11,000	BCY	1.000	1.000	1.000			202,000	197,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	25,000
		Subtotal (A1)													228,000	222,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													5,000	4,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													23,000	23,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													23,000	22,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													8,000	7,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													86,000	84,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													145,000	141,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															801,000	763,000

Table B4.15-6c Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	2	--	0.30	/BCY	11,000	BCY	1.000	1.000	1.000			3,000	3,000
U - UXO Clearance by Geophysics		LS	2	--	0.66	/SY	15,000	SY	1.000	1.000	1.000			10,000	10,000
H - Soil Excavation		LS	3	--	3.96	/BCY	11,000	BCY	1.000	1.000	1.040	Odor Control		47,000	43,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility		LS	3	--	1.08	/BCY-MILE	11,000	BCY	1.000	0.500	1.000			6,000	6,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	110	BCY	1.000	1.000	1.000			200	200
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	110	BCY	1.000	1.000	1.000			100	100
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	110	BCY	1.000	1.000	1.000			1,000	1,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	3	--	1.29	/BCY	11,000	BCY	1.000	1.000	1.000			15,000	13,000
H - Transportation of Treated Soil to Backfill Excavation		LS	3	--	0.87	/BCY-MILE	11,000	BCY	1.000	0.500	1.000			5,000	5,000
H - Backfill with Treated Soil		LS	3	--	1.71	/BCY	11,000	BCY	1.000	1.000	1.000			20,000	18,000
HB - Excavation of Borrow Material		LS	3	--	1.91	/BCY	4,700,000	BCY	1.000	1.000	1.000			9,381,000	8,509,000
HB - Transportation of Borrow Material to Backfill Area		LS	3	--	0.87	/BCY-MILE	4,700,000	BCY	1.000	1.500	1.000			6,410,000	5,814,000
HB - Backfill with Borrow Material		LS	3	--	1.71	/BCY	4,700,000	BCY	1.000	1.000	1.000			8,399,000	7,618,000
HB - Subgrade Preparation Prior to Installing Cap/Cover		LS	3	--	0.06	/SY	1,700,000	SY	1.000	1.000	1.000			107,000	97,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)		LS	3	--	19.01	/SY	1,700,000	SY	1.000	1.000	1.000			33,771,000	30,632,000
HB - Revegetation of Disturbed Areas		LS	3	--	0.18	/SY	1,700,000	SY	1.000	1.000	1.100	Disturbance		352,000	319,000
A - Excavation of Soil with Agent		LS	3	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	0.500	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan		LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - Removal of Soil with UXO		LS	3	--	71.16	/BCY	50	BCY	1.000	1.000	1.000			4,000	3,000
U - Excavation of Debris from Surface Soil		LS	3	--	3.07	/BCY	5,000	BCY	1.000	1.000	1.300	Productivity		21,000	19,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste Lan		LS	3	--	1.08	/BCY-MILE	5,000	BCY	1.000	1.500	1.300	Productivity		11,000	10,000
U - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	5,000	BCY	1.000	1.000	1.000			30,000	27,000
	Subtotal (I)													58,595,000	53,148,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HLLS														
Mob/Demob	4.5% J = 0.045 * (I)													2,637,000	2,392,000
Indirects, Overhead & Profit	39.0% K = 0.390 * (I+J)													23,880,000	21,660,000
Engineering Design	1.0% L = 0.010 * (I+J+K)													851,000	772,000
Resident Engineering	1.8% M = 0.018 * (I+J+K)													1,489,000	1,351,000
Contingency	32.5% N = 0.325 * (I+J+K+L+M)													28,422,000	25,780,000
	Subtotal (O = J+K+L+M+N)													57,280,000	51,955,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Dry Soil)		LS	3	--	44.61	/BCY	11,000	BCY	1.000	1.000	1.000			513,000	465,000
A - Caustic Washing of Agent Soil		LS	3	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	41,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Faci		LS	3	--	59.50	/BCY	50	BCY	1.000	1.000	1.000			3,000	3,000
	Subtotal (I1)													562,000	509,000
INDIRECT SUBCONTR O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0% J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													56,000	51,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													12,000	11,000
Contingency	40.0% N1 = 0.400 * (I1+J1+K1+L1+M1)													252,000	229,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													321,000	291,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														116,756,000	105,903,000

Table B4.15-6c Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 6c: Direct Thermal Desorption (Direct Heating) of Principal Threat Volume; Caps/Covers (Multi-Layer Cap)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
H - On-Post Hazardous Waste Landfill Closure (Particulates)		A	3	30	0.02	/BCY-YR	110	BCY	1.000	1.000	1.000		3	100	40
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)		A	3	30	0.07	/SY-YR	1,700,000	SY	1.000	1.000	1.000		124,000	3,482,000	1,764,000
A - On-Post Hazardous Waste Landfill Closure		A	3	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
U - On-Post Hazardous Waste Landfill, Closure		A	3	30	0.02	/BCY-YR	5,000	BCY	1.000	1.000	1.000		100	4,000	2,000
	Subtotal (P)												124,000	3,486,000	1,766,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											49,000	1,359,000	689,000
Contingency	32.5%	R = 0.325 * (P+Q)											56,000	1,575,000	798,000
	Subtotal (S = Q+R)												105,000	2,934,000	1,487,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)													229,000	6,420,000	3,253,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)														124,000,000	110,000,000

Table B4.15-13 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 13: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	680	BCY	1.000	1.000	1.000			6,000	6,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	680	BCY	1.000	1.000	1.000			3,000	3,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	510,000	BCY	1.000	1.000	1.000			4,402,000	4,193,000
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	510,000	BCY	1.000	1.000	1.000			2,622,000	2,378,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	5,000	BCY	1.000	1.000	1.000			43,000	41,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4.92	/BCY	5,000	BCY	1.000	1.000	1.000			26,000	23,000
		Subtotal (A)													7,105,000	6,646,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													231,000	216,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,861,000	2,676,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													306,000	286,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													127,000	119,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													3,030,000	2,834,000
		Subtotal (G = B+C+D+E+F)													6,555,000	6,132,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	61,000	BCY	1.000	1.000	1.000			117,000	112,000
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	68,000	BCY	1.000	1.000	1.000			1,247,000	1,217,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	25,000
		Subtotal (A1)													1,391,000	1,354,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													28,000	27,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													142,000	138,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													140,000	137,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													47,000	46,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													524,000	511,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													881,000	858,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															15,932,000	14,990,000

Table B4.15-13 C .stimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 13: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	3	--	0.30	/BCY	640	BCY	1.000	1.000	1.000			200	200
U - UXO Clearance by Geophysics			LS	2	--	0.66	/SY	15,000	SY	1.000	1.000	1.000			10,000	10,000
H - Soil Excavation			LS	3	--	3.96	/BCY	130,000	BCY	1.000	1.000	1.040	Odor Control		559,000	507,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	130,000	BCY	1.000	0.500	1.000			73,000	67,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	680	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	680	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	680	BCY	1.000	1.000	1.000			4,000	4,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	68,000	BCY	1.000	1.000	1.000			92,000	83,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	68,000	BCY	1.000	0.500	1.000			31,000	28,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	68,000	BCY	1.000	1.000	1.000			122,000	110,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	61,000	BCY	1.380	1.000	1.000			113,000	103,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	61,000	BCY	1.380	0.500	1.000			38,000	35,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	61,000	BCY	1.380	1.000	1.000			150,000	136,000
B - Soil Excavation			LS	3	--	3.96	/BCY	510,000	BCY	1.000	1.000	1.000			2,110,000	1,914,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	510,000	BCY	1.000	1.500	1.000			863,000	783,000
B - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	510,000	BCY	1.000	1.000	1.000			3,080,000	2,794,000
B - Excavation of Borrow Material			LS	3	--	1.91	/BCY	510,000	BCY	1.000	1.000	1.000			1,018,000	923,000
B - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	510,000	BCY	1.000	1.500	1.000			695,000	631,000
B - Backfill with Borrow Material			LS	3	--	1.71	/BCY	510,000	BCY	1.000	1.000	1.000			911,000	827,000
HB - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	1,700,000	SY	1.000	1.000	1.000			124,000	113,000
HB - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	1,700,000	SY	1.000	1.000	1.100	Disturbance		352,000	319,000
A - Excavation of Soil with Agent			LS	3	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	0.500	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - Removal of Soil with UXO			LS	3	--	71.16	/BCY	50	BCY	1.000	1.000	1.000			4,000	3,000
U - Excavation of Debris from Surface Soil			LS	3	--	3.07	/BCY	5,000	BCY	1.000	1.000	1.300	Productivity		21,000	19,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	5,000	BCY	1.000	1.500	1.300	Productivity		11,000	10,000
U - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	5,000	BCY	1.000	1.000	1.000			30,000	27,000
		Subtotal (I)													10,419,000	9,451,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMLM														
Mob/Demob	5.1%	J = 0.051 * (I)													534,000	484,000
Indirects, Overhead & Profit	39.0%	K = 0.390 *(I+J)													4,272,000	3,875,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													266,000	242,000
Resident Engineering	2.3%	M = 0.023 *(I+J+K)													343,000	311,000
Contingency	35.0%	N = 0.350 * (I+J+K+L+M)													5,542,000	5,027,000
		Subtotal (O = J+K+L+M+N)													10,956,000	9,938,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	68,000	BCY	1.000	1.000	1.000			3,170,000	2,875,000
H - Cement-Based Solidification			LS	3	--	36.11	/BCY	61,000	BCY	1.000	1.000	1.000			2,302,000	2,088,000
A - Caustic Washing of Agent Soil			LS	3	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	41,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Fac			LS	3	--	59.50	/BCY	50	BCY	1.000	1.000	1.000			3,000	3,000
		Subtotal (I1)													5,521,000	5,007,000
INDIRECT SUBCONTR. O&M COSTS (OPERATION		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 *(I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													552,000	501,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													121,000	110,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													2,478,000	2,247,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													3,151,000	2,858,000
TOTAL O&M COSTS (OPERATIONS) (OO = IO+I1+O1)															30,047,000	27,255,000

Table B4.15-13 C timate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 13: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure (Particulates)	A	3	30	0.02	/BCY-YR	680	BCY	1.000	1.000	1.000		20	500	200
H - Long Term Monitoring of Solidified Soil	A	3	30	0.25	/SY-YR	61,000	SY	1.000	1.000	1.000		16,000	446,000	226,000
H - Site Reviews	A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
B - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	510,000	BCY	1.000	1.000	1.000		13,000	358,000	181,000
A - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
U - On-Post Hazardous Waste Landfill, Closure	A	3	30	0.02	/BCY-YR	5,000	BCY	1.000	1.000	1.000		100	4,000	2,000
Subtotal (P)												32,000	887,000	450,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIES COST CODE: LLSL														
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											12,000	346,000	175,000
Contingency 32.5%	R = 0.325 * (P+Q)											14,000	401,000	203,000
Subtotal (S = Q+R)												27,000	747,000	379,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												58,000	1,634,000	828,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													47,600,000	43,100,000

Table B4.15-19 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 19: In Situ Thermal Treatment (RF/Microwave Heating); In Situ Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	510,000	BCY	1.000	1.000	1.000			4,402,000	4,402,000
B - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	510,000	BCY	1.000	1.000	1.000			2,622,000	2,497,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	5,000	BCY	1.000	1.000	1.000			43,000	43,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	5,000	BCY	1.000	1.000	1.000			26,000	24,000
		Subtotal (A)													7,095,000	6,969,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													231,000	226,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													2,857,000	2,806,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													305,000	300,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													127,000	125,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													3,026,000	2,972,000
		Subtotal (G = B+C+D+E+F)													6,546,000	6,430,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep			LS	1	--	7,959,000.00	/UNIT	1	UNITS	1.000	1.000	1.000			8,317,000	8,317,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	160	BCY	1.000	1.000	1.000			27,000	27,000
		Subtotal (A1)													8,344,000	8,344,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													167,000	167,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													511,000	511,000
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													1,083,000	1,083,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													135,000	135,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,072,000	3,072,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,967,000	4,967,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															26,952,000	26,710,000

Table B4.15-19 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 19: In Situ Thermal Treatment (RF/Microwave Heating); In Situ Solidification/Stabilization (Cement-Based Solidification)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	1	--	0.30	/BCY	5,000	BCY	1.000	1.000	1.000			2,000	2,000
U - UXO Clearance by Geophysics		LS	1	--	0.66	/SY	15,000	SY	1.000	1.000	1.000			10,000	10,000
H - Soil Cover for Solidified Materials		LS	2	--	6.92	/SY	61,000	SY	1.000	1.000	1.000			441,000	420,000
B - Soil Excavation		LS	2	--	3.96	/BCY	510,000	BCY	1.000	1.000	1.000			2,110,000	2,010,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	510,000	BCY	1.000	1.500	1.000			863,000	822,000
B - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	510,000	BCY	1.000	1.000	1.000			3,080,000	2,934,000
B - Excavation of Borrow Material		LS	2	--	1.91	/BCY	510,000	BCY	1.000	1.000	1.000			1,018,000	969,000
B - Transportation of Borrow Material to Backfill Area		LS	2	--	0.87	/BCY-MILE	510,000	BCY	1.000	1.500	1.000			695,000	662,000
B - Backfill with Borrow Material		LS	2	--	1.71	/BCY	510,000	BCY	1.000	1.000	1.000			911,000	868,000
HB - Supplementation of Soil With Conditioners		LS	2	--	0.07	/SY	1,700,000	SY	1.000	1.000	1.000			124,000	118,000
HB - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	1,700,000	SY	1.000	1.000	1.100	Disturbance		352,000	335,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	160	BCY	1.000	1.000	1.040	Odor Control		1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	0.500	1.000			100	100
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
U - Removal of Soil with UXO		LS	2	--	71.16	/BCY	50	BCY	1.000	1.000	1.000			4,000	4,000
U - Excavation of Debris from Surface Soil		LS	2	--	3.07	/BCY	5,000	BCY	1.000	1.000	1.300	Productivity		21,000	20,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	5,000	BCY	1.000	1.500	1.300	Productivity		11,000	10,000
U - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	5,000	BCY	1.000	1.000	1.000			30,000	29,000
	Subtotal (I)													9,676,000	9,216,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: MLMS														
Mob/Demob	3.9%	J = 0.039 * (I)												375,000	357,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												3,920,000	3,734,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												140,000	133,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)												210,000	200,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)												4,296,000	4,092,000
	Subtotal (O = J+K+L+M+N)													8,940,000	8,515,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - In Situ RF/Microwave Heating - Deep		A	1	2	205.02	/BCY	68,000	BCY	1.000	1.000	1.000			14,569,000	14,222,000
H - In Situ Cement-Based Solidification		LS	2	--	60.93	/BCY	61,000	BCY	1.000	1.000	1.000			3,884,000	3,699,000
A - Caustic Washing of Agent Soil		LS	2	--	273.50	/BCY	160	BCY	1.000	1.000	1.000			46,000	44,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Fa		LS	2	--	59.50	/BCY	50	BCY	1.000	1.000	1.000			3,000	3,000
	Subtotal (I1)													18,502,000	17,967,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)												1,110,000	1,078,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)												98,000	95,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)												196,000	190,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												7,962,000	7,732,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													9,367,000	9,096,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														46,485,000	44,795,000

Table B4.15-19 Cost Estimate - South Plants Medium Group - South Plants Balance of Area Subgroup
Alternative 19: In Situ Thermal Treatment (RF/Microwave Heating); In Situ Solidification/Stabilization (Cement-Based Solidification)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - Long Term Monitoring of In Situ Solidified Soil	A	2	30	0.25	/SY-YR	61,000	SY	1.000	1.000	1.000		16,000	462,000	241,000
H - Long-Term Groundwater Monitoring, South Plants Balance of Areas	A	2	30	31,000.00	/EA-YR	1	EA	1.000	1.000	1.000		32,000	939,000	490,000
H - Site Reviews	A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
B - On-Post Hazardous Waste Landfill Closure	A	2	30	0.02	/BCY-YR	510,000	BCY	1.000	1.000	1.000		13,000	371,000	194,000
A - On-Post Hazardous Waste Landfill Closure	A	2	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
U - On-Post Hazardous Waste Landfill, Closure	A	2	30	0.02	/BCY-YR	5,000	BCY	1.000	1.000	1.000		100	4,000	2,000
Subtotal (P)												64,000	1,858,000	970,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI	COST CODE: LLSL													
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											25,000	725,000	378,000
Contingency 32.5%	R = 0.325 * (P+Q)											29,000	839,000	438,000
Subtotal (S = Q+R)												54,000	1,564,000	817,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												118,000	3,422,000	1,787,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													76,900,000	73,300,000

Table B4.16-1 ... Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	7,900	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.16-1 ..st Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	7,900	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Soil Monitoring, Buried Sediment			A	1	30	12,000.00	/EA-YR	1	EA	1.000	1.000	1.000		13,000	376,000	199,000
H - Long-Term Groundwater Monitoring, Buried Sediments			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												22,000	655,000	347,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												9,000	256,000	135,000
Contingency	32.5%	R = 0.325 * (P+Q)												10,000	296,000	157,000
		Subtotal (S)												18,000	552,000	292,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														40,000	1,207,000	639,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,210,000	639,000

Table B4.16-2 Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
H - Fences			LS	1	--	15.90	/LF	1,300	LF	1.000	1.000	1.000			22,000	22,000
		Subtotal (A)													23,000	23,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													1,000	1,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													9,000	9,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													1,000	1,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													400	400
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													10,000	10,000
		Subtotal (G =B+C+D+E+F)													22,000	22,000
TOTAL CAPITAL COSTS (H = A+G)															45,000	45,000

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Table B4.16-2 Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Habitat Modification			A	1	3	0.18	/SY	7,900	SY	1.000	1.000	1.000			1,000	1,000
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
		Subtotal (I)													19,000	11,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													1,000	400
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													8,000	4,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													300	200
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													300	200
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													8,000	5,000
		Subtotal (O = J+K+L+M+N)													17,000	10,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Fences			A	2	30	0.79	/LF-YR	1,300	LF	1.000	1.000	1.000		1,000	31,000	16,000
H - Habitat Modification			A	3	30	0.01	/SY-YR	7,900	SY	1.000	1.000	1.000		50	1,000	1,000
H - Long Term Soil Monitoring, Buried Sediment			A	3	30	12,000.00	/EA-YR	1	EA	1.000	1.000	1.000		13,000	351,000	178,000
H - Long-Term Groundwater Monitoring, Buried Sediments			A	3	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	181,000	92,000
H - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												23,000	644,000	327,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												9,000	251,000	127,000
Contingency	32.5%	R = 0.325 * (P+Q)												10,000	291,000	148,000
		Subtotal (S)												19,000	542,000	275,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														42,000	1,223,000	622,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															1,270,000	667,000

Table B4.16-3 Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	16,000	BCY	1.000	1.000	1.000			138,000	138,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	16,000	BCY	1.000	1.000	1.000			82,000	78,000
		Subtotal (A)													220,000	216,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													7,000	7,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													89,000	87,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													9,000	9,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													4,000	4,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													94,000	92,000
		Subtotal (G =B+C+D+E+F)													203,000	200,000
TOTAL CAPITAL COSTS (H = A+G)															424,000	416,000

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Table B4.16-3 Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)														
H - Soil Excavation	LS	2	--	3.96	/BCY	16,000	BCY	1.000	1.000	1.000			66,000	63,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La	LS	2	--	1.08	/BCY-MILE	16,000	BCY	1.000	2.250	1.000			41,000	39,000
H - On-Post Hazardous Waste Landfill	LS	2	--	5.78	/BCY	16,000	BCY	1.000	1.000	1.000			97,000	92,000
H - Excavation of Borrow Material	LS	2	--	1.91	/BCY	16,000	BCY	1.000	1.000	1.000			32,000	30,000
H - Transportation of Borrow Material to Backfill Area	LS	2	--	0.87	/BCY-MILE	16,000	BCY	1.000	1.500	1.000			22,000	21,000
H - Backfill with Borrow Material	LS	2	--	1.71	/BCY	16,000	BCY	1.000	1.000	1.000			29,000	27,000
H - Supplementation of Soil With Conditioners	LS	2	--	0.07	/SY	7,900	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas	LS	2	--	0.18	/SY	7,900	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
Subtotal (I)													288,000	274,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE	MLSS												
Mob/Demob 3.9%	J = 0.039 * (I)												11,000	11,000
Indirects, Overhead & Profit 40.3%	K = 0.403 * (I+J)												120,000	115,000
Engineering Design 1.0%	L = 0.010 * (I+J+K)												4,000	4,000
Resident Engineering 1.5%	M = 0.015 * (I+J+K)												6,000	6,000
Contingency 30.0%	N = 0.300 * (I+J+K+L+M)												129,000	123,000
Subtotal (O = J+K+L+M+N)													271,000	258,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
H - On-Post Hazardous Waste Landfill Closure	A	2	30	0.02	/BCY-YR	16,000	BCY	1.000	1.000	1.000		400	12,000	6,000
Subtotal (P)												400	12,000	6,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI	COST CODE	LLSL												
Indirects, Overhead & Profit 39.0%	Q = 0.390 * (P)											200	5,000	2,000
Contingency 32.5%	R = 0.325 * (P+Q)											200	5,000	3,000
Subtotal (S)												300	10,000	5,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]												1,000	581,000	544,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)													1,000,000	960,000

Table B4.16-6 Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE 0														
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.16-6 Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation of Borrow Material			LS	1	--	1.91	/BCY	6,600	BCY	1.000	1.000	1.000			13,000	13,000
H - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	6,600	BCY	1.000	1.500	1.000			9,000	9,000
H - Backfill with Borrow Material			LS	1	--	1.71	/BCY	6,600	BCY	1.000	1.000	1.000			12,000	12,000
H - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	7,900	SY	1.000	1.000	1.000			500	500
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	7,900	SY	1.000	1.000	1.000			157,000	157,000
H - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	7,900	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
		Subtotal (I)													193,000	193,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													6,000	6,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													75,000	75,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													3,000	3,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													3,000	3,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													81,000	81,000
		Subtotal (O = J+K+L+M+N)													168,000	168,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	7,900	SY	1.000	1.000	1.000		1,000	17,000	9,000
H - Long-Term Groundwater Monitoring, Buried Sediments			A	1	30	6,200.00	/EA-YR	1	EA	1.000	1.000	1.000		6,000	194,000	103,000
H - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												10,000	296,000	157,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												4,000	116,000	61,000
Contingency	32.5%	R = 0.325 * (P+Q)												4,000	134,000	71,000
		Subtotal (S)												8,000	249,000	132,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														18,000	907,000	651,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															907,000	651,000

Table B4.16-13a Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
		Subtotal (A)													2,000	2,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													100	100
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,000	1,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													100	100
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													40	40
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													1,000	1,000
		Subtotal (G = B+C+D+E+F)													2,000	2,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			A	1	2	17.55	/BCY	16,000	BCY	1.000	1.000	1.000			293,000	286,000
		Subtotal (A1)													293,000	286,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													6,000	6,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													30,000	29,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													30,000	29,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													10,000	10,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													111,000	108,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													186,000	182,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															484,000	472,000

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Table B4.16-13a Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Excavation			LS	3	--	3.96	/BCY	16,000	BCY	1.000	1.000	1.000			66,000	60,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	16,000	BCY	1.000	1.500	1.000			27,000	25,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	160	BCY	1.000	1.000	1.000			300	200
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	160	BCY	1.000	1.000	1.000			200	200
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	160	BCY	1.000	1.000	1.000			1,000	1,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	16,000	BCY	1.000	1.000	1.000			22,000	20,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	16,000	BCY	1.000	1.500	1.000			22,000	20,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	16,000	BCY	1.000	1.000	1.000			29,000	26,000
H - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	7,900	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	7,900	SY	1.000	1.000	1.100	Disturbance		2,000	1,000
		Subtotal (I)													169,000	153,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLMS														
Mob/Demob	3.9%	J = 0.039 * (I)													7,000	6,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													68,000	62,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													2,000	2,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													4,000	3,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													75,000	68,000
		Subtotal (O = J+K+L+M+N)													156,000	142,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	16,000	BCY	1.000	1.000	1.000			746,000	677,000
		Subtotal (I1)													746,000	677,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													75,000	68,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													16,000	15,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													335,000	304,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													426,000	386,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															1,497,000	1,357,000

Table B4.16-13a Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	160	BCY	1.000	1.000	1.000		4	100	100
		Subtotal (P)												4	100	100
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2	40	20
Contingency	32.5%	R = 0.325 * (P+Q)												2	100	30
		Subtotal (S = Q+R)												3	100	50
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														10	200	100
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															1,980,000	1,830,000

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Table B4.16-19a Cost Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													0	0
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													0	0
Engineering Design	3.0%	D = 0.030 * (A+B+C)													0	0
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													0	0
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													0	0
		Subtotal (G = B+C+D+E+F)													0	0
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep			LS	1	--	7,959,000.00	/UNIT	1	UNIT	1.000	1.000	1.000		8,317,000	8,317,000	8,317,000
		Subtotal (A1)													8,317,000	8,317,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													166,000	166,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													509,000	509,000
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													1,079,000	1,079,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													135,000	135,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,062,000	3,062,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,951,000	4,951,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															13,268,000	13,268,000

Table B4.16-19a Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Supplementation of Soil With Conditioners			A	1	3	0.07	/SY	7,900	SY	1.000	1.000	1.000			1,000	1,000
H - Revegetation of Disturbed Areas			A	1	3	0.18	/SY	7,900	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
		Subtotal (I)													2,000	2,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MLMS														
Mob/Demob	3.9%	J = 0.039 * (I)													100	100
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													1,000	1,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													30	30
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													50	50
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													1,000	1,000
		Subtotal (O = J+K+L+M+N)													2,000	2,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep			A	1	3	205.02	/BCY	16,000	BCY	1.000	1.000	1.000			3,428,000	3,267,000
		Subtotal (I1)													3,428,000	3,267,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													206,000	196,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													18,000	17,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													36,000	35,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													1,475,000	1,406,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													1,735,000	1,654,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															5,168,000	4,925,000

Table B4.16-19a ... Estimate - Buried Sediment/Ditches Medium Group - Buried Sediment Subgroup
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
		Subtotal (P)												0	0	0
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: 0														
Indirects, Overhead & Profit	0.0%	Q = 0.000 * (P)												0	0	0
Contingency	0.0%	R = 0.000 * (P+Q)												0	0	0
		Subtotal (S = Q+R)												0	0	0
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														0	0	0
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															18,400,000	18,200,000

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Table B4.17-1 Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - No Action			LS	1	--	0.00	/SY	300,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.17-1 Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
HB - No Action			LS	1	--	0.00	/SY	300,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Sand Creek Lateral			A	1	30	67,000.00	/EA-YR	1	EA	1.000	1.000	1.000		70,000	2,100,000	1,113,000
H - Long-Term Groundwater Monitoring, Sand Creek Lateral			A	1	30	64,000.00	/EA-YR	1	EA	1.000	1.000	1.000		67,000	2,006,000	1,063,000
HB - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												140,000	4,191,000	2,221,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												54,000	1,635,000	866,000
Contingency	32.5%	R = 0.325 * (P+Q)												63,000	1,894,000	1,003,000
		Subtotal (S)												118,000	3,528,000	1,870,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														257,000	7,720,000	4,091,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															7,720,000	4,090,000

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Table B4.17-3 C. . Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	110,000	BCY	1.000	1.000	1.000			949,000	949,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	110,000	BCY	1.000	1.000	1.000			566,000	539,000
		Subtotal (A)													1,515,000	1,488,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													49,000	48,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													610,000	599,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													65,000	64,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													27,000	27,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													646,000	635,000
		Subtotal (G =B+C+D+E+F)													1,398,000	1,373,000
TOTAL CAPITAL COSTS (H = A+G)															2,913,000	2,861,000

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Table B4.17-3 Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
HB - Ditch Excavation			LS	2	--	3.87	/BCY	110,000	BCY	1.000	1.000	1.000		445,000	424,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste			LS	2	--	1.08	/BCY-MILE	110,000	BCY	1.000	1.750	1.000		217,000	207,000
HB - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	110,000	BCY	1.000	1.000	1.000		664,000	633,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	110,000	BCY	1.000	1.000	1.000		220,000	209,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	110,000	BCY	1.000	1.500	1.000		150,000	143,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	110,000	BCY	1.000	1.000	1.000		197,000	187,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	300,000	SY	1.000	1.000	1.000		22,000	21,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	300,000	SY	1.000	1.000	1.100 Disturbance		62,000	59,000
		Subtotal (I)												1,977,000	1,883,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLML												
Mob/Demob	3.9%	J = 0.039 * (I)												77,000	73,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												801,000	763,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												29,000	27,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)												57,000	54,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)												992,000	945,000
		Subtotal (O = J+K+L+M+N)												1,955,000	1,862,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	110,000	BCY	1.000	1.000	1.000	3,000	80,000	42,000
		Subtotal (P)											3,000	80,000	42,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL												
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											1,000	31,000	16,000
Contingency	32.5%	R = 0.325 * (P+Q)											1,000	36,000	19,000
		Subtotal (S)											2,000	67,000	35,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]													5,000	4,079,000	3,821,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)														6,990,000	6,680,000

Table B4.17-3f Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	15,000	BCY	1.000	1.000	1.000			129,000	129,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	15,000	BCY	1.000	1.000	1.000			77,000	73,000
		Subtotal (A)													207,000	203,000
INDIRECT CAPITAL COSTS		COST CODE LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													7,000	7,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													83,000	82,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													9,000	9,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													4,000	4,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													88,000	87,000
		Subtotal (G =B+C+D+E+F)													191,000	187,000
TOTAL CAPITAL COSTS (H = A+G)															397,000	390,000

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Table B4.17-3f Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 3f: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Soil Excavation			LS	2	--	3.96	/BCY	15,000	BCY	1.000	1.000	1.000			62,000	59,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	15,000	BCY	1.000	1.750	1.000			30,000	28,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	15,000	BCY	1.000	1.000	1.000			91,000	86,000
B - Soil Excavation			LS	2	--	3.96	/BCY	90,000	BCY	1.000	1.000	1.000			372,000	355,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	90,000	BCY	1.000	1.500	1.000			152,000	145,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	90,000	BCY	1.000	1.000	1.000			324,000	308,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	110,000	BCY	1.000	1.000	1.000			220,000	209,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	110,000	BCY	1.000	1.500	1.000			150,000	143,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	110,000	BCY	1.000	1.000	1.000			197,000	187,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	300,000	SY	1.000	1.000	1.000			22,000	21,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	300,000	SY	1.000	1.000	1.100	Disturbance		62,000	59,000
		Subtotal (I)													1,681,000	1,601,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLSS													
Mob/Demob	3.9%	J = 0.039 * (I)													65,000	62,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													703,000	669,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													24,000	23,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)													37,000	35,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)													753,000	717,000
		Subtotal (O = J+K+L+M+N)													1,582,000	1,507,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	15,000	BCY	1.000	1.000	1.000		400	11,000	6,000
		Subtotal (P)												400	11,000	6,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												100	4,000	2,000
Contingency	32.5%	R = 0.325 * (P+Q)												200	5,000	3,000
		Subtotal (S)												300	9,000	5,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														1,000	3,283,000	3,118,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															3,680,000	3,510,000

Table B4.17-6 , Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.17-6 Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
HB - Excavation of Borrow Material			LS	1	--	1.91	/BCY	290,000	BCY	1.000	1.000	1.000		579,000	579,000
HB - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	290,000	BCY	1.000	1.500	1.000		395,000	395,000
HB - Backfill with Borrow Material			LS	1	--	1.71	/BCY	290,000	BCY	1.000	1.000	1.000		518,000	518,000
HB - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	300,000	SY	1.000	1.000	1.000		19,000	19,000
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	300,000	SY	1.000	1.000	1.000		5,960,000	5,960,000
HB - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	300,000	SY	1.000	1.000	1.100 Disturbance		62,000	62,000
		Subtotal (I)												7,533,000	7,533,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	MLMS												
Mob/Demob	3.9%	J = 0.039 * (I)												292,000	292,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												3,052,000	3,052,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)												109,000	109,000
Resident Engineering	1.5%	M = 0.015 * (I+J+K)												163,000	163,000
Contingency	30.0%	N = 0.300 * (I+J+K+L+M)												3,345,000	3,345,000
		Subtotal (O = J+K+L+M+N)												6,960,000	6,960,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)															
HB - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	300,000	SY	1.000	1.000	1.000	22,000	658,000	349,000
H - Long-Term Groundwater Monitoring, Sand Creek Lateral			A	1	30	64,000.00	/EA-YR	1	EA	1.000	1.000	1.000	67,000	2,006,000	1,063,000
HB - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000	3,000	85,000	45,000
		Subtotal (P)											92,000	2,749,000	1,457,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL												
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)											36,000	1,072,000	568,000
Contingency	32.5%	R = 0.325 * (P+Q)											41,000	1,242,000	658,000
		Subtotal (S)											77,000	2,314,000	1,226,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]													169,000	19,557,000	17,177,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)														19,600,000	17,200,000

Table B4.17-13 C . . Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 13: Direct Thermal Desorption (Direct Heating), Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	140	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	140	BCY	1.000	1.000	1.000			1,000	1,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	90,000	BCY	1.000	1.000	1.000			777,000	740,000
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	90,000	BCY	1.000	1.000	1.000			463,000	420,000
		Subtotal (A)													1,242,000	1,161,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													40,000	38,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													500,000	468,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													53,000	50,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													22,000	21,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													529,000	495,000
		Subtotal (G = B+C+D+E+F)													1,145,000	1,071,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Dry Soil)			LS	1	--	17.55	/BCY	14,000	BCY	1.000	1.000	1.000			257,000	257,000
H - Cement-Based Solidification			LS	2	--	1.84	/BCY	1,100	BCY	1.000	1.000	1.000			2,000	2,000
		Subtotal (A1)													259,000	259,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													5,000	5,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													26,000	26,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													26,000	26,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													9,000	9,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													98,000	98,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													164,000	164,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,810,000	2,656,000

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Table B4.17-13 Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 13: Direct Thermal Desorption (Direct Heating), Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Ditch Excavation			LS	3	--	3.87	/BCY	15,000	BCY	1.000	1.000	1.000			61,000	55,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility			LS	3	--	1.08	/BCY-MILE	15,000	BCY	1.000	0.500	1.000			8,000	8,000
H - Load Treated Soil for Transport to Hazardous Landfill			LS	3	--	1.56	/BCY	140	BCY	1.000	1.000	1.000			200	200
H - Transportation of Particulates to On-Post Hazardous Waste Landfill			LS	3	--	1.08	/BCY-MILE	140	BCY	1.000	1.000	1.000			200	100
H - On-Post Hazardous Waste Landfill (Particulates)			LS	3	--	5.78	/BCY	140	BCY	1.000	1.000	1.000			1,000	1,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	14,000	BCY	1.000	1.000	1.000			19,000	17,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	14,000	BCY	1.000	0.500	1.000			6,000	6,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	14,000	BCY	1.000	1.000	1.000			25,000	23,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill			LS	3	--	1.29	/BCY	1,100	BCY	1.380	1.000	1.000			2,000	2,000
H - Transportation of Treated Soil to Backfill Excavation			LS	3	--	0.87	/BCY-MILE	1,100	BCY	1.380	0.500	1.000			1,000	1,000
H - Backfill with Treated Soil			LS	3	--	1.71	/BCY	1,100	BCY	1.380	1.000	1.000			3,000	2,000
B - Soil Excavation			LS	3	--	3.96	/BCY	90,000	BCY	1.000	1.000	1.000			372,000	338,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	3	--	1.08	/BCY-MILE	90,000	BCY	1.000	1.750	1.000			178,000	161,000
B - On-Post Hazardous Waste Landfill			LS	3	--	5.78	/BCY	90,000	BCY	1.000	1.000	1.000			544,000	493,000
B - Excavation of Borrow Material			LS	3	--	1.91	/BCY	90,000	BCY	1.000	1.000	1.000			180,000	163,000
B - Transportation of Borrow Material to Backfill Area			LS	3	--	0.87	/BCY-MILE	90,000	BCY	1.000	1.500	1.000			123,000	111,000
B - Backfill with Borrow Material			LS	3	--	1.71	/BCY	90,000	BCY	1.000	1.000	1.000			161,000	146,000
HB - Supplementation of Soil With Conditioners			LS	3	--	0.07	/SY	300,000	SY	1.000	1.000	1.000			22,000	20,000
HB - Revegetation of Disturbed Areas			LS	3	--	0.18	/SY	300,000	SY	1.000	1.000	1.100	Disturbance		62,000	56,000
		Subtotal (I)													1,767,000	1,603,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMSS														
Mob/Demob	4.5%	J = 0.045 * (I)													80,000	72,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													743,000	674,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													45,000	41,000
Resident Engineering	1.8%	M = 0.018 * (I+J+K)													45,000	41,000
Contingency	31.3%	N = 0.313 * (I+J+K+L+M)													838,000	760,000
		Subtotal (O = J+K+L+M+N)													1,751,000	1,588,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - Thermal Desorption (Dry Soil)			LS	3	--	44.61	/BCY	14,000	BCY	1.000	1.000	1.000			653,000	592,000
H - Cement-Based Solidification			LS	3	--	36.11	/BCY	1,100	BCY	1.000	1.000	1.000			42,000	38,000
		Subtotal (I1)													694,000	630,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													69,000	63,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													15,000	14,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													312,000	283,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													396,000	359,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															4,609,000	4,180,000

Table B4.17-13 Cost Estimate - Buried Sediment/Ditches Medium Group - Sand Creek Lateral Subgroup
Alternative 13: Direct Thermal Desorption (Direct Heating); Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure (Particulates)			A	3	30	0.02	/BCY-YR	140	BCY	1.000	1.000	1.000		4	100	50
H - Long Term Monitoring of Solidified Soil			A	3	30	0.25	/SY-YR	10,000	SY	1.000	1.000	1.000		3,000	73,000	37,000
B - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	90,000	BCY	1.000	1.000	1.000		2,000	63,000	32,000
		Subtotal (P)												5,000	136,000	69,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												2,000	53,000	27,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	62,000	31,000
		Subtotal (S = Q+R)												4,000	115,000	58,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														9,000	251,000	127,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															7,670,000	6,960,000

Table B4.18-1 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	150,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	600,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	94,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	230,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.18-1 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	150,000	SY	1.000	1.000	1.000			0	0
B - No Action			LS	1	--	0.00	/SY	600,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	94,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	230,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Section 36 Balance of Areas			A	1	30	166,000.00	/EA-YR	1	EA	1.000	1.000	1.000		173,000	5,204,000	2,758,000
H - Long-Term Groundwater Monitoring, Section 36 Balance of Areas			A	1	30	39,000.00	/EA-YR	1	EA	1.000	1.000	1.000		41,000	1,223,000	648,000
HBAU - Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												217,000	6,511,000	3,451,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												85,000	2,539,000	1,346,000
Contingency	32.5%	R = 0.325 * (P+Q)												98,000	2,942,000	1,559,000
		Subtotal (S)												183,000	5,481,000	2,905,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														400,000	11,992,000	6,355,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															12,000,000	6,360,000

Table B4.18-2 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Public Education			LS	1	--	1,700.00	/EA	1	EA	1.000	1.000	1.000			2,000	2,000
HB - Fences			LS	1	--	15.90	/LF	15,000	LF	1.000	1.000	1.000			249,000	249,000
A - No Action			LS	1	--	0.00	/SY	94,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	230,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													251,000	251,000
INDIRECT CAPITAL COSTS		COST CODE	LLSS													
Mob/Demob	3.3%	B = 0.033 * (A)													8,000	8,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													101,000	101,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													11,000	11,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													5,000	5,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													107,000	107,000
		Subtotal (G =B+C+D+E+F)													232,000	232,000
TOTAL CAPITAL COSTS (H = A+G)															483,000	483,000

Table B4.18-2 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 2: Access Restrictions (Modifications to FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Public Education			A	1	30	570.00	/EA-YR	1	EA	1.000	1.000	1.000			18,000	9,000
HB - Habitat Modification			A	1	3	0.18	/SY	750,000	SY	1.000	1.000	1.000			141,000	134,000
A - No Action			LS	1	--	0.00	/SY	94,000	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	230,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													159,000	144,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLSS													
Mob/Demob	3.3%	J = 0.033 * (I)													5,000	5,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)													64,000	58,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													2,000	2,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													3,000	3,000
Contingency	28.5%	N = 0.285 * (I+J+K+L+M)													66,000	60,000
		Subtotal (O = J+K+L+M+N)													141,000	127,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Fences			A	2	30	0.79	/LF-YR	15,000	LF	1.000	1.000	1.000		12,000	359,000	187,000
HB - Habitat Modification			A	3	30	0.01	/SY-YR	750,000	SY	1.000	1.000	1.000		5,000	129,000	66,000
HB - Long Term Soil Monitoring, Section 36 Balance of Areas			A	3	30	166,000.00	/EA-YR	1	EA	1.000	1.000	1.000		173,000	4,857,000	2,461,000
H - Long-Term Groundwater Monitoring, Section 36 Balance of Areas			A	3	30	39,000.00	/EA-YR	1	EA	1.000	1.000	1.000		41,000	1,141,000	578,000
HBAU - Site Reviews			A	3	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	79,000	40,000
		Subtotal (P)												234,000	6,566,000	3,333,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												91,000	2,561,000	1,300,000
Contingency	32.5%	R = 0.325 * (P+Q)												106,000	2,966,000	1,506,000
		Subtotal (S)												197,000	5,527,000	2,805,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														431,000	12,392,000	6,409,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															12,900,000	6,890,000

Table B4.18-3 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Section 36 Balance of Areas			LS	1	--	167,635.00	/EA	1	EA	1.000	1.000	1.000			175,000	175,000
HB - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	200,000	BCY	1.000	1.000	1.000			1,726,000	1,726,000
HB - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	200,000	BCY	1.000	1.000	1.000			1,028,000	979,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	300	BCY	1.000	1.000	1.000			3,000	3,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	300	BCY	1.000	1.000	1.000			2,000	1,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	77,000	BCY	1.000	1.000	1.000			665,000	665,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	77,000	BCY	1.000	1.000	1.000			396,000	377,000
		Subtotal (A)													3,994,000	3,927,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													155,000	152,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													1,566,000	1,540,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													257,000	253,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													86,000	84,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													1,818,000	1,787,000
		Subtotal (G = B+C+D+E+F)													3,882,000	3,816,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	300	BCY	1.000	1.000	1.000			50,000	50,000
		Subtotal (A1)													50,000	50,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													2,000	2,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													5,000	5,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													3,000	3,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													18,000	18,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													29000	29000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															7,956,000	7,822,000

Table B4.18-3 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Excavation Dewatering, Section 36 Balance of Areas		A	1	2	185,112.00	/EA-YR	1	EA	1.000	1.000	1.000			387,000	378,000
A - Agent Screening During Excavation		LS	1	--	0.30	/BCY	200,000	BCY	1.000	1.000	1.000			63,000	63,000
U - UXO Clearance by Geophysics		LS	1	--	0.66	/SY	230,000	SY	1.000	1.000	1.000			159,000	159,000
HB - Soil Excavation		LS	2	--	3.96	/BCY	200,000	BCY	1.000	1.000	1.000			828,000	788,000
HB - Transportation of Contaminated Soil to On-Post Hazardous Waste		LS	2	--	1.08	/BCY-MILE	200,000	BCY	1.000	1.500	1.000			339,000	322,000
HB - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	200,000	BCY	1.000	1.000	1.000			1,208,000	1,150,000
HB - Excavation of Borrow Material		LS	2	--	1.91	/BCY	200,000	BCY	1.000	1.000	1.000			399,000	380,000
HB - Transportation of Borrow Material to Backfill Area		LS	2	--	0.87	/BCY-MILE	200,000	BCY	1.000	1.500	1.000			273,000	260,000
HB - Backfill with Borrow Material		LS	2	--	1.71	/BCY	200,000	BCY	1.000	1.000	1.000			357,000	340,000
HB - Supplementation of Soil With Conditioners		LS	2	--	0.07	/SY	540,000	SY	1.000	1.000	1.000			40,000	38,000
HB - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	540,000	SY	1.000	1.000	1.100	Disturbance		112,000	106,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	300	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	300	BCY	1.000	1.000	1.000			500	500
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	300	BCY	1.000	1.000	1.000			2,000	2,000
U - Removal of Soil with UXO		LS	2	--	71.16	/BCY	160	BCY	1.000	1.000	1.000			12,000	11,000
U - Excavation of Debris from Surface Soil		LS	2	--	3.07	/BCY	77,000	BCY	1.000	1.000	1.300	Productivity		321,000	306,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	77,000	BCY	1.000	1.500	1.300	Productivity		169,000	161,000
U - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	77,000	BCY	1.000	1.000	1.000			465,000	443,000
	Subtotal (I)													5,135,000	4,910,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS													
Mob/Demob	5.1%	J = 0.051 * (I)												263,000	252,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)												2,173,000	2,078,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)												132,000	127,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)												151,000	145,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)												2,651,000	2,535,000
	Subtotal (O = J+K+L+M+N)													5,371,000	5,136,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
A - Caustic Washing of Agent Soil		LS	2	--	273.50	/BCY	300	BCY	1.000	1.000	1.000			86,000	82,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO		LS	2	--	2,220.00	/BCY	160	BCY	1.000	1.000	1.000			371,000	354,000
	Subtotal (I1)													457000	436000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: F													
Mob/Demob	5.0%	J1 = 0.050 * (I1)												23,000	22,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												48,000	46,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												11,000	10,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)												161,000	154,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													243,000	231,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														11,206,000	10,712,000

Table B4.18-3 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	200,000	BCY	1.000	1.000	1.000		5,000	145,000	76,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	300	BCY	1.000	1.000	1.000		10	200	100
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	77,000	BCY	1.000	1.000	1.000		2,000	56,000	29,000
		Subtotal (P)												7,000	202,000	105,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	79,000	41,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	91,000	48,000
		Subtotal (S = Q+R)												6,000	170,000	89,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														13,000	371,000	194,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															19,500,000	18,700,000

Table B4.18-3g Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Section 36 Balance of Areas			LS	1	--	167,635.00	/EA	1	EA	1.000	1.000	1.000			175,000	175,000
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	64,000	BCY	1.000	1.000	1.000			552,000	552,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	64,000	BCY	1.000	1.000	1.000			329,000	313,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	300	BCY	1.000	1.000	1.000			3,000	3,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	300	BCY	1.000	1.000	1.000			2,000	1,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	77,000	BCY	1.000	1.000	1.000			665,000	665,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	77,000	BCY	1.000	1.000	1.000			396,000	377,000
		Subtotal (A)													2,121,000	2,087,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													82,000	81,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													832,000	818,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													137,000	134,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													46,000	45,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													965,000	949,000
		Subtotal (G = B+C+D+E+F)													2,061,000	2,028,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	300	BCY	1.000	1.000	1.000			50,000	50,000
		Subtotal (A1)													50000	50000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													2,000	2,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													5,000	5,000
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													3,000	3,000
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													1,000	1,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													18,000	18,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													30,000	30,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															4,262,000	4,194,000

Table B4.18-3g Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - Excavation Dewatering, Section 36 Balance of Areas			A	1	2	185,112.00	/EA-YR	1	EA	1.000	1.000	1.000			387,000	378,000
A - Agent Screening During Excavation			LS	1	--	0.30	/BCY	200,000	BCY	1.000	1.000	1.000			63,000	63,000
U - UXO Clearance by Geophysics			LS	1	--	0.66	/SY	230,000	SY	1.000	1.000	1.000			159,000	159,000
H - Soil Excavation			LS	2	--	3.96	/BCY	64,000	BCY	1.000	1.000	1.000			265,000	252,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	2	--	1.08	/BCY-MILE	64,000	BCY	1.000	1.500	1.000			108,000	103,000
H - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	64,000	BCY	1.000	1.000	1.000			387,000	368,000
H - Installation of Multi-Layer Cap (Variable Soil Cover)			LS	2	--	6.04	/BCY	406,000	BCY	1.000	1.000	1.000			2,563,000	2,441,000
B - Soil Excavation			LS	2	--	3.96	/BCY	140,000	BCY	1.000	1.000	1.000			579,000	552,000
B - Transportation of Contaminated Soil to Consolidation Area			LS	2	--	1.08	/BCY-MILE	140,000	BCY	1.000	0.500	1.000			79,000	75,000
B - Grade Filling w/Consolidated Soil Prior to Capping			LS	2	--	3.44	/BCY	140,000	BCY	1.000	1.000	1.000			503,000	479,000
HB - Excavation of Borrow Material			LS	2	--	1.91	/BCY	64,000	BCY	1.000	1.000	1.000			128,000	122,000
HB - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	64,000	BCY	1.000	1.500	1.000			87,000	83,000
HB - Backfill with Borrow Material			LS	2	--	1.71	/BCY	64,000	BCY	1.000	1.000	1.000			114,000	109,000
HB - Supplementation of Soil With Conditioners			LS	2	--	0.07	/SY	750,000	SY	1.000	1.000	1.000			55,000	52,000
HB - Revegetation of Disturbed Areas			LS	2	--	0.18	/SY	750,000	SY	1.000	1.000	1.100	Disturbance		155,000	148,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	300	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	300	BCY	1.000	1.000	1.000			500	500
A - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	2	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	300	BCY	1.000	1.000	1.000			2,000	2,000
U - Removal of Soil with UXO			LS	2	--	71.16	/BCY	160	BCY	1.000	1.000	1.000			12,000	11,000
U - Excavation of Debris from Surface Soil			LS	2	--	3.07	/BCY	77,000	BCY	1.000	1.000	1.300	Productivity		321,000	306,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste L			LS	2	--	1.08	/BCY-MILE	77,000	BCY	1.000	1.500	1.300	Productivity		169,000	161,000
U - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	77,000	BCY	1.000	1.000	1.000			465,000	443,000
		Subtotal (I)													6,604,000	6,309,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: HMMS														
Mob/Demob	5.1%	J = 0.051 * (I)													338,000	323,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													2,794,000	2,669,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													170,000	163,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)													195,000	186,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)													3,409,000	3,257,000
		Subtotal (O = J+K+L+M+N)													6,907,000	6,599,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	300	BCY	1.000	1.000	1.000			86,000	82,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UX			LS	2	--	2,220.00	/BCY	160	BCY	1.000	1.000	1.000			371,000	354,000
		Subtotal (I1)													457,000	435,000
INDIRECT SUBCONTR. O&M COSTS (OPERATI		COST CODE: F														
Mob/Demob	5.0%	J1 = 0.050 * (I1)													23,000	22,000
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)													48,000	46,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)													11,000	10,000
Contingency	30.0%	N1 = 0.300 * (I1+J1+K1+L1+M1)													161,000	154,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													243,000	231,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															14,210,000	13,574,000

Table B4.18-3g Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 3g: Landfill (On-Post Landfill); Caps/Covers (Multi-Layer Cap) with Consolidation; Caps/Covers (Soil Cover)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	64,000	BCY	1.000	1.000	1.000		2,000	45,000	23,000
A - On-Post Hazardous Waste Landfill Closure			A	3	30	0.02	/BCY-YR	300	BCY	1.000	1.000	1.000		10	200	100
U - On-Post Hazardous Waste Landfill, Closure			A	3	30	0.02	/BCY-YR	77,000	BCY	1.000	1.000	1.000		2,000	54,000	27,000
		Subtotal (P)												4,000	99,000	50,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	39,000	20,000
Contingency	32.5%	R = 0.325 * (P+Q)												2,000	45,000	23,000
		Subtotal (S = Q+R)												3,000	84,000	42,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														7,000	183,000	93,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															18,700,000	17,900,000

Table B4.18-6 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE 0														
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.18-6 Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
U - UXO Clearance In Surface Soil by Geophysics			LS	1	--	0.07	/SY	230,000	SY	1.000	1.000	1.000			17,000	17,000
HBAU - Excavation of Borrow Material			A	1	2	1.91	/BCY	1,400,000	BCY	1.000	1.000	1.000			2,794,000	2,728,000
HBAU - Transportation of Borrow Material to Backfill Area			A	1	2	0.87	/BCY-MILE	1,400,000	BCY	1.000	1.500	1.000			1,909,000	1,864,000
HBAU - Backfill with Borrow Material			A	1	2	1.71	/BCY	1,400,000	BCY	1.000	1.000	1.000			2,502,000	2,442,000
HBAU - Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	750,000	SY	1.000	1.000	1.000			47,000	47,000
HBAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	2	19.01	/SY	750,000	SY	1.000	1.000	1.000			14,899,000	14,544,000
HBAU - Revegetation of Disturbed Areas			A	1	2	0.18	/SY	750,000	SY	1.000	1.000	1.100	Disturbance		155,000	151,000
		Subtotal (I)													22,323,000	21,793,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													726,000	708,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													8,701,000	8,494,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													317,000	310,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													397,000	387,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													9,333,000	9,112,000
		Subtotal (O = J+K+L+M+N)													19,474,000	19,012,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HBAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	2	30	0.07	/SY-YR	750,000	SY	1.000	1.000	1.000		55,000	1,591,000	831,000
H - Long-Term Groundwater Monitoring, Section 36 Balance of Areas			A	2	30	39,000.00	/EA-YR	1	EA	1.000	1.000	1.000		41,000	1,182,000	617,000
HBAU - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
		Subtotal (P)												98,000	2,855,000	1,490,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												38,000	1,113,000	581,000
Contingency	32.5%	R = 0.325 * (P+Q)												44,000	1,290,000	673,000
		Subtotal (S)												83,000	2,403,000	1,255,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														181,000	47,055,000	43,550,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															47,100,000	43,600,000

Table B4.18-13a Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - Excavation Dewatering, Section 36 Balance of Areas			LS	1	--	167,635.00	/EA	1	EA	1.000	1.000	1.000			175,000	175,000
H - On-Post Hazardous Waste Landfill (Particulates)			LS	2	--	8.26	/BCY	640	BCY	1.000	1.000	1.000			6,000	5,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)			LS	3	--	4.92	/BCY	640	BCY	1.000	1.000	1.000			3,000	3,000
B - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	140,000	BCY	1.000	1.000	1.000			1,208,000	1,151,000
B - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	140,000	BCY	1.000	1.000	1.000			720,000	653,000
A - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	300	BCY	1.000	1.000	1.000			3,000	2,000
A - On-Post Hazardous Waste Landfill Closure			LS	3	--	4.92	/BCY	300	BCY	1.000	1.000	1.000			2,000	1,000
U - On-Post Hazardous Waste Landfill			LS	2	--	8.26	/BCY	77,000	BCY	1.000	1.000	1.000			665,000	633,000
U - On-Post Hazardous Waste Landfill, Closure			LS	3	--	4.92	/BCY	77,000	BCY	1.000	1.000	1.000			396,000	359,000
		Subtotal (A)													3,177,000	2,983,000
INDIRECT CAPITAL COSTS		COST CODE: LMMS														
Mob/Demob	3.9%	B = 0.039 * (A)													123,000	116,000
Indirects, Overhead & Profit	37.8%	C = 0.378 * (A+B)													1,246,000	1,170,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													205,000	192,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													68,000	64,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													1,446,000	1,357,000
		Subtotal (G = B+C+D+E+F)													3,087,000	2,899,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Thermal Desorption (Saturated Soil)			A	1	2	17.55	/BCY	64,000	BCY	1.000	1.000	1.000			1,174,000	1,146,000
A - Caustic Washing of Agent Soil			LS	2	--	159.13	/BCY	300	BCY	1.000	1.000	1.000			50,000	48,000
		Subtotal (A1)													1,224,000	1,193,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													24,000	24,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													125,000	122,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													124,000	121,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													41,000	40,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													461,000	450,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													775,000	756,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															8,263,000	7,831,000

Table B4.18-13a Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
H - Excavation Dewatering, Section 36 Balance of Areas		A	1	3	185,112.00	/EA-YR	1	EA	1.000	1.000	1.000			580,000	553,000
A - Agent Screening During Excavation		LS	3	--	0.30	/BCY	280,000	BCY	1.000	1.000	1.000			88,000	80,000
U - UXO Clearance by Geophysics		LS	2	--	0.66	/SY	230,000	SY	1.000	1.000	1.000			159,000	151,000
H - Soil Excavation		LS	3	--	3.96	/BCY	64,000	BCY	1.000	1.000	1.000			265,000	240,000
H - Transportation of Contaminated Soil to Thermal Desorption Facility		LS	3	--	1.08	/BCY-MILE	64,000	BCY	1.000	1.000	1.000			72,000	66,000
H - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	640	BCY	1.000	1.000	1.000			1,000	1,000
H - Transportation of Particulates to On-Post Hazardous Waste Landfill		LS	3	--	1.08	/BCY-MILE	640	BCY	1.000	1.000	1.000			1,000	1,000
H - On-Post Hazardous Waste Landfill (Particulates)		LS	3	--	5.78	/BCY	640	BCY	1.000	1.000	1.000			4,000	4,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	3	--	1.29	/BCY	64,000	BCY	1.000	1.000	1.000			86,000	78,000
H - Transportation of Treated Soil to Backfill Excavation		LS	3	--	0.87	/BCY-MILE	64,000	BCY	1.000	1.000	1.000			58,000	53,000
H - Backfill with Treated Soil		LS	3	--	1.71	/BCY	64,000	BCY	1.000	1.000	1.000			114,000	104,000
B - Soil Excavation		LS	3	--	3.96	/BCY	140,000	BCY	1.000	1.000	1.000			579,000	525,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste L		LS	3	--	1.08	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			237,000	215,000
B - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	140,000	BCY	1.000	1.000	1.000			846,000	767,000
B - Excavation of Borrow Material		LS	3	--	1.91	/BCY	140,000	BCY	1.000	1.000	1.000			279,000	253,000
B - Transportation of Borrow Material to Backfill Area		LS	3	--	0.87	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			191,000	173,000
B - Backfill with Borrow Material		LS	3	--	1.71	/BCY	140,000	BCY	1.000	1.000	1.000			250,000	227,000
HB - Supplementation of Soil With Conditioners		LS	3	--	0.07	/SY	750,000	SY	1.000	1.000	1.000			55,000	50,000
HB - Revegetation of Disturbed Areas		LS	3	--	0.18	/SY	750,000	SY	1.000	1.000	1.100	Disturbance		155,000	141,000
A - Excavation of Soil with Agent		LS	3	--	4.61	/BCY	300	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	3	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - Load Treated Soil for Transport to Hazardous Landfill		LS	3	--	1.56	/BCY	300	BCY	1.000	1.000	1.000			500	400
A - Transportation of Contaminated Soil to On-Post Hazardous Waste L		LS	3	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	300	BCY	1.000	1.000	1.000			2,000	2,000
U - Removal of Soil with UXO		LS	3	--	71.16	/BCY	160	BCY	1.000	1.000	1.000			12,000	11,000
U - Excavation of Debris from Surface Soil		LS	3	--	3.07	/BCY	77,000	BCY	1.000	1.000	1.300	Productivity		321,000	291,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste L		LS	3	--	1.08	/BCY-MILE	77,000	BCY	1.000	1.500	1.300	Productivity		169,000	154,000
U - On-Post Hazardous Waste Landfill		LS	3	--	5.78	/BCY	77,000	BCY	1.000	1.000	1.000			465,000	422,000
	Subtotal (I)													4,993,000	4,563,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMLS														
Mob/Demob	5.1%	J = 0.051 * (I)												256,000	234,000
Indirects, Overhead & Profit	39.0%	K = 0.390 * (I+J)												2,047,000	1,871,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)												128,000	117,000
Resident Engineering	2.0%	M = 0.020 * (I+J+K)												146,000	133,000
Contingency	33.8%	N = 0.338 * (I+J+K+L+M)												2,555,000	2,334,000
	Subtotal (O = J+K+L+M+N)													5,131,000	4,689,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Thermal Desorption (Saturated Soil)		LS	3	--	76.00	/BCY	64,000	BCY	1.000	1.000	1.000			5,083,000	4,610,000
A - Caustic Washing of Agent Soil		LS	3	--	273.50	/BCY	300	BCY	1.000	1.000	1.000			86,000	78,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UX		LS	3	--	2,220.00	/BCY	160	BCY	1.000	1.000	1.000			371,000	337,000
	Subtotal (I1)													5,540,000	5,025,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0%	J1 = 0.000 * (I1)												0	0
Contractor Markup	10.0%	K1 = 0.100 * (I1+J1)												554,000	502,000
Engineering Design	0.0%	L1 = 0.000 * (I1+J1+K1)												0	0
Resident Engineering	2.0%	M1 = 0.020 * (I1+J1+K1)												122,000	111,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)												2,486,000	2,255,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													3,162,000	2,868,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														18,826,000	17,144,000

Table B4.18-13a Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 13a: Direct Thermal Desorption (Direct Heating)

Cost Item	Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)														
B - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	140,000	BCY	1.000	1.000	1.000		4,000	98,000	50,000
H - On-Post Hazardous Waste Landfill Closure (Particulates)	A	3	30	0.02	/BCY-YR	640	BCY	1.000	1.000	1.000		20	400	200
A - On-Post Hazardous Waste Landfill Closure	A	3	30	0.02	/BCY-YR	300	BCY	1.000	1.000	1.000		10	200	100
U - On-Post Hazardous Waste Landfill, Closure	A	3	30	0.02	/BCY-YR	77,000	BCY	1.000	1.000	1.000		2,000	54,000	27,000
Subtotal (P)												5,000	153,000	78,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITIE COST CODE: LLSL														
Indirects, Overhead & Profit 39.0% Q = 0.390 * (P)												2,000	60,000	30,000
Contingency 32.5% R = 0.325 * (P+Q)												2,000	69,000	35,000
Subtotal (S = Q+R)												5,000	129,000	65,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)												10,000	282,000	143,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)													27,400,000	25,100,000

Table B4.18-19a Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
B - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	140,000	BCY	1.000	1.000	1.000			1,208,000	1,208,000
B - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	140,000	BCY	1.000	1.000	1.000			720,000	686,000
H - Excavation Dewatering, Section 36 Balance of Areas			LS	1	--	167,635.00	/EA	1	EA	1.000	1.000	1.000			175,000	175,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	300	BCY	1.000	1.000	1.000			3,000	3,000
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	300	BCY	1.000	1.000	1.000			2,000	1,000
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	77,000	BCY	1.000	1.000	1.000			665,000	665,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	77,000	BCY	1.000	1.000	1.000			396,000	377,000
		Subtotal (A)													3,168,000	3,115,000
INDIRECT CAPITAL COSTS		COST CODE: LMSS														
Mob/Demob	3.9%	B = 0.039 * (A)													123,000	121,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													1,283,000	1,262,000
Engineering Design	4.5%	D = 0.045 * (A+B+C)													206,000	202,000
Resident Engineering	1.5%	E = 0.015 * (A+B+C)													69,000	67,000
Contingency	30.0%	F = 0.300 * (A+B+C+D+E)													1,455,000	1,430,000
		Subtotal (G = B+C+D+E+F)													3,135,000	3,083,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - In Situ RF/Microwave Heating - Deep/Saturated			LS	1	--	7,959,000.00	/UNIT	1	UNIT	1.000	1.000	1.000			8,317,000	8,317,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	300	BCY	1.000	1.000	1.000			50,000	50,000
		Subtotal (A1)													8,367,000	8,367,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: K														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													167,000	167,000
Contractor Markup	6.0%	C1 = 0.060 * (A1+B1)													512,000	512,000
Engineering Design	12.0%	D1 = 0.120 * (A1+B1+C1)													1,086,000	1,086,000
Resident Engineering	1.5%	E1 = 0.015 * (A1+B1+C1)													136,000	136,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													3,080,000	3,080,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													4,981,000	4,981,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															19,651,000	19,546,000

Table B4.18-19a Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
A - Agent Screening During Excavation			LS	1	--	0.30	/BCY	200,000	BCY	1.000	1.000	1.000			63,000	63,000
U - UXO Clearance by Geophysics			LS	1	--	0.66	/SY	230,000	SY	1.000	1.000	1.000			159,000	159,000
H - Excavation Dewatering, Section 36 Balance of Areas			A	1	2	185,112.00	/EA-YR	1	EA	1.000	1.000	1.000			387,000	378,000
B - Soil Excavation			LS	2	--	3.96	/BCY	140,000	BCY	1.000	1.000	1.000			579,000	552,000
B - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			237,000	226,000
B - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	140,000	BCY	1.000	1.000	1.000			846,000	805,000
B - Excavation of Borrow Material			LS	2	--	1.91	/BCY	140,000	BCY	1.000	1.000	1.000			279,000	266,000
B - Transportation of Borrow Material to Backfill Area			LS	2	--	0.87	/BCY-MILE	140,000	BCY	1.000	1.500	1.000			191,000	182,000
B - Backfill with Borrow Material			LS	2	--	1.71	/BCY	140,000	BCY	1.000	1.000	1.000			250,000	238,000
HB - Supplementation of Soil With Conditioners			A	1	2	0.07	/SY	750,000	SY	1.000	1.000	1.000			55,000	54,000
HB - Revegetation of Disturbed Areas			A	1	2	0.18	/SY	750,000	SY	1.000	1.000	1.000			141,000	138,000
A - Excavation of Soil with Agent			LS	2	--	4.61	/BCY	300	BCY	1.000	1.000	1.000			1,000	1,000
A - Transportation of Contaminated Soil to Soil Washing Unit			LS	2	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - Load Treated Soil for Transport to Hazardous Landfill			LS	2	--	1.56	/BCY	300	BCY	1.000	1.000	1.000			500	500
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	300	BCY	1.000	1.000	1.000			300	300
A - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	300	BCY	1.000	1.000	1.000			2,000	2,000
U - Removal of Soil with UXO			LS	2	--	71.16	/BCY	160	BCY	1.000	1.000	1.000			12,000	11,000
U - Excavation of Debris from Surface Soil			LS	2	--	3.07	/BCY	77,000	BCY	1.000	1.000	1.300	Productivity		321,000	306,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La			LS	2	--	1.08	/BCY-MILE	77,000	BCY	1.000	1.500	1.300	Productivity		169,000	161,000
U - On-Post Hazardous Waste Landfill			LS	2	--	5.78	/BCY	77,000	BCY	1.000	1.000	1.000			465,000	443,000
		Subtotal (I)													4,159,000	3,985,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE: MMSL														
Mob/Demob	4.5%	J = 0.045 * (I)													187,000	179,000
Indirects, Overhead & Profit	40.3%	K = 0.403 * (I+J)													1,749,000	1,676,000
Engineering Design	1.8%	L = 0.018 * (I+J+K)													107,000	102,000
Resident Engineering	2.3%	M = 0.023 * (I+J+K)													137,000	131,000
Contingency	35.0%	N = 0.350 * (I+J+K+L+M)													2,219,000	2,126,000
		Subtotal (O = J+K+L+M+N)													4,399,000	4,215,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)																
H - In Situ RF/Microwave Heating - Deep/Saturated			A	1	2	236.75	/BCY	64,000	BCY	1.000	1.000	1.000			15,834,000	15,457,000
A - Caustic Washing of Agent Soil			LS	2	--	273.50	/BCY	300	BCY	1.000	1.000	1.000			86,000	82,000
U - Packaging and Transportation of Agent UXO to Army Off-Post UXO			LS	2	--	2,220.00	/BCY	160	BCY	1.000	1.000	1.000			371,000	354,000
		Subtotal (I1)													16,291,000	15,892,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO		COST CODE: L														
Mob/Demob	0.0%	J1 = 0.000 * (I1)													0	0
Contractor Markup	6.0%	K1 = 0.060 * (I1+J1)													977,000	954,000
Engineering Design	0.5%	L1 = 0.005 * (I1+J1+K1)													86,000	84,000
Resident Engineering	1.0%	M1 = 0.010 * (I1+J1+K1)													173,000	168,000
Contingency	40.0%	N1 = 0.400 * (I1+J1+K1+L1+M1)													7,011,000	6,839,000
		Subtotal (O1 = J1+K1+L1+M1+N1)													8,247,000	8,045,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)															33,095,000	32,138,000

Table B4.18-19a Cost Estimate - Undifferentiated Medium Group - Section 36 Balance of Area Subgroup
Alternative 19a: In Situ Thermal Treatment (RF/Microwave Heating)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
B - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	140,000	BCY	1.000	1.000	1.000		4,000	102,000	53,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	300	BCY	1.000	1.000	1.000		10	200	100
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	77,000	BCY	1.000	1.000	1.000		2,000	56,000	29,000
		Subtotal (P)												5,000	158,000	83,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 • (P)												2,000	62,000	32,000
Contingency	32.5%	R = 0.325 • (P+Q)												2,000	71,000	37,000
		Subtotal (S = Q+R)												5,000	133,000	69,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														10,000	291,000	152,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															53,000,000	51,800,000

Table B4.19-1 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - No Action			LS	1	--	0.00	/SY	12,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	7,100	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	170,000	SY	1.000	1.000	1.000			0	0
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE	0													
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.19-1 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 1: No Additional Action (Provisions of FFA)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
H - No Action			LS	1	--	0.00	/SY	12,000	SY	1.000	1.000	1.000			0	0
A - No Action			LS	1	--	0.00	/SY	7,100	SY	1.000	1.000	1.000			0	0
U - No Action			LS	1	--	0.00	/SY	170,000	SY	1.000	1.000	1.000			0	0
		Subtotal (I)													0	0
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	0													
Mob/Demob	0.0%	J = 0.000 * (I)													0	0
Indirects, Overhead & Profit	0.0%	K = 0.000 * (I+J)													0	0
Engineering Design	0.0%	L = 0.000 * (I+J+K)													0	0
Resident Engineering	0.0%	M = 0.000 * (I+J+K)													0	0
Contingency	0.0%	N = 0.000 * (I+J+K+L+M)													0	0
		Subtotal (O = J+K+L+M+N)													0	0
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HB - Long Term Soil Monitoring, Burial Trenches			A	1	30	14,000.00	/EA-YR	1	EA	1.000	1.000	1.000		15,000	439,000	233,000
H - Long-Term Groundwater Monitoring, Burial Trenches			A	1	30	19,000.00	/EA-YR	1	EA	1.000	1.000	1.000		20,000	596,000	316,000
HAU-Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
		Subtotal (P)												37,000	1,119,000	593,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												15,000	436,000	231,000
Contingency	32.5%	R = 0.325 * (P+Q)												17,000	506,000	268,000
		Subtotal (S)												31,000	942,000	499,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														69,000	2,061,000	1,092,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															2,060,000	1,090,000

Table B4.19-3 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
H - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	28,000	BCY	1.000	1.000	1.000			242,000	242,000
H - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	28,000	BCY	1.000	1.000	1.000			144,000	137,000
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	12	BCY	1.000	1.000	1.000			100	100
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	12	BCY	1.000	1.000	1.000			100	100
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	57,000	BCY	1.000	1.000	1.000			492,000	492,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	57,000	BCY	1.000	1.000	1.000			293,000	279,000
		Subtotal (A)													1,171,000	1,150,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													38,000	37,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													471,000	463,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													50,000	50,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													21,000	21,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													499,000	490,000
		Subtotal (G = B+C+D+E+F)													1,080,000	1,061,000
DIRECT SUBCONTRACT CAPITAL COSTS																
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	12	BCY	1.000	1.000	1.000			2,000	2,000
		Subtotal (A1)													2,000	2,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: F														
Mob/Demob	5.0%	B1 = 0.050 * (A1)													100	100
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													200	200
Engineering Design	4.5%	D1 = 0.045 * (A1+B1+C1)													100	100
Resident Engineering	2.0%	E1 = 0.020 * (A1+B1+C1)													50	50
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													1,000	1,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													1,000	1,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															2,254,000	2,214,000

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Table B4.19-3 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	2	--	0.30	/BCY	32,000	BCY	1.000	1.000	1.000			10,000	10,000
U - UXO Clearance by Geophysics		LS	1	--	0.66	/SY	170,000	SY	1.000	1.000	1.000			117,000	117,000
H - Soil Excavation		LS	2	--	3.96	/BCY	28,000	BCY	1.000	1.000	1.300	Productivity		151,000	143,000
H - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	28,000	BCY	1.000	2.500	1.300	Productivity		103,000	98,000
H - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	28,000	BCY	1.000	1.000	1.000			169,000	161,000
H - Excavation of Borrow Material		LS	2	--	1.91	/BCY	28,000	BCY	1.000	1.000	1.000			56,000	53,000
H - Transportation of Borrow Material to Backfill Area		LS	2	--	0.87	/BCY-MILE	28,000	BCY	1.000	1.500	1.000			38,000	36,000
H - Backfill with Borrow Material		LS	2	--	1.71	/BCY	28,000	BCY	1.000	1.000	1.000			50,000	48,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	12	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	12	BCY	1.000	3.500	1.000			50	50
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	12	BCY	1.000	1.000	1.000			20	20
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	12	BCY	1.000	1.000	1.000			10	10
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	12	BCY	1.000	1.000	1.000			100	100
U - Removal of Soil with UXO		LS	2	--	71.16	/BCY	550	BCY	1.000	1.000	1.000			41,000	39,000
U - Excavation of Debris from Surface Soil		LS	2	--	3.07	/BCY	57,000	BCY	1.000	1.000	1.300	Productivity		238,000	226,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	57,000	BCY	1.000	2.500	1.300	Productivity		209,000	199,000
U - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	57,000	BCY	1.000	1.000	1.000			344,000	328,000
U - Supplementation of Soil With Conditioners		LS	2	--	0.07	/SY	170,000	SY	1.000	1.000	1.000			12,000	12,000
U - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	170,000	SY	1.000	1.000	1.100	Disturbance		35,000	33,000
	Subtotal (I)													1,574,000	1,504,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMMS														
Mob/Demob	5.1% J = 0.051 * (I)													81,000	77,000
Indirects, Overhead & Profit	40.3% K = 0.403 * (I+J)													666,000	637,000
Engineering Design	1.8% L = 0.018 * (I+J+K)													41,000	39,000
Resident Engineering	2.0% M = 0.020 * (I+J+K)													46,000	44,000
Contingency	33.8% N = 0.338 * (I+J+K+L+M)													812,000	777,000
	Subtotal (O = J+K+L+M+N)													1,646,000	1,573,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
A - Caustic Washing of Agent Soil		LS	2	--	273.50	/BCY	12	BCY	1.000	1.000	1.000			3,000	3,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Fa		LS	2	--	59.50	/BCY	550	BCY	1.000	1.000	1.000			34,000	33,000
	Subtotal (I1)													38,000	36,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: F														
Mob/Demob	5.0% J1 = 0.050 * (I1)													2,000	2,000
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													4,000	4,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													1,000	1,000
Contingency	30.0% N1 = 0.300 * (I1+J1+K1+L1+M1)													13,000	13,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													20,000	19,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														3,277,000	3,133,000

Table B4.19-3 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 3: Landfill (On-Post Landfill)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	28,000	BCY	1.000	1.000	1.000		1,000	20,000	11,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	12	BCY	1.000	1.000	1.000		0	10	5
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	57,000	BCY	1.000	1.000	1.000		1,000	41,000	22,000
		Subtotal (P)												2,000	62,000	32,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												1,000	24,000	13,000
Contingency	32.5%	R = 0.325 * (P+Q)												1,000	28,000	15,000
		Subtotal (S = Q+R)												2,000	52,000	27,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														4,000	114,000	59,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															5,650,000	5,410,000

Table B4.19-6 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
		Subtotal (A)													0	0
INDIRECT CAPITAL COSTS		COST CODE 0														
Mob/Demob	0.0%	B = 0.000 * (A)													0	0
Indirects, Overhead & Profit	0.0%	C = 0.000 * (A+B)													0	0
Engineering Design	0.0%	D = 0.000 * (A+B+C)													0	0
Resident Engineering	0.0%	E = 0.000 * (A+B+C)													0	0
Contingency	0.0%	F = 0.000 * (A+B+C+D+E)													0	0
		Subtotal (G =B+C+D+E+F)													0	0
TOTAL CAPITAL COSTS (H = A+G)															0	0

Table B4.19-6 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 6: Caps/Covers (Multi-Layer Cap)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)																
U - UXO Clearance In Surface Soil by Geophysics			LS	1	--	0.07	/SY	170,000	SY	1.000	1.000	1.000			12,000	12,000
HAU - Excavation of Borrow Material			LS	1	--	1.91	/BCY	32,000	BCY	1.000	1.000	1.000			64,000	64,000
HAU - Transportation of Borrow Material to Backfill Area			LS	1	--	0.87	/BCY-MILE	32,000	BCY	1.000	1.500	1.000			44,000	44,000
HAU - Backfill with Borrow Material			LS	1	--	1.71	/BCY	32,000	BCY	1.000	1.000	1.000			57,000	57,000
HAU-Subgrade Preparation Prior to Installing Cap/Cover			LS	1	--	0.06	/SY	12,000	SY	1.000	1.000	1.000			1,000	1,000
HAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			LS	1	--	19.01	/SY	12,000	SY	1.000	1.000	1.000			238,000	238,000
HAU - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	12,000	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
U - Soil Cover for Potential UXO Areas			LS	1	--	7.55	/SY	160,000	SY	1.000	1.000	1.000			1,262,000	1,262,000
U - Revegetation of Disturbed Areas			LS	1	--	0.18	/SY	160,000	SY	1.000	1.000	1.100	Disturbance		33,000	33,000
		Subtotal (I)													1,714,000	1,714,000
INDIRECT O&M COSTS (OPERATIONS)		COST CODE	LLMS													
Mob/Demob	3.3%	J = 0.033 * (I)													56,000	56,000
Indirects, Overhead & Profit	37.8%	K = 0.378 * (I+J)													668,000	668,000
Engineering Design	1.0%	L = 0.010 * (I+J+K)													24,000	24,000
Resident Engineering	1.3%	M = 0.013 * (I+J+K)													30,000	30,000
Contingency	28.8%	N = 0.288 * (I+J+K+L+M)													717,000	717,000
		Subtotal (O = J+K+L+M+N)													1,495,000	1,495,000
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
HAU - Installation of Multi-Layer Cap (Clay/Soil Cap)			A	1	30	0.07	/SY-YR	12,000	SY	1.000	1.000	1.000		1,000	26,000	14,000
H - Long-Term Groundwater Monitoring, Burial Trenches			A	1	30	19,000.00	/EA-YR	1	EA	1.000	1.000	1.000		20,000	596,000	316,000
HAU-Site Reviews			A	1	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	85,000	45,000
U - Soil Cover for Potential UXO Areas			A	1	30	0.03	/SY-YR	160,000	SY	1.000	1.000	1.000		5,000	150,000	80,000
		Subtotal (P)												29,000	857,000	454,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE	LLSL													
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												11,000	334,000	177,000
Contingency	32.5%	R = 0.325 * (P+Q)												13,000	387,000	205,000
		Subtotal (S)												24,000	721,000	382,000
TOTAL O&M COSTS (T = I+O+P+S) [Note: Total O&M Annual Cost Only Includes Long-Term Activities]														53,000	4,788,000	4,046,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (U = H+T)															4,790,000	4,050,000

Table B4.19-10 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 10: Direct Solidification/Stabilization (Cement-Based Solidification)

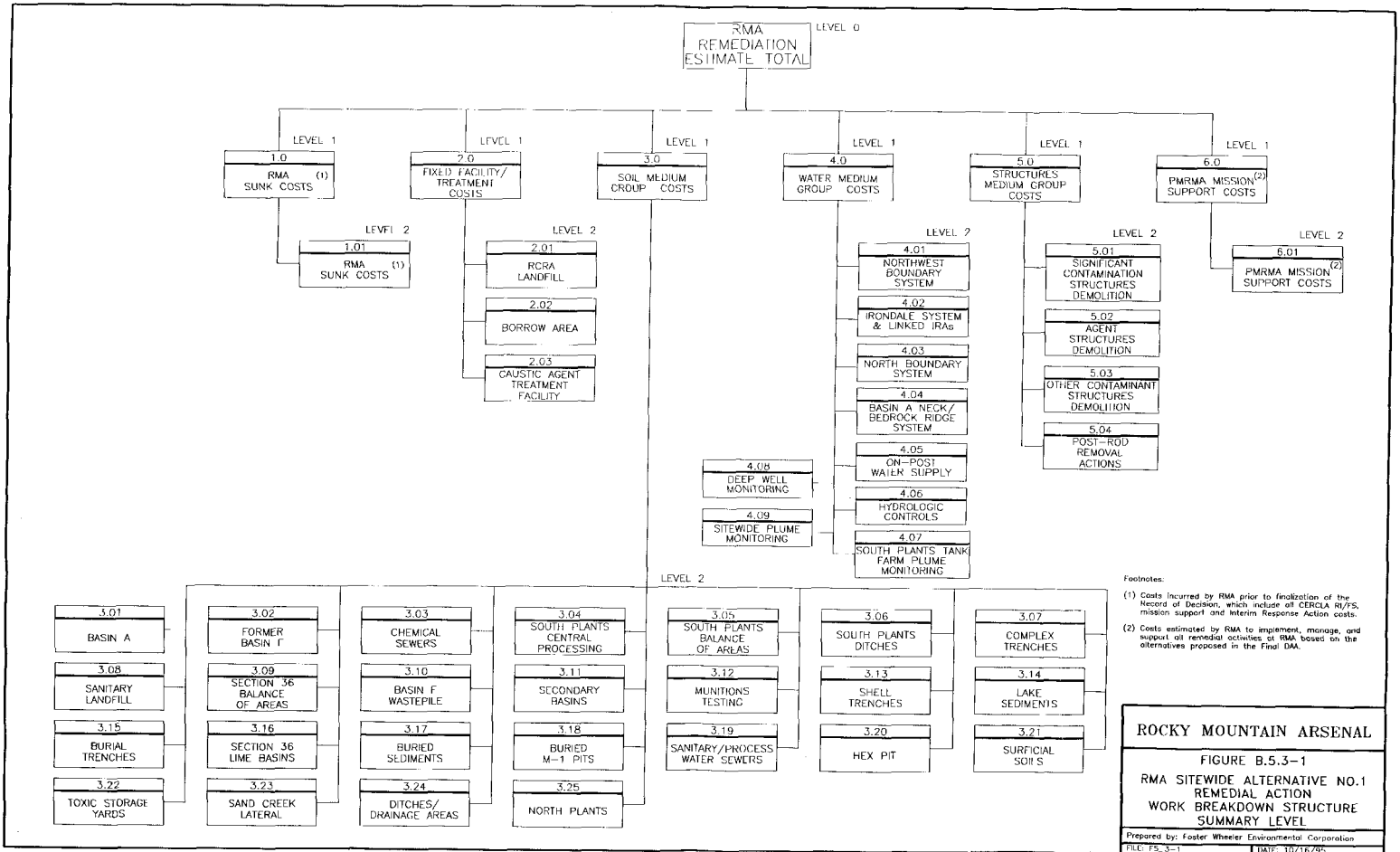
Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT CAPITAL COSTS																
A - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	12	BCY	1.000	1.000	1.000			100	100
A - On-Post Hazardous Waste Landfill Closure			LS	2	--	4.92	/BCY	12	BCY	1.000	1.000	1.000			100	100
U - On-Post Hazardous Waste Landfill			LS	1	--	8.26	/BCY	57,000	BCY	1.000	1.000	1.000			492,000	492,000
U - On-Post Hazardous Waste Landfill, Closure			LS	2	--	4.92	/BCY	57,000	BCY	1.000	1.000	1.000			293,000	279,000
		Subtotal (A)													785,000	771,000
INDIRECT CAPITAL COSTS		COST CODE: LLSS														
Mob/Demob	3.3%	B = 0.033 * (A)													26,000	25,000
Indirects, Overhead & Profit	39.0%	C = 0.390 * (A+B)													316,000	311,000
Engineering Design	3.0%	D = 0.030 * (A+B+C)													34,000	33,000
Resident Engineering	1.3%	E = 0.013 * (A+B+C)													14,000	14,000
Contingency	28.5%	F = 0.285 * (A+B+C+D+E)													335,000	329,000
		Subtotal (G = B+C+D+E+F)													724,000	712,000
DIRECT SUBCONTRACT CAPITAL COSTS																
H - Cement-Based Solidification			LS	1	--	1.84	/BCY	28,000	BCY	1.000	1.000	1.000			54,000	54,000
A - Caustic Washing of Agent Soil			LS	1	--	159.13	/BCY	12	BCY	1.000	1.000	1.000			2,000	2,000
		Subtotal (A1)													56,000	56,000
INDIRECT SUBCONTRACT CAPITAL COSTS		COST CODE: C														
Mob/Demob	2.0%	B1 = 0.020 * (A1)													1,000	1,000
Contractor Markup	10.0%	C1 = 0.100 * (A1+B1)													6,000	6,000
Engineering Design	9.0%	D1 = 0.090 * (A1+B1+C1)													6,000	6,000
Resident Engineering	3.0%	E1 = 0.030 * (A1+B1+C1)													2,000	2,000
Contingency	30.0%	F1 = 0.300 * (A1+B1+C1+D1+E1)													21,000	21,000
		Subtotal (G1 = B1+C1+D1+E1+F1)													35,000	35,000
TOTAL CAPITAL COSTS (H = A+G+A1+G1)															1,601,000	1,574,000

Table B4.19-10 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 10: Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item		Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (OPERATIONS)															
A - Agent Screening During Excavation		LS	2	--	0.30	/BCY	32,000	BCY	1.000	1.000	1.000			10,000	10,000
U - UXO Clearance by Geophysics		LS	1	--	0.66	/SY	170,000	SY	1.000	1.000	1.000			117,000	117,000
H - Soil Excavation		LS	2	--	3.96	/BCY	28,000	BCY	1.000	1.000	1.300	Productivity		151,000	143,000
H - Transportation of Contaminated Soil to Solidification Facility		LS	2	--	1.08	/BCY-MILE	28,000	BCY	1.000	3.500	1.300	Productivity		144,000	137,000
H - Load Nonhazardous Treated Soil from Stockpile for Backfill		LS	2	--	1.29	/BCY	28,000	BCY	1.380	1.000	1.000			52,000	50,000
H - Transportation of Treated Soil to Backfill Excavation		LS	2	--	0.87	/BCY-MILE	28,000	BCY	1.380	3.500	1.000			123,000	117,000
H - Backfill with Treated Soil		LS	2	--	1.71	/BCY	28,000	BCY	1.380	1.000	1.000			69,000	66,000
H - Soil Cover for Solidified Materials		LS	2	--	6.92	/SY	12,000	SY	1.000	1.000	1.000			87,000	83,000
H - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	12,000	SY	1.000	1.000	1.100	Disturbance		2,000	2,000
A - Excavation of Soil with Agent		LS	2	--	4.61	/BCY	12	BCY	1.000	1.000	1.000			100	100
A - Transportation of Contaminated Soil to Soil Washing Unit		LS	2	--	1.08	/BCY-MILE	12	BCY	1.000	3.500	1.000			50	50
A - Load Treated Soil for Transport to Hazardous Landfill		LS	2	--	1.56	/BCY	12	BCY	1.000	1.000	1.000			20	20
A - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	12	BCY	1.000	1.000	1.000			10	10
A - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	12	BCY	1.000	1.000	1.000			100	100
U - Removal of Soil with UXO		LS	2	--	71.16	/BCY	550	BCY	1.000	1.000	1.000			41,000	39,000
U - Excavation of Debris from Surface Soil		LS	2	--	3.07	/BCY	57,000	BCY	1.000	1.000	1.300	Productivity		238,000	226,000
U - Transportation of Contaminated Soil to On-Post Hazardous Waste La		LS	2	--	1.08	/BCY-MILE	57,000	BCY	1.000	2.500	1.300	Productivity		209,000	199,000
U - On-Post Hazardous Waste Landfill		LS	2	--	5.78	/BCY	57,000	BCY	1.000	1.000	1.000			344,000	328,000
U - Supplementation of Soil With Conditioners		LS	2	--	0.07	/SY	160,000	SY	1.000	1.000	1.000			12,000	11,000
U - Revegetation of Disturbed Areas		LS	2	--	0.18	/SY	160,000	SY	1.000	1.000	1.100	Disturbance		33,000	32,000
	Subtotal (I)													1,632,000	1,560,000
INDIRECT O&M COSTS (OPERATIONS)	COST CODE: HMMS														
Mob/Demob	5.1% J = 0.051 * (I)													84,000	80,000
Indirects, Overhead & Profit	40.3% K = 0.403 * (I+J)													691,000	660,000
Engineering Design	1.8% L = 0.018 * (I+J+K)													42,000	40,000
Resident Engineering	2.0% M = 0.020 * (I+J+K)													48,000	46,000
Contingency	33.8% N = 0.338 * (I+J+K+L+M)													843,000	805,000
	Subtotal (O = J+K+L+M+N)													1,707,000	1,632,000
DIRECT SUBCONTRACT O&M COSTS (OPERATIONS)															
H - Cement-Based Solidification		LS	2	--	36.11	/BCY	28,000	BCY	1.000	1.000	1.000			1,057,000	1,006,000
A - Caustic Washing of Agent Soil		LS	2	--	273.50	/BCY	12	BCY	1.000	1.000	1.000			3,000	3,000
U - Packaging and Transportation of HE Filled Uxo to Army Off-Post Fa		LS	2	--	59.50	/BCY	550	BCY	1.000	1.000	1.000			34,000	33,000
	Subtotal (I1)													1,094,000	1,042,000
INDIRECT SUBCONTR. O&M COSTS (OPERATIO	COST CODE: D														
Mob/Demob	0.0% J1 = 0.000 * (I1)													0	0
Contractor Markup	10.0% K1 = 0.100 * (I1+J1)													109,000	104,000
Engineering Design	0.0% L1 = 0.000 * (I1+J1+K1)													0	0
Resident Engineering	2.0% M1 = 0.020 * (I1+J1+K1)													24,000	23,000
Contingency	40.0% N1 = 0.400 * (I1+J1+K1+L1+M1)													491,000	468,000
	Subtotal (O1 = J1+K1+L1+M1+N1)													625,000	595,000
TOTAL O&M COSTS (OPERATIONS) (OO = I+O+I1+O1)														5,058,000	4,828,000

Table B4.19-10 Cost Estimate - Undifferentiated Medium Group - Burial Trenches Subgroup
Alternative 10: Direct Solidification/Stabilization (Cement-Based Solidification)

Cost Item			Cost Type	Start Year	End Year	1994 ($) Unit Cost	Units	Quantity	Units	Volume Factor	Mileage Factor	Other Factor	Description	1995 ($) Annual Cost	1995 ($) Total Cost	1995 ($) PW Cost
DIRECT O&M COSTS (LONG-TERM ACTIVITIES)																
H - Long Term Monitoring of Solidified Soil			A	2	30	0.25	/SY-YR	12,000	SY	1.000	1.000	1.000		3,000	91,000	47,000
H - Site Reviews			A	2	30	2,700.00	/EA-YR	1	EA	1.000	1.000	1.000		3,000	82,000	43,000
A - On-Post Hazardous Waste Landfill Closure			A	2	30	0.02	/BCY-YR	12	BCY	1.000	1.000	1.000		0	10	5
U - On-Post Hazardous Waste Landfill, Closure			A	2	30	0.02	/BCY-YR	57,000	BCY	1.000	1.000	1.000		1,000	41,000	22,000
		Subtotal (P)												7,000	214,000	112,000
INDIRECT O&M COSTS (LONG-TERM ACTIVITI		COST CODE: LLSL														
Indirects, Overhead & Profit	39.0%	Q = 0.390 * (P)												3,000	84,000	44,000
Contingency	32.5%	R = 0.325 * (P+Q)												3,000	97,000	51,000
		Subtotal (S = Q+R)												6,000	180,000	94,000
TOTAL O&M COSTS (LONG-TERM ACTIVITIES) (T = P+S)														14,000	395,000	206,000
TOTAL CAPITAL COSTS AND TOTAL O&M COSTS (OPERATIONS & LONG-TERM ACTIVITIES) (U = H+OO+T)															7,050,000	6,610,000



Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA R/FS, mission support and Interim Response Action costs.

(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

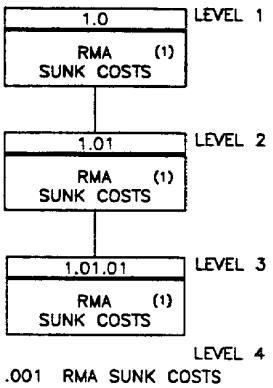
ROCKY MOUNTAIN ARSENAL

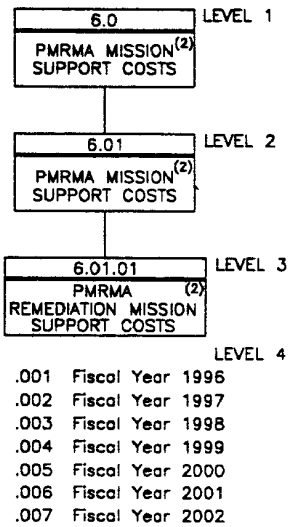
FIGURE B.5.3-1

RMA SITEWIDE ALTERNATIVE NO.1 REMEDIAL ACTION WORK BREAKDOWN STRUCTURE SUMMARY LEVEL

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-1 DATE: 10/16/95





Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

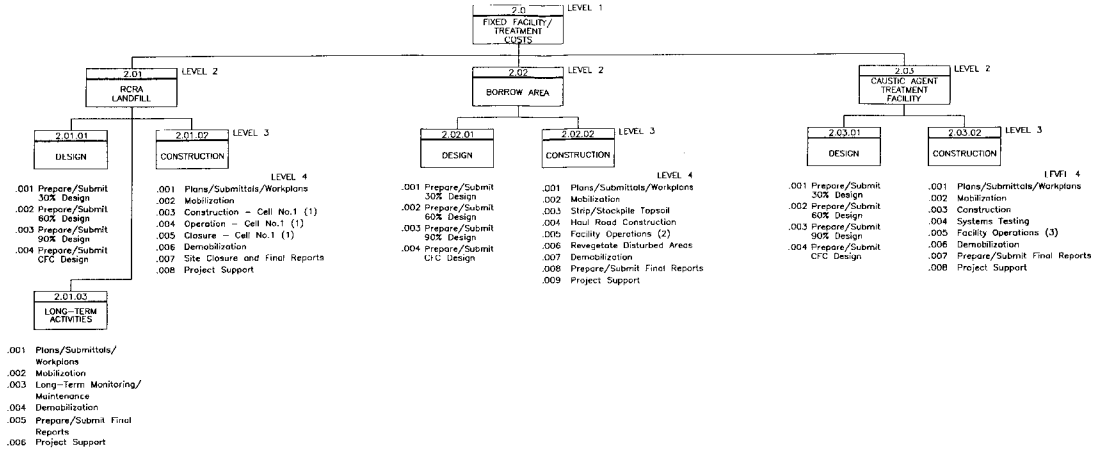
(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-2
RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUNK COSTS AND
PMRMA MISSION SUPPORT COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-2 | DATE: 10/16/95



Footnotes:

(1) Cost includes facility operations for spreading and compacting all demolition debris and excavated soils. Transportation costs to the fixed facility are included under each subgroup.

(2) Cost includes facility operations, excavating low-permeability soils and common borrow material, and maintaining the facility. Transportation costs from the borrow facility are included under each subgroup.

(3) Cost includes facility operations to treat all agent-contaminated demolition debris and soils. Transportation to and from the facility are included under each subgroup.

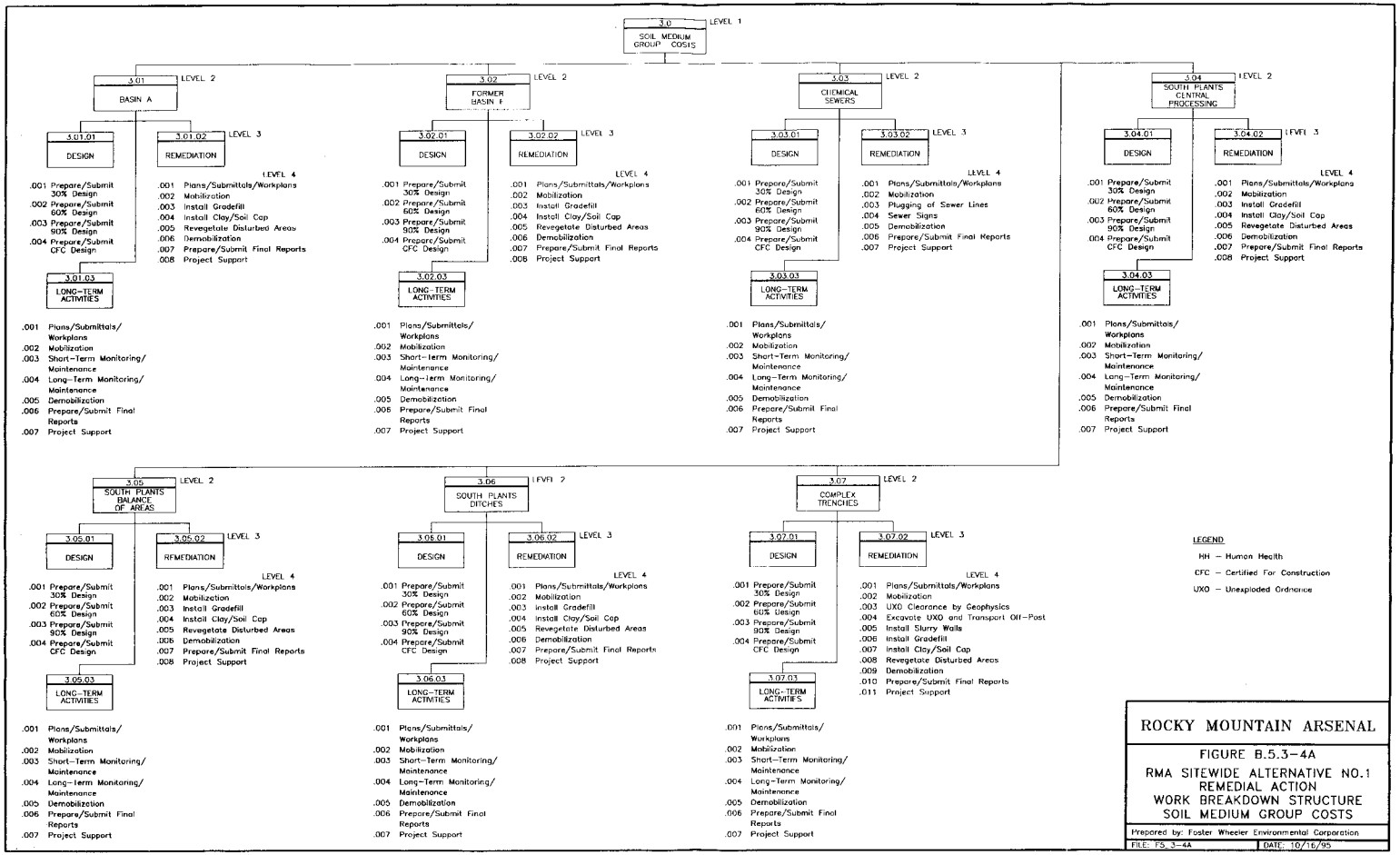
ROCKY MOUNTAIN ARSENAL

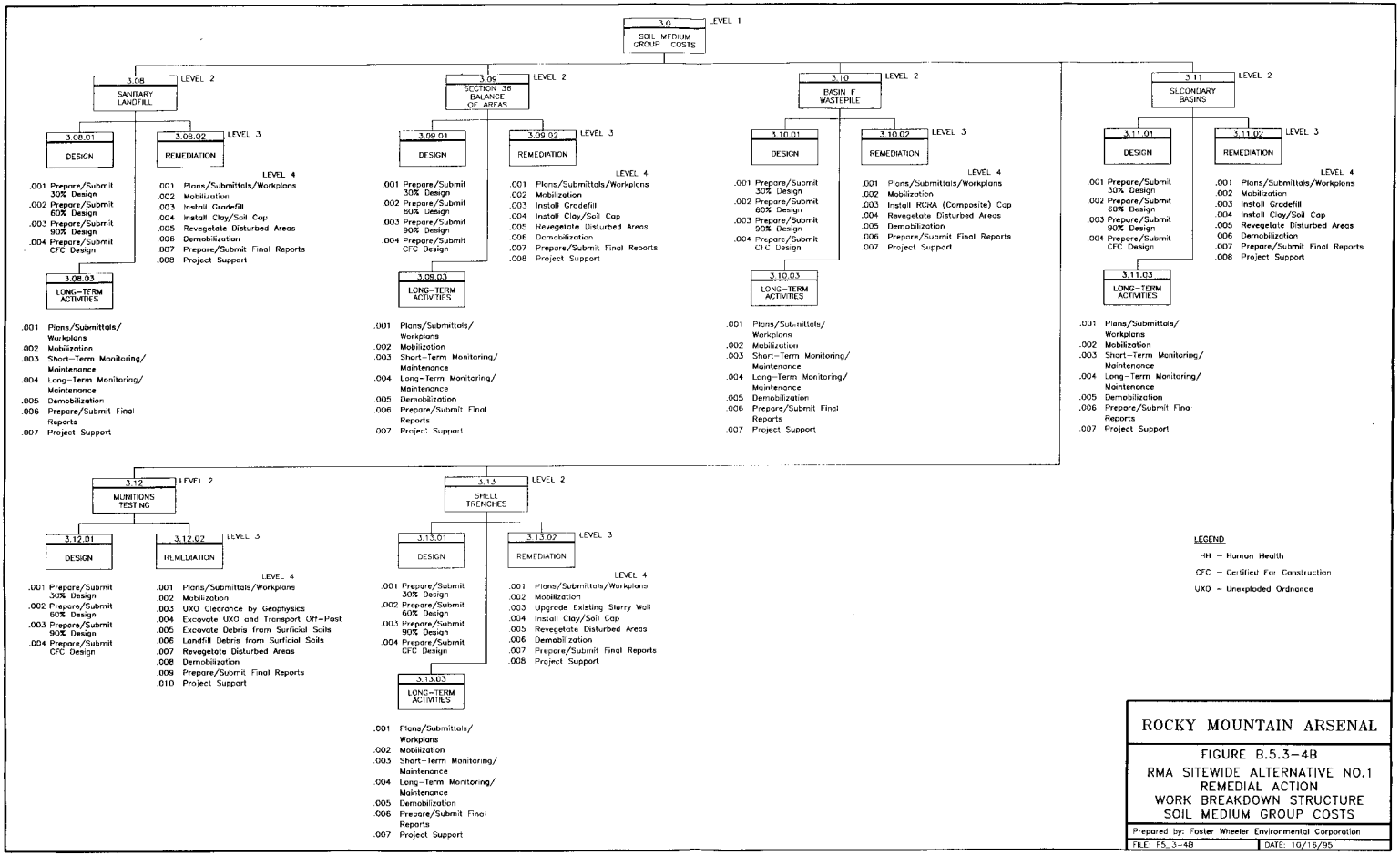
FIGURE B.5.3-3

RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
FIXED FACILITY COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-3 | DATE: 10/16/95


3.0 LEVEL 1
SOIL MEDIUM GROUP COSTS
3.01 LEVEL 2
BASIN A
3.01.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.01.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Install Gradefill
.004 Install Clay/Soil Cap
.005 Revegetate Disturbed Areas
.006 Demobilization
.007 Prepare/Submit Final Reports
.008 Project Support
3.01.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.02 LEVEL 2
FORMER BASIN F
3.02.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.02.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Install Gradefill
.004 Install Clay/Soil Cap
.005 Revegetate Disturbed Areas
.006 Demobilization
.007 Prepare/Submit Final Reports
.008 Project Support
3.02.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.03 LEVEL 2
CHEMICAL SEWERS
3.03.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.03.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Plugging of Sewer Lines
.004 Sewer Signs
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.03.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.04 LEVEL 2
SOUTH PLANTS CENTRAL PROCESSING
3.04.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.04.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Install Gradefill
.004 Install Clay/Soil Cap
.005 Revegetate Disturbed Areas
.006 Demobilization
.007 Prepare/Submit Final Reports
.008 Project Support
3.04.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.05 LEVEL 2
SOUTH PLANTS BALANCE OF AREAS
3.05.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.05.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Install Gradefill
.004 Install Clay/Soil Cap
.005 Revegetate Disturbed Areas
.006 Demobilization
.007 Prepare/Submit Final Reports
.008 Project Support
3.05.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.06 LEVEL 2
SOUTH PLANTS DITCHES
3.06.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.06.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Install Gradefill
.004 Install Clay/Soil Cap
.005 Revegetate Disturbed Areas
.006 Demobilization
.007 Prepare/Submit Final Reports
.008 Project Support
3.06.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.07 LEVEL 2
COMPLEX TRENCHES
3.07.01
DESIGN
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
3.07.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 UXO Clearance by Geophysics
.004 Excavate UXO and Transport Off-Post
.005 Install Slurry Walls
.006 Install Gradefill
.007 Install Clay/Soil Cap
.008 Revegetate Disturbed Areas
.009 Demobilization
.010 Prepare/Submit Final Reports
.011 Project Support
3.07.03
LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEGEND
HH – Human Health
CFC – Certified For Construction
UXO – Unexploded Ordnance
ROCKY MOUNTAIN ARSENAL
FIGURE B.5.3-4A
RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS
Prepared by: Foster Wheeler Environmental Corporation
FILE: F5_3-4A
DATE: 10/16/95



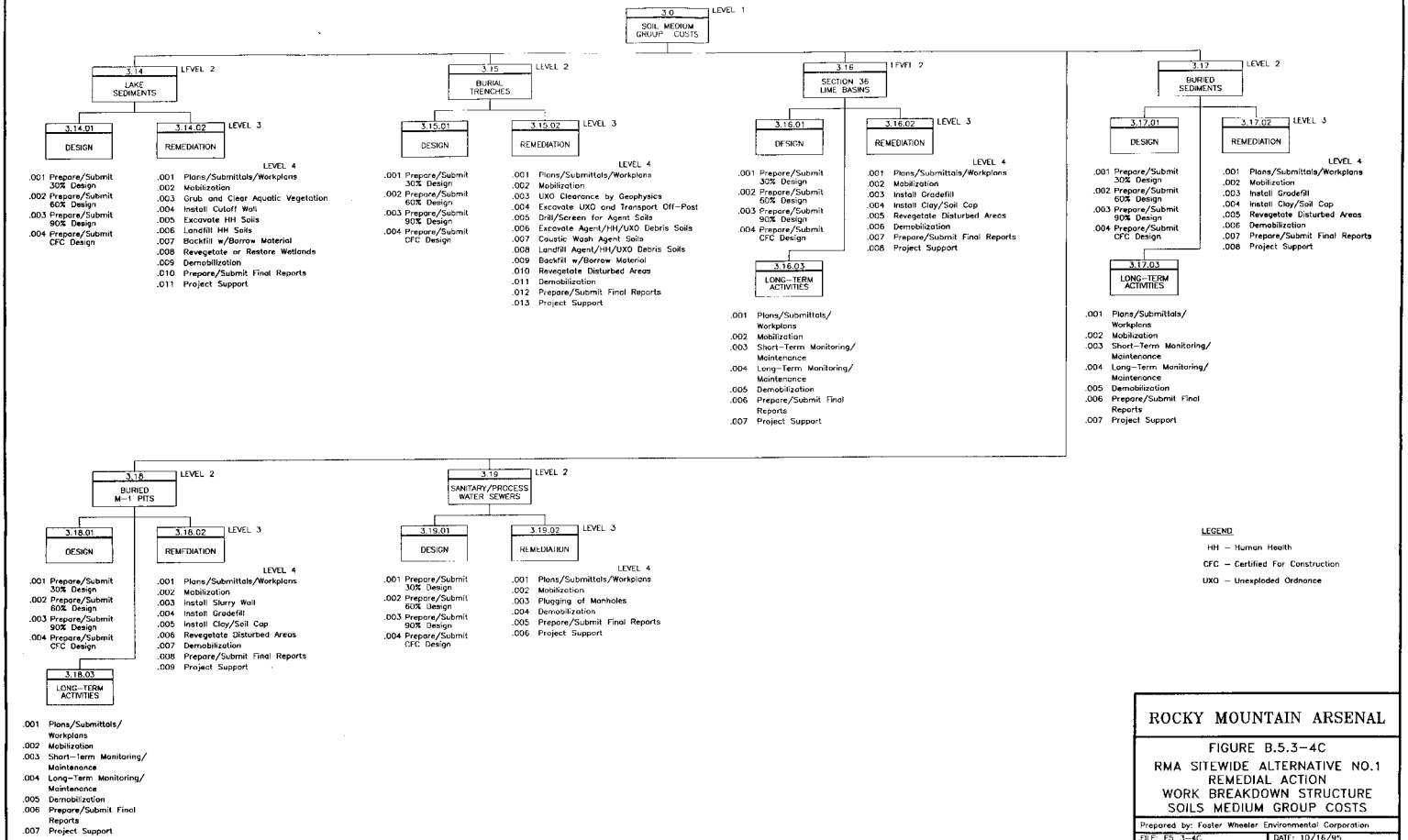
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-4B

RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-4B | DATE: 10/16/95



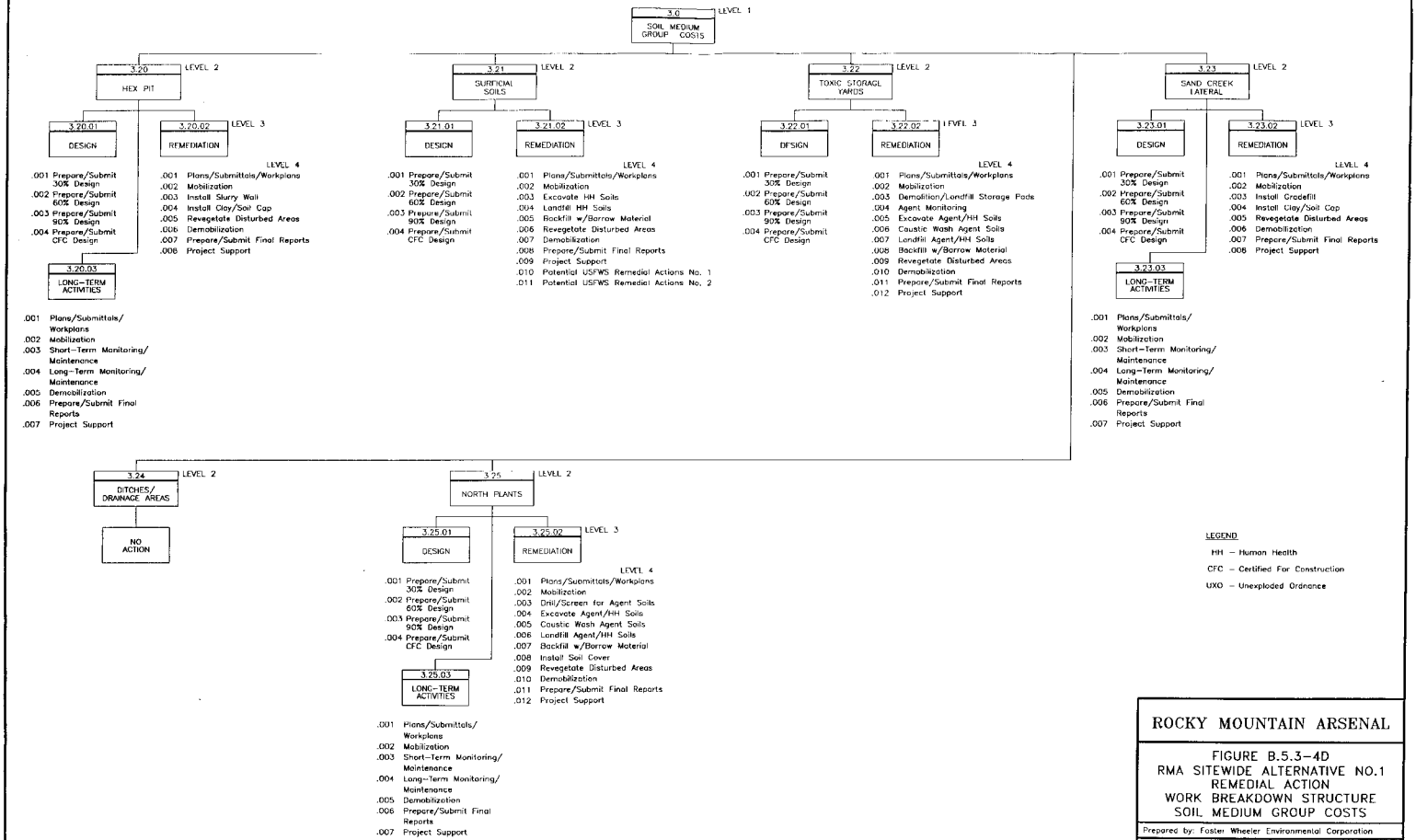
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-4C

RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOILS MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-4C | DATE: 10/16/95

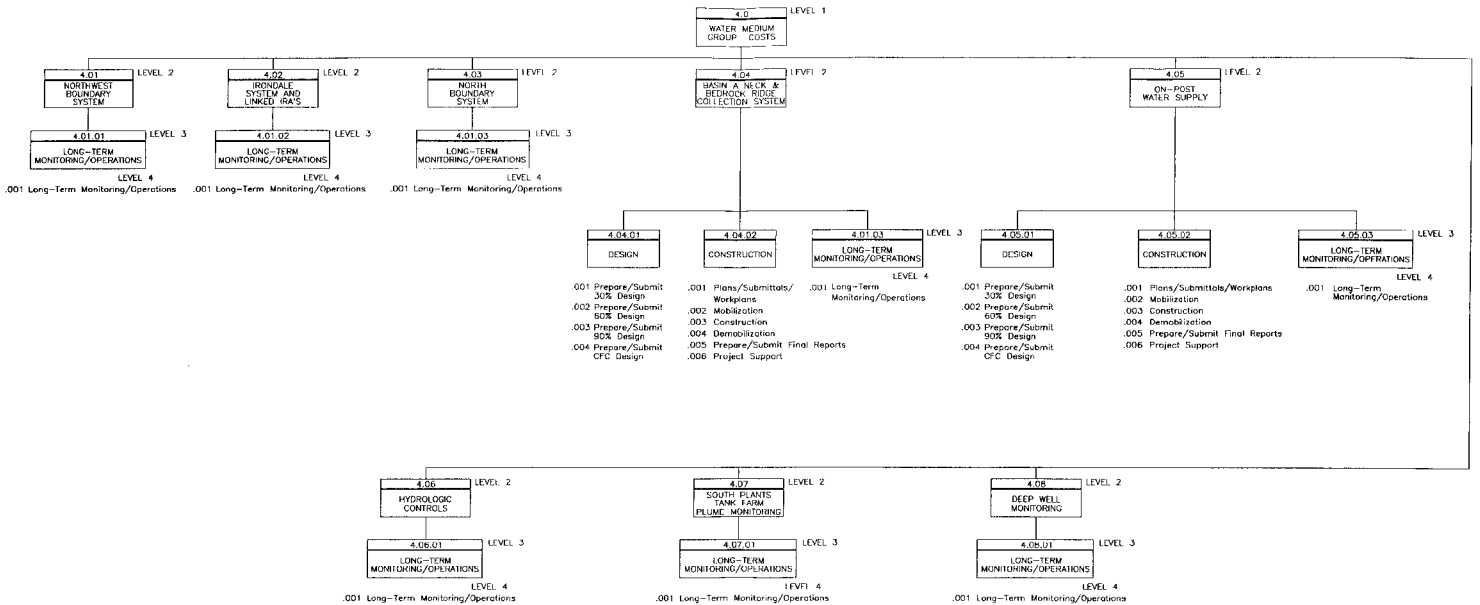


ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-4D
RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-4D | DATE: 10/16/95



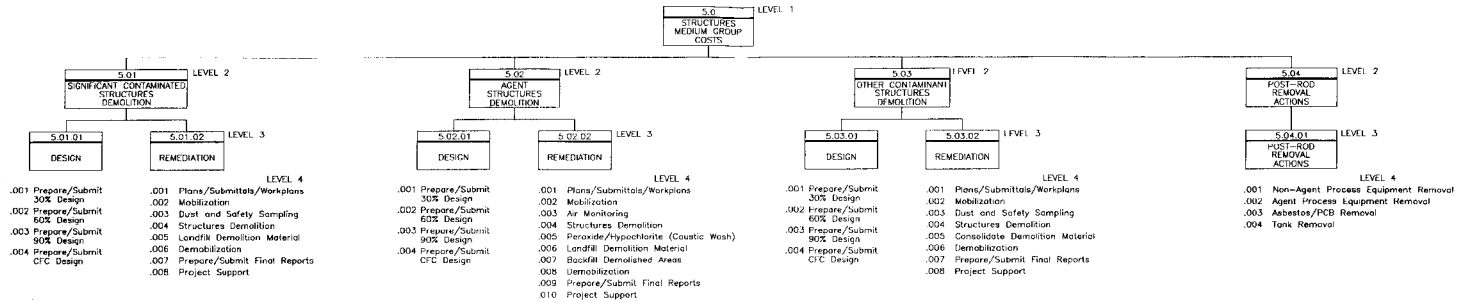
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-5

RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
WATER MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: FG_3_5 DATE: 10/16/95



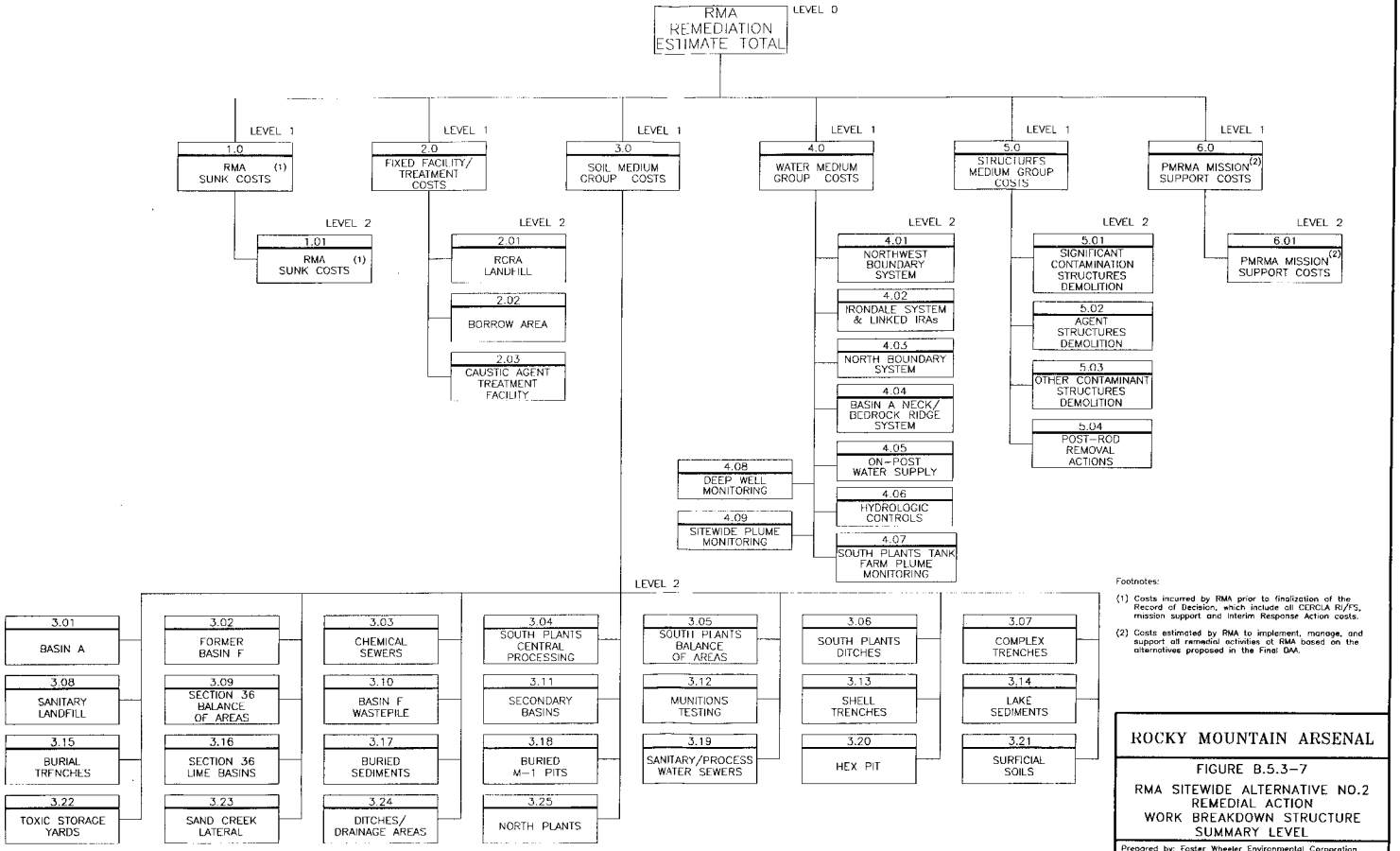
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-6

RMA SITEWIDE ALTERNATIVE NO.1
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
STRUCTURES MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: FS_3-6 | DATE: 10/16/95



Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

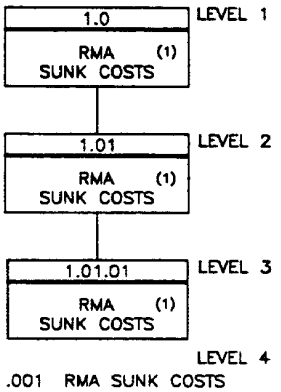
ROCKY MOUNTAIN ARSENAL

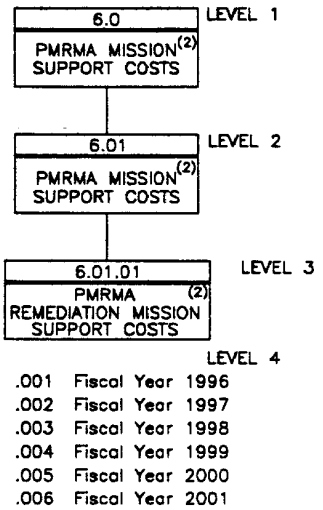
FIGURE B.5.3-7

RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUMMARY LEVEL

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-7 | DATE: 10/16/95





Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

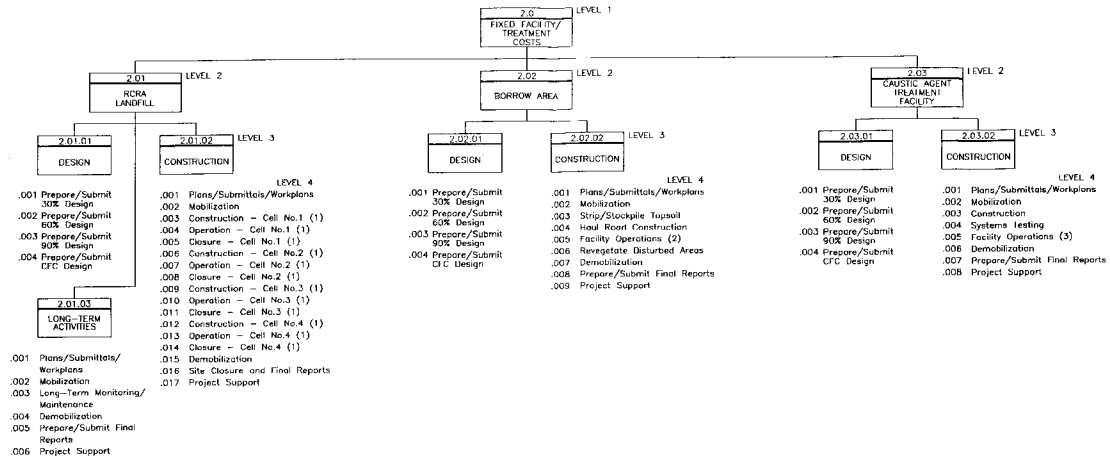
(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-8
RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUNK COSTS AND
PMRMA MISSION SUPPORT COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-8 | DATE: 10/16/95



Footnotes:

(1) Cost includes facility operations for spreading and compacting all demolition debris and excavated soils. Transportation costs to the fixed facility are included under each subgroup.

(2) Cost includes facility operations, excavating low-permeability soils and common borrow material, and maintaining the facility. Transportation costs from the borrow facility are included under each subgroup.

(3) Cost includes facility operations to treat all agent-contaminated demolition debris and soils. Transportation to and from the facility are included under each subgroup.

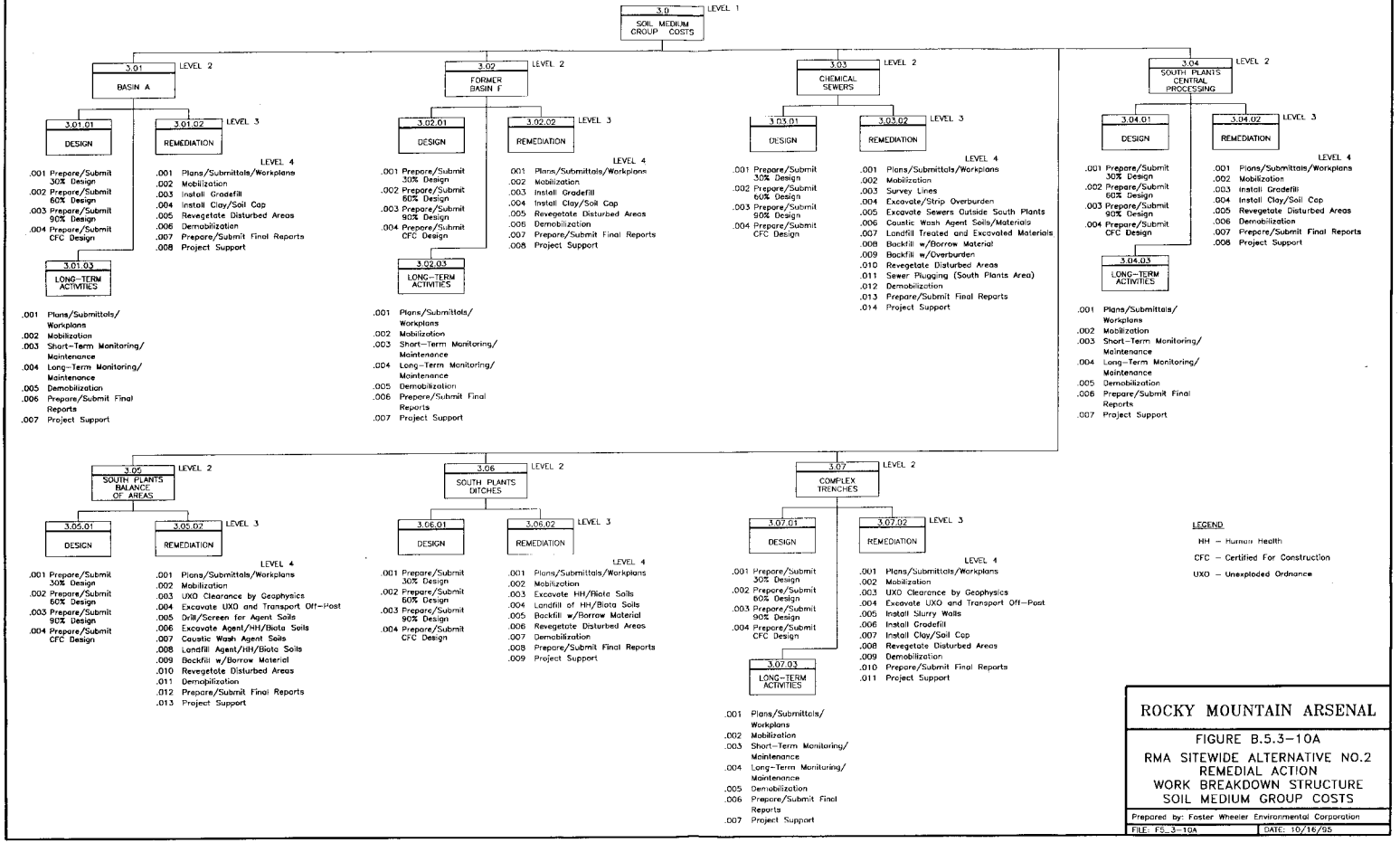
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-9

RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
FIXED FACILITY COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-9 | DATE: 10/16/95



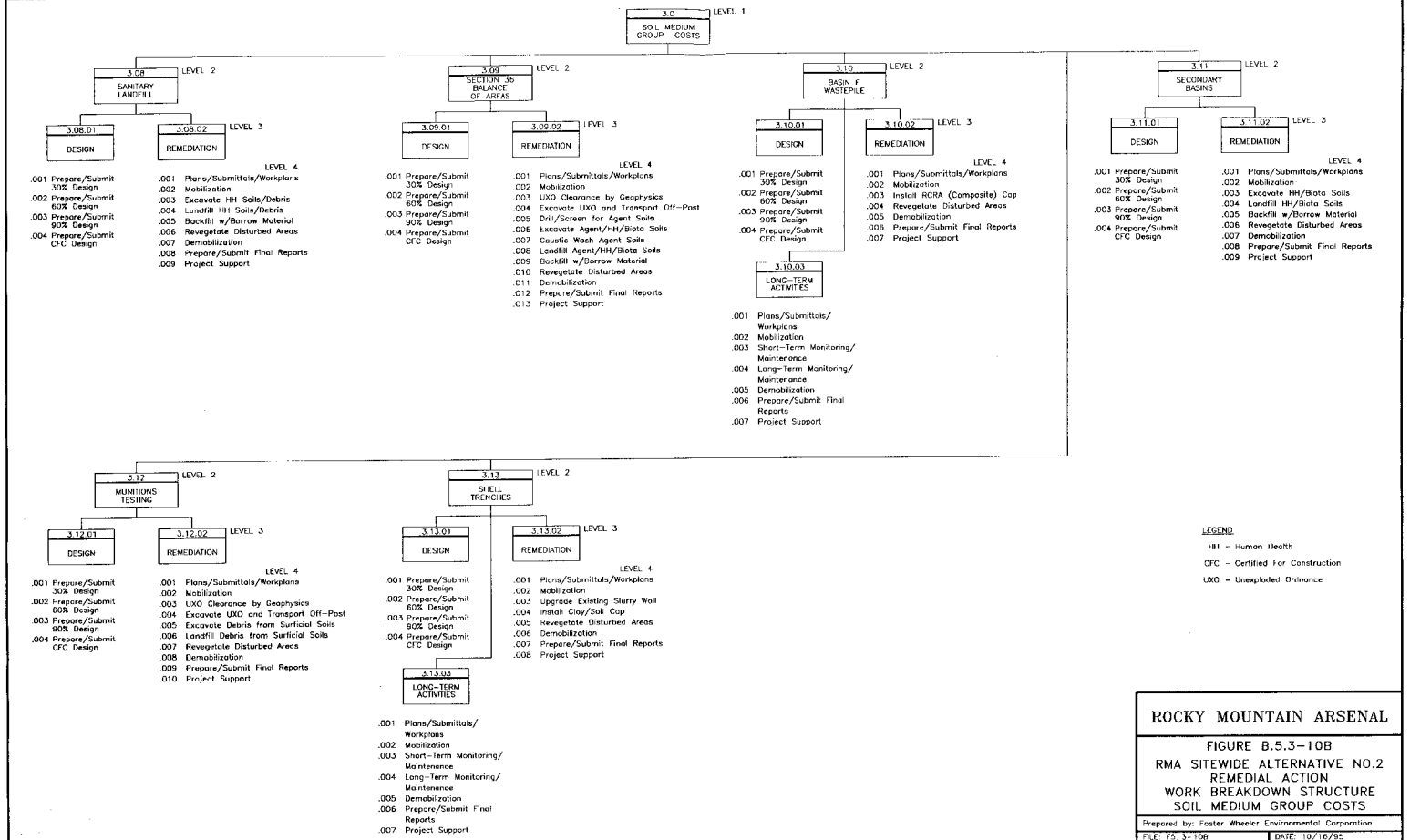
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-10A

RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-10A DATE: 10/16/95

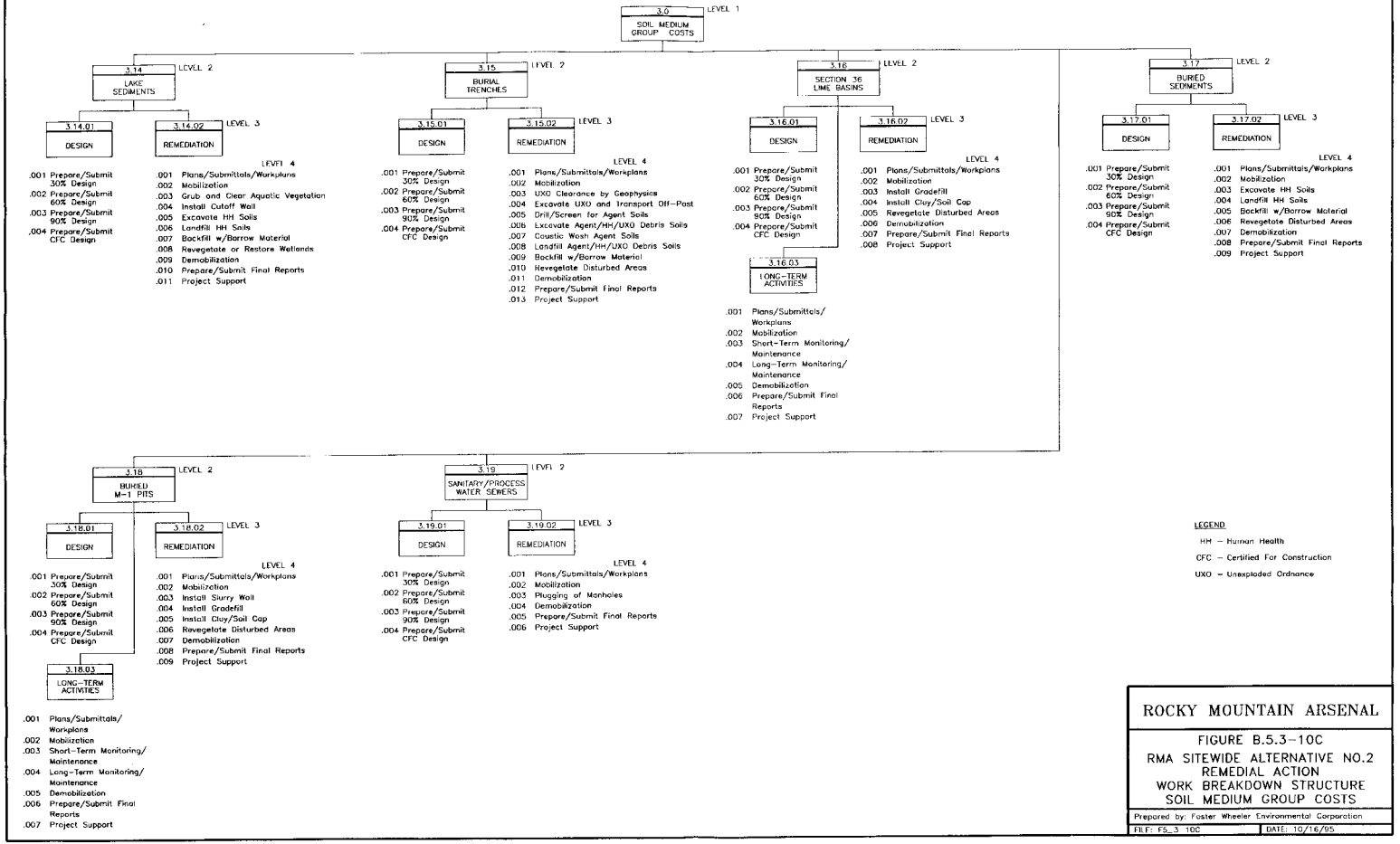


ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-10B
RMA SITEWIDE ALTERNATIVE NO.2 REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-10B | DATE: 10/16/95



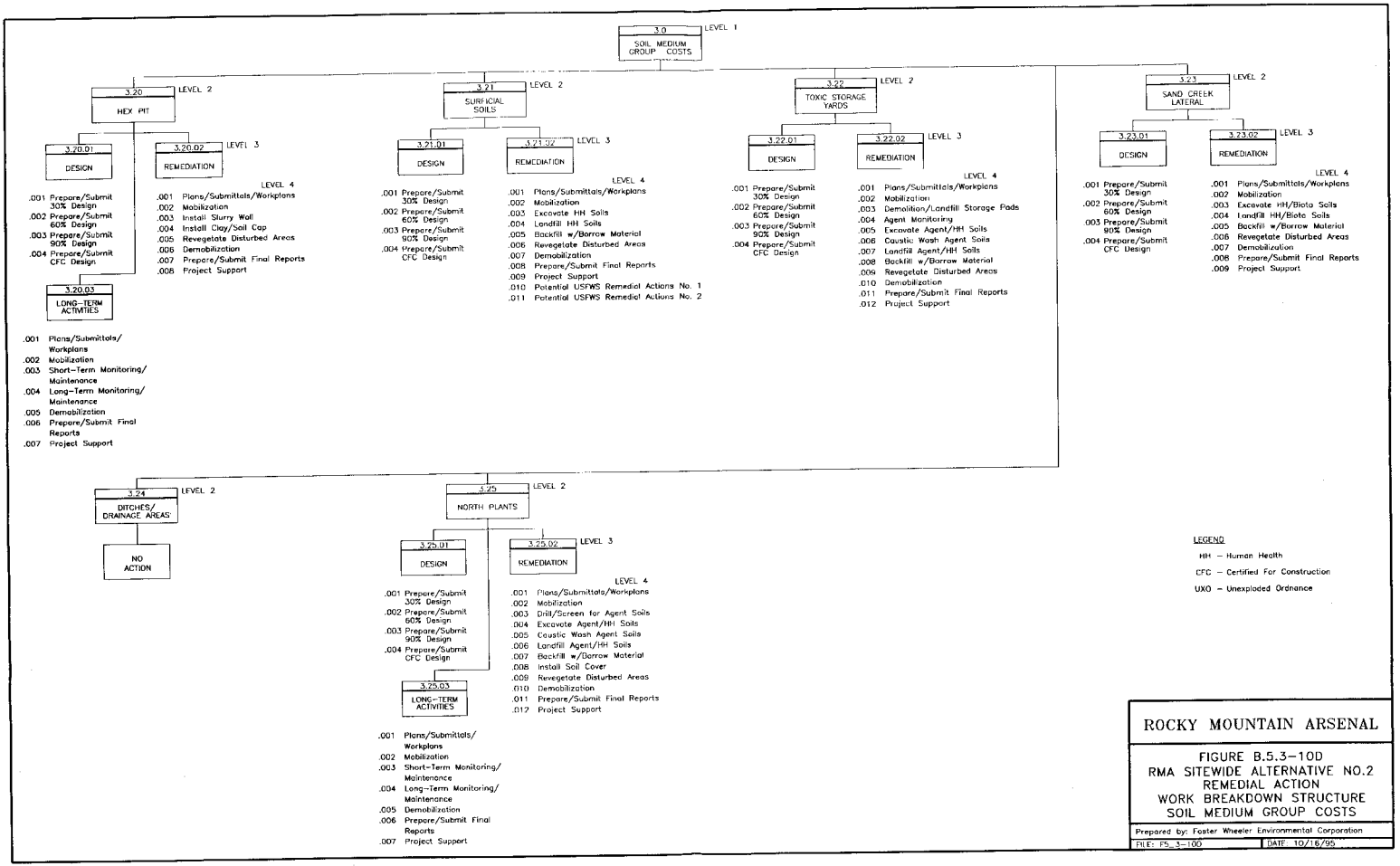
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-10C

RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3_10C | DATE: 10/16/95

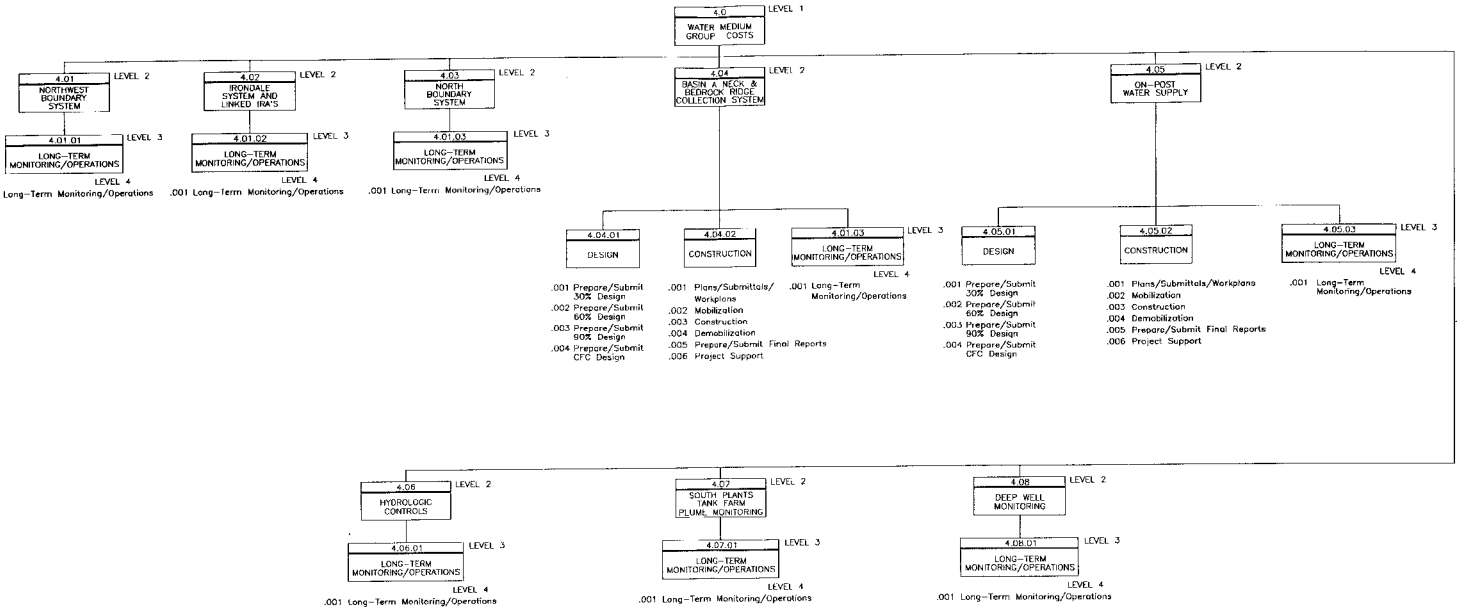


ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-10D
RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5-3-10D | DATE: 10/16/96



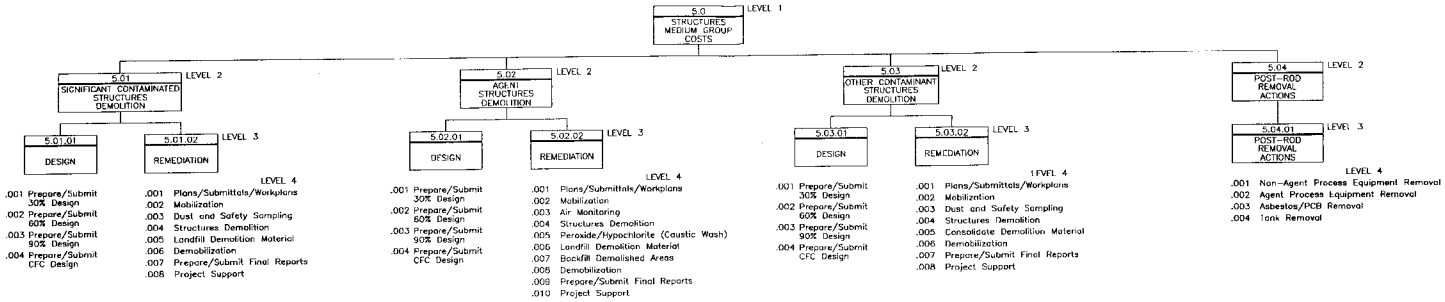
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-11

RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
WATER MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: FS_3-11 DATE: 10/16/95



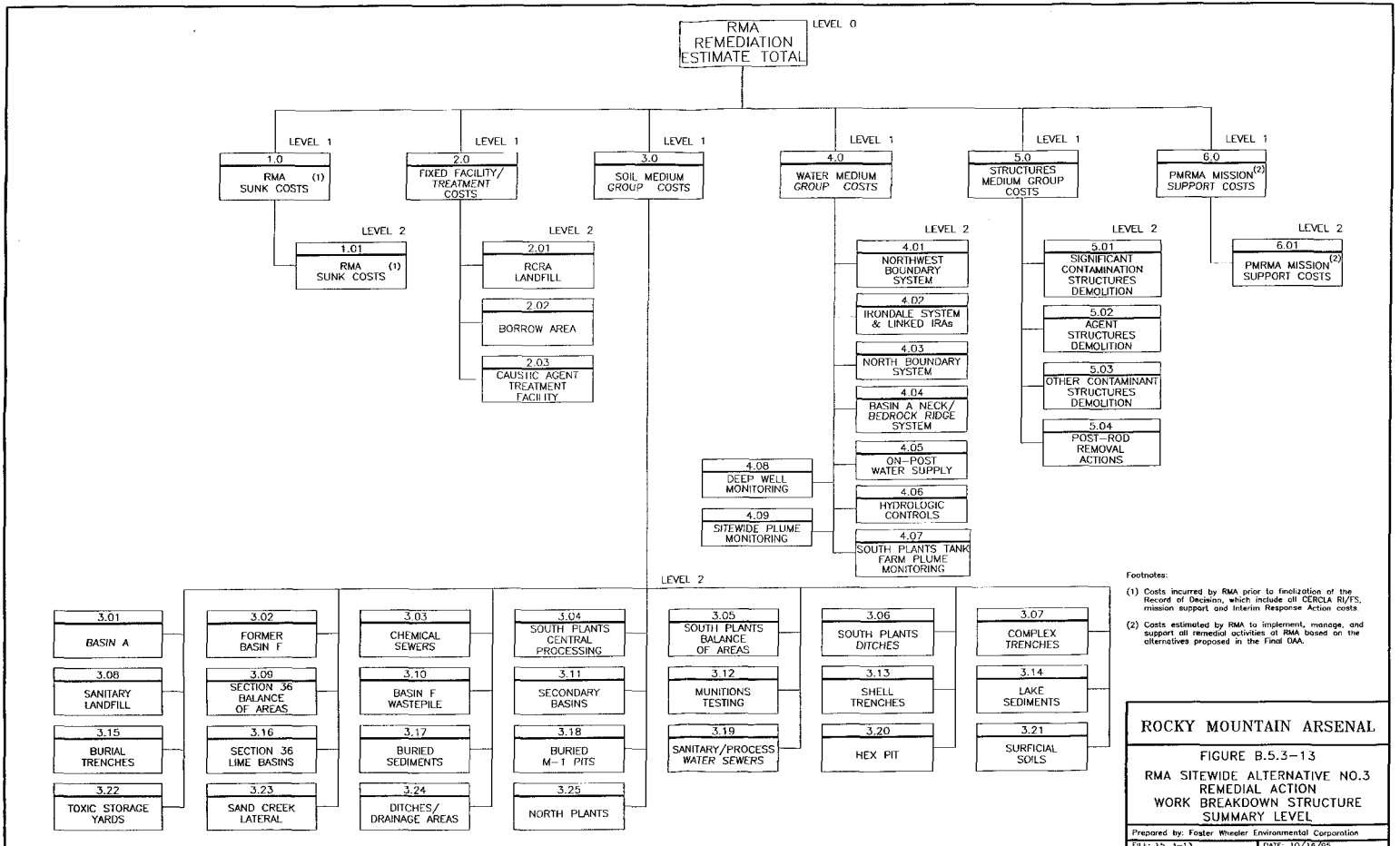
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-12

RMA SITEWIDE ALTERNATIVE NO.2
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
STRUCTURES MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-12 | DATE: 10/16/95



Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the final DAA.

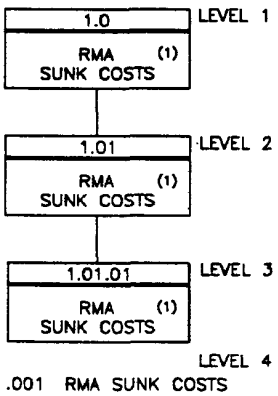
ROCKY MOUNTAIN ARSENAL

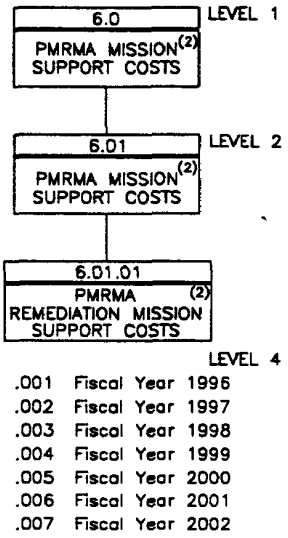
FIGURE B.5.3-13

RMA SITEWIDE ALTERNATIVE NO.3 REMEDIAL ACTION WORK BREAKDOWN STRUCTURE SUMMARY LEVEL

Prepared by: Foster Wheeler Environmental Corporation

FILE: fb_3-13 DATE: 10/16/95





Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

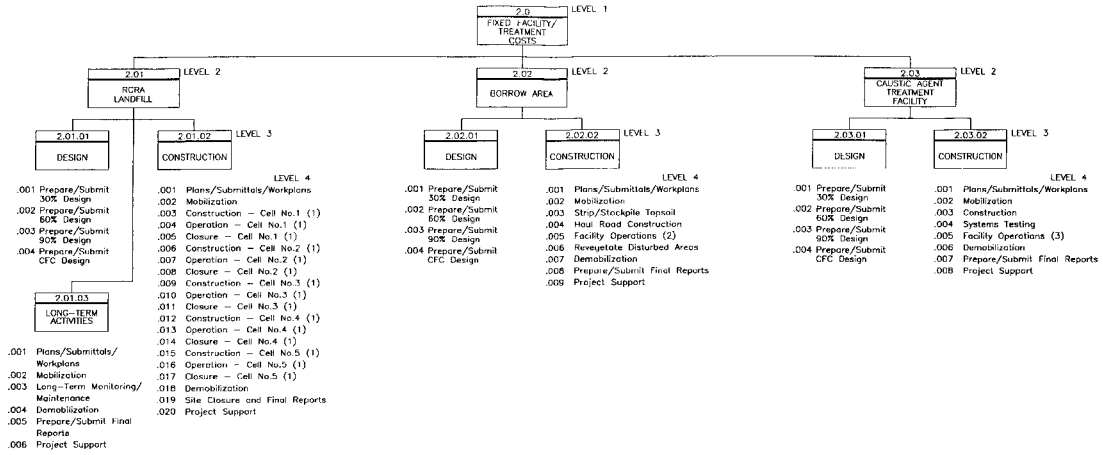
(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-14
RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUNK COSTS AND
PMRMA MISSION SUPPORT COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-14 | DATE: 10/16/95



Footnotes:

(1) Cost includes facility operations for spreading and compacting all demolition debris and excavated soils. Transportation costs to the fixed facility are included under each subgroup.

(2) Cost includes facility operations, excavating low-permeability soils and common borrow material, and maintaining the facility. Transportation costs from the borrow facility are included under each subgroup.

(3) Cost includes facility operations to treat all agent-contaminated demolition debris and soils. Transportation to and from the facility are included under each subgroup.

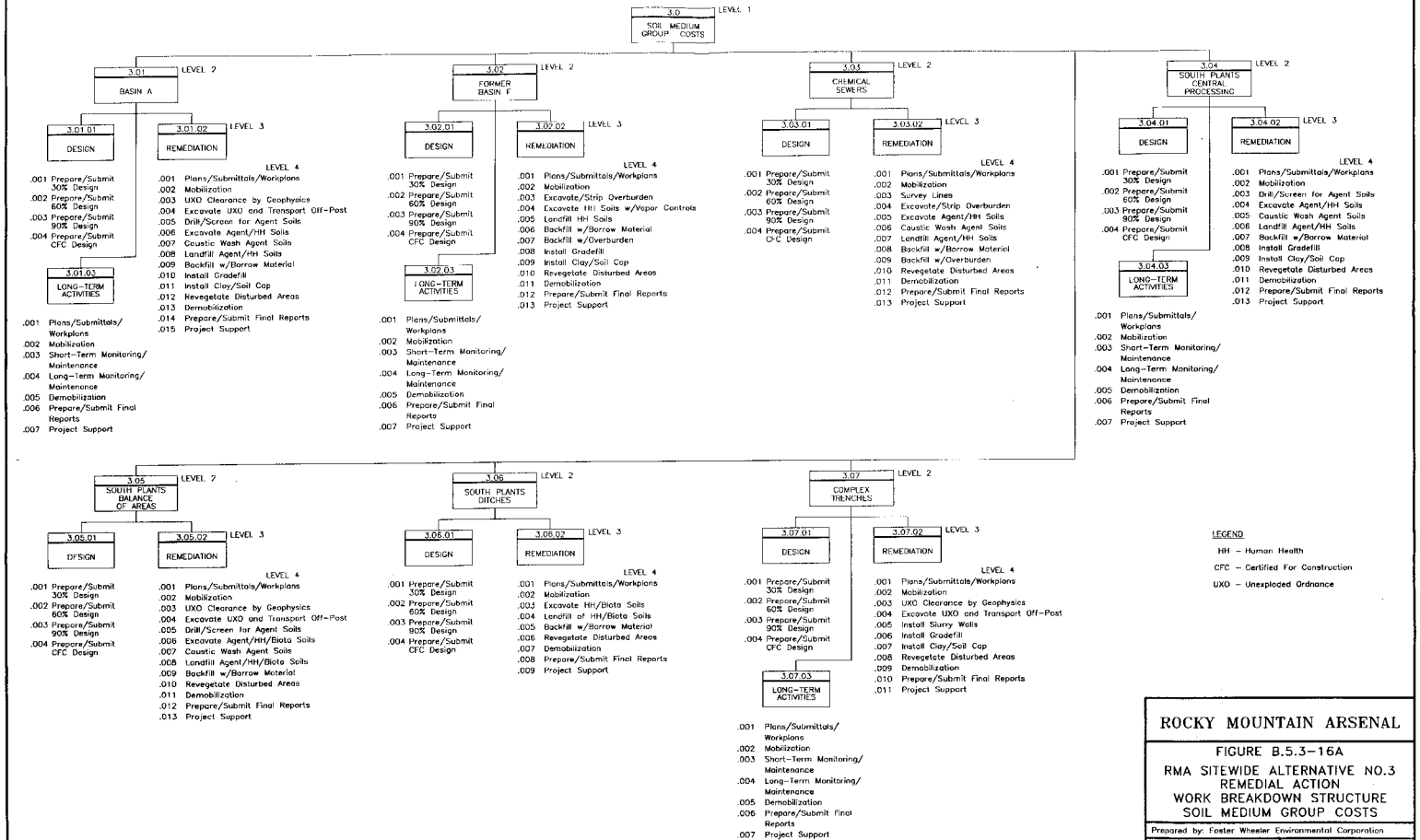
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-15

RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
FIXED FACILITY COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: f5_3-15 DATE: 10/16/95



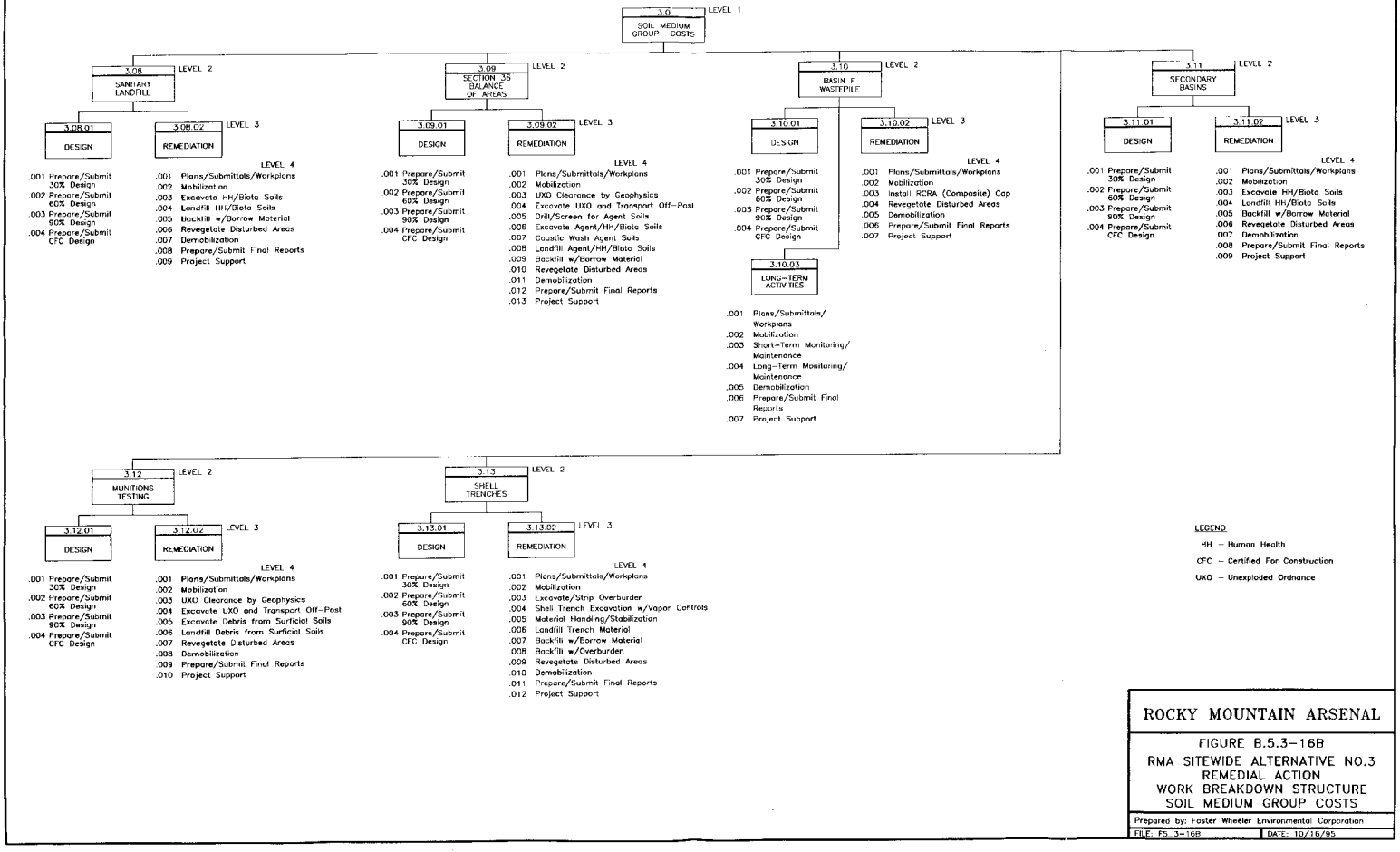
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-16A

RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-16A DATE: 10/16/95



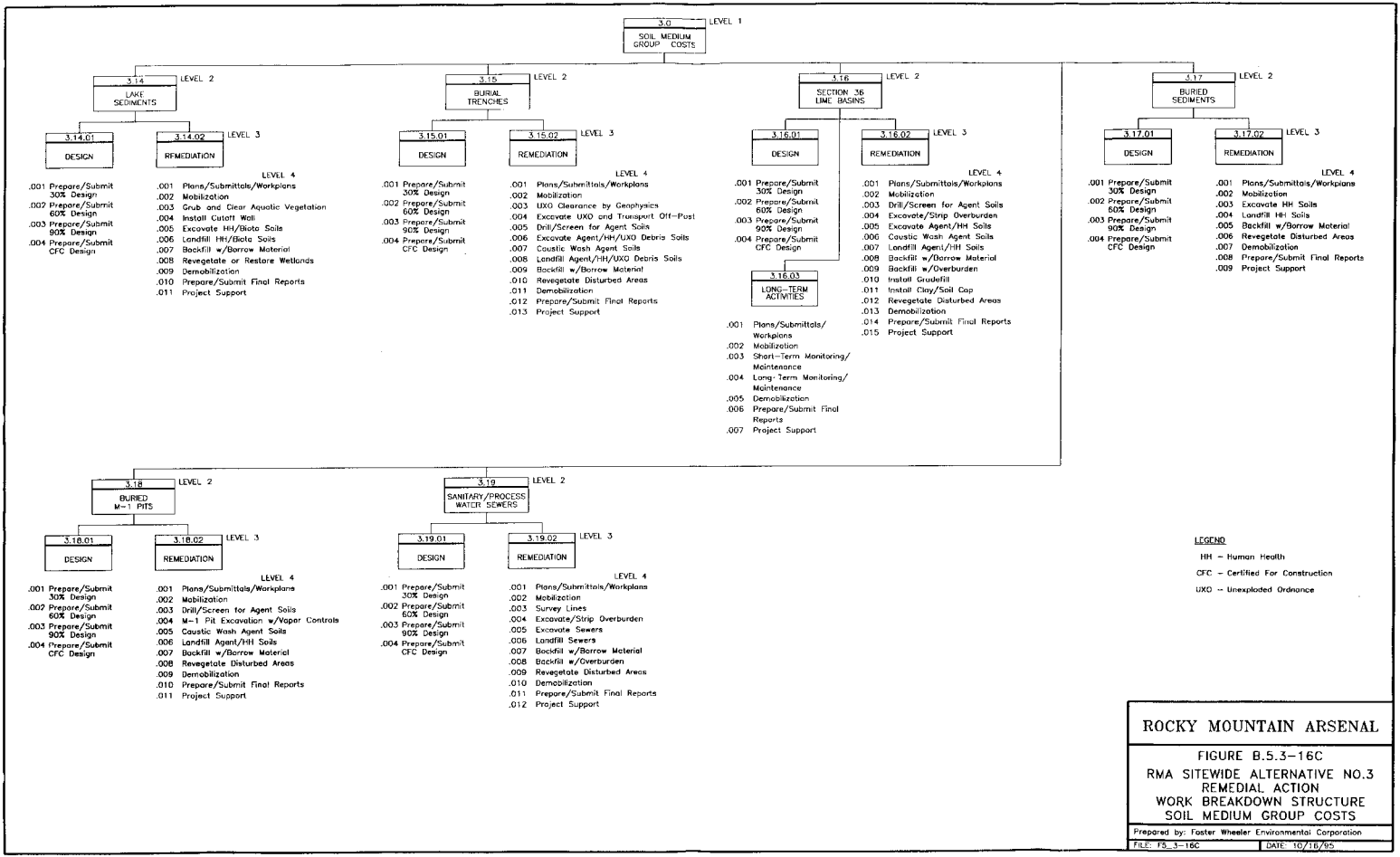
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-16B

RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-16B DATE: 10/16/95

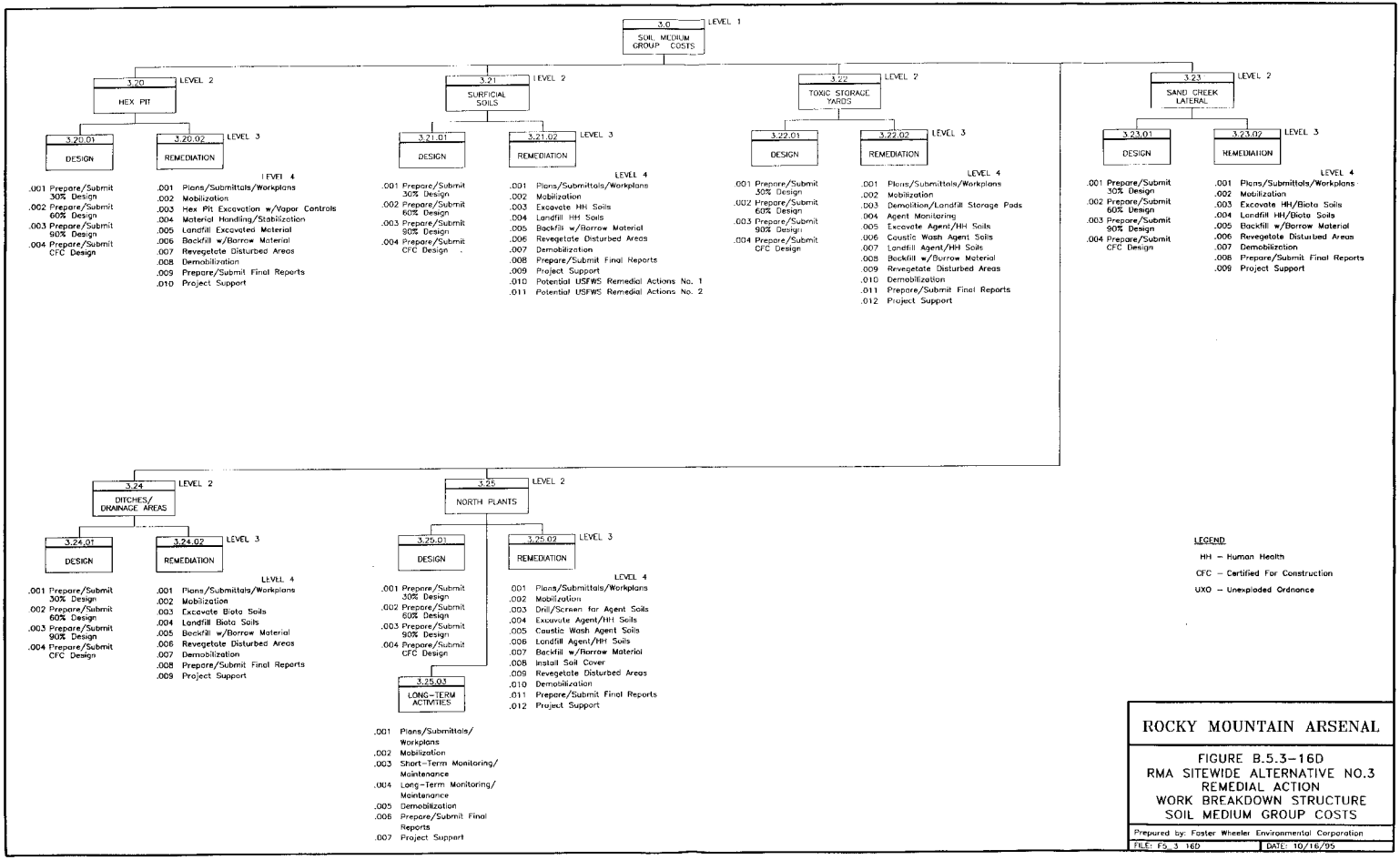


ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-16C
RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

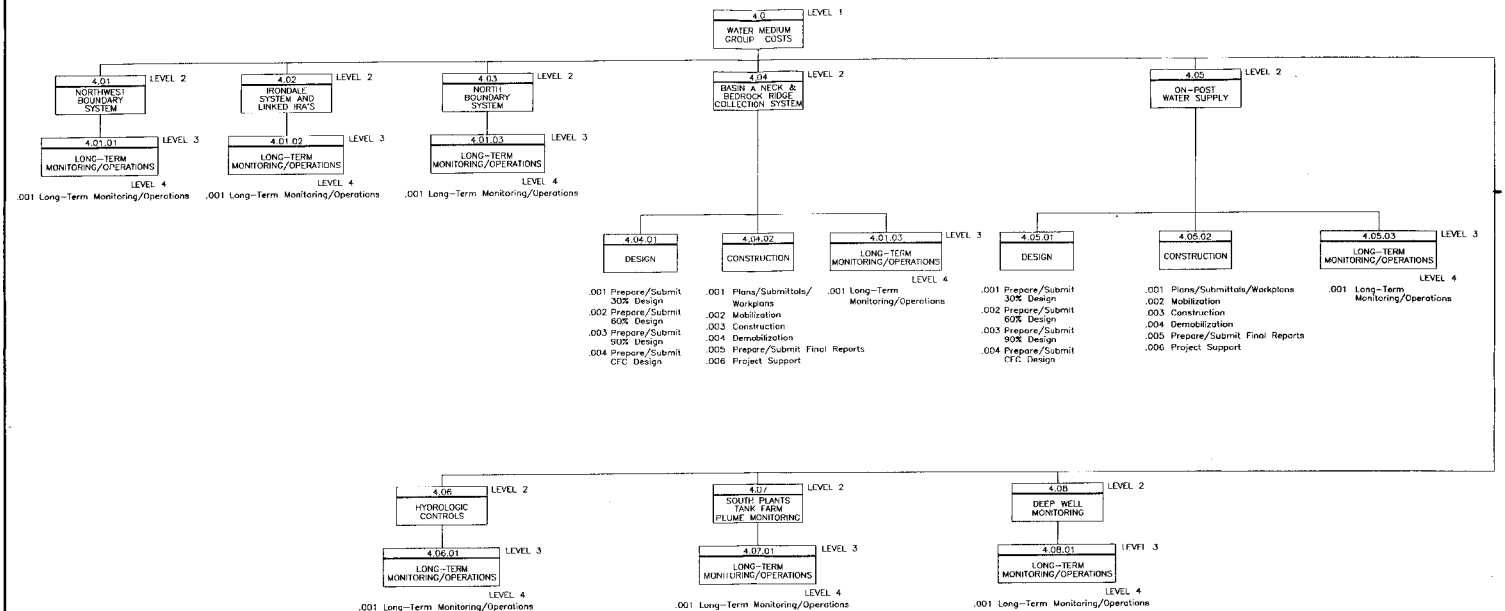
FILE: F5_3-16C | DATE: 10/16/95



ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-16D
RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation
FILE: F5_3_16D DATE: 10/16/95



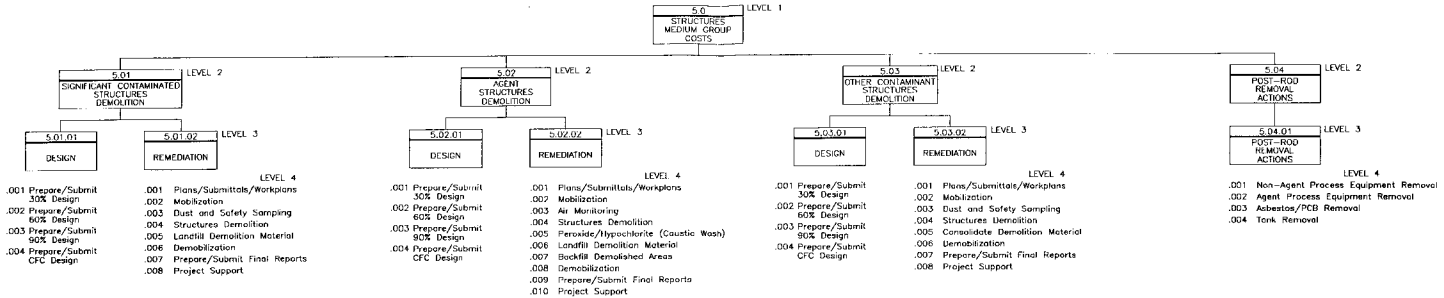
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-17

RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
WATER MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3_17 DATE: 10/16/95



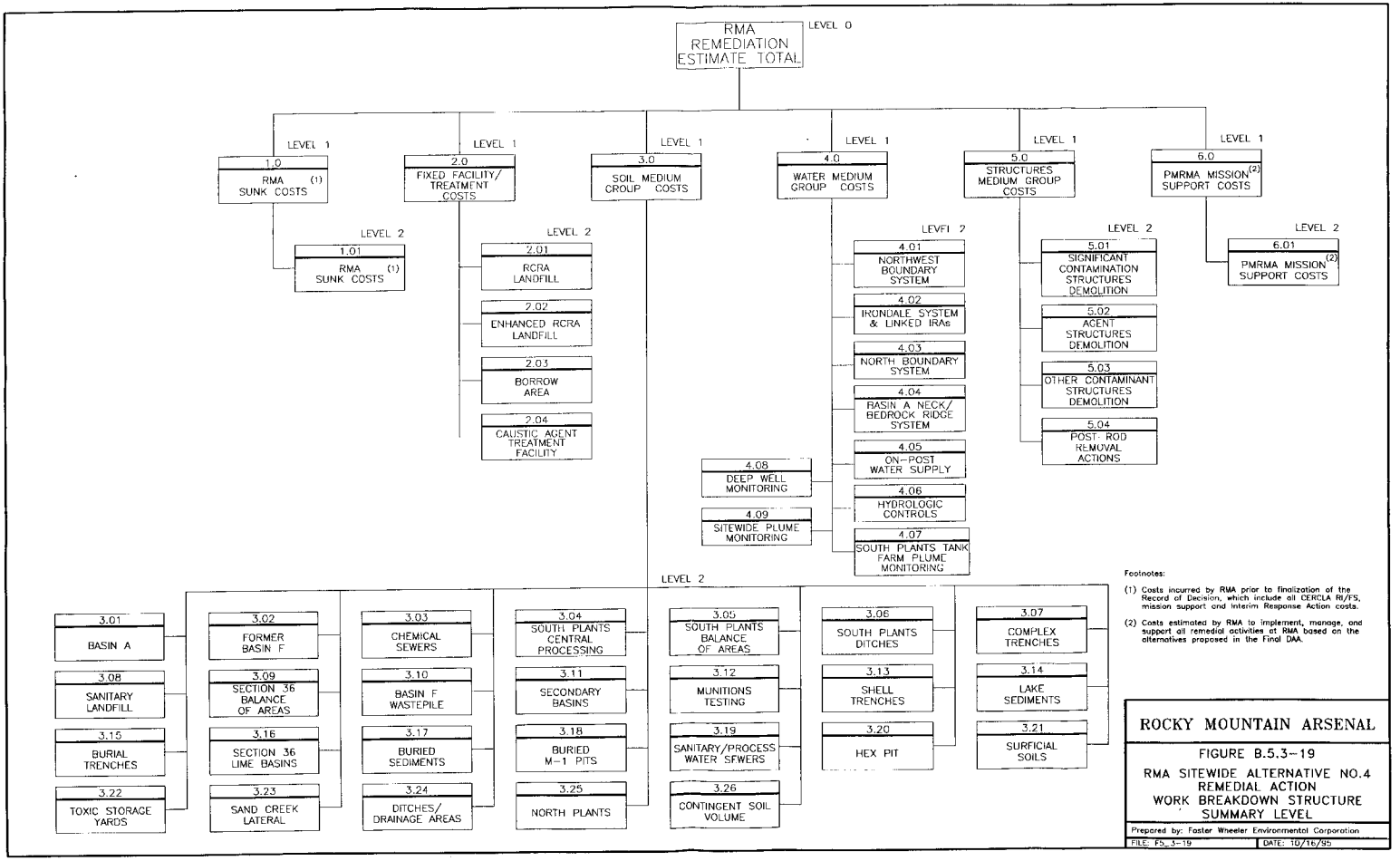
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-18

RMA SITEWIDE ALTERNATIVE NO.3
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
STRUCTURES MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-18 | DATE: 10/16/95



Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

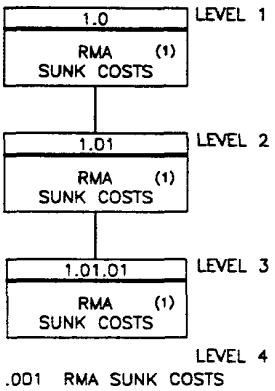
ROCKY MOUNTAIN ARSENAL

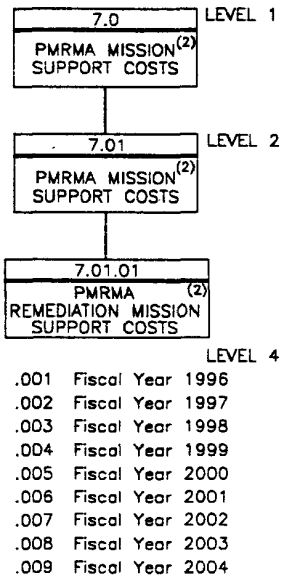
FIGURE B.5.3-19

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUMMARY LEVEL

Prepared by: Foster Wheeler Environmental Corporation

FILE: FS_3-19 DATE: 10/16/95





Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives, proposed in the Final DAA.

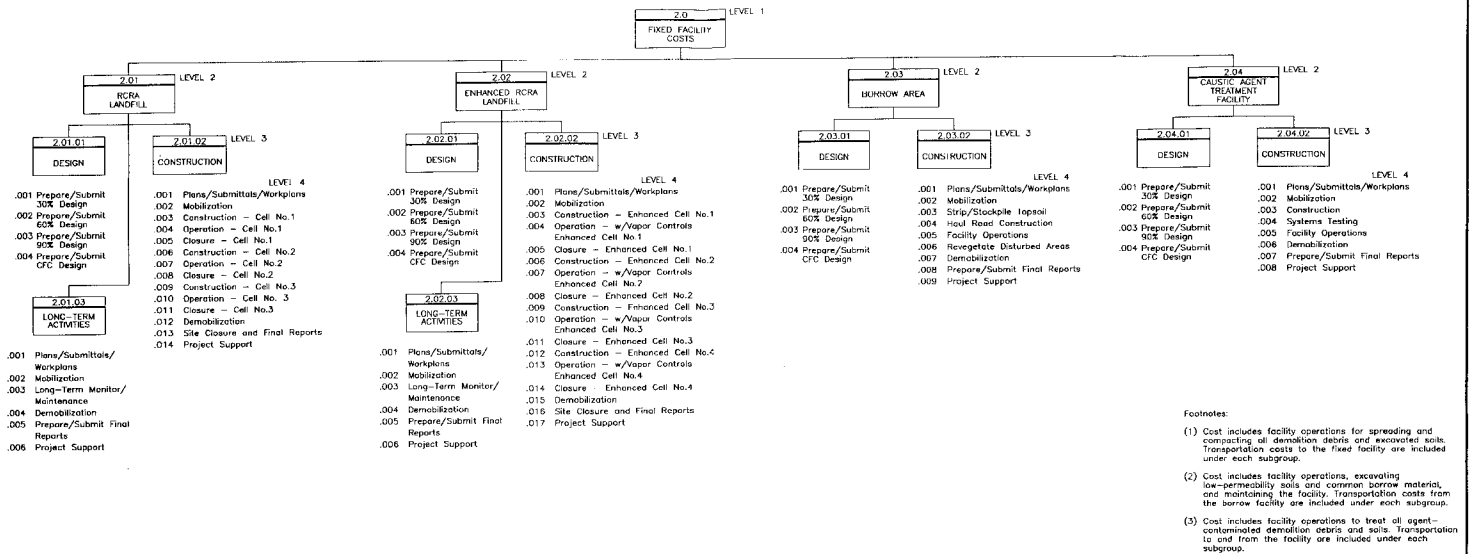
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-20

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUNK COSTS AND
PMRMA MISSION SUPPORT COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-30 | DATE: 10/16/95



Footnotes:

(1) Cost includes facility operations for spreading and compacting all demolition debris and excavated soils. Transportation costs to the fixed facility are included under each subgroup.

(2) Cost includes facility operations, excavating low-permeability soils and common borrow material, and maintaining the facility. Transportation costs from the borrow facility are included under each subgroup.

(3) Cost includes facility operations to treat all agent-contaminated demolition debris and soils. Transportation to and from the facility are included under each subgroup.

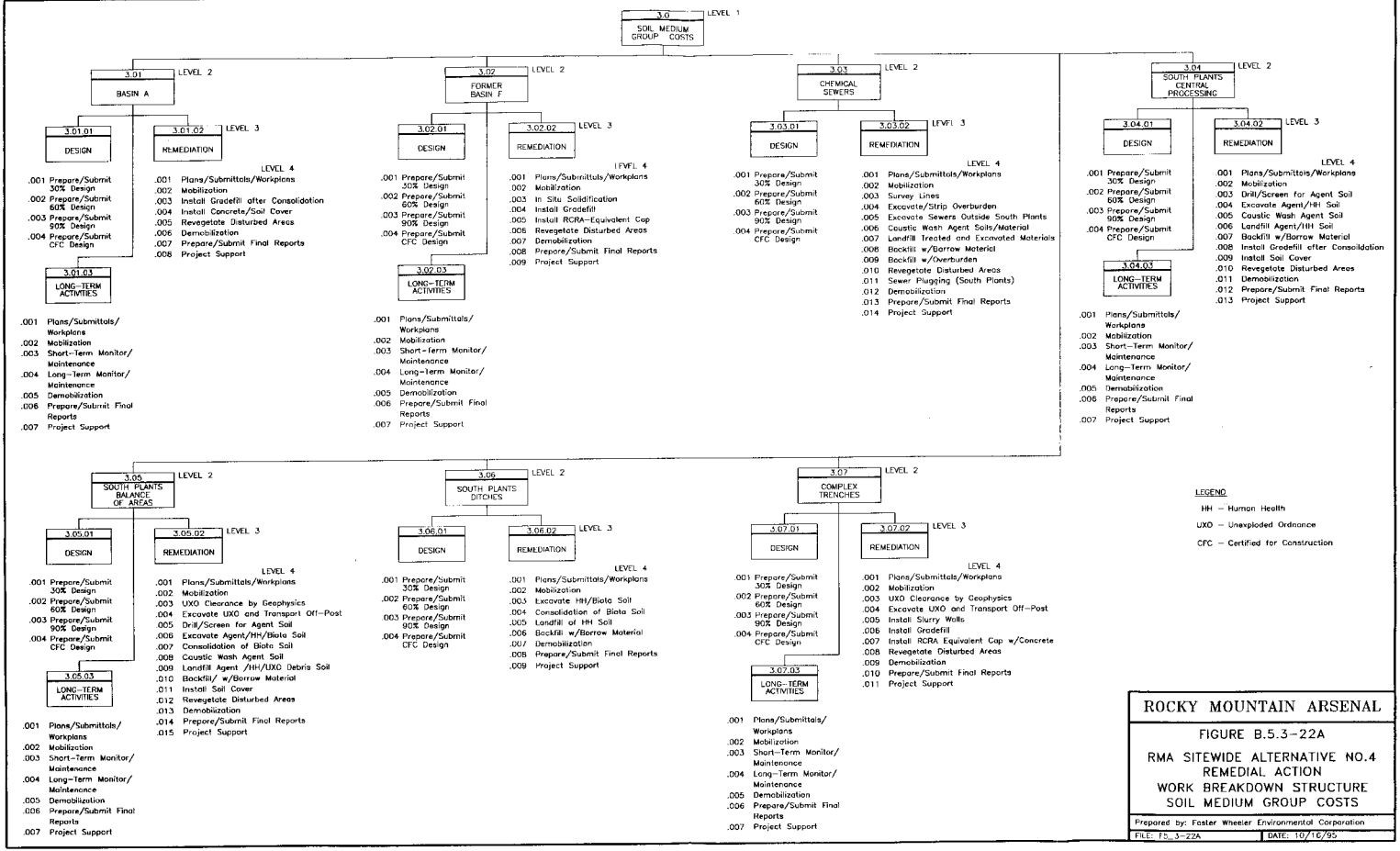
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-21

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
FIXED FACILITY COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-21 DATE: 10/16/95



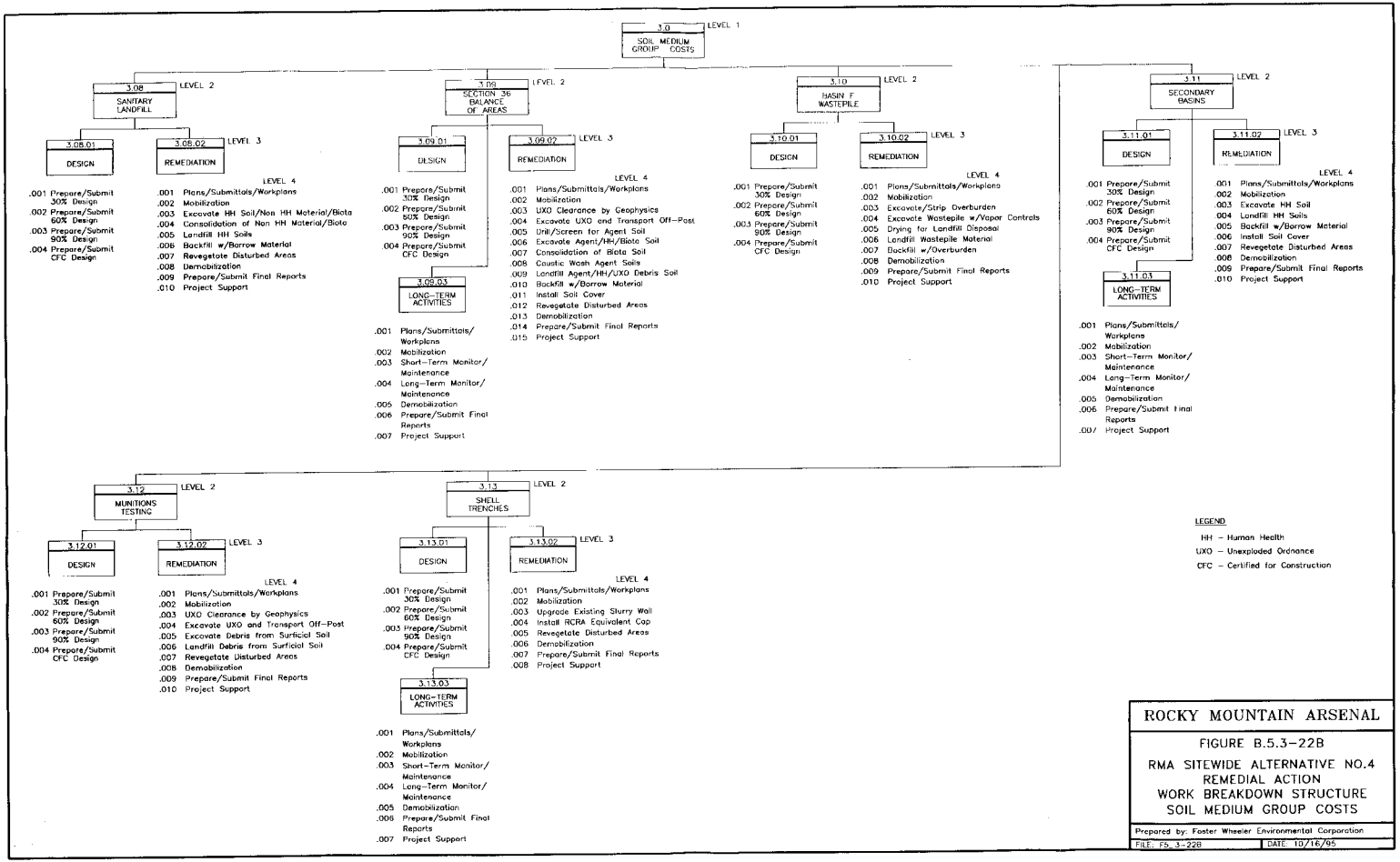
ROCKY MOUNTAIN ARSENAL

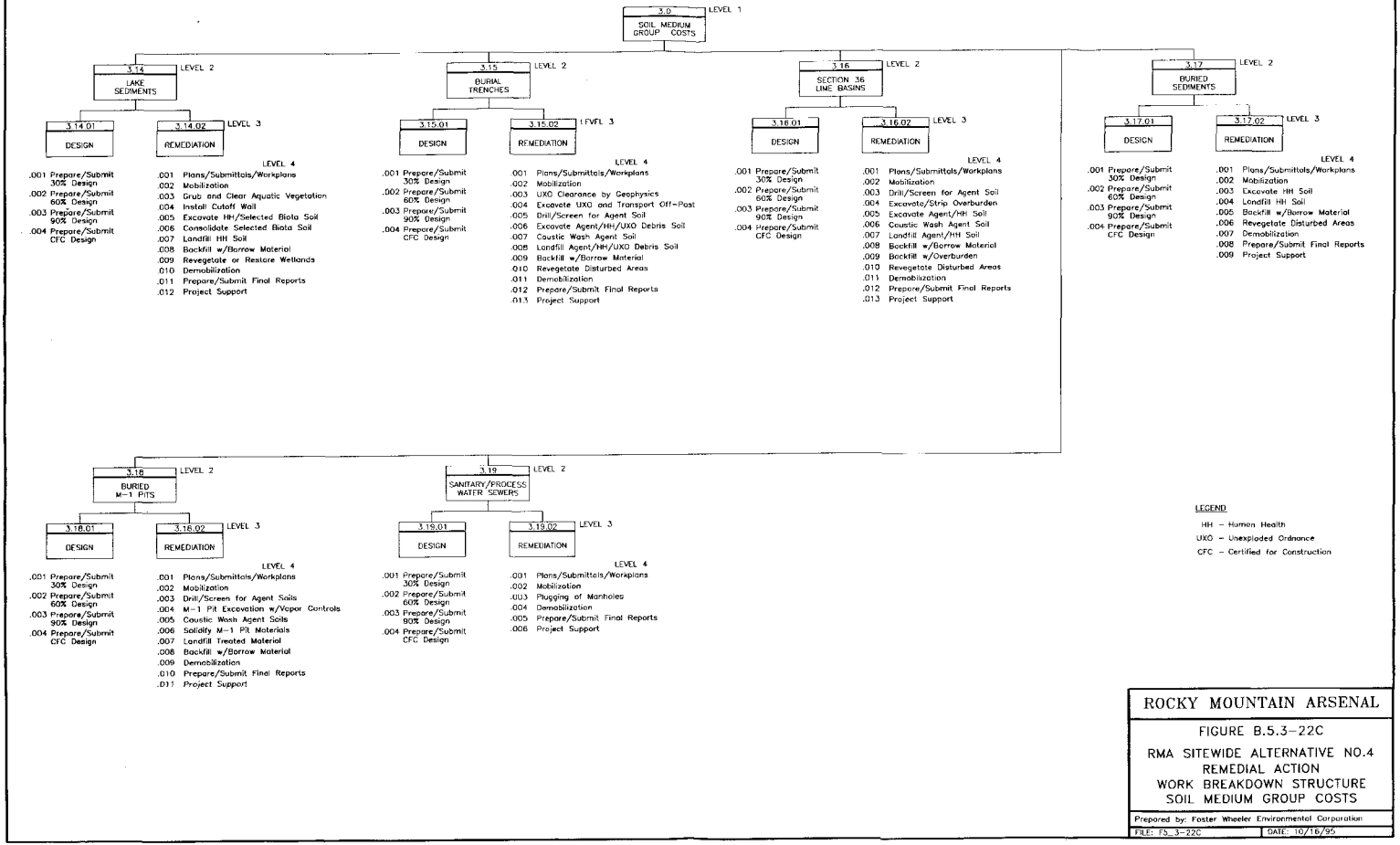
FIGURE B.5.3-22A

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: FS_3-22A DATE: 10/16/95


3.0 LEVEL 1
SOIL MEDIUM GROUP COSTS
3.08 LEVEL 2
SANITARY LANDFILL
3.08.01
DESIGN
3.08.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate HH Soil/Non HH Material/Biota
.004 Consolidation of Non HH Material/Biota
.005 Landfill HH Soils
.006 Backfill w/Borrow Material
.007 Revegetate Disturbed Areas
.008 Demobilization
.009 Prepare/Submit Final Reports
.010 Project Support
3.09 LEVEL 2
SECTION 36 BALANCE OF AREAS
3.09.01
DESIGN
3.09.02 LEVEL 3
REMEDIATION
3.09.03
LONG-TERM ACTIVITIES
LEVEL 4
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Short-Term Monitor/Maintenance
.004 Long-Term Monitor/Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 UXO Clearance by Geophysics
.004 Excavate UXO and Transport Off-Post
.005 Drill/Screen for Agent Soil
.006 Excavate Agent/HH/Biota Soil
.007 Consolidation of Biota Soil
.008 Caustic Wash Agent Soils
.009 Landfill Agent/HH/UXO Debris Soil
.010 Backfill w/Borrow Material
.011 Install Soil Cover
.012 Revegetate Disturbed Areas
.013 Demobilization
.014 Prepare/Submit Final Reports
.015 Project Support
3.10 LEVEL 2
BASIN F WASTEPILE
3.10.01
DESIGN
3.10.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate/Strip Overburden
.004 Excavate Wastepile w/Vapor Controls
.005 Drying for Landfill Disposal
.006 Landfill Wastepile Material
.007 Backfill w/Overburden
.008 Demobilization
.009 Prepare/Submit Final Reports
.010 Project Support
3.11 LEVEL 2
SECONDARY BASINS
3.11.01
DESIGN
3.11.02 LEVEL 3
REMEDIATION
3.11.03
LONG-TERM ACTIVITIES
LEVEL 4
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate HH Soil
.004 Landfill HH Soils
.005 Backfill w/Borrow Material
.006 Install Soil Cover
.007 Revegetate Disturbed Areas
.008 Demobilization
.009 Prepare/Submit Final Reports
.010 Project Support
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Short-Term Monitor/Maintenance
.004 Long-Term Monitor/Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
3.12 LEVEL 2
MUNITIONS TESTING
3.12.01
DESIGN
3.12.02 LEVEL 3
REMEDIATION
LEVEL 4
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 UXO Clearance by Geophysics
.004 Excavate UXO and Transport Off-Post
.005 Excavate Debris from Surficial Soil
.006 Landfill Debris from Surficial Soil
.007 Revegetate Disturbed Areas
.008 Demobilization
.009 Prepare/Submit Final Reports
.010 Project Support
3.13 LEVEL 2
SHELL TRENCHES
3.13.01
DESIGN
3.13.02 LEVEL 3
REMEDIATION
3.13.03
LONG-TERM ACTIVITIES
LEVEL 4
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Upgrade Existing Slurry Wall
.004 Install RCRA Equivalent Cap
.005 Revegetate Disturbed Areas
.006 Demobilization
.007 Prepare/Submit Final Reports
.008 Project Support
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Short-Term Monitor/Maintenance
.004 Long-Term Monitor/Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEGEND
HH - Human Health
UXO - Unexploded Ordnance
CFC - Certified for Construction
ROCKY MOUNTAIN ARSENAL
FIGURE B.5.3-22B
RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS
Prepared by: Foster Wheeler Environmental Corporation
FILE: FS_3-22B
DATE: 10/16/95



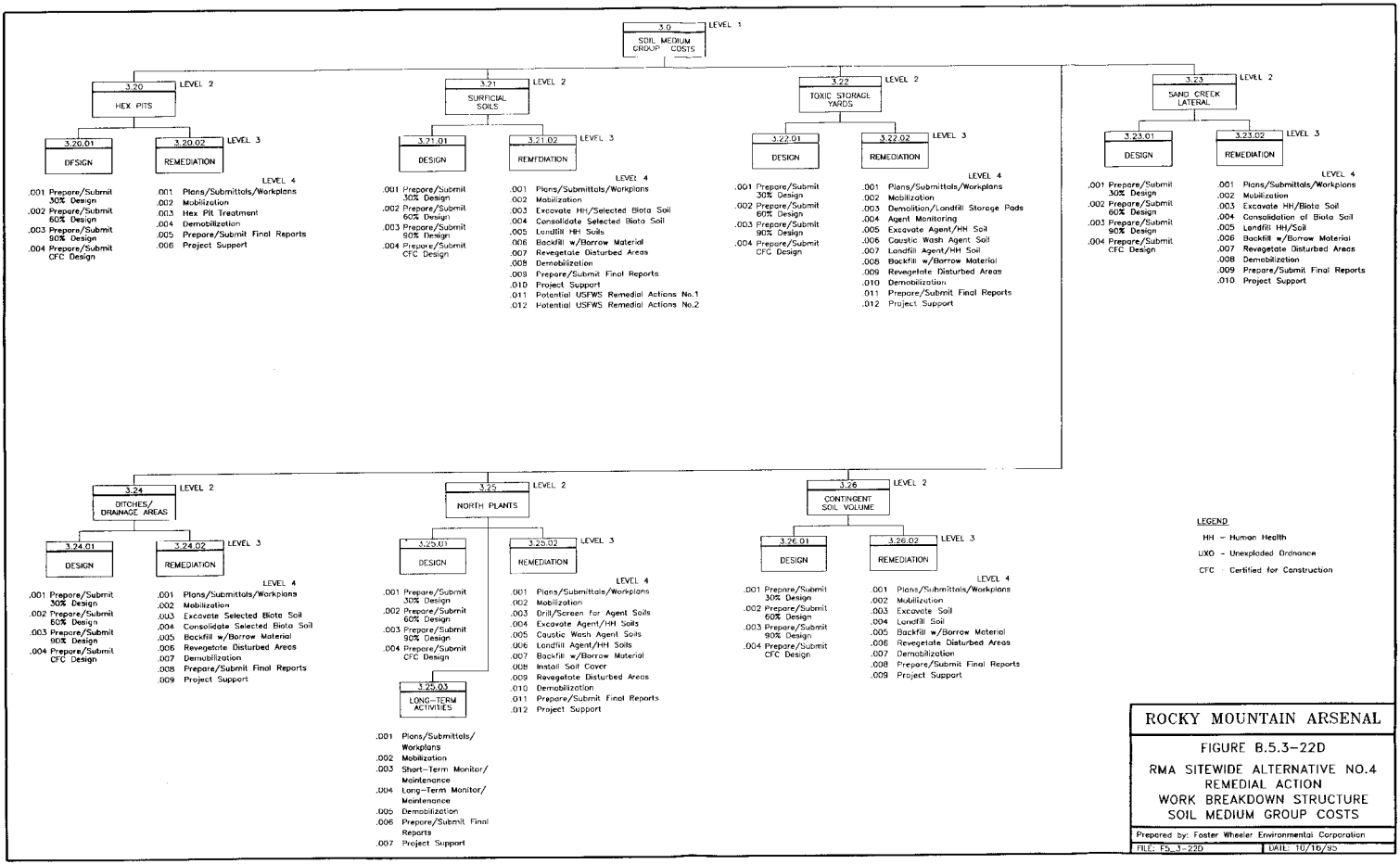
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-22C

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-22C DATE: 10/16/95



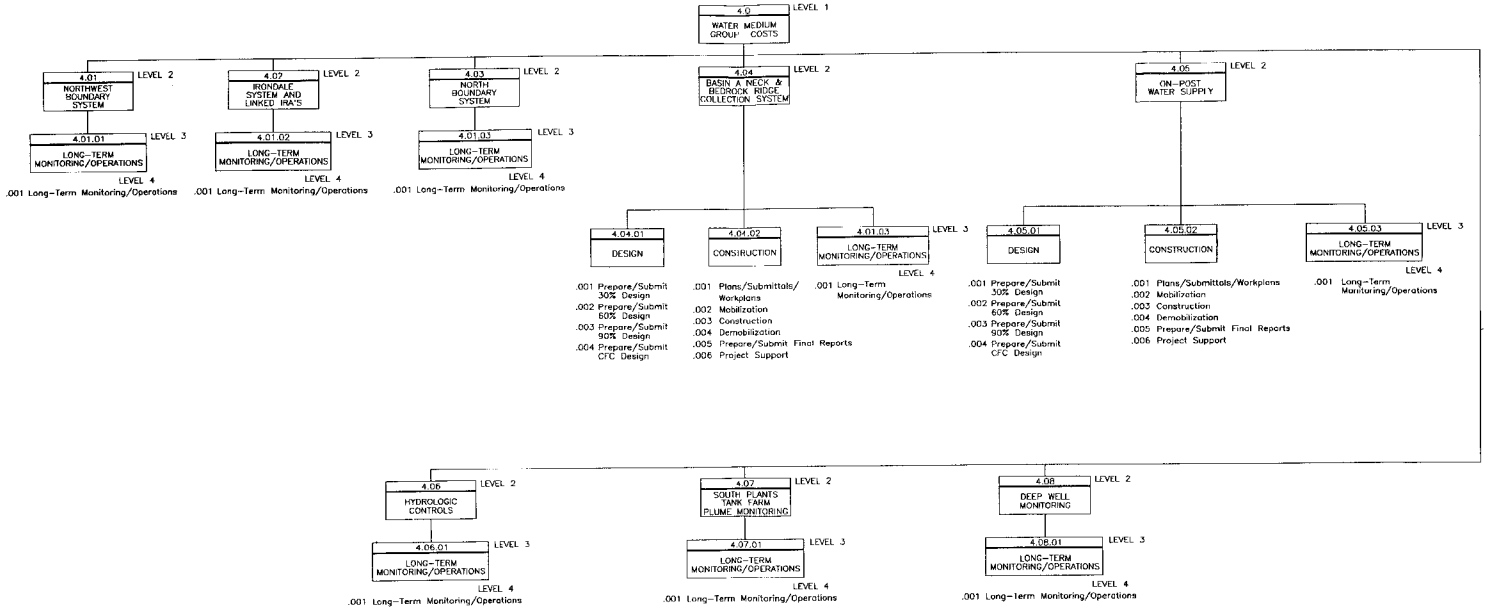
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-22D

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-22D | DATE: 10/16/95



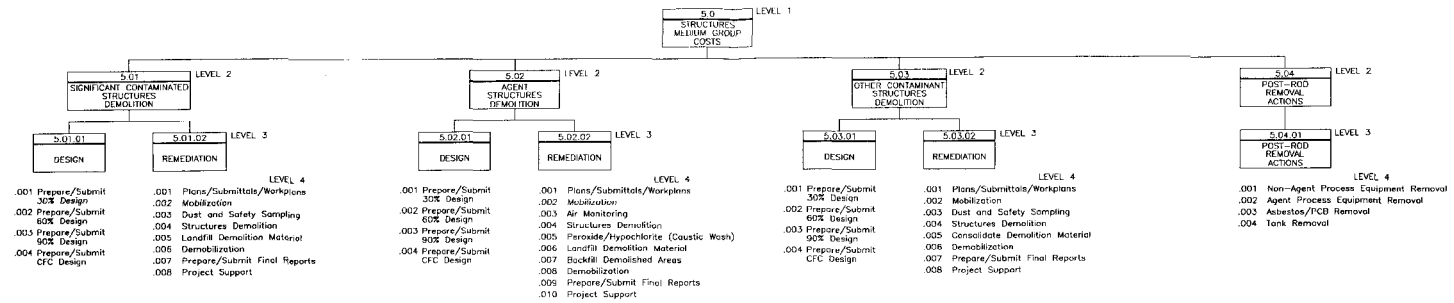
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-23

RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
WATER MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-23 DATE: 10/16/95



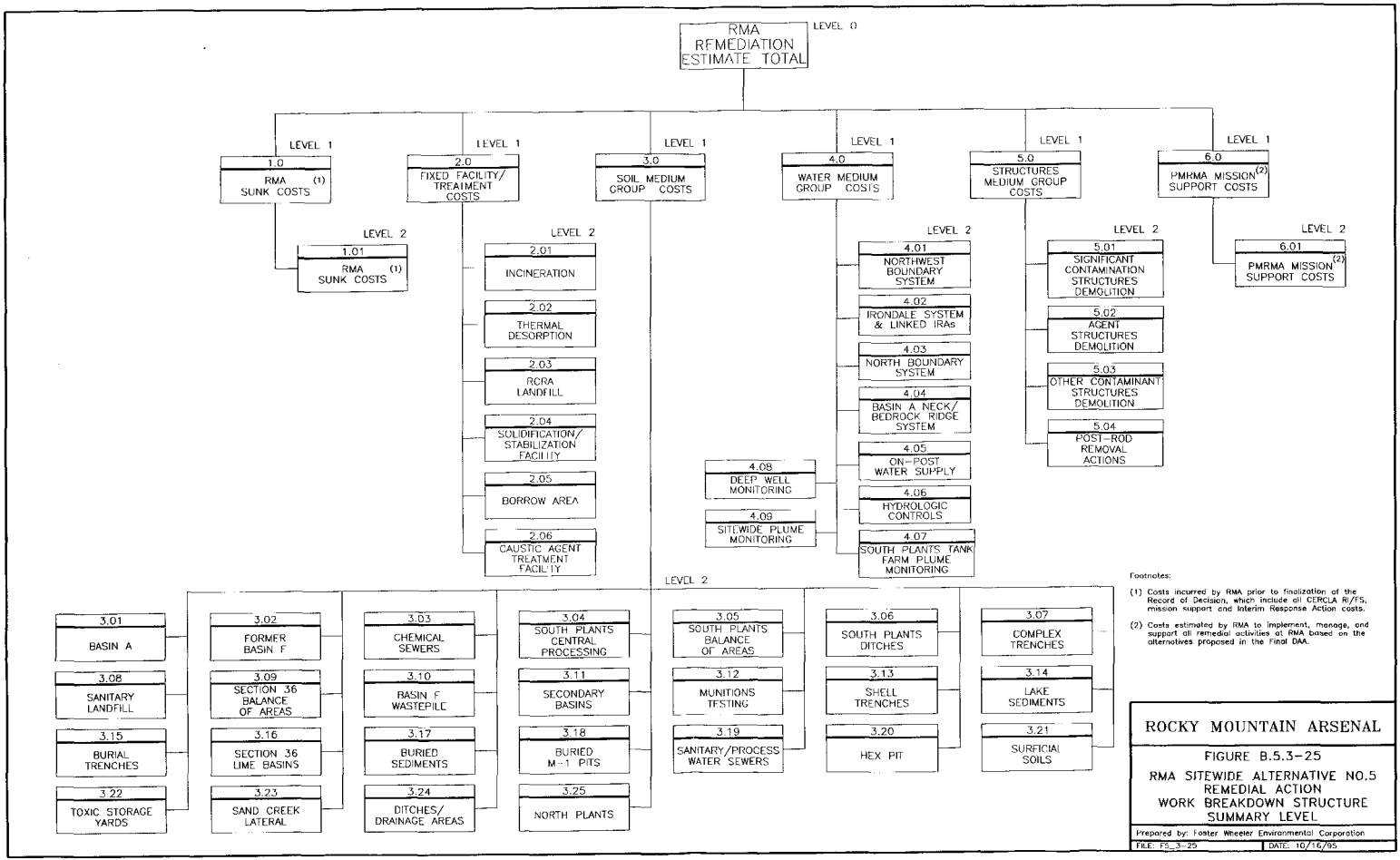
ROCKY MOUNTAIN ARSENAL

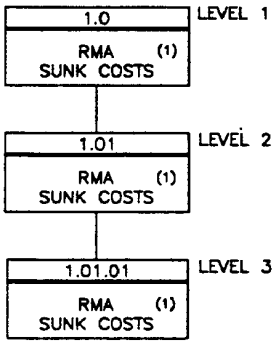
FIGURE B.5.3-24

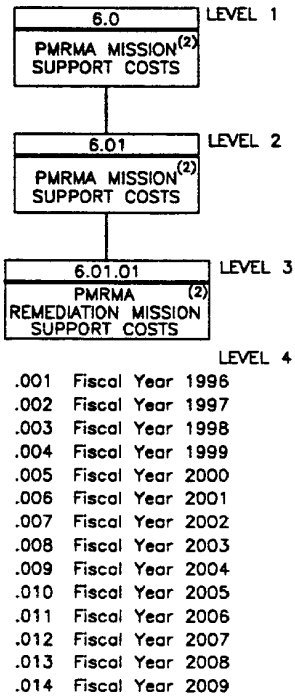
RMA SITEWIDE ALTERNATIVE NO.4
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
STRUCTURES MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: FS_3-24 | DATE: 10/16/95


RMA REMEDIATION ESTIMATE TOTAL
LEVEL 0
LEVEL 1
1.0 RMA (1) SUNK COSTS
2.0 FIXED FACILITY/ TREATMENT COSTS
3.0 SOIL MEDIUM GROUP COSTS
4.0 WATER MEDIUM GROUP COSTS
5.0 STRUCTURES MEDIUM GROUP COSTS
6.0 PMRMA MISSION(2) SUPPORT COSTS
LEVEL 2
1.01 RMA (1) SUNK COSTS
2.01 INCINERATION
2.02 THERMAL DESORPTION
2.03 RCRA LANDFILL
2.04 SOLIDIFICATION/ STABILIZATION FACILITY
2.05 BORROW AREA
2.06 CAUSTIC AGENT TREATMENT FACILITY
4.01 NORTHWEST BOUNDARY SYSTEM
4.02 IRONDALE SYSTEM & LINKED IRAs
4.03 NORTH BOUNDARY SYSTEM
4.04 BASIN A NECK/ BEDROCK RIDGE SYSTEM
4.05 ON-POST WATER SUPPLY
4.06 HYDROLOGIC CONTROLS
4.07 SOUTH PLANTS TANK FARM PLUME MONITORING
4.08 DEEP WELL MONITORING
4.09 SITEWIDE PLUME MONITORING
5.01 SIGNIFICANT CONTAMINATION STRUCTURES DEMOLITION
5.02 AGENT STRUCTURES DEMOLITION
5.03 OTHER CONTAMINANT STRUCTURES DEMOLITION
5.04 POST-ROD REMOVAL ACTIONS
6.01 PMRMA MISSION(2) SUPPORT COSTS
3.01 BASIN A
3.02 FORMER BASIN F
3.03 CHEMICAL SEWERS
3.04 SOUTH PLANTS CENTRAL PROCESSING
3.05 SOUTH PLANTS BALANCE OF AREAS
3.06 SOUTH PLANTS DITCHES
3.07 COMPLEX TRENCHES
3.08 SANITARY LANDFILL
3.09 SECTION 36 BALANCE OF AREAS
3.10 BASIN F WASTEPILE
3.11 SECONDARY BASINS
3.12 MUNITIONS TESTING
3.13 SHELL TRENCHES
3.14 LAKE SEDIMENTS
3.15 BURIAL TRENCHES
3.16 SECTION 36 LIME BASINS
3.17 BURIED SEDIMENTS
3.18 BURIED M-1 PITS
3.19 SANITARY/PROCESS WATER SEWERS
3.20 HEX PIT
3.21 SURFICIAL SOILS
3.22 TOXIC STORAGE YARDS
3.23 SAND CREEK LATERAL
3.24 DITCHES/ DRAINAGE AREAS
3.25 NORTH PLANTS
Footnotes:
(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA R/FS, mission support and Interim Response Action costs.
(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.
ROCKY MOUNTAIN ARSENAL
FIGURE B.5.3-25
RMA SITEWIDE ALTERNATIVE NO.5 REMEDIAL ACTION WORK BREAKDOWN STRUCTURE SUMMARY LEVEL
Prepared by: Foster Wheeler Environmental Corporation
FILE: FS_3-25
DATE: 10/16/95





Footnotes:

(1) Costs incurred by RMA prior to finalization of the Record of Decision, which include all CERCLA RI/FS, mission support and Interim Response Action costs.

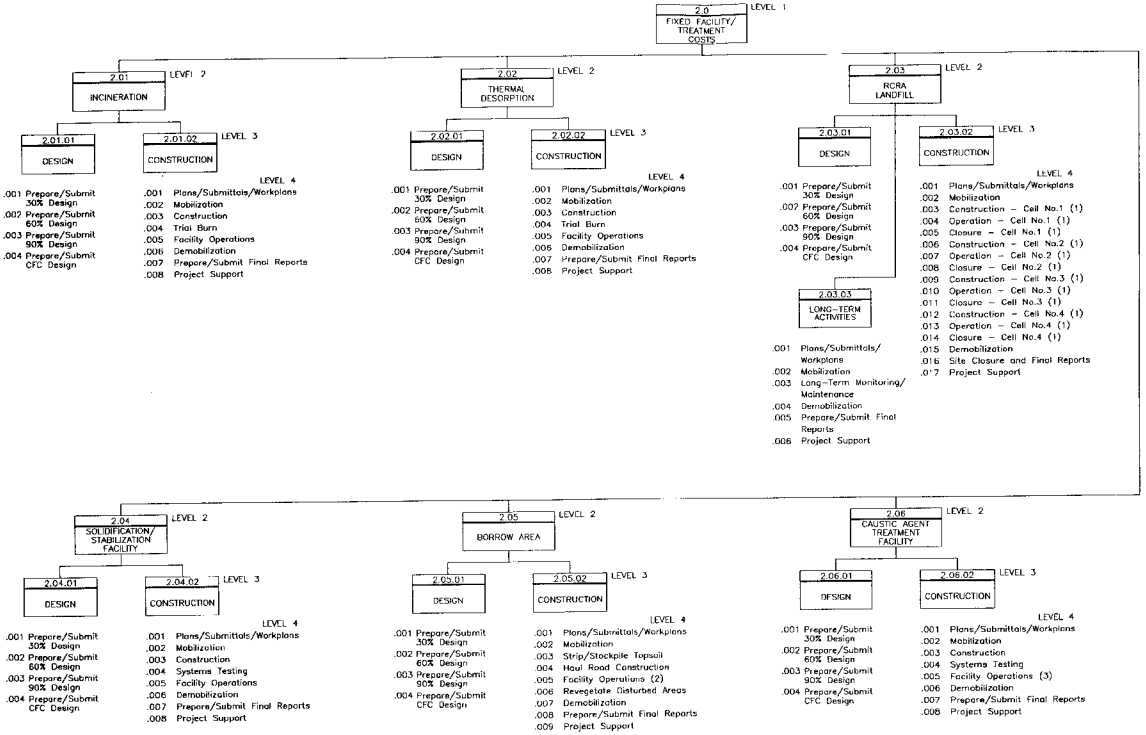
(2) Costs estimated by RMA to implement, manage, and support all remedial activities at RMA based on the alternatives proposed in the Final DAA.

ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-26
RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SUNK COSTS AND
PMRMA MISSION SUPPORT COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-26 | DATE: 10/16/95



Footnotes:

(1) Cost includes facility operations for spreading and compacting all demolition debris and excavated soils. Transportation costs to the fixed facility are included under each subgroup.

(2) Cost includes facility operations, excavating low-permeability soils and common borrow material, and maintaining the facility. Transportation costs from the borrow facility are included under each subgroup.

(3) Cost includes facility operations to treat all agent-contaminated demolition debris and soils. Transportation to and from the facility are included under each subgroup.

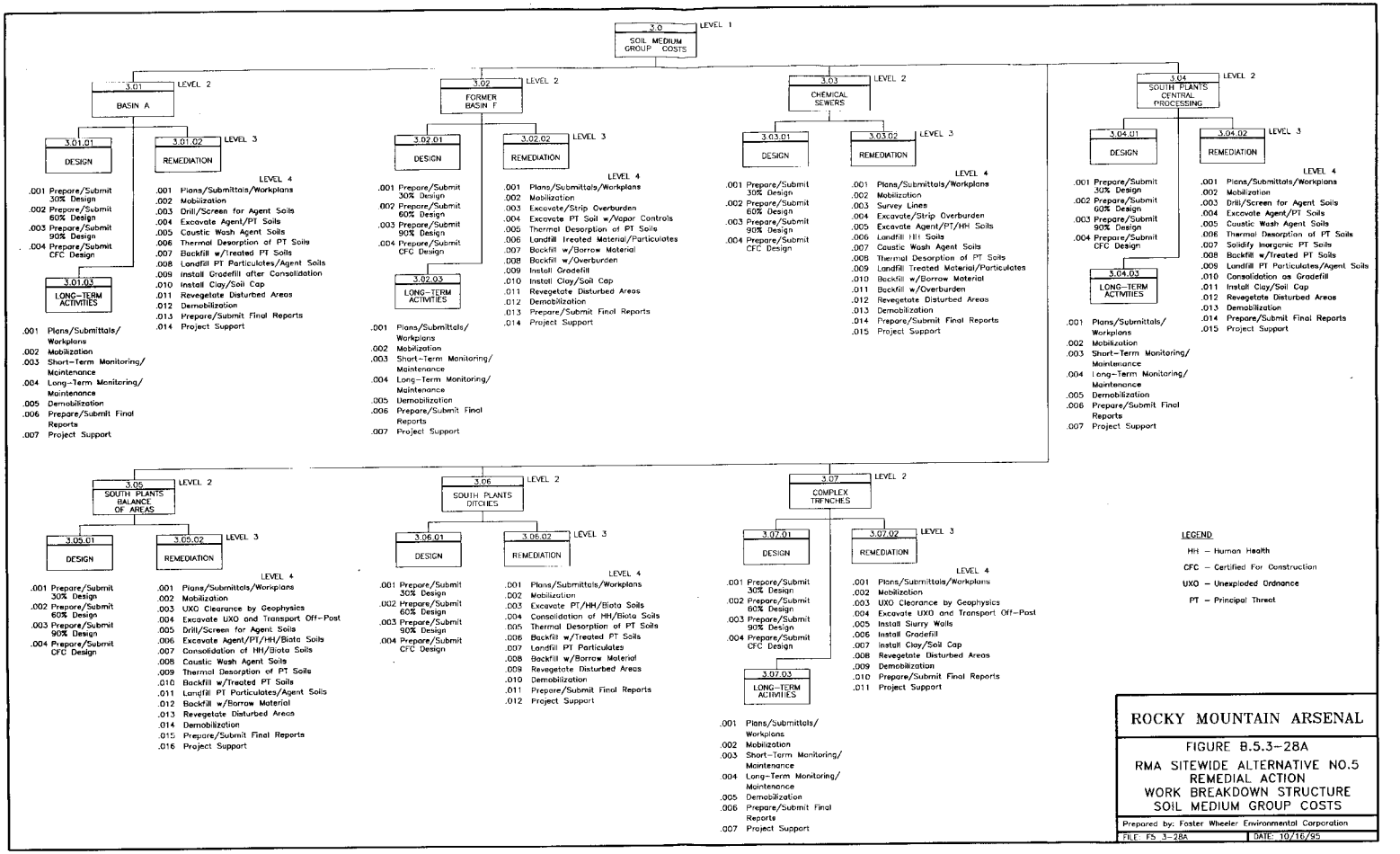
ROCKY MOUNTAIN ARSENAL

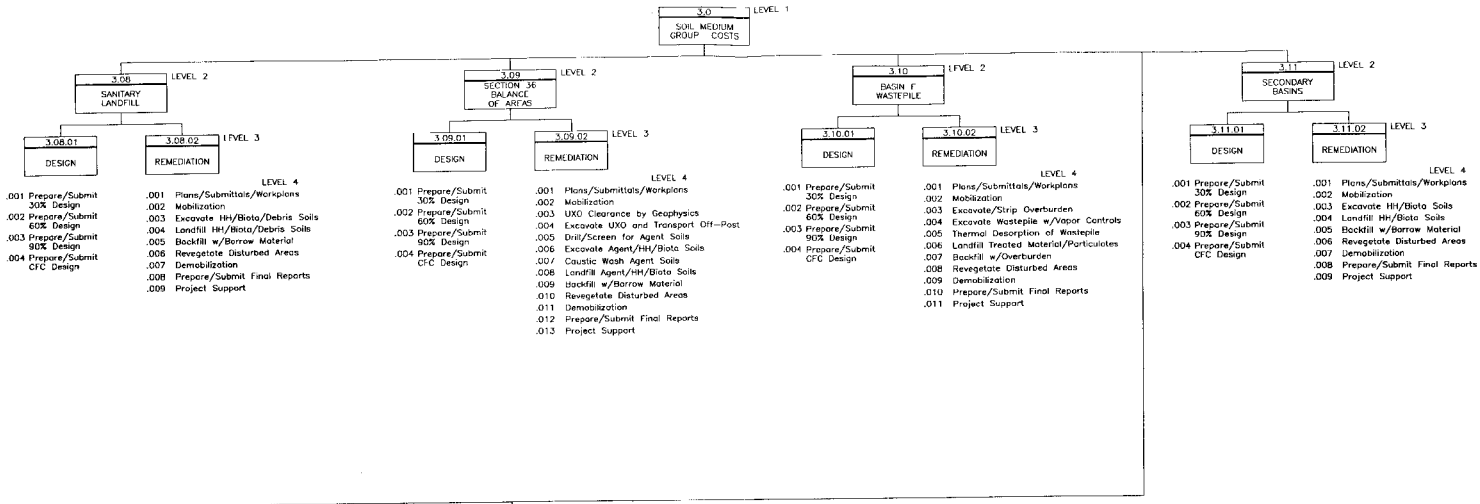
FIGURE B.5.3-27

RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
FIXED FACILITY COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-27 DATE: 10/16/95


3.0 SOIL MEDIUM GROUP COSTS LEVEL 1
3.01 BASIN A LEVEL 2
3.01.01 DESIGN
3.01.02 REMEDIATION LEVEL 3
3.01.03 LONG-TERM ACTIVITIES
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Drill/Screen for Agent Soils
.004 Excavate Agent/PT Soils
.005 Caustic Wash Agent Soils
.006 Thermal Desorption of PT Soils
.007 Backfill w/Treated PT Soils
.008 Landfill PT Particulates/Agent Soils
.009 Install Gradefill after Consolidation
.010 Install Clay/Soil Cap
.011 Revegetate Disturbed Areas
.012 Demobilization
.013 Prepare/Submit Final Reports
.014 Project Support
3.02 FORMER BASIN F LEVEL 2
3.02.01 DESIGN
3.02.02 REMEDIATION LEVEL 3
3.02.03 LONG-TERM ACTIVITIES
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate/Strip Overburden
.004 Excavate PT Soil w/Vapor Controls
.005 Thermal Desorption of PT Soils
.006 Landfill Treated Material/Particulates
.007 Backfill w/Borrow Material
.008 Backfill w/Overburden
.009 Install Gradefill
.010 Install Clay/Soil Cap
.011 Revegetate Disturbed Areas
.012 Demobilization
.013 Prepare/Submit Final Reports
.014 Project Support
3.03 CHEMICAL SEWERS LEVEL 2
3.03.01 DESIGN
3.03.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Survey Lines
.004 Excavate/Strip Overburden
.005 Excavate Agent/PT/HH Soils
.006 Landfill HH Soils
.007 Caustic Wash Agent Soils
.008 Thermal Desorption of PT Soils
.009 Landfill Treated Material/Particulates
.010 Backfill w/Borrow Material
.011 Backfill w/Overburden
.012 Revegetate Disturbed Areas
.013 Demobilization
.014 Prepare/Submit Final Reports
.015 Project Support
3.04 SOUTH PLANTS CENTRAL PROCESSING LEVEL 2
3.04.01 DESIGN
3.04.02 REMEDIATION LEVEL 3
3.04.03 LONG-TERM ACTIVITIES
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Drill/Screen for Agent Soils
.004 Excavate Agent/PT Soils
.005 Caustic Wash Agent Soils
.006 Thermal Desorption of PT Soils
.007 Solidify Inorganic PT Soils
.008 Backfill w/Treated PT Soils
.009 Landfill PT Particulates/Agent Soils
.010 Consolidation as Gradefill
.011 Install Clay/Soil Cap
.012 Revegetate Disturbed Areas
.013 Demobilization
.014 Prepare/Submit Final Reports
.015 Project Support
3.05 SOUTH PLANTS BALANCE OF AREAS LEVEL 2
3.05.01 DESIGN
3.05.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 UXO Clearance by Geophysics
.004 Excavate UXO and Transport Off-Post
.005 Drill/Screen for Agent Soils
.006 Excavate Agent/PT/HH/Biota Soils
.007 Consolidation of HH/Biota Soils
.008 Caustic Wash Agent Soils
.009 Thermal Desorption of PT Soils
.010 Backfill w/Treated PT Soils
.011 Landfill PT Particulates/Agent Soils
.012 Backfill w/Borrow Material
.013 Revegetate Disturbed Areas
.014 Demobilization
.015 Prepare/Submit Final Reports
.016 Project Support
3.06 SOUTH PLANTS DITCHES LEVEL 2
3.06.01 DESIGN
3.06.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate PT/HH/Biota Soils
.004 Consolidation of HH/Biota Soils
.005 Thermal Desorption of PT Soils
.006 Backfill w/Treated PT Soils
.007 Landfill PT Particulates
.008 Backfill w/Borrow Material
.009 Revegetate Disturbed Areas
.010 Demobilization
.011 Prepare/Submit Final Reports
.012 Project Support
3.07 COMPLEX TRENCHES LEVEL 2
3.07.01 DESIGN
3.07.02 REMEDIATION LEVEL 3
3.07.03 LONG-TERM ACTIVITIES
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 UXO Clearance by Geophysics
.004 Excavate UXO and Transport Off-Post
.005 Install Slurry Walls
.006 Install Gradefill
.007 Install Clay/Soil Cap
.008 Revegetate Disturbed Areas
.009 Demobilization
.010 Prepare/Submit Final Reports
.011 Project Support
LEGEND
HH – Human Health
CFC – Certified For Construction
UXO – Unexploded Ordnance
PT – Principal Threat
ROCKY MOUNTAIN ARSENAL
FIGURE B.5.3-28A
RMA SITEWIDE ALTERNATIVE NO.5 REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS
Prepared by: Foster Wheeler Environmental Corporation
FILE: F5 3-28A
DATE: 10/16/95



LEGEND

HH – Human Health

CFC – Certified For Construction

UXO – Unexploded Ordnance

PT – Principal Threat

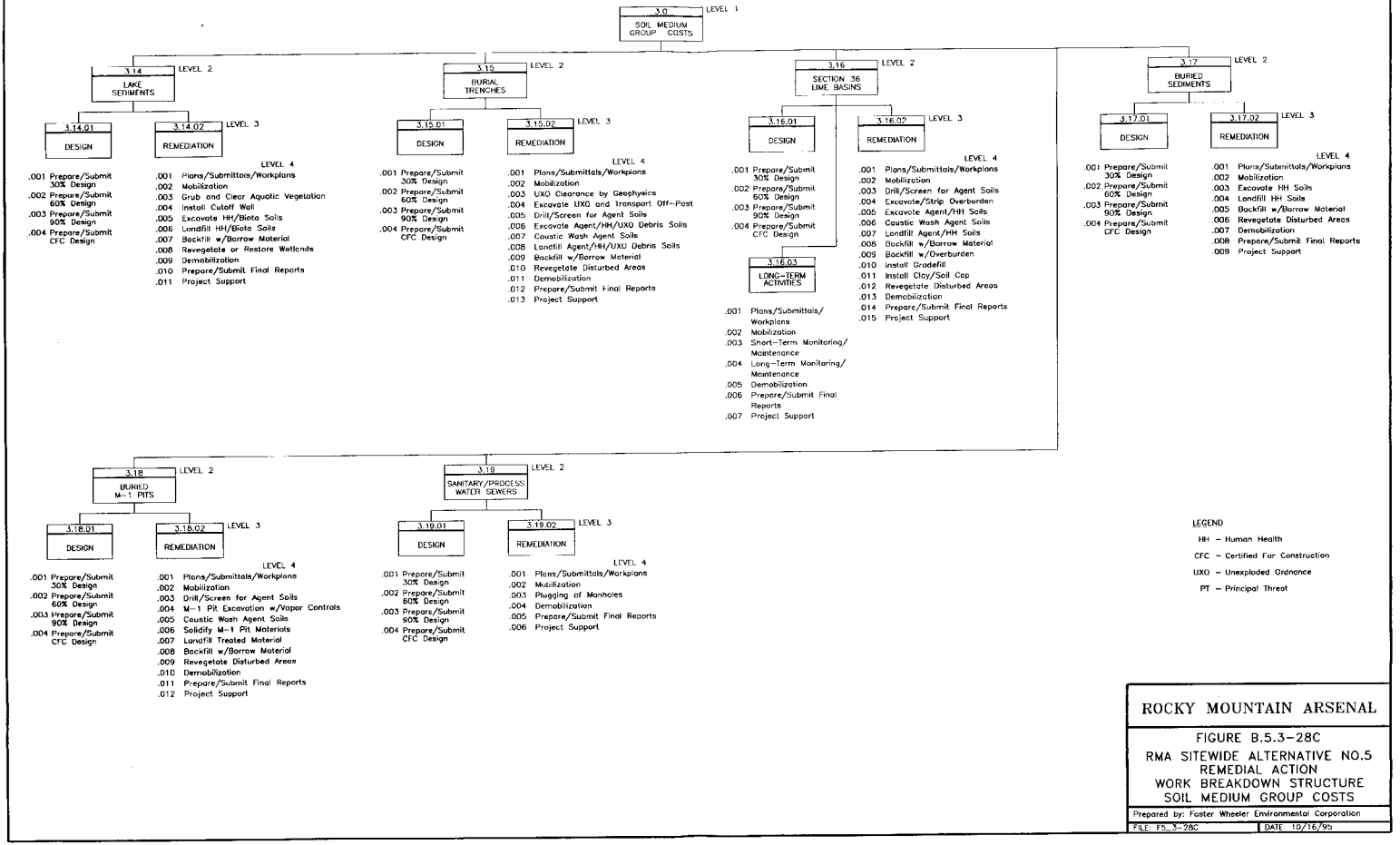
ROCKY MOUNTAIN ARSENAL

FIGURE B.5.3-28B

RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-28B | DATE: 10/16/95



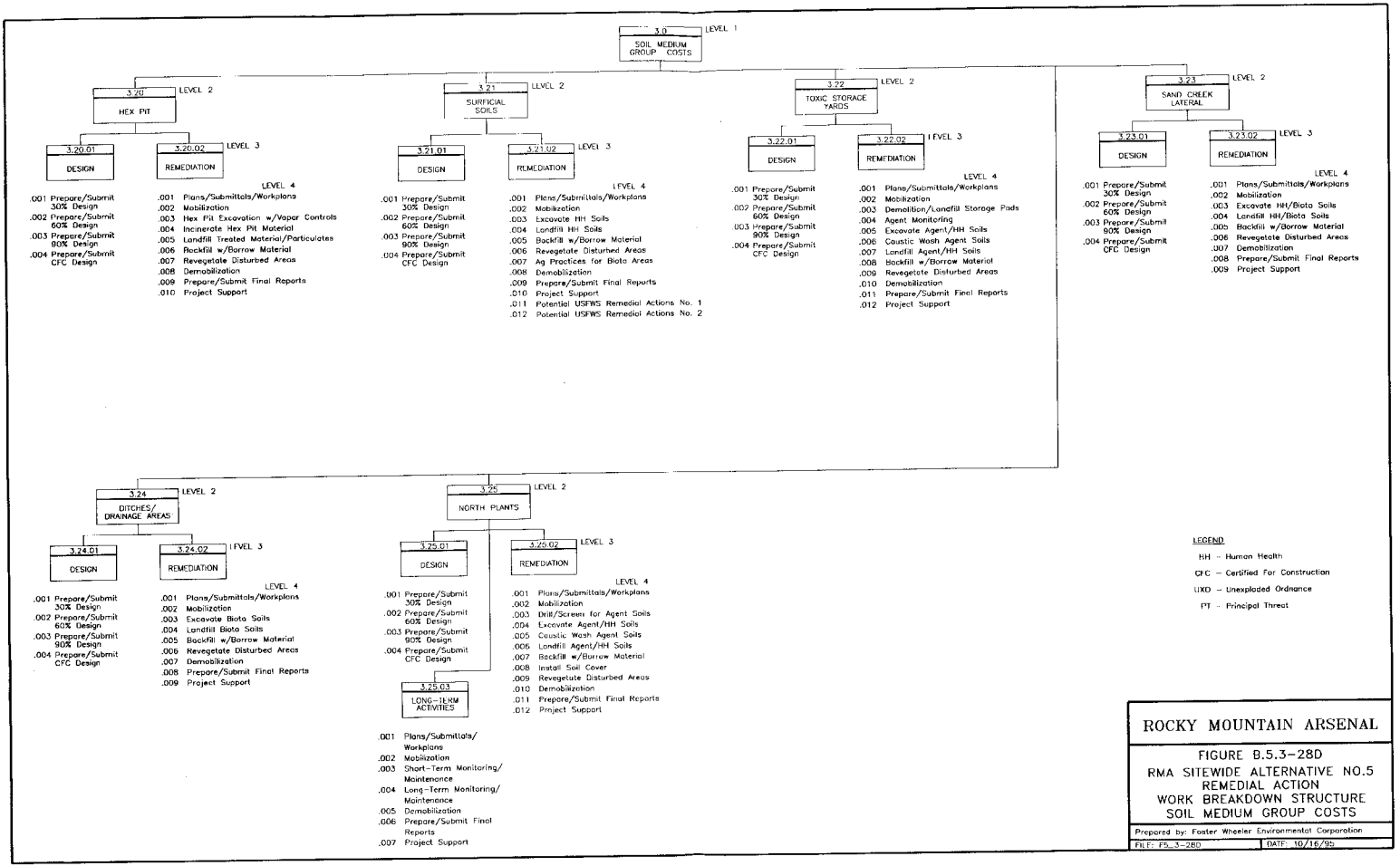
ROCKY MOUNTAIN ARSENAL

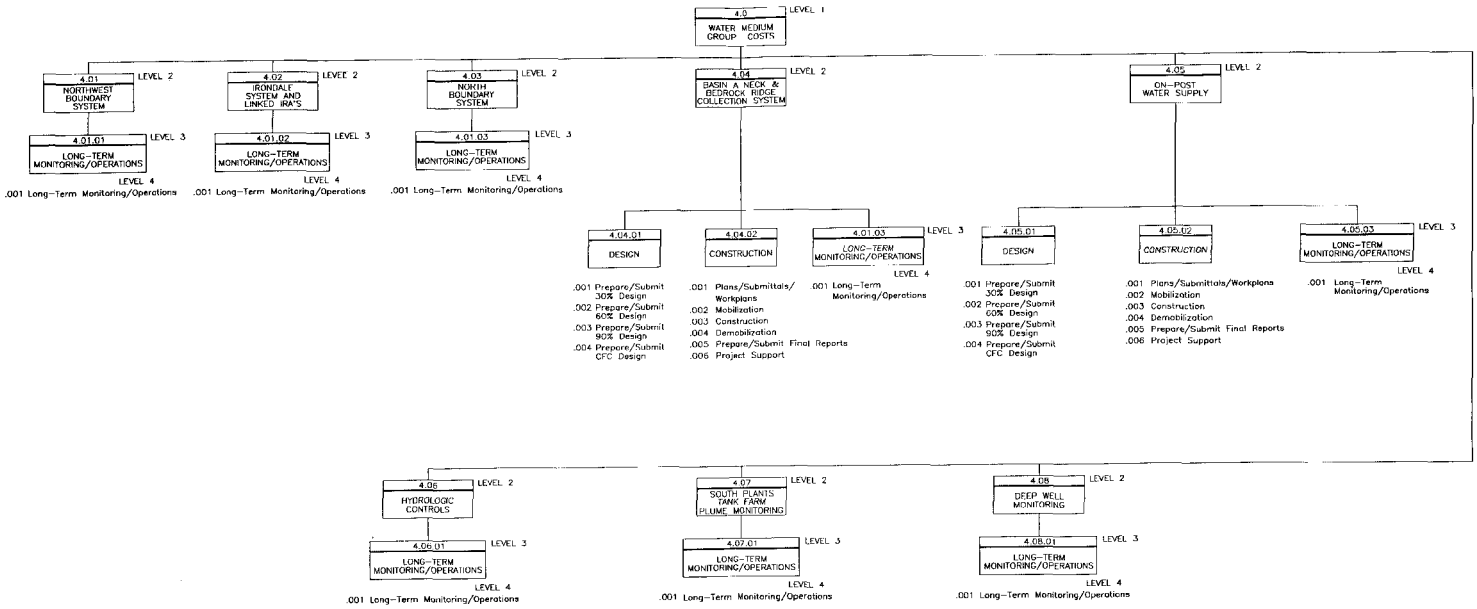
FIGURE B.5.3-28C

RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: F5_3-28C DATE: 10/16/95


3.0 LEVEL 1
SOIL MEDIUM GROUP COSTS
3.20 LEVEL 2
HEX PIT
3.20.01 DESIGN
3.20.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Hex Pit Excavation w/Vapor Controls
.004 Incinerate Hex Pit Material
.005 Landfill Treated Material/Particulates
.006 Backfill w/Borrow Material
.007 Revegetate Disturbed Areas
.008 Demobilization
.009 Prepare/Submit Final Reports
.010 Project Support
3.21 LEVEL 2
SURFICIAL SOILS
3.21.01 DESIGN
3.21.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate HH Soils
.004 Landfill HH Soils
.005 Backfill w/Borrow Material
.006 Revegetate Disturbed Areas
.007 Ag Practices for Biota Areas
.008 Demobilization
.009 Prepare/Submit Final Reports
.010 Project Support
.011 Potential USFWS Remedial Actions No. 1
.012 Potential USFWS Remedial Actions No. 2
3.22 LEVEL 2
TOXIC STORAGE YARDS
3.22.01 DESIGN
3.22.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Demolition/Landfill Storage Pads
.004 Agent Monitoring
.005 Excavate Agent/HH Soils
.006 Caustic Wash Agent Soils
.007 Landfill Agent/HH Soils
.008 Backfill w/Borrow Material
.009 Revegetate Disturbed Areas
.010 Demobilization
.011 Prepare/Submit Final Reports
.012 Project Support
3.23 LEVEL 2
SAND CREEK LATERAL
3.23.01 DESIGN
3.23.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate HH/Biota Soils
.004 Landfill HH/Biota Soils
.005 Backfill w/Borrow Material
.006 Revegetate Disturbed Areas
.007 Demobilization
.008 Prepare/Submit Final Reports
.009 Project Support
3.24 LEVEL 2
DITCHES/ DRAINAGE AREAS
3.24.01 DESIGN
3.24.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Excavate Biota Soils
.004 Landfill Biota Soils
.005 Backfill w/Borrow Material
.006 Revegetate Disturbed Areas
.007 Demobilization
.008 Prepare/Submit Final Reports
.009 Project Support
3.25 LEVEL 2
NORTH PLANTS
3.25.01 DESIGN
3.25.02 REMEDIATION LEVEL 3
.001 Prepare/Submit 30% Design
.002 Prepare/Submit 60% Design
.003 Prepare/Submit 90% Design
.004 Prepare/Submit CFC Design
LEVEL 4
.001 Plans/Submittals/Workplans
.002 Mobilization
.003 Drill/Screen for Agent Soils
.004 Excavate Agent/HH Soils
.005 Caustic Wash Agent Soils
.006 Landfill Agent/HH Soils
.007 Backfill w/Borrow Material
.008 Install Soil Cover
.009 Revegetate Disturbed Areas
.010 Demobilization
.011 Prepare/Submit Final Reports
.012 Project Support
3.25.03 LONG-TERM ACTIVITIES
.001 Plans/Submittals/ Workplans
.002 Mobilization
.003 Short-Term Monitoring/ Maintenance
.004 Long-Term Monitoring/ Maintenance
.005 Demobilization
.006 Prepare/Submit Final Reports
.007 Project Support
LEGEND
HH - Human Health
CFC - Certified For Construction
UXO - Unexploded Ordnance
PT - Principal Threat
ROCKY MOUNTAIN ARSENAL
FIGURE B.5.3-28D
RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
SOIL MEDIUM GROUP COSTS
Prepared by: Foster Wheeler Environmental Corporation
FILE: F5_3-28D
DATE: 10/16/95



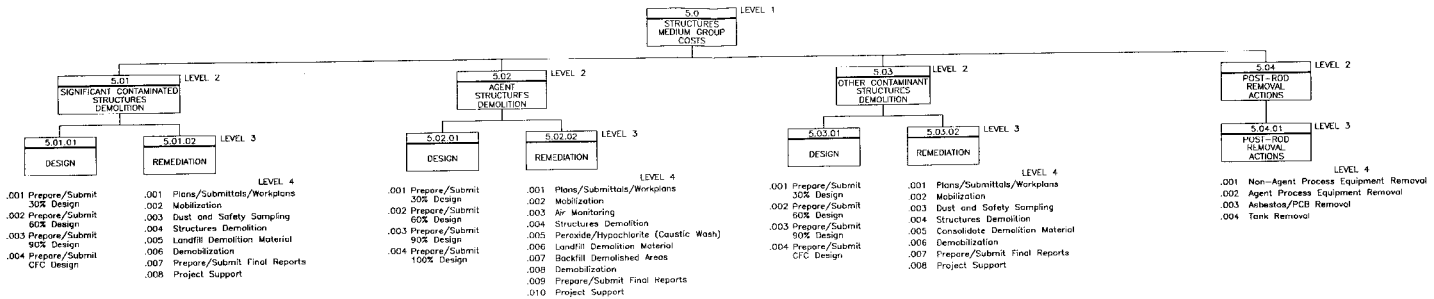
ROCKY MOUNTAIN ARSENAL

FIGURE NO. B.5.3-29

RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
WATER MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

File: F5_3-29 | DATE: 10/16/95



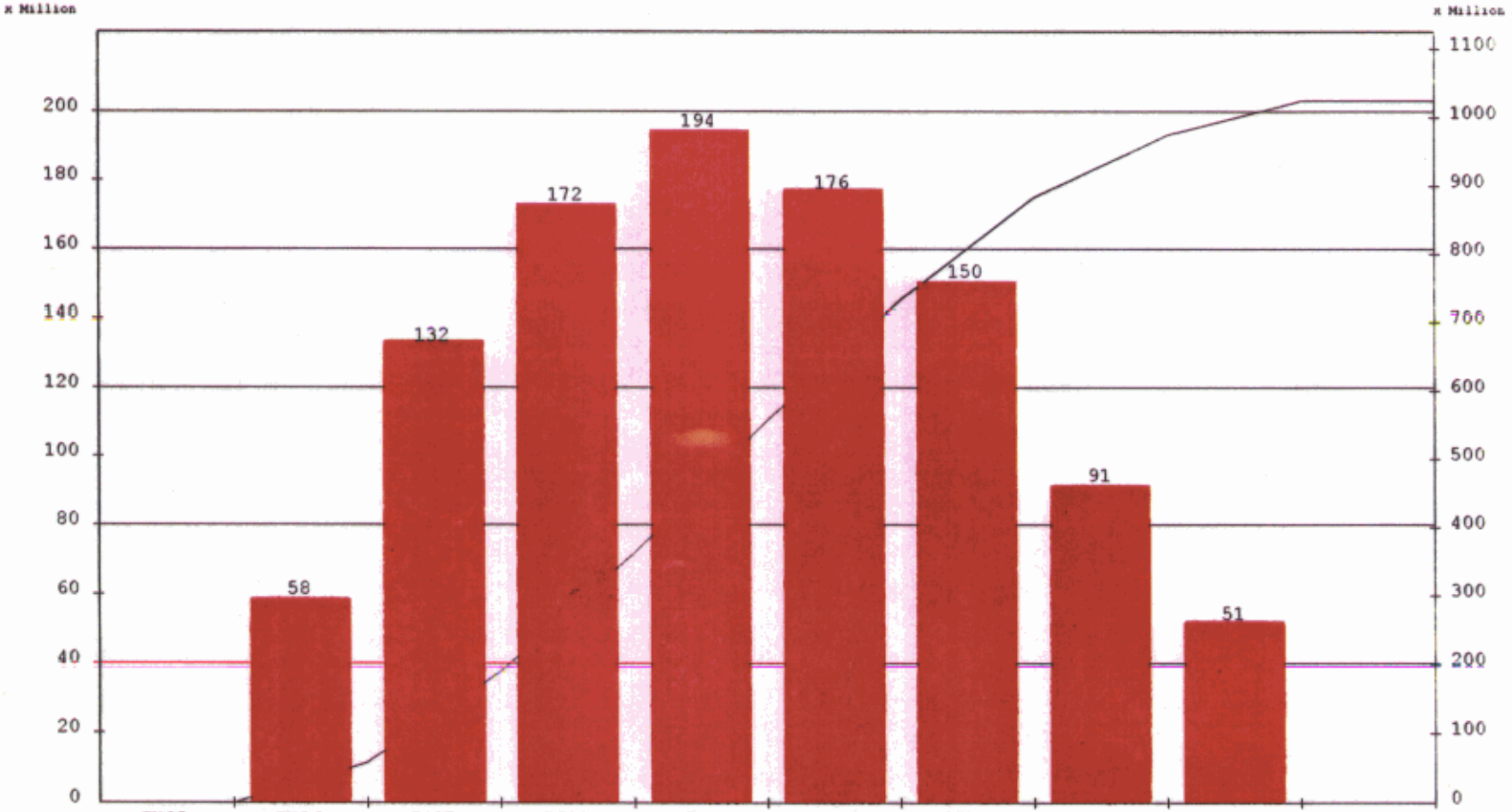
ROCKY MOUNTAIN ARSENAL

FIGURE NO. B.5.3-30

RMA SITEWIDE ALTERNATIVE NO.5
REMEDIAL ACTION
WORK BREAKDOWN STRUCTURE
STRUCTURES MEDIUM GROUP COSTS

Prepared by: Foster Wheeler Environmental Corporation

FILE: FS_3-30 DATE: 10/16/95

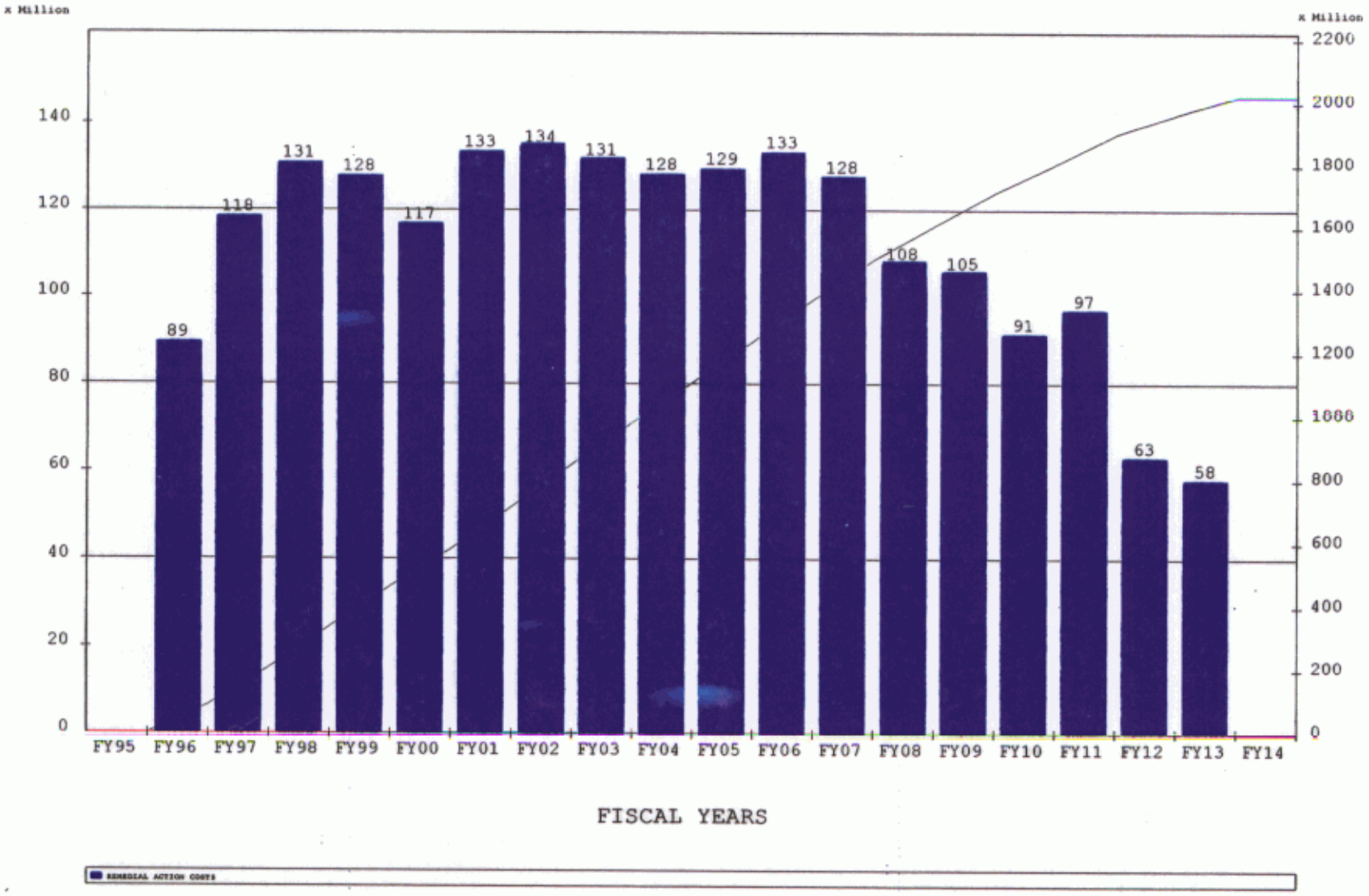


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Project Finish	25APR38		CAPS/COVERS ALTERNATIVE
Data Date	30DEC91		FINAL DAA REMEDIATION SUMMARY COST HISTOGRAM
Plot Date	11OCT95		FIGURE B.6.2 - 1

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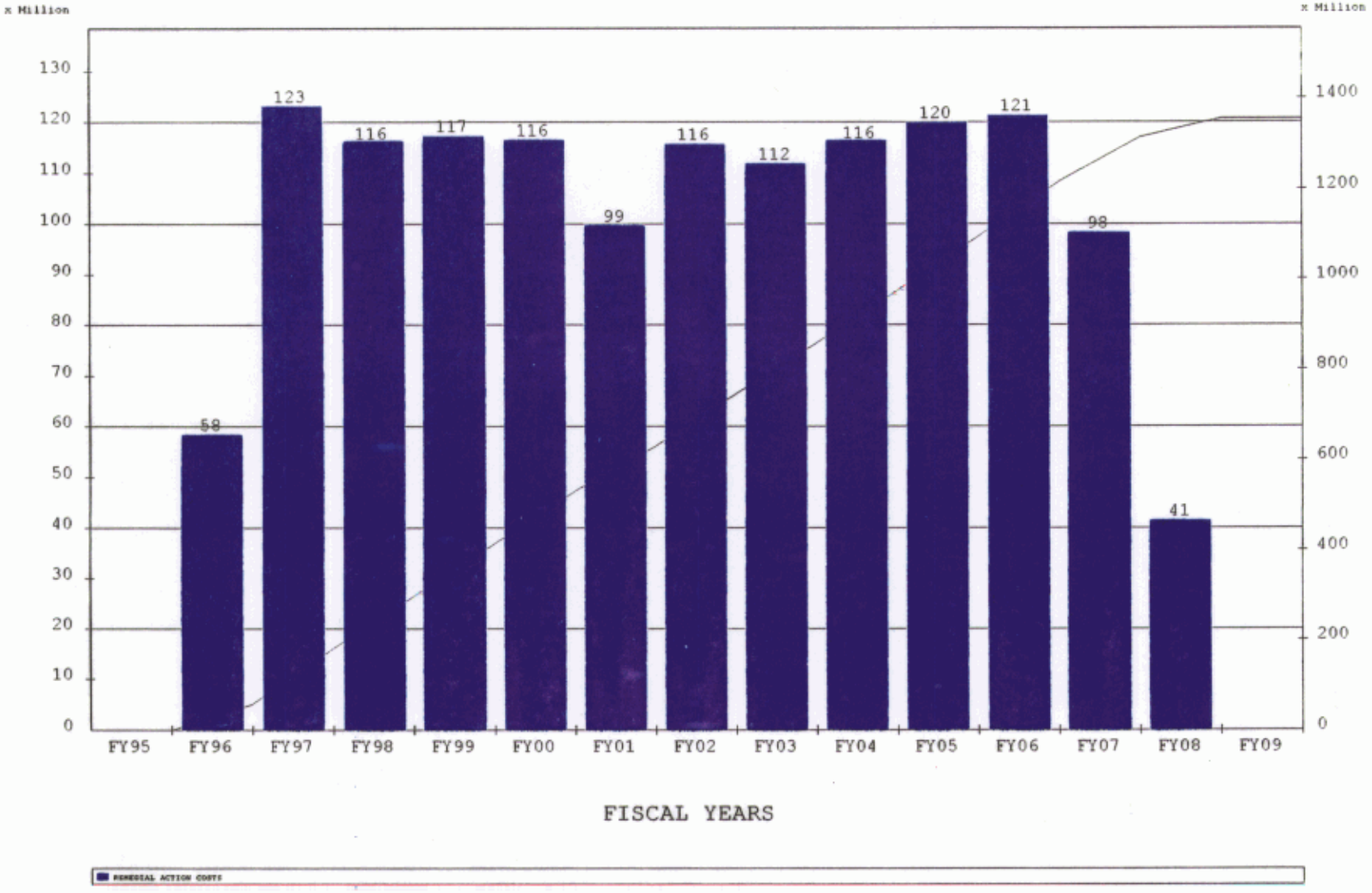
Sheet 1 of 1

Date	Revision	Checked	Approved



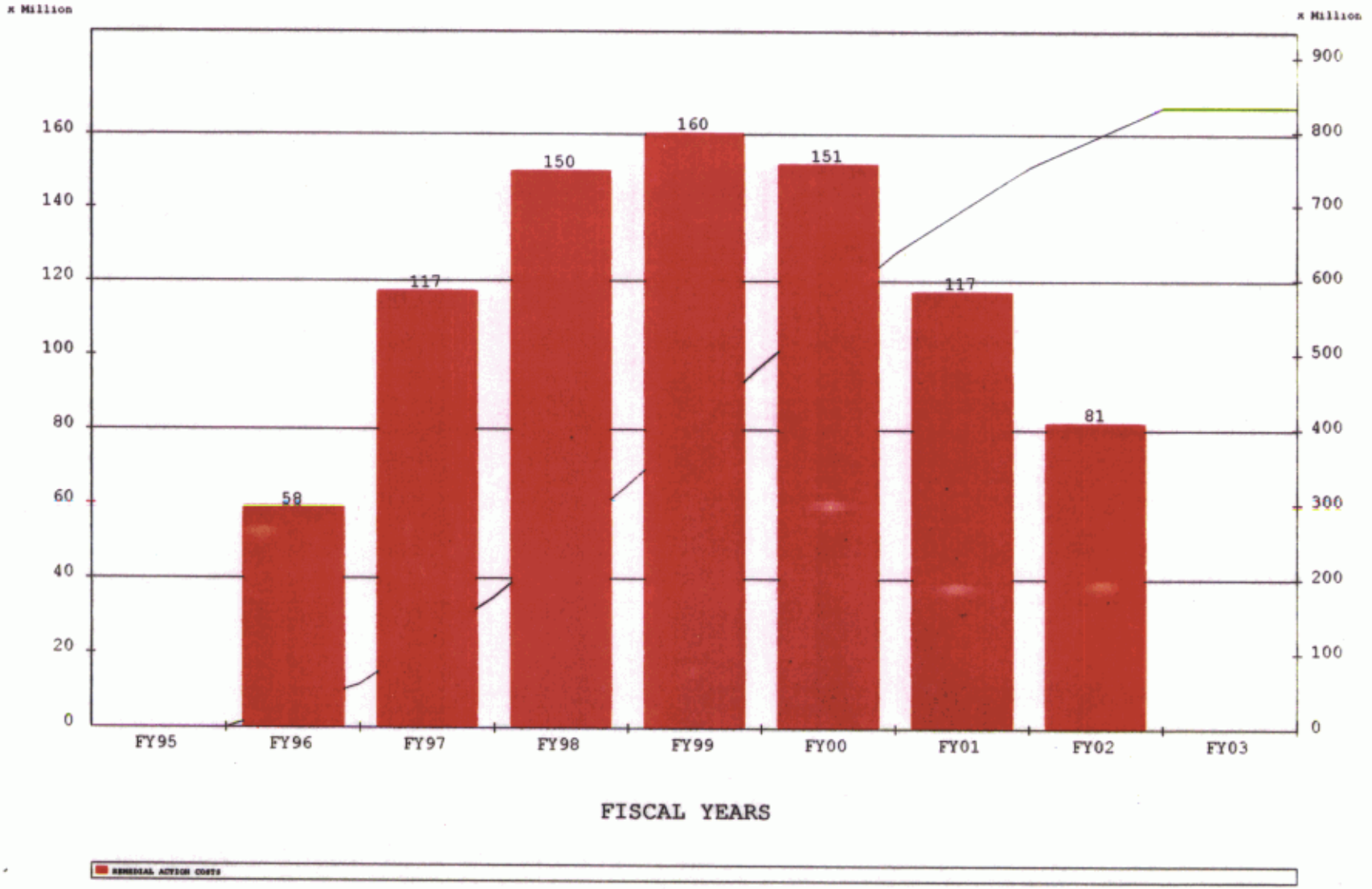
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Project Finish	25APR38		CAPS/TREATMENT/LANDFILL ALTERNATIVE
Data Date	30DEC91		FINAL DAA REMEDIATION LEVELED SUMMARY COST HISTOGRAM
Plot Date	12OCT95		FIGURE B.6.2 - 10
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Date	Revision	Checked	Approved



Project Start	30DEC91	RMEL	PROGRAM MGR FOR ROCKY MTN ARSENAL
Project Finish	25APR38		CONSOLIDATION/CAPS/TREATMENT/LANDFILL ALTERNATIVE
Data Date	30DEC91		FINAL DAA REMEDIATION LEVELED SUMMARY COST HISTOGRAM
Plot Date	12OCT95		FIGURE B.6.2 - 9
(c) Primavera Systems, Inc.		Sheet 1 of 1	

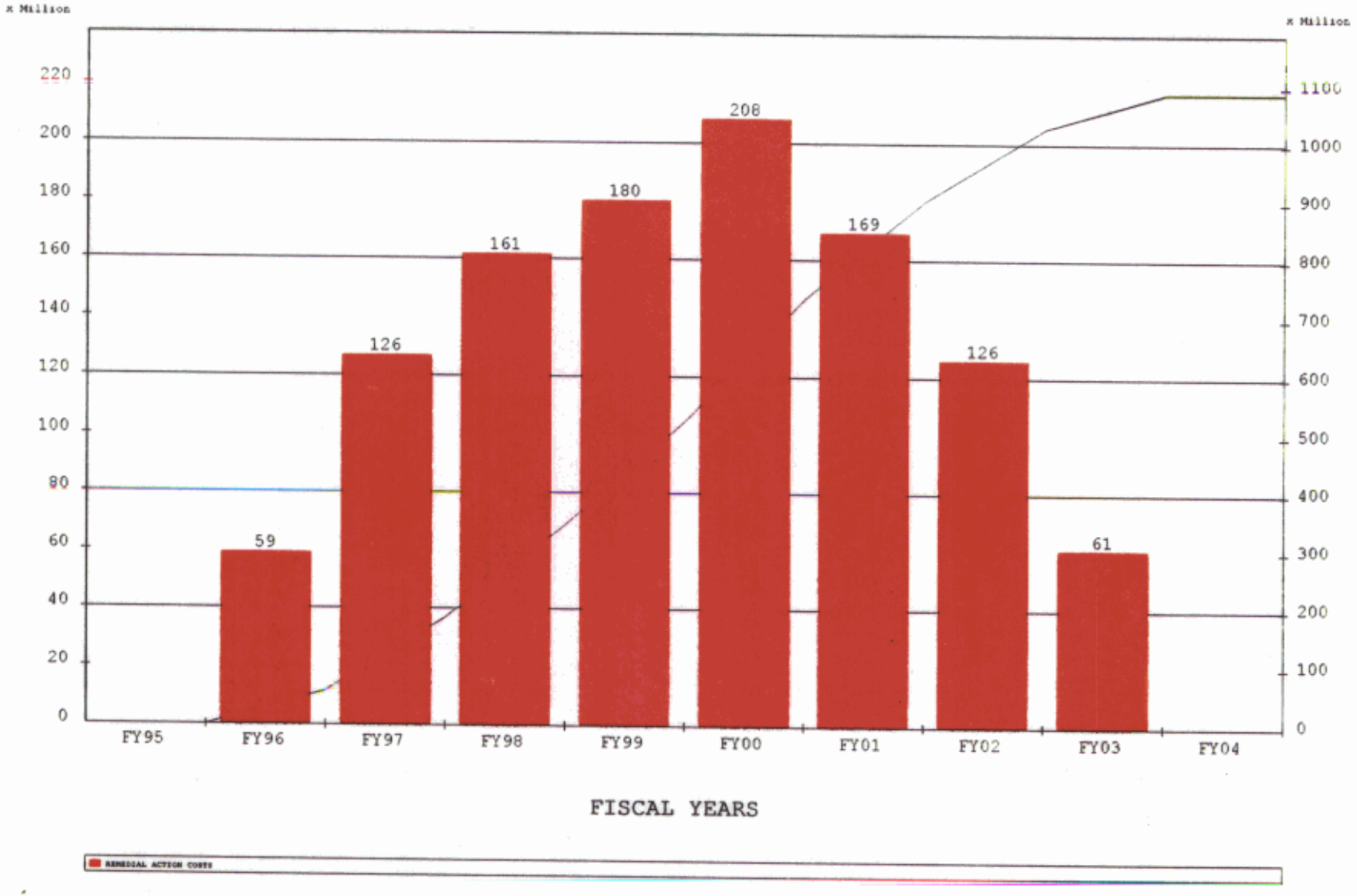
Date	Revision	Checked	Approved



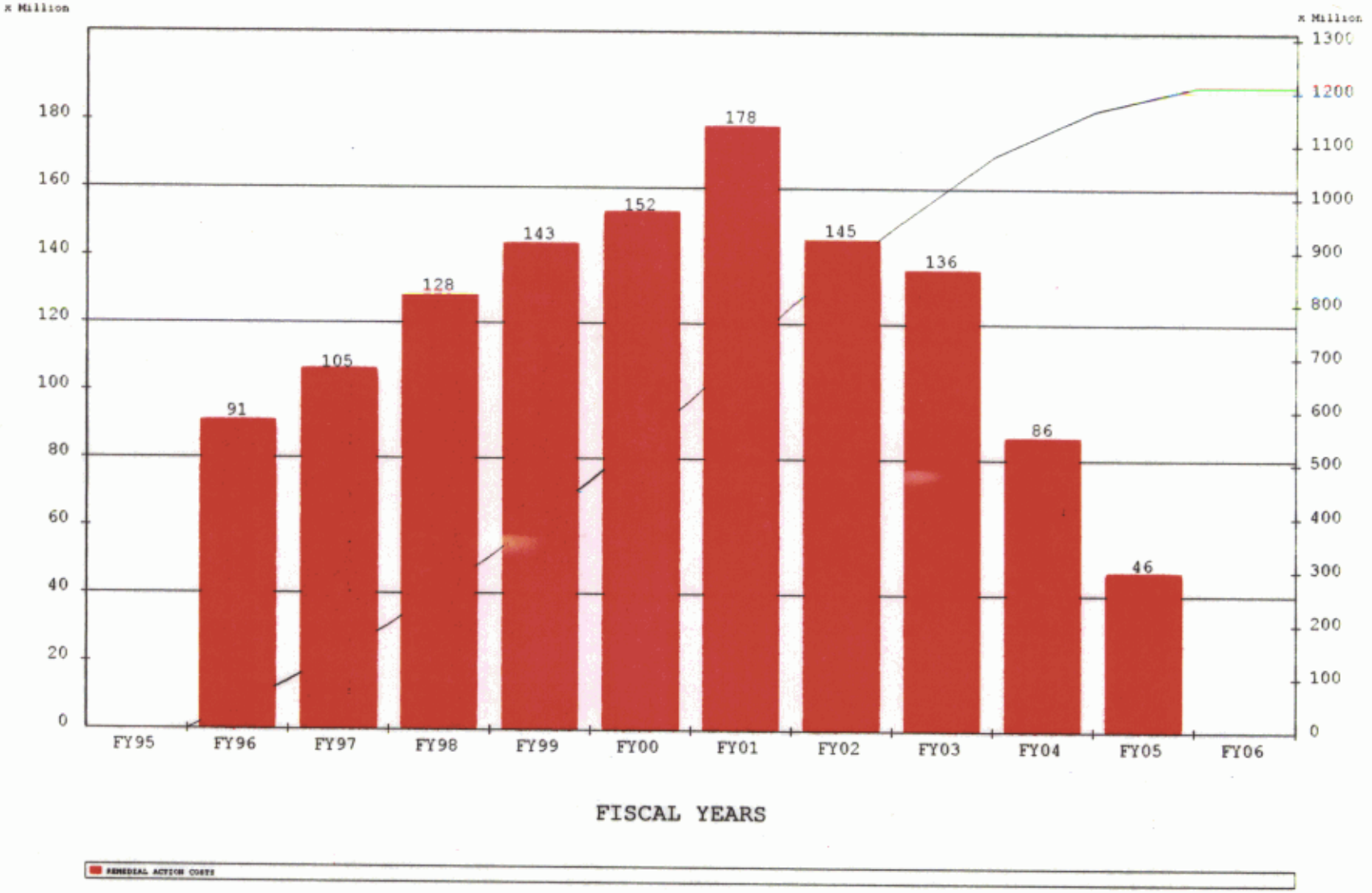
Project Start	30DEC91	PROGRAM MGR FOR ROCKY MTN ARSENAL	Sheet 1 of 1
Project Finish	25APR36	LANDFILL/CAPS ALTERNATIVE	
Data Date	30DEC91	FINAL DAA REMEDIATION SUMMARY COST HISTOGRAM	
Plot Date	11OCT95	FIGURE B.6.2 - 2	

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Date	Revision	Checked	Approved



Project Start	30DEC91	PROGRAM MGR FOR ROCKY MTN ARSENAL			
Project Finish	25APR38	LANDFILL ALTERNATIVE			
Data Date	30DEC91	FINAL DAA REMEDIATION SUMMARY COST HISTOGRAM			
Plot Date	12OCT95	FIGURE B.6.2 - 3			
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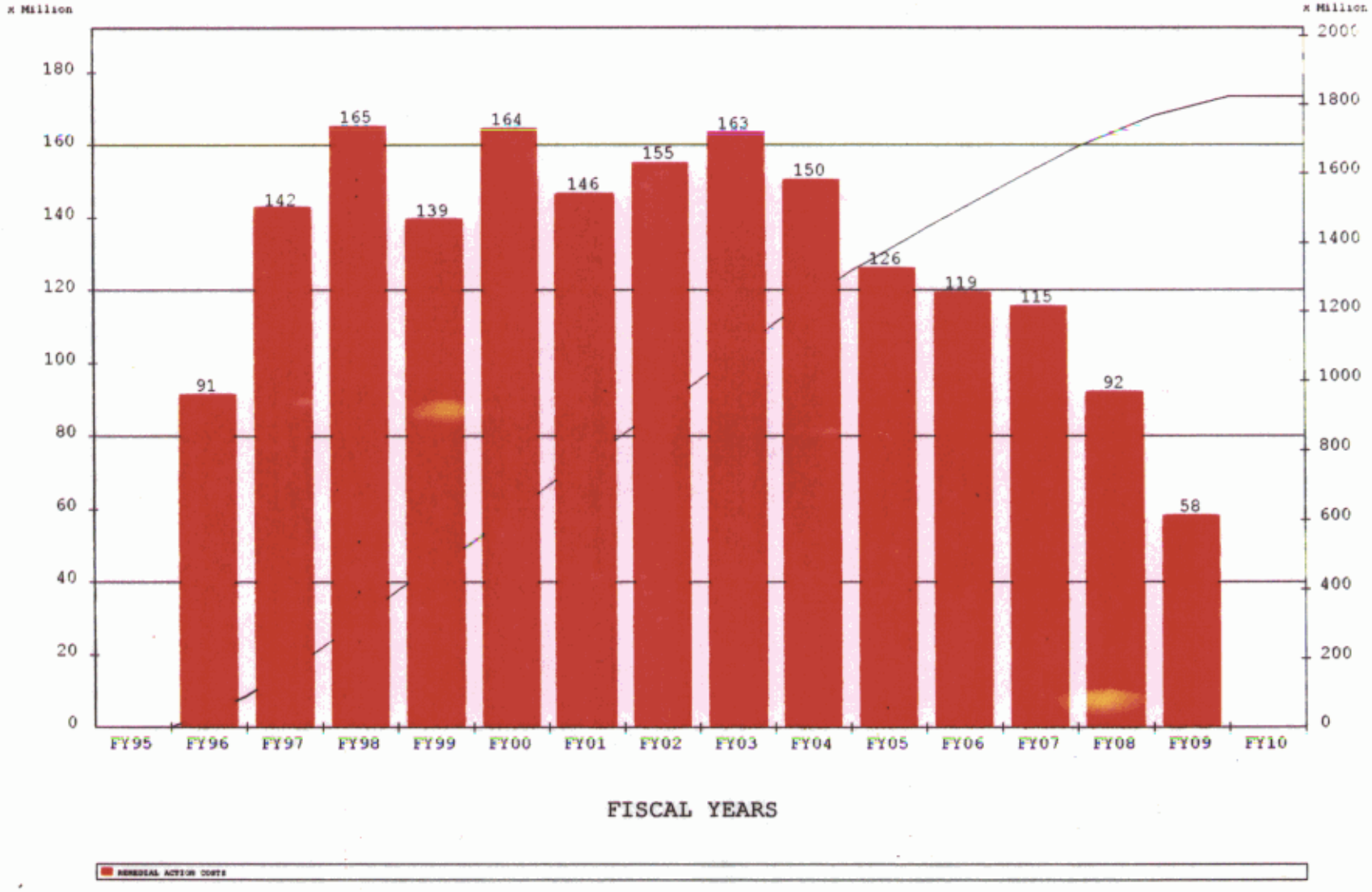
Project Start	30DEC91
Project Finish	25APR38
Data Date	30DEC91
Plot Date	12OCT95

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PROGRAM MGR FOR ROCKY MTN ARSENAL
CONSOLIDATION/CAPS/TREATMENT/LANDFILL ALTERNATIVE
FINAL DAA REMEDIATION SUMMARY COST HISTOGRAM
FIGURE B.6.2 - 4

Sheet 1 of 1

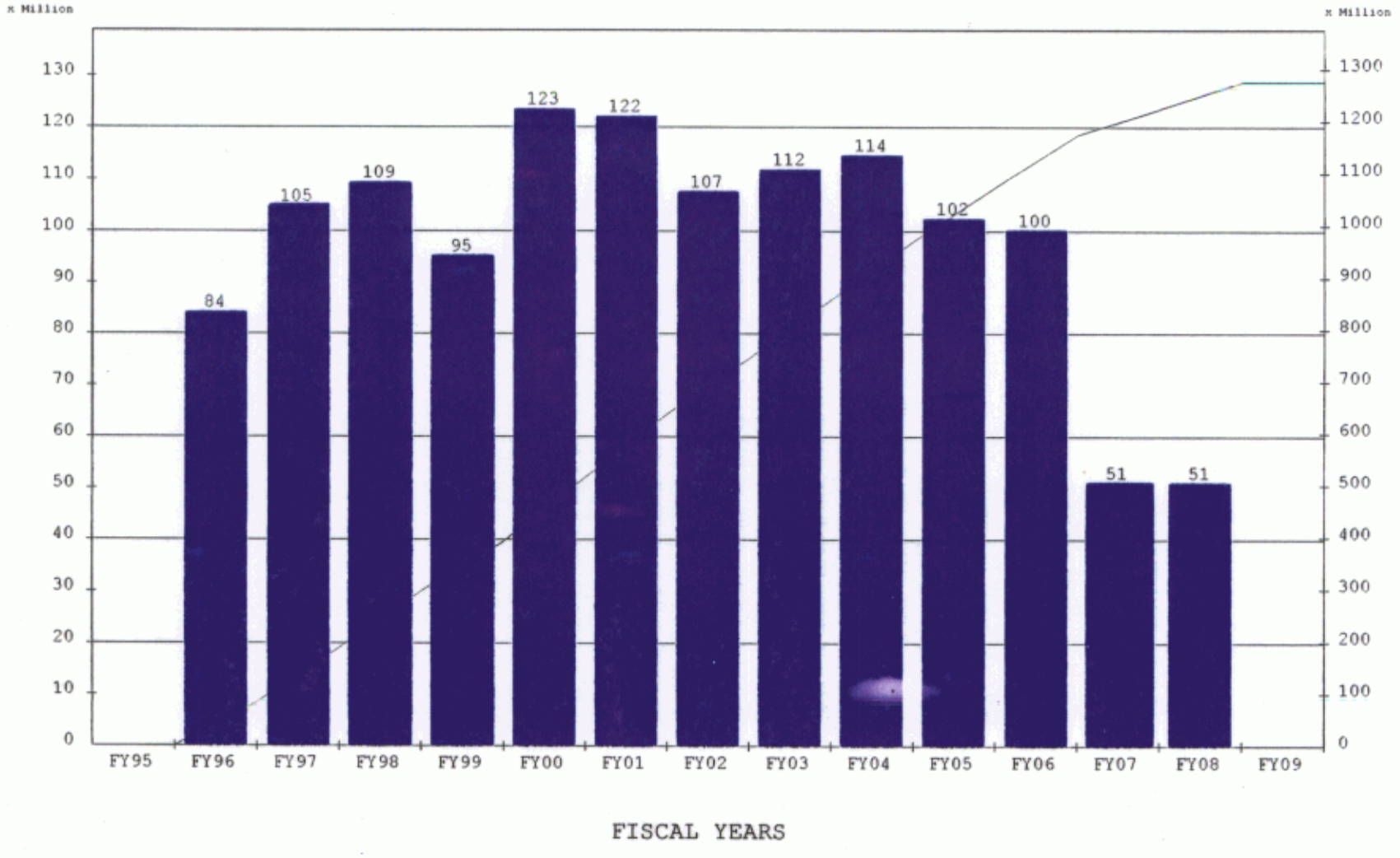
Date	Revision	Checked	Approved



Project Start	30DEC91	PROGRAM MGR FOR ROCKY MTN ARSENAL	Sheet 1 of 1
Project Finish	25APR38	CAPS/TREATMENT/LANDFILL ALTERNATIVE	
Data Date	30DEC91	FINAL DAA REMEDIATION SUMMARY COST HISTOGRAM	
Plot Date	12OCT95	FIGURE B.6.2 - 5	

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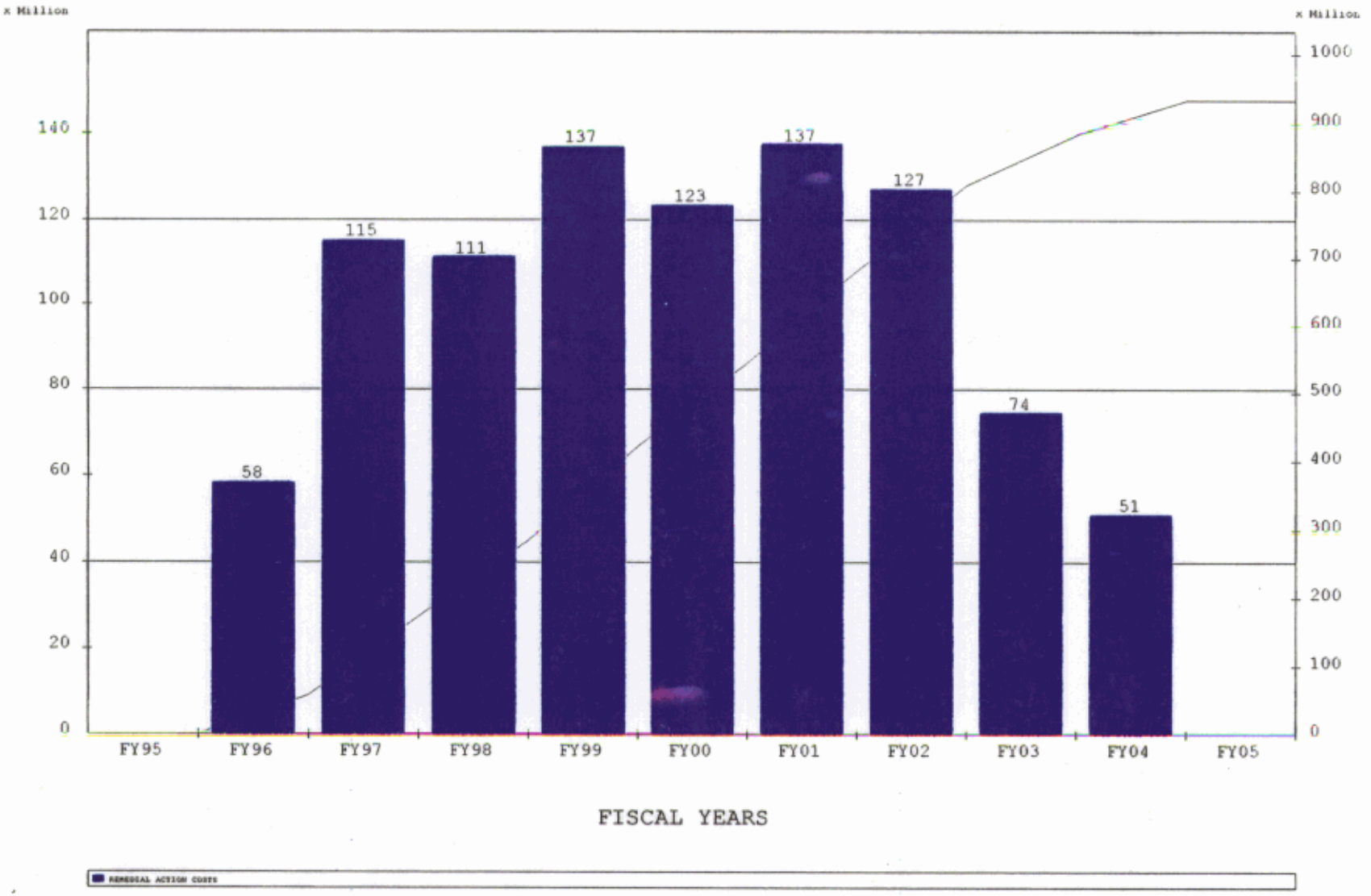
Date	Revision	Checked	Approved



Project Start	30DEC91	PROGRAM MGR FOR ROCKY MTN ARSENAL	Sheet 1 of 1
Project Finish	25APR38	CAPS/COVERS ALTERNATIVE	
Data Date	30DEC91	FINAL DAA REMEDIATION LEVELED SUMMARY COST HISTOGRAM	
Plot Date	11OCT95	FIGURE B.6.2 - 6	

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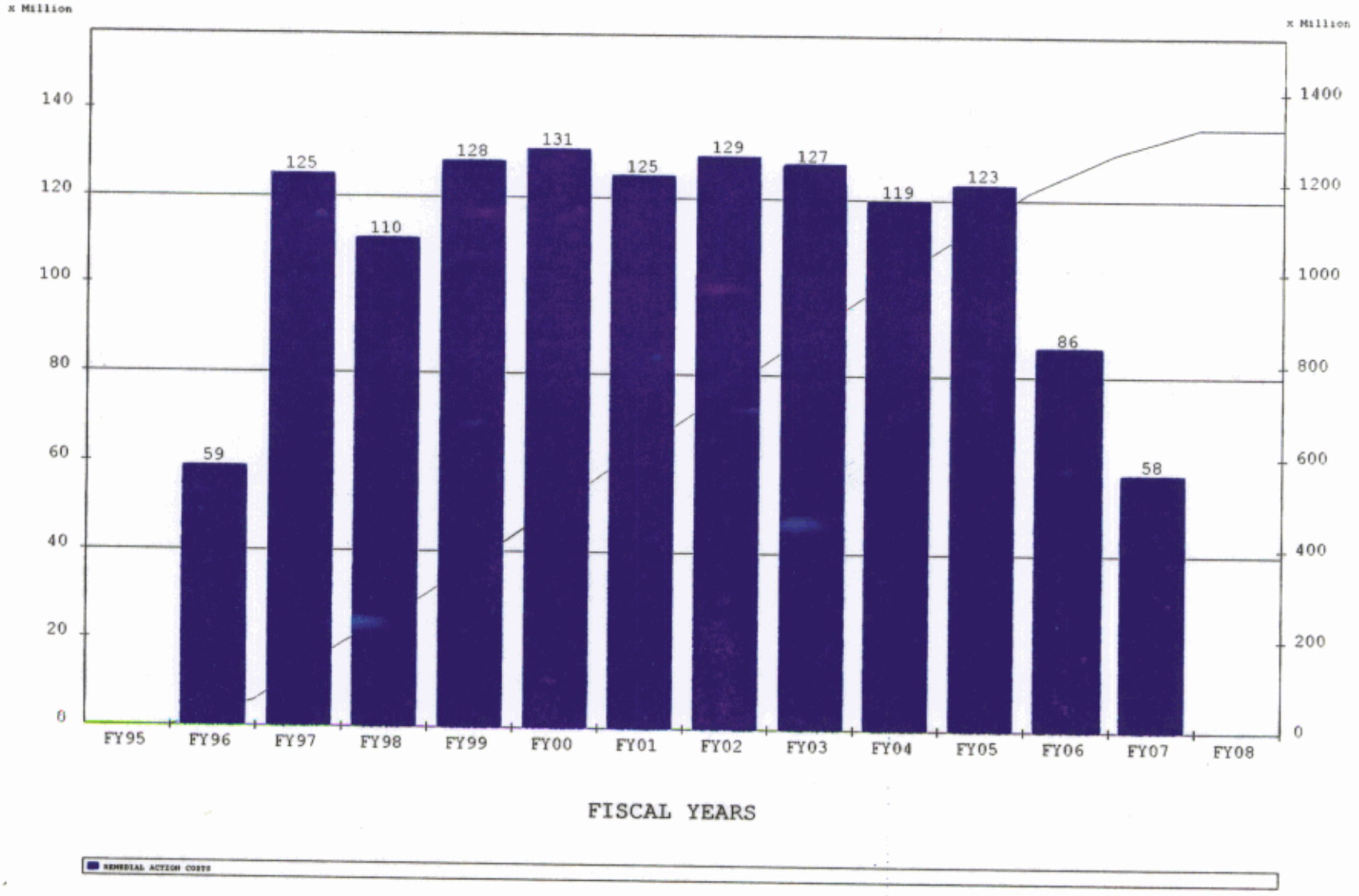
Date	Revision	Checked	Approved



Project Start	30DEC91	PROGRAM MGR FOR ROCKY MTN ARSENAL	Sheet 1 of 1
Project Finish	25APR38	LANDFILL/CAPS ALTERNATIVE	
Data Date	30DEC91	FINAL DAA REMEDIATION LEVELED SUMMARY COST HISTOGRAM	
Plot Date	11OCT95	FIGURE B.6.2 - 7	

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Date	Revision	Checked	Approved



Project Start	30DEC91
Project Finish	25APR38
Data Date	30DEC91
Plot Date	12OCT95

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PROGRAM MGR FOR ROCKY MTN ARSENAL
LANDFILL ALTERNATIVE
FINAL DAA REMEDIATION LEVELED SUMMARY COST HISTOGRAM
FIGURE B.6.2 - 8

Sheet 1 of 1

Date	Revision	Checked	Approved

WBS NO. 5.02
AGENT STRUCTURES DEMOLITION–AS

DEMOLITION VOLUME	600,054 BCY
TRANSPORTED VOLUME	187,430 BCY
CAUSTIC WASHED	9,372 BCY
LANDFILLED VOLUME	119,955 BCY

WBS NO. 5.01
SIGNIFICANT CONTAMINATED STRUCTURES DEMOLITION–SIGS

DEMOLITION VOLUME	224,548 BCY
TRANSPORTED VOLUME	68,040 BCY
LANDFILLED VOLUME	42,098 BCY

WBS NO. 5.03
OTHER CONTAMINATED STRUCTURES DEMOLITION–OS

DEMOLITION VOLUME	627,346 BCY
TRANSPORTED VOLUME	271,750 BCY
CONSOLIDATED VOLUME	159,256 BCY

(159,256 BCY)
(9,372 BCY)
(119,955 BCY)
(42,098 BCY)

WBS NO. 3.02
FORMER BASIN F–FBF

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	0		
CAP AREA	524,557 SY		
LOW PERM.	349,705 BCY	349,705 BCY	AREA 1, SEC.24
BORROW/BACKFILL	699,409 BCY	699,409 BCY	AREA 5, SEC.24
GRADEFILL	1,672,171 BCY	1,672,171 BCY	AREA 5, SEC.24
GRADEFILL	346,817 BCY	346,817 BCY	SURS–BIOTA SOILS
BIOTA BARRIER	174,852 BCY	174,852 BCY	OFF–POST
CONCRETE	0		

(349,705 BCY)
(174,852 BCY)

WBS NO. 3.10
BASIN F WASTEPILE–BFWP

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	600,000 BCY
AGENT	0
BIOTA	0
UXO	0
UXO DEBRIS	0

(600,000 BCY)

WBS NO. 3.11
SECONDARY BASINS–SECB

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	32,221 BCY		
BIOTA	0		
CAP AREA	522,582 SY		
LOW PERM.	0		
BORROW/BACKFILL	348,388 BCY	348,388 BCY	AREA 5, SEC.34
BACKFILL	32,221 BCY	32,221 BCY	AREA 5, SEC.34
BIOTA BARRIER	0		
CONCRETE	0		

(32,221 BCY)

WBS NO. 2.03
BORROW AREA 5, SEC. 34
SOIL TYPE: BORROW/GRADEFILL
TOTAL BORROW AVAILABLE:
8,889,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)
AS	20,056	8,868,944
FBF	2,371,580	6,497,364
BFWP	168,978	6,328,386
SECB	380,609	5,947,777
BASA	1,568,135	4,379,642
36LB	54,165	4,325,477
SURS	85,064	4,240,413
LAKS	32,500	4,207,913
BSED	15,715	4,192,198
SCL	104,942	4,087,256
DDA	51,516	4,035,740
CSEW	62,000	3,973,740

(380,609 BCY)
(168,978 BCY)
(2,371,580 BCY)
(1,568,135 BCY)
(20,056 BCY)

WBS NO. 3.21
SURFICIAL SOILS–SURS

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	85,064 BCY
AGENT	0
BIOTA	450,758 BCY
UXO	0
UXO DEBRIS	0

(85,064 BCY)
(85,064 BCY)
(103,941 BCY)
(346,817 BCY)

WBS NO. 3.14
LAKE SEDIMENTS–LAKS

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	19,228 BCY
AGENT	0
BIOTA	18,948 BCY
UXO	0
UXO DEBRIS	0

(32,500 BCY)
(18,948 BCY)
(19,228 BCY)

WBS NO. 3.17
BURIED SEDIMENTS–BSED

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	15,715 BCY
AGENT	0
BIOTA	0
UXO	0
UXO DEBRIS	0

(15,715 BCY)
(15,715 BCY)

WBS NO. 3.23
SAND CREEK LATERAL–SCL

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	14,687 BCY
AGENT	0
BIOTA	90,255 BCY
UXO	0
UXO DEBRIS	0

(104,942 BCY)
(14,687 BCY)
(90,255 BCY)

WBS NO. 3.24
DITCHES–DRAINAGE–DDA

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	0
AGENT	0
BIOTA	51,516 BCY
UXO	0
UXO DEBRIS	0

(51,516 BCY)
(51,516 BCY)

WBS NO. 3.16
SECTION 36 LIME BASINS–36LB

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	54,074 BCY
AGENT	91 BCY
BIOTA	0
UXO	0
UXO DEBRIS	0

(54,074 BCY)
(54,165 BCY)
(91 BCY)

WBS NO. 3.09
SECTION 36 BALANCE OF AREA–36BA

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	54,034 BCY		
AGENT	303 BCY		
BIOTA	144,163 BCY		
UXO	156 BCY		
UXO DEBRIS	77,820 BCY		
CAP AREA	851,489 SY		
LOW PERM.	0		
BORROW/BACKFILL	399,036 BCY	399,036 BCY	NTSY, AREA 6, SEC.31
BACKFILL	64,377 BCY	64,377 BCY	NTSY, AREA 6, SEC.31
BIOTA BARRIER	0		
CONCRETE	0		

(156 BCY)
(144,163 BCY)
(141,894 BCY)
(303 BCY)
(463,413 BCY)

WBS NO. 3.01
BASIN A–BASA

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
CONSOLIDATED SOIL VOL.	814,930 BCY		(1)
CAP AREA	666,204 SY		
LOW PERM.	0		
BORROW	888,272 BCY	888,272 BCY	AREA 5, SEC.34
GRADEFILL	627,379 BCY	627,379 BCY	LE
GRADEFILL	747,376 BCY	747,376 BCY	LF
GRADEFILL	679,863 BCY	679,863 BCY	AREA 5, SEC.34
BIOTA BARRIER	0		
CONCRETE	111,034 BCY	111,034 BCY	OFF–POST
DEMOLITION VOLUME	159,256 BCY		

(1) SANL, 36BA, LAKS, SURS, SCL, DDA, OS

(111,034 BCY)
(1,374,755 BCY)

WBS NO. 2.04
CAUSTIC AGENT TREATMENT FACILITY–CAUS

EXCEEDANCE TYPE	MATERIAL QUANTITY	SOURCE
AGENT SOIL	1,112 BCY	(1)
AGENT STRUCTURES	9,372 BCY	AS

(1) CSEW, SPCP, SPBA, 36BA, BUTR, MIP, 36LB, NPS, TXSY

(91 BCY)
(10,393 BCY)

WBS NO. 2.01
RCRA LANDFILL–LF

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
CAP AREA	171,511 SY		
EXCAVATED BORROW	1,095,977 BCY	1,095,977 BCY	LF EXCAVATION
LOW PERM.	405,160 BCY	405,160 BCY	AREA 1, SEC.24
SAND	148,967 BCY	148,967 BCY	OFF–POST
BIOTA BARRIER	51,236 BCY	51,236 BCY	OFF–POST
CAP STRUCTURAL FILL	217,984 BCY	217,984 BCY	LF EXCAVATION
DAILY COVER	130,617 BCY	130,617 BCY	LF EXCAVATION
HUMAN HEALTH/P.T.	795,537 BCY		(1)
AGENT	10,393 BCY		(2)
BIOTA SOIL	0		
UXO DEBRIS	228,830 BCY		(3)
DEMOLITION VOLUME	162,053 BCY		(4)
TOTAL	1,327,430 BCY		

(1) CSEW, SPCP, SPBA, SPDI, SANL, SECB, LAKS, BUTR, BSED, MIP, SURS, TXSY, SCL, NPS, CSV, 36BA, MUNT
(2) CSEW, SPCP, SPBA, 36BA, BUTR, MIP, NPS, AS
(3) SPBA, 36BA, MUNT, BUTR
(4) AS, SIGS

(405,160 BCY)
(51,236 BCY)
(148,967 BCY)

WBS NO. 2.02
ENHANCED RCRA LANDFILL–LE

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
CAP AREA	123,590 SY		
EXCAVATED BORROW	873,718 BCY	873,718 BCY	LE EXCAVATION
LOW PERM.	404,181 BCY	404,181 BCY	AREA 1, SEC.24
SAND	141,431 BCY	141,431 BCY	OFF–POST
BIOTA BARRIER	35,434 BCY	35,434 BCY	OFF–POST
CAP STRUCTURAL FILL	154,339 BCY	154,339 BCY	LE EXCAVATION
DAILY COVER	92,000 BCY	92,000 BCY	LE EXCAVATION
HUMAN HEALTH/P.T.	654,074 BCY		BFWP, 36LB
AGENT	91 BCY		36LB
BIOTA SOIL	0		
UXO DEBRIS	0		
TOTAL	746,165 BCY		

(404,181 BCY)
(35,434 BCY)
(141,431 BCY)

WBS NO. 3.03
CHEMICAL SEWERS–CSEW

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	61,537 BCY
AGENT	130 BCY
BIOTA	0
UXO	0
UXO DEBRIS	0

(61,537 BCY)
(52,000 BCY)
(130 BCY)

WBS NO. 3.13
SHELL TRENCHES–SHTR

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	0		
CAP AREA	32,370 SY		
LOW PERM.	21,580 BCY	21,580 BCY	NTSY, AREA 6, SEC.31
BORROW/BACKFILL	43,160 BCY	43,160 BCY	NTSY, AREA 6, SEC.31
GRADEFILL	0		
BIOTA BARRIER	10,790 BCY	10,790 BCY	OFF–POST
CONCRETE	0		

(10,790 BCY)
(21,580 BCY)
(43,160 BCY)

WBS NO. 3.07
COMPLEX TRENCHES–CXTR

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	0		
AGENT	0		
UXO	130 BCY		
UXO DEBRIS	0		
CAP AREA	388,732 SY		
LOW PERM.	259,155 BCY	259,155 BCY	NTSY, AREA 6, SEC.31
BORROW/BACKFILL	518,309 BCY	518,309 BCY	NTSY, AREA 6, SEC.31
GRADEFILL	1,556,621 BCY	1,556,621 BCY	NTSY, AREA 6, SEC.31
BIOTA BARRIER	0		
CONCRETE	64,789 BCY	64,789 BCY	OFF–POST

(130 BCY)
(64,789 BCY)
(259,155 BCY)
(2,074,930 BCY)

OFF–POST QUANTITIES

SITE	BIOTA BARRIER	CONCRETE	SAND
BASA	0	111,034 BCY	0
FBF	174,852 BCY	0	0
SPCP	76,443 BCY	0	0
CXTR	0	64,789 BCY	0
SHTR	10,790 BCY	0	0
LE	35,434 BCY	0	141,431 BCY
LF	51,236 BCY	0	148,967 BCY
TOTAL	348,755 BCY	175,823 BCY	290,398 BCY

WBS NO. 2.03
BORROW AREA 1, SEC. 24
SOIL TYPE: LOW–PERM
TOTAL BORROW AVAILABLE:
1,247,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)
FBF	349,705	897,295
LF	405,180	492,135
LE	404,181	87,954

(61 BCY)

WBS NO. 3.25
NORTH PLANTS–NPS

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	221 BCY		
AGENT	61 BCY		
BIOTA	0		
CAP AREA	156,564 SY		
LOW PERM.	0		
BORROW/BACKFILL	104,376 BCY	104,376 BCY	NTSY, AREA 5, SEC.31
BACKFILL	282 BCY	282 BCY	NTSY, AREA 6, SEC.31
BIOTA BARRIER	0		
CONCRETE	0		

(221 BCY)
(104,658 BCY)

WBS NO. 3.08
SANITARY LANDFILLS–SANL

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	13,790 BCY
NON–HUMAN HEALTH/P.T.	383,140 BCY
AGENT	0
BIOTA	22,967 BCY
UXO	0
UXO DERIS	0

(13,790 BCY)
(419,897 BCY)
(406,107 BCY)

WBS NO. 3.22
TOXIC STORAGE YARD–TXSY

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	2,689 BCY
NON–HUMAN HEALTH/P.T.	2,000 BCY
AGENT	220
BIOTA	0
UXO	0
UXO DEBRIS	0

(4,689 BCY)
(2,890 BCY)
(220 BCY)

WBS NO. 3.12
MUNITIONS TESTING–MUNT

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	0
AGENT	0
BIOTA	0
UXO	458 BCY
UXO DEBRIS	89,169 BCY

(89,169 BCY)
(458 BCY)

WBS NO. 3.15
BURIAL TRENCHES–BUTR

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	27,913 BCY
AGENT	12 BCY
BIOTA	0
UXO	549 BCY
UXO DEBRIS	56,814 BCY

(12 BCY)
(549 BCY)
(84,727 BCY)
(27,925 BCY)

WBS NO. 3.05
SOUTH PLANTS BALANCE OF AREAS–SPBA

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	127,505 BCY		
AGENT	160 BCY		
BIOTA	509,427 BCY	(375,816) BCY	TO SPCP
UXO	50 BCY		
UXO DEBRIS	5,027 BCY		
CAP AREA	1,832,285 SY		
LOW PERM.	0		
BORROW	1,161,680 BCY	1,161,680 BCY	NTSY, AREA 6, SEC.31
BACKFILL	127,505 BCY		SPBA–BIOTA SOILS
GRADEFILL	0		
BIOTA BARRIER	0		
CONCRETE	0		

(132,532 BCY)
(1,161,680 BCY)
(160 BCY)
(50 BCY)
(375,916 BCY)

WBS NO. 3.04
SOUTH PLANTS CENTRAL PROCESSING–SPCP

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	110,048 BCY		
AGENT	106 BCY		
CAP AREA	229,328 SY		
LOW PERM.	0		
BORROW/BACKFILL	110,048 BCY	110,048 BCY	SPBA–BIOTA SOILS
GRADEFILL	265,868 BCY	265,868 BCY	SPBA–BIOTA SOILS
GRADEFILL	595,894 BCY	595,894 BCY	NTSY, AREA 6, SEC.31
BIOTA BARRIER	76,443 BCY	76,443 BCY	OFF–POST
CONCRETE	0		

(110,048 BCY)
(595,894 BCY)
(106 BCY)
(76,443 BCY)

WBS NO. 3.06
SOUTH PLANTS DITCHES–SPDI

	MATERIAL QUANTITY	BORROW QUANTITY	SOURCE
HUMAN HEALTH/P.T.	33,364 BCY		
AGENT	0		
BIOTA	22,726 BCY		
UXO	0		
UXO DEBRIS	0		
BACKFILL	22,726 BCY	22,726 BCY	SPDI–BIOTA SOILS
BORROW/BACKFILL	10,638 BCY	10,638 BCY	NTSY, AREA 6, SEC.31

(33,364 BCY)
(10,638 BCY)

WBS NO. 3.26
CONTINGENT SOIL VOLUME–CSV

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	150,000 BCY

(150,000 BCY)
(150,000 BCY)

WBS NO. 3.18
BURIED M–1 PITS–M1P

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	25,711 BCY
AGENT	29 BCY
BIOTA	0
UXO	0
UXO DEBRIS	0

(29 BCY)
(25,740 BCY)

WBS NO. 3.20
HEX PITS–HEXP

EXCEEDANCE TYPE	VOLUME MATERIAL
HUMAN HEALTH/P.T.	3,300 BCY
AGENT	0
BIOTA	0
UXO	0
UXO DEBRIS	0

(3,300 BCY IF REQUIRED)

EXCAVATE UXO AND TRANSPORT OFF–POST

		SITE
UXO DEBRIS VOLUME	1,343 BCY	(1)

(1) SPBA, CXTR, 36BA, MUNT, BUTR

BEMA AREA

WBS NO. 2.03
BORROW AREA 4, SEC. 20
SOIL TYPE: LOW–PERM
TOTAL BORROW AVAILABLE:
4,999,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)

WBS NO. 2.03
BORROW AREA 3, SEC. 29
SOIL TYPE: LOW–PERM
TOTAL BORROW AVAILABLE:
5,454,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)

WBS NO. 2.03
NEW TOXIC STORAGE YARD
BORROW AREA 6, SEC. 31
SOIL TYPE: BORROW/GRADEFILL
TOTAL BORROW AVAILABLE:
5,980,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)
MTP	25,740	5,954,260
HEXP	0	5,954,260
SPBA	1,161,680	4,792,580
SPDI	565,894	4,196,686
SPCP	10,638	4,186,048
CSV	150,000	4,036,048
CXTR	2,074,930	1,961,118
SHTR	43,160	1,917,958
SANL	419,897	1,498,061
BUTR	27,925	1,470,136
NPS	104,658	1,365,478
36BA	463,413	902,065
TXSY	2,890	899,175

WBS NO. 2.03
NEW TOXIC STORAGE YARD
BORROW AREA 6, SEC. 31
SOIL TYPE: LOW–PERM
TOTAL BORROW AVAILABLE:
1,030,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)
SHTR	21,580	1,008,420
CXTR	258,155	749,265

WBS NO. 2.03
BORROW AREA 2, SEC. 25 & 36
SOIL TYPE: LOW–PERM
TOTAL BORROW AVAILABLE:
768,000 BCY

SITE	BORROW VOLUME(BCY)	REMAINING VOLUME(BCY)

(35,481 BCY, SOLIDIFICATION VOLUME)

LEGEND

- TO RCRA LANDFILL
- TO ENHANCED RCRA LANDFILL
- TO CAUSTIC WASH TREATMENT
- TO BASIN A CONSOLIDATION
- BORROW/GRADEFILL
- TO UXO TRANSPORT OFF–POST
- LOW–PERM BORROW
- BIOTA BARRIER AND CONCRETE
- BALD EAGLE MANAGEMENT AREA BOUNDARY
- STRUCTURES DEMOLITION
- CAPPED AREAS
- EXCAVATION AREAS
- BORROW AREAS
- OFF–POST QUANTITIES

ROCKY MOUNTAIN ARSENAL

PROPOSED
RMA CONCEPTUAL AGREEMENT

MASS BALANCE
LOGIC–FLOW DIAGRAM

Prepared by: Foster Wheeler Environmental Corporation

FILE: MASS.DWG | DATE: 10/5/95