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RECYCLING METHODOLOGY IMPLEMENTATION DOCUMENT - (SEE G-000-1005.112 FOR FURTHER RECYCLING DOCUMENTATION)

09/27/96

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IMPLEM

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September 27, 1996

Fernald Environmental Management Project
Letter No. C:OOTP:96-0057

Mr. Jack R. Craig, Director
Department of Energy
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705

Dear Mr. Craig:

CONTRACT DE-AC24-92OR21972, RECYCLING METHODOLOGY IMPLEMENTATION DOCUMENT

Reference: FY96-2 POC 2.a

The purpose of this letter is to document the completion of the subject milestone.

Attached, for your review, is the document "Approach, Assumptions, and Data for the Application of the Fernald Metals Disposition Methodology to the Plant 4 Category A/Accessible Metals." This document is submitted to satisfy FDF FY96-2 POC 2.a, which requires FDF to submit a document describing the application of the Fernald Metals Disposition Methodology to evaluate 10% of the structural steel from Plant 4, with corresponding Disposition Summary Matrix tables, by September 30, 1996.

Sincerely,

John Bradburne for
President

JCB:RWL:tmw
Attachement

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FY96-076
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APPROACH, ASSUMPTIONS, AND DATA FOR THE APPLICATION OF THE "FERNALD METALS DISPOSITION METHODOLOGY" TO THE PLANT 4 CATEGORY A/ACCESSIBLE METALS

September 1996

Prepared by:

Fluor Daniel Fernald
in cooperation with Oak Ridge National Laboratory

Prepared for:
U.S. Department of Energy
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ACRONYMS

Operable Unit 1	OU1
Operable Unit 2	OU2
Operable Unit 3	OU3
Operable Unit 5	OU5
Applicable or Relevant and Appropriate Standards, Limitations, Criteria, and Requirements	ARAR's
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Title 42)	CERCLA
Department of Energy-Fernald	DOE-FN
Department of Energy-Environmental Management	DOE-EM
Fluor Daniel Fernald	FDF
Fernald Environmental Management Project	FEMP
Large White Metal Box	LWMB
Material Release Facility	MRF
Nevada Test Site	NTS
On-Site Disposal Facility	OSDF
Receiving and Incoming Materials Inspection Area	RIMIA
Record of Decision (CERCLA)	ROD
Waste Acceptance Criteria	WAC

APPROACH, ASSUMPTIONS, AND DATA FOR THE APPLICATION OF THE "FERNALD METALS DISPOSITION METHODOLOGY" TO THE PLANT 4 CATEGORY A/ACCESSIBLE METALS

I. Scope

This document presents the detailed approach, assumptions, and data for the analysis phase of the evaluation of seven disposition alternatives for the Category A - Accessible Metals (i.e. structural steel) from the demolition of Building 4A/Plant 4. Disposition of the remainder of materials from Plant 4 (transite, concrete, lead, process equipment, light gauge metals, etc.) was not evaluated, although the Methodology can be conveniently modified to address other material categories in the future.

Two scenarios were evaluated, with the primary difference being the quantity of steel considered. In the first scenario, only 10% of the Plant. 4 steel was considered (approximately 150 tons). A Disposition Summary Matrix (Table A), which consolidates all the pertinent data and other information for evaluation of the 150 tons scenario, is attached.

As part of this evaluation, a Sensitivity Analysis was performed in which the primary parameter (the amount of steel considered) was changed from 150 tons (10% of Plant 4 structural steel) to 15,200 tons (100% of OU3 structural steel) and the analysis was repeated. In light of regulator and stakeholder input, the 15,200 tons scenario appears to have much greater value in addressing the recycling vs. disposal issue for structural steel, at Fernald and throughout the DOE weapons complex. A Disposition Summary Matrix (Table B) for the 15,200 tons scenario is also attached.

The information presented in the Matrix tables will be used as the focal point for a dialogue involving DOE, Fluor Daniel Fernald (FDF), the regulators, and other stakeholder groups to discuss the pros and cons of the various disposition alternatives. Input received will likely result in changes to some of the entries on the tables, to more accurately reflect stakeholder views and preferences. This dialogue will in turn lead into the decision phase of the analysis, which is described in greater detail in Section IX.

II. Background

The basis for this evaluation is the "Decision Methodology for Fernald Scrap Metal Disposition Alternatives" (also called the "Fernald Metals Disposition Methodology" or simply the "Methodology"). The DRAFT Methodology was presented to the regulators and other stakeholders at a public meeting on June 11, 1996, and comments were requested by July 26, 1996. After all comments received were evaluated, it was determined that no changes to the Methodology text were required. Therefore, the Methodology was essentially issued as an approved document on June 11, 1996.

The Methodology was developed to help decision makers compare and select among competing disposition alternatives for OU3 radioactive scrap steel. The performance measures which form the basis of this analysis consider both quantitative and qualitative factors, including direct costs and benefits, socio-economic issues, and environmental, safety, and health impacts.

The Methodology was designed to be a flexible, "living" document. Although it will be applied only to structural steel for this initial test case, the Methodology may be a valuable tool for evaluating disposition alternatives for a variety of other materials in the future, such as concrete, transite, lead, copper, or light gauge metal.

For this application of the Methodology, seven disposition alternatives for structural steel were evaluated based on nine performance measures. The disposition alternatives are described in Section V, and the performance measures are described in Section VI.

III. Data Sources

In evaluating scrap metal disposition alternatives, the Methodology considers both qualitative and quantitative information. Several of the performance measures used in this study, although important in the evaluation of competing disposition alternatives, are not conveniently expressed in numerical terms. For these qualitative criteria, information sources include DOE policy documents, comments received from regulators and other stakeholders at public meetings or through the CERCLA process, published reports, and discussions with industry experts.

Quantitative performance measures are expressed numerically in terms of money, time, risk, weight, volume, or some other standard unit of measure. The major quantitative data sources used for this analysis include the following:

OU3 RI/FS	FEMP OU3 Remedial Investigation and Feasibility Study Report, February 1996.
Warren 1995	Stephen Warren et al. Cost Model for DOE Radioactively Contaminated Carbon Steel Recycling.
Chen 1995	S.Y. Chen et al., "Transportation Risk Assessment," Recycle Policy Workshop, September 26-27, 1995, Salt Lake City, UT.
Cohen 1995	S. Cohen & Associates, Analysis of the Potential Recycling of Department of Energy Radioactive Scrap Metal, August 14, 1995, Washington, DC.
Means 1994	Means Site Work and Landscape Cost Data. 1994 Edition.
MSE 1995	MSE Inc./Western Environmental Technology Office, Feasibility Analysis of Recycling Radioactive Scrap Steel, Rev. B, September 11, 1995, Butte, MT.
Alaron	Alaron Corporation. Final Report for the FERMCO Metal Recycling Treatability Study, January 1996.
GeoSyntec	GeoSyntec Consultants, Impacted Materials Placement Plan OSDF, March 1996.
ORNL 1995	Preliminary Analysis of Recycle of Metal from Building K-31 at the Oak Ridge Site. Oak Ridge National Laboratory. 1995.
Simek 1995	Mary Ann Simek et al. "Limiting Concentrations and Risk Evaluation," Recycle Policy Workshop, September 26-27, 1995, Salt Lake City, UT.
WM PEIS	Waste Management Programmatic Environmental Impact Statement.

IV. Key Data and Assumptions

Presented below are the key data and assumptions which form the basis for this study. Other assumptions relating to specific disposition alternatives are included with the descriptions of the alternatives in Section V.

- Total On-Site Disposal Facility (OSDF) Volume = 2,500,000 cu. yd. (bank)

a.	OU2 material	=	450,000	18% of total
b.	OU3 material	=	300,000	12%
c.	OU5 material	=	1,750,000	70%
	Total		2,500,000 cu. yd.	100%

NOTE: The OU3 total of 300,000 bank cu. yd. remains basically unchanged whether or not the structural steel is included, since 150 tons equates to only about 23 bank cu. yd. and 15,200 tons is only about 2,300 bank cu. yd.

- For secondary waste management for both the vendor-facility unrestricted release and the metal-melt alternatives, the vendor performs packaging of secondary wastes. The secondary wastes are then transported from the vendor facility back to Fernald prior to being shipped to Nevada Test Site (NTS) for disposal. For the on-site unrestricted release alternative, the secondary wastes will be packaged on site and then transported to NTS for disposal.

- "Bank" volume is essentially equal to "unbulked" volume.

- A bulking factor of 16.7 is used for evaluating containerized transportation or disposition of the structural steel. The density of the structural steel is assumed to be 490 lbs per bank cu.ft.

- Cost estimates include only those costs directly incurred by DOE-FN (e.g., long-term monitoring and maintenance costs for incurred by NTS are not included).

- Cost estimates do not include contingency.

- Scrap steel from the FEMP is currently sold to a local broker for $0.02 per pound. The value of 150 tons is approximately $6,000 and the value of 15,200 tons is approximately $608,000.

V. Alternatives to be Evaluated

Seven material disposition alternatives will be evaluated for this initial application of the Methodology. These are described in sections V.1-V.7. All of the alternatives considered will fully comply with ARARs and are implementable (i.e., are technically and administratively feasible and rely on available services and materials).

NOTE: The Methodology is designed to accommodate emerging technologies and changes to key parameters over time; the Disposition Summary Matrix tables may be updated periodically to include new alternatives and new information.

V.1 On-Site Disposal Facility (OSDF)

Dispose of the structural steel in the FEMP permanent on-site disposal facility (OSDF) along with wastes generated by OU2 and OU5. This alternative consists of the following steps:

- Purchase containers and prepare for loading steel.
- Load steel into containers.
- Transport containerized steel to OSDF.
- Place steel in OSDF.
- Transport empty containers back to material staging area and perform container maintenance activities in preparation for loading additional steel.
- Size-reduce and dispose of unusable containers in OSF.

The key assumptions for this alternative are as follows:

- The OSDF will be designed and constructed in accordance with the relevant requirements of the Resource Conservation and Recovery Act and the Uranium Mill Tailings Remediation Control Act. As described in the OU2 ROD, the facility will feature a multi-layer capping system, including a vegetative soil layer, a filter layer, a biotic barrier, a drainage layer, and an infiltration barrier. The disposal facility will also feature a multi-layer liner that will include a leachate collection system, primary and secondary liners separated by a leak detection system, and a low-permeability compacted clay layer. The layers of both the cap and liner will be separated by geotextile fabrics and high-density polyethylene and bentonite composites for added protection. The disposal facility will prevent contaminant migration to the air and surface water and is modeled to protect groundwater for a 200 to 1,000 year performance period.
- This alternative also includes the imposition of administrative controls through real estate deed restrictions and access controls, and incorporation of post-remediation activities that include long-term monitoring and maintenance of the OSDF and operation of a groundwater monitoring network to evaluate the performance of the OSDF.
- Steel beams will be placed in the OSDF per the "Impacted Materials Placement Plan" as follows:

  > Beams will be spread or placed into a lift no higher than 18 inches and will be delivered to the OSDF by the truckload and dumped in loose lifts (en masse). Initial compaction of the beams shall be accomplished with a bulldozer as the beams are laterally spread. Soil will then be spread over the beams to bring the layer thickness to approximately 21 in. Final compaction shall be accomplished by four passes of a self-propelled, static foot-pad compactor (e.g., Caterpillar 815C). Any soft spots indicated by tire ruts more than ½ in. or excessive deflection under a rolling vehicle which cannot be stabilized with further compaction shall be cause for additional treatment, including removal, replacement, and recompaction of the soil material, and, if needed, filling the soft areas with grout or other material.

- The steel meets the OSDF WAC.
- The OSDF will be shut down (i.e., will not accept waste) for an average of three months each year because of frost conditions.
- Containers for transporting steel to OSDF will be reused 25 times.
- Steel from the Plant 4 demolition will stay in interim storage for approximately 2 years until the OSDF is engineered, constructed, and begins accepting the metal.
- Structural steel material placed into the OSDF will be calculated as bank (unbulked) volumes, since it will not be containerized.
- The placement cost for structural steel is 11.9 times that for soil ($1.23/bank cu.ft. for soil and $14.63/bank cu.ft. for steel).
- The OU3 steel (15,200 tons or 62,000 bank cu.ft.) comprises about 0.09% of the total OSDF volume.

V.2 Off-site Disposal at Nevada Test Site (NTS)

Package and transport structural steel to the DOE Nevada Test Site (NTS) low level waste (LLW) repository and dispose (bury). This alternative consists of the following steps:

- Purchase large white metal box (LWMB) containers and prepare for packaging.
- Package containers with steel. (Any additional cost which may be required for size reduction of steel to facilitate more efficient packaging was not estimated.)
- Stage containers prior to shipment.
- Transport to NTS by truck in LWMB containers.
- Dispose (bury) LWMB containers at NTS.

The key assumptions for this alternative are as follows:

- The metals all meet the NTS WAC, therefore no treatment is required.
- Metal will be shipped to the NTS by truck in top-loading large white metal boxes/LWMB (approximate volume of LWMB containers is 1,280 cu.ft.). The containers and their contents are buried at NTS.
- Schedule assumptions: continuous operation (one shift, 40 hours per week for duration of activity). Some interim storage of steel is required, although this time and associated cost have not been quantified. Shipment schedule may be limited by availability of steel per OU3 facilities demolition schedule and by availability of LWMB containers.

V.3 Off-Site Disposal at a Commercial Disposal Facility (Envirocare)

Package and transport structural steel to an off-site commercial LLW disposal facility (Envirocare in Utah) and bury. This alternative consists of the following steps:

- Lease/purchase gondola rail cars and prepare for loading.
- Load containers with steel and transport to gondola cars.
- Remove steel from containers and place steel in gondola cars.
- Transport to Envirocare (Utah) by rail for disposal .
- Dispose of gondola car contents.
- Return empty gondola cars to FEMP by rail.
- Maintain gondola cars to prepare for future shipments.

The key assumptions for this alternative are as follows:

- OU3 steel will be packaged in combination with OU1 dried pit material in gondola cars and shipped by train from the FEMP to Envirocare (Utah). Contents will be dumped for unbulked burial at Envirocare. Empty gondola cars will be shipped via rail from Envirocare back to the FEMP.
- A burial rate of $6.39 per ft3 of combined steel/dried OU1 pit waste is assumed for Envirocare.
- The metals all meet the commercial disposal facility WAC, therefore no waste treatment is needed.
- Schedule assumptions: continuous operation (one shift, 40 hours per week for duration of activity). Some interim storage of steel is required, although this time and associated cost have not been quantified. Shipment schedule limited by OU1 schedule and OU3 facilities demolition schedule.
- An exemption can be obtained from DOE Order 5820.2A to allow use of a commercial disposal facility. (The cost to obtain this exemption was not quantified.)

V.4 On-Site Decontamination and Unrestricted Release (FEMP MRF)

Decontaminate steel at FEMP Material Release Facility (MRF). Structural steel is released from the FEMP radiologically controlled area, with no restrictions on end use, after documenting that residual radioactivity meets the guidelines of DOE Order 5400.5. This alternative consists of the following steps:

- Load steel onto trailers and transport to the MRF.
- Unload steel and decontaminate at MRF by abrasive blasting.

- Survey steel for free-release.
- Load steel onto flatbed trailers and move to clean side (RIMIA).
- Dispose of secondary waste at NTS.
- Sell cleaned steel as scrap.

The key assumptions for this alternative are as follows:

- The decontamination method includes removal of the radionuclides and other contaminants from the surface of the metal using existing grit blaster (assume 25% rework rate).
- Material handling, packaging, decontamination, radiological monitoring, and other activities for this disposition alternative are performed by FERMCO personnel.
- Schedule assumptions: continuous operation (one shift, 40 hours per week for duration of activity). Some interim storage of steel is required, although this time and associated cost have not been quantified. Limiting factors are production rate for decontamination equipment, FERMCO labor schedules, and free-release survey rates.
- Market price for product: steel reclamation market value is assumed to be $0.02/lb.

NOTE: The FEMP MRF is currently located in Building 78 (New D&D). Since this building is scheduled to be demolished in 1998, the location of the MRF will change. However, since the systems and equipment that comprise the MRF are mobile or portable, reestablishing the MRF elsewhere in OU3 should be easily accomplished. Although the cost associated with reestablishing the MRF has not been quantified, it is expected to be insignificant in terms of this analysis.

V.5 Vendor Facility Decontamination and Unrestricted Release (Vendor MRF)

Containerize and ship structural steel from the FEMP to a commercial decontamination facility, where the material is decontaminated, surveyed, and documented to meet DOE Order 5400.5 residual radioactivity guidelines. The material is then sold as scrap with no restrictions on end use. This alternative consists of the following steps:

- Purchase containers and prepare for packaging.
- Package steel into containers.
- Stage containers prior to shipping.
- Transport to vendor facility.
- Decontaminate steel with automated abrasive blaster/descaler.
- Survey steel for free-release.
- Sell steel as scrap.

- Return containers and secondary waste to FEMP.
- Dispose secondary waste at NTS.

The key assumptions for this alternative are as follows:

- The decontamination method includes removal of the radionuclides and other contaminants from the surface of the metal using an automated, continuous flow abrasive blaster/descaler.
- Structural steel will be shipped to the vendor facility by truck in roll-offs.
- Lessons learned from the Plant 7/Alaron steel recycling project will result in a success rate of 90% of steel meeting free-release criteria after first pass through descaler.
- Schedule assumptions: continuous operation. Some interim storage of steel is required, although this time and associated cost have not been quantified. Limiting factor is vendor production rate.
- Market price for product: Steel reclamation market value is assumed to be $0.02/lb.

V.6 Melt of Metal and Fabrication of Restricted Use Products (Recycle 2000)

Transport the structural steel from the FEMP to an off-site commercial facility, where it is melted and fabricated into B-25-type containers for DOE use. The containers are then returned to FEMP. Because the processing facility will not commingle the scrap metal from different generating sites, the secondary waste remains site-specific and is disposed of at the FEMP's normal disposal site (NTS). All packaging and transportation is consistent with current transportation and disposal practices. This alternative is consistent with the DOE's Recycle 2000 Concept -- processing radioactively contaminated carbon steel into disposal containers for one-time use for the disposal of DOE-EM Program generated wastes.

This alternative consists of the following steps:

- Purchase containers and prepare for packaging.
- Package containers with steel.
- Stage containers prior to transport.
- Transport to the metal-melt facility.
- Melt the steel and fabricate containers. This consists of four steps: size-reducing the steel to fit the furnace; melting the steel to form billets; rolling the billets to sheet; and fabricating new disposal containers.
- Transport fabricated containers and secondary waste to FEMP.
- Dispose (bury) secondary waste at NTS.

The following are the key assumptions made for the structural steel metal-melt alternative:

- The structural steel will be shipped to a commercial metal-melt facility by truck in large top-loading containers (LWMB).
- The secondary wastes generated as a result of the metal-melting processes will be returned to the FEMP and then dispositioned at NTS.
- The cost of new B-25-type containers is $584.85 each.
- Schedule assumptions: continuous operation. Limiting factor is material availability per OU3 facilities demolition schedule.

V.7 Vendor-operated FEMP MRF (Privatized FEMP MRF)

Establish a subcontract with a private supplier of decontamination services to operate the FEMP Material Release Facility (MRF). Decontaminate steel at FEMP Material Release Facility (MRF) using equipment supplied by vendor. Structural steel is released from the FEMP radiologically controlled area, with no restrictions on end use, after documenting that residual radioactivity meets the guidelines of DOE Order 5400.5. This alternative consists of the following steps:

- Load steel onto trailers and transport to the MRF.
- Decontaminate steel at MRF by abrasive blasting (automated, continuous flow steel descaler).
- Survey steel for free-release.
- Load steel onto flatbed trailers and move to clean side (RIMIA).
- Dispose of secondary waste at NTS.
- Sell cleaned steel as scrap.

The key assumptions for this alternative are as follows:

- The vendor leases the FEMP MRF.
- The subcontract is firm, fixed price per pound, assuming an annual feed rate of 1,000 tons per year of "acceptable" steel. The price per pound includes the cost of equipment, operating supplies, and FERMCO labor.
- The vendor retains ownership of (and liability for) the automated, continuous flow descaler after the project is completed, and returns the leased space to "as found" conditions.
- The decontamination method includes removal of the radionuclides and other contaminants from the surface of the metal using equipment supplied by vendor, but operated by FERMCO labor force.
- Material handling, packaging, decontamination, radiological monitoring, and other activities for this disposition alternative are performed by FERMCO personnel.

- Schedule assumptions: continuous operation (one shift, 40 hours per week for duration of activity). Limiting factor is production rate for decontamination equipment.

- Market price for product: steel reclamation market value is assumed to be $0.02/lb. FEMP retains 100% of scrap sale proceeds.

VI. Performance Measures to be Evaluated

For each of the seven alternatives, the following nine performance measures will be evaluated. (Regulatory compliance is not included as a performance measure because it is assumed that all of the alternatives will fully comply with ARARs. Therefore, regulatory compliance will not differentiate among the alternatives, and does not need to be included in this comparative evaluation.)

VI.1 Net Present Value

This performance measure is the net present value of the direct financial costs and benefits that are directly paid or received by the Department of Energy.

The objective of the Present Worth Analysis (PW) is to use a method of economic evaluation that compares the sums of discounted dollar costs or benefits of capital investments, replacements, operations, maintenance, and dismantlement of two or more systems or operations over their anticipated useful life span. The analysis technique identifies the system or operation considered to be the lowest-cost alternative for satisfying a particular need. The PW analysis complies with the requirements described by the Office of Management and Budget (OMB) Circular No. A-94, the National Institute of Standards and Technology (NIST) Handbook 135, and the United States Environmental Protection Agency (USEPA) OSWER Directive 9355.3-01.

The PW analysis approach was applied in the analysis to evaluate the material disposition alternatives. The PW techniques sum all the time-equivalent dollar costs attributable to the economic alternatives. The positive cash flows (salvage value) are treated as negative costs. These costs are discounted to the base year and subtracted from the total.

All cash flow amounts are stated in present value constant dollars; hence, all dollars will have the same purchasing power. Constant dollars indicate what the same good or service would cost at different times if no inflation or deflation exists to change the purchasing power of the dollar. A straightforward means was used to express cash flows in constant dollars by establishing a reference (base) year for which the value of the dollar is set.

The constant dollar cash flows are adjusted for opportunity costs associated with their different times of occurrence. The adjustment for opportunity cost, called "discounting of cash flows," allows converting the constant dollar cash flows occurring at different times to a time-equivalent lump-sum amount evaluated as of the beginning of the base year. This is accomplished by using an interest rate or "real discount rate" which reflects the opportunity cost apart from any change in the purchasing power of the dollar. Real discount rates do not include the rate of inflation or deflation since the cash flows are expressed in constant dollars. The real discount rate was obtained from appendix C of the OMB Circular No. A-94, revised February 1996. The discount rate identified in the circular for a study period of thirty years and beyond is 3%. This discount rate was applied to calculate the net present value (NPV). The NPVs of each of the economic alternatives were compared in order to identify the least-cost option.

The cost analysis includes all of the financial costs and benefits of the alternatives. These costs include both the direct budget allocations to the project and incremental costs to other activities such as permitting, monitoring, or other compliance costs. Costs cover the full scope of the project, including handling, packaging, storage, transportation, secondary waste management, decontamination, disposal, etc. Likewise, financial benefits include both the direct proceeds to the project through actions such as sale of recycled products, and benefits to other activities through reduced costs or improved schedules. Hidden costs in overhead accounts are extracted and assigned to the alternatives, as appropriate. In addition, future liabilities are included in the estimate.

For the Life-cycle Cost calculations, all costs are considered, including long-term costs and costs which are common to all alternatives. For example, the Life-cycle Cost for a recycle/reuse alternative will include not only the cost to perform recycling and secondary waste management activities, but also the total OSDF cost (minus the cost for placement of the recycled material), since the OSDF cost will be incurred whether or not recycling is implemented. The Life-cycle Cost gives more of a "Big Picture" look, indicating the relative impacts of the various disposition alternatives on the overall, long-term FEMP remediation scenario.

VI.2 Total Undiscounted Cost

This performance measure is the summation of all direct financial costs and benefits that are directly paid or received by the Department of Energy. Undiscounted total costs will be calculated through use of a zero discount rate in the analytical spreadsheet.

The Total Undiscounted Cost will be calculated and expressed in terms of Unit Cost, Incremental Cost, and Life-cycle Cost. For the Unit Cost calculation, costs which are common to all alternatives will not be included, because they will not affect the relative comparison of alternatives. Thus, the cost associated with implosion of Plant 4 will not be included since this cost was incurred regardless of the disposition alternative. The Unit Cost indicates the relative short-term costs (and benefits) of specific activities required solely to implement a specific alternative, expressed in terms of dollars per bank cubic feet.

The Incremental Cost of each alternative is similar to the Unit Cost, except Incremental Cost is expressed in terms of total dollars instead of dollars per bank cubic foot.

The Life-cycle Cost calculation for Total Undiscounted Cost will include the same cost elements as the NPV Life-cycle Cost calculation. However, for the Total Undiscounted Life-cycle Cost, a discount rate of zero will be used to express the cost of each alternative in terms of 1996 constant dollars.

VI.3 Schedule Impacts

Schedule impacts will be expressed as the amount of time, measured in months, required to complete each alternative, and also as the amount of time that implementing an alternative will reduce or lengthen the FEMP remediation schedule (i.e. the "10-year Plan"). Under limited funding scenarios, implementation of one alternative may prevent or delay progress in other areas of overall FEMP remediation. This performance measure incorporates factors such as the projected demolition schedules for OU3 structures, OSDF material placement schedules, availability of recycling services, and waste shipment and disposal schedules.

VI.4 Local Economic Impacts

This performance measure captures those economic factors that lie outside of the direct cost analysis performed for measures one and two. Some of these economic factors include local economic impacts on the surrounding community, employment effects, property values, and the impact of the recycled material on the larger market for scrap metal or contaminated scrap metal.

As money flows into and out of the economy of a region, an economic stimulus may arise over and above the direct amount of spending on the alternative. The economic impact will vary over time as the spending schedule changes. Each alternative will also have direct employment impacts: an increase or decrease in jobs will result with each alternative. The type of jobs created or lost will vary based on the skills required, employer, and the type of work involved. Direct manpower requirements and timing will flow from the financial analysis. Union involvement can be estimated based on the resultant job structure. Based on the effect of the alternative on economic impact and public acceptance, property values for the community may improve or decline. Finally, if an alternative includes the creation of a saleable product, then the impacts of that product on the market should be examined.

Because of the relatively small amount of metal considered in this study (even the 15,200 tons scenario would add only a small fraction to the total amount of steel recycled in the US each year), it is assumed that there will be no substantial impacts on the national or regional markets that the recycled material would enter. However, the impact on local markets would be more substantial, especially for the 15,200 tons scenario. For example, through an existing subcontract with a local scrap metal broker, approximately 220 tons of steel free-released through the FEMP MRF were sold over a period of several months. Free-release and sale of the 15,200 tons is projected to provide several years of business for local brokers/recyclers, which is considered to be a substantial impact.

To make it possible to direct the limited time and budget for this study to analysis of those performance measures that will likely play the larger roles in the decision-making, only a simple evaluation of local economic impacts was performed. This evaluation will be expressed qualitatively to indicate the relative projected impact of each alternative on the local economy, assigning a "value" of 1, 2, 3, 4, or 5, with "1" corresponding to the least benefit to the local economy and "5" corresponding to the greatest benefit.

VI.5 Institutional Preference

This performance measure addresses how consistent each alternative is with DOE and EPA policies. These can include such policies as preferences for recycle, resource conservation mandates, privatization, or obligations to utilize final rather than interim solutions to clean-up. This performance measure can also address the views of other federal, state, and local institutions such as regulatory agencies.

With privatization being considered for many DOE functions, it is critical to understand how private firms would play a part and how best to involve them. The performance measure will be the amounts and kinds of involvement, from traditional management and operations contracting to more entrepreneurial arrangements. This will be analyzed based on past experience with similar ventures, as well as informal discussions with private firms and experts familiar with private company activities.

The analysis of institutional issues will be qualitative, and will rely largely on information provided by DOE officials, DOE program documentation, and formal comments submitted by USEPA and OEPA through the CERCLA process. The result of the analysis of this performance measure will be a simple qualitative assessment of how well the alternative adheres to these institutional preferences, assigning a "value" of 1, 2, 3, 4, or 5, with "1" indicating the lowest institutional preference and "5" indicating the highest institutional preference.

VI.6 Local Social Preference

This performance measure addresses the relative social preference for each alternative in the local area, the larger region, or nationwide. Although national and regional social preferences were considered in the analysis, the preferences of the local society received the most attention and had the most impact on the "value" assigned to each competing alternative.

On the national level, key social issues are public preferences concerning interstate shipment of radioactive waste and disposal of waste generated out-of-state. In the local area and region, some of the key social issues include public acceptance, impact on community services, and the legacy left for the community after the alternative is completed. Again, the preferences of the local society greatly outweigh those of the regional or national society for this analysis.

As with local economic and institutional preferences, the evaluation of social impacts is difficult to quantify. For this performance measure, public comments received through the CERCLA process, community outreach activities, public meetings, and other public input will be used to formulate a qualitative assessment of the social impacts of the alternatives. "Values" of 1, 2, 3, 4, or 5 will be assigned to the alternatives, with "1" indicating the least preferable and "5" indicating the most preferable.

VI.7 Protectiveness of the Environment

The environmental protectiveness performance measure addresses potential adverse (or beneficial) impacts on the environment, including physical degradation of surrounding or affected ecological systems and harmful effects on plants and animals . This performance measure is used to assess potential widespread, localized, and long- and short-term impacts on entire ecological systems or constituents. The performance measure is also used to describe impacts resulting in loss of use of natural resources such as land or water.

A key element of life cycle analysis is the study, not only of the immediate risks for each alternative, but the relative risks avoided (or benefits realized) by not pursuing other alternatives. For example, the direct financial benefit of recycle is already captured in the price received for the recycled material; the environmental benefits come through the lessened releases of hazardous materials during manufacture of virgin steel. These environmental benefits as well as the adverse impacts of the alternatives are included in the environmental performance measure. A qualitative analysis of the environmental protectiveness of the alternatives will be performed, assigning a "value" of 1, 2, 3, 4, or 5, with "1" indicating least protective and "5" indicating most protective.

VI.8 Public Health Impacts

The public health performance measure addresses the operational risk and avoided risk to off-site populations associated with each alternative. It addresses potential adverse impacts on the health and safety of the surrounding or affected off-site human population, for the DOE site, commercial disposal site, recycle facility, commercial decontamination facility, or the avoided steel making sites. This performance measure is used to assess potential health impacts to communities from accidents involving the release of radioactive or hazardous materials or the dangers of accidents during transportation on public roads.

A quantitative evaluation will be made of the public health impacts of the alternatives, expressed as the expected number of fatalities from all activities associated with the alternative. This will be based on the Recycle 2000 analyses, PEIS, RI/FS, and the ORNL analysis of Building K-31 in Oak Ridge.

VI.9 Worker Safety Impacts

The worker safety performance measure addresses potential adverse impacts and avoided impacts on the health and safety of personnel inside the site boundary or any worker associated with the avoided virgin metal production. This measure includes the potential impact from release of hazardous and radioactive materials and conventional industrial accidents.

A quantitative evaluation will be made of the worker safety impacts of the alternatives, expressed as the expected number of fatalities for workers from all activities associated with the alternative. This will be based on the Recycle 2000 analyses, PEIS, RI/FS, and the ORNL analysis of Building K-31 in Oak Ridge.

VII. Analysis of Alternatives

VII.1 Analysis of Alternative 1: Placement in On-Site Disposal Facility (OSDF)

This alternative would result in the metals being dispositioned in the OSDF. The evaluation of each of the nine performance measures is described below for alternative 1.

VII.1.a Net Present Value

Life-cycle cost elements are as follows:

- Engineering and design.
- Construction of facility, roads, etc.
- Utilities interface.
- Radiological and safety oversight.
- Roads and storm water maintenance.
- Environmental monitoring and compliance.

- Sampling and analysis.
- Baseline groundwater monitoring.
- On-property transport to disposal.
- Material placement in OSDF.
- Long-term monitoring and maintenance (200 years post closure).

For the NPV calculation, the life-cycle cost for the 150 tons scenario was approximately **$159 million**, and for the 15,200 tons scenario the NPV was approximately **$159 million**. (See Attachment 1 for details of the cost estimate.)

VII.1.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost, the calculation described above was repeated using a discount rate of zero. The estimate for the 150 tons scenario was approximately **$190 million**, and the 15,200 tons scenario was approximately **$190 million**. (See Attachment 1 for details of the cost estimate.)

The incremental cost component of total undiscounted cost for placement of 150 tons of steel in the OSDF is **$6,000** , and for the 15,200 tons the incremental cost of steel placement is **$600,000** .

For the unit cost component of total undiscounted cost of placement of steel in the OSDF, the estimate for both the 150 and 15,200 tons scenarios was **$14.63 per bank cu.ft.** (See Attachment 1 for details of the cost estimate.)

VII.1.c Schedule Impacts

For the 150 tons scenario, the estimated time to place the steel in the OSDF is **less than 1 week**, assuming a full crew. The corresponding impact on the 10-year Plan is **neutral**.

For the 15,200 tons scenario, the estimated time required for the full crew to place the steel is about **3 months**. Assuming that the 10-year Plan includes this time for placement of the steel in the OSDF, the impact of this alternative is **neutral**.

VII.1.d Local Economic Impacts

For the 150 tons scenario, the anticipated impact on the local economy of placing the steel in the OSDF is negligible because of the relatively small quantity of material being evaluated resulting in a "value" of **3**.

For the 15,200 tons scenario, the impact is more pronounced. Placement of the steel in the OSDF will have a slight negative impact on the local economy, relative to some of the other alternatives, because this alternative will prevent the influx of relatively large quantities of a saleable product (scrap steel) into the local market. Based on the anticipated schedule for demolition of OU3 structures, scrap steel will be generated at a rate of roughly 1,000 to 2,000 tons per year. Several local scrap metal recycling and brokerage firms have contacted FDF to express interest in buying the scrap metal. As with the other disposition alternatives, placement of the steel in the OSDF will negatively impact the local scrap market. The rating for this alternative for impacts to the local economy is **2**.

VII.1.e Institutional Preference

The institutional preference rating for the 150 tons scenario is **3** due to the relatively small amount of material being considered.

For the 15,200 tons scenario, implementation of this alternative rates a **2** for institutional preference because disposal of structural steel does not meet DOE policies for recycle and privatization. In addition, the EPA waste minimization hierarchy specifies that waste management approaches should first attempt to reduce the volume generated, reuse or recycle if source reduction is not feasible (as is the case with FEMP scrap steel), and utilize disposal options only as a last resort. As with other disposition alternatives, OSDF placement of structural steel is less favored than recycling/reuse alternatives in terms of institutional preference.

VII.1.f Local Social Preference

Although the public stakeholders have expressed a clear preference for recycle/reuse alternatives over disposal alternatives, the social impact for the 150 tons scenario is negligible (**3**) due to the small amount of material under consideration.

For the larger case of 15,200 tons, this alternative has the lowest public acceptance of all alternatives because the local community wishes to minimize the amount of LLW material placed in the OSDF. On the national level, onsite disposal is preferable to offsite disposal due to the perceived risks of cross-country transport of radioactive materials and the resistance of some communities to accept wastes generated out-of-state. However, disposal alternatives in general are much less preferred by the public than recycle/reuse alternatives. Furthermore, despite engineering calculations to the contrary, the public has expressed their perception that placement of steel in the OSDF increases the potential for eventual OSDF failure. Coupled with the siting of the OSDF directly above the aquifer, this alternative adds to the long-term legacy for the Fernald community. The result of analysis of this alternative for local social preference is **1**.

VII.1.g Protectiveness of the Environment

As with the other qualitative performance measures for the 150 tons scenario, the rating for environmental protectiveness is **3** due to the relatively small quantity of material.

For the 15,200 tons scenario, this alternative has some positive environmental impacts because it prevents direct access to the contaminants on the steel by placement in the OSDF. Implementation of this alternative would mitigate the potential migration of contaminants from the steel to the surrounding environment thereby reducing risks to off-site residents and environmental systems.

Institutional controls maintained for the OSDF for the 200-1,000 year design life include continued federal ownership of that portion of the FEMP to preclude homesteading, intrusive actions, or facility degradation; deed restrictions; and passive access controls (e.g. fencing) around the facility to prevent unauthorized access or use of the land.

The long-term effectiveness and permanence of this alternative for containing the contamination remaining on the metals would depend primarily on the physical integrity of the OSDF. The facility will be designed to ensure protectiveness for a minimum of 200 years to a maximum goal of 1,000 years. Some degree of uncertainty concerning the ability of the federal government (or another entity or society as a whole) to maintain long-term (i.e., up to 1,000 years) institutional controls and the long-term performance of the engineered system does exist. However, based on available engineering data and computer modeling, the long-term effectiveness and permanence of the disposal facility would be supported.

In the general comparison of disposal vs. recycle alternatives, there is a considerable difference in environmental impacts because the recycling alternatives eliminate the environmental impacts associated with production of new (virgin) steel. Mining and foundry operations negatively impact air quality, water quality and aquatic ecology, and land use.

For air quality impacts, considerable emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), carbon monoxide (CO), hydrocarbons, and particulate matter result from mining of iron ore, limestone, and coal, shipping these materials via barge, rail, or truck, burning coal to produce electricity, and smelting operations. For each ton of virgin steel produced, approximately 11.8 pounds of SO_2 are released to the environment, compared to about 8.8 pounds per ton of steel recycled. For SO_2 alone, disposal alternatives for the 15,200 tons scenario indirectly result in the emission of approximately 45,600 pounds more of SO_2 than recycling alternatives. (Similar estimates for emissions of other air pollutants and impacts on water quality/aquatic ecology and land use may be calculated for future applications of the Methodology.)

In the overall analysis of environmental impacts, the positive effect of isolating the contaminated steel in the OSDF is outweighed by the potential negative effects discussed above, resulting in a rating of **2** for this performance measure.

VII.1.h Public Health Impacts

For the 150 tons scenario, the expected number of fatalities for the public is $\mathbf{3 \times 10^{-5}}$.

For the 15,200 tons scenario, the expected number of fatalities for the public is $\mathbf{1 \times 10^{-4}}$.

VII.1.i Worker Safety Impacts

For the 150 tons scenario, the expected number of fatalities for the work force is $\mathbf{3 \times 10^{-5}}$.

For the 15,200 tons scenario, the expected number of fatalities for the work force is $\mathbf{3 \times 10^{-3}}$.

VII.2 Analysis of Alternative 2: Off-Site Disposal at Nevada Test Site (NTS)

This alternative would result in the steel being packaged at Fernald and shipped by truck to NTS for disposal. The evaluation of the nine performance measures is described below for alternative 2.

VII.2.a Net Present Value

Life-cycle cost elements are as follows:

- Container preparation (including container purchase price).
- Container packaging.
- Container staging prior to shipment.
- Container shipping.
- Container burial at NTS.
- Disposal at NTS.
- OSDF life-cycle cost (minus steel placement cost).

For the NPV estimate, the life-cycle cost of the 150 tons scenario was approximately **$159 million**, and for the 15,200 tons scenario it was approximately **$177 million**. (See Attachment 2 for cost estimate details.)

VII.2.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost, the calculation described above was repeated using a discount rate of zero. The estimate for the 150 tons scenario was approximately **$191 million**, and for the 15,200 tons scenario it was **$212 million**. (See Attachment 2 for cost estimate details.)

For the incremental cost component of total undiscounted cost, the estimate for 150 tons is **$232,000**, and for 15,200 tons it is **$22 million**.

For the unit cost component of total undiscounted cost of disposal of the steel at NTS, the estimate for the 150 tons scenario was **$378 per bank cu.ft.**, and for the 15,200 tons scenario it was **$368 per bank cu.ft.** (See Attachment 2 for details of the cost estimate.)

VII.2.c Schedule Impacts

For the 150 tons scenario, the time required to ship the steel to NTS is about **2 weeks**, resulting in a **neutral** impact on the 10-year Plan.

For the 15,200 tons scenario, the NTS shipping schedule is limited by the availability of material per the OU3 facilities demolition schedule. Based on current estimates, the last of the OU3 steel would not be available for about **6 years**. The impact of shipping the steel offsite as it becomes available would be to **reduce the 10-year Plan by 3 months**. Further 10-year Plan reductions could be realized through scheduling of labor for steel shipment during the annual period when the OSDF is not accepting material and the expeditious removal of steel piles from OU3 to make the underlying soils more readily accessible for excavation and OSDF placement. These potential additional schedule reductions have not been quantified.

VII.2.d Local Economic Impacts

Analysis of alternative for local economic impacts is very similar to the analysis for alternative 1 (See Section VII.1.d), resulting in a rating of **1** for the 150 tons scenario, and **2** for the 15,200 tons scenario. Offsite disposal could have a slightly positive impact on the local economy over onsite disposal through revenues to local transportation firms for cross-country transport to NTS. However, this positive impact is outweighed by the negative impact of preventing the scrap steel from entering the local market.

VII.2.e Institutional Preference

Since this alternative does not meet DOE or EPA policies for recycle and privatization (See Section VII.1.e for a more thorough discussion), it is rated the same as alternative 1 for this performance measure (**3** for the 150 tons scenario and **2** for the 15,200 tons scenario).

VII.2.f Local Social Preference

Public acceptance of this alternative is higher than for onsite disposal but lower than for any of the recycle/reuse alternatives. (See Section VII.1.f for a more thorough discussion.) Therefore, the social impact of this alternative is rated as **1** for the 150 tons scenario and **2** for the 15,200 tons scenario.

VII.2.g Protectiveness of the Environment

Impacts to the environment would be similar to those identified for alternative 1 (See Section VII.1.g), with the following differences. NTS is located in an area with considerably less human population than the FEMP area, the NTS region is arid, and the NTS facility is not sited directly above a sole-source aquifer. These factors would make the NTS alternative slightly preferable to the OSDF alternative with respect to environmental impacts.

However, because of the negative environmental impacts associated with the production of virgin steel (made necessary because disposal options prevent the scrap steel from entering the recycling market), the overall analysis for this performance measure results in a rating of **3** for the 150 tons scenario, and **2** for the 15,200 tons scenario.

VII.2.h Public Health Impacts

For the 150 tons scenario, the expected number of fatalities for the public is 7×10^{-4}.

For the 15,200 tons scenario, the expected number of fatalities for the public is 6×10^{-2}.

VII.2.i Worker Safety Impacts

For the 150 tons scenario, the expected number of fatalities for the work force is **3×10^{-5}**.

For the 15,200 tons scenario, the expected number of fatalities for the work force is **3×10^{-3}**.

VII.3 Analysis of Alternative 3: Off-Site Commercial Disposal Facility (Envirocare)

This alternative would result in the steel being packaged in gondola cars in combination with dried pit waste from OU1 and shipped by rail to Envirocare for disposal. The evaluation of the nine performance measures is presented below for this alternative.

VII.3.a Net Present Value

Life-cycle cost elements are as follows:

- Container lease/purchase and preparation for packaging.
- Container packaging.
- Container staging prior to shipment.
- Container shipment.
- Disposal of steel at Envirocare.
- Container return shipment.
- Container maintenance.
- OSDF life-cycle cost (minus steel placement cost).

For the NPV calculation, the life-cycle cost for the 150 tons scenario was approximately **$159 million**, and for the 15,200 tons scenario it was approximately **$161 million**. (See Attachment 3 for cost estimate details.)

VII.3.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost, the calculation described above was repeated using a discount rate of zero. The estimate for the 150 tons scenario was approximately **$190 million**, and for the 15,200 tons scenario it was **$193 million**. (See Attachment 3 for cost estimate details.)

The incremental cost for this alternative is **$58,000** for 150 tons of steel, and **$3 million** for 15,200 tons.

For the unit cost component of total undiscounted cost of disposal of steel at Envirocare, the estimate for 150 tons is **$94 per bank cu.ft.**, and for 15,200 it is **$65 per bank cu.ft.** (See Attachment 3 for cost estimate details.)

VII.3.c Schedule Impacts

Schedule impacts for the Envirocare disposition alternative are essentially the same as for the NTS disposal alternative. For the 150 tons scenario, the **2 weeks** required for shipment would have a **neutral** impact on the 10-year Plan.

For the 15,200 tons scenario, the shipment schedule would be spread over **6 years** based on material availability and the impact on the 10-year Plan would be a **reduction of 3 months** (with potential additional reductions as discussed in Section VII.2.c).

VII.3.d Local Economic Impacts

Impacts to the local economy for this alternative are the same as for alternative 2 (See Section VII.2.d). Therefore, the rating for this performance measure is **3** for the 150 tons scenario, and **2** for the 15,200 tons scenario.

VII.3.e Institutional Preference

The institutional impacts of this alternative are the same as for alternative 2 (See Section VII.2.e). Therefore, the rating for this performance measure is **3** for the 150 tons scenario, and **2** for the 15,200 tons scenario.

VII.3.f Local Social Preference

The social impacts of this alternative are the same as for alternative 2 (See Section VII.2.f). Therefore, the rating for this performance measure is **3** for the 150 tons scenario, and **2** for the 15,200 tons scenario.

VII.3.g Protectiveness of the Environment

Since the Envirocare facility is located in a desert region similar to the NTS region, the environmental impacts of this alternative are the same as for alternative 2 (See Section VII.2.g). Therefore, the rating for this performance measure are **3** for the 150 tons scenario and **2** for the 15,200 tons scenario.

VII.3.h Public Health Impacts

For the 150 tons scenario, the expected number of fatalities for the public is 3×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the public is 2×10^{-4}.

VII.3.i Worker Safety Impacts

For the 150 tons scenario, the expected number of fatalities for the work force is 3×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the work force is 3×10^{-3}.

VII.4 Analysis of Alternative 4: On-Site Unrestricted Release (FEMP MRF)

This alternative would result in the steel being decontaminated in the FEMP MRF using existing systems and sold to a local dealer as clean scrap. The evaluation of the nine performance measures is described below for alternative 4.

VII.4.a Net Present Value

The life-cycle cost elements are as follows:

- Transportation of steel to the MRF.
- Decontamination of steel by abrasive blasting.
- Free-release surveying.
- Loading and transportation of clean steel to RIMIA.
- Scrap value of clean steel.
- Disposal of secondary waste at NTS.
- OSDF life-cycle cost (minus steel placement cost).

For the NPV calculation, the life-cycle cost for the 150 tons scenarion was **$159 million**, and for 15,200 tons it was approximately **$164 million**. (See Attachment 4 for cost estimate details.)

VII.4.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost for processing steel through the onsite MRF, the calculation described above was repeated using a discount rate of zero. The estimate for the 150 tons scenario was approximately **$191 million**, and the 15,200 tons scenario was approximately **$197 million**. (See Attachment 4 for details of the cost estimate.)

The incremental cost for 150 tons is **$82,000**, and for 15,200 tons it is **$7 million**.

For the unit cost component of total undiscounted cost for onsite MRF processing of the steel, the estimate for the 150 tons was **$134 per bank cu.ft.**, and for the 15,200 tons scenario it was **$132 per bank cu.ft.** (See Attachment 4 for cost estimate details.)

VII.4.c Schedule Impacts

For the 150 tons scenario, onsite MRF activities would require approximately **10 weeks**, resulting in a **neutral** impact on the 10-year Plan.

For the 15,200 tons scenario, onsite MRF activities would require approximately **21 years**, resulting in an impact to the 10-year Plan of approximately **+11 years**. (These estimates are based on published production rates for the existing MRF abrasive blasting system assuming a normal one shift per day, 40 hour work week with a blasting crew of two workers, and manual free-release surveying methods. The total time estimate of 21 years would be significantly reduced by incorporating improved decontamination capabilities, automated surveying techniques, increased crew size, or added work shifts. However, the cost estimates would then need to be modified accordingly.)

VII.4.d Local Economic Impacts

The positive impact of the 150 tons scenario on the local economy would be slight due to the relatively small amount of material being evaluated. Therefore, the rating for the 150 tons scenario is **3**.

However, as discussed in Section VII.1.d, the recycle/reuse alternatives generate a saleable product (clean scrap steel) so they generally have a favorable economic impact as compared to the disposition alternatives. The onsite MRF alternative provides an additional stimulus to the local economy because it provides meaningful work for the local labor force (decontamination activities) and the scrap steel would likely enter the local scrap market rather than the market near an offsite MRF. Therefore, for the 15,200 tons scenario, the rating for this performance measure is **4**.

VII.4.e Institutional Preference

Due to the relatively small amount of steel in the 150 tons scenario, the institutional impact of this alternative is rated as **3**.

However, as discussed in Section VII.1.e, the recycle/reuse alternatives are preferable to the disposal alternatives in terms of DOE and EPA policies and guidelines. Therefore, the rating for this performance measure for the 15,200 tons scenario is **4**.

VII.4.f Local Social Preference

Due to the relatively small amount of material in the 150 tons scenario, the rating for this performance measure is **3**.

However, as discussed in Section VII.1.f, public comments indicate a very strong preference for recycle/reuse alternatives over disposal alternatives. Therefore, the rating for this alternative for the 15,200 tons scenario is **4**.

VII.4.g Protectiveness of the Environment

Due to the relatively small amount of material in the 150 tons scenario, the rating for this performance measure is **3**.

However, as discussed in Section VII.1.g, the recycle/reuse alternatives are preferable to the disposal alternatives because the environmental benefits of isolating contaminants through disposal are outweighed by the environmental detriments associated with virgin metal production. Therefore, the rating for this performance measure for the 15,200 tons scenario is **4**.

VII.4.h Public Health Impacts

For the 150 tons scenario, the expected number of fatalities for the public is 7×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the public is 2×10^{-3}.

VII.4.i Worker Safety Impacts

For the 150 tons scenario, the expected number of fatalities for the work force is 5×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the work force is 4×10^{-3}.

VII.5 Analysis of Alternative 5: Vendor Decontamination and Free-release (Vendor MRF)

VII.5.a Net Present Value

Life-cycle cost elements are as follows. (See Attachment 5 for details of the cost estimates.)

- Container purchase and preparation.
- Container packaging and staging prior to shipment.
- Container shipping to vendor MRF.
- Container unloading.
- Steel decontamination.
- Surveying for free-release.
- Market value of scrap steel.
- Shipment of empty containers and secondary waste back to FEMP.
- Secondary waste disposal at NTS.
- OSDF life-cycle cost (minus steel placement cost).

For the NPV calculation, the life-cycle cost for the 150 tons scenario was approximately **$159 million**, and for the 15,200 tons the NPV was approximately **$186 million**.

VII.5.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost for the vendor (offsite) MRF, the calculation described above was repeated using a discount rate of zero. The estimate for the 150 tons scenario was approximately **$191 million**, and for the 15,200 tons it was approximately **$222 million**.

The incremental cost for 150 tons is **$330,000**, and for 15,200 tons it is **$32 million**.

For the unit cost component of total undiscounted cost, the estimate for the 150 tons is approximately **$538 per bank cu.ft.**, and for the 15,200 tons scenario it is approximately **$535 per bank cu.ft.**

VII.5.c Schedule Impacts

For the 150 tons scenario, the time required to implement this alternative is **16 weeks**, resulting in a **neutral** impact to the 10-year Plan.

For the 15,200 tons scenario, assuming the same vendor production rate as for the Plant 7 steel recycling subcontract, the time to implement this alternative is **15 years**, with a corresponding impact to the 10-year Plan of an **additional 6 years**. (Significant decreases to the 15 year implementation time would likely result from more efficient vendor operations, as compared to the Plant 7 subcontract. Vendor MRF activities would be administered through subcontracts in which faster throughput requirements could be dictated. Also, Basic Ordering Agreements (BOAs) for vendor steel recycling services could be established through which steel from several OU3 facilities would be processed by multiple vendors simultaneously, thereby bringing the total time required to implement this alternative in line with the 6 year OU3 facilities demolition schedule. These measures could result in reductions to the 10-year Plan schedule similar to those discussed in Section VII.2.c.)

VII.5.d Local Economic Impacts

As discussed previously, the positive economic impacts of the recycling/reuse alternatives would be slight for the 150 tons scenario due to the small amount of material being considered. Therefore, the rating for this performance measure for the 150 tons scenario is **3**.

The positive economic impacts of the 15,200 tons scenario would be more pronounced. However, the offsite vendor alternatives would result in the scrap steel entering markets far removed from the Fernald area (probably in Pennsylvania or Tennessee), as opposed to the onsite MRF alternative through which the scrap would enter the local market. Therefore, the impact on the local economy of offsite MRF processing for the 15,200 tons scenario is **2**.

VII.5.e Institutional Preference

Due to the relatively small amount of steel in the 150 tons scenario, the positive institutional impact of this alternative is slight. Therefore, the rating for this performance measure is **3**.

However, as discussed previously, the impact for the 15,200 tons scenario would be more pronounced. Since recycle/reuse alternatives are preferable to disposal alternatives in terms of meeting DOE and EPA policies and guidelines on waste minimization, recycling, and privatization, the rating for this performance measure for the 15,200 tons scenario is **4**.

VII.5.f Local Social Preference

Due to the relatively small amount of steel in the 150 tons scenario, the positive social impact of this alternative is slight. Therefore, the rating for this performance measure is **3**.

However, the positive social impact of the recycle/reuse alternatives would be more pronounced for the 15,200 tons scenario. The rating for this performance measure for the 15,200 tons scenario is **4**.

VII.5.g Protectiveness of the Environment

Because of the relatively small amount of material for the 150 tons scenario, the positive environmental impacts of this alternative would be slight, resulting in a rating of 3.

However, as discussed in Section VII.1.g, the recycle/reuse alternatives are preferable to disposal alternatives because the environmental benefits of isolating contaminants through disposal are outweighed by the environmental detriments associated with virgin metal production. Therefore, the rating for this performance measure is 4.

VII.5.h Public Health Impacts

For the 150 tons scenario, the expected number of fatalities for the public is **9×10^{-6}**.

For the 15,200 tons scenario, the expected number of fatalities for the public is **2×10^{-3}**.

VII.5.i Worker Safety

For the 150 tons scenario, the expected number of fatalities for the work force is **5×10^{-5}**.

For the 15,200 tons scenario, the expected number of fatalities for the work force is **5×10^{-3}**.

VII.6 Analysis of Alternative 6: Melt of Metal and Box Fabrication (Recycle 2000)

VII.6.a Net Present Value

The life-cycle cost elements are as follows. (See attachment 6 for cost estimate details.)

- Container purchase and preparation for packaging.
- Container packaging and staging.
- Container shipment to the metal melt facility.
- Melt steel and fabricate containers.
- Transport fabricated boxes and secondary waste to FEMP.
- Secondary waste disposal at NTS.
- Value of the boxes produced.
- OSDF life-cycle cost (minus steel placement cost).

For the NPV estimate, the life-cycle cost for the 150 tons scenario is approximately **$159 million**, and for the 15,200 tons it is approximately **$189 million**.

VII.6.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost for the Recycle 2000 alternative, the calculation described above was repeated using a discount rate of zero. The estimate for 150 tons is approximately **$191 million**, and for 15,200 tons it is approximately **$225 million**.

The incremental cost for 150 tons is **$362,000**, and for 15,200 tons it is **$35 million**.

For the unit cost component of total undiscounted cost, the estimate for the 150 tons scenario is approximately **$590 per bank cu.ft.**, and for 15,200 tons it is approximately **$586 per bank cu.ft.**

VII.6.c Schedule Impacts

For the 150 tons scenario, the time required for implementation of this alternative is **5 weeks**, with a corresponding **neutral** impact to the 10-year Plan.

For the 15,200 tons scenario, the schedule impacts would be dependent upon the availability of steel per the OU3 facilities demolition schedule and would therefore be essentially the same as discussed in Section VII.2.c. The time required to implement this alternative is **6 years** with a corresponding **decrease to the 10-year Plan of 3 months**.

VII.6.d Local Economic Impacts

The impacts on the local economy for the relatively small 150 tons scenario would be minimal, resulting in a rating of **3**.

For the 15,200 tons scenario, the economic impacts would be more pronounced, although the positive impacts would not be felt in the local marketplace. Therefore, the rating for this performance measure for the 15,200 tons scenario is **2**.

VII.6.e Institutional Preference

The rating for this performance measure for the 150 tons scenario is **3** because of the relatively small amount of material being considered.

However, for the larger case of 15,200 tons, the positive institutional impact would be more pronounced. As discussed previously, recycle/reuse alternatives generally rate higher than disposal alternatives for this performance measure. This particular alternative has the added advantage of specifically supporting the DOE Recycle 2000 initiative, resulting in a rating of **5**.

VII.6.f Local Social Preference

Due to the relatively small volume of material in the 150 tons scenario, the rating is **3**.

As discussed previously, public stakeholders definitely favor the recycling/reuse alternatives to the disposal alternatives. This particular alternative is favored over the other recycle/reuse alternatives because the public is somewhat concerned about DOE's ability to ensure that all free-released materials are 100% "clean." Therefore, for the 15,200 tons scenario, the rating for this performance measure is **5**.

VII.6.g Protectiveness of the Environment

Because the amount of material in the 150 tons scenario is relatively small, the rating for this performance measure is 3.

However, as discussed previously, recycle/reuse alternatives outperform disposal alternatives in terms of environmental impact due to the pollution prevention benefits of avoided virgin steel production. Therefore, the rating for this performance measure for the 15,200 tons scenario is 4.

VII.6.h Public Health Impacts

The expected number of fatalities for the public for the 150 tons scenario is 9×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the public is 2×10^{-3}.

VII.6.i Worker Safety Impacts

For the 150 tons scenario, the expected number of fatalities for the work force is 3×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the work force is 2×10^{-3}.

VII.7 Analysis of Alternative 7: Vendor-operated FEMP MRF (Privatized FEMP MRF)

VII.7.a Net Present Value

Life-cycle cost elements are as follows. (See Attachment 7 for cost estimate details.)

- Load steel onto trailers and transport to on-site MRF.
- Decontaminate steel.
- Survey steel for free-release.
- Load clean steel onto trailers and move to RIMIA.
- Scrap value of clean steel.
- Secondary waste disposal at NTS.
- OSDF life-cycle cost (minus steel placement cost).

For the NPV estimate, the life-cycle cost to process steel through the privatized MRF for the 150 tons scenario is approximately **$159 million**, and for 15,200 tons it is approximately **$172 million**.

VII.7.b Total Undiscounted Cost

For the life-cycle estimate of total undiscounted cost, the calculation described above was repeated using a discount rate of zero. The estimate for 150 tons is approximately **$191 million**, and for the 15,200 tons scenario it is approximately **$206 million**.

The incremental cost for 150 tons is **$170,000**, and for 15,200 tons it is **$16 million**.

For the unit cost component of total undiscounted cost, the estimate for 150 tons is approximately **$276 per bank cu.ft.**, and for 15,200 tons it is approximately **$275 per bank cu.ft.**

VII.7.c Schedule Impacts

Implementation of the privatized onsite MRF alternative would have the same schedule impacts as the offsite vendor operated MRF (See Section VII.5.c).

For the 150 tons scenario, the time to implement this alternative is **16 weeks**, with a corresponding **neutral** impact to the 10-year Plan.

For the 15,200 tons scenario, the time to implement is **15 years**, with a corresponding impact to the 10-year Plan of an **additional 6 years**.

Again, as discussed in Section VII.5.c, the time to implement this alternative could be brought more in line with the 6-year OU3 demolition schedule through appropriate subcontract requirements.

VII.7.d Local Economic Impacts

The local economic impacts for this alternative are essentially the same as for alternative 4. The rating for this performance measure for the 150 tons scenario is **3**; and for the 15,200 tons scenario, the rating is **4**.

VII.7.e Institutional Preference

For the 150 tons scenario, the rating for this performance measure is **3** dut to the relatively small amount of material being considered.

For the 15,200 tons scenario, the impact is more pronounced. This alternative carries all the same institutional benefits of alternative 4, with the added benefit of supporting DOE's privatization initiative. Therefore, the rating for this performance measure for the 15,200 tons scenario is **5**.

VII.7.f Local Social Preference

The social impacts of this alternative are essentially the same as for alternative 4. The ratings for this performance measure are **3** for the 150 tons scenario, and **4** for the 15,200 tons scenario.

VII.7.g Protectiveness of the Environment

Again, since this alternative is essentially the same as alternative 4 in terms of environmental impacts, the ratings for this performance measure are **3** for the 150 tons scenario, and **4** for the 15,200 tons scenario.

VII.7.h Public Health Impacts

The expected number of fatalities for the public is 7×10^{-5} for the 150 tons scenario.

For the 15,200 tons scenario, the expected number of fatalities for the public is 2×10^{-3}.

VII.7.i Worker Safety Impacts

For the 150 tons scenario, the expected number of fatalities for the work force is 5×10^{-5}.

For the 15,200 tons scenario, the expected number of fatalities for the work force is 4×10^{-3}.

VIII. Summary

The information presented in this document and in the corresponding Disposition Summary Matrix tables is a compilation of the best data currently available and may be used as a tool to aid decision makers in arriving at an ultimate conclusion on the question of how best to disposition the structural steel from Plt. 4 and throughout the FEMP. This information comprises the analysis phase of the Fernald Metals Disposition Methodology as it applies to the cases of 150 tons of steel from Plt. 4 and 15,200 tons of steel from OU3.

However, as stated previously, the "Fernald Metals Disposition Methodology" was designed to be a "living" document which may be modified and revised as conditions change. Much of the information presented is based on best estimates rather than data generated from completed projects and activities. As the physical work of remediation projects is undertaken and "hard" data and better information become available, the Disposition Summary Matrix tables willd be updated to reflect changes which could significantly impact the comparison of alternatives. Additionally, as new technologies and approaches become available in the future, they will be evaluated and included in the Disposition Summary Matrix tables, as appropriate.

IX. Recommendations/Path Forward

The information presented in the Matrix tables, and the corresponding text, will be used as the focal point for a dialogue between DOE decision makers, FERMCO, the regulators, and stakeholder groups to discuss the issues surrounding disposition of scrap steel from OU3 remediation. In some cases, particularly for the qualitative performance measures, group discussions should facilitate the views of some participants being expressed more clearly. The Matrix will be updated to incorporate a better understanding of stakeholder preferences, DOE policies, or EPA requirements.

During the discussion of the results reported in the Matrix, it may become obvious that one or more alternatives are clearly inferior or unacceptable. These alternatives should be deleted from the Matrix and not be considered during the decision phase of the Methodology, as described below.

For the final decision phase, several standard, structured methods are available to analyze the tradeoffs between competing disposition alternatives. The most prominent methods available for this analysis include multiattribute value theory (MAVT), multiattribute utility theory (MAUT), and the analytical hierarchy approach (AHP), which are described in greater detail in Section 5 of the actual Methodology document. These methods are tools to be used by the decision makers to help rank and choose among alternatives, but are not intended to replace the decision makers.

Based on the quantity and quality of the information used to generate the Matrix tables for this particular application of the Methodology, MAVT appears to be the most suitable method for completing the decision phase. MAVT is probably the most widely used tool for analyzing multiattribute problems. MAVT includes the following operational steps:

- Evaluating each alternative separately for each performance measure (scaling).
- Assigning weights or ranking factors to each performance measure.
- Aggregating the performance measure weights and the scaling evaluations to obtain an overall measure of worth (additive or multiplicative value function).
- Conducting sensitivity analyses and making final recommendations.

TABLE A

Disposition Summary Matrix for the 150 Tons Scenario

TABLE A
Disposition Summary Matrix
150 Tons Scenario

ALTERNATIVES		1 OSDF	2 NTS	3 ENVIROCARE	4 FEMP MRF	5 VENDOR MRF	6 RECYCLE 2000	7 PRIVATIZED FEMP MRF
A. NET Present Value	LC	159M	159M	159M	159M	159M	159M	159M
B. Total Undiscounted Cost	LC	190 M	191 M	190 M	190 M	191 M	191 M	191 M
	Incre mental	$6000	$232, 000	$58,000	$82,000	$330,000	$362,000	$170,000
	Unit	$15/ bcf	$378 bcf	$94/bcf	$134/bcf	$538/bcf	$590/bcf	$276/bcf
C. Schedule Impacts	Total	<1wk	2wks	2wks	10 wks	16 wks	5 wks	16 wks
	10 year plan	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
D. Local Economic Impacts		3	3	3	3	3	3	3
E. Institutional Preference		3	3	3	3	3	3	3
F. Local Social Preference		3	3	3	3	3	3	3

ALTERNATIVES	1 OSDF	2 NTS	3 ENVIROCARE	4 FEMP MRF	5 VENDOR MRF	6 RECYCLE 2000	7 PRIVATIZED FEMP MRF
G. Protectiveness of the Environment	3	3	3	3	3	3	3
H. Public Health Impacts (Fatalities)	$3X10^{-5}$	$7X10^{-4}$	$3X10^{-5}$	$7X10^{-5}$	$9X10^{-5}$	$9X10^{-5}$	$7X10^{-5}$
I. Worker Safety Impacts (Fatalities)	$3X10^{-5}$	$3X10^{-5}$	$3X10^{-5}$	$5X10^{-5}$	$5X10^{-5}$	$3X10^{-5}$	$5X10^{-5}$

TABLE B

Disposition Summary Matrix for the 15,200 Tons Scenario

TABLE B
Disposition Summary Matrix
15,200 Tons Scenario

ALTERNATIVES		1 OSDF	2 NTS	3 ENVIROCARE	4 FEMP MRF	5 VENDOR MRF	6 RECYCLE 2000	7 PRIVATIZED FEMP MRF
A. NET Present Value	LC	159M	177M	161M	164M	186M	189M	172M
B. Total Undiscounted Cost	LC	190 M	212 M	193M	197 M	222 M	225 M	206 M
	Incre mental	$600, 000	22M	3M	7M	32M	35M	16M
	Unit	$15/ bcf	$368 bcf	$65/bcf	$132/bcf	$535/bcf	$586/bcf	$275/bcf
C. Schedule Impacts	Total	1wk	6yrs (availa bility)	6yrs (availability)	21 yrs	15 yrs	6yrs (based on availabilty)	15 yrs
	10 year plan	Neutral	-3mos	-3mos	+12 yrs	+6 yrs	-3mos	+6 yrs
D. Local Economic Impacts		2	2	2	4	2	2	4
E. Institutional Preferences		2	2	2	4	4	5	5
F. Local Social Preference		1	2	2	4	4	5	4

ALTERNATIVES	1 OSDF	2 NTS	3 ENVIROCARE	4 FEMP MRF	5 VENDOR MRF	6 RECYCLE 2000	7 PRIVATIZED FEMP MRF
G.Protectiveness of the Environment	2	2	2	4	4	4	4
H. Public Health Impacts (Fatalities)	$1X10^{-4}$	$6X10^{-2}$	$2X10^{-4}$	$2X10^{-3}$	$2X10^{-3}$	$2X10^{-3}$	$2X10^{-3}$
I. Worker Safety Impacts (Fatalities)	$3X10^{-3}$	$3X10^{-3}$	$3X10^{-3}$	$4X10^{-3}$	$5X10^{-3}$	$2X10^{-3}$	$4X10^{-3}$

ATTACHMENT 1

Cost Estimate Details for Alternative 1:
Placement in On-Site Disposal Facility (OSDF)

Alternative 1 - On-site Disposal Cell

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,188,285	$2,521,527	$13,709,812	1998	$0	$1,671,443	$1,671,443	2021
$10,052,014	$2,737,326	$12,789,340	1999	$0	$1,671,443	$1,671,443	2022
$13,007,338	$2,603,940	$15,611,278	2000	$0	$1,671,443	$1,671,443	2023
$9,439,876	$2,657,101	$12,096,977	2001	$0	$1,671,443	$1,671,443	2024
$17,857,591	$2,707,244	$20,564,835	2002	$0	$1,671,443	$1,671,443	2025
$14,736,874	$2,707,244	$17,444,119	2003	$0	$1,671,443	$1,671,443	2026
$17,350,449	$2,715,601	$20,066,050	2004	$0	$1,671,443	$1,671,443	2027
$9,199,228	$1,999,221	$11,198,450	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,415,660	$72,965,012	$190,380,672	TOTAL

Alternative 1 - On-site Disposal Cell

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,188,285	$2,521,527	$13,709,812	1998	$0	$1,671,443	$1,671,443	2021
$10,052,014	$2,737,326	$12,789,340	1999	$0	$1,671,443	$1,671,443	2022
$13,007,338	$2,603,940	$15,611,278	2000	$0	$1,671,443	$1,671,443	2023
$9,439,876	$2,657,101	$12,096,977	2001	$0	$1,671,443	$1,671,443	2024
$17,857,591	$2,707,244	$20,564,835	2002	$0	$1,671,443	$1,671,443	2025
$14,736,874	$2,707,244	$17,444,119	2003	$0	$1,671,443	$1,671,443	2026
$17,350,449	$2,715,601	$20,066,050	2004	$0	$1,671,443	$1,671,443	2027
$9,199,228	$1,999,221	$11,198,450	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,288,973	$57,707,145	$158,996,119	NPV

Alternative 1 - On-site Disposal Cell

$190,380,672

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2035
				CONSTRUCTION DURATION YEARS											
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,826,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,672	-
	2CSE6	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$162,722	-	-	$162,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,698	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,374,000	-	-	-	$8,325,879	$6,533,594	$10,899,499	$6,816,900	$15,622,083	$12,501,366	$15,080,064	$6,594,613	-
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	-
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,528,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266	-	-	-	-	-	-	-	-	-
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,298	-	-	-	$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,353,689	$0	$0	$14,918,851	$13,709,812	$12,591,119	$15,413,057	$11,898,766	$20,366,616	$17,245,898	$19,867,830	$11,198,450	$50,143,303
15,200 TONS		LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,189,324	-	-	-	-	$198,221	$198,221	$198,221	$198,221	$198,221	$198,221	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,082

ATTACHMENT 2

Cost Estimate Details for Alternative 2:
Off-Site Disposal at Nevada Test Site (NTS)

Alternative 2A - Nevada Test Site Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,773,969	$12,825,389	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,640,583	$15,646,930	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,693,745	$12,133,000	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,743,888	$20,600,057	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,743,888	$17,479,624	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,752,245	$20,101,321	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,408,160	$73,184,875	$190,593,035	TOTAL

Alternative 2A - Nevada Test Site Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,773,969	$12,825,389	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,640,583	$15,646,930	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,693,745	$12,133,000	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,743,888	$20,600,057	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,743,888	$17,479,624	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,752,245	$20,101,321	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,282,637	$57,894,257	$159,176,894	NPV

Alternative 2A - Nevada Test Site Disposal

$190,593,035

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE6	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP6	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,698	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,366,500		-	-	$8,326,121	$6,532,999	$10,898,507	$6,816,280	$15,620,660	$12,600,228	$15,078,691	$6,594,013	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,536	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,315	$2,089,315	$2,089,315	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,346,189	$0	$0	$14,918,851	$13,709,054	$12,590,524	$15,412,065	$11,898,135	$20,365,192	$17,244,760	$19,866,457	$11,197,849	$50,143,303

150 TONS	PREP, PACKAGE, STAGE, & SHIP STEEL TO NTS	$231,600	-	-	-	-	$38,600	$38,600	$38,600	$38,600	$38,600	$38,600	-	-
15,050 TONS	LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,177,588	-	-	-	-	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

Alternative 2B - Nevada Test Site Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$6,373,922	$16,379,837	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$6,240,536	$19,170,972	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$6,293,697	$15,685,475	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$6,343,840	$24,091,208	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$6,343,840	$20,992,510	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$6,352,197	$23,596,247	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$116,834,460	$94,784,587	$211,619,048	TOTAL

Alternative 2B - Nevada Test Site Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$6,373,922	$16,379,837	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$6,240,536	$19,170,972	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$6,293,697	$15,685,475	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$6,343,840	$24,091,208	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$6,343,840	$20,992,510	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$6,352,197	$23,596,247	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$100,797,916	$76,276,413	$177,074,329	NPV

Alternative 2B - Nevada Test Site Disposal

$211,619,048

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,826,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,672	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,698	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$81,792,800	-	-	-	$8,267,135	$6,487,496	$10,822,597	$6,768,803	$15,511,859	$12,413,161	$14,973,665	$6,548,084	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,656	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.8.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,315	$2,089,315	$2,089,315	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$186,772,489	$0	$0	$14,918,851	$13,651,068	$12,545,020	$15,336,155	$11,850,658	$20,256,391	$17,167,693	$19,761,431	$11,151,920	$50,143,303

15,200 TONS	PREP, PACKAGE, STAGE, & SHIP STEEL TO NTS	$23,008,900	-	-	-	-	$3,834,817	$3,834,817	$3,834,817	$3,834,817	$3,834,817	$3,834,817	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,696
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

ATTACHMENT 3

Cost Estimate Details for Alternative 3:
Off-Site Commercial Disposal Facility (Envirocare)

Alternative 3A - Envirocare Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,744,986	$12,796,405	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,611,600	$15,617,946	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,664,761	$12,104,017	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,714,905	$20,571,074	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,714,905	$17,450,641	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,723,262	$20,072,338	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,408,160	$73,010,975	$190,419,135	TOTAL

Alternative 3A - Envirocare Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,744,986	$12,796,405	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,611,600	$15,617,946	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,664,761	$12,104,017	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,714,905	$20,571,074	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,714,905	$17,450,641	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,723,262	$20,072,338	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,282,637	$57,746,261	$159,028,898	NPV

Alternative 3A - Envirocare Disposal

$190,419,135

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,366,500	-	-	-	$8,325,121	$6,532,999	$10,898,507	$6,816,280	$15,620,660	$12,500,228	$15,078,691	$6,594,013	-
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	-
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266	-	-	-	-	-	-	-	-	-
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-	-	$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,346,189	$0	$0	$14,918,851	$13,709,054	$12,590,524	$15,412,065	$11,898,135	$20,365,192	$17,244,760	$19,866,457	$11,197,849	$50,143,303

150 TONS	PREP, PACKAGE, STAGE, & SHIP STEEL TO ENVIROCARE	$57,700	-	-	-	-	$9,617	$9,617	$9,617	$9,617	$9,617	$9,617	-	-
15,050 TONS	LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,177,588	-	-	-	-	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

Alternative 3B - Envirocare Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$3,216,605	$13,222,520	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$3,083,219	$16,013,655	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$3,136,380	$12,528,158	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$3,186,524	$20,933,891	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$3,186,524	$17,835,193	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$3,194,881	$20,438,931	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$116,834,460	$75,840,687	$192,675,148	TOTAL

Alternative 3B - Envirocare Disposal

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$3,216,605	$13,222,520	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$3,083,219	$16,013,655	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$3,136,380	$12,528,158	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$3,186,524	$20,933,891	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$3,186,524	$17,835,193	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$3,194,881	$20,438,931	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$100,797,916	$60,154,452	$160,952,367	NPV

Alternative 3B - Envirocare Disposal

$192,675,148

ITEM NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,236,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$162,722	-	-	$162,722	-	-	-	-	-	-	-	-	-
	2CUP6	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$81,792,800	-	-	-	$8,267,135	$6,487,496	$10,822,597	$6,768,803	$15,611,859	$12,413,161	$14,973,665	$6,548,084	-
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	-
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$186,772,489	$0	$0	$14,918,851	$13,651,068	$12,545,020	$15,336,156	$11,850,658	$20,256,391	$17,157,693	$19,761,431	$11,151,920	$50,143,303
15,200 TONS		PREP, PACKAGE, STAGE, & SHIP STEEL TO ENVIROCARE	$4,065,000	-	-	-	-	$677,500	$677,500	$677,500	$677,500	$677,500	$677,500	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

ATTACHMENT 4

Cost Estimate Details for Alternative 4:
On-Site Unrestricted Release (FEMP MRF)

Alternative 4A - FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,749,053	$12,800,472	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,615,667	$15,622,013	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,668,828	$12,108,083	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,718,972	$20,575,140	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,718,972	$17,454,708	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,727,328	$20,076,404	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,408,160	$73,035,375	$190,443,535	TOTAL

Alternative 4A - FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,749,053	$12,800,472	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,615,667	$15,622,013	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,668,828	$12,108,083	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,718,972	$20,575,140	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,718,972	$17,454,708	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,727,328	$20,076,404	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,282,637	$57,767,027	$159,049,663	NPV

Alternative 4A - FEMP Material Release Facility

$190,443,535

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,692,832	-	-	$1,692,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,698	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,366,500	-	-	-	$8,325,121	$6,532,999	$10,898,507	$6,816,280	$15,620,660	$12,600,228	$15,078,691	$6,694,013	-
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	-
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266	-	-	-	-	-	-	-	-	-
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,298	-	-	-	$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,315	$2,089,315	$2,089,316	$2,131,102	$2,181,248	$2,181,248	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,346,189	$0	$0	$14,918,851	$13,709,054	$12,590,524	$15,412,066	$11,898,135	$20,365,192	$17,244,760	$19,866,467	$11,197,849	$50,143,303

150 TONS	HAUL, DECONTAMINATE & RELEASE, & SECONDARY WASTE DISPOSAL AT NTS	$82,100	-	-	-	-	$13,683	$13,683	$13,683	$13,683	$13,683	$13,683	$13,683	-	-
15,050 TONS	LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,177,588	-	-	-	-	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

Alternative 4B - FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$3,909,888	$13,915,804	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$3,776,502	$16,706,938	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$3,829,663	$13,221,442	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$3,879,807	$21,627,174	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$3,879,807	$18,528,477	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$3,888,164	$21,132,214	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$116,834,460	$80,000,387	$196,834,848	TOTAL

Alternative 4B - FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$3,909,888	$13,915,804	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$3,776,502	$16,706,938	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$3,829,663	$13,221,442	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$3,879,807	$21,627,174	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$3,879,807	$18,528,477	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$3,888,164	$21,132,214	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$100,797,916	$63,694,511	$164,492,426	NPV

Alternative 4B - FEMP Material Release Facility

$196,834,848

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACILITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,826,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,672	-
	2CSE6	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$81,792,800	-	-	-	$8,267,135	$6,487,496	$10,822,597	$6,768,803	$15,511,859	$12,413,161	$14,973,665	$6,548,084	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$63,656	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.8.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$186,772,489	$0	$0	$14,918,861	$13,651,068	$12,545,020	$15,336,155	$11,850,658	$20,256,391	$17,157,693	$19,761,431	$11,151,920	$50,143,303

15,200 TONS	HAUL, DECONTAMINATE & RELEASE, & SECONDARY WASTE DISPOSAL AT NTS	$8,224,700	-	-	-	-	$1,370,783	$1,370,783	$1,370,783	$1,370,783	$1,370,783	$1,370,783	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

ATTACHMENT 5

Cost Estimate Details for Alternative 5:
Vendor Decontamination and Free-release (Vendor MRF)

Alternative 5A - Vendor Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,790,369	$12,841,789	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,656,983	$15,663,330	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,710,145	$12,149,400	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,760,288	$20,616,457	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,760,288	$17,496,024	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,768,645	$20,117,721	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,408,160	$73,283,275	$190,691,435	TOTAL

Alternative 5A - Vendor Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,790,369	$12,841,789	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,656,983	$15,663,330	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,710,145	$12,149,400	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,760,288	$20,616,457	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,760,288	$17,496,024	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,768,645	$20,117,721	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,282,637	$57,977,999	$159,260,636	NPV

Alternative 5A - Vendor Material Release Facility

$190,691,435

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE6	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$162,722	-	-	$162,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,698	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,366,500	-	-	-	$8,325,121	$6,532,999	$10,898,507	$6,816,280	$15,620,660	$12,500,228	$15,078,691	$6,594,013	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,286	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,766,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,346,189	$0	$0	$14,918,851	$13,709,054	$12,590,524	$15,412,065	$11,898,135	$20,365,192	$17,244,760	$19,866,457	$11,197,849	$50,143,303

150 TONS	HAUL, DECONTAMINATE & RELEASE, & SECONDARY WASTE DISPOSAL AT NTS	$330,000	-	-	-	-	$55,000	$55,000	$55,000	$55,000	$55,000	$55,000	-	-
15,050 TONS	LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,177,588	-	-	-	-	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,665,062

Alternative 5B - Vendor Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$8,111,938	$18,117,854	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$7,978,552	$20,908,988	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$8,031,713	$17,423,492	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$8,081,857	$25,829,224	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$8,081,857	$22,730,527	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$8,090,214	$25,334,264	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$116,834,460	$105,212,687	$222,047,148	TOTAL

Alternative 5B - Vendor Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$8,111,938	$18,117,854	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$7,978,552	$20,908,988	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$8,031,713	$17,423,492	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$8,081,857	$25,829,224	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$8,081,857	$22,730,527	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$8,090,214	$25,334,264	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$100,797,916	$85,151,113	$185,949,029	NPV

Alternative 5B - Vendor Material Release Facility

$222,047,148

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,826,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,672	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP5	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,698	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$81,792,800	-	-	-	$8,267,135	$6,487,496	$10,822,597	$6,768,803	$15,511,859	$12,413,161	$14,973,665	$6,548,084	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,656	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			-
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$186,772,489	$0	$0	$14,918,851	$13,651,068	$12,545,020	$15,336,155	$11,850,658	$20,256,391	$17,167,693	$19,761,431	$11,151,920	$50,143,303

15,200 TONS	HAUL, DECONTAMINATE & RELEASE, & SECONDARY WASTE DISPOSAL AT NTS	$33,437,000	-	-	-	-	$5,572,833	$5,572,833	$5,572,833	$5,572,833	$5,572,833	$5,572,833	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

ATTACHMENT 6

Cost Estimate Details for Alternative 6:
Melt of Metal and Box Fabrication (Recycle 2000)

Alternative 6A - Recycle 2000

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,795,736	$12,847,155	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,662,350	$15,668,696	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,715,511	$12,154,767	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,765,655	$20,621,824	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,765,655	$17,501,391	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,774,012	$20,123,088	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,408,160	$73,315,475	$190,723,635	TOTAL

Alternative 6A - Recycle 2000

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,795,736	$12,847,155	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,662,350	$15,668,696	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,715,511	$12,154,767	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,765,655	$20,621,824	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,765,655	$17,501,391	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,774,012	$20,123,088	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,282,637	$58,005,402	$159,288,039	NPV

Alternative 6A - Recycle 2000

$190,723,635

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIILITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$162,722	-	-	$162,722	-	-	-	-	-	-	-	-	-
	2CUP6	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,366,500	-	-	-	$8,325,121	$6,532,999	$10,898,507	$6,816,280	$15,620,660	$12,500,228	$15,078,691	$6,594,013	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,629,700	-	-	-	$938,349	$691,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,315	$2,089,315	$2,089,315	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,346,189	$0	$0	$14,918,851	$13,709,054	$12,590,524	$15,412,065	$11,898,135	$20,365,192	$17,244,760	$19,866,457	$11,197,849	$50,143,303

150 TONS	HAUL, MELT, CAST, ROLL, & FAB BOXES. SEND 2NDARY WASTES NTS VIA FE	$362,200	-	-	-	-	$60,367	$60,367	$60,367	$60,367	$60,367	$60,367	-	-
15,050 TONS	LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,177,588	-	-	-	-	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

Alternative 6B - Recycle 2000

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$8,642,605	$18,648,520	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$8,509,219	$21,439,655	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$8,562,380	$17,954,158	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$8,612,524	$26,359,891	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$8,612,524	$23,261,193	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$8,620,881	$25,864,931	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$116,834,460	$108,396,687	$225,231,148	TOTAL

Alternative 6B - Recycle 2000

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$8,642,605	$18,648,520	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$8,509,219	$21,439,655	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$8,562,380	$17,954,158	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$8,612,524	$26,359,891	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$8,612,524	$23,261,193	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$8,620,881	$25,864,931	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$100,797,916	$87,860,815	$188,658,731	NPV

Alternative 6B - Recycle 2000

$225,231,148

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,828,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,672	-
	2CSE6	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP6	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$81,792,800	-	-	-	$8,267,135	$6,487,496	$10,822,597	$6,768,803	$15,611,859	$12,413,161	$14,973,665	$6,548,084	-
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,656	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	-
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266	-	-	-	-	-	-	-	-	-
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-	-	$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$186,772,489	$0	$0	$14,918,851	$13,651,068	$12,545,020	$16,336,156	$11,850,658	$20,256,391	$17,157,693	$19,761,431	$11,151,920	$50,143,303
15,200 TONS		HAUL, MELT, CAST, ROLL, & FAB BOXES. SEND 2NDARY WASTES NTS VIA FE	$36,621,000	-	-	-	-	$6,103,500	$6,103,500	$6,103,500	$6,103,500	$6,103,500	$6,103,500	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062

ATTACHMENT 7

Cost Estimate Details for Alternative 7:
Vendor-operated FEMP MRF (Privatized FEMP MRF)

Alternative 7A - Privatized FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,763,636	$12,815,055	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,630,250	$15,636,596	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,683,411	$12,122,667	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,733,555	$20,589,724	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,733,555	$17,469,291	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,741,912	$20,090,988	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$117,408,160	$73,122,875	$190,531,035	TOTAL

Alternative 7A - Privatized FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,187,527	$2,521,527	$13,709,054	1998	$0	$1,671,443	$1,671,443	2021
$10,051,419	$2,763,636	$12,815,055	1999	$0	$1,671,443	$1,671,443	2022
$13,006,346	$2,630,250	$15,636,596	2000	$0	$1,671,443	$1,671,443	2023
$9,439,255	$2,683,411	$12,122,667	2001	$0	$1,671,443	$1,671,443	2024
$17,856,168	$2,733,555	$20,589,724	2002	$0	$1,671,443	$1,671,443	2025
$14,735,736	$2,733,555	$17,469,291	2003	$0	$1,671,443	$1,671,443	2026
$17,349,076	$2,741,912	$20,090,988	2004	$0	$1,671,443	$1,671,443	2027
$9,198,628	$1,999,221	$11,197,849	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$101,282,637	$57,841,493	$159,124,129	NPV

Alternative 7A - Privatized FEMP Material Release Facility

$190,531,035

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACIULITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,826,902	$1,960,203	$2,083,238	$2,499,973	$2,235,608	$2,235,608	$2,235,608	$2,235,608	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE5	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP6	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$82,366,500	-	-	-	$8,325,121	$6,532,999	$10,898,507	$6,816,280	$15,620,660	$12,500,228	$15,078,691	$6,594,013	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,766,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$187,346,189	$0	$0	$14,918,851	$13,709,054	$12,590,524	$15,412,066	$11,898,135	$20,365,192	$17,244,760	$19,866,457	$11,197,849	$50,143,303

150 TONS	HAUL, DECONTAMINATE & RELEASE, & SECONDARY WASTE DIPOSAL AT NTS	$169,600	-	-	-	-	$28,267	$28,267	$28,267	$28,267	$28,267	$28,267	$28,267	-	-
15,050 TONS	LOAD AND HAUL STEEL FROM CONSTR SITE TO OSDF	$1,177,588	-	-	-	-	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	$196,265	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$182,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,855,062

Alternative 7B - Privatized FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$5,403,305	$15,409,220	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$5,269,919	$18,200,355	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$5,323,080	$14,714,858	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$5,373,224	$23,120,591	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$5,373,224	$20,021,893	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$5,381,581	$22,625,631	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$1,655,062	$1,655,062	2041-2205
				$116,834,460	$88,960,887	$205,795,348	TOTAL

Alternative 7B - Privatized FEMP Material Release Facility

Life-Cycle Cost Analysis

Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year	Construction Cost	O&M Cost	Annual Cash Flow	Cash Flow Year
$0	$0	$0	1996	$0	$1,671,443	$1,671,443	2019
$14,584,004	$334,846	$14,918,851	1997	$0	$1,671,443	$1,671,443	2020
$11,129,541	$2,521,527	$13,651,068	1998	$0	$1,671,443	$1,671,443	2021
$10,005,915	$5,403,305	$15,409,220	1999	$0	$1,671,443	$1,671,443	2022
$12,930,436	$5,269,919	$18,200,355	2000	$0	$1,671,443	$1,671,443	2023
$9,391,778	$5,323,080	$14,714,858	2001	$0	$1,671,443	$1,671,443	2024
$17,747,367	$5,373,224	$23,120,591	2002	$0	$1,671,443	$1,671,443	2025
$14,648,669	$5,373,224	$20,021,893	2003	$0	$1,671,443	$1,671,443	2026
$17,244,050	$5,381,581	$22,625,631	2004	$0	$1,671,443	$1,671,443	2027
$9,152,699	$1,999,221	$11,151,920	2005	$0	$1,671,443	$1,671,443	2028
$0	$1,671,443	$1,671,443	2006	$0	$1,671,443	$1,671,443	2029
$0	$1,671,443	$1,671,443	2007	$0	$1,671,443	$1,671,443	2030
$0	$1,671,443	$1,671,443	2008	$0	$1,671,443	$1,671,443	2031
$0	$1,671,443	$1,671,443	2009	$0	$1,671,443	$1,671,443	2032
$0	$1,671,443	$1,671,443	2010	$0	$1,671,443	$1,671,443	2033
$0	$1,671,443	$1,671,443	2011	$0	$1,671,443	$1,671,443	2034
$0	$1,671,443	$1,671,443	2012	$0	$1,671,443	$1,671,443	2035
$0	$1,671,443	$1,671,443	2013	$0	$36,519	$36,519	2036
$0	$1,671,443	$1,671,443	2014	$0	$36,519	$36,519	2037
$0	$1,671,443	$1,671,443	2015	$0	$36,519	$36,519	2038
$0	$1,671,443	$1,671,443	2016	$0	$36,519	$36,519	2039
$0	$1,671,443	$1,671,443	2017	$0	$36,519	$36,519	2040
$0	$1,671,443	$1,671,443	2018	$0	$55,168,740	$55,168,740	2041-2205
				$100,797,916	$71,320,228	$172,118,144	NPV

Alternative 7B - Privatized FEMP Material Release Facility

$205,795,348

WBS NO.	COST A/C	DESC.	TOTAL BUDGET	CONSTRUCTION DURATION YEARS											
				FY95	FY96	1 FY97	2 FY98	3 FY99	4 FY2000	5 FY2001	6 FY2002	7 FY2003	8 FY2004	9 FY2005	10 FY2006-FY2205
		DISPOSAL FACILITY													
1.1.1.1.2.3.6	2CCD8	OSDF TITLE III DESIGN	$1,592,832	-	-	$1,592,832	-	-	-	-	-	-	-	-	-
	2CD00	OSDF TITLE III DESIGN SERVICES	$17,311,349	-	-	-	$1,825,902	$1,960,203	$2,083,238	$2,499,973	$2,235,508	$2,235,508	$2,235,508	$2,235,508	-
	2CCR4	ROAD TITLE III DESIGN	$229,587	-	-	$229,587	-	-	-	-	-	-	-	-	-
	2CC00	ROAD TITLE III DESIGN SERVICES	$321,833	-	-	-	-	$205,973	$6,437	$32,183	-	-	$6,668	$70,572	-
	2CSE6	ENG STUDIES OSDF BARRIER	$13,142	-	-	$13,142	-	-	-	-	-	-	-	-	-
	2CUP1	UTILITIES INTERFACE DESIGN - PHASE I	$128,899	-	-	$128,899	-	-	-	-	-	-	-	-	-
	2CUP2	UTILITIES INTERFACE DESIGN - PHASE II	$152,722	-	-	$152,722	-	-	-	-	-	-	-	-	-
	2CUP6	UTILITIES INTERFACE TITLE III - PHASE I	$84,977	-	-	$84,977	-	-	-	-	-	-	-	-	-
1.1.1.1.2.3.7	2CU00	UTILITIES INTERFACE DESIGN	$74,448	-	-	-	$44,598	$29,850	-	-	-	-	-	-	-
	2CC11	OSDF CONSTR. & RAD/SAFETY MGMT.	$7,567,919	-	-	$7,567,919	-	-	-	-	-	-	-	-	-
	2CD01	OSDF CONSTRUCTION	$81,792,800	-	-	-	$8,267,135	$6,487,496	$10,822,597	$6,768,803	$16,611,859	$12,413,161	$14,973,665	$6,548,084	
	2CR11	HAUL ROAD CONSTR & PROJ MGMT	$1,804,047	-	-	$1,804,047	-	-	-	-	-	-	-	-	-
	2CR12	NORTH ENTRANCE ROAD CONSTR & PROJ MGMT	$778,833	-	-	$778,833	-	-	-	-	-	-	-	-	-
	2CR00	ROAD CONSTRUCTION PHASE II	$1,220,327	-	-	-	$53,556	$731,043	$18,164	$90,819	-	-	$28,209	$298,535	
	2CUC1	UTILITIES INTERFACE CONSTRUCTION	$2,023,421	-	-	$2,023,421	-	-	-	-	-	-	-	-	-
	2CUO1	UTILITIES INTERFACE CONSTRUCTION PHASE II	$1,529,700	-	-	-	$938,349	$591,351	-	-	-	-	-	-	-
1.1.1.1.2.4	2DSU1	ROAD/STORMWATER MAINTENANCE	$242,266	-	-	$242,266					-	-			
	2DS00	ROAD/STORMWATER MAINTENANCE	$2,837,296	-	-		$432,212	$449,790	$316,404	$327,778	$327,778	$327,778	$327,778	$327,778	-
1.1.1.1.2.6.1	2FP11	OSDF MONITORING & COMPLIANCE	$118,701	-	-	$118,701	-	-	-	-	-	-	-	-	-
	2FP12	SAMPLING & TESTING	$88,924	-	-	$88,924	-	-	-	-	-	-	-	-	-
	2FP13	BASELINE G.WTR. MON.	$92,580	-	-	$92,580	-	-	-	-	-	-	-	-	-
	2FP00	OSDF POST MONITORING & MAINTENANCE	$66,765,887	-	-	-	$2,089,316	$2,089,316	$2,089,316	$2,131,102	$2,181,246	$2,181,246	$2,189,603	$1,671,443	$50,143,303
		TOTAL LCC OSDF - 1996 CONSTANT DOLLARS By FY	$186,772,489	$0	$0	$14,918,851	$13,851,068	$12,545,020	$15,336,155	$11,850,658	$20,256,391	$17,157,693	$19,761,431	$11,161,920	$50,143,303

16,200 TONS	HAUL, DECONTAMINATE & RELEASE, & SECONDARY WASTE DIPOSAL AT NTS	$17,155,200	-	-	-	-	$2,864,200	$2,864,200	$2,864,200	$2,864,200	$2,864,200	$2,864,200	-	-

2036-2040	OSDF POST MONITORING & MAINTENANCE	$152,596
2041-2205	OSDF POST MONITORING & MAINTENANCE	$1,655,062