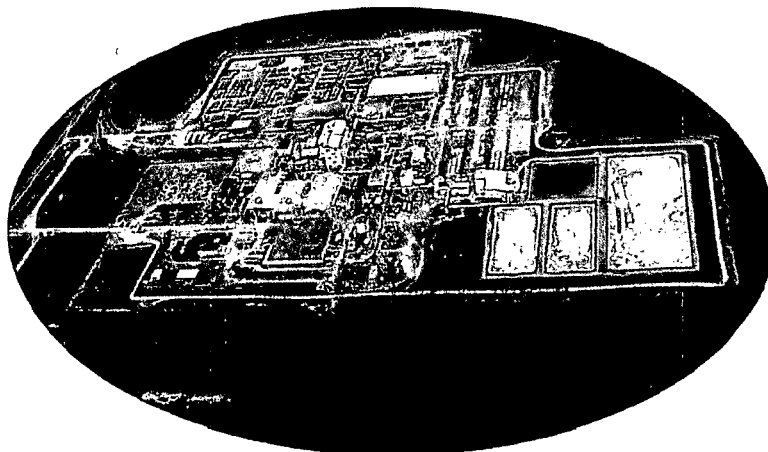


Decommissioning Cost Estimate

**Prepared for:**

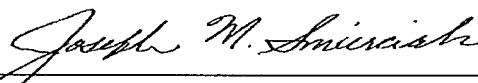
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Rev. 1
July 27, 2010

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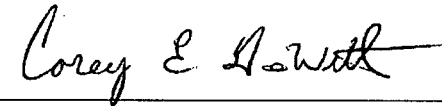
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EXECUTIVE SUMMARY

ENERCON Services Inc. (ENERCON) is providing with this report an independent decommissioning cost estimate for the Honeywell Metropolis Works Plant (MTW) located in Metropolis, Illinois. This estimate was prepared at the request of Honeywell to provide for an independent estimate for financial assurance purposes. This report used as its' basis the *Site Reclamation Cost Estimate for Plant Located in Metropolis, Illinois, Revision 0* dated May 2006 (2006 Report). This report was issued to Honeywell by Duratek (now EnergySolutions). Where possible, this information was reviewed with sufficient detail to assess the reliability of the prior decommissioning cost estimate.

To support this report, a radiological characterization survey of site soils was performed in 2009. However, no additional characterization of equipment and structures was performed as part of the 2009 site characterization. Therefore, specific and general information regarding equipment and structures from the 2006 Report was used in determining decontamination and demolition methodologies in order to minimize overall decommissioning costs.

This estimate includes itemized costs for manpower and equipment resources, radioactive waste volume reduction, packaging, shipping and burial activities, and the performance of final status surveys for buildings and structures. The estimated decommissioning cost is \$186,610,047. This estimate is for budgetary purposes only.

A significant portion of the overall decommissioning costs is attributed to the processing or burial of radioactive waste. The radioactive waste disposal rate used for most of the waste in this estimate was based on shipping to EnergySolutions of Utah at a favorable rate based on a large waste volume and low levels of activity.

1.0 INTRODUCTION

1.1 Purpose

ENERCON Services Inc. (ENERCON) is providing with this report an independent decommissioning cost estimate for the Honeywell Metropolis Works Plant (MTW) located in Metropolis, Illinois. This independent estimate was prepared at the request of Honeywell for financial assurance purposes. This report used as its' basis the *Site Reclamation Cost Estimate for Plant Located in Metropolis, Illinois Revision 0* (2006 Report) prepared for Honeywell by Duratek (now EnergySolutions).

The estimate includes only activities and cost factors necessary to reduce residual radioactivity to levels that will permit release of the associated structures, buildings and grounds for unrestricted use.

Costs associated with the demolition and removal of non-contaminated equipment or structures are not included in this cost estimate unless such activities are required to support decommissioning. Consistent with the prior decommissioning cost estimates, an actual date to perform the site decommissioning has not been selected. Therefore, the cost estimate provided by this report is in 2009 dollars.

1.2 Scope

The scope of this report is to present the estimated costs derived for site decommissioning of the Metropolis Plant. The specific areas covered by this estimate include:

- Feed Materials Building
- Fluorine Plant
- Ion Exchange Building
- Liquid Fluorine and Nitrogen Facilities
- Sodium Removal Building
- KOH Muds Building
- Calcium Fluoride Building
- Uranium Recovery Building
- Surface Treatment Facility
- Feed Materials Building Pads
- Administrative Areas
- Sampling Plant
- Ore Storage Pads
- Ore Storage Building
- KOH Muds Storage Pad
- Bed Materials and Filter Fines Building
- Waste Storage Pad
- Uranium Settling Ponds
- Pond Muds Filter Calciner Building
- Drains & Sewers
- Cylinder Wash Building
- Outdoor Areas
- Drum Crusher Building
- Discharge Ditch to River

Decommissioning costs are directly related to the degree of remediation required and the amount of radioactive waste generated. The extent of remediation is based on radiological data, proven decontamination processes and data from similar projects. The volume and weight of radioactive waste was estimated based on data collected in the 2009 radiological site characterization and data compiled and reported in the 2006 Report. Data from previous reports are based on information presented on site drawings, vendor documents, and direct measurements in the facility.

1.3 Assumptions and Bases

The following assumptions and bases were utilized in developing the 2009 decommissioning cost estimate. These assumptions are consistent with the assumptions and bases utilized in previous decommissioning cost estimates.

- Some of the older more contaminated structures will be removed completely. Structures with minimal or no contamination will remain in place after decommissioning. These structures will be decontaminated as required and free released. No building refurbishment is included.
- Uncontaminated processing equipment may have intrinsic value. No credit was taken for any salvage value.
- Contaminated equipment will be decontaminated on site, processed at a volume reduction facility prior to disposal, or sent directly to a licensed radioactive material disposal site. The waste processing facility is assumed to be the Studsvik facility located in Memphis, Tennessee.
- Waste planned for processing includes scrap metal, used equipment, concrete and soil that are generally expected to be uncontaminated.
- Molyflush cylinders and the thin walled uranium hexafluoride (UF₆) cylinders will be shipped offsite for processing.
- Radioactive waste with low specific activity will be sent to EnergySolutions in Clive, Utah. It was assumed that partially decontaminated equipment, protective clothing wastes, removed concrete, miscellaneous dry activated waste (DAW), and soil would qualify for disposal at the EnergySolutions facility.
- Wastes qualify for disposal at EnergySolutions under their current license and waste acceptance criteria.
- The independent third party site remediation contractor will provide the demolition equipment and survey instrumentation at prevailing rates.
- During decommissioning, local decontamination technicians and supervisors will be utilized so no travel and living expenses are included. Supervisors and project management personnel will not be local hires so travel and living expenses were included.

- Construction labor rates in the 2006 Report were obtained from 2006 RS Means Building Construction Cost Data for Paducah, Kentucky. An escalation factor to the overall cost was applied to adjust the cost to 2009 dollars rather than adjusting individual cost line items. However, the unit costs for soil disposal were updated based on current market conditions and applied to the additional volumes of soil identified during the 2009 site characterization. All labor costs are based on an independent third party contractor.
- The Historical Site Assessment (HSA) prepared by ENERCON in 2009 and the subsequent site characterization completed by ENERCON in 2009 provide additional information and data to support this 2009 Decommissioning Cost Estimate Report.
- The site-specific release criteria used as the basis in this report is 110 picocuries per gram (pCi/g) which would support achieving the unrestricted release criteria of 25 millirem per year (mrem/yr). This value is consistent with the site-specific release criteria approved by the NRC at the closed Sequoyah Fuels UF₆ conversion plant. This represents an increase in the site-specific release criteria used in previous decommissioning cost estimates.

2.0 MTW LOCATION, HISTORY, AND CURRENT STATUS

2.1 MTW Location and Description

Honeywell MTW is the holder of Nuclear Regulatory Commission License Number SUB-526. The plant address listed on the license is as follows:

Honeywell
2768 N US Route 45
Metropolis, IL 62960-6700

The plant is located on U.S. Highway 45, approximately 1.8 miles northwest of downtown Metropolis, Illinois. The Honeywell Metropolis Works site is located on approximately 950 acres of land in Massac County at the southern tip of Illinois (Figure 1). The primary site perimeter is formed by U.S. Highway 45 to the north, the Ohio River to the south, an industrial coal blending plant to the west and privately-owned, developed land to the east. Plant operations are conducted in a fenced restricted area covering approximately 59 acres in the north-central portion of the site. Honeywell also owns approximately 100 acres of land directly across U.S. Highway 45, north/northeast of the plant.

2.2 MTW History

Initial construction of the facility was completed in 1958 and the first UF₆ was produced in 1959 as part of a five-year contract for conversion services with the former Atomic Energy Commission (AEC). In 1961 a UF₆ pilot plant was installed. The AEC conversion contract expired in 1964 and the conversion process was mothballed. Continued increase in demand for conversion services resulted in rehabilitation of the UF₆ facility in 1967 and commercial conversion started in 1968. In 1968-1969 capacity for the facility was expanded to 9,000 metric tons. Capacity was increased in 1975 to 11,500 metric tons and in 1995 to 12,700 metric tons. Re-engineering in 2001 increased capacity to approximately 14,000 metric tons. Additional re-engineering in 2007 further increased the capacity to approximately 15,000 metric tons.

2.3 MTW Physical Description

2.3.1 Main Production and Plant Operations Buildings

Major production buildings include the following: the Feed Materials Building, the Ion Exchange Building, the Sodium Removal Building, the KOH Muds Building, the Uranium Recovery Building, the Sampling Plant, the Fluoride Production Facility, the Waste Treatment Plant, and the UF₆ Cylinder

Storage Area. The plant operations buildings include the Administration Building, the Laboratory and Office Building, the Maintenance Shop/Store/Office Building, and the Powerhouse.

2.3.2 Miscellaneous Production Buildings

The miscellaneous production buildings include the Ore Storage Building, the Bed Materials and Filter Fines Building, the Pond Muds Filter Calciner Building, the Cylinder Wash Building, the Drum Crusher Building, the Non-uranium Fluorination Buildings ($\text{SF}_6/\text{IF}_5/\text{SbF}_5$), the Liquid Fluorine Facility, the Liquid Nitrogen Facility, and the Calcium Fluoride Facility.

2.3.3 Drum Storage Pads and Ponds

The drum storage pads and ponds include the five ore storage pads, the KOH muds storage pad, the waste storage area, and uranium settling Ponds 3 and 4.

2.3.4 Outdoor Areas, Drains, and Sewers

The outdoor areas, drains, and sewers include the employee parking lot, paved roads on-site, railroad spurs number 1 through 4, the land between two parallel property exclusion fences, site drains/sewers/underground process lines, and the MTW land outside the fenced operations area.

2.3.5 Calcium Fluoride Ponds

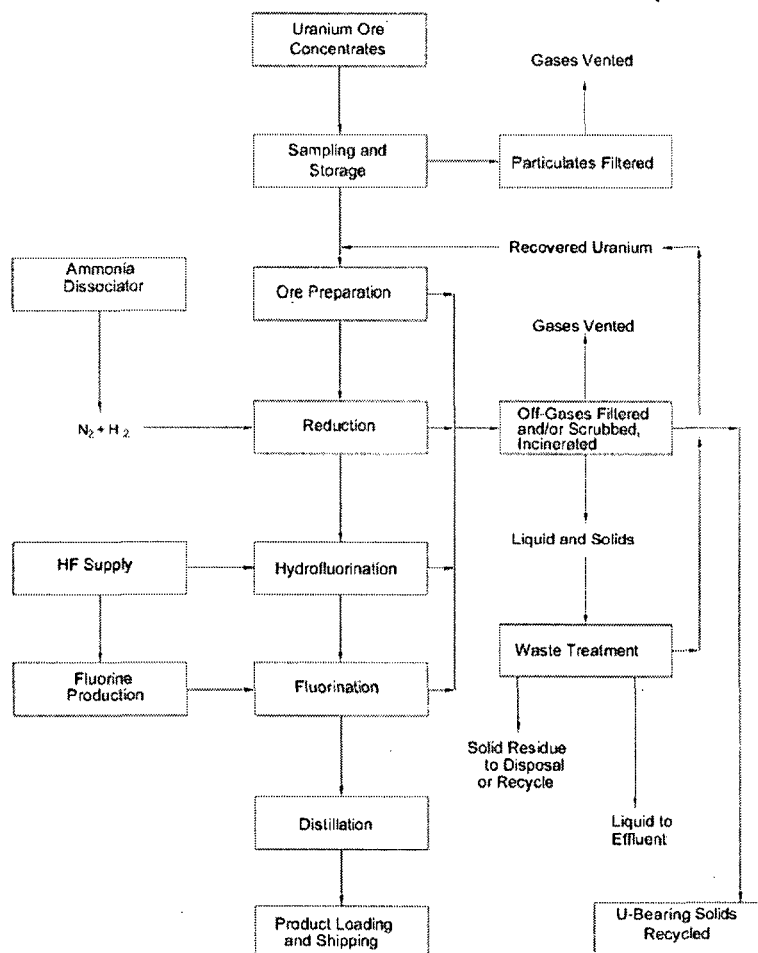
There are currently four calcium fluoride ponds at the site designated Ponds B, C, D and E. Pond A which was located north of Pond B was removed, and the surface treatment facility was constructed in the area once occupied by Pond A. The facility historically used calcium hydroxide to precipitate fluorides as insoluble calcium fluoride into these ponds. The surface treatment facility is now used to treat fluoride materials prior to a permitted discharge, so materials are no longer added to these ponds.

2.4 MTW Process Operations

The Metropolis plant was designed to convert uranium ore concentrates into uranium hexafluoride, which is then shipped to U.S. and foreign plants for enrichment of the ^{235}U isotope. The facility, which uses the fluoride volatility process, has the capacity to convert approximately 15,000 metric tons of uranium per year from ore concentrates into UF_6 . The ore concentrates feed assays show approximately 75% uranium and the distilled UF_6 product contains less than 300 parts per million (ppm) impurities. The process flow diagram of the conversion process is provided below, and each significant step of the conversion process is described.

2.4.1 UF₆ Conversion Process Flow Diagram

The process flow diagram for the plant operations is as follows.



2.4.2 Ore Preparation

The plant receives uranium ore concentrates in 55-gallon drums. Each drum of ore concentrate is weighed and then stored on storage pads until accountability procedures and the uranium and impurity analyses are completed.

Some ore concentrates and all uranium compounds from the uranium recovery process contain undesirable amounts of contaminants (principally sodium) that must be removed. The pretreatment consists of a four-stage countercurrent decantation treatment with ammonium sulfate solution. The uranium solids discharge into the ore calciner in the ore preparation area.

Incoming ore concentrates are charged into the system through a drum-dumping station. The concentrates either go directly to the calciner or through the pretreatment area to the calciner. Following the calciner, the ore concentrates are blended, agglomerated, dried, crushed, and sized to a uniform particle size. Dusts and fumes from this process are controlled by a series of dust collectors.

2.4.3 Uranium Reduction

The sized U_3O_8 enters a fluid-bed reactor termed the reductor. In the reductor, the uranium is reduced to the dioxide form utilizing hydrogen and nitrogen as the fluidizing gas, which is obtained from the dissociation of ammonia. The reductor off-gas (principally hydrogen, nitrogen, water vapor, and hydrogen sulfide) is passed through filters to remove particulate uranium, and the residual gas is incinerated to convert the H_2S to SO_2 .

2.4.4 Uranium Hydrofluorination

The uranium dioxide from the reductor is fed into two fluid-bed hydrofluorinators operated in series. A countercurrent flow of anhydrous hydrogen fluoride (HF) fluidizing gas converts the uranium dioxide into uranium tetrafluoride (UF_4). The off-gas is filtered to remove particulate uranium and scrubbed with water and potassium hydroxide solution to remove HF before being vented to the atmosphere. The HF scrubber liquors are neutralized with KOH, and the fluoride is removed with calcium before being discharged with the main plant effluent.

The UF_4 is then fed into two parallel fluid-bed fluorinators that also contain inert bed material. Elemental fluorine used as the fluidizing gas converts the UF_4 to UF_6 that is volatilized from the fluorinators. Residual uranium and nonvolatile uranium daughter products remain in the bed material, which is recycled and reused until the buildup of contaminant levels prohibits further use. The bed material is then retired for radioactive decay and recovery of the uranium content. The volatilized gas containing UF_6 , excess fluorine, and HF is passed through a series of filters for particulate removal and through a series of cold traps for UF_6 collection.

2.4.5 Uranium Hexafluoride Distillation

The bulk of the UF_6 is condensed in a series of primary cold traps that are operated at approximately $-20^{\circ}F$. The secondary and tertiary traps operate at lower temperatures and remove the residual UF_6 . Following liquefaction crude UF_6 is removed intermittently from the cold traps by heating and is then transferred to still feed tanks to await purification by fractional distillation.

Uncondensed gas from the cold traps consisting of F_2 , HF, air, and traces of UF_6 is passed through scrubbers where contact with aqueous potassium hydroxide solution removes fluorides and traces of uranium prior to release to the atmosphere. The potassium diuranate precipitated in the off-gas scrubbers is settled from the KOH that is subsequently reused in the process scrubbers.

Crude UF_6 from the still feed tanks is fed into a low boiler distillation column. The UF_6 that has been stripped of low-boiling impurities is then fed into a high boiler distillation column where high-boiling impurities are eliminated. The product is condensed and packaged into 10-ton or 14-ton cylinders that are shipped to gaseous diffusion plants. There are no off-gases from this process.

Potassium diuranate from the cold trap off-gas cleanup system, fluorinator filter fines, contaminated fluorinator bed material, miscellaneous recovered dust, and scrap ore are finely ground and leached with a sodium carbonate solution to solubilize the uranium as the tricarbonate complex. The leached material is filtered, and the insoluble material (principally inorganic fluoride containing residual uranium and uranium daughter products) is dried and drummed for disposal at a licensed radioactive waste disposal facility. The uranium in the filtrate is precipitated with sodium hydroxide (NaOH); the recovered uranium is then charged to the head end of the process via the pretreatment facility. The uranium recovery leach liquors are recycled to permit reuse. Less than 10% of these liquors are withdrawn, treated, and then discharged into the plant effluent.

2.4.6 UF_6 Cylinder Cleaning

Periodically, UF_6 product cylinders must be washed and pressure tested to assure integrity. The cylinders are washed with sodium carbonate solution to leach the uranium from the residual solids. The leach liquors are then filtered to remove the unleached solids and transferred to the remaining recovery facility. The remaining solids containing daughter products of uranium principally ^{234}Th and ^{234}Pa are stored on-site in drums and are eventually disposed of at a licensed waste disposal facility.

2.4.6.1 Fluorine Production

Fluorine, which is one of the raw materials required for the UF_6 process, is produced on-site by electrolysis using hydrogen fluoride as the source. A portion of this material is transferred to the UF_6 operation, and the remainder is used to produce materials that are sold commercially.

2.4.7 Plant and Non-Plant Area Delineation

ENERCON assessed the plant and non-plant areas at the MTW site as part of the HSA. The plant was delineated into 29 separate areas or systems of interest (Figure 2). Non-plant areas were delineated into 5 separate areas or systems (Figure 3). Table 1 provides a list of the 34 areas or systems.

Table 2-1: Listing of Plant and Non-Plant Areas

Area Designation	Description
P-1	Administration Building and Parking Lot
P-2	Laboratory Building and Adjacent Storage Area
P-3	Former Cold Trash Storage Area
P-4	Fluorination Preparation
P-5	Ore Staging Area/Drum Dumping Area/Sodium Removal Building/KOH Muds Building/Wet Process Building/Calciner
P-6	Feed Materials Building and South Pad
P-7	Powerhouse, Nitrogen Generation, Laundry, Flammable Storage Building, and Storage Area
P-8	Liquid Fluorine Plant, Sulfur Hexafluoride Plant, Antimony Pentafluoride, Iodine Pentafluoride Plant, and the Loading Docks
P-9	Ore Sampling Area
P-10	Ore Storage Building
P-11	Ore Storage Pads
P-12	Tank Farm, Pond Muds Calciner, and Fuel Oil Storage
P-13	Cylinder Wash Area
P-14	Uranium Settling Ponds
P-15	Bed Materials and Filter Fines Building
P-16	Drum Storage Pad
P-17	Waste Storage Area
P-18	Uranium Hexafluoride Cylinder Storage Area
P-19	Drum Crushing Facility
P-20	Environmental Protection Facility (EPF)
P-21	Calcium Fluoride Ponds
P-22	Maintenance Storage Area/Trash Compactor/Switchyard/Fuel Depot
P-23	Maintenance Shop/Stores/Loading Dock
P-24	Liquid Propane Gas Area
P-25	Roadways and Ground Surface
P-26	Plant Exclusion Area
P-27	Sanitary Drain Lines
P-28	Process Drain Lines
P-29	Storm Water Drain Lines
NP-1	Non-Plant Area 1 - NPDES Outfalls
NP-2	Non-Plant Area 2 - Surface Drainage Pathways to the Ohio River
NP-3	Non-Plant Area 3 - On-site Landfill and Kickback Area
NP-4	Non-Plant Area 4 - River Road
NP-5	Non-Plant Area 5 - Remainder of the Property

The 2009 site characterization activities evaluated the site soils in twenty-six (P-1 through P-26) of the twenty-nine designated plant areas and the five (NP-1 through NP-5) designated non-plant areas. Plant areas P-27, P-28, and P-29 were not characterized due to inability to access the various subsurface lines because of on-going plant operations.

3.0 ASSESSMENT OF PLANT RADIOLOGICAL CONDITIONS

3.1 Radiological Criteria for License Termination

The overall objective of the Honeywell-Metropolis decommissioning is to remediate the facilities to a condition that corresponds to a calculated dose to the public that is less than 25 mrem/yr from applicable pathways. The facilities may then be released for unrestricted use. This dose limit is codified at 10 CFR 20.1402, Radiological Criteria for Unrestricted Use.

The Derived Concentration Guideline Level (DCGL) is defined in MARSSIM as the radionuclide-specific concentration within a survey unit corresponding to the release criterion. The DCGL is dependent upon several factors including the radionuclides of interest, applicable dose pathways, area occupancy and the future use of the facility. DCGLs assume a uniform level of residual radioactivity across the survey unit. For the Honeywell-Metropolis facility it was assumed that site-specific release criteria would be developed. The 2006 Report used 35 pCi/g as the release criteria, but stated that increased DCGL values were expected to be achievable. The 2006 Report cited as an example the release criteria of 110 pCi/g for the Sequoyah Fuels facility. The Sequoyah Fuels facility was a uranium conversion plant similar to MTW that closed in the 1990s. For this report and decommissioning cost estimate, a release criteria of 110 pCi/g was used as the basis of estimate. ENERCON has performed dose modeling for numerous sites and understands the basis for the 110 pCi/g approved by the NRC for the Sequoyah Fuels facility. ENERCON believes that 110 pCi/g is a reasonable DCGL for planning purposes and can be defended to the NRC.

The NRC criterion for acceptable surface contamination levels historically was 5,000 dpm/100 cm² average for U-nat and 1,000 dpm/100 cm² removable for U-nat as stated in Policy and Guidance Directive FC 83-23 "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, or Special Nuclear Materials Licenses". The current NRC guidance for acceptable activity levels for specific radionuclides is presented in NUREG-1757 Table B.1. The NRC declined to provide specific guidance for alpha emitting radionuclides, including U-nat. ENERCON expects that the MTW site will apply for a site specific release criteria using the guidance in NUREG-1757 Appendix I and the ALARA analysis guidance in NUREG-1757 Appendix N. These acceptable levels are presented in Table 3-1.

3.2 Prior Assessment of Plant Radiological Conditions

The 2006 Report evaluated NRC criteria and provided the following conclusions regarding the MTW radiological conditions/release criteria:

- NRC criterion for residual depleted uranium (DU) in soil was formerly 35 pCi/g.
- NRC guidance for acceptable license termination screening values for specific radionuclides was available in NUREG-1757 Table B.2.
- Honeywell would apply for site-specific release criteria using the guidance in NUREG-1757 Appendix I and the ALARA analysis guidance in NUREG1757 Appendix N. The outcome of this effort would be release criterion in excess of 35 pCi/g.

Other sites had previously performed evaluations and obtained site-specific release criteria in excess of 35 pCi/g. For example, the Sequoyah Fuels Corporation site's DCGL for uranium was 110 pCi/g for a release criteria of 25 mrem/yr. An ALARA evaluation indicated an ALARA action level of 4,780 pCi/g uranium, thus demonstrating that the 110 pCi/g value was ALARA. Therefore, the 2006 Report assumed that a site-specific release level of 35 pCi/g or greater for soils could be established. This report listed the following release criteria for surface contamination levels.

Table 3-1: Acceptable Surface Contamination Levels

NUCLIDES ^a	AVERAGE ^{b,c,f}	MAXIMUM ^{b,d,f}	REMOVABLE ^{b,e,f}
U-nat , U-235, U-238 , and associated decay products	5,000 dpm/100 cm ²	15,000 dpm/100 cm ²	1,000 dpm/100 cm ²
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm ²	300 dpm/100 cm ²	20 dpm/100 cm ²
Th-nat , Th-232 , Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm ²	3,000 dpm/100 cm ²	200 dpm/100 cm ²
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5,000 dpm/100 cm ²	15,000 dpm/100 cm ²	1,000 dpm/100 cm ²

^a Where surface contamination by both alpha- and beta-gamma emitting nuclides exists, the limits established for alpha- and beta-gamma emitting nuclides should apply independently.

^b As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

- ^c Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such subject.
- ^d The maximum contamination level applies to an area not more than 100 cm².
- ^e The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.
- ^f The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

3.3 Identification of Potential Radionuclides of Concern

As part of the HSA prepared in 2009 by ENERCON, a list of potential radionuclides of concern (ROC) was developed. This ROC list provided guidance on the sampling strategies, methodologies, and analytical protocols selected for characterization. Part of the assessment and evaluation process considered the movement of uranium daughter products in the plant processing operations. Potential concentration of uranium daughter radionuclides in a specific waste stream was considered when performing characterization. Identifying the location(s) where those waste streams were historically handled was considered in the HSA.

Appendix C of the HSA assessed the ROCs in incoming ore concentrate and the plant-specific waste streams. Evaluating the various forms of uranium found in the incoming ore concentrate and the plant waste streams, the following was concluded:

- Dose exposure from the incoming ore concentrate is primarily (more than 90%) driven by the presence of U-234, U-235, and U-238.
- Dose exposure based on on-site and off-site environmental air monitoring data is primarily driven (more than 90%) by the presence of U-234, U-235, and U-238.
- Dose exposure based on uranium recovery solid wastes is primarily driven by the presence of Ra-226, Th-230, and Th-232.
- Dose exposure based on water effluent monitoring data is primarily driven by the presence of Ra-226, U-234, and U-238.

ENERCON designated radionuclides U-234, U-235, and U-238 as the base ROC group. Radionuclides Ra-226, Th-230, and Th-232 were designated as modified ROC Group 1. Radionuclides Ra-226, U-234, and U-238 were designated as modified ROC Group 2.

Within the plant operational processes, the uranium recovery process occurs in the Feed Materials Building (P-6), the Cylinder Wash Facility (P-13), the Bed Materials and Filter Fines Building (P-15), and the Waste Storage Area (P-17). Thus, 4 of the 29 plant areas were assessed as requiring consideration for the base ROC and modified ROC Group 1. All remaining plant operational areas (25 of the 29 plant areas) were assessed as requiring consideration of the base ROC group for characterization.

The water effluent location is the NPDES outfall (NP-1). Thus, 1 of the 5 non-plant areas was assessed as requiring consideration for modified ROC Group 2. All remaining non-plant areas (NP-2 through NP-5) were assessed as requiring consideration for the base ROC group for characterization.

3.4 Characterization Data for Prior Assessments of Radiological Conditions

The 2006 Report used available data and experience with similar sites to determine the extent of remediation required during decommissioning. The available characterization data for the 2006 Report included removable activity survey data and environmental sampling data.

The removable activity survey data was utilized to help determine which buildings and indoor areas required remediation. Fixed activity data was not available. The average and maximum activity levels measured for each building were provided in the 2006 Report. The limit used for removable activity for natural uranium was 1,000 dpm/100 cm². No additional data from buildings and indoor areas were collected during the 2009 site characterization so no changes were made to the quantities estimated by Duratek in the 2006 Report.

The 2006 Report used site environmental sample survey data to help determine which outdoor areas potentially required remediation assuming a site-specific soil release level of 35 pCi/g. This report uses data collected during the 2009 site characterization assuming a site-specific soil release level of 110 pCi/g.

3.4.1 Main Production Buildings

Survey data included in the 2006 Report for the Main Production Buildings indicated that in general these buildings were contaminated and would require remediation. Specifically the Feed Materials Building, the Uranium Recovery Building, the KOH Building and the Sampling Plant exceeded the release level

assumed for the 2006 Report. This decommissioning cost estimate assumes no change in the radiological status of these buildings.

3.4.2 Miscellaneous Production Buildings

Survey data included in the 2006 Report for the Miscellaneous Production Buildings indicated that in general these buildings were not contaminated and would not require extensive remediation. Based on prior history the Pond Muds Filter Calciner Building was assumed to require remediation in the 2006 Report. This decommissioning cost estimate assumes no change in the radiological status of these buildings.

3.4.3 Drum Storage Pads & Ponds

Based on history, the Drum Storage Pad, the KOH Muds Storage Pad, the Waste Storage Pad, and the Ore Storage Pads were assumed in the 2006 Report to require remediation. Uranium Settling Pond Nos. 3 and 4 were assumed in the 2006 Report to require remediation based upon data from Uranium Settling Pond Nos. 1 and 2 that required remediation at closure. This decommissioning cost estimate assumes no change in the radiological status of these areas.

3.4.4 Outdoor Areas, Drains & Sewers

Site characterization completed in 2009 focused on plant and non-plant surface and subsurface soils. Prior to the 2009 site characterization there was limited data available for surface and subsurface soils in the plant and non-plant areas. Characterization activities excluded subsurface piping systems to eliminate disruptions to plant operations. A significant volume of impacted soil was identified beyond the volume estimated in the 2006 Report. The changes in these volumes are as follows:

- Plant area soil impacted to a depth of approximately 1 foot below grade was identified in an estimated footprint area of 624,075 square feet (ft^2). Therefore, an additional 624,075 cubic feet (ft^3) of impacted soil was added to the 2009 decommissioning cost estimate.
- Plant area soil impacted to a depth of approximately 3 feet below grade was identified in an estimated footprint area of 69,609 ft^2 . Therefore, an additional 139,218 ft^3 ($69,609 \text{ ft}^2 \times 2 \text{ ft}$) of impacted subsurface soil was added to the 2009 decommissioning cost estimate.
- Plant area soil impacted to a depth of approximately 6 feet below grade was identified in an estimated footprint area of 30,013 ft^2 . Therefore, an additional 90,039 ft^3 ($30,013 \text{ ft}^2 \times 3 \text{ ft}$) of impacted subsurface soil was added to account to the 2009 decommissioning cost estimate.

Overall, the additional impacted soil volume for plant areas (P-1 through P-25) identified in this decommissioning cost estimate based on the 2009 characterization is estimated to be 853,332 cubic feet.

Similarly, the additional impacted soil volume for non-plant areas (P-26 and NP-1 through NP-5) identified in this decommissioning cost estimate based on the 2009 characterization is estimated to be 153,897 cubic feet.

3.4.5 Administrative Areas

The Administration Building, the Lab and Office Building, the Shop/Stores/Office Building, and the Power House were identified in the 2006 Report as not contaminated. The 2006 Report stated that radioactive materials were used in laboratory area and some remediation in this area will be required. This decommissioning cost estimate assumes no change in the radiological status of these areas.

3.4.6 Calcium Fluoride Ponds B through E

Ponds B through E are RCRA regulated surface impoundments. Characterization of the ponds was completed by Honeywell in 2009. Pond closure requirements are currently under evaluation by Honeywell. RCRA financial security for pond closures is accounted for separately and is therefore not part of this decommissioning cost estimate.

4.0 2009 DECOMMISSIONING COST ESTIMATION METHODS

With limited exceptions, the 2006 Report cost estimates associated with buildings and structures were not modified for this decommissioning cost estimate. The methodology described in this section was used by Duratek in 2006 to prepare the 2006 Report for Honeywell. This section of the decommissioning cost estimate report states the overview of the considerations and factors used to prepared this decommissioning cost estimate. Factors developed for the 2006 Report that remain unchanged are identified and described. Updates for this decommissioning cost estimate report are identified and described.

Table 4-1: Decommissioning Cost Summary - Honeywell Facility

Operation	Man-hours	Labor Plus Travel & Living	Waste Process & Transport	Equipment, Contracts & Supplies	Radwaste Ship & Disposal	Total Cost
Main Production Buildings	211,041	\$11,359,421	\$776,448	\$1,010,299	\$55,793,846	\$68,940,005
Miscellaneous Production Buildings	103,738	\$5,747,318	\$195,669	\$317,427	\$6,387,876	\$12,648,290
Drum Storage Pads & Ponds	349,504	\$19,491,606	\$4,249,810	\$1,009,645	\$5,023,255	\$29,774,316
Outdoor Areas, Drains & Sewers	6,723	\$353,380	\$1,272,454	\$92,791	\$283,564	\$2,002,189
Administrative Areas	196	\$10,276	\$0	\$790	\$83,989	\$95,055
Additional soil plant areas P1-P-25	1,664	\$0	\$20,925,206	\$0	\$2,885,263	\$23,810,469
Additional soil non-plant areas NP1-NP5 plus additional soil adjacent to subsurface piping	10,400	\$0	\$3,208,367	\$0	\$811,586	\$4,019,953
Decommissioning Planning	480	\$51,346	\$0	\$0	\$0	\$51,346
Characterization Surveys	2,275	\$221,503	\$0	\$20,754	\$0	\$242,257
Final Surveys	9,100	\$886,013	\$0	\$83,015	\$0	\$969,028
Planning, Training & Mobilization	2,068	\$120,645	\$0	\$0	\$0	\$120,645
Honeywell Oversight & Licensing	21,684	\$1,924,447	\$0	\$0	\$0	\$1,924,447
Totals	718,873	\$40,165,955	\$30,627,954	\$2,534,721	\$71,269,379	\$144,598,000
						25% CONTINGENCY
						\$36,149,500
						ILLINOIS RAD WASTE FEE (\$3/ft ³)
						\$5,862,547
						GRAND TOTAL
						\$186,610,047

Specific modifications and/or adjustments to the decommissioning cost estimate in this current report compared to the 2006 Report are highlighted below:

- No adjustments were made in the estimated level of man-hours for tasks scoped in the 2006 Report.

- New man-hour estimates were added to address the soils added as a result of the 2009 characterization work.
- Labor plus travel and living costs were escalated using a cost escalation factor of 1.126 (see Attachment 14) to account for inflation.
- Equipment contract and supplies costs scoped in the 2006 were escalated by a factor of 1.126 to account for inflation.
- Radwaste transportation and disposal costs scoped in the 2006 report were escalated by a factor of 1.126 to account for inflation.
- Waste process and transport costs scoped in the 2006 Report were either escalated by a factor of 1.126 to account for inflation or replaced with rates consistent with 2009 market conditions.
- New waste process costs were added to address the soils added as a result of the 2009 characterization.
- New radwaste shipping and disposal costs were added to address the soils added as a result of the 2009 characterization.
- Prior decommissioning cost estimates did not include a line item for the existing State of Illinois fee of \$3 per cubic foot (ft³) for disposal of low-level radioactive waste. The cost of this fee was added for both the waste volume identified in the 2006 Report and for the additional soil volume added because of the 2009 site characterization.

4.1 Cost Modifying Factors

In the 2006 Report, site and work conditions were assumed by Duratek to significantly affect the overall cost of remediation. A productivity adjustment factor was incorporated based on site and work conditions expected to be encountered during decommissioning tasks. The productivity adjustment factor was related to personnel protection requirements and working temperatures. The degree of protection required depended on the extent of contamination and specific activities to be performed in a given area. As the level of personnel protection increased, so did the impact on individual productivity and task duration. Adjustments were made to account for the implementation of personnel protective measures where applicable. This estimate utilized standardized levels of personnel protection and their associated impacts as shown in Table 4-2. The productivity factors related to these levels of personnel protection were provided in Table 4-3 and Table 4-4 for light and heavy work, respectively.

Table 4-2: Personnel Protective Equipment Protection Summary

Level A:	The highest available level of respiratory, skin, and eye protection
Level B:	The highest level of respiratory protection, but less skin protection than Level A. Level B is the minimum level recommended for initial site entries, or for other entry conditions dealing with unknown hazards.
Level C:	The same level of skin protection as Level B, but a lower level of respiratory protection.
Level D Modified:	Skin protection similar to or the same as Level C, without respiratory protection.
Level D:	Standard work uniform suitable for construction work: no respiratory protection and minimal skin protection.

4.2 Radiological Waste Volume Estimates

For the Honeywell decommissioning, the 2006 Report assumed the unprocessed radiological waste volumes shown in Table 4-5. Waste volume estimates for unprocessed radiological waste volumes have not changed from the 2006 Report.

4.3 Radiological Waste Disposal Cost

The 2006 Report assumed waste processing would occur at the Duratek facility in Oak Ridge, Tennessee followed by disposal at EnergySolutions of Utah. Some wastes were assumed to be directly disposed at EnergySolutions. The following sections describe the pricing used for the 2006 Report, and the adjustments made for the 2009 Report.

4.3.1 EnergySolutions of Utah Disposal Costs

The 2006 Report estimated the cost to transport waste to the EnergySolutions disposal site based on a transport distance of 1,985 miles at a rate of \$2.90 per mile. The cost to dispose of the waste at the EnergySolutions of Utah site was based on a disposal charge of \$123 per cubic foot. ENERCON assumed these unit costs will remain the same and applied a cost escalation factor of 1.126 to account for inflation.

Table 4-3: Hazardous and Toxic Waste Productivity Factors: Light Work

Variables	U/M	Level A			Level B			Level C			Level D Modified			Level D		
		T<70	70<T	T>85	T<70	70<T	T>85	T<70	70<T	T>85	T<70	70<T	T>85	T<70	70<T	T>85
A. Standard losses	Min.	160	160	160	140	140	140	128	128	128	76	76	76	32	32	32
B. Scheduled/heat stress breaks	Min.	60	90	120	43	65	86	35	63	101	30	47	63	30	33	44
C. Dexterity losses	Min.	78	69	60	74	69	64	55	51	44	4	4	3	5	5	5
D. Total time lost per 8-hr. WD	Min.	298	319	340	257	274	290	218	242	273	110	127	142	67	70	81
E. Productivity time per 8-hr. WD	Min.	182	161	140	223	206	191	262	238	207	370	353	338	413	410	399
F. Productivity time on clean site	Min.	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
G. HTW Productivity Factor		0.42	0.37	0.33	0.52	0.48	0.44	0.61	0.55	0.48	0.86	0.82	0.79	0.96	0.95	0.93

Notes:

- Standard delays account for all time losses independent of temperature variations. They include safety meetings, instructions, putting on and taking off of PPE, decontamination, switching air supply/filters, monitoring delays, and cleanup.
- Scheduled/heat stress breaks account for all paid rest periods per workday.
- Dexterity losses are based on subjective opinions of the percentage that PPE slows down a normal worker because of factors such as discomfort, clumsiness, weight, and restricted breathing and communication. The number of minutes actually worked is reduced by the percentage representing the average response for that particular PPE level.
- Values for A, B, and C were derived by averaging the survey responses for each PPE level. Responses that varied greatly from the average were subject to omission at the author's discretion.
- Total paid time = 480 minutes.
- 50-minute delay on clean site = 10-minute safety meeting and instructions + 10-minute cleanup + 30-minute breaks.
- Calculations: $D = A + B + C$ $E = 480 - D$ $F = 480 - 50$ $G = E/F$ U/M = unit of measure WD = workday Min. = minutes
- T = temperature (°Fahrenheit)
- Level A-protection is used in extreme emergency situations only. Productivity factors for Level A should be used with caution because they were extrapolated from 2 data points.

Table 4-4: Hazardous and Toxic Waste Productivity Factors: Heavy Work

Variables	U/M	Level A			Level B			Level C			Level D Modified			Level D		
		T<70	70<T	T>85	T<70	70<T	T>85	T<70	70<T	T>85	T<70	70<T	T>85	T<70	70<T	T>85
A. Standard losses	Min.	220	220	220	204	204	204	135	135	135	76	76	76	28	28	28
B. Scheduled/heat stress breaks	Min.	60	105	150	50	75	123	64	131	178	30	90	165	30	45	60
C. Dexterity losses	Min.	80	62	44	52	46	35	44	34	26	28	24	18	11	10	10
D. Total time lost per 8-hr. WD	Min.	360	387	414	306	325	362	243	300	339	134	190	259	69	83	98
E. Productivity time per 8-hr. WD	Min.	120	93	66	174	155	118	237	180	141	346	290	221	411	397	382
F. Productivity time on clean site	Min.	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
G. HTW Productivity Factor		0.28	0.22	0.15	0.40	0.36	0.27	0.55	0.42	0.33	0.80	0.68	0.51	0.96	0.92	0.89

Notes:

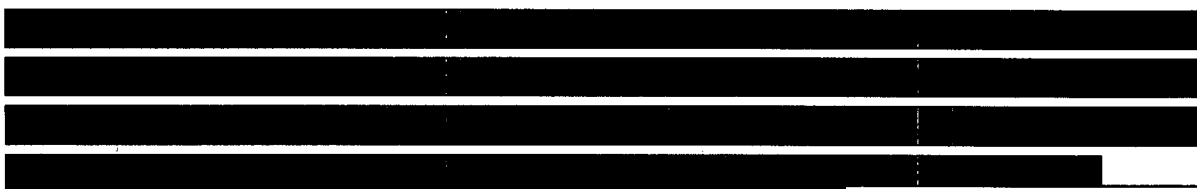
- Standard delays account for all time losses independent of temperature variations. They include safety meetings, instructions, putting on and taking off of PPE, decontamination, switching air supply/filters, monitoring delays, and cleanup.
- Scheduled/heat stress breaks account for all paid rest periods per workday.
- Dexterity losses are based on subjective opinions of the percentage that PPE slows down a normal worker because of factors such as discomfort, clumsiness, weight, and restricted breathing and communication. The number of minutes actually worked is reduced by the percentage representing the average response for that particular PPE level.
- Values for A, B, and C were derived by averaging the survey responses for each PPE level. Responses that varied greatly from the average were subject to omission at the author's discretion.
- Total paid time = 480 minutes.
- 50-minute delay on clean site = 10-minute safety meeting and instructions + 10-minute cleanup + 30-minute breaks.
- Calculations: $D = A + B + C$ $E = 480 - D$ $F = 480 - 50$ $G = E/F$ U/M = unit of measure WD = workday Min. = minutes
- T = temperature (°Fahrenheit)
- Level A-protection is used in extreme emergency situations only. Productivity factors for Level A should be used with caution because they were extrapolated from 2 data points.

Table 4-5: Honeywell Unprocessed Radioactive Waste Summary

Area Description	Generated EnergySolutions Disposal Volume (ft ³)	Decon EnergySolutions Disposal Volume (ft ³)	Direct EnergySolutions Disposal Volume (ft ³)	Total Disposal Volume (ft ³)
Main Production Buildings	2,434	10,860	330,849	344,144
Miscellaneous Production Bldgs	1,246	1,373	36,783	39,401
Drum Storage Pads & Ponds	4,184	0	26,800	30,984
Outdoor Areas, Drains & Sewers	105	0	1,644	1,749
Administrative Areas	18	0	500	518
TOTALS	7,987	12,233	396,576	416,796

4.3.2 Waste Processing/Burial Costs

In the 2006 Report the cost to transport waste to the Duratek central volume reduction facility in Oak Ridge, Tennessee was based on a transport distance of 295 miles at a rate of \$2.90 per mile. Waste processing at the Studsvik facility in Memphis, Tennessee was included in this estimate for additional soils identified during the 2009 site characterization. The unit cost was variable depending upon the volume reduction process. These unit costs were included in Appendix A-12 of the 2006 Report.



4.4 Remediation Methods

PROPRIETARY INFORMATION Withhold from Public Disclosure Under 10 CFR 2.390 EXEMPTION 4

Remediation methods selected in the 2006 Report considered contamination levels, degree of penetration of contamination into substrate material, equipment cost, support equipment costs, material and chemical costs, the generation of secondary waste volumes (waste in addition to the removed contaminated material), processing rates, labor requirements, and applicability to various tasks. Typical decontamination processes presented in the 2006 Report are summarized in Table 4-6. This table shows the decontamination methodology used, application information, the process cost per square foot of area decontaminated, and the amount of secondary waste generated. These unit factors stated in the 2006

Report have been applied to specific areas or equipment requiring remediation to determine the most cost-effective process. ENERCON assumed these variables will remain as presented in the 2006 Report, and applied a cost escalation factor of 1.126 to account for inflation.

Table 4-6: Decontamination Methodology Comparison

Methodology	Application	Penetration depth (in)	Crew Size	Process Cost (\$/ft ²)	Secondary Waste Volume (ft ³ /1,000 ft ²)
McDonald U-5 Scabbler	Floor concrete	0.25	2.0	1.069	0
McDonald U-5 Scabbler	Floor concrete	0.5	2.0	2.042	0
McDonald 3WCD Scabbler	Wall concrete	0.125	2.0	4.916	0
Blastrac 10D Shot Blaster	Floor concrete	0.063	1.1	0.437	0.53
Blastrac 10D Shot Blaster	Floor concrete	0.125	1.1	0.557	0.53
LTC 10-60Pn Special Vacuum Blaster	All surfaces	0.031	1.3	1.837	0.53
LTC 10-60Pn Special Vacuum Blaster	All surfaces	0.063	1.3	3.336	0.53
EDCO CPU-10C Floor Plane	Floor concrete	0.50	2.0	1.768	0
CO2 Blasting	All Surfaces	0.00	2.0	4.575	0
Hydrolaser (5-10,000 psi)	All Surfaces	0.00	2.0	0.952	9.07
Hands-On-Decon	Non-Porous surfaces	0	1.0	2.197	8.33

4.5 Radiological Waste Volume Reduction Costs

The 2006 volume reduction processes analyzed in the 2006 Report are summarized in Table 4-7. This table shows the volume reduction methodology used, application information, transportation charges, the process cost per unit weight or volume, and the total process cost per unit volume. Unit factors were applied to specific items of equipment requiring disposal. The waste generated at this facility were assumed to include ventilation systems, process equipment, concrete, steel, soil and secondary waste generated during the decontamination work such as protective clothing and materials used during manual decontamination work.

Table 4-7: Volume Reduction Methodology Cost Information

Volume Reduction (VR) Methodology	Applicability	Transport Container Type	Total VR Cost (\$/lb)
Super Compaction	Dry active waste, 20 lb/ft ³	B-25 for EnergySolutions Disposal	4.08
Survey & Release Low Density Drums	Clean Low Density Waste	55 Gallon Drum	1.31
Survey & Release Low Density Boxes	Clean Low Density Waste	B-25 for EnergySolutions Disposal	1.68
Survey & Release High Density Boxes	Clean Waste at >60 lb/ft ³	B-25 for EnergySolutions Disposal	0.20
Survey & Release Asbestos Material	Potentially Clean Asbestos	B-25 for EnergySolutions Disposal	2.53

4.6 Unit Costs

The 2006 Report listed the unit costs used for the decommissioning cost estimate. These unit costs are provided in Table 4-8. ENERCON assumed these unit costs will remain as presented in the 2006 Report, and applied a cost escalation factor of 1.126 to account for inflation. Rates listed in the table below are non-prevailing wage rates.

Table 4-8: Decommissioning Estimate Selected Unit Cost Factors

Unit Cost Factor	2006 Unit Cost Rate	Units
Radioactive Soil and Rubble Disposal at EnergySolutions of Utah	\$123.00	cubic foot
Waste Transportation to EnergySolutions of Utah	\$2.90	Mile
Transportation Distance to EnergySolutions of Utah	1,985	miles
20-ft Sea/Land Container Cost	\$330.00	month
Management and Supervision	\$130.84	hour
Engineer	\$87.50	hour
Radiation Protection Supervisor	\$123.43	hour
Laborer Foreman	\$45.04	hour
Administrative Assistant	\$33.03	hour
Instrument Technician	\$59.78	hour
Radiation Protection Technician	\$59.78	hour
Laborer	\$28.85	hour
Illinois sales tax	6.25%	
Fee	20%	

4.7 Cost Escalation Factor

A methodology for computing annual estimate updates is provided in Attachment 14. Labor, energy, and waste processing costs escalation factors were calculated. The cost escalation methodology specified in NUREG-1307 Revision 13 was utilized to calculate a cost escalation factor to account for inflation.

4.8 Final Surveys

The 2006 Report estimated final survey costs based on the methodology presented in NUREG-1757 Volume 3. The estimate utilized the number of sample points for the various areas being surveyed, the type of survey being performed, and the time to perform each of these surveys. Equipment and material cost to perform the surveys was added along with staff support costs to determine a total cost. The survey requirements were based on NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). The 2006 Report summarized the facility survey labor estimates. They are provided in Appendices A-6 through A-9. ENERCON assumed these unit costs will remain as selected by Duratek, and applied a cost escalation factor of 1.126 to account for inflation.

5.0 DESCRIPTION OF THE DECOMMISSIONING PROCESS

Decommissioning of the Honeywell Facility will require residual radioactive materials be removed from the site to allow removal of the decommissioned facilities from the site's radioactive materials license. After the Honeywell Facility has been remediated to release limits, no further decontamination or demolition is required. Upon acceptance of the final radiological survey report and termination of licenses by the NRC, no restrictions are imposed upon the site. Numerous structures will remain after license termination. Remaining buildings or structure will not have had their structural soundness compromised by decommissioning activities.

5.1 Characterization Survey

Characterization surveys will be conducted in areas of the facility that have a history of radioactive materials use or storage. Survey results will determine the extent of remediation required to achieve release of these areas for unrestricted use. Characterization surveys are normally performed in such a manner that if no contamination is found, the results may be used as final survey data or to augment final survey data.

5.2 Remediation

The 2006 Report summarized the anticipated remediation activities, with applicable assumptions and bases, in the remaining areas. This summary is presented in Table 5-1.

Table 5-1: 2006 Decommissioning Basis for Planned Remediation Activities

Building or Area	Remediation Activities
Main Production Buildings	
FM Building	All equipment and structure will be removed from the site. Basement 8" concrete walls and 6" concrete floor slab will be removed. Soil 12" deep below floor slab will be removed.
KOH Muds Bldg, Sodium Removal Bldg, U Recovery Bldg, & Sample Plant Bldg	All equipment and structure will be removed from the site. 1/2" of concrete will be removed from the floor slabs and they will be left in place.
FM Building South Pad East & FM Building South Pad West	All equipment will be removed from the site. 6" concrete floor slabs will be removed, 18"x24" footings will be removed, and 2'x3' equipment footings will be removed. Soil 12" deep below floor slabs will be removed.
Miscellaneous Production Buildings	
Calcliner Building	All equipment and structure will be removed from the site. 1/2" of concrete will be removed from the floor slab and it will be left in place.

Building or Area	Remediation Activities
Ore Storage Bldg., Bed Materials and Filter Fines Bldg., Cylinder Wash Bldg., Hazardous Waste Storage Bldg., & Drum Crusher Bldg.	Buildings will be decontaminated and remain in place. 1/2" of concrete will be removed from the floor slabs and the slabs will remain in place.
New Drum Washing Bldg., & New Drum Crusher Bldg.	All equipment will be removed from the site. Buildings will be decontaminated and remain in place. 1/2" of concrete will be removed from the floor slabs and the slabs will remain in place.
Miscellaneous Waste	BM/FF Bldg. LLRW Trash in drums -338 tons, LLRW Trash in B-25 boxes - 227 tons, LLRW Trash in Blue boxes - 27 tons, Waste Pad Material-1.2 tons, Scrap Metals Pad - 4,830 tons, New Scrap Metal - 73 tons, 16"x16"x8" Metals Pad Cubes - 22 tons, Imhoff Sludge in Crusher Building - 73 ton, Outfall Material in Crusher Building - 5.1 tons, Cold Concrete (Construction Rubble) - 158 tons, soil from HF Mitigation & Fire Water Line Ruptures - 450 tons, Hot Concrete (Construction Rubble) - 340 tons, Hot Asbestos in Drum Crusher Building - 9 tons, Large Rad. Scrap Metal (Fluorinator shell & Cold Trap Shell) – 12.5 tons, Crushed Unwashed Ore Drums – 155 tons, DAW on storage pad – 60 tons, Cold Special / Chemical Waste - 68 tons, 400 thin-walled UF ₆ Cylinders, & 26 Molyflush Cylinders.
Drum Storage Pads & Ponds	
Ore Storage Pads, Drum Storage Pad, Waste Storage Pad	1/2" of concrete will be removed from the concrete pads and the pads will remain in place.
Uranium Settling Pond Nos. 3 and 4	Excavate 3' from pond bottoms, backfill ponds with 9' thick clay.
Outdoor Areas, Drains & Sewers	
Non-plant areas	Excavate a trapezoidal area 3' wide at the bottom, 2 feet deep, with side sloped two horizontal to 1 vertical along the 2,770 foot length of the drainage ditch. Excavate impacted soils along the surface drainage pathway east of the plant. Excavate impacted soils along the road to the inactive landfill. Excavate impacted soils along old River Road.
Process Drain & Stormwater Pipe	Excavate and remove all process drain lines in an area 3' x 5' x 2,567'. Excavate and remove all storm water drain lines in an area 3' x 5' x 6,175'. Portions of the stormwater piping were not considered impacted.
Site Soil Areas	Excavate a total of 748,500 square feet to a depth of 1'. Excavate additional soils to a depth of 3' in limited areas and in additional areas up to 6. Total volume of soils to be excavated is estimated to be 883,140 cubic feet. Backfill the excavated areas.
Administrative Areas	Remove and replace roofing material at Laundry Area over a 20'x50' area

5.2.1 Main Production Buildings

The entire Feed Material Building and structure, the concrete slab, the building pads, and all of the equipment was considered to be contaminated and would need to be demolished and removed from the site for processing or disposal at a licensed radioactive waste disposal facility.

The Ion Exchange Building, the Sodium Removal Building, the KOH Muds Building, the Uranium Recovery Building, and the Sample Plant will be treated in a similar manner. The structures and all of the equipment are considered to be contaminated and would need to be demolished and removed from the site for processing or disposal at a licensed radioactive waste disposal facility. The building concrete slabs will be left in place after being decontaminated using surface removal methods.

5.2.2 Miscellaneous Production Buildings

The Ore Storage Building, the Bed Materials and Filter Fines Building, the Pond Muds Filter Calciner Building, the Cylinder Wash Building, the Drum Crusher Building is considered to be contaminated. The Pond Muds and Filter Calciner structures, and all of the equipment are considered to be contaminated and would need to be demolished and removed from the site for processing or disposal at a licensed radioactive waste disposal facility. The Ore Storage Building, the Bed Materials and Filter Fines Building, the old and new Cylinder Wash Buildings, and the old and new Drum Crusher Buildings will be decontaminated and left in place. Building concrete slabs will be left in place after being decontaminated using surface removal methods.

The GF_2 Plant Building, the South GF_2 Plant, the $\text{SF}_6/\text{IF}_5/\text{SbF}_5$ Building, the Liquid Fluorine Facility, the Liquid Nitrogen Facility, the Surface Treatment Facility, and the Calcium Fluoride Building do not require remediation.

5.2.3 Drum Storage Pads and Uranium Settling Ponds

The Ore Storage Pads, the KOH Muds Storage Pad, and the Waste Storage Pad are considered to be contaminated. The concrete slabs will be left in place after being decontaminated using surface removal methods.

Uranium Settling Pond Nos. 3 and 4 are contaminated and will be remediated by removing the pond sediments, pond liner, and contaminated soil under the ponds for disposal at a licensed radioactive waste disposal facility.

5.2.4 Outdoor Areas, Drains and Sewers

The sanitary system was not assumed to be impacted and therefore would not require remediation. The entire process system was assumed impacted and portions of the storm water system were assumed impacted. No characterization was able to be performed near subsurface piping systems during the 2009 site characterization due to the on-going production at the site. For the storm water system, the determining factor typically was based on whether or not the piping was located downgradient of an area that had impacts to surface and subsurface soils. If a subsurface piping system was assumed impacted, remediation was assumed to consist of removing the piping and associated backfill. The typical cross section (3-foot wide by 5-foot deep) used in this estimate is the same cross section used in the estimate in the 2006 Report. The disposition of the impacted piping and backfill was assumed to be disposal at a licensed radioactive waste disposal facility.

The drainage swale from Outfall 002 (formerly referred to as “The Discharge Ditch to River” in the 2006 Report) is contaminated and will be remediated by removing the ditch sediments and surrounding impacted soil for disposal at a licensed radioactive waste disposal facility. The typical cross section assumed was a 2-foot deep trapezoidal shaped channel with a three foot bottom and two horizontal to one vertical side slopes. The total length was estimated to be approximately 2,770 feet.

The other three notable impacts to areas outside the restricted area (Outdoor Areas) include impacts east of the Ore Storage Pads, impacts detected along River Road, and the road to the inactive landfill. The impacts along River Road were detected approximately 25 feet on either side of the center of River Road over an approximate 750 length. The impacts east of the Ore Storage Pad were in a drainage swale located east of the Ore Storage Pads. The typical cross section assumed a one-foot deep rectangular shaped channel with a three foot wide bottom. Approximately 675 feet of drainage swale was assumed impacted. The impacts along the road to the inactive landfill were isolated. Due to limited sampling which did not allow for extensive delineation, an assumed impacted area was used.

5.2.5 Administrative Areas

The Administration Building, the Lab and Office Building, the Shop/Stores/Office Building, and the Power House do not require remediation except for the roof above the laundry in the Administration Building. The 2006 Report assumed that the roof was expected to be contaminated and accounted for the removal, shipment, and disposal at a licensed radioactive waste disposal facility.

5.2.6 Calcium Fluoride Ponds

Calcium Fluoride Ponds B through E contain CaF_2 materials impacted with minor amount of uranium. These ponds are permitted RCRA impoundments and will be remediated as RCRA regulated units. These surface impoundments are included in the RCRA decontamination and decommissioning estimate for the required RCRA financial security. Closure cost for these ponds have not been included in prior cost estimates, and are not included in the 2009 Report.

5.3 License Termination Surveys

License termination surveys, or final release surveys, will be performed in all areas of the site using the guidance provided in NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). The surveys will be performed in accordance with specifically developed plans and procedures.

5.3.1 Survey Instrumentation

Selection and use of instrumentation will ensure sensitivities are sufficient to detect the identified nuclides at the minimum detection requirements. A list of typical final survey instrumentation, radiation detected, and calibration sources are provided in Table 5-2.

Table 5-2: Typical Final Survey Instrumentation

Instrument/Detector	Detector Type	Radiation Detected	Calibration Source	Use
Ludlum Model 2350 with 4368, 43-98, 43-94 or 43-106 detector	Gas-flow proportional (126cm ²)	Alpha or beta	99Tc (β) 230Th (α)	Direct alpha and direct beta surveys; Beta scans on solid surfaces.
Ludlum Model 2350/ SP-1133m or SP-175-3m	GM Pipe Detector	Alpha or beta	99Tc (β) 230Th (α)	Direct beta pipe survey.
Ludlum Model 2350 with 44-40 detector	Shielded GM (15.5cm ²)	Beta	99Tc (β)	Direct beta surveys; Beta scans on solid surfaces.
Ludlum Model 2350 with 44-2 or 44-10 detector	NaI (Tl) Scintillator	Gamma	137Cs	Gamma exposure rate and gamma scans.
Eberline Teletector Model 6112B	Ion Chamber	Gamma	60Co (γ)	Gamma exposure rate
Eberline SAC-4 Scaler Counter	ZnS scintillator	Alpha	230Th (α)	Smear counting
Eberline BC-4 Scaler Counter	Shielded GM	Beta	99Tc (β)	Smear counting
Tennelec Planchette Counter or Equal	Shielded Gas-flow proportional	Alpha and Beta	99Tc (β), 230Th (α)	Smear counting
EG&G NOMAD Gamma Spectrometer or Equal	HPGe	Gamma energy and intensity	Mixed gamma	Nuclide identification and quantification of soil and sand samples.

6.0 References

Code of Federal Regulations, 10 CFR 61, Licensing Requirements for Land Disposal of Radioactive Waste.

Means Building Construction Cost Data, 64th Annual Edition, 2006, R.S. Means Company, Inc.

Code of Federal Regulations, 10 CFR 20.1402, Radiological Criteria for Unrestricted Use.

NUREG-1575, Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), (December 1997).

NRC Policy and Guidance Directive FC 83-23, Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Byproduct, Source, or Special Nuclear Material Licenses.

NUREG-1757 Vol. 1, Rev. 1, Consolidated NMSS Decommissioning Guidance Decommissioning Process for Materials Licensees, Table B.1, Acceptable License Termination Screening Values of Common Radionuclides for Building-Surface Contamination

NUREG/CR-5512, Volume 2, Residual Radioactive Contamination From Decommissioning: User's Manual DandD Version 2.1," Decontamination and Decommissioning (DandD).

Federal Register / Vol. 46, No. 205 / Pages 52061-3 / October 23, 1981 Nuclear Regulatory Commission, Disposal or Onsite Storage of Thorium or Uranium Wastes From Past Operations".

NUREG-1757 Vol. 1, Rev. 1, Consolidated NMSS Decommissioning Guidance Decommissioning Process for Materials Licensees, Table B.2, Screening Values (pCi/g) of Common Radionuclides for Soil Surface Contamination Levels.

NUREG-1307, *Report on Waste Burial Charges*, Revision 11, March 2005

NUREG-1757 Vol. 3, Rev. 0, Consolidated NMSS Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness, PART II: Financial Assurance.

Code of Federal Regulations, 10 CFR 30, Rules of General Applicability to Domestic Licensing of Byproduct Material

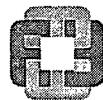
Site Reclamation Cost Estimate for Plant Located in Metropolis, Illinois, May 2006, Duratek Inc.

Historical Site Assessment, April 2009, ENERCON Services, Inc.

Radiological Characterization Report For Site Soils, October 2009, ENERCON Services, Inc.

FIGURES

SECURITY-RELATED INFORMATION
WITHHOLD FROM PUBLIC DISCLOSURE
UNDER 10 CFR 2.390



ENERCON
MURRYSVILLE, PENNSYLVANIA

**HONEYWELL
METROPOLIS PLANT**

FIGURE 1

							SIZE	DWG NO.	REV
0	INITIAL ISSUE						A	09-HON-99.DWG	1
REV	DESCRIPTION	DRN	CHK	REV	APP	DATE	SCALE	NONE	SHEET 1 of 1

SECURITY-RELATED INFORMATION
WITHHOLD FROM PUBLIC DISCLOSURE
UNDER 10 CFR 2.390



ENERCON

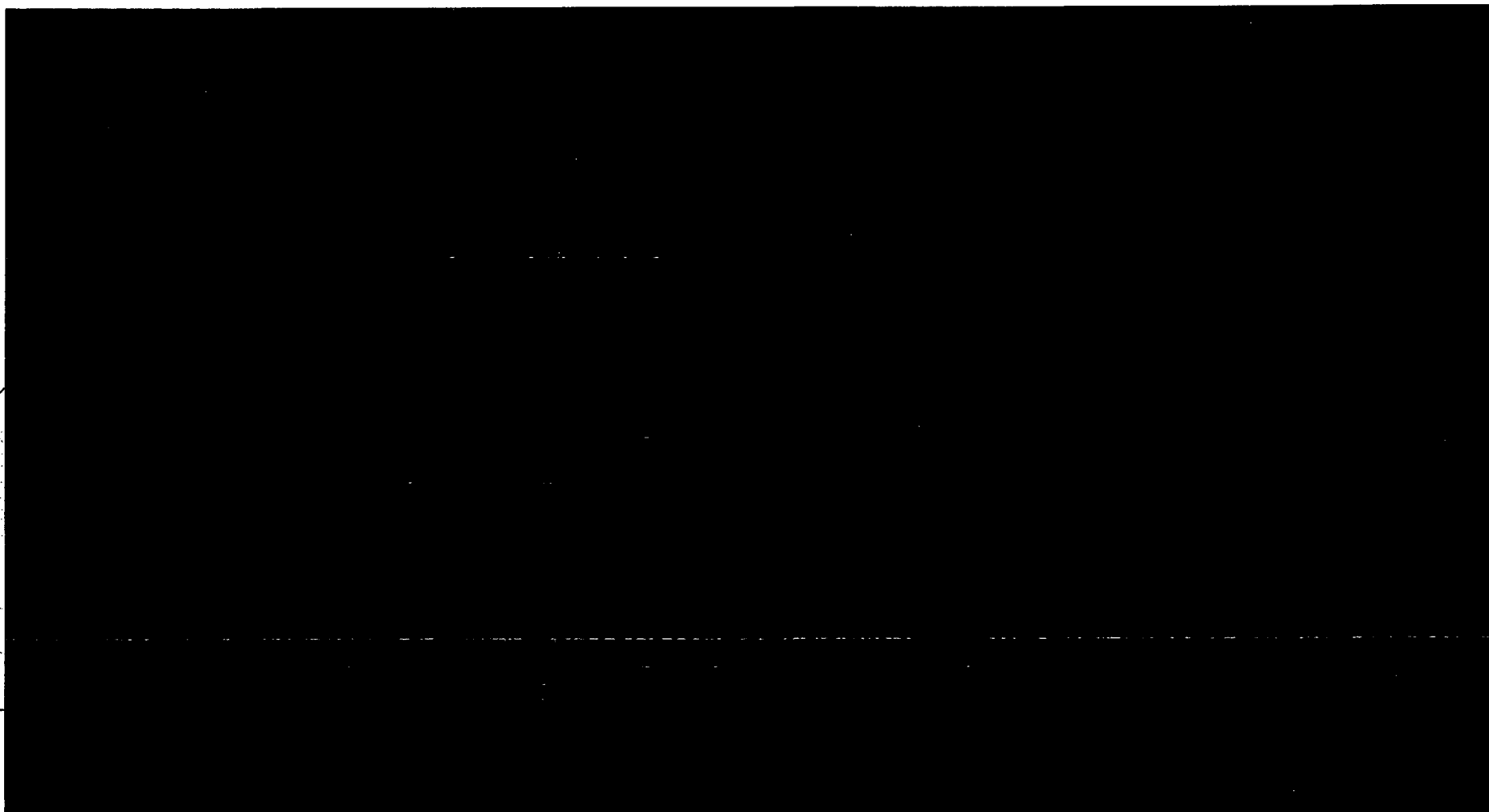
MURRYSVILLE, PENNSYLVANIA

HONEYWELL
METROPOLIS PLANT

FIGURE 2
PLANT AREAS

REV	DESCRIPTION	DRN	CHK	REV	APP	DATE	SIZE	DWG NO.	REV
0	INITIAL ISSUE	TPM	JMS			10/12/09	A	09-HON-99.DWG	1
SCALE AS NOTED							SHEET 1 of 1		

SECURITY-RELATED INFORMATION
WITHHOLD FROM PUBLIC DISCLOSURE
UNDER 10 CFR 2.390



							SIZE	DWG NO.	REV
0	INITIAL ISSUE	TPM	JMS	CED	REAS	9/29/09	B	09-HON-099.DWG	1
REV	DESCRIPTION	DRN	CHK	REV	APP	DATE	SCALE	AS NOTED	SHEET 1 of 1

APPENDIX A-1

Contaminated Waste Volume Summary

Table A-1
CONTAMINATED WASTE VOLUME SUMMARY
Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CODE	Area Description	Decon Barnwell Waste Volume (ft ³)	Barnwell Direct Bury Waste Volume (ft ³)	Generated EnergySolutions Waste Volume (ft ³)	Decon EnergySolutions Waste Volume (ft ³)	EnergySolutions Direct Bury Waste Volume (ft ³)	Total Waste Volume (ft ³)
1	Main Production Buildings	0	0	2,434	10,860	330,849	344,143
2	Miscellaneous Production Buildings	0	0	1,246	1,373	36,783	39,402
3	Drum Storage Pads and Ponds	0	0	4,184	0	26,800	30,984
4	Outdoor Areas, Drains, and Sewers	0	0	105	0	1,644	1,749
5	Administrative Areas	0	0	18	0	500	518
6	Calcium Fluoride Ponds	0	0	0	0	0	0
	TOTALS:	0	0	7,987	12,233	396,576	416,796

Notes:

- (1) Decon Waste Volume: This is the volume of waste generated directly by a decontamination process (this includes such items as blasting grit, treated chemicals, etc.)
- (2) Generated Waste Volume: This is the volume of protective clothing waste generated by all operations on site and is a function of labor hours for each activity.

APPENDIX A-2

Contaminated Waste Disposal Cost

Table A-2
CONTAMINATED WASTE DISPOSAL COST
Honeywell - Metropolis Works (MTW) Metropolis, Illinois

Area Description	Decon Barnwell Disposal Cost	Barnwell Direct Bury Disposal Cost	Generated EnergySolutions Disposal Cost	Decon EnergySolutions Disposal Cost	EnergySolutions Direct Bury Disposal Cost	Total Waste Disposal Cost
Main Production Buildings	\$0	\$0	\$333,518	\$1,487,880	\$45,326,292	\$47,147,690
Miscellaneous Production Buildings	\$0	\$0	\$170,642	\$188,082	\$5,039,248	\$5,397,971
Drum Storage Pads and Ponds	\$0	\$0	\$573,155	\$0	\$3,671,665	\$4,244,821
Outdoor Areas, Drains & Sewers	\$0	\$0	\$14,363	\$0	\$225,259	\$239,622
Administrative Areas	\$0	\$0	\$2,474	\$0	\$68,500	\$70,974
Calcium Fluoride Ponds	\$0	\$0	\$0	\$0	\$0	\$0
TOTALS:	\$0	\$0	\$1,094,152	\$1,675,962	\$54,330,964	\$57,101,078

WASTE DISPOSAL PACKAGING & SHIPPING COST

Area Description	Decon Barnwell Pack and Shipping Cost	Barnwell Direct Bury Pack and Shipping Cost	Generated EnergySolutions Pack and Shipping Cost	Decon EnergySolutions Pack and Shipping Cost	EnergySolutions Direct Bury Pack and Shipping Cost	Total Waste Pack and Shipping Cost
Main Production Buildings	\$0	\$0	\$12,987	\$57,937	\$1,764,975	\$1,835,899
Miscellaneous Production Buildings	\$0	\$0	\$6,645	\$7,324	\$196,225	\$210,193
Drum Storage Pads and Ponds	\$0	\$0	\$22,318	\$0	\$142,972	\$165,290
Outdoor Areas, Drains & Sewers	\$0	\$0	\$559	\$0	\$8,771	\$9,331
Administrative Areas	\$0	\$0	\$96	\$0	\$2,667	\$2,764
Calcium Fluoride Ponds	\$0	\$0	\$0	\$0	\$0	\$0
TOTALS:	\$0	\$0	\$42,605	\$65,261	\$2,115,610	\$2,223,477

APPENDIX A-3

Contaminated Cost and Unit Disposal Cost Factors



Table A-3

CONTAINER COST

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

Area Description	Total Waste Volume (ft ³)	Waste Containers* (each)	Waste Container Cost
Main Production Buildings	344,144	486	\$160,380
Miscellaneous Production Buildings	39,401	56	\$18,480
Drum Storage Pads and Ponds	30,984	44	\$14,520
Outdoor Areas, Drains & Sewers	1,749	3	\$990
Administrative Areas	518	1	\$330
Calcium Fluoride Ponds	0	0	\$0
TOTALS	416,796	590	\$194,700

*Note:

The number of waste containers is rounded up to the next full container.

UNIT COST FACTORS FOR DISPOSAL

Decon waste disposal rate for Barnwell:	\$2,244.97 per ft ³
DAW waste disposal rate for Barnwell:	\$2,244.97 per ft ³
DAW waste disposal rate for EnergySolutions:	\$123.00 per ft ³
Estimated mileage rate to Barnwell:	\$2.90 per mile
Estimated transport distance to Barnwell:	1,192 miles
Estimated mileage rate to EnergySolutions:	\$2.90 per mile
Estimated transport distance to EnergySolutions:	1,985 miles
Average direct bury waste density:	56.4 pound/ft ³
Average generated waste density (EnergySolutions waste):	25 pound/ft ³
Truck transport waste weight limit:	44,000 pounds
20-ft shipping container internal volume:	709 ft ³
Estimated cost for 20-ft shipping container use (4 months):	\$330.00 each
Local industrial waste landfill shipping & disposal rate:	\$32.00 per yd ³
Labor rate for shipping:	\$73.03 per hour

APPENDIX A-4 Waste Disposal Labor Estimate

Table A-4**WASTE DISPOSAL SUPPORT LABOR ESTIMATE****Honeywell - Metropolis Works (MTW) Metropolis, Illinois**

Area Description	Waste Containers (each)	Radioactive Waste Shipments* (each)	Waste Shipment Labor* (man-hour)
Main Production Buildings	485.2	486	7762.5
Miscellaneous Production Buildings	55.5	56	888.7
Drum Storage Pads and Ponds	43.7	44	698.9
Outdoor Areas, Drains & Sewers	2.5	3	39.5
Administrative Areas	0.7	1	11.7
Calcium Fluoride Ponds	0.0	0	0.0
TOTALS	588	590	9,401

***Note:**

The number of waste shipments is rounded up to the next full shipment.

APPENDIX A-5 Contaminated Waste Disposal Summary

Table A-5
CONTAMINATED WASTE DISPOSAL SUMMARY
Honeywell - Metropolis Works (MTW) Metropolis, Illinois

			CONTAINER COST		SHIP LABOR	SHIP LABOR COST
LOC CODE	Total Waste Volume (ft ³)	B-25* Waste Containers (each)	Waste* Container Cost	Radioactive* Waste Shipments (each)	Waste* Shipment Labor (man-hour)	Waste* Shipment Labor Cost
1	344,144	485.2	\$160,380	486	7762.5	\$566,896
2	39,401	55.5	\$18,480	56	888.7	\$64,904
3	30,984	43.7	\$14,520	44	698.9	\$51,039
4	1,749	2.5	\$990	3	39.5	\$2,881
5	518	0.7	\$330	1	11.7	\$853
6	0	0	\$0	0	0	\$0
Total	416,796	588	\$194,700	590	9,401.3	\$686,573

*Note:

The number of waste containers is rounded up to the next full container.

The number of waste shipments is rounded up to the next full shipment.

APPENDIX A-6

Building Survey Labor Summary

Table A-6

CLASS 1 (IMPACTED) BUILDING AREA SURVEY
Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CLASS 1 (IMPACTED) BUILDING AREA SURVEY

Enter Below Optional Loc Code	Enter Building Name Below	Enter Room Number Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Area Height Below (feet)	Surface Area							Enter Floor + L. Wall Survey Code	Enter U. Wall + Ceiling Survey Code	Enter Survey Sketches (each)	Survey Package Prep (hours)	Direct Survey Labor (hours)
								Floor (m2)	Lower Walls (m2)	Upper Walls (m2)	Ceiling (m2)	Roof (m2)	Total (m2)	Survey Package (each)					
5	Lab/Office	Exterior	Exterior	Y	28	77	15		128	165		200	493		1	5	3	8	23
5	Lab/Office	Exterior	Exterior	Y	42	56	15		119	164		219	492		1	5	3	8	23
		Exterior	Exterior																
		Exterior	Exterior																
		Exterior	Exterior																
		Exterior	Exterior																
		Exterior	Exterior																
		Exterior	Exterior																

Class 1 Structure Survey Area Limit: 100 m²

5	Lab/Office	1	Typical office	Y	14.0	16.5	12.0	21	37	31	21		111	1	1	5	1	8	19
5	Lab/Office	2	Typical office	N	14.0	16.5	12.0	21	37	31	21		111	1	1	5	1		11
5	Lab/Office	3	Typical office	N	14.0	16.5	12.0	21	37	31	21		111	1	1	5	1		11
5	Lab/Office	4	Typical office	N	14.0	16.5	12.0	21	37	31	21		111	1	1	5	1		11
5	Lab/Office	1	Typical lab	Y	16.5	28.0	12.0	43	54	45	43		185	1	1	5	1	8	19
5	Lab/Office	1	Typical lab	N	16.5	28.0	12.0	43	54	45	43		185	1	1	5	1		11
5	Lab/Office	1	Typical office	Y	9.5	19.25	12.0	17	35	29	17		98	5	1	5	1	40	51
TOTALS								187	538	572	187		1897					72	179

Table A-6

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Enter Below Optional Loc Code	Enter Building Name Below	Enter Room Number Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Area Height Below (feet)	Enter Floor + L. Wall Survey Code	Enter U. Wall + Ceiling Survey Code	Enter Survey Sketches	Survey Package Prep (hours)	Direct Survey Labor (hours)
5	Administration	Exterior	Exterior	Y	44.5	150.0	25	1	5	3	8	23
5	Shop/Stores	Exterior	Exterior	Y	50.0	128.0	15	1	5	3	8	23
5	Engr Offices	Exterior	Exterior	Y	64.0	128.0	15	1	5	3	8	23
5	Power House	Exterior	Exterior	Y	35.0	84.0	25	1	5	3	8	23
2	CaF ₂	Exterior	Exterior	Y	50.0	64.0	25	1	5	3	8	23
2	SF ₆ /SbF ₅	Exterior	Exterior	Y	54.0	78.0	15	1	5	3	8	23
2	Liquid Fluorine	Exterior	Exterior	Y	28.0	28.0	15	1	5	3	8	23
2	Liquid Nitrogen	Exterior	Exterior	Y	32.0	52.0	15	1	5	3	8	23
2	CF _x	Exterior	Exterior	Y	32.0	35.0	15	1	5	3	8	23
2	N ₂ Gas Facility	Exterior	Exterior	Y	29.0	47.0	15	1	5	3	8	23
2	GF ₂	Exterior	Exterior	Y	145.0	210.0	20	1	5	3	8	24
2	Hazardous Waste	Exterior	Exterior	Y	42.0	42.0	20	1	5	3	8	23

Class 2 Structure Survey Area Limit: 1,000 m²

5	Admin. Office	1	Typical 1st Floor Office	Y	11.0	16.5	8	1	5	1	8	19
5	Admin. Office	2	Typical 1st Floor Office	N	9.5	9.5	8	1	5	1		11
5	Admin. Office	3	Typical 1st Floor Office	N	10.0	13.0	8	1	5	1		11
5	Admin. Office	4	Typical 1st Floor Office	N	16.5	22.5	8	1	5	1		11
5	Admin. Office	5	Typical 1st Floor Office	N	9.0	10.5	8	1	5	1		11
5	Admin. Office	6	Typical 1st Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	7	Typical 1st Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	8	Typical 1st Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	9	Typical 1st Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	10	Typical 1st Floor Office	N	11.0	14.5	8	1	5	1		11

Table A-6

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Enter Below Optional Loc Code	Enter Building Name Below	Enter Room Number Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Area Height Below (feet)	Enter Floor + L. Wall Survey Code	Enter U. Wall + Ceiling Survey Code	Enter Survey Sketches	Survey Package Prep (hours)	Direct Survey Labor (hours)
5	Admin. Office	11	Typical 1st Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	12	Typical 1st Floor Office	N	1.5	8.0	8	1	5	1		11
5	Admin. Office	13	Typical 1st Floor Office	Y	11.0	22.5	8	1	5	1	8	19
5	Admin. Office	14	Typical 1st Floor Office	Y	11.0	14.5	8	1	5	1	8	19
5	Admin. Office	15	Typical 1st Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	1	Typical 2nd Floor Office	Y	11.0	16.5	8	1	5	1	8	19
5	Admin. Office	2	Typical 2nd Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	3	Typical 2nd Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	4	Typical 2nd Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	5	Typical 2nd Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	6	Typical 2nd Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	7	Typical 2nd Floor Office	Y	11.0	16.5	8	1	5	1	8	19
5	Admin. Office	8	Typical 2nd Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	9	Typical 2nd Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	10	Typical 2nd Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	11	Typical 2nd Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	12	Typical 2nd Floor Office	N	11.0	22.5	8	1	5	1		11
5	Admin. Office	13	Typical 2nd Floor Office	N	11.0	16.5	8	1	5	1		11
5	Admin. Office	14	Typical 2nd Floor Office	N	7.0	14.0	8	1	5	1		11
5	Admin. Office	15	Typical 2nd Floor Office	N	15.5	19.5	8	1	5	1		11
5	Shop/Stores	1	Large Space	N	5.0	7.0	8	1	5	1		11
5	Shop/Stores	1	Smaller Space	N	16.5	30.0	8	1	5	1		11
5	Shop/Stores	2	Smaller Space	Y	22.0	31.5	8	1	5	1	8	19

Table A-6

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Enter Below Optional Loc Code	Enter Building Name Below	Enter Room Number Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Area Height Below (feet)	Enter Floor + L. Wall Survey Code	Enter U. Wall + Ceiling Survey Code	Enter Survey Sketches	Survey Package Prep (hours)	Direct Survey Labor (hours)
5	Shop/Stores	3	Smaller Space	N	11.0	12.5	8	1	5	1		11
5	Shop/Stores	4	Smaller Space	N	11.0	16.5	8	1	5	1		11
5	Shop/Stores	5	Smaller Space	N	11.0	22.5	8	1	5	1		11
5	Shop/Stores	6	Smaller Space	N	11.0	16.5	8	1	5	1		11
5	Engr Offices	1	Lunch Area	N	11.0	22.5	8	1	5	1		11
5	Engr Offices	1	Engineering Area	N	11.0	16.5	8	1	5	1		11
5	Engr Offices	1	Drafting Area	N	11.0	22.5	8	1	5	1		11
5	Engr Offices	1	Drawing Room	N	11.0	14.5	8	1	5	1		11
5	Power House	1	Large Space	N	1.5	8.0	8	1	5	1		11
2	Power House	1	Small Space	N	11.0	22.5	8	1	5	1		11
2	Power House	2	Small Space	Y	11.0	14.5	8	1	5	1	8	19
2	Power House	1	Offices	N	11.0	22.5	8	1	5	1		11
2	Power House	2	Offices	N	11.0	16.5	8	1	5	1		11
2	Power House	3	Offices	N	11.0	22.5	8	1	5	1		11
2	Power House	4	Offices	N	11.0	16.5	8	1	5	1		11
2	CaF ₂	1	Offices	N	11.0	22.5	8	1	5	1		11
2	CaF ₂	2	Offices	N	11.0	16.5	8	1	5	1		11
2	CaF ₂	3	Offices	N	11.0	22.5	8	1	5	1		11
2	CaF ₂	4	Offices	N	11.0	16.5	8	1	5	1		11
2	CaF ₂	1	Large Bay	N	11.0	22.5	8	1	5	1		11
2	CaF ₂	2	Large Bay	N	11.0	16.5	8	1	5	1		11
2	CaF ₂	3	Large Bay	Y	11.0	22.5	8	1	5	1	8	19
2	SF ₆ /SbF ₅	1	Offices	N	11.0	16.5	8	1	5	1		11

Table A-6

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

Enter Below Optional Loc Code	Enter Building Name Below	Enter Room Number Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Area Height Below (feet)	Enter Floor + L. Wall Survey Code	Enter U. Wall + Ceiling Survey Code	Enter Survey Sketches	Survey Package Prep (hours)	Direct Survey Labor (hours)
2	SF ₆ /SbF ₅	2	Offices	N	11.0	22.5	8	1	5	1		11
2	SF ₆ /SbF ₅	3	Offices	N	11.0	16.5	8	1	5	1		11
2	SF ₆ /SbF ₅	4	Offices	N	7.0	160.0	8	1	5	1		11
2	SF ₆ /SbF ₅	1	Large Bay	N	7.0	50.0	8	1	5	1		11
2	SF ₆ /SbF ₅	2	Large Bay	Y	7.0	160.0	8	1	5	1	8	19
2	SF ₆ /SbF ₅	3	Large Bay	N	4.5	146.0	8	1	5	1		11
2	Liquid Fluorine	1	Interior	Y	102.0	159.0	8	1	5	1	8	19
2	Liquid Nitrogen	1	Interior	N	21.5	36.0	8	1	5	1		11
2	CF _x	1	Offices	N	5.5	6.0	8	1	5	1		11
2	CF _x	2	Offices	N	7.0	7.5	8	1	5	1		11
2	CF _x	1	Large Bay	N	5.5	14.0	8	1	5	1		11
2	N ₂ Gas Facility	1	Interior	N	11.0	16.5	8	1	5	1		11
2	GF ₂	1	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	2	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	3	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	4	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	5	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	6	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	7	Offices	N	2.0	8.0	8	1	5	1		11
2	GF ₂	8	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	9	Offices	Y	11.0	16.5	8	1	5	1	8	19
2	GF ₂	10	Offices	N	11.0	16.5	8	1	5	1		11
2	GF ₂	11	Offices	N	11.0	16.5	8	1	5	1		11



CLASS 2 (IMPACTED) BUILDING AREA SURVEY

CLASS 2 (IMPACTED) BUILDING AREA SURVEY

[illegible]

APPENDIX A-7

Outdoor Area Survey Labor Summary

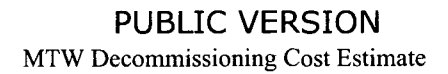
Table A-7

NON-IMPACTED OPEN LAND UNPAVED AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

NON-IMPACTED OPEN LAND UNPAVED AREA SURVEY

Enter Below Optional Loc Code	Enter Surface Types Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Random Survey Sketches (each)	Survey Package Prep (hours)	10% Survey Labor (hours)
4	Grass & soil	100 meter wide corridor outside fenced area	Y	328	4800	4	4	5.9
4	Grass & soil	50 meter wide corridor each side of remediated drainage ditch	Y	100	1600	4	4	5.5
TOTALS						8	8	11.4



Honeywell - Metropolis Works (MTW) Metropolis, Illinois

Enter Below Optional Loc Code	Enter Surface Types Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Random Survey Sketches (each)	Survey Package Prep (hours)	10% Survey Labor (hours)
4	Asphalt	Employee parking	Y	235	240	1	4	4.3
4	Asphalt	Main entrance road	Y	30	350	1	4	4.3
4	Asphalt	Trucking entrance road	Y	30	350	1	4	4.3
					TOTALS	3	12	13



ENERCON

PUBLIC VERSION
MTW Decommissioning Cost Estimate

Table A-7

IMPACTED UNPAVED OPEN LAND AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

IMPACTED UNPAVED OPEN LAND AREA SURVEY

Enter Below Optional Loc Code	Enter Surface Types Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Subsurface Activity Depth (feet)	Enter Random Survey Sketches (each)	Direct Survey Labor (hours)
4	Soil	Corridor between two fences	Y	35	4850	1	2	270
3	Soil	Remediated CaF ₂ Pond area	Y	450	600	1	2	382
3	Soil	Remediated Settling Pond area	Y	70	100	2	2	26
4	Soil	Remediated drainage ditch area	Y	6	1600	2	8	44
1	Soil	Remediated FM Building area	Y	110	150	2	2	52
4	Soil and Grass	Remainder of the fenced site	Y	900	525	1	8	664
							TOTALS	1,438

Table A-7

IMPACTED PAVED OUTDOOR AREA SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

IMPACTED PAVED OUTDOOR AREA SURVEY

Enter Below Optional Loc Code	Enter Surface Types Below	Enter Area Description Below	Survey Package Reqrd ? (Y/N)	Enter Area Width Below (feet)	Enter Area Length Below (feet)	Enter Random Survey Sketches (each)	Survey Package Prep (hours)	Direct Survey Labor (hours)
4	Asphalt	Paved roads inside fenced area	Y	24	3500	1	4	29
4	Asphalt	Paved lot by stores	Y	55	115	1	4	7
TOTALS							8	36

Table A-7

DRAIN & SEWER SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

CATCH BASIN AND CLEAN-OUT SURVEY

Basin Survey Duration (hrs): 4 Basin Survey Crew Size (men): 2		D.I. Survey Duration (hrs): 2 D.I. Survey Crew Size (men): 1				
Enter Below Optional Loc Code	Enter Area Description Below	Enter Basin Diameter Below (feet)	Survey Package Required? (Y/N)	Survey Package Prep (hours)	Survey Labor (hours)	
4	Drain #1 Grate on 10" Concrete Storm Drain	5.0	Y	4	12.0	
4	Drain #2 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Drain #3 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Drain #4 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Drain #5 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Drain #6 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Drain #7 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Drain #8 Grate on 10" Concrete Storm Drain	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
4	Sanitary Sewer Manhole #1 on 4" line	5.0	N		8.0	
TOTALS				4	132.0	

Table A-7

DRAIN & SEWER SURVEY

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

DRAIN PIPE SURVEY

Pipe Survey Rate (feet/hour): 40 Pipe Survey Crew Size (men): 3						
Enter Below Optional Loc Code	Enter Area Description Below	Enter Pipe Diameter Below (feet)	Enter Pipe Length Below (feet)	Survey Package Required? (Y/N)	Survey Package Prep (hours)	Survey Labor (hours)
4	10" Storm Drain #1	10	300	Y	4	26.5
4	10" Storm Drain #2	10	300	N		22.5
4	10" Storm Drain #3	10	300	N		22.5
4	10" Storm Drain #4	10	300	Y	4	26.5
4	10" Storm Drain #5	10	300	N		22.5
4	10" Storm Drain #6	10	300	N		22.5
4	4" Cast Iron Drain #1	4	300	Y	4	26.5
4	4" Cast Iron Drain #1	4	300	N		22.5
4	4" Cast Iron Drain #1	4	300	N		22.5
4	4" Cast Iron Drain #1	4	300	Y	4	26.5
4	4" Cast Iron Drain #1	4	300	N		22.5
4	4" Cast Iron Drain #1	4	300	N		22.5
TOTALS					16	286

APPENDIX A-8 Instrument Lease Charges

Table A-8
INSTRUMENT COSTS
Honeywell - Metropolis Works (MTW) Metropolis, Illinois

48 D&D Duration (months)

5.0 Final Survey Duration (months)

0.5 Characterization Survey Duration (months)

INSTRUMENT COSTS

Item No.	Instrument Description	Monthly Commercial Rental Rate	Char Survey Number Instruments Required	D&D Number Instruments Required	Final Survey Number Instruments Required	D&D Full Project Duration	D&D Alternate Monthly Duration	Char Survey Instrument Lease Cost	D&D Instrument Lease Cost	Final Survey Instrument Lease Cost
1	Becton Dickinson Tritium Air Monitor, Model Triton III	\$1,000								
2	Bicron Micro R Meter, Model MicroRem	\$250								
3	Dosimeter Corporation of America 3090-3 with 50 ft cable and detector	\$165								
4	Dosimeter Corporation of America 3090-3	\$125								
5	Dosimeter Corporation of America Self Reading Dosimeter, Model 862/866	\$25								
6	Eberline Beta/Gamma Survey Meter, Model E-130G	\$100								
7	Eberline Beta/Gamma Survey Meter, Model E-140	\$100								
8	Eberline Beta/Gamma Survey Meter, Model E-520	\$110								
9	Eberline Neutron Survey Meter, Model PNR-4	\$450								
10	Eberline Radiation Monitors, Model RM-14	\$75								
11	Eberline Radiation Monitors, Model RM-15	\$100								
12	Eberline Radiation Monitors, Model RM-20	\$130								
13	Eberline Ion Chambers, Model RO-2	\$100								
14	Eberline Ion Chambers, Model RO-2A	\$100								
15	Eberline Ion Chambers, Model RO-20	\$140								
16	Eberline Low to High Ion chamber Survey Instrument, Model RD-7 (includes detectors	\$785								
17	Eberline Teletector, Model 6112B	\$605								
18	F&J Personal Air Sampler (Breathing Zone), Model Buck SS	\$50								
19	F&J High Volume Air Sampler, Model HV-1	\$90		2		Y			\$8,640	
20	F&J Low Volume Air Sampler, LV-1	\$90		6		Y			\$25,920	
21	F&J Low Volume Gooseneck Air Sampler, LV-14	\$145								
22	Gillian Personal Air Samplers (Breathing Zone), Model GilAir/GilAir-5	\$80								
23	Ludlum Survey Meter, Model 3	\$50								
24	Ludlum Geiger Counter, Model 5	\$70								
25	Ludlum Geiger Counter, Model 6	\$50								
26	Ludlum Ion Chamber, Model 9	\$140								
27	Ludlum Survey Meter, Model 12	\$75		10		Y			\$36,000	
28	Ludlum Survey Meter Model 12 with Scaler Option	\$115								

INSTRUMENT COSTS

Item No.	Instrument Description	Monthly Commercial Rental Rate	Char Survey Number Instruments Required	D&D Number Instruments Required	Final Survey Number Instruments Required	D&D Full Project Duration	D&D Alternate Monthly Duration	Char Survey Instrument Lease Cost	D&D Instrument Lease Cost	Final Survey Instrument Lease Cost
29	Ludlum MicroR Meter, Model 19	\$120		2	2	Y			\$11,520	\$1,200
30	Ludlum Stretch Scope, Model 77-3	\$385								
31	Ludlum Stretch Scope, Model 78	\$385								
32	Ludlum Alarm Ratemeter, Model 177	\$85								
33	Ludlum Area Monitor, Model 300	\$195								
34	Ludlum Area Monitor, Model 375	\$85								
35	Ludlum Area Monitor, Model 395	\$80								
36	Ludlum Scaler/Ratemeter, Model 2221	\$200								
37	Ludlum 2224 Alpha Beta Scaler Ratemeter	\$135								
38	Ludlum Data Logger, Model 2350-1	\$200		12	7	Y			\$115,200	\$7,000
39	Ludlum Model 2360 Alpha Beta Data Logger	\$155								
40	NE Technology Contamination Monitor (Simult, Alpha/Beta), Model CM7A	\$450								
41	Overhoff Tritium Monitor, Model 400SBC	\$600								
42	Reuter Stokes Pressurized Ion Chamber, Model RSS-112	\$1,450								
43	TSI Portacount Plus Respirator Fit Tester and Accessories, Model 8020	\$800								
44	Victoreen 450P Pressurized Ion Chambers	\$165								
45	Xetex Telescoping Doserate Meter with Accessories, Model 330A Telescan	\$395								
RADIATION DETECTORS FOR PORTABLE INSTRUMENTATION										
46	Bicron G-5 Be Ruggedized Fiddler Detector	\$650								
47	Eberline Aluminum Shielded Pancake Detector, Model HP-210AL	\$50								
48	Eberline Tungsten Shielded Pancake Detector, Model HP-210T	\$100								
49	Eberline GM Pancake Detector, Model HP-260	\$30								
50	Eberline Spare Detector (Purging), for Model TCM-2	\$130								
51	Eberline GM Detector, Model HP-270	\$35								
52	Eberline RO-7-LD Low Range Detector 2R/hr (RO-7 not included)	\$180								
53	Eberline RO-7-BM Mid Range Detector 200R/hr (RO-7 not included)	\$180								
54	Eberline RO-7 BH High Range Detector 20KR/hr (RO-7 not included)	\$180								
55	Ludlum 50cm2 Alpha Scintillator, Model 43-4	\$50		12	7	Y			\$28,800	\$1,750
56	Ludlum 550cm2 Gas Proportional Detector, Model 43-37	\$65			4					\$1,300
57	Ludlum 43-89 100 cm2 Alpha Beta Scintillator	\$105								
58	Ludlum 125cm2 Gas Proportional Detector, Model 43-68	\$50		12	7	Y			\$28,800	\$1,750
59	Ludlum 125cm2 Gas Proportional Detector, Model 43-106	\$55								
60	Ludlum Beta Scintillator, Model 44-1	\$55		9	7	Y			\$23,760	\$1,925
61	Ludlum Gamma Scintillator Detector, Model 44-2	\$55		9	7	Y			\$23,760	\$1,925

INSTRUMENT COSTS

Item No.	Instrument Description	Monthly Commercial Rental Rate	Char Survey Number Instruments Required	D&D Number Instruments Required	Final Survey Number Instruments Required	D&D Full Project Duration	D&D Alternate Monthly Duration	Char Survey Instrument Lease Cost	D&D Instrument Lease Cost	Final Survey Instrument Lease Cost
62	Ludlum Pancake GM Detector, Model 44-9	\$35		10		Y			\$16,800	
63	Ludlum Gamma Scintillator Detector, Model 44-10	\$100								
64	Ludlum Windowless Tritium Detector Model 44-110	\$205								
65	Ludlum Gama Scintillator Detector, Model 44-16	\$100								
66	Ludlum Energy Compensated GM Detector, Model 44-38	\$20		9	7	Y			\$8,640	\$700
67	Ludlum Shielded Pancake GM Detector, Model 44-40	\$40		6		Y			\$11,520	
SUPPORT EQUIPMENT FOR RADIATION PROTECTION INSTRUMENTATION										
68	Ludlum Floor Monitor Cart, Model 239-1F	\$105			4					\$2,100
69	Modified Harper Cart	\$40		12	3					\$600
70	Concoa Gas Regulator, Model 212 for use with the large (L-P10) and medium (Q-P10) 80 cu ft capacity P-10 bottle	\$25								
71	Concoa Gas Regulator, Model 3251301-180 for use with the small (6R-P10) 35 cu ft capacity gas bottle	\$25		12	7					\$875
72	Chargers for Self Reading Dosimeters (battery or electric)	\$15								
SEMI-PORTABLE RADIATION PROTECTION INSTRUMENTATION										
73	Eberline Personnel Contamination Monitor, Model PCM-1B	\$3,400								
74	Eberline Portal Monitor with Scintillation Detectors, Model PM-7	\$3,000								
75	Eberline Tool Contamination Monitor, Model TCM-2	\$2,000								
76	Hydro Nuclear (HNS) Automated Laundry Frisker, Model ALF-1	\$1,700								
77	Ludlum Beta Air Monitor, Model 333-2 with pump	\$650								
78	Eberline Continuous Alpha Air Particulate Monitor, Model Alpha-6A-1 w/integral radial entry sampling head and regulated air pump	\$718								
79	Eberline Continuous Beta Air Particulate Monitor, Model AMS-4 w/integral radial entry sampling head and RAP-1 (Regulated Air	\$1,021								
LABORATORY & ANALYTICAL COUNTING INSTRUMENTATION										
80	Spectroscopy System with Detector, PC, Software, Shield and Accessories, Model Genie PC	\$6,136								
81	Eberline Beta Sample counter, Model BC-4	\$325								
82	Eberline Alpha Scintillation Counter, Model SAC-4	\$400								
83	Ludlum Scaler with Single Channel Analyzer, Model 2000/2200	\$190								
84	Ludlum Scaler with M 43-10-1 Sample Counter, Model 2929	\$325								
85	Canberra PC Based Automatic Low Background Alpha/Beta Counter, Model	\$3,950								
86	with Alpha/Beta Option and Accessories Model A-255OP2	\$4,489								
87	Protean Model IPC9025 Automatic Planchet Counter	\$3,200								
88	Denver Instruments Balance 3 kgm +/-0.1 gm, Model XE3000	\$70		2	2	Y			\$6,720	\$700
89	Mettler Balance -400 gm +/- 0.01 gm, Model S400G	\$81								

INSTRUMENT COSTS

Item No.	Instrument Description	Monthly Commercial Rental Rate	Char Survey Number Instruments Required	D&D Number Instruments Required	Final Survey Number Instruments Required	D&D Full Project Duration	D&D Alternate Monthly Duration	Char Survey Instrument Lease Cost	D&D Instrument Lease Cost	Final Survey Instrument Lease Cost
90	Mettler 40 gm +/-0.01 gm, Model BB244	\$115								
91	Mettler 12 kgm +/-0.01 gm, Model PJ1220	\$148								
92	Troemner Weight Set 0-2000 gram, Model 2000	\$23		1	1	Y			\$1,104	\$115

INSTRUMENT COSTS

Item No.	Instrument Description	Monthly Commercial Rental Rate	Char Survey Number Instruments Required	D&D Number Instruments Required	Final Survey Number Instruments Required	D&D Full Project Duration	D&D Alternate Monthly Duration	Char Survey Instrument Lease Cost	D&D Instrument Lease Cost	Final Survey Instrument Lease Cost
PORTABLE GAMMA SPECTROSCOPY EQUIPMENT										
Bubble Technologies Portable Gamma Spectroscopy System:										
93	With Detector, PC, Software, Case and Accessories, Model Microspec-2	\$1,050								
Canberra Portable Gamma Spectroscopy System:										
94	Model Inspector	\$4,750								
EG&G Portable Gamma Spectroscopy System:										
95	Software, Lab Dewar, Vertical Cryostat and Nuclear Lead, movable lead shield with table and liner, Model Nomad	\$3,450								
96	spec; NaI gamma spec; peak search; nuclide identification; neutron detection; and auto ranging dose rates from uR/hr to 10 R/hr (all options included)	\$1,600								
Canberra Inspector Portable Gamma Spectroscopy System:										
97	Electronics package, w/HPGe detector in portable dewar, computer, software, nuclear lead-moveable shield/table and liner	\$5,000		1	1	Y			\$240,000	\$25,000
Stationary Gamma Spectroscopy System:										
98	Canberra Inspector MCA/GENIE 2000 Software, Inspector Acquisition Electronics Package with Unit 1 and f UUSEC shaping, Procount 2000 Counting procedures, HPGe Detector w/3.25" End-cap, Model 7500SL Cryostat (30 liter dewar), Genie-PC Interactive	\$7,475								
99	Canberra In-Situ Object Counting System (ISOCS) w/Canberra Inspector Portable MCA/GENIE 2000 Software, Inspector Acquisition Electronics Package w/Unit 1 & 4 USEC Shaping, Procount 2000 counting Procedures, HPGe Detector w/3.25" End-cap, Model 7500SL Cryostat (30 liter dewar), Portable Detector Frame w/complete 2.5 and 5 cm Shields, Stationary Model 747 Top	\$10,272								
100	Liquid Scintillation Counter: Packard LSC Model M11302 Tricarb Alpha/Beta Option.	\$5,712								
101	each Canberra Inspector with HPGe, 16 in deep lead shield, Packard Liquid Scintillation counter and Automatic Planchet Counter	\$21,143								
IN-SITU PIPE MONITORING EQUIPMENT AND DETECTORS										
102	Duratek GM Snake Probe, Model SN-505-8K	\$162								
103	Extends/Retracts Detector and Allows All Detector Signals to be read as group or Indiv., Model SP-113-3M	\$175								
104	Duratek GM Motorized 1.13" Spider Probe Extends/Retracts Detector for Scanning and Direct Measurements of Piping internals 3 to 24	\$175								
105	Extends/Retracks Detector and Allows All Detector Signals to be read as Group or Indiv., Model SP-175-3M	\$175								
106	Ludlum 0.5 inch Gas Proportional Detector to Survey Straight Piping of 0.75 to 1 inch	\$150								
107	Ludlum 1.5 inch Gas Proportional Detector to Survey Straight Piping of 2 to 3 inch	\$125								
108	Ludlum 1 inch Gas Proportional Detector to Survey Straight Piping of 1.25 to 2 inch	\$125								
109	AEES Model PSL-3 Gas Proportional Detector	\$290								
110	AEES Model PSL-4 Gas Proportional Detector	\$320								

INSTRUMENT COSTS										
Item No.	Instrument Description	Monthly Commercial Rental Rate	Char Survey Number Instruments Required	D&D Number Instruments Required	Final Survey Number Instruments Required	D&D Full Project Duration	D&D Alternate Monthly Duration	Char Survey Instrument Lease Cost	D&D Instrument Lease Cost	Final Survey Instrument Lease Cost
SEALED SOURCES AND COUNTING STANDARDS										
111	Tc-99 47 mm, Beta Source	\$100		12	7	Y				
112	Th-230 47 mm Alpha Source	\$100		2	2	Y				
113	Cs-137 Gamma Button Source	\$35								
114	Cs-137 10cm x 10cm Beta Source	\$115								
115	Mixed Gamma, 250 ml Sand Marinelli, 133N	\$200		1	1	Y				
116	Mixed Gamma, 1L Sand Marinelli, 133N	\$200								
117	Mixed Gamma, 1L Water Marinelli, 133N	\$200		1	1	Y				
118	Mixed Gamma, 45mm Petri Dish	\$200								
119	Mixed Gamma, 47 mm Filter Paper	\$200								
120	Mixed gamma, Point Geometry	\$200								
121	Th-230, 150 mm x 67 mm Anodized Alpha Source	\$150								
122	Tc-99 150 mm x 67 mm Anodized Beta Source	\$150								
123	Cs-137 100 mm x 100 mm Anodized Cesium Source	\$175								
TOTAL INSTRUMENT LEASE COST									\$587,184	\$46,940

APPENDIX A-9 Equipment Lease Charges

Table A-9
EQUIPMENT COSTS
Honeywell - Metropolis Works (MTW) Metropolis, Illinois
48 D&D Duration (months)
5.0 Final Survey Duration (months)
EQUIPMENT COSTS

Item No.	Equipment Description	Monthly Commercial Rental Rate	D&D Number Items Required	Final Survey Number Items Required	D&D Full Project Duration	D&D Alternate Monthly Duration	D&D Equipment Lease Cost	Final Survey Equipment Lease Cost
	DECON EQUIPMENT							
1	Arizona Instruments Mercury Vapor Analyzer, Model Jerome 411	\$140						
2	Fisher Scientific Turbidity Meter, Model DRT-100B	\$135						
3	Metrosonics Heat Stress Monitor, Model 3600	\$140						
4	Rae Systems Photo Ionization Detector, Mini Rae	\$500	1	1	Y		\$24,000	\$2,500
5	Rae Systems Photo Ionization Detector, Multi Rae	\$600						
6	TSI Portacount Plus Respirator Fit Tester and Accessories, Model 8020	\$800						
	SEMI PORTABLE DECONTAMINATION EQUIPMENT							
7	ABB Raymond Grit Blast Unit	\$5,000						
8	Hako Twin Head HEPA Vacuum, Model C83985	\$150						
9	Hepa Air 110 Vac Ventilation Unit, Model H1990C	\$135						
10	Hepa Air 110 Vac Ventilation Unit, Model H2000	\$120						
11	LTC Grit Blast Unit, Model 1060	\$3,500						
12	LTC Grit Blast Unit, Model 1072	\$4,500						
13	Mac Donald Single Piston Hand Scabbler, Model H-5	\$90						
14	MacDonald Five Piston Floor Scabbler, Model U-5	\$825						
15	MacDonald Three Piston Wall Scabbler, Model 3 WCD	\$280						
16	Nor Clean Triple Head HEPA Vacuum, Model BB-105-3	\$530	3		Y		\$76,320	
17	Pentek 9A Vacuum System Base Unit, Model Vac Pac	\$3,780	3		Y		\$544,320	
18	Pentek Needle Gun Corner Cutters	\$315						
19	Bisco Jaw Crusher, Model 241-36x35	\$475						
20	Ellis Band Saw, Model 3000	\$425						
	OFFICE EQUIPMENT							
21	Download Notebook Computers:	\$189	4	4	Y		\$36,288	\$3,780
22	Laser Jet Printer:	\$104	2	2	Y		\$9,984	\$1,040
	SAMPLING EQUIPMENT							

Item No.	Equipment Description	Monthly Commercial Rental Rate	D&D Number Items Required	Final Survey Number Items Required	D&D Full Project Duration	D&D Alternate Monthly Duration	D&D Equipment Lease Cost	Final Survey Equipment Lease Cost
23	Bisco Jaw Crusher, Model 241-36x35	\$497						
24	FISHER SCIENTIFIC - Oven, ISOTEMP 5.0 120VAC CAT.#13247750G:	\$124	2	2	Y		\$11,866	\$1,236
25	FORESTRY SUPPLIERS - Soil Sampling Auger Kit, CAT.#67352:	\$361						
	TOOLS							
26	Set of Lifting Slings	\$70						
27	8' Fiberglass Step Ladder	\$56						
28	1" x 150' Air Hose	\$35						
29	Cutting Torch	\$137	1		Y		\$6,576	
30	Band Saw	\$72	2		Y		\$6,912	
31	Lighting standard, 2 500 W halogen quartz	\$46	1		Y		\$2,208	
	HEAVY EQUIPMENT RENTAL							
32	Truck Mounted Hydraulic Crane, 25 Ton	\$7,459	2		N	1	\$14,918	
33	40' Telescoping Boom Work Platform	\$3,375	2	1	N	2	\$13,500	\$16,875
34	Oxyacetylene Cutting Outfits, incl gas & tips	\$960	1		Y		\$46,073	
35	1-1/4 C.Y. Backhoe Loader	\$3,375	1		N	1	\$3,375	
36	Backhoe Attachment, 1,200 ft-lb Hydraulic Hammer	\$1,620	1		N	2	\$3,240	
37	Crew Carrier	\$1,188	1		Y		\$57,024	
	SAFETY EQUIPMENT							
38	Respirators	\$56						
39	Tripod Lifeline Rescue System	\$240	1	1	Y		\$11,520	\$1,200
40	Portable Axial Electric Blower	\$208	1		Y		\$9,984	
41	Confined Space Safety Harness	\$31	1	1	Y		\$1,488	\$155
TOTAL EQUIPMENT LEASE COST							\$879,596	\$26,786

APPENDIX A-10

Demolition Estimate

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		FM Building Demolition	370,440	CF	\$0.00	\$0.09	\$0.11		\$76,336	\$97,020	\$173,356
1		FM Building 6" Floor Slab Demolition	5,145	SF		\$3.84	\$0.49		\$47,003	\$6,003	\$53,006
1		FM Building 8" Concrete Wall Demolition	308	LF		\$9.90	\$1.26		\$7,261	\$924	\$8,185
1		FM Building 1" Soil Removal	191	CY		\$5.77	\$5.95		\$2,618	\$2,700	\$5,318
1		FM Building 50' Buffer 1" Soil Removal	656	CY		\$5.77	\$5.95		\$9,006	\$9,287	\$18,293
1		KOH Muds Building Demolition	59,850	CF		\$0.09	\$0.11		\$12,333	\$15,675	\$28,008
1		FM Building South Pad East 6" Floor Slab Demolition	3,888	SF		\$3.84	\$0.49		\$35,520	\$4,536	\$40,056
1		FM Building South Pad East 18"x24" Concrete Footings Demolition	252	LF		\$6.46	\$3.77		\$3,877	\$2,262	\$6,139
1		FM Building South Pad East 2'x3' Equip. Concrete Footings Demolition	252	LF		\$9.23	\$5.40		\$5,539	\$3,240	\$8,779
1		FM Building South Pad East 1' Soil Removal	144	CY		\$5.77	\$5.95		\$1,978	\$2,040	\$4,018
1		FM Building South Pad West 6" Floor Slab Demolition	3,564	SF		\$3.84	\$0.49		\$32,560	\$4,158	\$36,718
1		FM Building South Pad West 18"x24" Concrete Footings Demolition	240	LF		\$6.46	\$3.77		\$3,693	\$2,154	\$5,847
1		FM Building South Pad West 2'x3' Equip. Concrete Footings Demolition	240	LF		\$9.23	\$5.40		\$5,275	\$3,086	\$8,361
1		FM Building South Pad West 1' Soil Removal	132	CY		\$5.77	\$5.95		\$1,813	\$4,870	\$6,683
1		Sodium Removal Building Demolition	93,240	CF		\$0.09	\$0.11		\$19,214	\$24,420	\$43,634
1		U Recovery Building Demolition	114,000	CF		\$0.09	\$0.11		\$23,492	\$29,857	\$53,349
1		Sample Plant Building Demolition	71,016	CF		\$0.09	\$0.11		\$14,634	\$18,599	\$33,233
2		Calciner Building Demolition	22,500	CF		\$0.09	\$0.11		\$4,637	\$5,893	\$10,530
3		Setting Ponds #3 and #4 Excavation, 3' deep	500	CY		\$2.31	\$1.39		\$2,748	\$1,655	\$4,403
3		Backfill Settling Pond Area with Clay (9')	1,500	CY	\$6.10	\$1.42	\$1.87	\$9,150	\$5,071	\$6,679	\$20,900
4		Excavate Drainage Ditch to River, 1600'x6'x3'	1,067	CY		\$3.09	\$1.51		\$7,840	\$3,835	\$11,675
4		Backfill Drainage Ditch with Clay (5')	1,778	CY	\$4.77	\$1.42	\$1.87	\$8,480	\$6,011	\$7,915	\$22,406
4		Excavate Buried Drain Pipe, 2,000'x3'x5'	1,111	CY		\$3.09	\$1.51		\$8,166	\$3,995	\$12,161
4		Remove Buried Drain Pipe, 12"	2,000	LF		\$3.95	\$1.29		\$18,821	\$6,143	\$24,964
4		Remove Imbedded Drain Pipe	250	LF	\$1.55	\$6.12	\$2.01	\$388	\$3,641	\$1,196	\$5,225
4		Excavate Buried Sewer Pipe, 1,000'x3'x5'	556	CY		\$3.09	\$1.51		\$4,083	\$1,997	\$6,080
4		Remove Buried Sewer Pipe	1,000	LF		\$3.95	\$1.29		\$9,410	\$3,071	\$12,481
4		Remove Imbedded Sewer Pipe	250	LF	\$1.55	\$6.12	\$2.01	\$388	\$3,641	\$1,196	\$5,225

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
4		Remove manholes/Catch Basins	8	EA		\$173.10	\$56.50		\$3,297	\$1,076	\$4,373
4		Backfill Pipe Excavations	1,667	CY	\$4.77	\$1.42	\$1.87	\$7,950	\$5,635	\$7,421	\$21,006
4		Excavate Contaminated Soil from Site, 2 acres x 1' deep	3,227	CY		\$3.09	\$1.51		\$23,715	\$11,601	\$35,316
4		Backfill Soil Excavations	3,227	CY	\$4.77	\$1.42	\$1.87	\$15,391	\$10,909	\$14,366	\$40,666
1		R-123 Refrigerant Analyzer	0.03	ton		\$512.89			\$42	\$0	\$42
1		R-123 Refrigerant Analyzer	0.04	ton		\$512.89			\$53	\$0	\$53
1		Concentrate Elevator	16	ton		\$512.89			\$19,361	\$0	\$19,361
1		Prepared Feed Elevator	19	ton		\$512.89			\$22,665	\$0	\$22,665
1		"A" UF4 Elevator	17	ton		\$512.89			\$20,451	\$0	\$20,451
1		Bed Recycle Elevator	10	ton		\$512.89			\$12,296	\$0	\$12,296
1		Milled Feed Elevator	10	ton		\$512.89			\$12,395	\$0	\$12,395
1		Passenger Elevator	2	ton		\$512.89			\$2,992	\$0	\$2,992
1		Freight Elevator	0.25	ton		\$512.89			\$302	\$0	\$302
1		UF4 Feed Screw - 3rd Floor	0.12	ton		\$512.89			\$142	\$0	\$142
1		Green Salt Feed Screw - 2nd Floor	0.12	ton		\$512.89			\$142	\$0	\$142
1		Green Salt Dispenser - 2nd Floor	0.12	ton		\$512.89			\$142	\$0	\$142
1		Ore Blender Disc. Screw	0.16	ton		\$512.89			\$194	\$0	\$194
1		"B" UF4 Elevator	14	ton		\$512.89			\$17,140	\$0	\$17,140
1		Prepared Feed Drum Inverter Discharge Screw	0.45	ton		\$512.89			\$550	\$0	\$550
1		UF6 Cyl. Hdlg. Crane - Runway & Bridge	6	ton		\$512.89			\$7,065	\$0	\$7,065
1		Crane Trolley Car	6	ton		\$512.89			\$7,065	\$0	\$7,065
1		Lifting Beam for Shannahan Crane	1	ton		\$512.89			\$1,224	\$0	\$1,224
1		"A" HF Preheater	4	ton		\$512.89			\$4,407	\$0	\$4,407
1		"A" Bot. Hydrofluorinator Heater	2	ton		\$512.89			\$2,057	\$0	\$2,057
1		#4 Steam Chest	6	ton		\$512.89			\$7,093	\$0	\$7,093
1		#3 Steam Chest	6	ton		\$512.89			\$7,093	\$0	\$7,093
1		Tempered Water Tank Cooling Coil	4	ton		\$512.89			\$5,222	\$0	\$5,222
1		Sample Cold Trap	0.28	ton		\$512.89			\$343	\$0	\$343
1		UF6 lab. Samples Cyl. Emptying Manifold	0.17	ton		\$512.89			\$208	\$0	\$208
1		Sample Cold Trap	0.17	ton		\$512.89			\$208	\$0	\$208
1		Unit Heater	1	ton		\$512.89			\$853	\$0	\$853
1		Oil Cooler heat Exchanger	0.02	ton		\$512.89			\$24	\$0	\$24

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Gycol heat Exchanger	0.02	ton		\$512.89			\$24	\$0	\$24
1		Over Feed Brine Cooler	7	ton		\$512.89			\$8,900	\$0	\$8,900
1		Economizer	7	ton		\$512.89			\$8,900	\$0	\$8,900
1		R-134a Condenser	3	ton		\$512.89			\$3,725	\$0	\$3,725
1		R-134a Liquid Suction in Heat Exchanger	1	ton		\$512.89			\$769	\$0	\$769
1		Condenser - R-123 (Top)	1	ton		\$512.89			\$769	\$0	\$769
1		Condenser - Cooler - R-123 & R-134a (Bottom)	1	ton		\$512.89			\$1,722	\$0	\$1,722
1		Condenser - R-134a Pump Down	3	ton		\$512.89			\$3,725	\$0	\$3,725
1		#2 Steam Chest	6	ton		\$512.89			\$7,093	\$0	\$7,093
1		#1 Steam Chest	6	ton		\$512.89			\$7,093	\$0	\$7,093
1		"B" HF Preheater	4	ton		\$512.89			\$4,413	\$0	\$4,413
1		"B" Bottom HydroFluorinator Heater	7	ton		\$512.89			\$8,896	\$0	\$8,896
1		Flame Tower Preheater (Former "A")	1	ton		\$512.89			\$758	\$0	\$758
1		Strip Heaters - Upper Section Ctr.	0.21	ton		\$512.89			\$261	\$0	\$261
1		Strip Heaters - Upper Section Ctr.	0.21	ton		\$512.89			\$261	\$0	\$261
1		Cooling Coils - Lower Section Ctr.	0.21	ton		\$512.89			\$261	\$0	\$261
1		Cooling Coils - Lower Section Ctr.	0.21	ton		\$512.89			\$261	\$0	\$261
1		Mist Eliminator for Vacuum Pump	0.09	ton		\$512.89			\$110	\$0	\$110
1		Oxide Vacuum Filter	1	ton		\$512.89			\$1,232	\$0	\$1,232
1		UF4 Vacuum Filter	1	ton		\$512.89			\$1,232	\$0	\$1,232
1		Ash Vacuum Cleaner	1	ton		\$512.89			\$1,232	\$0	\$1,232
1		UF4 Vacuum Cleaner	45	ton		\$512.89			\$54,643	\$0	\$54,643
1		Ash Vacuum Cleaner	1	ton		\$512.89			\$1,232	\$0	\$1,232
1		Oxide Vacuum Cleaner - Dust Collector	3	ton		\$512.89			\$4,136	\$0	\$4,136
1		Oxide Vacuum Cleaner - Dust Collector	0.45	ton		\$512.89			\$545	\$0	\$545
1		UF4 Vacuum Cleaner	0.45	ton		\$512.89			\$545	\$0	\$545
1		Spar Filter Fines Drum Dumper	2	ton		\$512.89			\$2,355	\$0	\$2,355
1		Hat Box (East)	2	ton		\$512.89			\$2,266	\$0	\$2,266
1		Hat Box (West)	3	ton		\$512.89			\$3,959	\$0	\$3,959
1		500# Mit-E-Lift, Portable Hoist	0.02	ton		\$512.89			\$21	\$0	\$21
1		Crane Trolley Car	6	ton		\$512.89			\$7,065	\$0	\$7,065
1		Lifting Beam for Shannahan Crane	1	ton		\$512.89			\$1,224	\$0	\$1,224

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		UF4 Mill - 3rd Floor	1	ton		\$512.89			\$1,062	\$0	\$1,062
1		Stone Saw - Type M-75	1	ton		\$512.89			\$878	\$0	\$878
1		Bench Grinder - Queen Sit7 UF792	0.06	ton		\$512.89			\$71	\$0	\$71
1		Bench Grinder - Stand	1	ton		\$512.89			\$708	\$0	\$708
1		Drum Inverter	2	ton		\$512.89			\$2,550	\$0	\$2,550
1		Ore Concrete Blender	13	ton		\$512.89			\$15,313	\$0	\$15,313
1		UF6 Cylinder Cart	3	ton		\$512.89			\$3,679	\$0	\$3,679
1		UF4 Drum Inverter	2	ton		\$512.89			\$2,550	\$0	\$2,550
1		Articulated arm for Fluorinators	0.13	ton		\$512.89			\$156	\$0	\$156
1		Manlift - East	10	ton		\$512.89			\$11,775	\$0	\$11,775
1		Manlift - West	10	ton		\$512.89			\$11,775	\$0	\$11,775
1		Personnel Funnel Cone for Above	0.27	ton		\$512.89			\$329	\$0	\$329
1		10,000# Cap - Monorail - Maint Area	1	ton		\$512.89			\$1,250	\$0	\$1,250
1		2,000# Cap - Monorail - Spar Recycle Area	0.17	ton		\$512.89			\$212	\$0	\$212
1		4,500# Cap - Monorail - "A" Green Salt Area	0.09	ton		\$512.89			\$106	\$0	\$106
1		9,500# Cap - Monorail - G.E. Dissoc. Retorts	0.31	ton		\$512.89			\$376	\$0	\$376
1		4,500# Cap - Monorail - "A" Green Salt Area	0.11	ton		\$512.89			\$133	\$0	\$133
1		4,000# Cap - Monorail - "Q" Refrigeration Area	0.23	ton		\$512.89			\$276	\$0	\$276
1		#2 Vacuum Pump	0.30	ton		\$512.89			\$368	\$0	\$368
1		Cooling Air Blower - East	0.03	ton		\$512.89			\$35	\$0	\$35
1		Cooling Air Blower - West	0.03	ton		\$512.89			\$35	\$0	\$35
1		Gycol Circ. Pump - Basement	0.29	ton		\$512.89			\$354	\$0	\$354
1		R-123 Gear Aux. Oil Pump	0.03	ton		\$512.89			\$34	\$0	\$34
1		Bottom Hydrofluorinator Blower	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		FM Bldg. Exh. Fan	11	ton		\$512.89			\$13,450	\$0	\$13,450
1		Sample Vacuum Pump	0.03	ton		\$512.89			\$368	\$0	\$368
1		Exhaust Fan - Distillation	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Flame Tower Vacuum Pump - 2nd Floor	0.30	ton		\$512.89			\$368	\$0	\$368
1		Exhaust Fan - South Center	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Exhaust Fan - West	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Exhaust Fan - Maintenance Area	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Basement Exhaust Fan - Hoistwell	1	ton		\$512.89			\$1,133	\$0	\$1,133

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DEMOLITION ESTIMATE

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LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Bottom Hydrofluorinator Air Circulation Fan	7	ton		\$512.89			\$8,896	\$0	\$8,896
1		Bottom Hydrofluorinator Comp. Air Blower	1	ton		\$512.89			\$956	\$0	\$956
1		Exhaust Fan - Sxw	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Refrigeration Vent Blower	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Water Cooler	0.17	ton		\$512.89			\$212	\$0	\$212
1		Portable Air conditioner	1	ton		\$512.89			\$885	\$0	\$885
1		R-123 Cenrifugal Compressor	24	ton		\$512.89			\$28,756	\$0	\$28,756
1		R-123 Purge Unit	12	ton		\$512.89			\$14,513	\$0	\$14,513
1		R-134a Purge Unit	12	ton		\$512.89			\$14,513	\$0	\$14,513
1		Refrigerant Management System	1	ton		\$512.89			\$850	\$0	\$850
1		R-123 High Eff. Purge Unit	0.21	ton		\$512.89			\$255	\$0	\$255
1		"A" Bot. Hydrofluorinator	3	ton		\$512.89			\$3,965	\$0	\$3,965
1		"A" Hydrofluorinator	3	ton		\$512.89			\$3,965	\$0	\$3,965
1		"B" Hydrofluorinator	3	ton		\$512.89			\$3,965	\$0	\$3,965
1		"B" Bot. Hydrofluorinator	3	ton		\$512.89			\$3,965	\$0	\$3,965
1		"C" Hydrofluorinator	5	ton		\$512.89			\$5,499	\$0	\$5,499
1		12" Flame Tower Reactor	0.41	ton		\$512.89			\$496	\$0	\$496
1		Separator	0.44	ton		\$512.89			\$531	\$0	\$531
1		Separator	0.44	ton		\$512.89			\$531	\$0	\$531
1		Separator	0.44	ton		\$512.89			\$531	\$0	\$531
1		Switch Board - NW	1	ton		\$512.89			\$1,700	\$0	\$1,700
1		Switch Board - NE	1	ton		\$512.89			\$850	\$0	\$850
1		Switch Board - E - Ctr	1	ton		\$512.89			\$850	\$0	\$850
1		Switch Board - E - S	1	ton		\$512.89			\$637	\$0	\$637
1		High Boiler Still	8	ton		\$512.89			\$10,040	\$0	\$10,040
1		Low Boiler Still	7	ton		\$512.89			\$8,402	\$0	\$8,402
1		#2 Sample Vac. Pump Alumina Tower	1	ton		\$512.89			\$738	\$0	\$738
1		#1 Sample Vac. Pump Alumina Tower	1	ton		\$512.89			\$738	\$0	\$738
1		#2 Prepared Feed Hopper	19	ton		\$512.89			\$23,462	\$0	\$23,462
1		#1 Prepared Feed Hopper	19	ton		\$512.89			\$23,462	\$0	\$23,462
1		Tempered Water Tank	4	ton		\$512.89			\$4,342	\$0	\$4,342
1		#3 Prepared Feed Hopper	19	ton		\$512.89			\$23,462	\$0	\$23,462

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DEMOLITION ESTIMATE

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LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Water Treatment Chem. Addition Pot	0.05	ton		\$512.89			\$56	\$0	\$56
1		Knock Out Pot	0.26	ton		\$512.89			\$319	\$0	\$319
1		R-134a Receiver	1	ton		\$512.89			\$1,781	\$0	\$1,781
1		R-134a Accumulator	1	ton		\$512.89			\$1,223	\$0	\$1,223
1		Distillate Crane Scale	0.01	ton		\$512.89			\$17	\$0	\$17
1		UF6 Cylinder Shipping Scale	5	ton		\$512.89			\$6,109	\$0	\$6,109
1		Delumper Flame Tower Reactor	0.10	ton		\$512.89			\$117	\$0	\$117
1		Rotary Valve - Dust Coll. Discharge	0.03	ton		\$512.89			\$35	\$0	\$35
1		Rotary Valve - Draw Off Leg. - Basmt.	0.03	ton		\$512.89			\$39	\$0	\$39
1		Rotary Valve - "A" Bot H'Flator Disc.	0.03	ton		\$512.89			\$32	\$0	\$32
1		Dust Valve - M-410 Spar	0.03	ton		\$512.89			\$32	\$0	\$32
1		Rotary Valve Bed Fines Hopper Disc. Rv.	0.03	ton		\$512.89			\$35	\$0	\$35
1		Rotary Valve "B" Bot. H'Flator Disc.	0.03	ton		\$512.89			\$35	\$0	\$35
1		Dryer Disch. Mill Feed Screw	0.47	ton		\$512.89			\$579	\$0	\$579
1		Calcliner Elev. Disc. Screw	0.20	ton		\$512.89			\$248	\$0	\$248
1		Prepared Feed Hopper Feeder Screw	1	ton		\$512.89			\$806	\$0	\$806
1		Undersized Feed Material Screw	1	ton		\$512.89			\$1,671	\$0	\$1,671
1		Ore Conc. Surge Hopper Disch. Screw - N	1	ton		\$512.89			\$1,126	\$0	\$1,126
1		Ore Conc. Surge Hopper Disch. Screw - N	1	ton		\$512.89			\$1,126	\$0	\$1,126
1		UF6 Continuous Sample Vessel-East	1	ton		\$512.89			\$919	\$0	\$919
1		UF6 Continuous Sample Vessel-West	1	ton		\$512.89			\$919	\$0	\$919
1		"A" Fluorinator Heater	4	ton		\$512.89			\$5,100	\$0	\$5,100
1		"B" Fluorinator Heater	4	ton		\$512.89			\$5,100	\$0	\$5,100
1		Service Room Hot Water Heater	0.08	ton		\$512.89			\$97	\$0	\$97
1		Tempered Water Spiral Heat Exchanger	20	ton		\$512.89			\$24,921	\$0	\$24,921
1		Tempered Water Spiral Heat Exchanger	20	ton		\$512.89			\$24,921	\$0	\$24,921
1		Unit Heater	0.04	ton		\$512.89			\$46	\$0	\$46
1		Steam Jacket On U-430	0.45	ton		\$512.89			\$550	\$0	\$550
1		"B" Top H/Aerator Heater	2	ton		\$512.89			\$2,656	\$0	\$2,656
1		"C" Flator Heater	2	ton		\$512.89			\$2,266	\$0	\$2,266
1		Fluidizing Air To All Flators	0.01	ton		\$512.89			\$11	\$0	\$11
1		Safety Shower Filter	0.14	ton		\$512.89			\$174	\$0	\$174

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		#1 Instrument Air Filter	0.00	ton		\$512.89			\$6	\$0	\$6
1		#2 Instrument Filter	0.00	ton		\$512.89			\$6	\$0	\$6
1		Welder - Ideal Arc 250	0.23	ton		\$512.89			\$283	\$0	\$283
1		Welder - Da 250	0.23	ton		\$512.89			\$283	\$0	\$283
1		500# Cap- Mite-Lift - Portable Hoist	0.02	ton		\$512.89			\$21	\$0	\$21
1		1000# Cap - Hoist - N	0.06	ton		\$512.89			\$73	\$0	\$73
1		500# Cap - Hoist - S	0.03	ton		\$512.89			\$37	\$0	\$37
1		500# Cap - Hoist - Cont Room Platform	0.03	ton		\$512.89			\$37	\$0	\$37
1		Drill Press	0.48	ton		\$512.89			\$591	\$0	\$591
1		Prepared Feed Mill	4	ton		\$512.89			\$4,616	\$0	\$4,616
1		Ore Dryer Discharge Crusher	1	ton		\$512.89			\$1,520	\$0	\$1,520
1		Scrap Recovery (UF4) Mill	1	ton		\$512.89			\$1,520	\$0	\$1,520
1		Prepared Feed Mill	4	ton		\$512.89			\$4,616	\$0	\$4,616
1		Ore Precrusher	1	ton		\$512.89			\$1,594	\$0	\$1,594
1		Motor Control Center (C-Fm-40)	3	ton		\$512.89			\$3,471	\$0	\$3,471
1		1000# Cap - Monorail - Valve Room	0.13	ton		\$512.89			\$159	\$0	\$159
1		2000# - Monorail - "B" Flator	0.07	ton		\$512.89			\$80	\$0	\$80
1		2000# Cap Monorail - "A" Flator	0.07	ton		\$512.89			\$89	\$0	\$89
1		Vacuum Pump - East	1	ton		\$512.89			\$850	\$0	\$850
1		Vacuum Pump - West	1	ton		\$512.89			\$850	\$0	\$850
1		Yard Safety Shower Circ. Pump	0.05	ton		\$512.89			\$57	\$0	\$57
1		Yard Safety Shower Circ. Pump	0.05	ton		\$512.89			\$57	\$0	\$57
1		Yard Safety Shower Circ. Pump	0.05	ton		\$512.89			\$57	\$0	\$57
1		Safety Shower Circ. Pump	0.06	ton		\$512.89			\$71	\$0	\$71
1		"A" Top H/EFlator Blower	2	ton		\$512.89			\$2,833	\$0	\$2,833
1		"A" Flator Blower	9	ton		\$512.89			\$10,412	\$0	\$10,412
1		"B" Flator Blower	9	ton		\$512.89			\$10,412	\$0	\$10,412
1		"B" Flator Comb. Air Blower	1	ton		\$512.89			\$956	\$0	\$956
1		"A" Flator Comb. Air Blower	0.11	ton		\$512.89			\$130	\$0	\$130
1		Exhaust Fan - Maint. Area	0.06	ton		\$512.89			\$67	\$0	\$67
1		Control Room A/C Blower	0.03	ton		\$512.89			\$35	\$0	\$35
1		Exh. Fan - Service Room	0.06	ton		\$512.89			\$67	\$0	\$67

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Man-Cooling Fan	1	ton		\$512.89			\$637	\$0	\$637
1		"B" Top H/Flator Air Circ. Fan	6	ton		\$512.89			\$7,649	\$0	\$7,649
1		Control Room Fan	1	ton		\$512.89			\$956	\$0	\$956
1		"C" Flator Heat Circ. Air Blower	9	ton		\$512.89			\$10,412	\$0	\$10,412
1		"C" Flator Heat Comb. Air Blower	1	ton		\$512.89			\$956	\$0	\$956
1		Drinking Water Cooler	0.17	ton		\$512.89			\$212	\$0	\$212
1		Refrigerator - Control Room	0.07	ton		\$512.89			\$81	\$0	\$81
1		Refrigerator - Cont. Room - Foreman	0.07	ton		\$512.89			\$81	\$0	\$81
1		A/C & Heating Unit	1	ton		\$512.89			\$1,062	\$0	\$1,062
1		A/C & Heating Unit	3	ton		\$512.89			\$3,718	\$0	\$3,718
1		"B" Top H-Flator	4	ton		\$512.89			\$4,656	\$0	\$4,656
1		Ore Crusher Grizzley Screen	0.36	ton		\$512.89			\$443	\$0	\$443
1		Calciner Grizzley	0.36	ton		\$512.89			\$443	\$0	\$443
1		Scrap Recovery Screen	1	ton		\$512.89			\$1,062	\$0	\$1,062
1		Switchboard - N X E	4	ton		\$512.89			\$4,834	\$0	\$4,834
1		Switchboard - N X W	4	ton		\$512.89			\$4,834	\$0	\$4,834
1		Switchboard - N X W	3	ton		\$512.89			\$3,825	\$0	\$3,825
1		Dryer Surge Hopped	3	ton		\$512.89			\$3,187	\$0	\$3,187
1		UF6 Blow Off & Dump Truck	1	ton		\$512.89			\$1,226	\$0	\$1,226
1		Bed Fines Hopper	11	ton		\$512.89			\$13,280	\$0	\$13,280
1		Scrap Recovery Hopper	0.30	ton		\$512.89			\$362	\$0	\$362
1		Safety Shower Heater Storage Tank	1	ton		\$512.89			\$669	\$0	\$669
1		Ore Conc. Surge Hopper	8	ton		\$512.89			\$9,833	\$0	\$9,833
1		"A" Flator Bed - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"B" Flator Bed - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"B" Top H-Flator Disc. Line - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		Undersize Feed Matl. Screw - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"C" Flator Bed - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		Ore Conc. Surge Hopper - N- Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		Ore Conc. Surge Hopper - S - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		Conc. Blender Feed Line - Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"A" Bottom H-Flator Feeder	0.39	ton		\$512.89			\$481	\$0	\$481

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DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		In-Range Discharge	0.39	ton		\$512.89			\$481	\$0	\$481
1		Scrap Rec. Mill Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		Fines Discharge	0.39	ton		\$512.89			\$481	\$0	\$481
1		"A" Flator Spar Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		"B" Flator UF4 Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		"A" Flator UF4 Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		"B" Flator Spar Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		"B" Bottom H-Flator Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		"C" Flator UF4 Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		"C" Flator Spar Feeder	0.39	ton		\$512.89			\$481	\$0	\$481
1		Ore In-Range Discharge	0.39	ton		\$512.89			\$481	\$0	\$481
1		Ore In-Range Discharge	0.39	ton		\$512.89			\$481	\$0	\$481
1		"A" Reoxidizer Screw	0.47	ton		\$512.89			\$579	\$0	\$579
1		Flator Filter Fines Screw	0.47	ton		\$512.89			\$579	\$0	\$579
1		Ore Dryer Feed Screw	1	ton		\$512.89			\$1,377	\$0	\$1,377
1		"B" Reoxidizer Screw	6	ton		\$512.89			\$7,649	\$0	\$7,649
1		Ore Classifier Feed Screw	0.46	ton		\$512.89			\$567	\$0	\$567
1		Hoist Trolley	0.11	ton		\$512.89			\$137	\$0	\$137
1		Hoist Trolley	0.11	ton		\$512.89			\$137	\$0	\$137
1		Ore Dryer	0.00	ton		\$512.89			\$0	\$0	\$0
1		Filter Dryer	4	ton		\$512.89			\$5,100	\$0	\$5,100
1		Ore Dryer Heater	5	ton		\$512.89			\$6,105	\$0	\$6,105
1		"A" Top Hflator Heater	4	ton		\$512.89			\$5,100	\$0	\$5,100
1		High Boiler Still Condenser	0.05	ton		\$512.89			\$59	\$0	\$59
1		H2O Filter for Metal Tube D/P Test - E	0.03	ton		\$512.89			\$39	\$0	\$39
1		H2O Filter for Metal Tube D/P Test - W	0.03	ton		\$512.89			\$39	\$0	\$39
1		Hot Glycol Filter	0.03	ton		\$512.89			\$39	\$0	\$39
1		Decon Trunk Vacuum	0.03	ton		\$512.89			\$39	\$0	\$39
1		Welder	0.19	ton		\$512.89			\$232	\$0	\$232
1		Hot Box	1	ton		\$512.89			\$719	\$0	\$719
1		500# Cap. Portable Hoist	0.02	ton		\$512.89			\$21	\$0	\$21
1		4000# Cap. Hoist	0.08	ton		\$512.89			\$96	\$0	\$96

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DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		2000# Cap. Hoist	0.06	ton		\$512.89			\$77	\$0	\$77
1		1000# Cap. Hoist	0.04	ton		\$512.89			\$45	\$0	\$45
1		1000# Cap. Hoist	0.12	ton		\$512.89			\$142	\$0	\$142
1		1000# Cap. Hoist - Electric	0.03	ton		\$512.89			\$42	\$0	\$42
1		Scrap Recycle Drum Inverter	2	ton		\$512.89			\$2,656	\$0	\$2,656
1		Washer - Decon	1	ton		\$512.89			\$1,275	\$0	\$1,275
1		2,500 Cap. Monorail	0.26	ton		\$512.89			\$319	\$0	\$319
1		2,000 Cap. Monorail	0.11	ton		\$512.89			\$133	\$0	\$133
1		4,500 Cap. Monorail	0.11	ton		\$512.89			\$133	\$0	\$133
1		4,000 Cap. Monorail	0.32	ton		\$512.89			\$386	\$0	\$386
1		Monorail	0.35	ton		\$512.89			\$425	\$0	\$425
1		4,000 Cap. Monorail	0.09	ton		\$512.89			\$106	\$0	\$106
1		Dryer Combustion Air Blower	0.01	ton		\$512.89			\$18	\$0	\$18
1		"A" Flator Offgas Lines Cooling Blower	0.23	ton		\$512.89			\$283	\$0	\$283
1		Exhaust Fan - Service Room	1	ton		\$512.89			\$956	\$0	\$956
1		Exhaust Fan - Decon	0.11	ton		\$512.89			\$130	\$0	\$130
1		Wall Exhaust Fan - South	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Wall Exhaust Fan - West	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		#317-1 Vent Unit	1	ton		\$512.89			\$963	\$0	\$963
1		Exhaust Fan	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Exhaust Fan	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Decon Bead Blaster	3	ton		\$512.89			\$3,400	\$0	\$3,400
1		Exhaust Fan	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		"B" Top Hflator Combustion Air Blower	1	ton		\$512.89			\$956	\$0	\$956
1		Wall Exhaust Fan - Southwest	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Drinking Cooler	0.17	ton		\$512.89			\$212	\$0	\$212
1		"A" Top Hflator	4	ton		\$512.89			\$4,636	\$0	\$4,636
1		4/E Dia. Prepared Feed Air Classifier	1	ton		\$512.89			\$918	\$0	\$918
1		6/E Dia. Prepared Feed Air Classifier	2	ton		\$512.89			\$1,965	\$0	\$1,965
1		Switchboard - East-West	3	ton		\$512.89			\$4,250	\$0	\$4,250
1		Switchboard - East-East	5	ton		\$512.89			\$6,374	\$0	\$6,374
1		Ultrasonic Cleaner Tank - Decon	1	ton		\$512.89			\$1,700	\$0	\$1,700

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DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Dryer Feed Hopper	3	ton		\$512.89			\$3,400	\$0	\$3,400
1		#1 Still Feed Tank	4	ton		\$512.89			\$5,307	\$0	\$5,307
1		#2 Still Feed Tank	4	ton		\$512.89			\$5,307	\$0	\$5,307
1		Bed Fines Hopper	9	ton		\$512.89			\$11,067	\$0	\$11,067
1		Spar Discharge Hopper	3	ton		\$512.89			\$4,250	\$0	\$4,250
1		#3 Still Feed Tank	4	ton		\$512.89			\$5,307	\$0	\$5,307
1		Dryer Feed Hopper Vibrator - West	0.01	ton		\$512.89			\$8	\$0	\$8
1		"A" Reoxidizer Screw Disch. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"B" Flator Primary Filter Disch. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"B" Flator B.U. Filter Disch. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"A" Flator Primary Filter Disch. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"A" Flator B.U. Filter Disch. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		F-416 Discharge Line Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"C2" Flator Primary Filter D.O. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		"C1" Flator Primary Filter D.O. Vibrator	0.01	ton		\$512.89			\$8	\$0	\$8
1		Dryer Feed Hopper Vibrator - East	0.01	ton		\$512.89			\$8	\$0	\$8
1		"A" Flator Primary Filter Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		"A" Flator Primary Filter Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		"B" Flator Primary Filter Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		"B" Flator Primary Filter Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		Spar Recycle Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		"C" Flator Primary Filter Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		"C" Flator Primary Filter Disch. R/V	0.39	ton		\$512.89			\$481	\$0	\$481
1		Screw Conveyor	0.33	ton		\$512.89			\$403	\$0	\$403
1		C Fluorinate Filter Fines Screw	0.20	ton		\$512.89			\$249	\$0	\$249
1		Rotex Feed Screw	0.23	ton		\$512.89			\$280	\$0	\$280
1		Mud Bailer Feed Screw	1	ton		\$512.89			\$1,230	\$0	\$1,230
1		Hoist Trolley - "A" Green Salt	0.03	ton		\$512.89			\$32	\$0	\$32
1		A-1 Primary Cold Trap	1	ton		\$512.89			\$1,617	\$0	\$1,617
1		A-2 Primary Cold Trap	1	ton		\$512.89			\$1,617	\$0	\$1,617
1		A-3 Primary Cold Trap	1	ton		\$512.89			\$1,617	\$0	\$1,617
1		Product Condenser	0.02	ton		\$512.89			\$25	\$0	\$25

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

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Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		A-4 Primary Cold Trap	2	ton		\$512.89			\$2,867	\$0	\$2,867
1		B-2 Primary Cold Trap	2	ton		\$512.89			\$2,867	\$0	\$2,867
1		B-3 Primary Cold Trap	2	ton		\$512.89			\$2,867	\$0	\$2,867
1		B-1 Primary Cold Trap	2	ton		\$512.89			\$2,867	\$0	\$2,867
1		B-4 Primary Cold Trap	2	ton		\$512.89			\$2,867	\$0	\$2,867
1		Alt. Primary Cold Trap - Nooter	2	ton		\$512.89			\$2,867	\$0	\$2,867
1		"B" Hydrogen Preheater	0.20	ton		\$512.89			\$244	\$0	\$244
1		"B" Reductor Heater - Surface Comb.	0.19	ton		\$512.89			\$230	\$0	\$230
1		Instrument Air Filter	0.00	ton		\$512.89			\$5	\$0	\$5
1		Chem. Trap - Fluorine Analyzer	0.00	ton		\$512.89			\$5	\$0	\$5
1		Chem. Trap - Fluorine Analyzer	0.00	ton		\$512.89			\$5	\$0	\$5
1		Chem. Trap - Fluorine Analyzer	0.00	ton		\$512.89			\$5	\$0	\$5
1		Chem. Trap - Fluorine Analyzer	0.00	ton		\$512.89			\$5	\$0	\$5
1		Chem. Trap - Sample Point	0.00	ton		\$512.89			\$5	\$0	\$5
1		Chem. Trap - Fluorine Analyzer	0.00	ton		\$512.89			\$5	\$0	\$5
1		Air Filter	1	ton		\$512.89			\$1,383	\$0	\$1,383
1		Welder - Idealarc 400	0.19	ton		\$512.89			\$237	\$0	\$237
1		Welder - 400 amp stick	0.19	ton		\$512.89			\$237	\$0	\$237
1		Hot Box	0.02	ton		\$512.89			\$19	\$0	\$19
1		E-409-A-1 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-408-A-2 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-410-A-3 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-427-A-4 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-426-B-2 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-425-B-3 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Distillation West - Hot Box	4	ton		\$512.89			\$4,604	\$0	\$4,604
1		Distillation East - Hot Box	4	ton		\$512.89			\$4,604	\$0	\$4,604
1		E-600-Alt. Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-492-B-1 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		E-493-B-4 Primary Cold Trap Hot Box	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Mit-E-Lift-500# Cap	0.02	ton		\$512.89			\$21	\$0	\$21
1		Hoist - "A" Green Salt Train - 2000# Cap.	1	ton		\$512.89			\$744	\$0	\$744

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Hoist - Cold Trap Area	0.02	ton		\$512.89			\$21	\$0	\$21
1		Hoist - Cold Trap Area	0.02	ton		\$512.89			\$21	\$0	\$21
1		#1 Mud Bailer - West	3	ton		\$512.89			\$4,250	\$0	\$4,250
1		#1 Mud Bailer - East	3	ton		\$512.89			\$3,187	\$0	\$3,187
1		#1 UF4 Mill - North	2	ton		\$512.89			\$2,975	\$0	\$2,975
1		UF4 Blender	17	ton		\$512.89			\$21,248	\$0	\$21,248
1		#2 UF4 Mill - South	4	ton		\$512.89			\$4,958	\$0	\$4,958
1		#3 Mudbailer - North	2	ton		\$512.89			\$2,656	\$0	\$2,656
1		Monorail - Over A-3 Prim Cold Trap 30,000#	1	ton		\$512.89			\$1,521	\$0	\$1,521
1		Monorail - Over A-2 Prim Cold Trap 30,000#	1	ton		\$512.89			\$1,521	\$0	\$1,521
1		Monorail - Over A-1 Prim Cold Trap 30,000#	1	ton		\$512.89			\$1,521	\$0	\$1,521
1		Monorail - Over Rotex Screen (S-600) 3,000#	0.10	ton		\$512.89			\$121	\$0	\$121
1		Monorail - "A" G. Salt Area, 2,000#	0.08	ton		\$512.89			\$92	\$0	\$92
1		Monorail - B-3 Prim. Cold Trap	1	ton		\$512.89			\$686	\$0	\$686
1		Monorail - A Bot. Hflourinator	0.12	ton		\$512.89			\$141	\$0	\$141
1		Vac. Pump - UF6 Fluorine Analyzer	0.07	ton		\$512.89			\$81	\$0	\$81
1		Vac. Pump - Sample Point	0.10	ton		\$512.89			\$124	\$0	\$124
1		"A" Reductor Blower	7	ton		\$512.89			\$8,924	\$0	\$8,924
1		Exh. Fan - Hf Area - West Wall	0.08	ton		\$512.89			\$96	\$0	\$96
1		Exh. Fan - Hf Area - South Wall	0.08	ton		\$512.89			\$96	\$0	\$96
1		Building Ventilation Unit	3	ton		\$512.89			\$4,250	\$0	\$4,250
1		Man Cooling Fan	0.06	ton		\$512.89			\$67	\$0	\$67
1		"B" Reductor Comb. Air Blower	1	ton		\$512.89			\$797	\$0	\$797
1		Exhaust Fan - South X West - 1 Lg	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Drinking Water Cooler	0.17	ton		\$512.89			\$212	\$0	\$212
1		#1 UF4 Mill Grizzly	10	ton		\$512.89			\$12,749	\$0	\$12,749
1		#2 UF4 Mill Grizzly	10	ton		\$512.89			\$12,749	\$0	\$12,749
1		Spar (Bed) Rotex Screen	2	ton		\$512.89			\$2,975	\$0	\$2,975
1		Rotex Screen	2	ton		\$512.89			\$2,975	\$0	\$2,975
1		Switchboard C-19 West	7	ton		\$512.89			\$8,924	\$0	\$8,924
1		Switchboard D-20 East	7	ton		\$512.89			\$8,924	\$0	\$8,924
1		Vibrator - #1 Ore Conc. Hopper	0.01	ton		\$512.89			\$8	\$0	\$8

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Vibrator - #2 Ore Conc. Hopper	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #1 Dry Oxide Dust Coil	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #1 Dry Oxide Dust Coil	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #1 Dry Oxide Dust Coil	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - Hf Filter (F-424) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - Hf Filter (F-425) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vib. - "A" Reductor K.O. Pot Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - UF4 Hopper	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - Spar Decay Hopper Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #3 Ore Conc. Hopper	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - UF4 Hopper	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B3" HF Filter Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B4" HF Filter Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B5" HF Filter Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B6" HF Filter Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vib. - "B" Red/ER Fines Ko Pot Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator-Inlet Line To #2 UF4 Mill	0.01	ton		\$512.89			\$8	\$0	\$8
1		Rotary Value - #1 Mudbailer Ore Blender	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Value - #2 Mudbailer Ore Blender	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Value - "A" Top H/Eflator	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - F-494 Fines Discharge	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - F-493 Fines Discharge	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - F-495 Fines Discharge	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - #1 Dry Oxide Dust Col. Hop.	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - "A" Reductor Ko Pot Disch.	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - UF4 Mill Feeder - N	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - "B" Top H/Eflator	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - "B-1" Red. Filter Fines Disch.	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Value - #2 UF4 Crusher - S	0.04	ton		\$512.89			\$46	\$0	\$46
1		Conc. Feed Hopper Screw	1	ton		\$512.89			\$1,326	\$0	\$1,326
1		Wet Oxide Dust Collector Discharge Screw	1	ton		\$512.89			\$689	\$0	\$689
1		Trolley - B-4 & B-5 HF Filters	0.03	ton		\$512.89			\$33	\$0	\$33

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		"A" Reductor Filter Fines Hopper	0.06	ton		\$512.89			\$71	\$0	\$71
1		A-1 Tert. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		A-2 Tert. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		A-1 Sec. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		"A" Reductor Heater	8	ton		\$512.89			\$9,916	\$0	\$9,916
1		#A4 HF Filter Heater (F-424)	0.22	ton		\$512.89			\$269	\$0	\$269
1		#A 5 HF Filter Heater (F-424)	0.22	ton		\$512.89			\$269	\$0	\$269
1		A-2 Sec. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		B-1 Sec. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		B-2 Sec. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		B-1 Tert. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		B-2 Tert. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		Shower Water Heater	0.08	ton		\$512.89			\$94	\$0	\$94
1		A-3 Sec. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		B-3 Sec. Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		Sample Cold Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		"B" Reductor Filter Fines Hopper "1 B"	0.06	ton		\$512.89			\$71	\$0	\$71
1		Bot. H'Flator Filter #1 B - Heater	0.15	ton		\$512.89			\$183	\$0	\$183
1		Bot. H'Flator Filter #2B - Heater	0.15	ton		\$512.89			\$183	\$0	\$183
1		"B" Red. Fines Hopper Disch. Piping Heater	0.15	ton		\$512.89			\$183	\$0	\$183
1		Top H/EFlator Filter #3B Heater	0.15	ton		\$512.89			\$183	\$0	\$183
1		Top H/EFlator Filter #4B Heater	0.15	ton		\$512.89			\$183	\$0	\$183
1		#1 Dry Oxide Dust Collector	0.00	ton		\$512.89			\$0	\$0	\$0
1		Vessel Vacuum, Hop. & Controller Stand	1	ton		\$512.89			\$1,417	\$0	\$1,417
1		A4 Bot. HF Filter	1	ton		\$512.89			\$843	\$0	\$843
1		A5 Bot. HF Filter	1	ton		\$512.89			\$843	\$0	\$843
1		Chem Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		Chem Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		Chem Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		Chem Trap	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		Inst. Air Filter	2	ton		\$512.89			\$2,883	\$0	\$2,883
1		B4 Bot. HF Filter	1	ton		\$512.89			\$942	\$0	\$942

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DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		3B Top HF Filter	1	ton		\$512.89			\$942	\$0	\$942
1		6B Top HF Filter	1	ton		\$512.89			\$942	\$0	\$942
1		5B Bottom HF Filter	1	ton		\$512.89			\$942	\$0	\$942
1		Welder - Idealarc	0.19	ton		\$512.89			\$237	\$0	\$237
1		Welder - Idealarc	0.19	ton		\$512.89			\$237	\$0	\$237
1		Hot Box - Cold Trap E-446-1A Sec.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E-413-2A Sec.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E411-1A Tert.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E412-2A Tert.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E447-1B Sec.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E448-2B Sec.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E472-1B Tert.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E473-2B Tert.	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E-601	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E-602	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Hot Box - Cold Trap E-603	1	ton		\$512.89			\$1,211	\$0	\$1,211
1		Portable Hoist - Mite-E-Lift	0.02	ton		\$512.89			\$21	\$0	\$21
1		4000# - Hoist B4 & B5 Hf Filters	0.08	ton		\$512.89			\$92	\$0	\$92
1		2000# - Hoist - Over "A" Reductor	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist & Trolley Over A4 & A5 HF Filter	0.08	ton		\$512.89			\$92	\$0	\$92
1		4000# Hoist & Trolley Oven B3 HF Filter	0.07	ton		\$512.89			\$90	\$0	\$90
1		1000# - Hoist - Rotary Va. Storage Area	0.04	ton		\$512.89			\$52	\$0	\$52
1		1000# Cap - Portable Hoist	0.04	ton		\$512.89			\$52	\$0	\$52
1		1000# Cap - Portable Hoist	0.04	ton		\$512.89			\$52	\$0	\$52
1		20,000# Monorail - Over Cold Trap 2B Tert.	1	ton		\$512.89			\$1,139	\$0	\$1,139
1		20,000# Monorail - Over Cold Trap 1B	1	ton		\$512.89			\$1,139	\$0	\$1,139
1		20,000# Mono - Cold Trap 2B Sec. & 1A Tert.	2	ton		\$512.89			\$1,903	\$0	\$1,903
1		20,000# Mono - Cold Trap 2A & 1B Sec.	2	ton		\$512.89			\$1,903	\$0	\$1,903
1		20,000# Mono - Cold Trap 1A Sec. & 2A Tert.	2	ton		\$512.89			\$1,903	\$0	\$1,903
1		11,000# Monorail - Over HF Filter A4 & A5	0.36	ton		\$512.89			\$437	\$0	\$437

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DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		7,000# Monorail - Over HF Filter B4 & B5	0.24	ton		\$512.89			\$289	\$0	\$289
1		5,000# Monorail - Over HF Filter B3	0.22	ton		\$512.89			\$264	\$0	\$264
1		1,000# Monorail - Over HF Filter B6	0.13	ton		\$512.89			\$157	\$0	\$157
1		1,000# Monorail - Over "A" Gs Area	0.13	ton		\$512.89			\$157	\$0	\$157
1		1,000# Monorail - Over "A" Gs Area	0.13	ton		\$512.89			\$157	\$0	\$157
1		MO-419 Monorail - Over (C-418) Mill Feed Elevator	0.16	ton		\$512.89			\$191	\$0	\$191
1		MO-420 1,000# Mono - Over Rotary Va. Stor. Area	0.09	ton		\$512.89			\$105	\$0	\$105
1		Vacuum Pump	0.07	ton		\$512.89			\$81	\$0	\$81
1		"A" Reductor Comb Air Blower	0.35	ton		\$512.89			\$425	\$0	\$425
1		Fluorine Compressor	0.35	ton		\$512.89			\$425	\$0	\$425
1		Exhaust Fan - South Wall - HF Area	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Exhaust Fan - West Wall - HF Area	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Emergency Exh. Fan	2	ton		\$512.89			\$2,266	\$0	\$2,266
1		Women's Shower Exhaust Fan	0.03	ton		\$512.89			\$35	\$0	\$35
1		Man Cooling Fan	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		"B" HF Primary Jet Scrubber - West	0.09	ton		\$512.89			\$106	\$0	\$106
1		"B" HF Secondary Jet Scrubber - East	0.09	ton		\$512.89			\$106	\$0	\$106
1		"B" Reductor Air Circ. Fan	9	ton		\$512.89			\$10,412	\$0	\$10,412
1		Exhaust Fan	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Water Cooler	0.04	ton		\$512.89			\$51	\$0	\$51
1		R-402 "A" Reductor - Surface Comb.	8	ton		\$512.89			\$10,139	\$0	\$10,139
1		R-600 "B" Reductor	8	ton		\$512.89			\$10,139	\$0	\$10,139
1		Spar Rotex Screen	0.08	ton		\$512.89			\$96	\$0	\$96
1		Exit - Wet Oxide Dust Coil. #2 (F-416)	0.08	ton		\$512.89			\$92	\$0	\$92
1		Exhaust Fan (P-524)	0.08	ton		\$512.89			\$96	\$0	\$96
1		Exhaust Fan (P-639)	0.08	ton		\$512.89			\$96	\$0	\$96
1		Exhaust Fan (P-523)	0.08	ton		\$512.89			\$96	\$0	\$96
1		Switch Board Nxw	10	ton		\$512.89			\$12,395	\$0	\$12,395
1		Motor Control Ctr Nxw	4	ton		\$512.89			\$5,100	\$0	\$5,100
1		#1 Conc. Hopper (Ctr)	2	ton		\$512.89			\$2,231	\$0	\$2,231
1		"A" Reductor Filter Fines Hopper	0.10	ton		\$512.89			\$117	\$0	\$117
1		#2 Conc. Hopper (East) - Cont. Boiler	2	ton		\$512.89			\$2,231	\$0	\$2,231

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DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		HF Filter Bump Tank	1	ton		\$512.89			\$790	\$0	\$790
1		UF6 Surge Tank	5	ton		\$512.89			\$6,258	\$0	\$6,258
1		"1B" Reductor Filter Fines Hopper	0.31	ton		\$512.89			\$375	\$0	\$375
1		#3 Conc. Hopper - West	2	ton		\$512.89			\$2,231	\$0	\$2,231
1		Vibrator - #1 Wet Oxide Dust Coil. Hop. (E)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #1 Wet Oxide Dust Coil. Hop. (W)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #2 Wet Oxide Dust Coil. Hop. (E)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - #2 Wet Oxide Dust Coil. Hop. (W)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - HF Filter "A1" (F-406) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - HF Filter "A2" (F-407) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - HF Filter "A3" (F-419) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - HF Filter "A6" (F-443) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vib. "A" UF4 Prim. Dust Coll. (F-426) Hop.	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - A2 Prim Flation Filter (F-432)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - A1 Prim Flation Filter (F-433)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - B2 Prim Flation Filter (F-408)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - B1 Prim Flation Filter (F-409)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - Span Decay Hopper Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vib. - "A" Filter Fines Hopper Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "A" Reductor Feeder	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - UF4 Prim Dust Coil. (F-611)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "A" Reduction Feed Hopper	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B1" HF Filter (F-608) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B2" HF Filter (F-609) Disch. Line	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B" Red. Feed Hopper (U-606)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B" Red. Feed (R-600)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "B" Red. Prim Filter ö1 Bö	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "C2" Flator Prim Filter Shell	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - "C1" Flator Prim Filter Shell	0.01	ton		\$512.89			\$8	\$0	\$8
1		Rotary Va. - "A" Reductor Feeder (R-402)	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - Prim. Uf4 Dust Coll. Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - Ash Dust Coll. Disch. (F-422)	0.03	ton		\$512.89			\$42	\$0	\$42

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Rotary Va. - Spar Decay Hopper Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - #2 Dry Oxide Dust Coll. Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - #1 Wet Oxide Dust Coll. Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - #2 Wet Oxide Dust Coll. Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - #1 Wet Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - "B" Reductor Feeder	0.04	ton		\$512.89			\$46	\$0	\$46
1		Rotary Va. - "B" UF4 Prim. Dust Coll. Disch.	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Va. - "Conc. Surge Hopper Feeder	0.03	ton		\$512.89			\$42	\$0	\$42
1		"A" Reductor Hopper Feed Conveyer	0.40	ton		\$512.89			\$484	\$0	\$484
1		Spar Decay Hopper Feed Screw	0.45	ton		\$512.89			\$550	\$0	\$550
1		"B" Reductor Hopper Feed Screw	1	ton		\$512.89			\$843	\$0	\$843
1		"B" UF4 Elevator Disch. Screw	2	ton		\$512.89			\$1,912	\$0	\$1,912
1		"A" UF4 Elevator Disch. Screw	1	ton		\$512.89			\$615	\$0	\$615
1		"B" UF4 Elevator Sec. Feed Screw	0.30	ton		\$512.89			\$365	\$0	\$365
1		Trolley - Over "A" Red BU Filter	0.03	ton		\$512.89			\$32	\$0	\$32
1		Trolley - Over "B.1" Red BU Filter	0.03	ton		\$512.89			\$32	\$0	\$32
1		Trolley - Over "B.2" Red BU Filter	0.03	ton		\$512.89			\$32	\$0	\$32
1		CR-401 Hoist Well Crane	0.00	ton		\$512.89			\$0	\$0	\$0
1		Dryer Prior to Chem Trap	0.03	ton		\$512.89			\$36	\$0	\$36
1		Dryer Prior to Chem Trap	0.03	ton		\$512.89			\$36	\$0	\$36
1		Dryer Prior to Chem Trap	0.20	ton		\$512.89			\$248	\$0	\$248
1		#1 Low Boiler Still Condenser	2	ton		\$512.89			\$2,037	\$0	\$2,037
1		"A" HF Filter Heater	0.28	ton		\$512.89			\$339	\$0	\$339
1		"A2" HF Filter Heater	0.28	ton		\$512.89			\$339	\$0	\$339
1		"A3" HF Filter Heater	0.28	ton		\$512.89			\$339	\$0	\$339
1		"A4" HF Filter Heater	0.28	ton		\$512.89			\$339	\$0	\$339
1		#2 Low Boiler Still Condenser	2	ton		\$512.89			\$2,037	\$0	\$2,037
1		#1 Dravo H&V Unit - Sw	17	ton		\$512.89			\$21,248	\$0	\$21,248
1		#2 Dravo H&V Unit - Se	17	ton		\$512.89			\$21,248	\$0	\$21,248
1		#4 Dravo H&V Unit - Nw	17	ton		\$512.89			\$21,248	\$0	\$21,248
1		Top Heater Filter No. 1B Htr	0.25	ton		\$512.89			\$308	\$0	\$308
1		Top Heater Filter No. 2B Htr	0.25	ton		\$512.89			\$308	\$0	\$308

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Reductor Filter Htr No.	0.25	ton		\$512.89			\$308	\$0	\$308
1		"A" Reductor BU Filter Htr.	0.25	ton		\$512.89			\$308	\$0	\$308
1		"A" Reductor Exit Gas Cooler	0.02	ton		\$512.89			\$21	\$0	\$21
1		"A" Reductor Exit Gas Cooler	0.02	ton		\$512.89			\$21	\$0	\$21
1		#3 Low Boiler Condenser	2	ton		\$512.89			\$2,037	\$0	\$2,037
1		#4 Low Boiler Condenser	2	ton		\$512.89			\$2,037	\$0	\$2,037
1		A Sec. UF4 Dust Cell	3	ton		\$512.89			\$3,825	\$0	\$3,825
1		A Reductor Backup Filter	1	ton		\$512.89			\$1,125	\$0	\$1,125
1		"A1" Top HF Filter	3	ton		\$512.89			\$3,931	\$0	\$3,931
1		"A2" Top HF Filter	3	ton		\$512.89			\$3,931	\$0	\$3,931
1		B-2 Fluoninator Primary Filter	1	ton		\$512.89			\$1,413	\$0	\$1,413
1		B-1 Fluoninator Primary Filter	1	ton		\$512.89			\$1,413	\$0	\$1,413
1		#2 Dry Oxide Dust Coll	29	ton		\$512.89			\$35,219	\$0	\$35,219
1		#1 Wet Oxide Dust Coll. - Primary	0.00	ton		\$512.89			\$0	\$0	\$0
1		A3 Top HF Filter	3	ton		\$512.89			\$3,931	\$0	\$3,931
1		Ash Dust Coll #1	2	ton		\$512.89			\$1,987	\$0	\$1,987
1		A Pri UF4 Dust Coll	17	ton		\$512.89			\$20,267	\$0	\$20,267
1		A-1 Fluorinator Primary Filter	3	ton		\$512.89			\$3,559	\$0	\$3,559
1		B-3 Fluorinator Primary Filter	3	ton		\$512.89			\$3,559	\$0	\$3,559
1		Ash Vac Cleaner	0.28	ton		\$512.89			\$336	\$0	\$336
1		Ash Dust Coil #2 Spar Recycle	5	ton		\$512.89			\$5,666	\$0	\$5,666
1		A6 Top HF Filter	0.43	ton		\$512.89			\$528	\$0	\$528
1		B-2 Fluorinator Backup Filter	0.11	ton		\$512.89			\$131	\$0	\$131
1		B-1 Fluorinator Backup Filter	0.11	ton		\$512.89			\$131	\$0	\$131
1		A-1 Fluorinator Backup Filter	0.11	ton		\$512.89			\$131	\$0	\$131
1		B-3 Fluorinator Backup Filter	0.11	ton		\$512.89			\$131	\$0	\$131
1		B UF4 Spec Dust Coll.	17	ton		\$512.89			\$20,267	\$0	\$20,267
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Chem. Traps	0.03	ton		\$512.89			\$31	\$0	\$31
1		Blow Back Air Filter On F-446	0.01	ton		\$512.89			\$16	\$0	\$16
1		C-1 Fluorinator Primary Filter - West	2	ton		\$512.89			\$2,001	\$0	\$2,001
1		C-2 Fluorinator Primary Filter - Center	2	ton		\$512.89			\$2,001	\$0	\$2,001
1		C-3 Fluorinator Primary Filter - East	2	ton		\$512.89			\$2,001	\$0	\$2,001
1		C-1 Fluorinator Backup Filter - West	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		C-2 Fluorinator Backup Filter - Center	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		C-3 Fluorinator Backup Filter - East	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		"B" Reductor Fri Filter	1	ton		\$512.89			\$1,125	\$0	\$1,125
1		"B" Reductor Backup Filter	1	ton		\$512.89			\$942	\$0	\$942
1		1B Top Hflator Filter	1	ton		\$512.89			\$942	\$0	\$942
1		2B Top Hflator Filter	1	ton		\$512.89			\$942	\$0	\$942
1		B UF4 Pri. Dust Coil.	10	ton		\$512.89			\$12,395	\$0	\$12,395
1		1A Reductor Fri. Filter	1	ton		\$512.89			\$1,125	\$0	\$1,125
1		A-2 Fluorinator Primary Filter - West	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		A-3 Fluorinator Primary Filter - Center	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		A-2 Fluorinator Backup Filter - West	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		A-3 Fluorinator Backup Filter - Center	1	ton		\$512.89			\$1,045	\$0	\$1,045
1		Welder	0.19	ton		\$512.89			\$237	\$0	\$237
1		Hoist - 500# Cap. - Portable	0.02	ton		\$512.89			\$21	\$0	\$21
1		Hoist - "A" Reductor BU Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - B-1 Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - B-2 Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - F-496 & F-497 Fluorinator Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - F-493 & F-494 Fluorinator Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - AB HF Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - A1 & A2 HF Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - "B" Reductor BU Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - A2 Fri & BU Flation Filter	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - B1 BU Flation Filter & A6 HF Filter	0.04	ton		\$512.89			\$48	\$0	\$48

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Hoist - Ash Dust Coll.	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - A1 & B2 BU & B2 Pnim-Flation Filters	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - A1 & B2 BU & B2 Pnim-Flation Filters	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - "B" Red. Prim. Filters	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - "C" Flator Prim. Filters	0.04	ton		\$512.89			\$48	\$0	\$48
1		Hoist - "C" Flator BU Filters	0.04	ton		\$512.89			\$48	\$0	\$48
1		3000# Monorail	0.12	ton		\$512.89			\$149	\$0	\$149
1		2000# Monorail - "C" Flaton Pri Filters	0.33	ton		\$512.89			\$398	\$0	\$398
1		2000# Monorail - "C" Flaton Sec. Filter	0.26	ton		\$512.89			\$319	\$0	\$319
1		6000# Monorail - "A1 & B2 BU & B2 Fri Flation Fil.	0.26	ton		\$512.89			\$318	\$0	\$318
1		4000# Monorail - B1 BU Flation & A6 HF Flit.	0.24	ton		\$512.89			\$292	\$0	\$292
1		3500# Monorail - A1 BU, B1 Fri. & B2 BU Flation	0.23	ton		\$512.89			\$280	\$0	\$280
1		4000# Monorail - A2 Fri & A2 BU Flation Fil.	0.17	ton		\$512.89			\$212	\$0	\$212
1		1500# Monorail - #2 Wet Oxide Dust Coll.	0.17	ton		\$512.89			\$212	\$0	\$212
1		4000# Monorail - A1 HF Filter	0.43	ton		\$512.89			\$530	\$0	\$530
1		4000# Monorail - A1 & A2 HF Filter	0.29	ton		\$512.89			\$348	\$0	\$348
1		4000# Monorail - "A" UF4 Sec. Dust Coll	0.29	ton		\$512.89			\$348	\$0	\$348
1		4500# Monorail - "A" Red. BU Filter	0.13	ton		\$512.89			\$159	\$0	\$159
1		6000# Monorail - "B" Reductor BU Filter	0.11	ton		\$512.89			\$131	\$0	\$131
1		1900# Monorail - "B" Reductor BU Filter	0.16	ton		\$512.89			\$195	\$0	\$195
1		1700# Monorail - B2 HF Filter	0.16	ton		\$512.89			\$195	\$0	\$195
1		5500# Monorail - B1 HF Filter	0.16	ton		\$512.89			\$195	\$0	\$195
1		3000# Monorail - #1 Low Boiler Condenser	0.15	ton		\$512.89			\$186	\$0	\$186
1		3000# Monorail - #2 Low Boiler Condenser	0.15	ton		\$512.89			\$186	\$0	\$186
1		3000# Monorail - #3 Low Boiler Condenser	0.15	ton		\$512.89			\$186	\$0	\$186
1		3000# Monorail - #4 Low Boiler Condenser	0.15	ton		\$512.89			\$186	\$0	\$186
1		2000# Monorail - Ash Dust Coll. Blower	0.09	ton		\$512.89			\$106	\$0	\$106
1		2000# Monorail - Ash Dust Coll. Blower Motor	0.09	ton		\$512.89			\$106	\$0	\$106
1		10000# Monorail	0.22	ton		\$512.89			\$264	\$0	\$264
1		10000# Monorail	0.26	ton		\$512.89			\$318	\$0	\$318
1		Monorail - F-496 & F-497 Fluorinator Filter	0.26	ton		\$512.89			\$319	\$0	\$319
1		Monorail - F-493 & F-494 Fluorinator Filter	0.26	ton		\$512.89			\$319	\$0	\$319

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Silencer - Ash Vac Cl. Exhst.	0.21	ton		\$512.89			\$255	\$0	\$255
1		"A" UF4 D.C. Exhauster	2	ton		\$512.89			\$2,656	\$0	\$2,656
1		Wet Oxide Dust Coll. Blower	2	ton		\$512.89			\$2,334	\$0	\$2,334
1		UF4 BU D.C. Blower	2	ton		\$512.89			\$2,125	\$0	\$2,125
1		"A" Reducton Exit Cooling Blower	1	ton		\$512.89			\$637	\$0	\$637
1		Ash Vac. Cl. Exhauster	2	ton		\$512.89			\$2,833	\$0	\$2,833
1		Dry Oxide D.C. Blower	4	ton		\$512.89			\$4,869	\$0	\$4,869
1		"A" HF Pri. Jet Scrubber-East	0.05	ton		\$512.89			\$57	\$0	\$57
1		Ash D.C. Exhauster	1	ton		\$512.89			\$850	\$0	\$850
1		"A" HF Sec. Jet Scrubber-West	0.05	ton		\$512.89			\$57	\$0	\$57
1		Dravo H&V Unit #1	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Dravo H&V Unit #2	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Dravo H&V Unit #4	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Dravo Induced Draft Fan	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Dravo Induced Draft Fan	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Dravo Induced Draft Fan	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Roof Exhaust Blower Nxe	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Roof Exhaust Blower Hoist Well	6	ton		\$512.89			\$7,012	\$0	\$7,012
1		Trane Vent Unit No 317-1	3	ton		\$512.89			\$3,368	\$0	\$3,368
1		Trane Vent Unit No 222-1	5	ton		\$512.89			\$5,666	\$0	\$5,666
1		Exhaust Fan - Sxw	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Exhaust Fan - Wxs	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Exhaust Fan - Wxn	1	ton		\$512.89			\$1,133	\$0	\$1,133
1		Fan - Man Cooler	0.06	ton		\$512.89			\$67	\$0	\$67
1		Vent Fan	0.06	ton		\$512.89			\$67	\$0	\$67
1		"B" Reductor Exit Gas Cooler Blower	0.15	ton		\$512.89			\$183	\$0	\$183
1		Drinking Water Cooler	0.04	ton		\$512.89			\$51	\$0	\$51
1		Scrubber, A Green Salt Dust Collector	0.38	ton		\$512.89			\$464	\$0	\$464
1		Scrubber, B Green Salt Dust Collector	0.38	ton		\$512.89			\$464	\$0	\$464
1		SW-23 Switchboard - See Dwg MTW-A0029	0.33	ton		\$512.89			\$403	\$0	\$403
1		SW-22 Switchboard - See Dwg MTW-A0030	0.3	ton		\$512.89			\$366	\$0	\$366
1		UF4 Hopper	0	ton		\$512.89			\$0	\$0	\$0

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
1		Spar Decay Hopper	0	ton		\$512.89			\$0	\$0	\$0
1		Air Blow Back Surge Tank	0.24	ton		\$512.89			\$297	\$0	\$297
1		"A" Reductor Feed Hopper	7	ton		\$512.89			\$8,853	\$0	\$8,853
1		"B" Reductor Feed Hopper	7	ton		\$512.89			\$8,853	\$0	\$8,853
1		Vibrtr-On No2 Dry Ox Dust Coil Hppr(F412)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - On"A"Sec UF4 Dust Coil	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - On"B"Sect UF4 Dust Coll(F450)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - On"A"Red Exit Gas Cooler(E625)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - On"B"Red Exit Gas Cooler(E632)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Vibrator - On (F-450)	0.01	ton		\$512.89			\$8	\$0	\$8
1		Rotary Valve-"A"UF4 Sec D.C. Disch	0.03	ton		\$512.89			\$42	\$0	\$42
1		Rotary Valve-"B"UF4 Sec D.C. Disch	0.03	ton		\$512.89			\$42	\$0	\$42
1		Equipment Removal Average Over Entire Basement	5,134	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$255,594	\$0	\$255,594
1		Equipment Removal Sodium Removal/Ion Exchange Bldg	3,808	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$189,579	\$0	\$189,579
1		Equipment Removal Sodium Removal/Ion Exchange Bldg	2,520	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$125,457	\$0	\$125,457
1		Equipment Removal KOH Muds Building	2,394	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$119,184	\$0	\$119,184
1		Equipment Removal Uranium Recovery Building	4,560	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$227,017	\$0	\$227,017
1		Equipment Removal Uranium Recovery Building	1,100	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$54,763	\$0	\$54,763
1		Equipment Removal FM Building Southeast pad	3,888	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$193,562	\$0	\$193,562
1		Equipment Removal FM Building Southwest pad	3,564	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$177,432	\$0	\$177,432
1		Equipment Removal Sample Plant	4,488	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$223,433	\$0	\$223,433
2		Equipment Removal Pond Muds Filter Calciner Bldg	1,125	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$56,008	\$0	\$56,008
2		Equipment Removal Cylinder Wash Building	504	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$25,091	\$0	\$25,091
2		Equipment Removal Drum Crusher Building	5,340	sq ft	\$0.00	\$49.78	\$0.00	\$0.00	\$256,849	\$0	\$256,849
4		Contaminated Soil at Sampling Plant Railroad Tracks	132	cy		\$5.77	\$5.95		\$1,811	\$1,868	\$3,679
4		Contaminated Soil at Sampling Plant North Fence	5	cy		\$5.77	\$5.95		\$67	\$69	\$136
4		Contaminated Debris at Sampling Plant Railroad Tracks	2	ton		\$512.89			\$2,149	\$0	\$2,149
2		BM/FM building LLRW Trash in drums	338	ton		\$512.89			\$412,142	\$0	\$412,142
3		Material on Waste Pad / Other	1	ton		\$512.89			\$1,465	\$0	\$1,465
2		BM/FM building LLRW Trash in B-25 Boxes	227	ton		\$512.89			\$277,604	\$0	\$277,604

Table A-10

DEMOLITION ESTIMATE

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

TASK-BASED DEMOLITION COSTS

42% Hazardous & Toxic Waste Productivity Factor: Level C, Heavy Work, 70-85°F

Percent Labor Cost 65.00%

LOC Code	WBS No.	AREA	Quantity	Unit	Material Unit Price	Labor Unit Price	Equipment Unit Price	Material Total Price	Labor Total Price	Equipment Total Price	Total Price
2		BM/FF building LLRW Trash in Blue Boxes	27	ton		\$512.89			\$33,277	\$0	\$33,277
3		Scrap Metal on Metal Pad	4,830	ton		\$512.89			\$5,898,334	\$0	\$5,898,334
3		New Scrap Metal on Metal Pad	73	ton		\$512.89			\$89,023	\$0	\$89,023
3		16"x16"x8" cubes for disposal on Metals Pad	22	ton		\$512.89			\$26,377	\$0	\$26,377
2		Imhoff Sludge in Crusher Building	73	ton		\$512.89			\$89,435	\$0	\$89,435
2		Outfall Material in Crusher Building	5	ton		\$512.89			\$6,182	\$0	\$6,182
5		Remove Roof Over Laundry	1,000	ton		\$512.89			\$3,091	\$0	\$3,091
2		RAM Flat Compactor	2	ton		\$512.89			\$2,152	\$0	\$2,152
2		Conveyor for RAM Flat Compactor	1	ton		\$512.89			\$916	\$0	\$916
2		HEPA unit for RAM Flat Compactor	0	ton		\$512.89			\$366	\$0	\$366
2		Drum Washer	1	ton		\$512.89			\$916	\$0	\$916
2		Equipment Removal Surface Treatment Pad	23,575	sq ft	\$0.00	\$24.89	\$0.00	\$0.00	\$586,835	\$0	\$586,835
TOTALS								\$41,747	\$11,289,475	\$310,807	\$11,642,029

Total over 1st to 5th floors of FM Building	\$0.00	\$1,533,423	\$0.00
Floor area of 1st to 5th floors of FM Building:		30804 ft ²	
Average per ft ² for 1st to 5th floors of FM Bui	\$0.00	\$49.78	\$0.00

APPENDIX A-11 Decontamination Costs

Table A-11

DECONTAMINATION COSTS

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

SPECIFIC AREA SURFACE REMOVAL COST ANALYSES WITH ENERGYSOLUTIONS DISPOSAL											"ENERGYSOLUTIONS WASTE DISPOSAL COSTS"				
APP. CODE	METHODOLOGY	AREA	ITEM	LOC CODE	SURFACE AREA (ft ²)	MATERIAL THICK (inch)	CONTAM. REMOVAL DEPTH (inch)	CONTAM. WASTE DENSITY (lb/ft ³)	CONTAMINATED VOLUME (lb/ft ³)	CONTAM. WEIGHT (pounds)	BURIAL & SHIP COST	PROCESS UNIT COST (\$/ft ²)	PROCESS COST	SURFACE RELEASE COST	COST
25	EDCO CPU-10C Floor Plane - 1/2"	Sample Plant Building	Floor	1	4,488	8	2/4	66.7	281	18700	\$43,910	1.768	\$7,933	\$4,432	\$56,275
25	EDCO CPU-10C Floor Plane - 1/2"	Ore Storage Building	Floor	2	611	8	2/4	66.7	38	2545	\$5,975	1.768	\$1,080	\$603	\$7,658
25	EDCO CPU-10C Floor Plane - 1/2"	Bed Material Fines Building	Floor	2	14,140	8	2/4	66.7	884	58917	\$138,344	1.768	\$24,995	\$13,962	\$177,301
25	EDCO CPU-10C Floor Plane - 1/2"	Cylinder Wash Building	Floor	2	1,125	8	2/4	66.7	70	4688	\$11,007	1.768	\$1,989	\$1,111	\$14,107
25	EDCO CPU-10C Floor Plane - 1/2"	Drum Crusher Building	Floor	2	5,340	8	2/4	66.7	334	22250	\$52,246	1.768	\$9,439	\$5,273	\$66,958
25	EDCO CPU-10C Floor Plane - 1/2"	Hazardous Waste Storage Building	Floor	2	750	8	2/4	66.7	47	3125	\$7,338	1.768	\$1,326	\$741	\$9,405
25	EDCO CPU-10C Floor Plane - 1/2"	KOH Muds Building	Floor	1	2,394	8	2/4	66.7	150	9975	\$23,423	1.768	\$4,232	\$2,364	\$30,019
25	EDCO CPU-10C Floor Plane - 1/2"	Sodium Removal Building	Floor	1	3,808	8	2/4	66.7	238	15867	\$37,257	1.768	\$6,731	\$3,760	\$47,748
25	EDCO CPU-10C Floor Plane - 1/2"	U Recovery Building	Floor	1	4,560	8	2/4	66.7	285	19000	\$44,615	1.768	\$8,061	\$4,503	\$57,179
25	EDCO CPU-10C Floor Plane - 1/2"	Calcliner Building	Floor	1	1,125	8	2/4	66.7	70	4688	\$11,007	1.768	\$1,989	\$1,111	\$14,107
25	EDCO CPU-10C Floor Plane - 1/2"	Ore Storage Pad #1	Floor	1	12,402	8	2/4	66.7	775	51675	\$121,340	1.768	\$21,923	\$12,246	\$155,509
25	EDCO CPU-10C Floor Plane - 1/2"	Ore Storage Pad #2	Floor	1	14,040	8	2/4	66.7	878	58500	\$137,366	1.768	\$24,818	\$13,864	\$176,048
25	EDCO CPU-10C Floor Plane - 1/2"	Ore Storage Pad #3	Floor	1	30,459	8	2/4	66.7	1904	126913	\$298,008	1.768	\$53,842	\$30,076	\$381,926
25	EDCO CPU-10C Floor Plane - 1/2"	Ore Storage Pad #4	Floor	1	38,400	8	2/4	66.7	2400	160000	\$375,702	1.768	\$67,879	\$37,918	\$481,499
25	EDCO CPU-10C Floor Plane - 1/2"	Ore Storage Pad #5	Floor	1	42,508	8	2/4	66.7	2657	177117	\$415,894	1.768	\$75,140	\$41,974	\$533,008
25	EDCO CPU-10C Floor Plane - 1/2"	KOH Muds Storage Pad	Floor	1	8,652	8	2/4	66.7	541	36050	\$84,650	1.768	\$15,294	\$8,543	\$108,487
25	EDCO CPU-10C Floor Plane - 1/2"	Drum Storage Pad	Floor	1	7,210	8	2/4	66.7	451	30042	\$70,542	1.768	\$12,745	\$7,119	\$90,406
25	EDCO CPU-10C Floor Plane - 1/2"	Waste Storage Pad	Floor	1	3,721	8	2/4	66.7	233	15504	\$36,406	1.768	\$6,578	\$3,674	\$46,658
TOTAL:									12,233.5	815,556	\$1,915,030			\$193,274	\$2,454,298

SPECIFIC AREA SURFACE CLEANING COST ANALYSES WITH ENERGYSOLUTIONS DISPOSAL

APP. CODE	METHODOLOGY	AREA	ITEM	LOC CODE	WBS No.	0.0929 SURFACE AREA (ft ²)	ft ² per m ² GENERATED RW VOLUME (ft ³)	GENERATED WASTE DENSITY (lb/ft ³)	GENERATED WASTE WEIGHT (pound)	BURIAL & SHIP COST	PROCESS UNIT COST (\$/ft ²)	PROCESS COST	SURFACE RELEASE COST	COST
42	Hands-On-Decon	Ore Storage Building	50% Walls	2		3,510	29.3	25.0	731.3	\$4,579	3.30	\$11,570	\$3,466	\$19,614
42	Hands-On-Decon	Ore Storage Building	10% Roof	2		1,306	10.9	25.0	272.2	\$1,704	3.30	\$4,306	\$1,290	\$7,300
42	Hands-On-Decon	Bed Material Fines Building	50% Walls	2		4,080	34	25.0	850.0	\$5,322	3.30	\$13,448	\$4,029	\$22,800
42	Hands-On-Decon	Bed Material Fines Building	10% Roof	2		1,414	11.8	25.0	294.6	\$1,845	3.30	\$4,661	\$1,396	\$7,902
42	Hands-On-Decon	Cylinder Wash Building	50% Walls	2		1,050	8.8	25.0	218.8	\$1,370	3.30	\$3,461	\$1,037	\$5,868
42	Hands-On-Decon	Cylinder Wash Building	10% Roof	2		11	0.9	25.0	23.4	\$147	3.30	\$371	\$111	\$629
42	Hands-On-Decon	Drum Crusher Building	50% Walls	2		2,235	18.6	25.0	465.6	\$2,916	3.30	\$7,367	\$2,207	\$12,490
42	Hands-On-Decon	Drum Crusher Building	10% Roof	2		534	4.5	25.0	111.3	\$697	3.30	\$1,760	\$527	\$2,984
42	Hands-On-Decon	Hazardous Waste Storage Building	50% Walls	2		825	6.9	25.0	171.9	\$1,076	3.30	\$2,719	\$815	\$4,610
42	Hands-On-Decon	Hazardous Waste Storage Building	10% Roof	2		75	0.6	25.0	15.6	\$98	3.30	\$247	\$74	\$419
42	Hands-On-Decon	Lab Sink Drains	Drain Pipe	5		500	4.2	25.0	104.2	\$652	3.30	\$1,648	\$494	\$2,794
SUBTOTAL:							130.5	275.0	3,258.9	\$20,406		\$51,558	\$15,446	\$87,410

APPENDIX A-12 Volume Reduction Costs

Table A-12

VOLUME REDUCTION COSTS

Honeywell - Metropolis Works (MTW) Metropolis, Illinois

SPECIFIC MATERIAL VOLUME REDUCTION COST ANALYSES - STUDEVIK/ENERGYSOLUTIONS DISPOSAL								
APP. CODE	VOLUME REDUCTION METHODOLOGY	AREA	ITEM	ITEM CODE	CONTAMINATED VOLUME (ft ³)	BULK DENSITY (lb/ft ³)	CONTAMINATED WEIGHT (pound)	PROCESS COST
88	Boxes >60 lbs/ft for BSFR	Storage Pads	Scap Metal on Metals Pad	3	96,602	100	9,660,200	
84	Added Charge for Failed BSFR	Storage Pads	Scap Metal on Metals Pad	3	9,660	100	966,020	
88	Boxes >60 lbs/ft for BSFR	Storage Pads	New Scrap Metal on Metals Pad	3	1,458	100	145,800	
84	Added Charge for Failed BSFR	Storage Pads	New Scrap Metal on Metals Pad	3	146	100	14,580	
88	Boxes >60 lbs/ft for BSFR	Storage Pads	16"x16"x8" cubes for disposal on Metals Pad	3	432	100	43,200	
84	Added Charge for Failed BSFR	Storage Pads	16"x16"x8" cubes for disposal on Metals Pad	3	43	100	4,320	
88	Boxes >60 lbs/ft for BSFR	Sample Plant	Equipment Sample Plant	1	7,715	62	480,234	
84	Added Charge for Failed BSFR	Sample Plant	Equipment Sample Plant	1	772	62	47,833	
88	Boxes >60 lbs/ft for BSFR	Cylinder Wash Building	Equipment Cylinder Wash Building	2	866	62	53,930	
84	Added Charge for Failed BSFR	Cylinder Wash Building	Equipment Cylinder Wash Building	2	87	62	5,369	
88	Boxes >60 lbs/ft for BSFR	Drum Crusher Building	Equipment Drum Crusher Building	2	9,180	62	571,401	
84	Added Charge for Failed BSFR	Drum Crusher Building	Equipment Drum Crusher Building	2	918	62	56,916	
88	Boxes >60 lbs/ft for BSFR	FM Building	FM Building Demolition Concrete Rubble	1	9,677	75	725,775	
84	Added Charge for Failed BSFR	FM Building	FM Building Demolition Concrete Rubble	1	484	75	36,289	
88	Boxes >60 lbs/ft for BSFR	FM Building	FM Pads Demolition Concrete Rubble	1	2,650	107	282,490	
84	Added Charge for Failed BSFR	FM Building	FM Pads Demolition Concrete Rubble	1	133	107	14,178	
88	Boxes >60 lbs/ft for BSFR	Storage Pads	Cold Concrete (Construction Rubble)	3	5,250	60	315,000	
108	Molyflush Cylinder Processing	Storage Pads	Molyflush Cylinders	3	4,160	84	351,000	
88	Boxes >60 lbs/ft for BSFR	Storage Pads	Thin Walled UF ₆ Cylinders	3	62,857	21	1,320,000	
84	Added Charge for Failed BSFR	Storage Pads	Thin Walled UF ₆ Cylinders	3	6,286	21	132,000	
88	Boxes >60 lbs/ft for BSFR	Storage Pads	I-HF Mitigation & Fire Water Line Rupture	3	12,000	75	900,000	
84	Added Charge for Failed BSFR	Storage Pads	I-HF Mitigation & Fire Water Line Rupture	3	600	75	45,000	
88	Boxes >60 lbs/ft for BSFR	FM Building	Soil Under FM Bldg - 1'	1	7,332	80	586,530	
84	Added Charge for Failed BSFR	FM Building	Soil Under FM Bldg - 1'	1	367	80	29,328	
88	Boxes >60 lbs/ft for BSFR	FM Building	Soil Under FM Bldg Pad SE - 1'	1	5,540	80	443,232	
84	Added Charge for Failed BSFR	FM Building	Soil Under FM Bldg Pad SE - 1'	1	277	80	22,160	
88	Boxes >60 lbs/ft for BSFR	FM Building	Soil Under FM Bldg Pad SW - 1'	1	5,079	80	406,296	
84	Added Charge for Failed BSFR	FM Building	Soil Under FM Bldg Pad SW - 1'	1	254	80	20,316	
88	Boxes >60 lbs/ft for BSFR	Outdoor Plant Areas	Plant areas P-1 through P-25 1 foot depth	1	694,998	80	55,599,816	
84	Added Charge for Failed BSFR	Outdoor Plant Areas	Plant areas P-1 through P-25 1 foot depth	1	34,750	80	2,779,992	
88	Boxes >60 lbs/ft for BSFR	Outdoor Plant Areas	Plant areas P-1 through P-25 1 to 6 foot depth	1	325,545	80	26,043,595	
84	Added Charge for Failed BSFR	Outdoor Plant Areas	Plant areas P-1 through P-25 1 to 6 foot depth	1	16,277	80	1,302,180	
88	Boxes >60 lbs/ft for BSFR	Settling Ponds	Settling Ponds #3 & #4 - 3'	3	19,238	80	1,539,000	
84	Added Charge for Failed BSFR	Settling Ponds	Settling Ponds #3 & #4 - 3'	3	962	80	76,952	



PUBLIC VERSION

PROPRIETARY INFORMATION
Withhold from Public Disclosure Under
10 CFR 2.390 EXEMPTION 4

SPECIFIC MATERIAL VOLUME REDUCTION COST ANALYSES - STUDSVIK/ENERGYSOLUTION

APP. CODE	VOLUME REDUCTION METHODOLOGY	AREA	ITEM	ITEM CODE	CONTAMINATED VOLUME (ft ³)	BULK DENSITY (lb/ft ³)	CONTAMINATED WEIGHT (pound)	PROCESS COST
88	Boxes >60 lbs/ft for BSFR	Outdoor Non-Plant Areas	Additional non-plant soils & sub-surface piping	4	218,534	80	17,482,720	
84	Added Charge for Failed BSFR	Outdoor Non-Plant Areas	Additional non-plant soils & sub-surface piping	4	10,927	80	874,136	
88	Boxes >60 lbs/ft for BSFR	Drum Compactor Area	Conveyor from Drum Compactor	2	75	20	1,500	
84	Added Charge for Failed BSFR	Drum Compactor Area	Conveyor from Drum Compactor	2	7.50	20	150	
							TOTAL	\$30,627,955

Notes

- (1) Due to rounding of values the calculated values may not be exact.
(2) BSFR = Bulk Survey for Release

PROPRIETARY INFORMATION
Withhold from Public Disclosure Under
10 CFR 2.390 EXEMPTION 4

APPENDIX A-13

Miscellaneous Item Inventory Estimate

Table A-13
MISCELLANEOUS ITEM VOLUME ESTIMATE
Honeywell - Metropolis Works (MTW) Metropolis, Illinois

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft ³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft ³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft ³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft ³)
Equipment Average Over Entire Basement	1	ft ²	5,134	FM-Basement	62.2			549,358	8,825.94	70%	384,551	6,178
R-123 Refrigerant Analyzer	1	each	1	FM-1st Floor	58.0	69.0	1.2	70	1.20	100%	70	1
R-123 Refrigerant Analyzer	1	each	1	FM-1st Floor	58.0	86.0	1.5	87	1.50	100%	87	2
Concentrate Elevator	1	each	1	FM-1st Floor	58.0	31,706.7	546.7	31,709	546.70	100%	31,709	547
Prepared Feed Elevator	1	each	1	FM-1st Floor	58.0	37,120.0	640.0	37,120	640.00	100%	37,120	640
"A" UF4 Elevator	1	each	1	FM-1st Floor	58.0	33,495.0	577.5	33,495	577.50	100%	33,495	578
Bed Recycle Elevator	1	each	1	FM-1st Floor	58.0	20,138.9	347.2	20,138	347.20	100%	20,138	347
Milled Feed Elevator	1	each	1	FM-1st Floor	58.0	20,300.0	350.0	20,300	350.00	100%	20,300	350
Passenger Elevator	1	each	1	FM-1st Floor	58.0	4,900.0	84.5	4,901	84.50	100%	4,901	85
Freight Elevator	1	each	1	FM-1st Floor	115.0	500.0	4.3	495	4.30	100%	495	4
UF4 Feed Screw - 3rd Floor	1	each	1	FM-1st Floor	58.0	232.0	4.0	232	4.00	100%	232	4
Green Salt Feed Screw - 2nd Floor	1	each	1	FM-1st Floor	58.0	232.0	4.0	232	4.00	100%	232	4
Green Salt Dispenser - 2nd floor	1	each	1	FM-1st Floor	58.0	232.0	4.0	232	4.00	100%	232	4
Ore Blender Disc. Screw	1	each	1	FM-1st Floor	187.0	313.0	1.7	318	1.70	100%	318	2
"B" UF4 Elevator	1	each	1	FM-1st Floor	58.0	28,072.0	484.0	28,072	484.00	100%	28,072	484
Prepared Feed Drum Inverter Discharge Screw	1	each	1	FM-1st Floor	200.0	906.0	4.5	900	4.50	100%	900	5
UF6 Cyl. Hdg. Crane - Runway & Bridge	1	each	1	FM-1st Floor	58.0	11,571.0	199.5	11,571	199.50	100%	11,571	200
Crane Trolley Car	1	each	1	FM-1st Floor	58.0	11,571.0	199.5	11,571	199.50	100%	11,571	200
Lifting Beam for Shannahan Crane	1	each	1	FM-1st Floor	167.0	2,000.0	12.0	2,004	12.00	100%	2,004	12
"A" HF Preheater	1	each	1	FM-1st Floor	151.0	7,200.0	47.8	7,218	47.80	100%	7,218	48
"A" Bot. Hydrofluorinator Heater	1	each	1	FM-1st Floor	216.0	3,364.4	15.6	3,370	15.60	100%	3,370	16
#4 Steam Chest	1	each	1	FM-1st Floor	58.0	11,616.0	200.3	11,617	200.30	100%	11,617	200
#3 Steam Chest	1	each	1	FM-1st Floor	58.0	11,616.0	200.3	11,617	200.30	100%	11,617	200
Tempered Water Tank Cooling Coil	1	each	1	FM-1st Floor	89.0	8,529.6	96.1	8,553	96.10	100%	8,553	96
Sample Cold Trap	1	each	1	FM-1st Floor	117.0	566.0	4.8	562	4.80	100%	562	5
UF6 lab. Samples Cyl. Emptying Manifold	1	each	1	FM-1st Floor	71.0	345.0	4.8	341	4.80	100%	341	5
Sample Cold Trap	1	each	1	FM-1st Floor	71.0	345.0	4.8	341	4.80	100%	341	5
Unit Heater	1	each	1	FM-1st Floor	58.0	245.0	24.1	1,398	24.10	100%	1,398	24
Oil Cooler heat Exchanger	1	each	1	FM-1st Floor	200.0	31.0	0.2	40	0.20	100%	40	0
Glycol heat Exchanger	1	each	1	FM-1st Floor	200.0	31.0	0.2	40	0.20	100%	40	0
Over Feed Brine Cooler	1	each	1	FM-1st Floor	152.0	14,550.0	95.9	14,577	95.90	100%	14,577	96
Economizer	1	each	1	FM-1st Floor	152.0	14,550.0	95.9	14,577	95.90	100%	14,577	96
R-134a Condenser	1	each	1	FM-1st Floor	200.0	6,108.6	30.5	6,100	30.50	100%	6,100	31
R-134a Liquid Suction in Heat Exchanger	1	each	1	FM-1st Floor	200.0	1,260.0	6.3	1,260	6.30	100%	1,260	6
Condenser - R-123 (Top)	1	each	1	FM-1st Floor	200.0	1,254.5	6.3	1,260	6.30	100%	1,260	6
Condenser - Cooler - R-123 & R-134a (Bottom)	1	each	1	FM-1st Floor	200.0	2,822.5	14.1	2,820	14.10	100%	2,820	14
Condenser - R-134a Pump Down	1	each	1	FM-1st Floor	200.0	6,100.0	30.5	6,100	30.50	100%	6,100	31
#2 Steam Chest	1	each	1	FM-1st Floor	58.0	11,616.0	200.3	11,617	200.30	100%	11,617	200
#1 Steam Chest	1	each	1	FM-1st Floor	58.0	11,616.0	200.3	11,617	200.30	100%	11,617	200
"B" HF Preheater	1	each	1	FM-1st Floor	139.0	7,200.0	52.0	7,228	52.00	100%	7,228	52
"B" Bottom Hydrofluorinator Heater	1	each	1	FM-1st Floor	58.0	14,570.7	251.2	14,570	251.20	100%	14,570	251
Flame Tower Preheater (Former "A")	1	each	1	FM-1st Floor	58.0	1,240.6	21.4	1,241	21.40	100%	1,241	21
Strip Heaters - Upper Section Ctr.	1	each	1	FM-1st Floor	62.0	428.0	6.9	428	6.90	100%	428	7
Strip Heaters - Upper Section Ctr.	1	each	1	FM-1st Floor	62.0	428.0	6.9	428	6.90	100%	428	7
Cooling Coils - Lower Section Ctr.	1	each	1	FM-1st Floor	62.0	428.0	6.9	428	6.90	100%	428	7

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft ³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft ³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft ³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft ³)
Cooling Coils - Lower Section Ctr.	1	each	1	FM-1st Floor	62.0	428.0	6.9	428	6.90	100%	428	7
Mist Eliminator for Vacuum Pump	1	each	1	FM-1st Floor	58.0	120.0	3.1	180	3.10	100%	180	3
Oxide Vacuum Filter	1	each	1	FM-1st Floor	58.0	1,390.2	34.8	2,018	34.80	100%	2,018	35
UF4 Vacuum Filter	1	each	1	FM-1st Floor	58.0	1,390.2	34.8	2,018	34.80	100%	2,018	35
Ash Vacuum Cleaner	1	each	1	FM-1st Floor	58.0	1,390.2	34.8	2,018	34.80	100%	2,018	35
UF4 Vacuum Cleaner	1	each	1	FM-1st Floor	58.0	7,855.0	1,543.0	89,494	1,543.00	100%	89,494	1,543
Ash Vacuum Cleaner	1	each	1	FM-1st Floor	58.0	1,390.2	34.8	2,018	34.80	100%	2,018	35
Oxide Vacuum Cleaner - Dust Collector	1	each	1	FM-1st Floor	58.0	4,670.4	116.8	6,774	116.80	100%	6,774	117
Oxide Vacuum Cleaner - Dust Collector	1	each	1	FM-1st Floor	77.0	900.0	11.6	893	11.60	100%	893	12
UF4 Vacuum Cleaner	1	each	1	FM-1st Floor	77.0	900.0	11.6	893	11.60	100%	893	12
Spar Filter Fines Drum Dumper	1	each	1	FM-1st Floor	58.0	1,661.5	66.5	3,857	66.50	100%	3,857	67
Hot Box (East)	1	each	1	FM-1st Floor	58.0	1,600.0	64.0	3,712	64.00	100%	3,712	64
Hot Box (West)	1	each	1	FM-1st Floor	58.0	2,795.0	111.8	6,484	111.80	100%	6,484	112
500# Mit-E-Lift, Portable Hoist	1	each	1	FM-1st Floor	58.0	56.0	0.58	34	0.58	100%	34	1
Crane Trolley Car	1	each	1	FM-1st Floor	58.0	11,571.0	199.5	11,571	199.50	100%	11,571	200
Lifting Beam for Shannahan Crane	1	each	1	FM-1st Floor	167.0	2,000.0	12.0	2,004	12.00	100%	2,004	12
UF4 Mill - 3rd Floor	1	each	1	FM-1st Floor	58.0	2,500.0	30.0	1,740	30.00	100%	1,740	30
Stone Saw - Type M-75	1	each	1	FM-1st Floor	58.0	1,440.9	24.8	1,438	24.80	100%	1,438	25
Bench Grinder - Queen Sity UF792	1	each	1	FM-1st Floor	58.0	116.0	2.0	116	2.00	100%	116	2
Bench Grinder - Stand	1	each	1	FM-1st Floor	58.0	400.0	20.0	1,160	20.00	100%	1,160	20
Drum Inverter	1	each	1	FM-1st Floor	58.0	4,176.0	72.0	4,176	72.00	100%	4,176	72
Ore Concrete Blender	1	each	1	FM-1st Floor	58.0	10,300.0	432.4	25,079	432.40	100%	25,079	432
UF6 Cylinder Cart	1	each	1	FM-1st Floor	58.0	6,027.2	103.9	6,026	103.90	100%	6,026	104
UF4 Drum Inverter	1	each	1	FM-1st Floor	58.0	4,176.0	72.0	4,176	72.00	100%	4,176	72
Articulated arm for Fluorinators	1	each	1	FM-1st Floor	58.0	258.0	4.4	255	4.40	100%	255	4
Manlift - East	1	each	1	FM-1st Floor	58.0	2,400.0	332.5	19,285	332.50	100%	19,285	333
Manlift - West	1	each	1	FM-1st Floor	58.0	2,400.0	332.5	19,285	332.50	100%	19,285	333
Personnel Funnel Cone for Above	1	each	1	FM-1st Floor	58.0	288.0	9.3	539	9.30	100%	539	9
10,000# Cap - Monorail - Maint Area	1	each	1	FM-1st Floor	117.0	2,040.0	17.5	2,048	17.50	100%	2,048	18
2,000# Cap - Monorail - Spar Recycle Area	1	each	1	FM-1st Floor	124.0	345.0	2.8	347	2.80	100%	347	3
4,500# Cap - Monorail - "A" Green Salt Area	1	each	1	FM-1st Floor	145.0	173.0	1.2	174	1.20	100%	174	1
9,500# Cap - Monorail - G.E. Dissoc. Retorts	1	each	1	FM-1st Floor	220.0	612.0	2.8	616	2.80	100%	616	3
4,500# Cap - Monorail - "A" Green Salt Area	1	each	1	FM-1st Floor	145.0	216.0	1.5	218	1.50	100%	218	2
4,000# Cap - Monorail - "Q" Refrigeration Area	1	each	1	FM-1st Floor	133.0	450.0	3.4	452	3.40	100%	452	3
#2 Vacuum Pump	1	each	1	FM-1st Floor	58.0	230.0	10.4	603	10.40	100%	603	10
Cooling Air Blower - East	1	each	1	FM-1st Floor	95.0	56.0	0.6	57	0.60	100%	57	1
Cooling Air Blower - West	1	each	1	FM-1st Floor	95.0	56.0	0.6	57	0.60	100%	57	1
Glycol Circ. Pump - Basement	1	each	1	FM-1st Floor	58.0	286.0	10.0	580	10.00	100%	580	10
R-123 Gear Aux. Oil Pump	1	each	1	FM-1st Floor	550.0	50.0	0.1	55	0.10	100%	55	0
Bottom Hydrofluorinator Blower	1	each	1	FM-1st Floor	58.0	300.0	32.0	1,856	32.00	100%	1,856	32
FM Bldg. Exh. Fan	1	each	1	FM-1st Floor	58.0	400.0	379.8	22,028	379.80	100%	22,028	380
Sample Vacuum Pump	1	each	1	FM-1st Floor	58.0	230.0	10.4	603	10.40	100%	603	10
Exhaust Fan - Distillation	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Flame Tower Vacuum Pump - 2nd Floor	1	each	1	FM-1st Floor	58.0	230.0	10.4	603	10.40	100%	603	10
Exhaust Fan - South Center	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Exhaust Fan - West	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Exhaust Fan - Maintenance Area	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Basement Exhaust Fan - Hoistwell	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Bottom Hydrofluorinator Air Circulation Fan	1	each	1	FM-1st Floor	58.0	600.0	251.2	14,570	251.20	100%	14,570	251

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft ³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft ³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft ³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft ³)
Bottom Hydrofluorinator Comp. Air Blower	1	each	1	FM-1st Floor	58.0	450.0	27.0	1,566	27.00	100%	1,566	27
Exhaust Fan - Sxw	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Refrigeration Vent Blower	1	each	1	FM-1st Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Water Cooler	1	each	1	FM-1st Floor	58.0	83.0	6.0	348	6.00	100%	348	6
Portable Air conditioner	1	each	1	FM-1st Floor	58.0	440.0	25.0	1,450	25.00	100%	1,450	25
R-123 Centrifugal Compressor	1	each	1	FM-1st Floor	58.0	32,480.0	812.0	47,096	812.00	100%	47,096	812
R-123 Purge Unit	1	each	1	FM-1st Floor	58.0	16,393.8	409.8	23,768	409.80	100%	23,768	410
R-134a Purge Unit	1	each	1	FM-1st Floor	58.0	16,393.8	409.8	23,768	409.80	100%	23,768	410
Refrigerant Management System	1	each	1	FM-1st Floor	58.0	960.0	24.0	1,392	24.00	100%	1,392	24
R-123 High Eff. Purge Unit	1	each	1	FM-1st Floor	58.0	230.0	7.2	418	7.20	100%	418	7
"A" Bot. Hydrofluorinator	1	each	1	FM-1st Floor	155.0	6,483.8	41.9	6,495	41.90	100%	6,495	42
"A" Hydrofluorinator	1	each	1	FM-1st Floor	155.0	6,483.8	41.9	6,495	41.90	100%	6,495	42
"B" Hydrofluorinator	1	each	1	FM-1st Floor	155.0	6,483.8	41.9	6,495	41.90	100%	6,495	42
"B" Bot. Hydrofluorinator	1	each	1	FM-1st Floor	155.0	6,483.8	41.9	6,495	41.90	100%	6,495	42
"C" Hydrofluorinator	1	each	1	FM-1st Floor	158.0	9,000.0	57.0	9,006	57.00	100%	9,006	57
12" Flame Tower Reactor	1	each	1	FM-1st Floor	58.0	540.0	14.0	812	14.00	100%	812	14
Separator	1	each	1	FM-1st Floor	58.0	420.0	15.0	870	15.00	100%	870	15
Separator	1	each	1	FM-1st Floor	58.0	420.0	15.0	870	15.00	100%	870	15
Separator	1	each	1	FM-1st Floor	58.0	420.0	15.0	870	15.00	100%	870	15
Switch Board - NW	1	each	1	FM-1st Floor	58.0	480.0	48.0	2,784	48.00	100%	2,784	48
Switch Board - NE	1	each	1	FM-1st Floor	58.0	240.0	24.0	1,392	24.00	100%	1,392	24
Switch Board - E - Ctr	1	each	1	FM-1st Floor	58.0	240.0	24.0	1,392	24.00	100%	1,392	24
Switch Board - E - S	1	each	1	FM-1st Floor	58.0	180.0	18.0	1,044	18.00	100%	1,044	18
High Boiler Still	1	each	1	FM-1st Floor	145.0	16,500.0	113.4	16,443	113.40	100%	16,443	113
Low Boiler Still	1	each	1	FM-1st Floor	83.0	13,719.0	165.8	13,761	165.80	100%	13,761	166
#2 Sample Vac. Pump Alumina Tower	1	each	1	FM-1st Floor	77.0	1,216.0	15.7	1,209	15.70	100%	1,209	16
#1 Sample Vac. Pump Alumina Tower	1	each	1	FM-1st Floor	77.0	1,216.0	15.7	1,209	15.70	100%	1,209	16
#2 Prepared Feed Hopper	1	each	1	FM-1st Floor	58.0	6,000.0	662.5	38,425	662.50	100%	38,425	663
#1 Prepared Feed Hopper	1	each	1	FM-1st Floor	58.0	6,000.0	662.5	38,425	662.50	100%	38,425	663
Tempered Water Tank	1	each	1	FM-1st Floor	74.0	7,111.6	96.1	7,111	96.10	100%	7,111	96
#3 Prepared Feed Hopper	1	each	1	FM-1st Floor	58.0	6,000.0	662.5	38,425	662.50	100%	38,425	663
Water Treatment Chem. Addition Pot	1	each	1	FM-1st Floor	101.0	96.0	0.9	91	0.90	100%	91	1
Knock Out Pot	1	each	1	FM-1st Floor	58.0	238.0	9.0	522	9.00	100%	522	9
R-134a Receiver	1	each	1	FM-1st Floor	58.0	1,936.6	50.3	2,917	50.30	100%	2,917	50
R-134a Accumulator	1	each	1	FM-1st Floor	189.0	2,013.9	10.6	2,003	10.60	100%	2,003	11
Distillate Crane Scale	1	each	1	FM-1st Floor	140.0	25.0	0.2	28	0.20	100%	28	0
UF6 Cylinder Shipping Scale	1	each	1	FM-1st Floor	58.0	3,450.0	172.5	10,005	172.50	100%	10,005	173
Delumper Flame Tower Reactor	1	each	1	FM-1st Floor	58.0	150.0	3.3	191	3.30	100%	191	3
Rotary Valve - Dust Coll. Discharge	1	each	1	FM-1st Floor	58.0	57.0	1.0	58	1.00	100%	58	1
Rotary Valve - Draw Off Leg. - Basmt.	1	each	1	FM-1st Floor	58.0	63.0	1.1	64	1.10	100%	64	1
Rotary Valve "A" Bot H'Flator Disc.	1	each	1	FM-1st Floor	58.0	54.0	0.9	52	0.90	100%	52	1
Dust Valve - M-410 Spar	1	each	1	FM-1st Floor	58.0	50.0	0.9	52	0.90	100%	52	1
Rotary Valve Bed Fines Hopper Disc. Rv.	1	each	1	FM-1st Floor	58.0	57.0	1.0	58	1.00	100%	58	1
Rotary Valve "B" Bot. H'Flator Disc.	1	each	1	FM-1st Floor	58.0	57.0	1.0	58	1.00	100%	58	1
Dryer Disch. Mill Feed Screw	1	each	1	FM-2nd Floor	120.0	943.0	7.9	948	7.90	100%	948	8
Calciner Elev. Disc. Screw	1	each	1	FM-2nd Floor	58.0	54.0	7.0	406	7.00	100%	406	7
Prepared Feed Hopper Feeder Screw	1	each	1	FM-2nd Floor	120.0	1,319.5	11.0	1,320	11.00	100%	1,320	11
Undersized Feed Material Screw	1	each	1	FM-2nd Floor	120.0	2,733.2	22.8	2,736	22.80	100%	2,736	23
Ore Conc. Surge Hopper Disch. Screw -N	1	each	1	FM-2nd Floor	58.0	1,700.0	31.8	1,844	31.80	100%	1,844	32

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Ore Conc. Surge Hopper Disch. Screw -N	1	each	1	FM-2nd Floor	58.0	1,700.0	31.8	1,844	31.80	100%	1,844	32
Uf6 Continuous Sample Vessel-East	1	each	1	FM-2nd Floor	215.0	1,500.0	7.0	1,505	7.00	100%	1,505	7
Uf6 Continuous Sample Vessel-West	1	each	1	FM-2nd Floor	215.0	1,500.0	7.0	1,505	7.00	100%	1,505	7
"A" Fluorinator Heater	1	each	1	FM-2nd Floor	58.0	5,760.0	144.0	8,352	144.00	100%	8,352	144
"B" Fluorinator Heater	1	each	1	FM-2nd Floor	58.0	5,760.0	144.0	8,352	144.00	100%	8,352	144
Service Room Hot Water Heater	1	each	1	FM-2nd Floor	99.0	154.0	1.6	158	1.60	100%	158	2
Tempered Water Spiral Heat Exchanger	1	each	1	FM-2nd Floor	58.0	14,074.3	703.7	40,815	703.70	100%	40,815	704
Tempered Water Spiral Heat Exchanger	1	each	1	FM-2nd Floor	58.0	14,074.3	703.7	40,815	703.70	100%	40,815	704
Unit Heater	1	each	1	FM-2nd Floor	58.0			75	1.29	100%	75	1
Steam Jacket On U-430	1	each	1	FM-2nd Floor	58.0			900	15.50	100%	900	16
"B" Top H/EFlator Heater	1	each	1	FM-2nd Floor	58.0	1,500.0	75.0	4,350	75.00	100%	4,350	75
"C" Flator Heater	1	each	1	FM-2nd Floor	58.0	1,280.0	64.0	3,712	64.00	100%	3,712	64
Fluidizing Air To All Flators	1	each	1	FM-2nd Floor	87.0	17.0	0.2	17	0.20	100%	17	0
Safety Shower Filter	1	each	1	FM-2nd Floor	92.0	290.0	3.1	285	3.10	100%	285	3
#1 Instrument Air Filter	1	each	1	FM-2nd Floor	92.0	8.0	0.1	9	0.10	100%	9	0
#2 Instrument Air Filter	1	each	1	FM-2nd Floor	92.0	8.0	0.1	9	0.10	100%	9	0
Welder - Ideal Arc 250	1	each	1	FM-2nd Floor	58.0	375.0	8.0	464	8.00	100%	464	8
Welder - Da 250	1	each	1	FM-2nd Floor	58.0	375.0	8.0	464	8.00	100%	464	8
500# Cap - Mite-Lift - Portable Hoist	1	each	1	FM-2nd Floor	58.0	56.0	0.58	34	0.58	100%	34	1
1000# Cap - Hoist - N	1	each	1	FM-2nd Floor	60.0	120.0	2.0	120	2.00	100%	120	2
500# Cap - Hoist - S	1	each	1	FM-2nd Floor	121.0	60.0	0.5	61	0.50	100%	61	1
500# Cap - Hoist - Cont Room Platform	1	each	1	FM-2nd Floor	121.0	60.0	0.5	61	0.50	100%	61	1
Drill Press	1	each	1	FM-2nd Floor	58.0	250.0	16.7	969	16.70	100%	969	17
Prepared Feed Mill	1	each	1	FM-2nd Floor	60.0	7,500.0	126.0	7,560	126.00	100%	7,560	126
Ore Dryer Discharge Crusher	1	each	1	FM-2nd Floor	83.0	2,500.0	30.0	2,490	30.00	100%	2,490	30
Scrap Recovery (UF4) Mill	1	each	1	FM-2nd Floor	83.0	2,500.0	30.0	2,490	30.00	100%	2,490	30
Prepared Feed Mill	1	each	1	FM-2nd Floor	60.0	7,500.0	126.0	7,560	126.00	100%	7,560	126
Ore Precrusher	1	each	1	FM-2nd Floor	58.0	2,000.0	45.0	2,610	45.00	100%	2,610	45
Motor Control Center (C-Fm-40)	1	each	1	FM-2nd Floor	58.0	1,960.0	98.0	5,684	98.00	100%	5,684	98
1000# Cap - Monorail - Valve Room	1	each	1	FM-2nd Floor	145.0	259.0	1.8	261	1.80	100%	261	2
2000# - Monorail - "B" Flator	1	each	1	FM-2nd Floor	145.0	129.0	0.9	131	0.90	100%	131	1
2000# Cap Monorail - "A" Flator	1	each	1	FM-2nd Floor	145.0	151.0	1.0	145	1.00	100%	145	1
Vacuum Pump - East	1	each	1	FM-2nd Floor	58.0	1,392.0	24.0	1,392	24.00	100%	1,392	24
Vacuum Pump - West	1	each	1	FM-2nd Floor	58.0	1,392.0	24.0	1,392	24.00	100%	1,392	24
Yard Safety Shower Circ. Pump	1	each	1	FM-2nd Floor	58.0	91.0	1.6	93	1.60	100%	93	2
Yard Safety Shower Circ. Pump	1	each	1	FM-2nd Floor	58.0	91.0	1.6	93	1.60	100%	93	2
Yard Safety Shower Circ. Pump	1	each	1	FM-2nd Floor	58.0	91.0	1.6	93	1.60	100%	93	2
Safety Shower Circ. Pump	1	each	1	FM-2nd Floor	58.0	116.0	2.0	116	2.00	100%	116	2
"A" Top H/EFlator Blower	1	each	1	FM-2nd Floor	58.0	800.0	80.0	4,640	80.00	100%	4,640	80
"A" Flator Blower	1	each	1	FM-2nd Floor	58.0	2,940.0	294.0	17,052	294.00	100%	17,052	294
"B" Flator Blower	1	each	1	FM-2nd Floor	58.0	2,940.0	294.0	17,052	294.00	100%	17,052	294
"B" Flator Comb. Air Blower	1	each	1	FM-2nd Floor	58.0	270.0	27.0	1,566	27.00	100%	1,566	27
"A" Flator Comb. Air Blower	1	each	1	FM-2nd Floor	76.0	212.0	2.8	213	2.80	100%	213	3
Exhaust Fan - Maint. Area	1	each	1	FM-2nd Floor	58.0	60.0	1.9	110	1.90	100%	110	2
Control Room A/C Blower	1	each	1	FM-2nd Floor	95.0	56.0	0.6	57	0.60	100%	57	1
Exh. Fan - Service Room	1	each	1	FM-2nd Floor	58.0	60.0	1.9	110	1.90	100%	110	2
Man-Cooling Fan	1	each	1	FM-2nd Floor	58.0	148.0	18.0	1,044	18.00	100%	1,044	18
"B" Top H/EFlator Air Circ. Fan	1	each	1	FM-2nd Floor	58.0	2,160.0	216.0	12,528	216.00	100%	12,528	216
Control Room Fan	1	each	1	FM-2nd Floor	58.0	270.0	27.0	1,566	27.00	100%	1,566	27

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"C" Flator Heat Circ. Air Blower	1	each	1	FM-2nd Floor	58.0	2,940.0	294.0	17,052	294.00	100%	17,052	294
"C" Flator Heat Comb. Air Blower	1	each	1	FM-2nd Floor	58.0	270.0	27.0	1,566	27.00	100%	1,566	27
Drinking Water Cooler	1	each	1	FM-2nd Floor	58.0	83.0	6.0	348	6.00	100%	348	6
Refrigerator - Control Room	1	each	1	FM-2nd Floor	11.8	133.0	11.3	133	11.30	0%	0	0
Refrigerator - Cont. Room - Foreman	1	each	1	FM-2nd Floor	11.8	133.0	11.3	133	11.30	0%	0	0
A/C & Heating Unit	1	each	1	FM-2nd Floor	58.0	1,200.0	30.0	1,740	30.00	100%	1,740	30
A/C & Heating Unit	1	each	1	FM-2nd Floor	58.0	4,200.0	105.0	6,090	105.00	100%	6,090	105
"B" Top II-Flator	1	each	1	FM-2nd Floor	182.0	7,653.3	41.9	7,626	41.90	100%	7,626	42
Ore Crusher Grizzly Screen	1	each	1	FM-2nd Floor	58.0	725.0	12.5	725	12.50	100%	725	13
Calciner Grizzly	1	each	1	FM-2nd Floor	58.0	725.0	12.5	725	12.50	100%	725	13
Scrap Recovery Screen	1	each	1	FM-2nd Floor	58.0	1,200.0	30.0	1,740	30.00	100%	1,740	30
Switchboard - N X E	1	each	1	FM-2nd Floor	58.0	1,365.0	136.5	7,917	136.50	100%	7,917	137
Switchboard - N X W	1	each	1	FM-2nd Floor	58.0	1,365.0	136.5	7,917	136.50	100%	7,917	137
Switchboard - N X W	1	each	1	FM-2nd Floor	58.0	1,080.0	108.0	6,264	108.00	100%	6,264	108
Dryer Surge Hopper	1	each	1	FM-2nd Floor	58.0	900.0	90.0	5,220	90.00	100%	5,220	90
U6 Blow Off & Dump Tank	1	each	1	FM-2nd Floor	97.0	2,016.9	20.7	2,008	20.70	100%	2,008	21
Bed Fines Hopper	1	each	1	FM-2nd Floor	58.0	3,750.0	375.0	21,750	375.00	100%	21,750	375
Scrap Recovery Hopper	1	each	1	FM-2nd Floor	76.0	589.0	7.8	593	7.80	100%	593	8
Safety Shower Heater Storage Tank	1	each	1	FM-2nd Floor	146.0	1,092.0	7.5	1,095	7.50	100%	1,095	8
Ore Conc. Surge Hopper	1	each	1	FM-2nd Floor	60.0	16,000.0	268.4	16,104	268.40	100%	16,104	268
"A" Flator Bed - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"B" Flator Bed - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"B" Top II-Flator Disc. Line - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Undersize Feed Matl. Screw - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"C" Flator Bed - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Ore Conc. Surge Hopper - N - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Ore Conc. Surge Hopper - S - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Conc. Blender Feed Line - Vibrator	1	each	1	FM-2nd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"A" Bottom II-Flator Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
In - Range Discharge	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
Scrap Rec. Mill Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
Fines Discharge	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"A" Flator Spar Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"B" Flator UF4 Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"A" Flator UF4 Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"B" Flator Spar Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"B" Bottom II-Flator Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"C" Flator UF4 Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"C" Flator Spar Feeder	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
Ore In-Range Discharge	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
Ore In-Range Discharge	1	each	1	FM-2nd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"A" Reoxidizer Screw	1	each	1	FM-3rd Floor	120.0	943.0	7.9	948	7.90	100%	948	8
Flator Filter Fines Screw	1	each	1	FM-3rd Floor	120.0	943.0	7.9	948	7.90	100%	948	8
Ore Dryer Feed Screw	1	each	1	FM-3rd Floor	120.0	2,261.9	18.8	2,256	18.80	100%	2,256	19
"B" Reoxidizer Screw	1	each	1	FM-3rd Floor	58.0	4,500.0	216.0	12,528	216.00	100%	12,528	216
Ore Classifier Feed Screw	1	each	1	FM-3rd Floor	58.0	500.0	16.0	928	16.00	100%	928	16
Hoist Trolley	1	each	1	FM-3rd Floor	75.0	225.0	3.0	225	3.00	100%	225	3
Hoist Trolley	1	each	1	FM-3rd Floor	75.0	225.0	3.0	225	3.00	100%	225	3
Ore Dryer	1	each	1	FM-3rd Floor	58.0	35,000.0	1,085.0	62,930	1,085.00	100%	62,930	1,085

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft ³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft ³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft ³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft ³)
Filter Dryer	1	each	1	FM-3rd Floor	58.0	2,000.0	144.0	8,352	144.00	100%	8,352	144
Ore Dryer Heater	1	each	1	FM-3rd Floor	58.0	10,000.0	172.4	9,999	172.40	100%	9,999	172
"A" Top Inflator Heater	1	each	1	FM-3rd Floor	58.0	5,760.0	144.0	8,352	144.00	100%	8,352	144
High Boiler Still Condenser	1	each	1	FM-3rd Floor	120.0	94.0	0.8	96	0.80	100%	96	1
H2O Filter For Metal Tube D/P Test - E	1	each	1	FM-3rd Floor	58.0	63.0	1.1	64	1.10	100%	64	1
H2O Filter For Metal Tube D/P Test - W	1	each	1	FM-3rd Floor	58.0	63.0	1.1	64	1.10	100%	64	1
Hot Glycol Filter	1	each	1	FM-3rd Floor	58.0	63.0	1.1	64	1.10	100%	64	1
Decon Trunk Vacuum	1	each	1	FM-3rd Floor	58.0	63.0	1.1	64	1.10	100%	64	1
Welder	1	each	1	FM-3rd Floor	214.3	380.0	9.1	1,950	9.10	100%	1,950	9
Hot Box	1	each	1	FM-3rd Floor	58.0	1,174.5	20.3	1,177	20.30	100%	1,177	20
500# Cap. Portable Hoist	1	each	1	FM-3rd Floor	58.0	56.0	0.6	34	0.58	100%	34	1
4000# Cap Hoist	1	each	1	FM-3rd Floor	225.0	150.0	0.7	158	0.70	100%	158	1
2000# Cap Hoist	1	each	1	FM-3rd Floor	63.0	125.0	2.0	126	2.00	100%	126	2
1000# Cap. Hoist	1	each	1	FM-3rd Floor	105.0	70.0	0.7	74	0.70	100%	74	1
1000# Cap. Hoist	1	each	1	FM-3rd Floor	58.0	70.0	4.0	232	4.00	100%	232	4
1000# Cap. Hoist - Electric	1	each	1	FM-3rd Floor	63.0	70.0	1.1	69	1.10	100%	69	1
Scrap Recycle Drum Inverter	1	each	1	FM-3rd Floor	58.0	4,350.0	75.0	4,350	75.00	100%	4,350	75
Washer - Decon	1	each	1	FM-3rd Floor	58.0	150.0	36.0	2,088	36.00	100%	2,088	36
2,500 Cap. Monorail	1	each	1	FM-3rd Floor	145.0	518.0	3.6	522	3.60	100%	522	4
2,000 Cap. Monorail	1	each	1	FM-3rd Floor	145.0	216.0	1.5	218	1.50	100%	218	2
4,500 Cap. Monorail	1	each	1	FM-3rd Floor	145.0	216.0	1.5	218	1.50	100%	218	2
4,000 Cap. Monorail	1	each	1	FM-3rd Floor	124.0	633.0	5.1	632	5.10	100%	632	5
Monorail	1	each	1	FM-3rd Floor	145.0	690.0	4.8	696	4.80	100%	696	5
4,000 Cap. Monorail	1	each	1	FM-3rd Floor	124.0	173.0	1.4	174	1.40	100%	174	1
Dryer Combustion Air Blower	1	each	1	FM-3rd Floor	58.0	5.0	0.5	29	0.50	100%	29	1
"A" Flator Oilgas Lines Cooling Blower	1	each	1	FM-3rd Floor	58.0	80.0	8.0	464	0.08	100%	464	8
Exhaust Fan - Service Room	1	each	1	FM-3rd Floor	58.0	270.0	27.0	1,566	0.27	100%	1,566	27
Exhaust Fan - Decon	1	each	1	FM-3rd Floor	76.0	213.0	2.8	213	2.80	100%	213	3
Wall Exhaust Fan - South	1	each	1	FM-3rd Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
Wall Exhaust Fan - West	1	each	1	FM-3rd Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
#317-1 Vent Unit	1	each	1	FM-3rd Floor	58.0	544.0	27.2	1,578	27.20	100%	1,578	27
Exhaust Fan	1	each	1	FM-3rd Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
Exhaust Fan	1	each	1	FM-3rd Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
Decon Bead Blaster	1	each	1	FM-3rd Floor	58.0	960.0	96.0	5,568	96.00	100%	5,568	96
Exhaust Fan	1	each	1	FM-3rd Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
"B" Top Inflator Combustion Air Blower	1	each	1	FM-3rd Floor	58.0	270.0	27.0	1,566	27.00	100%	1,566	27
Wall Exhaust Fan - Southwest	1	each	1	FM-3rd Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
Drinking Cooler	1	each	1	FM-3rd Floor	58.0	83.0	6.0	348	6.00	100%	348	6
"A" Top Inflator	1	each	1	FM-3rd Floor	58.0	7,592.2	130.9	7,592	130.90	100%	7,592	131
4/E Dia. Prepared Feed Air Classifier	1	each	1	FM-3rd Floor	113.0	1,500.0	13.3	1,503	13.30	100%	1,503	13
6/E Dia. Prepared Feed Air Classifier	1	each	1	FM-3rd Floor	72.0	3,200.0	44.7	3,218	44.70	100%	3,218	45
Switchboard East-West	1	each	1	FM-3rd Floor	58.0	1,200.0	120.0	6,960	120.00	100%	6,960	120
Switchboard East-East	1	each	1	FM-3rd Floor	58.0	1,800.0	180.0	10,440	180.00	100%	10,440	180
Ultrasonic Cleaner Tank - Decon	1	each	1	FM-3rd Floor	58.0	300.0	48.0	2,784	48.00	100%	2,784	48
Dryer Feed Hopper	1	each	1	FM-3rd Floor	58.0	1,920.0	96.0	5,568	96.00	100%	5,568	96
#1 Still Feed Tank	1	each	1	FM-3rd Floor	212.0	8,710.0	41.0	8,692	41.00	100%	8,692	41
#2 Still Feed Tank	1	each	1	FM-3rd Floor	212.0	8,710.0	41.0	8,692	41.00	100%	8,692	41
Bed Fines Hopper	1	each	1	FM-3rd Floor	58.0	6,400.0	312.5	18,125	312.50	100%	18,125	313
Spar Discharge Hopper	1	each	1	FM-3rd Floor	58.0	2,400.0	120.0	6,960	120.00	100%	6,960	120

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#3 Still Feed Tank	1	each	1	FM-3rd Floor	212.0	8,710.0	41.0	8,692	41.00	100%	8,692	41
Dryer Feed Hopper Vibrator - West	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"A" Reoxidizer Screw Disch. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"B" Flator Primary Filter Disch. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"B" Flator B.U. Filter Disch. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"A" Flator Primary Filter Disch. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"A" Flator B.U. Filter Disch. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
F-416 Discharge Line Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"C2" Flator Primary Filter D.O. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"C1" Flator Primary Filter D.O. Vibrator	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Dryer Feed Hopper Vibrator - East	1	each	1	FM-3rd Floor	123.0	9.0	0.1	12	0.10	100%	12	0
"A" Flator Primary Filter Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"A" Flator Primary Filter Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"B" Flator Primary Filter Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"B" Flator Primary Filter Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
Spar Recycle Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"C" Flator Primary Filter Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
"C" Flator Primary Filter Disch. R/V	1	each	1	FM-3rd Floor	358.0	800.0	2.2	788	2.20	100%	788	2
Screw Conveyor	1	each	1	FM-4th Floor	120.0	655.0	5.5	660	5.50	100%	660	6
C Fluorinate Filter Fines Screw	1	each	1	FM-4th Floor	120.0	412.0	3.4	408	3.40	100%	408	3
Rotex Feed Screw	1	each	1	FM-4th Floor	58.0	400.0	7.9	458	7.90	100%	458	8
Mud Bailer Feed Screw	1	each	1	FM-4th Floor	255.0	2,000.0	7.9	2,015	7.90	100%	2,015	8
Hoist Trolley - "A" Green Salt	1	each	1	FM-4th Floor	75.0	54.0	0.7	53	0.70	100%	53	1
A-1 Primary Cold Trap	1	each	1	FM-4th Floor	97.0	2,634.3	27.3	2,648	27.30	100%	2,648	27
A-2 Primary Cold Trap	1	each	1	FM-4th Floor	97.0	2,634.3	27.3	2,648	27.30	100%	2,648	27
A-3 Primary Cold Trap	1	each	1	FM-4th Floor	97.0	2,634.3	27.3	2,648	27.30	100%	2,648	27
Product Condenser	1	each	1	FM-4th Floor	58.0	0.0	0.7	41	0.70	100%	41	1
A-4 Primary Cold Trap	1	each	1	FM-4th Floor	172.0	4,700.0	27.3	4,696	27.30	100%	4,696	27
B-2 Primary Cold Trap	1	each	1	FM-4th Floor	172.0	4,700.0	27.3	4,696	27.30	100%	4,696	27
B-3 Primary Cold Trap	1	each	1	FM-4th Floor	172.0	4,700.0	27.3	4,696	27.30	100%	4,696	27
B-1 Primary Cold Trap	1	each	1	FM-4th Floor	172.0	4,700.0	27.3	4,696	27.30	100%	4,696	27
B-4 Primary Cold Trap	1	each	1	FM-4th Floor	172.0	4,700.0	27.3	4,696	27.30	100%	4,696	27
Alt. Primary Cold Trap - Nooter	1	each	1	FM-4th Floor	172.0	4,700.0	27.3	4,696	27.30	100%	4,696	27
"B" Hydrogen Preheater	1	each	1	FM-4th Floor	58.0	400.0	6.9	400	6.90	100%	400	7
"B" Reductor Heater - Surface Comb.	1	each	1	FM-4th Floor	80.0	375.0	4.7	376	4.70	100%	376	5
Instrument Air Filter	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Chem. Trap - Fluorine Analyzer	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Chem. Trap - Fluorine Analyzer	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Chem. Trap - Fluorine Analyzer	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Chem. Trap - Fluorine Analyzer	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Chem. Trap - Sample Point	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Chem. Trap - Fluorine Analyzer	1	each	1	FM-4th Floor	80.0	8.0	0.1	8	0.10	100%	8	0
Air Filter	1	each	1	FM-4th Floor	76.0	2,261.9	29.8	2,265	29.80	100%	2,265	30
Welder - Idealarc 400	1	each	1	FM-4th Floor	42.0	391.0	9.3	389	9.25	100%	389	9
Welder-400 amp stick	1	each	1	FM-4th Floor	42.0	391.0	9.3	389	9.25	100%	389	9
Hot Box	1	each	1	FM-4th Floor	58.0	31.0	0.5	31	0.53	100%	31	1
E-409- A-1 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
E-408- A-2 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
E-410- A-3 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32

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E-427- A-4 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
E-426- B-2 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
E-425- B-3 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
Distillation West - Hot Box	1	each	1	FM-4th Floor	58.0	1,300.0	130.0	7,540	130.00	100%	7,540	130
Distillation East - Hot Box	1	each	1	FM-4th Floor	58.0	1,300.0	130.0	7,540	130.00	100%	7,540	130
E-600-Alt. Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
E-492- B-1 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
E-493- B-4 Primary Cold Trap Hot Box	1	each	1	FM-4th Floor	58.0	320.0	32.0	1,856	32.00	100%	1,856	32
Mit-E-Lift - 500# Cap	1	each	1	FM-4th Floor	58.0	56.0	0.6	34	0.58	100%	34	1
Hoist - "A" Green Salt Train - 2000# Cap.	1	each	1	FM-4th Floor	58.0	125.0	21.0	1,218	21.00	100%	1,218	21
Hoist - Cold Trap Area	1	each	1	FM-4th Floor	58.0	56.0	0.6	34	0.58	100%	34	1
Hoist - Cold Trap Area	1	each	1	FM-4th Floor	58.0	56.0	0.6	34	0.58	100%	34	1
#1 Mud bailer - West	1	each	1	FM-4th Floor	58.0	4,000.0	120.0	6,960	120.00	100%	6,960	120
#2 Mud bailer - East	1	each	1	FM-4th Floor	58.0	4,000.0	90.0	5,220	90.00	100%	5,220	90
#1 UF4 Mill - North	1	each	1	FM-4th Floor	58.0	4,872.0	84.0	4,872	84.00	100%	4,872	84
UF4 Blender	1	each	1	FM-4th Floor	58.0	10,500.0	600.0	34,800	600.00	100%	34,800	600
#2 UF4 Mill - South	1	each	1	FM-4th Floor	58.0	8,120.0	140.0	8,120	140.00	100%	8,120	140
#3 Mudbailer - North	1	each	1	FM-4th Floor	58.0	4,000.0	75.0	4,350	75.00	100%	4,350	75
Monorail - Over A-3 Prim. Cold Trap, 30,000#	1	each	1	FM-4th Floor	106.0	2,500.0	23.5	2,491	23.50	100%	2,491	24
Monorail - Over A-2 Prim. Cold Trap, 30,000#	1	each	1	FM-4th Floor	106.0	2,500.0	23.5	2,491	23.50	100%	2,491	24
Monorail - Over A-1 Prim. Cold Trap, 30,000#	1	each	1	FM-4th Floor	106.0	2,500.0	23.5	2,491	23.50	100%	2,491	24
Monorail - Over Rotex Screen (S-600), 3,000#	1	each	1	FM-4th Floor	62.0	200.0	3.2	198	3.20	100%	198	3
Monorail - "A" G. Salt Area, 2,000#	1	each	1	FM-4th Floor	58.0	151.0	2.6	151	2.60	100%	151	3
Monorail - B-3 Prim. Cold Trap	1	each	1	FM-4th Floor	106.0	1,125.0	10.6	1,124	10.60	100%	1,124	11
Monorail - A Bot. Hflourinator	1	each	1	FM-4th Floor	66.0	230.0	3.5	231	3.50	100%	231	4
Vac. Pump - UF6 Fluorine Analyzer	1	each	1	FM-4th Floor	58.0	131.0	2.3	133	2.30	100%	133	2
Vac. Pump - Sample Point	1	each	1	FM-4th Floor	58.0	203.0	3.5	203	3.50	100%	203	4
"A" Reductor Blower	1	each	1	FM-4th Floor	58.0	2,520.0	252.0	14,616	252.00	100%	14,616	252
Exh. Fan - HF Area - West Wail	1	each	1	FM-4th Floor	58.0	27.0	2.7	157	2.70	100%	157	3
Exh. Fan - HF Area - South Wail	1	each	1	FM-4th Floor	58.0	27.0	2.7	157	2.70	100%	157	3
Building Ventilation Unit	1	each	1	FM-4th Floor	58.0	800.0	120.0	6,960	120.00	100%	6,960	120
Man Cooling Fan	1	each	1	FM-4th Floor	58.0	60.0	1.9	110	1.90	100%	110	2
"B" Reductor Comb. Air Blower	1	each	1	FM-4th Floor	58.0	146.0	22.5	1,305	22.50	100%	1,305	23
Exhaust Fan - South X West - 1 Lg	1	each	1	FM-4th Floor	58.0	200.0	32.0	1,856	32.00	100%	1,856	32
Drinking Water Cooler	1	each	1	FM-4th Floor	58.0	83.0	6.0	348	6.00	100%	348	6
#1 UF4 Mill Grizzly	1	each	1	FM-4th Floor	58.0	3,600.0	360.0	20,880	360.00	100%	20,880	360
#2 UF4 Mill Grizzly	1	each	1	FM-4th Floor	58.0	3,600.0	360.0	20,880	360.00	100%	20,880	360
Spar (Bed) Rotex Screen	1	each	1	FM-4th Floor	58.0	840.0	84.0	4,872	84.00	100%	4,872	84
Rotex Screen	1	each	1	FM-4th Floor	58.0	840.0	84.0	4,872	84.00	100%	4,872	84
Switchboard C-19 West	1	each	1	FM-4th Floor	58.0	2,520.0	252.0	14,616	252.00	100%	14,616	252
Switchboard D-20 East	1	each	1	FM-4th Floor	58.0	2,520.0	252.0	14,616	252.00	100%	14,616	252
Vibrator - #1 Ore Conc. Hopper	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #2 Ore Conc. Hopper	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #1 Dry Oxide Dust Coil	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #1 Dry Oxide Dust Coil	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #1 Dry Oxide Dust Coil	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - HF Filter (F-424) Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - HF Filter (F-425) Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vib. - "A" Reductor K.O. Pot Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft ³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft ³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft ³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft ³)
Vibrator - UF4 Hopper	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - Spar Decay Hopper Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #3 Ore Conc. Hopper	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - UF4 Hopper	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B3" IIF Filter Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B4" IIF Filter Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B5" IIF Filter Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B6" IIF Filter Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vib. - "B" Reducer Fines Ko Pot Disch. Line	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator-Inlet Line To #2 UF4 Mill	1	each	1	FM-4th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Rotary Valve - #1 Mudbailer Ore Blender	1	each	1	FM-4th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Valve - #2 Mudbailer Ore Blender	1	each	1	FM-4th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Valve - "A" Top HÆFlator	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - F-494 Fines Discharge	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - F-493 Fines Discharge	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - F-495 Fines Discharge	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - #1 Dry Oxide Dust Col. Hop.	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - "A" Reductor Ko Pot Disch.	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - UF4 Mill Feeder - N	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - "B" Top HÆFlator	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - "B-1" Red. Filter Fines Disch.	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Rotary Valve - #2 UF4 Crusher - S	1	each	1	FM-4th Floor	58.0	73.0	1.3	75	1.30	100%	75	1
Conc. Feed Hopper Screw	1	each	1	FM-5th Floor	120.0	2,167.7	18.1	2,172	18.10	100%	2,172	18
Wet Oxide Dust Collector Discharge Screw	1	each	1	FM-5th Floor	120.0	1,131.0	9.4	1,128	9.40	100%	1,128	9
Trolley - B-4 & B-5 IIF Filters	1	each	1	FM-5th Floor	77.1	54.0	0.7	54	0.70	100%	54	1
"A" Reductor Filter Fines Hopper	1	each	1	FM-5th Floor	58.0	120.0	2.0	116	2.00	100%	116	2
A-1 Tert. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
A-2 Tert. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
A-1 Sec. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
"A" Reductor Heater	1	each	1	FM-5th Floor	58.0	1,400.0	280.0	16,240	280.00	100%	16,240	280
#A4 IIF Filter Heater (F-424)	1	each	1	FM-5th Floor	38.0	440.0	11.6	441	11.60	100%	441	12
#A5 IIF Filter Heater (F-424)	1	each	1	FM-5th Floor	38.0	440.0	11.6	441	11.60	100%	441	12
A-2 Sec. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
B-1 Sec. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
B-2 Sec. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
B-1 Tert. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
B-2 Tert. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
Shower Water Heater	1	each	1	FM-5th Floor	13.0	154.0	11.8	153	11.80	100%	153	12
A-3 Sec. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	0%	0	0
B-3 Sec. Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
Sample Cold Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
B" Reductor Filter Fines Hopper "I B"	1	each	1	FM-5th Floor	58.0	120.0	2.0	116	2.00	100%	116	2
Bot. HÆFlator Filter #1 B - Heater	1	each	1	FM-5th Floor	40.0	300.0	7.5	300	7.50	100%	300	8
Bot. HÆFlator Filter #2B - Heater	1	each	1	FM-5th Floor	40.0	300.0	7.5	300	7.50	100%	300	8
"B" Red. Fines Hopper Disch. Piping Heater	1	each	1	FM-5th Floor	40.0	300.0	7.5	300	7.50	100%	300	8
Top HÆFlator Filter #3B Heater	1	each	1	FM-5th Floor	40.0	300.0	7.5	300	7.50	100%	300	8
Top HÆFlator Filter #4B Heater	1	each	1	FM-5th Floor	40.0	300.0	7.5	300	7.50	100%	300	8
#1 Dry Oxide Dust Collector	1	each	1	FM-5th Floor	58.0	6,930.0	1,386.0	80,388	1,386.00	100%	80,388	1,386
Vessel Vacuum, Hop. & Controller Stand	1	each	1	FM-5th Floor	58.0	500.0	40.0	2,320	40.00	100%	2,320	40

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A4 Bot. HF Filter	1	each	1	FM-5th Floor	119.0	1,381.8	11.6	1,380	11.60	100%	1,380	12
A5 Bot. HF Filter	1	each	1	FM-5th Floor	119.0	1,381.8	11.6	1,380	11.60	100%	1,380	12
Chem Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
Chem Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
Chem Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
Chem Trap	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
Inst. Air Filter	1	each	1	FM-5th Floor	74.0	4,700.0	63.8	4,721	63.80	100%	4,721	64
B4 Bot. HF Filter	1	each	1	FM-5th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
3B Top HF Filter	1	each	1	FM-5th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
6B Top HF Filter	1	each	1	FM-5th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
5B Bottom HF Filter	1	each	1	FM-5th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
Welder - Idealarc	1	each	1	FM-5th Floor	42.0	391.0	9.3	389	9.25	100%	389	9
Welder - Idealarc	1	each	1	FM-5th Floor	42.0	391.0	9.3	389	9.25	100%	389	9
Hot Box - Cold Trap E-446-1A Sec.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap E-413-2A Sec.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap E411-1A Tert.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-412-2A Tert.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-447-1B Sec.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-448-2B Sec.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-472-1B Tert.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-473-2B Tert.	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-601	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-602	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Hot Box - Cold Trap - E-603	1	each	1	FM-5th Floor	58.0	199.0	34.2	1,984	34.20	100%	1,984	34
Portable Hoist - Mite-E-Lift	1	each	1	FM-5th Floor	58.0	56.0	0.6	34	0.58	100%	34	1
4000# - Hoist B4 & B5 HF Filters	1	each	1	FM-5th Floor	75.0	150.0	2.0	150	2.00	100%	150	2
2000# - Hoist - Over "A" Reductor	1	each	1	FM-5th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist & Trolley Over A4 & A5 HF Filter	1	each	1	FM-5th Floor	75.0	150.0	2.0	150	2.00	100%	150	2
4000# Hoist & Trolley Over B3 HF Filter	1	each	1	FM-5th Floor	113.0	150.0	1.3	147	1.30	100%	147	1
1000# - Hoist - Rotary Va. Storage Area	1	each	1	FM-5th Floor	66.0	88.0	1.3	86	1.30	100%	86	1
1000# Cap - Portable Hoist	1	each	1	FM-5th Floor	66.0	88.0	1.3	86	1.30	100%	86	1
1000# Cap - Portable Hoist	1	each	1	FM-5th Floor	66.0	88.0	1.3	86	1.30	100%	86	1
20,000# Monorail - Over Cold Trap 2B Tert.	1	each	1	FM-5th Floor	106.0	1,875.0	17.6	1,866	17.60	100%	1,866	18
20,000# Monorail - Over Cold Trap 1B	1	each	1	FM-5th Floor	106.0	1,875.0	17.6	1,866	17.60	100%	1,866	18
20,000# Mono - Cold Trap 2B Sec. & 1A Tert.	1	each	1	FM-5th Floor	106.0	3,125.0	29.4	3,116	29.40	100%	3,116	29
20,000# Mono - Oven Cold Trap 2A & 1B Sec.	1	each	1	FM-5th Floor	106.0	3,125.0	29.4	3,116	29.40	100%	3,116	29
20,000# Mono - Cold Trap 1A Sec. & 2A Tert.	1	each	1	FM-5th Floor	106.0	3,125.0	29.4	3,116	29.40	100%	3,116	29
11,000# Monorail - Over HF Filter A4 & A5	1	each	1	FM-5th Floor	77.0	719.0	9.3	716	9.30	100%	716	9
7,000# Monorail - Over HF Filter B4 & B5	1	each	1	FM-5th Floor	103.0	474.0	4.6	474	4.60	100%	474	5
5,000# Monorail - Over HF Filter B3	1	each	1	FM-5th Floor	103.0	431.0	4.2	433	4.20	100%	433	4
1,000# Monorail - Over HF Filter B6	1	each	1	FM-5th Floor	103.0	259.0	2.5	258	2.50	100%	258	3
1,000# Monorail - Oven "A" Gs Area	1	each	1	FM-5th Floor	103.0	259.0	2.5	258	2.50	100%	258	3
1,000# Monorail - Over "A" Gs Area	1	each	1	FM-5th Floor	103.0	259.0	2.5	258	2.50	100%	258	3
MO-419 Monorail - Over (C-418) Mill Feed Elevator	1	each	1	FM-5th Floor	78.0	311.0	4.0	312	4.00	100%	312	4
MO-420 1,000# Mono - Over Rotary Va. Stor. Area	1	each	1	FM-5th Floor	115.0	173.0	1.5	173	1.50	100%	173	2
Vacuum Pump	1	each	1	FM-5th Floor	58.0	131.0	2.3	133	2.30	100%	133	2
"A" Reductor Comb Air Blower	1	each	1	FM-5th Floor	58.0	120.0	12.0	696	12.00	100%	696	12

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Fluorine Compressor	1	each	1	FM-5th Floor	58.0	120.0	12.0	696	12.00	100%	696	12
Exhaust Fan - South Wall - HF Area	1	each	1	FM-5th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Exhaust Fan - West Wall - HF Area	1	each	1	FM-5th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Emergency Exh. Fan	1	each	1	FM-5th Floor	58.0	320.0	64.0	3,712	64.00	100%	3,712	64
Women's Shower Exhaust Fan	1	each	1	FM-5th Floor	58.0	15.0	1.0	58	1.00	100%	58	1
Man Cooling Fan	1	each	1	FM-5th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
"B" HF Primary Jet Scrubber - West	1	each	1	FM-5th Floor	58.0	174.0	3.0	174	3.00	100%	174	3
"B" HF Secondary Jet Scrubber - East	1	each	1	FM-5th Floor	58.0	174.0	3.0	174	3.00	100%	174	3
"B" Reductor Air Circ. Fan	1	each	1	FM-5th Floor	58.0	1,470.0	294.0	17,052	294.00	100%	17,052	294
Exhaust Fan	1	each	1	FM-5th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Water Cooler	1	each	1	FM-5th Floor	13.8	83.0	6.0	83	6.00	0%	0	0
R-402 "A" Reductor - Surface Comb.	1	each	1	FM-5th Floor	58.0	10,900.0	286.3	16,605	286.30	100%	16,605	286
R-600 "B" Reductor	1	each	1	FM-5th Floor	58.0	10,900.0	286.3	16,605	286.30	100%	16,605	286
Spar Rotex Screen	1	each	1	FM-5th Floor	58.0	155.0	2.7	157	2.70	100%	157	3
Exit - Wet Oxide Dust Coil. #2 (F-416)	1	each	1	FM-5th Floor	60.0	150.0	2.5	150	2.50	100%	150	3
Exhaust Fan (P-524)	1	each	1	FM-5th Floor	58.0	27.0	2.7	157	2.70	100%	157	3
Exhaust Fan (P-639)	1	each	1	FM-5th Floor	58.0	27.0	2.7	157	2.70	100%	157	3
Exhaust Fan (P-523)	1	each	1	FM-5th Floor	58.0	27.0	2.7	157	2.70	100%	157	3
Switch Board Nxw	1	each	1	FM-5th Floor	58.0	3,500.0	350.0	20,300	350.00	100%	20,300	350
Motor Control Ctr Nxw	1	each	1	FM-5th Floor	58.0	1,440.0	144.0	8,352	144.00	100%	8,352	144
#1 Conc. Hopper (Ct)	1	each	1	FM-5th Floor	58.0	2,500.0	63.0	3,654	63.00	100%	3,654	63
"A" Reductor Filter Fines Hopper	1	each	1	FM-5th Floor	58.0	0.0	3.3	191	3.30	100%	191	3
#2 Conc. Hopper (East) - Cont. Boiler	1	each	1	FM-5th Floor	58.0	2,500.0	63.0	3,654	63.00	100%	3,654	63
HF Filter Bump Tank	1	each	1	FM-5th Floor	58.0	1,083.4	22.3	1,293	22.30	100%	1,293	22
UF6 SurgeTank	1	each	1	FM-5th Floor	58.0	6,583.0	176.7	10,249	176.70	100%	10,249	177
"IB" Reductor Filter Fines Hopper	1	each	1	FM-5th Floor	58.0	615.0	10.6	615	10.60	100%	615	11
#3 Conc. Hopper - West	1	each	1	FM-5th Floor	58.0	2,500.0	63.0	3,654	63.00	100%	3,654	63
Vibrator - #1 Wet Oxide Dust Coil. Hop. (E)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #1 Wet Oxide Dust Coil. Hop. (W)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #2 Wet Oxide Dust Coll. Hop. (E)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - #2 Wet Oxide Dust Coil. Hop. (W)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - HF Filter "A1" (F-406) Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - HF Filter "A2" (F-407) Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - HF Filter "A3" (F-419) Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - HF Filter "A6" (F-443) Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vib. - "A" UF4 Prim. Dust Coll. (F-426) Hop.	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - A2 Prim Flation Filter (F-432)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - A1 Prim Flation Filter (F-433)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - B2 Prim Flation Filter (F-408)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - B1 Prim Flation Filter (F-409)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - Span Decay Hopper Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vib. - "A" Filter Fines Hopper Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "A" Reductor Feeder	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - UF4 Prim Dust Coil. (F-611)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "A" Reduction Feed Hopper	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B1" HF Filter (F-608) Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B2" HF Filter (F-609) Disch. Line	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B" Red. Feed Hopper (U-606)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "B" Red. Feeder (R-600)	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0

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Vibrator - "B" Red. Prim Filter	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "C2" Fiator Prim Filter Shell	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - "C1" Fiator Prim Filter Shell	1	each	1	FM-5th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Rotary Va. - "A" Red uctor Feeder (R-402)	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - "A" Prim. UF4 Dust Coll. Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - Ash Dust Coll. Disch. (F-422)	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - Spar Decay Hopper Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - #2 Dry Oxide Dust Coll. Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - #1 Wet Oxide Dust Coll. Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - #2 Wet Oxide Dust Coll. Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - #1 Wet Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - "B" Reductor Feeder	1	each	1	FM-5th Floor	58.0	0.0	1.3	75	1.30	100%	75	1
Rotary Va. - "B" UF4 Prim. Dust Coll. Disch.	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Va. - "Conc. Surge Hopper Feeder	1	each	1	FM-5th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
"A" Reductor Hopper Feed Conveyor	1	each	1	FM-6th Floor	120.0	795.0	6.6	792	6.60	100%	792	7
Spar Decay Hopper Feed Screw	1	each	1	FM-6th Floor	120.0	900.0	7.5	900	7.50	100%	900	8
"B" Reductor Hopper Feed Screw	1	each	1	FM-6th Floor	120.0	1,378.4	11.5	1,380	11.50	100%	1,380	12
"B" UF4 Elevator Disch. Screw	1	each	1	FM-6th Floor	120.0	3,127.8	26.1	3,132	26.10	100%	3,132	26
"A" UF4 Elevator Disch. Screw	1	each	1	FM-6th Floor	120.0	1,007.3	8.4	1,008	8.40	100%	1,008	8
"B" UF4 Elevator Sec. Feed Screw	1	each	1	FM-6th Floor	136.0	600.0	4.4	598	4.40	100%	598	4
Trolley - Over "A" Red BU Filter	1	each	1	FM-6th Floor	75.0	54.0	0.7	53	0.70	100%	53	1
Trolley - Over "B.1" Red BU Filter	1	each	1	FM-6th Floor	75.0	54.0	0.7	53	0.70	100%	53	1
Trolley - Oven "B.2" Red BU Filter	1	each	1	FM-6th Floor	75.0	54.0	0.7	53	0.70	100%	53	1
CR-401 Hoist Well Crane	1	each	1	FM-6th Floor	58.0	96,787.5	1,668.8	96,790	1,668.80	100%	96,790	1,669
Dryer Prior To Chem Trap	1	each	1	FM-6th Floor	73.0	57.0	0.8	58	0.80	100%	58	1
Dryer Prior To Chem Trap	1	each	1	FM-6th Floor	73.0	57.0	0.8	58	0.80	100%	58	1
Dryer Prior To Chem Trap	1	each	1	FM-6th Floor	58.0	287.0	7.0	406	7.00	100%	406	7
#1 Low Boiler Still Condenser	1	each	1	FM-6th Floor	139.0	3,340.0	24.0	3,336	24.00	100%	3,336	24
"A" IIF Filter Heater	1	each	1	FM-6th Floor	40.0	555.0	13.9	556	13.90	100%	556	14
"A2" IIF Filter Heater	1	each	1	FM-6th Floor	40.0	555.0	13.9	556	13.90	100%	556	14
"A3" IIF Filter Heater	1	each	1	FM-6th Floor	40.0	555.0	13.9	556	13.90	100%	556	14
"A4" IIF Filter Heater	1	each	1	FM-6th Floor	40.0	555.0	13.9	556	13.90	100%	556	14
#2 Low Boiler Still Condenser	1	each	1	FM-6th Floor	139.0	3,340.0	24.0	3,336	24.00	100%	3,336	24
#1 Dravo H&V Unit - Sw	1	each	1	FM-6th Floor	58.0	6,000.0	600.0	34,800	600.00	100%	34,800	600
#2 Dravo H&V Unit - Sc	1	each	1	FM-6th Floor	58.0	6,000.0	600.0	34,800	600.00	100%	34,800	600
#4 Dravo H&V Unit - Nw	1	each	1	FM-6th Floor	58.0	6,000.0	600.0	34,800	600.00	100%	34,800	600
Top Heater Filter No. 1B Htr	1	each	1	FM-6th Floor	40.0	503.0	12.6	504	12.60	100%	504	13
Top Heater Filter No. 2B Htr	1	each	1	FM-6th Floor	40.0	503.0	12.6	504	12.60	100%	504	13
Reductor Filter Htr No.	1	each	1	FM-6th Floor	40.0	503.0	12.6	504	12.60	100%	504	13
"A" Reductor BU Filter Htr.	1	each	1	FM-6th Floor	40.0	503.0	12.6	504	12.60	100%	504	13
"A" Reductor Exit Gas Cooler	1	each	1	FM-6th Floor	58.0	34.0	0.6	35	0.60	100%	35	1
"A" Reductor Exit Gas Cooler	1	each	1	FM-6th Floor	58.0	34.0	0.6	35	0.60	100%	35	1
#3 Low Boiler Condenser	1	each	1	FM-6th Floor	139.0	3,340.0	24.0	3,336	24.00	100%	3,336	24
#4 Low Boiler Condenser	1	each	1	FM-6th Floor	139.0	3,340.0	24.0	3,336	24.00	100%	3,336	24
A Sec. UF4 Dust Cell	1	each	1	FM-6th Floor	58.0	1,975.0	108.0	6,264	108.00	100%	6,264	108
A Reductor Backup Filter	1	each	1	FM-6th Floor	111.0	1,841.9	16.6	1,843	16.60	100%	1,843	17
"A1" Top IIF Filter	1	each	1	FM-6th Floor	58.0	4,425.0	111.0	6,438	111.00	100%	6,438	111
"A2" Top IIF Filter	1	each	1	FM-6th Floor	58.0	4,425.0	111.0	6,438	111.00	100%	6,438	111
B-2 Fluonination Primary Filter	1	each	1	FM-6th Floor	174.0	2,300.0	13.3	2,314	13.30	100%	2,314	13

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B-1 Fluorinator Primary Filter	1	each	1	FM-6th Floor	174.0	2,300.0	13.3	2,314	13.30	100%	2,314	13
#2 Dry Oxide Dust Coll	1	each	1	FM-6th Floor	58.0	4,972.5	994.5	57,681	994.50	100%	57,681	995
#1 Wet Oxide Dust Coll. - Primary	1	each	1	FM-6th Floor	58.0	16,600.0	3,169.8	183,848	3,169.80	100%	183,848	3,170
A3 Top HF Filter	1	each	1	FM-6th Floor	58.0	4,425.0	111.0	6,438	111.00	100%	6,438	111
Ash Dust Coll #1	1	each	1	FM-6th Floor	58.0	3,250.0	39.2	3,254	39.20	100%	3,254	39
A Pri UF4 Dust Coll	1	each	1	FM-6th Floor	58.0	2,861.0	572.3	33,193	572.30	100%	33,193	572
A-1 Fluorinator Primary Filter	1	each	1	FM-6th Floor	58.0	2,200.0	100.5	5,829	100.50	100%	5,829	101
B-3 Fluorinator Primary Filter	1	each	1	FM-6th Floor	58.0	2,200.0	100.5	5,829	100.50	100%	5,829	101
Ash Vac Cleaner	1	each	1	FM-6th Floor	58.0	361.0	9.5	551	9.50	100%	551	10
Ash Dust Coil #2 Spar Recycle	1	each	1	FM-6th Floor	58.0	800.0	160.0	9,280	160.00	100%	9,280	160
A6 Top HF Filter	1	each	1	FM-6th Floor	58.0	566.0	14.9	864	14.90	100%	864	15
B-2 Fluorinator Backup Filter	1	each	1	FM-6th Floor	58.0	141.0	3.7	215	3.70	100%	215	4
B-1 Fluorinator Backup Filter	1	each	1	FM-6th Floor	58.0	141.0	3.7	215	3.70	100%	215	4
A-1 Fluorinator Backup Filter	1	each	1	FM-6th Floor	58.0	141.0	3.7	215	3.70	100%	215	4
B-3 Fluorinator Backup Filter	1	each	1	FM-6th Floor	58.0	141.0	3.7	215	3.70	100%	215	4
B UF4 Sec Dust Coll.	1	each	1	FM-6th Floor	58.0	2,861.3	572.3	33,193	572.30	100%	33,193	572
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Chem. Traps	1	each	1	FM-6th Floor	102.0	50.0	0.5	51	0.50	100%	51	1
Blow Back Air Filter On F-446	1	each	1	FM-6th Floor	127.0	25.0	0.2	25	0.20	100%	25	0
C-1 Fluorinator Primary Filter - West	1	each	1	FM-6th Floor	58.0	3,170.0	56.5	3,277	56.50	100%	3,277	57
C-2 Fluorinator Primary Filter - Center	1	each	1	FM-6th Floor	58.0	3,170.0	56.5	3,277	56.50	100%	3,277	57
C-3 Fluorinator Primary Filter - East	1	each	1	FM-6th Floor	58.0	3,170.0	56.5	3,277	56.50	100%	3,277	57
C-1 Fluorinator Backup Filter - West	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
C-2 Fluorinator Backup Filter - Center	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
C-3 Fluorinator Backup Filter - East	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
"B" Reductor Fri Filter	1	each	1	FM-6th Floor	111.0	1,841.9	16.6	1,843	16.60	100%	1,843	17
"B" Reductor Backup Filter	1	each	1	FM-6th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
1B Top Hflator Filter	1	each	1	FM-6th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
2B Top Hflator Filter	1	each	1	FM-6th Floor	116.0	1,535.2	13.3	1,543	13.30	100%	1,543	13
B UF4 Pri. Dust Coil.	1	each	1	FM-6th Floor	58.0	2,200.0	350.0	20,300	350.00	100%	20,300	350
1A Reductor Fri. Filter	1	each	1	FM-6th Floor	111.0	1,841.9	16.6	1,843	16.60	100%	1,843	17
A-2 Fluorinator Primary Filter - West	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
A-3 Fluorinator Primary Filter - Center	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
A-2 Fluorinator Backup Filter - West	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
A-3 Fluorinator Backup Filter - Center	1	each	1	FM-6th Floor	58.0	1,492.0	29.5	1,711	29.50	100%	1,711	30
Welder	1	each	1	FM-6th Floor	42.0	391.0	9.3	389	9.25	100%	389	9
Hoist - 500# Cap. - Portable	1	each	1	FM-6th Floor	58.0	56.0	0.6	34	0.58	100%	34	1
Hoist-"A" Reductor BU. Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - B-1 Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - B-2 Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - F-496 & F-497 Fluorinator Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - F-493 & F-494 Fluorinator Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - AB HF Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1

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Hoist - A1 & A2 HF Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - "B" Reductor BU Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - A2 Fri & BU Flation Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - B1 BU Flation Filter & A6 HF Filter	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - Ash Dust Coll.	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - A1 & B2 BU & B2 Pnim-Flation Filters	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - A1 & B2 BU & B2 Pnim-Flation Filters	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - "B" Red. Prim. Filters	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - "C" Flator Prim. Filters	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
Hoist - "C" Flator BU Filters	1	each	1	FM-6th Floor	98.0	80.0	0.8	78	0.80	100%	78	1
3000# Monorail	1	each	1	FM-6th Floor	153.0	238.0	1.6	245	1.60	100%	245	2
2000# Monorail - "C" Flator Pri Filters	1	each	1	FM-6th Floor	145.0	647.0	4.5	653	4.50	100%	653	5
2000# Monorail - "C" Flator Sec. Filter	1	each	1	FM-6th Floor	145.0	518.0	3.6	522	3.60	100%	522	4
6000# Monorail - A1 & B2 BU & B2 Fri Flation Fil.	1	each	1	FM-6th Floor	124.0	518.0	4.2	521	4.20	100%	521	4
4000# Monorail - B1 BU Flation & A6 HF Flit.	1	each	1	FM-6th Floor	145.0	474.0	3.3	479	3.30	100%	479	3
3500# Monorail-A1 BU, B1 Fri. & B2 BU Flation	1	each	1	FM-6th Floor	124.0	460.0	3.7	459	3.70	100%	459	4
4000# Monorail - A2 Fri & A2 BU Flation Fil.	1	each	1	FM-6th Floor	124.0	345.0	2.8	347	2.80	100%	347	3
1500# Monorail - #2 Wet Oxide Dust Coll.	1	each	1	FM-6th Floor	145.0	345.0	2.4	348	2.40	100%	348	2
4000# Monorail - A1 HF Filter	1	each	1	FM-6th Floor	124.0	863.0	7.0	868	7.00	100%	868	7
4000# Monorail - A1 & A2 HF Filter	1	each	1	FM-6th Floor	124.0	575.0	4.6	570	4.60	100%	570	5
4000# Monorail - "A" UF4 Sec. Dust Coll	1	each	1	FM-6th Floor	124.0	575.0	4.6	570	4.60	100%	570	5
4500# Monorail - "A" Red. BU Filter	1	each	1	FM-6th Floor	145.0	259.0	1.8	261	1.80	100%	261	2
6000# Monorail - "B" Reductor BU Filter	1	each	1	FM-6th Floor	153.0	214.0	1.4	214	1.40	100%	214	1
1900# Monorail - "B" Reductor BU Filter	1	each	1	FM-6th Floor	145.0	323.0	2.2	319	2.20	100%	319	2
1700# Monorail - B2 HF Filter	1	each	1	FM-6th Floor	145.0	323.0	2.2	319	2.20	100%	319	2
5500# Monorail - B1 HF Filter	1	each	1	FM-6th Floor	145.0	323.0	2.2	319	2.20	100%	319	2
3000# Monorail - #1 Low Boiler Condenser	1	each	1	FM-6th Floor	145.0	302.0	2.1	305	2.10	100%	305	2
3000# Monorail - #2 Low Boiler Condenser	1	each	1	FM-6th Floor	145.0	302.0	2.1	305	2.10	100%	305	2
3000# Monorail - #3 Low Boiler Condenser	1	each	1	FM-6th Floor	145.0	302.0	2.1	305	2.10	100%	305	2
3000# Monorail - #4 Low Boiler Condenser	1	each	1	FM-6th Floor	145.0	302.0	2.1	305	2.10	100%	305	2
2000# Monorail - Ash Dust Coll. Blower	1	each	1	FM-6th Floor	145.0	173.0	1.2	174	1.20	100%	174	1
2000# Monorail - Ash Dust Coll. Blower Motor	1	each	1	FM-6th Floor	145.0	173.0	1.2	174	1.20	100%	174	1
10000# Monorail	1	each	1	FM-6th Floor	127.0	438.0	3.4	432	3.40	100%	432	3
10000# Monorail	1	each	1	FM-6th Floor	127.0	525.0	4.1	521	4.10	100%	521	4
Monorail - F-496 & F-497 Fluorinator Filter	1	each	1	FM-6th Floor	145.0	518.0	3.6	522	3.60	100%	522	4
Monorail - F-493 & F-494 Fluorinator Filter	1	each	1	FM-6th Floor	145.0	518.0	3.6	522	3.60	100%	522	4
Silencer - Ash Vac Cl. Exhst.	1	each	1	FM-6th Floor	76.0	417.0	5.5	418	5.50	100%	418	6
"A" UF4 D.C. Exhauster	1	each	1	FM-6th Floor	58.0	375.0	75.0	4,350	75.00	100%	4,350	75
Wet Oxide Dust Coll. Blower	1	each	1	FM-6th Floor	58.0	330.0	65.9	3,822	65.90	100%	3,822	66
UF4 BU D.C. Blower	1	each	1	FM-6th Floor	58.0	300.0	60.0	3,480	60.00	100%	3,480	60
"A" Reducton Exit Cooling Blower	1	each	1	FM-6th Floor	58.0	90.0	18.0	1,044	18.00	100%	1,044	18
Ash Vac. Cl. Exhausten	1	each	1	FM-6th Floor	58.0	400.0	80.0	4,640	80.00	100%	4,640	80
Dry Oxide D.C. Blower	1	each	1	FM-6th Floor	58.0	688.0	137.5	7,975	137.50	100%	7,975	138
"A" HF Pri. Jet Scrubber-East	1	each	1	FM-6th Floor	58.0	91.0	1.6	93	1.60	100%	93	2
Ash D.C. Exhauster	1	each	1	FM-6th Floor	58.0	120.0	24.0	1,392	24.00	100%	1,392	24
"A" HF Sec. Jet Scrubber -West	1	each	1	FM-6th Floor	58.0	91.0	1.6	93	1.60	100%	93	2
Dravo H&V Unit #1	1	each	1	FM-6th Floor	58.0	200.0	198.0	11,484	198.00	100%	11,484	198
Dravo H&V Unit #2	1	each	1	FM-6th Floor	58.0	200.0	198.0	11,484	198.00	100%	11,484	198
Dravo H&V Unit #4	1	each	1	FM-6th Floor	58.0	200.0	198.0	11,484	198.00	100%	11,484	198

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft ³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft ³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft ³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft ³)
Dravo Induced Draft Fan	1	each	1	FM-6th Floor	58.0	200.0	198.0	11,484	198.00	100%	11,484	198
Dravo Induced Draft Fan	1	each	1	FM-6th Floor	58.0	200.0	198.0	11,484	198.00	100%	11,484	198
Dravo Induced Draft Fan	1	each	1	FM-6th Floor	58.0	200.0	198.0	11,484	198.00	100%	11,484	198
Roof Exhaust Blower Nxc	1	each	1	FM-6th Floor	58.0	990.0	198.0	11,484	198.00	100%	11,484	198
Roof Exhaust Blower Hoist Well	1	each	1	FM-6th Floor	58.0	990.0	198.0	11,484	198.00	100%	11,484	198
Trane Vent Unit No 317-1	1	each	1	FM-6th Floor	58.0	475.0	95.1	5,516	95.10	100%	5,516	95
Trane Vent Unit No 222-1	1	each	1	FM-6th Floor	58.0	800.0	160.0	9,280	160.00	100%	9,280	160
Exhaust Fan - Sxw	1	each	1	FM-6th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Exhaust Fan - Wxs	1	each	1	FM-6th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Exhaust Fan - Wxn	1	each	1	FM-6th Floor	58.0	230.0	32.0	1,856	32.00	100%	1,856	32
Fan - Man Cooler	1	each	1	FM-6th Floor	58.0	100.0	1.9	110	1.90	100%	110	2
Vent Fan	1	each	1	FM-6th Floor	58.0	100.0	1.9	110	1.90	100%	110	2
"B" Reductor Exit Gas Cooler Blower	1	each	1	FM-6th Floor	40.0	300.0	7.5	300	7.50	100%	300	8
Drinking Water Cooler	1	each	1	FM-6th Floor	13.8	83.0	6.0	83.0	6.00	0%	0	0
Scrubber, A Green Salt Dust Collector	1	each	1	FM-6th Floor	58.0	498.0	13.1	760	13.10	100%	760	13
Scrubber, B Green Salt Dust Collector	1	each	1	FM-6th Floor	58.0	498.0	13.1	760	13.10	100%	760	13
SW-22 Switchboard - See Dwg MTW-A0029	1	each	1	FM-6th Floor	40.0	660.0	16.5	660	16.50	100%	660	17
SW-23 Switchboard - See Dwg MTW-A0030	1	each	1	FM-6th Floor	40.0	660.0	15.0	600	15.00	100%	600	15
UF4 Hopper	1	each	1	FM-6th Floor	58.0	9,625.0	1,925.0	111,650	1,925.00	100%	111,650	1,925
Spar Decay Hopper	1	each	1	FM-6th Floor	58.0	21,321.6	4,264.3	247,329	4,264.30	100%	247,329	4,264
Air Blow Back Surge Tank	1	each	1	FM-6th Floor	58.0	338.0	8.4	487	8.40	100%	487	8
"A" Reductor Feed Hopper	1	each	1	FM-6th Floor	58.0	2,650.0	250.0	14,500	250.00	100%	14,500	250
"B" Reductor Feed Hopper	1	each	1	FM-6th Floor	58.0	2,650.0	250.0	14,500	250.00	100%	14,500	250
Vibrtr-On No2 Dry Ox Dust Coil Hppr(F412)	1	each	1	FM-6th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - On"A"Sec UF4 Dust Coil	1	each	1	FM-6th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - On"B"Sec UF4 Dust Coll(F450)	1	each	1	FM-6th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - On"A" Red Exit Gas Cooler(E625)	1	each	1	FM-6th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - On"B"Red Exit Gas Cooler(E632)	1	each	1	FM-6th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Vibrator - On (F-450)	1	each	1	FM-6th Floor	123.0	9.0	0.1	12	0.10	100%	12	0
Rotary Valve-"A"UF4 Sec D.C. Disch	1	each	1	FM-6th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Rotary Valve-"B" UF4 Sec D.C. Disch	1	each	1	FM-6th Floor	58.0	68.0	1.2	70	1.20	100%	70	1
Contaminated Debris at Sampling Plant Railroad Tracks	4	ft ³	88	Debris	40.0	40.0	1.0	3,520	88.00	100%	3,520	88
BM/FF building LLRW Trash in drums	2	drum	2,250	DAW	40.0	300.0	7.5	675,000	16,875.00	100%	675,000	16,875
Material on Waste Pad / Other	3	drum	8	DAW	40.0	300.0	7.5	2,400	60.00	100%	2,400	60
BM/FF building LLRW Trash in B-25 Boxes	2	B-25 box	128	DAW	40.0	3,552.0	88.8	454,656	11,366.40	100%	454,656	11,366
BM/FF building LLRW Trash in Blue Boxes	2	blue box	25	DAW	40.0	2,180.0	54.5	54,500	1,362.50	100%	54,500	1,363
Scrap Metal on Metals Pad	3	ft ³	96,602	Metals	100.0	100.0	1.0	9,660,200	96,602.00	0%	0	0
New Scrap Metal on Metals Pad	3	ft ³	1,458	Metals	100.0	100.0	1.0	145,800	1,458.00	0%	0	0
16"x16"x8" cubes for disposal on Metals Pad	3	ft ³	432	Metals	100.0	100.0	1.0	43,200	432.00	0%	0	0
Imhoff Sludge in Crusher Building	2	drum	217	sludge	90.0	675.0	7.5	146,475	1,627.50	100%	146,475	1,628
Outfall Material in Crusher Building	2	drum	15	sludge	90.0	675.0	7.5	10,125	112.50	100%	10,125	113
Equipment Sodium Removal/Ion Exchange Bldg	1	ft ²	3,808	Metals	62.2			407,471	6,546.00	90%	366,724	5,892
Equipment Sodium Removal/Ion Exchange Bldg	1	ft ²	2,520	Metals	62.2			269,650	4,332.00	90%	242,685	3,899
Equipment KOH Muds Building	1	ft ²	2,394	Metals	62.2			256,167	4,116.00	90%	230,551	3,704
Equipment Uranium Recovery Building	1	ft ²	4,560	Metals	62.2			487,938	7,839.00	90%	439,144	7,055
Equipment Uranium Recovery Building	1	ft ²	1,100	Metals	62.2			117,704	1,891.00	90%	105,934	1,702
Equipment FM Building Southeast pad	1	ft ²	3,888	Metals	62.2			416,031	6,684.00	90%	374,428	6,016

DESCRIPTION	LOC CODE	UNITS	NO. OF UNITS	MAT'L OF CONST.	BULK DENSITY (lb/ft³)	UNIT WEIGHT (lb)	UNIT VOLUME (ft³)	TOTAL WEIGHT (pound)	TOTAL VOLUME (ft³)	PERCENT DIRECT BURY (vol %)	ESOLUTIONS DISPOSAL WEIGHT (pound)	ESOLUTIONS DISPOSAL VOLUME (ft³)
Equipment FM Building Southwest pad	1	ft²	3,564	Metals	62.2			381,662	6,127.00	90%	343,226	5,514
Equipment Sample Plant	1	ft²	4,488	Metals	62.2			480,234	7,715.00	50%	240,117	3,858
Equipment Pond Muds Filter Calciner Bldg	2	ft²	1,125	Metals	62.2			120,379	1,934.00	95%	114,360	1,837
Equipment Cylinder wash Building	2	ft²	504	Metals	62.2			26,965	866.00	0%	0	0
Equipment Drum crusher Building	2	ft²	5,340	Metals	62.2			57140	9,180.00	0%	0	0
FM Building Demolition Debris	1	ft³	109,043	Debris	33.3			5,670,249	170,371.00	100%	5,670,249	170,371
FM Building Demolition Concrete Rubble	1	ft³	6,048	concrete rubble	75.0			725760	9,677.00	0%	0	0
Na Removal Building Demolition Debris	1	ft³	13,796	Debris	34.8			717,392	20,610.00	100%	717,392	20,610
U Recovery Building Demolition Debris	1	ft³	14,141	Debris	52.0			735,332	20,955.00	100%	735,332	20,955
KOH Muds Building Demolition Debris	1	ft³	1,193	Debris	52.0			62,010	1,193.00	100%	62,010	1,193
Sample Plant Building Demolition Debris	1	ft³	14,231	Debris	52.0			740,012	2,105.00	100%	740,012	21,045
Calciner Building Demolition Debris	2	ft³	981	Debris	52.0			51,025	981.00	100%	51,025	981
FM Pads Demolition Concrete Rubble	1	ft³	2,355	concrete rubble	106.6			282,600	2,650.00	0%	0	0
Excavated Pipe	4	ft³	1,556	Steel	42.3			65,770	1,556.00	100%	65,770	1,556
Roofing Over Laundry Area	5	ft³	500	Asphalt/Gravel	100.0			50,000	500.00	100%	50,000	500
Cold Concrete (Construction Rubble)	3	ft³	5,250	concrete rubble	60.0			315,000	5,250.00	0%	0	0
Soil from HF Mitigation & Fire Water Line Ruptures	3	ft³	12,000	soil	75.0			900,000	12,000.00	0%	0	0
Rad. Contaminated Concrete from HF Mitigation	3	ft³	10,000	concrete rubble	60.0			600,000	10,000.00	100%	600,000	10,000
Hot Concrete (Construction Rubble)	3	ft³	1,350	concrete rubble	60.0			81,000	1,350.00	100%	81,000	1,350
Hot Asbestos	2	ft³	2,500	Asbestos	7.0			17,500	2,500.00	100%	17,500	2,500
Large Rad. Scrap Metal (Fluorinator shell & Cold Trap	3	lbs	25,000	steel	21.0			25,000	1,190.00	100%	25,000	1,190
Crushed Unwashed Ore Drums	3	ft³	6,200		50.0			310,000	6,200.00	100%	310,000	6,200
DAW: Construction Rubble (Block Wall), Broken Filter												
Tubes (Fluorination), Dust Collector Bags, Trash, PPE,												
Floor sweeping, Incinerator Ash	3	ft³	8,000	debris	15.0				8,000.00	100%	120,000	8,000
Cold Special / Chemical Waste	2	ft³	9,105	chemical waste	15.0				9,105.00	0%	0	0
Molyflush Cylinders	3	cylinders	26	steel	84.4	13,500	160		4,130.00	0%	0	0
Thin Walled UF6 Cylinders	3	cylinders	400	steel	21.0	3,300	160	1,320,000	62,875.00	0%	0	0
RAM Flat Compactor	2	each	1	steel	70.0	3,525	50.4	3,525	50.00	100%	3,525	50
Conveyor for RAM Flat Compactor	2	each	1	steel	20.0	1,500	75	1,500	75.00	0%	0	0
HEPA Unit for RAM Flat Compactor	2	each	1	steel	30.0	600		600	20.00	100%	600	20
Drum Washer	2	each	1	steel	30.0	1,500	50	1,500	50.00	100%	1,500	50
TOTALS:								30,738,503	602,354		16,730,311	396,609
								31,345,776	621,343.0			
diff								607,273	18,989.2			

APPENDIX A-14

Cost Escalation Factors

APPENDIX A-14
COST ESCALATION METHODOLOGY

As described in NUREG-1307 Revision 13, the adjustment of the total decommissioning cost estimate can be expressed by:

$$\text{Estimated Cost (Year X)} = [\text{Base Cost}] [AL_x + BE_x + CB_x]$$

Where, per NUREG-1307, A, B, and C are the fractions of the total 1986 dollar costs that are attributable to labor (0.65), energy (0.13), and burial (0.22), respectively, and sum to 1.0. The factors L_x , E_x , and B_x are the Labor Cost, Energy Cost, and the Low-Level Waste (LLW) Burial/Disposition Cost Adjustments respectively.

The above equation when adjusted to reference the 2009 Honeywell-Metropolis estimate can be expressed as follows:

$$\text{Estimated Cost (2009)} = [\text{2006 Cost}] [AL_x + BE_x + CB_x]$$

where A, B, and C are the fractions of the total 2006 Honeywell-Metropolis dollar costs that are attributable to labor, energy, and burial, respectively, and sum to 1.0. The Honeywell-Metropolis values for these fractions are given below:

$$A = 0.297$$

$$B = 0.006$$

$$C = 0.697$$

The factors L_x , E_x , and B_x are defined by:

$$L_x = \text{Labor Cost Adjustment, May 2006 to the re-estimate month of 2009,}$$

$$E_x = \text{Energy Cost Adjustment, May 2006 to the re-estimate month of 2009, and}$$

$$B_x = \text{LLW Burial/Disposition Cost Adjustment, May 2006 to the re-estimate month of 2009, (i.e., burial/disposition cost in the new estimate month of 2009 divided by the burial cost in May 2006)}$$

Licensees are to evaluate L_x and E_x for the years subsequent to 1986 based on the national producer price indexes, national consumer price indexes, and on local conditions for a given site (NUREG-1307, Rev. 13). For the Metropolis plant, the estimates will be adjusted based on the indexes for 2009.

Calculation of the Honeywell-Metropolis factors are detailed in the following sections.

Calculation of Honeywell Labor Cost Adjustment Factor L_x

Current employment cost indexes for labor can be obtained from the U.S. Department of Labor, Bureau of Labor Statistics. On the internet select the BLS website at www.bls.gov. Select "Pay & Benefits", next select "National Compensation Data", then select "Occupational Wages", next select the database "Employment Cost Index" one screen data search.

To generate the correct report select the following options for the report: (1) Total Compensation, (2) Private Industry, (3) Index Number, (4) 220 South Region (5) Not seasonally adjusted. Then click the get data button. The report extracts the data presented below.

Series Id: CIU2010000000220I (B) Not Seasonally Adjusted Compensation: Total compensation sector: Private industry Periodicity: Index number Industryocc: South					
Year	Qtr1	Qtr2	Qtr3	Qtr4	Annual
2001	86.4	87.2	88.1	88.7	
2002	89.5	90.5	91.2	91.2	
2003	92.0	92.7	93.6	93.9	
2004	95.2	96.2	97.1	97.7	
2005	98.9	99.3	99.7	100.0	
2006	101.0	101.6	102.8	103.5	
2007	104.3	105.3	106.1	106.7	
2008	107.8	108.5	109.1	109.3	
2009	109.8	110.1			
B : Includes wages, salaries, and employer costs for employee benefits.					

In the period between the 2006 Report and the 2009 Report, data from this website has been re-formatted. The index has been rebased to December 2005 = 100. The 2006 Report used Q4, 2005 as the basis for calculating L_x. Therefore, Q4 2005 is the current baseline that is used to calculate L_x for the 2009 report. The Labor adjustment factor calculation is shown below.

LABOR ADJUSTMENT FACTOR CALCULATION		
Base Year (Q4, 2005) Labor Index	Estimate Year (2009) (Q2, 2009) Labor Index	Honeywell L _x (Estimate Year/Base Year)
100.0	110.1	1.101

Calculation of Honeywell Energy Cost Adjustment Factor E_x

The adjustment factor for energy, E_x , is a weighted average of two components, namely, industrial electric power, P_x , and light fuel oil, F_x . For Honeywell E_x is given by:

$$E_x (\text{PWR}) = 0.5P_x + 0.5F_x$$

At Honeywell the PWR energy fractions were based on equal use of electric power and natural gas. The current values of P_x and F_x are calculated from the Producer Price Indexes (PPI), available in the "PPI Detailed Report", published by the U.S. Department of Labor, Bureau of Labor Statistics. On the internet select the BLS website at www.bls.gov. Select "Inflation and Prices", next select "Producer Price Indexes", then select the database "Commodity Data" one screen data search. To generate the report for industrial electric power select the following options: (1) "05 Fuels and Related Products & Power", (2) "0543 Industrial Electric Power" (3) Not seasonally adjusted. Then click the get data button.

To generate the report for natural gas select the following options for the report: (1) "05 Fuels and Related Products & Power", (2) "0531 "Natural Gas" (3) Not seasonally adjusted. Then click the get data button.

The report provides the data shown below after the report is modified to give annual data only.

Series Id: WPU0543	
Not Seasonally Adjusted	
Group: Fuels and related products and power	
Item: Industrial electric power	
Base Date: 198200	
Year	Annual
1999	128.9
2000	131.5
2001	141.1
2002	139.9
2003	145.8
2004	147.2
2005	156.2
2006	172.8
2007	180.4
2008	189.1

Series Id: WPU0531	
Not Seasonally Adjusted	
Group: Fuels and related products and power	
Item: Natural gas	
Base Date: 198200	
Year	Annual
1999	91.2
2000	155.5
2001	171.8
2002	122.5
2003	214.5
2004	245.9
2005	335.4
2006	280.3
2007	273.8
2008	344.0

ENERGY ADJUSTMENT FACTOR CALCULATION					
Base Year (2005) Power Index	Estimate Year (2009) (2008 Annual Power Index)	P _x (2009)	Base Year (2005) Fuel Index	Estimate Year (2009) (2008 Annual Fuel Index)	F _x (2009)
156.2	189.1	1.211	335.4	344.0	1.026

$$E_x = 0.5P_x + 0.5F_x$$

$$E_x = 0.5 (1.211) + 0.5 (1.026), \text{ or}$$

$$E_x = 1.119$$

Calculation of Waste Burial Cost Adjustment Factor B_x

The adjustment factors for waste burial/disposition B_x, were calculated based on data are taken directly from data on the appropriate LLW locations given in Table 2.1 of NUREG-1307.

At Honeywell waste will be sent to an (1) offsite waste processor, (2) the EnergySolutions of Utah Burial site. The adjustment factor for waste burial/disposition B_x, is a weighted average of these three components. For the Honeywell, B_x is given by:

$$B_x (\text{HON}) = D \cdot WP_x + E \cdot \text{BARN}_x + F \cdot \text{ENV}_x$$

where D, E, and F are the fractions of the total 2006 waste dollar costs that are attributable to (1) an offsite waste processor, (2) Barnwell South Carolina burial site, and (3) Energy Solution of Utah Burial site respectively, and sum to 1.0. These values are:

$$D = 0.322$$

$$E = 0.000$$

$$F = 0.678$$

WP_x Factor Calculation

The adjustment factor for Waste Processors, WP_x, is calculated from extrapolated data given in Table 2.1 of NUREG-1307 for Direct Disposal with Vendors at U.S. Ecology from a PWR for the estimate year 2009 divided by the adjustment factor for the Base Year 2006. However, waste processors do not publish rate schedules. Rates are negotiated with each waste shipper based on current burial site rates and waste processor labor rates. The attached chart "Direct Disposal with Vendors PWR Table 2.1 from NUREG-1307 Revision 13" plots the data and calculates a trendline equation as follows:

$$y = 0.008x - 11.433$$

Where y is the adjustment factor for a selected year and x is the year. For example, y computes a value of 4.639 for year 2009. The waste processor factor for Honeywell assuming a base year of 2006 and estimate year of 2009 is given by:

$$WP_{2009} = y_{2009}/y_{2006}$$

Using the trendline equation $y = 0.008x - 11.433$, the values of y_{2009} and y_{2006} are 4.639 and 4.615. The computed value of WP₂₀₁₂ is $(4.639 / 4.615)$, or 1.005.

BARN_x Factor

The adjustment factor for Barnwell South Carolina burial site, BARN_x, is 0. Since Barnwell has closed and is not available outside the Atlantic Compact, Table 2.1 of NUREG-1307 for Direct Disposal from a Non-Atlantic Compact PWR is N/A. Therefore, this value is 0.

ENV_x Factor Calculation

The adjustment factor for EnergySolutions of Utah, ENV_x, is calculated from extrapolated data given in Table 2.1 of NUREG-1307 for Direct Disposal for Washington Site from a PWR for the estimate year 2009 divided by the adjustment factor for the Base Year 2006. EnergySolutions of Utah does not publish a rate schedule. Rates are negotiated with each waste shipper based primarily on waste volume. The attached chart "Direct Disposal PWR Table 2.1 from NUREG-1307 Revisions 11 and 13" plots the data and calculates a trendline equation as follows:

$$y = 0.4347x - 865.47$$

Where y is the adjustment factor for a selected year and x is the year. For example, y computes a value of 7.842 for year 2009. The waste burial/disposition factor for Honeywell assuming a base year of 2006 and estimate year of 2009 is given by:

$$ENV_{2009} = y_{2009}/y_{2006}$$

Using the trendline equation $y = 0.4347x - 865.47$, the values of y_{2009} and y_{2006} are 7.842 and 6.538. The computed value of ENV_{2009} is $(7.842 / 6.538)$, or 1.199.

B_x Calculation

The B_x factor equation for the year 2009 is as follows:

$$B_{2009} \text{ (HON)} = D*WP_{2009} + E*BARN_{2009} + F*ENV_{2009}, \text{ or}$$

$$B_{2009} \text{ (HON)} = (0.322)(1.005) + 0 + (0.678)(1.199), \text{ or}$$

$$B_{2009} \text{ (HON)} = 1.137$$

2009 Escalation Factor Calculation

As described in NUREG-1307 Revision 13, the adjustment of the total decommissioning cost estimate can be expressed by:

$$\text{Escalation Factor for Year 2009} = [AL_{2009} + BE_{2009} + CB_{2009}]$$

Portions of the 2006 Decommissioning Cost Estimate were not re-estimated for the 2009 Report. For those costs, a specific cost escalation factor was calculated and applied. The adjustment factor computation used factors listed below that are detailed in the previous sections.

$$A = 0.297$$

$$B = 0.006$$

$$C = 0.697$$

$$L_{2009} = 1.101$$

$$E_{2009} = 1.119$$

$$B_{2009} = 1.137$$

The 2009 escalation factor calculation is:

$$\text{2009 Escalation Factor} = (0.297)(1.101) + (0.006)(1.119) + (0.697)(1.137), \text{ or}$$

$$\text{2009 Escalation Factor} = 0.327 + 0.007 + 0.792$$

$$\text{2009 Escalation Factor} = 1.126$$

