CLOSURE PLAN

FOR

Superior Special Services, Inc.'s
Mercury Reclamation, Recovery and Storage Facility
4972 Woodville Highway
Tallahassee, FL 32311

Prepared: October 1994
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LIST OF EXHIBITS

1. INTRODUCTION

Superior Special Services, Inc. operates a mercury reclamation/recovery/storage facility for mercury-containing lamps and devices at 4972 Woodville Highway (Building No. 2) in Tallahassee, Florida. The building consists of the following: an office, a conference room, a break room, locker rooms; a lavatory; a receiving and staging area; a storage area; a distiller room and a crusher-separator room. This closure plan was written to comply with 40 CFR Part 264.112.

2. MAXIMUM INVENTORY OF ON-SITE HAZARDOUS WASTE

2.1 Mercury Reclamation - Recovery Activities

Table 1 summarizes the maximum inventory of hazardous waste, which could be on-site during facility operations associated with mercury reclamation-recovery activities. There is sufficient space to receive and store approximately 100,000 mercury-containing lamps (i.e., fluorescent and high intensity discharge lamps). Superior Special Services, Inc. typically processes all fluorescent and HID lamps as soon as possible upon receipt at the loading dock.

Superior Special Services, Inc. periodically vacuums floors in the processing and administrative rooms; these activities generate waste water. Condensate is also periodically generated depending on the humidity and temperature. This liquid waste water which has tested as hazardous with regard to mercury has been collected by Safety Kleen and transported to one of their permitted facilities.

On occasion, it is possible to produce a backlog of unprocessed powder and house mercury-containing devices. Any unprocessed powder or mercury-containing devices would: either be placed into Superior Special Services distiller before closure activities would commence, be transported to a sister facility or outside facility for treatment.

Some of Superior Special Services customers crush their own lamps on-site and either transport them directly to Superior Special Services or arrange to have them delivered to the company. Those pre-crushed lamps would be processed by Superior Special Services also.

2.2 Universal Waste Handler Activities

Table 2 summarizes the expected maximum inventory of recyclable items which could be stored on-site in association with our universal waste handler activities. Designated space at the facility is used to house universal wastes which are not going to be processed on-site.

Table 1
Maximum Inventory of On-Site Hazardous Waste Associated With Mercury Reclamation/Recovery Activities

Waste Type	Estimated Maximum Quantity On-Site	Management Method
Whole Fluorescent Lamps	60,000	Crushed, Separated and Distilled
High Intensity Discharge Lamps	4,000	Broken, Separated and Distilled
Unprocessed powder, HID Capsules, Mercury devices and other mercury containing wastes	60 55-Gallon Drums(1)	Managed by a Recycler

Table 2
Maximum Inventory of On-Site Items Associated With Universal Waste Handler Activities

Waste Type	Estimated Maximum Quantity On-Site	Management Method
Batteries which do not contain mercury	30 55-Gallon Drums	Managed by a recycler
Lamp Ballasts/transformers/ capacitors	20 55-Gallon Drums	Landfilled in an out of State Permitted Facility
Misc. Electronics	25 Gaylord Boxes	Transported to an in-state recycler

(1) Superior Special Services estimates housing 60 55-gallon drums. Based on current inventory levels the composition of the 60 drums will consist of 45 drums of unprocessed powder, 10 drums of HID capsules and 5 drums of mercury devices.

Note: The actual quantity of hazardous waste (e.g., unprocessed powder and HID capsules) drums and drums of mercury-containing devices will vary depending on business. The combined total number of drums will not exceed 60 55-gallon drums.

3. CLOSURE SCHEDULE

Figure 1 illustrates a closure schedule for Superior Special Services, Inc.'s mercury reclamation, recovery and storage facility. The schedule reflects each of the tasks described in the section titled Detailed Description of Decontamination Activities. It is anticipated the pre-decontamination activities could be completed within five working days. Decontamination activities are expected to require an additional 50 working days to complete.

4. DETAILED DESCRIPTION OF DECONTAMINATION ACTIVITIES

Decontamination activities at Superior Special Services, Inc.'s facility consist of pre-decontamination, decontamination and post-decontamination related tasks. All tasks will be conducted by a third party. In the event of closure, the recycling (e.g., crusher, separator and distiller) equipment and pollution control equipment (i.e., carbon filters, HEPA filter and baghouse filter) will be removed by Superior Special Services, Inc. They will be dismantled before third party pre-decontamination activities and transported to a new location. The equipment would certainly be operable and would have a value on the open market. The equipment is considered an asset by Superior Special Services, Inc.'s bank.

4.1 Pre-Decontamination Activities

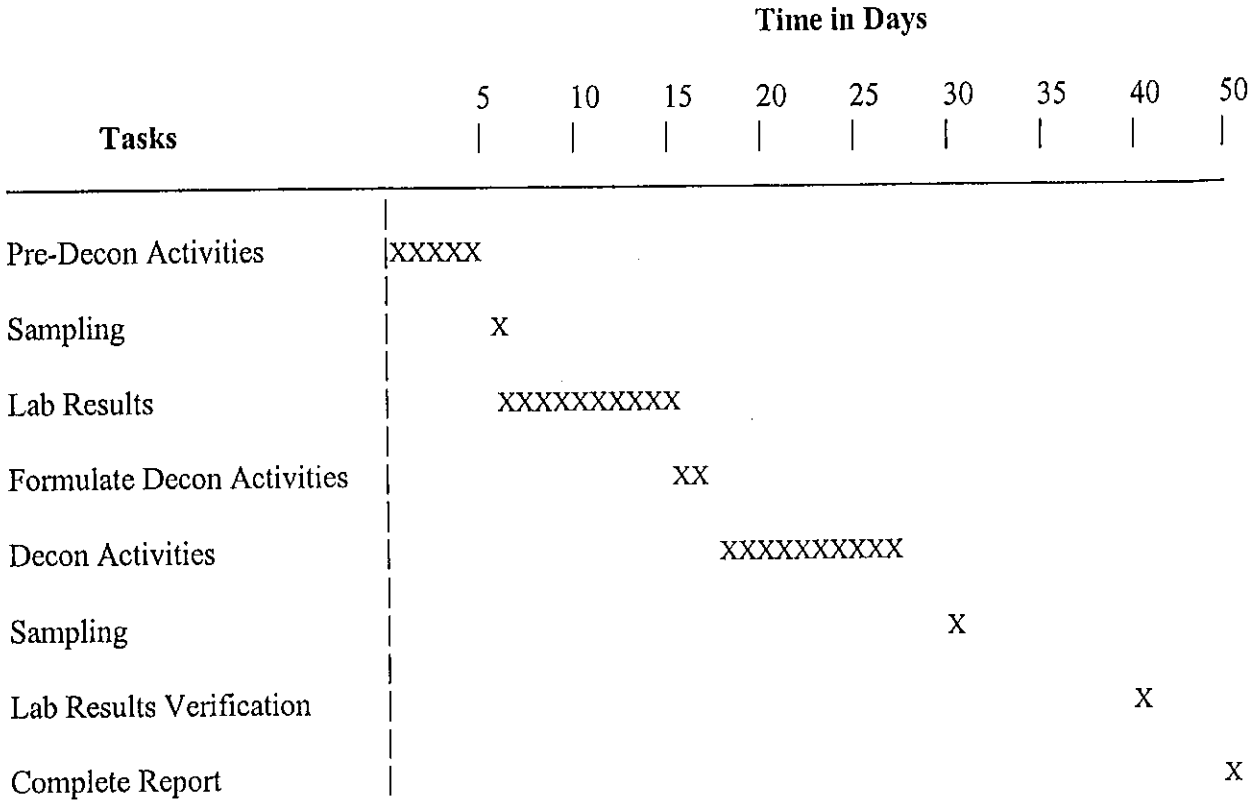
A contractor would schedule and arrange for all on-site recovered materials (e.g., glass, corrugated cardboard, aluminum, brass and powder) to be transported to local end markets. The contractor would contact DEP's Northwest District to obtain the confidential list of Superior Special Services' recovered material markets. Representatives from seven different companies would be contacted to arrange for the collection of crushed glass, metal, liquid mercury, powder, baled corrugated boxes, wooden pallets and empty drums. All containers (e.g., corrugated boxed and drums) would be dusted to remove surface dust. Then, contractor personnel would thoroughly sweep surface dust and glass from floors, and other readily accessible surfaces within the building. Level"D" (work uniform and a dust mask) personal protective equipment would be required for this cleaning. Personal protective clothing such as dust masks and cleaning rags will be placed into a 5-gallon bucket. Collected debris (i.e., dirt, dust and glass) will be collected and placed into a 55-gallon drum.

4.2 Decontamination Activities

Decontamination of Superior Special Services, Inc.'s facility consists of three principal steps. The first step involves determining the extent, if any, of mercury and cadmium contamination. The second step reflects cleaning the exterior surface of all equipment and accessible surfaces (i.e., floors, walls and ceilings). The last step involves verifying that the cleaning activities completed in step two were successful.

Figure 1

Closure Schedule



Phase I - Contamination Evaluation

The current level of mercury and cadmium contamination (if any) in the buildings is not known. The objective of this phase is to sample and analyze representative surfaces for mercury and cadmium. It is anticipated that mercury and cadmium samples will be collected from 32 locations in the reclamation/recovery building. Twelve will be collected in the processing area, eight from the office area and another 12 throughout the building. Twelve wipe samples will be taken from the storage building. Seven shallow soil samples will also be collected and analyzed for mercury to determine if the loading dock area and glass roll-off area were affected. The analytical results will provide information on the degree (if any) of mercury and cadmium contamination at the building. This sampling is also important to ensure that the decontamination efforts proceed from more contaminated to less contaminated areas.

Phase II - Facility Decontamination

Decontamination of Superior Special Services, Inc.'s building will be performed by the following procedures:

- Remove mercury and cadmium contamination from all accessible surfaces using a high efficiency mercury vacuum and cold power washing.
- Clean walls, ceiling beams, floor and equipment.
- Collect all cleaning fluids and rinsate.
- Containerize and segregate waste materials from clean-up activities (e.g., solids, liquid, cleaning materials and personal protective equipment); and
- Sample waste materials and manage appropriately.

Phase III - Decontamination Verification

The objective of this phase is to sample and analyze representative surfaces in order to determine that decontamination activities have removed mercury and cadmium to target clean-up concentrations. Surface sample analytical results will provide documentation of successful facility decontamination. It is anticipated that 32 samples for mercury and cadmium will be collected for analysis. In addition, two or three waste stream samples will likely be collected and analyzed for disposal purposes.

4.3 Post-Decontamination Activities

For purposes of this plan, these activities focus on the quantity and disposition of clean-up residue. It is estimated that clean-up activities may generate four to eight 55-gallon drums of waste (i.e., rags, filters, personal protective equipment and water). As mentioned earlier, this material will be tested to determine the appropriate management practice.

5. CLOSURE PERFORMANCE STANDARDS

The Occupational Safety and Health Administration (OSHA), U.S. Environmental Protection Agency (EPA) and the Department of Housing and Urban Development (HUD) have no established allowable surface residue concentrations for cadmium and mercury. There is, however, a level established by the Department of Housing and Urban Development for lead at 500 micrograms (ug) per square foot. Superior Special Services, Inc.'s target clean up levels for cadmium and mercury regarding closure are set forth below. It is important to note that 500 ug/ft^2 is approximately equal to 50 $ug/100\ cm^2$

Substance	PEL[1] (mg/m3)	MCL[2] (mg/L)	Reference dose (RfD)[3]	Surface limit Existing	Surface limit Suggested	Rationale
Cadmium (Cd)	0.005	0.0005	0.0005 mg/kg/day (IRIS)[4]	NA	20 $ug/100\ cm^2$	Set at 40% of the Pb level based on higher toxicity lower PEL of cadmium. Exposure according to scenario is 12% of RfD.
Mercury (Hg)	0.1	0.002	none established	NA	20 $ug/100\ cm^2$	Set at 40% of the Pb level based on the similarity of the MCL value to that of cadmium, even though PEL is the same as Pb.

1 The PEL (Permissible Exposure Limit) is set by the Occupational Safety and Health Administration (OSHA) and represents the highest average airborne concentration to which employees may be legally exposed in a workplace exposure situation.

2 The MCL (Maximum Contaminant Level) is the water concentration set by the Environmental Protection Agency (EPA) to prevent health effects (among the public) associated with water consumption.

3 The reference dose (RfD) is the highest daily dose of a chemical such that chronic, noncarcinogenic health effects are not expected among the general population. Doses exceeding 100% of the RfD would not be acceptable.

4 IRIS is the U. S. Environmental Protection Agency Integrated Risk Information Service toxicity database.

6. COST ESTIMATE FOR FACILITY CLOSURE

The closure cost estimate is based on costs that Superior Special Services, Inc. would incur by selecting and hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. Detailed written facility closure estimates for Superior Special Services, Inc. are presented in Table 3. Closure costs are expressed in mid 2001 dollars.

7. PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

Superior Special Services, Inc. has always maintained stringent operating practices. We strongly believe that the detailed decontamination procedures described in this Closure Plan ensure that the facility will not pose a threat to human health and the environment. Closure or decontamination procedures at Superior Special Services, Inc. will minimize exposure to hazardous constituents resulting in the protection of human health and the environment.

8. EXPECTED YEAR OF CLOSURE

It is not possible to predict an expected year of closure for Superior Special Services, Inc. is recycling facility. Closure of the facility would likely occur for one of the following reasons. One, Superior Special Services, Inc. decides to terminate the Florida operation. Two, Superior Special Services, Inc. business continues to grow and it must move to a larger building. Three, another company acquires the firm and decides to relocate the operation.

9. CLOSURE ACTIVITIES

Superior Special Services, Inc. will notify DEP staff of all closure related activities.

10. AMENDMENT OF PLAN

Superior Special Services, Inc. will comply with the provisions of 40 CFR Part 264.112 (c)

11. NOTIFICATION OF FINAL CLOSURE

Superior Special Services, Inc. will comply with the provisions of 40 CFR Part 264.112 (d).

Table 3
Facility Closure Cost Estimate

Tasks	Estimated Cost ($)
Pre-Decontamination Activities	
Labor-Dusting/Sweeping [1]	$ 160
Project Management [2]	$ 130
Shipping/Material Management	
Glass [3]	$ 300
Al End Caps [4]	$ 0
Liquid Hg [5]	$ 0
Powder [6]	$ 3,500
Corrugated Bales [4]	$ 0
Pallets [7]	$ 100
Empty Drums [8]	$ 0
Processing Equipment [9]	$ 500
Subtotal	$ 4,690
Phase I: Contamination Evaluation	
Wipe Sampling [10]	$ 88
Lab Analysis [11]	$ 1,280
Soil Sampling [12]	$ 360
Project Management [13]	$ 150
Subtotal	$ 1,878
Phase II: Decontamination Activities	
Labor [14]	$ 6,400
PPE [15]	$ 1,500
Lodging/Meals [16]	$ 1,500
Service Vehicle [17]	$ 1,004
Equipment [18]	$ 2,350
Miscellaneous [19]	$ 400
Project Management/Closure Certification [20]	$ 1,440
Subtotal	$ 14,594
Phase III: Decontamination Verification	
Wipe Sampling [10]	$ 88
Lab Analysis [21]	$ 1,280
Project Management/Report [22]	$ 150
Subtotal	$ 1,518
Residue Management for Decon Activities [23]	$ 3,195
On-Site Inventory Management	
Fluorescent Lamps [24]	$ 10,200
HID Lamps [25]	$ 2,600
Unprocessed Powder/Mercury Containing Waste Items [27]	$ 24,705
Fluorescent Lamp Ballasts [29]	$ 5,250
Misc. Electronics [30]	$ 4,150
Engineering/Management [31]	$ 2,880
Subtotal	$ 52980
Total	$ 75660
Contingency [32]	$ 3,783
Grand Total	$ 79,443

Assumptions:

(1) Reflects 4 hours (technician) @ $40/hour

Source: ACT

(2) Reflects 2 hours @ $65/hour

Source: ACT

(3) Reflects $60 per rolloff and five rolloffs

Source: Marpan Supply, Inc.

(4) Local vendor would not charge to collect material.

(5) Reflects shipping approximately 2,000 pounds of liquid mercury to market in Pennsylvania. Revenue will be derived after accounting for transportation costs.

(6) Reflects hauling and recycling fee @ $35/drum; maximum inventory at 100

(7) Reflects hauling pallets to Leon County Landfill

Source: Tip fee at landfill plus trucking cost.

(8) Local vendor would not charge to collect material.

(9) Source: Local trucking company.

(10) Reflects staff time, automobile charge, mileage and containers.

Field Technician $40/hour @ 1.5 hours = $60

Mileage 20 Miles @ $0.40/mile = $8

Containers $20

Source: SL & ES

(11) Reflects 32 Locations @ $40/location = $1,280

1 Hg Test = $30
1 Cd Test = $10

Source: SL & ES

(12) Reflects staff time plus analytical testing. This activity would be completed at the same time as footnote #11.

Sampling Fee @ $50

Analytical Fee @ $40/sample for Hg total for 7 samples and 1 blank @ $30 = $310

Source: SL & ES

(13) Reflects $150 for Senior Staff

Source: SL & ES

(14) Reflects 2 technicians at $40/hour for 10 days

$40/hour Source: American Compliance Technologies (ACT)

Source: Superior Special Services, Inc. staff experience closing out facilities in Minnesota, and Florida.

(15) Reflects $75/day/person for 10 days for 2 people; EPA Level "C"

Source: ACT

(16) Reflects $75/day/person for 10 days for 2 people

Source: ACT.

(17) Reflects a field vehicle @ $85/day for 10 days and 440 miles @ $0.35/mile

Source: ACT

(18) Reflects pressure washer and wet/dry vacuum at $125/day for 10 days Source: ACT

Reflects scissor lift for 10 days @ $110/day Source: Erickson Forklift

(19) Reflects containers, drums, labels and rags

Source: ACT

(20) Reflects ~16 hours of senior staff person (i.e., a P.E.) at $90/hour

Source: ACT

(21) Reflects 32 locations @ $40/location

Source: SL & ES

(22) Reflects 2 hours @ $75/hour

Source: SL & ES

(23) Reflects 15 55-gallon drums of rinsate (i.e., wash water) at $193 per drum and 1 55-gallon drum of solid material (e.g., dust, glass, rags and PPE) hauled outstate and managed by a TSDF.

Total cost = $3,195

(24) Reflects 60,000 fluorescent lamps in storage and reclamation buildings hauled within the state and recycled by a lamp recycler.

Cost base on: 60,000 lamps @ $0.17/lamp recycling fee plus transportation = $10,200.

Source: In-State Recycler.

(25) Reflects 4,000 HID lamps in storage and reclamation buildings hauled within the state and recycled by a lamp recycler.

Cost based on: 4,000 lamps @ $0.65/lamp recycling fee plus transportation = $2,600.

Source: In-State Recycler

(27) Reflects 45 drums of unprocessed powder, 10 drums of HID capsules and 5 drums of mercury-containing waste hauled out of state and managed by a recycler.

Costs based on a quotation received from Mercury Waste Solutions, Union Grove, WI.

(29) Reflects 20 55-gallon drums transported to an out of state recycler at $0.35/lb and 750 lbs/drum.

(30) Reflects 25 gaylord boxes at $166 per box including freight.

(31) Estimated at $2,880 equal to $90/hour @ 32 hours. This cost item plus project management/closure certification equals $4,320.

(32) Estimated at ~ 5% of $75,660.