MERCURY OVERPACKING AT SOMERVILLE, NEW JERSEY

ENVIRONMENTAL ASSESSMENT

May 2001

Defense Logistics Agency
Defense National Stockpile Center
Fort Belvoir, Virginia

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GLOSSARY

ambient Surrounding. For example, *ambient* air is usually outdoor air, as distinguished from indoor air.

aquifer A saturated geologic unit through which significant quantities of water can migrate under natural hydraulic gradients.

aquitard A less permeable geologic unit in a stratigraphic sequence. Aquitards separate aquifers.

concentration The amount of one substance dissolved or contained in a given amount of another.

contaminant Any substance or material that enters a system (the environment, human body, food, etc.) where it is not normally found.

cultural resources Archaeological sites, architectural features, traditional-use areas, and Native American sacred sites.

decibel A logarithmic unit of sound measurement that describes the magnitude or particular quantity of sound pressure or power with respect to a standard reference value. In general, a sound doubles in loudness with every increase of 10 decibels.

drainage basin An aboveground area of the Earth's surface that supplies the water to a particular stream.

emission One or more substances released to the water, air or soil in the natural environment.

environmental impact Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

exposure Contact with a chemical by swallowing, by breathing, or by direct contact (such as through the skin or eyes). *Exposure* may be short term (acute) or long term (chronic).

floodplain The lowlands adjoining inland and coastal waters and relatively flat areas, including, at a minimum, that area inundated by a one percent or greater-chance flood in any given year.

formation In geology, the primary unit of formal stratigraphic mapping or description. Most formations possess certain distinctive features.

hazardous waste According to the Resource Conservation and Recovery Act, a solid waste that, because of its characteristics, may (1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or (2) pose a substantial hazard to human health of the environment when improperly treated, stored, transported, disposed or, or otherwise managed. Hazardous wastes appear on special U.S. Environmental Protection Agency lists and possess at least one of the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

historic resources Archaeological sites, architectural structures, and objects dating from 1492 or later, after the arrival of the first Europeans to the Americas.

infrastructure The basic facilities, services and installations needed to support a plant or site, such as transportation and communication systems.

National Environmental Policy Act of 1969 An act constituting the basic national charter for protection of the environment. The Act calls for the preparation of an environmental impact statement for every major Federal action that may significantly affect the quality of the human or natural environment. Its main purpose is to provide environmental information to decision makers so that their actions are based on an understanding of the potential environmental consequences of a proposed action and the reasonable alternatives.

noise Any sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying (unwanted sound).

outfall The discharge point of a drain, sewer or pipe as it empties into a body of water.

prehistoric Predating written history.

recycling The process of re-using material for the production of new goods or services on the same quality level.

runoff The portion of rainfall, melted snow or irrigation water that flows across the ground surface and eventually enters streams.

viewshed The extent of the area that may be viewed from a particular location. Viewsheds are generally bounded by topographic features such as hills or mountains.

Visual Resource Management Class Any of the classifications of visual resources established through application of the Visual Resource Management process of the U.S. Bureau of Land Management. Four classifications are employed to describe different degrees of modification to landscape elements:

Class I: Areas where the natural landscape is preserved, including national wilderness areas and the wild sections of national wild and scenic rivers.

Class II: Areas with very limited land development activity, resulting in visual contrasts that are seen but do not attract attention.

Class III: Areas in which development may attract attention, but the natural landscape still dominates.

Class IV: Areas in which development activities may dominate the view and may be the major focus in the landscape.

visual resources Natural and cultural features by which the appearance of a particular landscape is defined.

waste An output with no marketable value that is discharged to the environment. Normally the term *waste* refers to solid or liquid materials.

wastewater Water originating from human sanitary water use (domestic wastewater) and from a variety of industrial processes (industrial wastewater).

water table The boundary between the unsaturated zone and the deeper saturated zone. The upper surface of an unconfined aquifer.

wetland Land areas exhibiting hydric soil conditions, saturated or inundated solid during some portion of the year, and plant species tolerant of such conditions.

1.0 NEED FOR PROPOSED ACTION

This section provides background on the Defense National Stockpile Center's Somerville, New Jersey, Depot, and discusses the purpose and need for the proposed action, briefly lists the alternatives analyzed, and describes the relationship to other agency actions.

1.1 Purpose and Need

Under authority delegated by the Secretary of Defense under the Strategic and Critical Materials Stock Piling Act of 1939, as amended (50 U.S.C. §98 *et seq*.), the Defense National Stockpile Center (DNSC), a subordinate command of the Defense Logistics Agency (DLA), is responsible for all activities necessary to provide safe, secure, and environmentally sound stewardship for all commodities in the National Defense Stockpile. DNSC is also responsible for the disposition of stockpiled items declared excess to national defense needs and authorized for sale.

Specific to this particular Environmental Assessment (EA), DNSC is responsible for the management of stocks of certain critical and strategic materials as determined by Congress. Mercury is one of these materials. Mercury is stored in cast iron or steel flasks (76 pounds (34 kilograms) of mercury per flask) at three DLA/DNSC Depots located in New Haven, Indiana; Warren, Ohio; and Somerville, New Jersey; and in the Department of Energy's Y-12 National Security Complex located in Oak Ridge, Tennessee. Mercury is stored and inspected in accordance with DNSC requirements as required by the Defense National Stockpile Operations Manual (DNSC4145.1, September 27, 2000; revised March 29, 2001); the Defense National Stockpile Quality Assurance Manual (DNSC 8200.9, January 9, 1998), and other guidance and directives applicable to the storage of mercury. The DNSC health and safety guidelines for mercury (DNSC 1997) ensure that worker exposure is limited.

At the Somerville stockpile site (DNSC's highest volume mercury stockpile location, with 2,615 metric tons), the 75,877 mercury-containing steel flasks are stored on wooden pallets in rows of up to three pallets in height. Metal drip pans are located under each stack of pallets. Mercury

contamination has been observed on the outside of some containers. The current storage facilities are in warehouses with concrete floor slab separated by asphaltic expansion joints with solid block wall construction, ceiling air vents, and multiple points of entry and exit through secure doors. Each building is equipped with a dry-pipe (water supply) fire suppression system as well as emergency response equipment. There are no floor drains through which leaked or spilled materials may escape to the environment. The floors have been sealed with a leak-proof polyurea elastomeric surfacing system, which will not allow penetration by mercury. This coating is a high tensile strength, seamless, and flexible system which forms an impervious water-proof surface. Prior to the installation of the coating, the floors were prepared by sandblasting to remove any loose concrete, and cracks and expansion joints were filled with silicon.

The mercury-containing flasks meet the U.S. Department of Transportation's mercury-specific requirements for transportation other than by aircraft. 49 C.F.R. §173.164(d)(2). The proposed overpacking (see Section 1.2 below) of the flasks into steel drums will meet the U.S. Department of Transportation's mercury specific requirements for shipment by highway. 49 C.F.R. §173.164(a).

1.2 Proposed Action

The proposed action is to place (overpack) the mercury-containing flasks into steel drums. A No Action Alternative has also been assessed pursuant to the requirements of NEPA and to provide a baseline for comparison of potential impacts.

1.3 Relationship to Other Actions

DNSC voluntarily discontinued mercury sales in 1994 due to concerns raised by the United States Environmental Protection Agency (EPA). In 1997, DNSC initiated an EA to support its consideration of the options for the future management of the stockpiled mercury. DNSC later determined that an environmental impact statement (EIS) was more appropriate under the National Environment Policy Act (NEPA) and halted that EA.

The process for completion of a Mercury Management EIS is currently underway. The "Notice of Intent to Prepare a

Draft Programmatic Environmental Impact Statement for the Long Term Management of the National Defense Stockpile Inventory of Excess Mercury" was published on February 5, 2001, at 66 Federal Register 8947. The EIS will evaluate a range of reasonable alternatives for management of the entire DNSC mercury stockpile, including whether the mercury should continue to be stored at its present locations; stored at fewer locations or at a single location; treated and stored or treated and disposed of; and sold, or sold with restrictions.

Overpacking the flasks into steel drums would be an interim operational action, providing additional assurance that the mercury stored at the Somerville Depot is suitable for continued safe storage there or for transportation elsewhere. DNSC's operation of all of its Depots includes implementation of a range of actions to ensure safe operation. The overpacking of the mercury flasks into drums would not prejudice the outcome of the EIS.

2.0 ALTERNATIVES CONSIDERED

This Section provides a description of the proposed action and no action alternatives. As described in Section 1.3, the proposed action is to transfer the flasks of mercury stored at the Somerville Depot into steel drums. The Alternative considered is No Action.

2.1 No Action

Under the No Action Alternative, the mercury would continue to be stored at the Somerville Depot in flasks on pallets, with no further overpacking of the flasks pending completion of the EIS. DNSC and its predecessor agencies have stored mercury for over forty years with no impact on the environment. Under the No Action Alternative, the mercury would remain generally undisturbed in sealed flasks inside locked warehouses. The condition of the stockpile would be monitored in accordance with DNSC mercury storage area inspection procedures. Inspections will be conducted by trained Quality Assurance personnel and include both visual examinations and ambient air monitoring using state-of-the-art equipment. If any leaks were detected, or if there was an abnormally high concentration of mercury vapor in the air in the warehouse as measured by a mercury vapor analyzer, appropriate action would be taken immediately. Each flask would be wiped clean using a mercury suppressant towlette that absorbs mercury vapors and decontaminates hard surfaces. The flask would be inspected and if required, would be transferred into a new container. Cleanup equipment, such as a mercury vacuum and mercury absorbent powder, and personal protective equipment is available in a cabinet nearby. No impacts to the environment, and low to negligible risks to workers and the general public, would be expected.

2.2 Overpack the Mercury-Filled Flasks into Steel Barrels

The overpacking process will begin with the exterior of each flask being vacuumed and then wiped with a mercury suppressant towlette that absorbs mercury vapors and decontaminates hard surfaces. These towlettes will be disposed of as hazardous waste by the Defense Reutilization and Marketing Service.

An eight-mil, round -bottomed, plastic drum liner will be placed into each drum. Six flasks will be placed into each drum. The flasks must be packed, secured and cushioned to prevent damage by controlling the flasks' movement within the drum and to provide absorption should leakage occur. DNSC will use a pre-cut absorbent mat as cushioning material on the bottom of the drums, and will use cardboard dividers inside the drums to separate the flasks and provide cushioning. Use of the cardboard dividers instead of wood dividers will alleviate the need for nails, staples or other metallic objects inside the drums.

DNSC will use thirty-gallon, removable head (i.e., lid) carbon steel drums constructed from sixteen-gauge steel. The drums will be lined with an epoxy-phenolic coating. Each drum lid will have a one-half inch round, sponge rubber O-ring (gasket) around its edge, which will provide a seal between the drum and its lid. A steel locking ring with bolt will compress the gasket to maintain the seal. Each lid will have a bung-hole with a leak-proof lid, which will permit sampling of the air inside the drum. The drums will be labeled in compliance with U.S. Department of Transportation and United Nations requirements, included orientation markings to ensure that the drums and the flasks remain upright. The drums will be placed on forty-eight inch square pallets, each pallet holding five drums. Each pallet will be placed on a drip pan. The pallets will provide cushioning designed to hold the drums without causing friction among the drums.

During the over-packing process, the following spill-prevention measures will be taken: pallet transfer containment pans will be used to prevent or minimize contamination of floors; secondary containment pans for the process lines will be used; containment booms will be available for use in the unlikely event of a large spill; and mercury monitors will be

present to detect any mercury vapors. All personnel will be hazardous waste operator (HAZWOPER) trained.

The palleted drums will be relocated to warehouse bays specifically designed and dedicated to mercury storage in which the upgraded flooring described above in Section 1.1 and upgraded sprinkler systems have been installed. It is anticipated that the mercury will remain in these warehouse bays pending the decision regarding the long-term management of DOD's mercury to be reached in the EIS process described above in Section 1.3. Inspections will be conducted by trained Quality Assurance personnel and include both visual examinations and ambient air monitoring using state-of-the-art equipment.

3.0 AFFECTED ENVIRONMENT

This section describes the Somerville Depot and its neighboring area. It describes the natural and human environment that could be affected by the proposed action or the No Action Alternative and provides the context for understanding the environmental consequences described in Section 4.0.

3.1 Somerville, New Jersey

The Somerville Depot consists of approximately 77 acres (31.2 hectares) of land owned by the Federal Government. The entrance to the Depot is through Veterans Administration property on the western side of Route 206 approximately 2.5 miles (4.0 kilometers (km)) south of Somerville, New Jersey (USACE 2000C:3-1). Figure 3–1 shows the location and boundaries of the Somerville Depot, and warehouses 3 and 4, in which mercury is stored. The Depot is bordered to the north by the approximately 3,000 acre (1,200 hectares) undeveloped Duke Estate and a firing range. Land to the west and south is a combination of residential and commercial development. A park and recreational area is present to the southeast of the Depot. Entrance to the Depot is controlled by a seven foot (2.1 meters) high barbed wire fence and security guards (USACE 2000C:3-4). There are fifteen permanent duty employees at the Depot (Lynch 2000).

3.1.1 Air Quality and Noise

The Somerville Depot is located in Somerset County in an area that is designated better than national standards for sulfur dioxide and better than national standards or unclassifiable for nitrous oxide. The area is in attainment for carbon monoxide. Under EPA's proposed rule change reinstating the 1-Hour Ozone Standard, the area is in severe nonattainment for ozone (EPA 1999A). The EPA has not assigned attainment status designation for Pb or PM_{10} (EPA 1999B).

There are no point source air emissions on the Depot, thus there are no required air permits (USACE 2000C). The only potential fugitive emission source is a stockpile of manganese. This stockpile is normally covered with a tarpaulin except during outloading operations, making

the potential for release to the air negligible (USACE, 1998B).

Noise associated with day to day activities around the Somerville Depot is confined to automobile and truck traffic and occasional forklift and loader operation. These noise sources are limited to the daytime during normal working hours. It is expected that for residences near the Depot, the ADNL from activities at the Depot is less than 55 dBA (decibel A-weighted) and is compatible with residential land use.

3.1.2 Waste Management

Sanitary wastewater, non-hazardous solid waste, and small quantities of hazardous waste are generated during routine maintenance and materials handling activities at the Somerville Depot. Sanitary wastewater is discharged to a sanitary leach field located south of a U.S. Postal Service warehouse adjacent to the Depot, (USACE 2000C:3-10). Non-hazardous solid waste, consisting of typical office garbage and maintenance wastes, are picked up by a commercial refuse collection company and disposed of at a Bridgewater Resources Incorporated landfill (Farley 2000).

The Depot is a conditionally exempt small quantity hazardous waste generator. Therefore, only small quantities of hazardous waste such as spent paints, cleaners, and solvents are routinely generated during Depot operations (USACE 2000C:3-5). Approximately 100 to 200 gallons (380 to 760 liters) of hazardous waste are generated each year. Hazardous wastes are accumulated on-site in accordance with Resource Conservation and Recovery Act requirements until trucked off the site by a commercial waste management collection company for recycling or treatment and disposal (Farley 2000).

3.1.3 Geology and Soils

The Somerville Depot overlays the Passaic Formation, which is a non-marine, fine-grained, thin-bedded, argillaceous shale, with siltstone beds and occasional beds of black, gray, greenish, or bluish shales. The Passaic Formation may be thicker than 800 feet (244 m) in the area of the Somerville Depot. The soils overlaying the bedrock are generally low-permeability silts and clays (USACE 1998B:3-1).

As part of a 1999 Site Investigation, twenty-six soil samples were collected from fourteen locations on the Depot. The results were compared to the New Jersey Department of Environmental Protection's (NJDEP) residential and non-residential soil cleanup criteria. Non-residential soil cleanup criteria are equivalent to or higher than the residential soil cleanup criteria. The concentration of barium surpassed the residential criterion, and the concentrations of lead and thallium surpassed the residential and non-residential criteria in a sample collected near the former incinerator (USACE 2000C:4-17). Concentrations of arsenic and zinc surpassed both residential and non-residential criteria in two samples (USACE 2000C:4-19), while concentrations of antimony, copper, and nickel surpassed residential criteria in one or more samples collected from various areas surveyed in the investigation (USACE 2000C:4-19). No elevated concentrations of mercury were detected in the soil samples.

3.1.4 Water Resources

3.1.4.1 Surface Water. The Somerville Depot is positioned on a surface water divide between two drainage basins. Surface water from the north drains through two stormwater outfalls to a tributary of Dukes Brook. Dukes Brook flows to the Raritan River about three miles downstream from the Depot. Surface water from the south drains to a tributary of Royce Brook. Royce Brook flows to the Millstone River about four miles downstream from the Depot. The Millstone River flows northward until it joins the Raritan River about five miles downstream of the Depot. The Raritan River flows eastward into Raritan Bay more than 20 miles (32 km) downstream of the Depot (USACE 1998B:3-6). There is no history of riverine or tidal flooding at the Somerville Depot (USACE 1998B:3-6). The nearest downstream surface water intake, about 5 miles (8 km) from the Depot on the Raritan River, is used by the Elizabethtown Water Company to supply drinking water (USACE 1998B:3-8). Potable water for the Depot is obtained through the Elizabethtown Water Company (USACE 1998B:2-4).

In December of 1995, samples were collected from the Depot's four stormwater outfalls. Data showed that antimony was discharged from the Depot through an outfall to a tributary of Royce Brook at concentrations exceeding the ambient water quality criterion. The pH level of this particular sample was outside the acceptable range for ambient

water quality (USACE 1998B:3-8). Sampling beginning in early 1997 has detected lead during one or more sampling event at three outfalls at concentrations exceeding the ambient water quality criterion of 0.005 micrograms per liter (mg/L). Chromium was also detected in another outfall sample collected during the same time period at concentrations exceeding the ambient water quality criterion (USACE 1998B:3-8).

More recently, as part of the 1999 Site Investigation, five surface water and sediment samples were collected from the four Depot stormwater outfalls. Sediment results were compared to soil background sample results and to low- and severe-effects levels, as related to impacts to aquatic life, according to State of New Jersey sediment guidance. Surface water results were compared to State of New Jersey Ambient Water Quality Criteria. At three outfalls, concentrations of six trace metals in sediment samples surpassed the severe effects levels, indicating that runoff from the Depot has probably impacted sediment at the on-site outfalls (USACE 2000C:4-31). The concentrations of four other trace metals in one or more samples surpassed the surface water quality criteria (USACE 2000C:4-32). No elevated concentrations of mercury were detected in the surface water samples.

3.1.4.2 Groundwater. The Passaic Formation is an extensive aquifer that underlies portions of 10 counties in an area of about 1,000 square miles (2,600 sq. km). The most populated and industrialized section of New Jersey is positioned directly over this aquifer. The aquifer comprises thin water bearing units and thick aquitards. Groundwater within the aquifer is under both water table and confined conditions (USACE 1998B:3-1). The aquifer discharges to wells and to major rivers. Depth to groundwater for municipal potable water production wells ranges from 150 to 200 feet (46 to 61 m) (USACE 1998B:3-2). Five public-supply wells, utilized by the City of Manville, are positioned about 2.5 miles (4 km) northeast of the Depot. These five wells range in depth from 206 feet to 340 feet (62.8 to 104 m). In 1990, the U.S. Census Bureau recorded the presence of 3,451 residential wells within 4 miles (6.4 km) of the Depot (USACE 1998B:3-5).

As part of the 1999 Site Investigation, the potential for downward migration of contaminants to groundwater was investigated by surveying subsurface soils and determining metals concentrations. Soils were sampled at depths of one to two feet (0.3 to 0.6 m), and compared to the surface and

subsurface metal concentrations. If subsurface metals concentrations were found to be substantially less than at the surface, then it could be assumed that downward travel of metals was inhibited (USACE 2000C:4-22). The subsurface soil sample concentrations were not found to be lower than the surface sample concentrations, and in six cases, subsurface concentrations were above both residential and non-residential regulatory soil criteria. Based on these six subsurface soil sample exceedances, it was recommended that the potential for groundwater impacts at the Depot be further investigated (USACE 2000C:4-26). No elevated concentrations of mercury were detected in the groundwater samples.

3.1.5 Ecological Resources

3.1.5.1 Nonsensitive Habitats and Species. The dominant forest types of the woodlands that are located north of the Somerville Depot include Appalachian oak, sugar maple-mixed hardwoods, hemlock-mixed hardwoods, and oak-chestnut. There are no woodlands within the perimeter of the Depot, which consists of mowed lawn, gravel, and pavement (Cash 1998C:8).

The woodlands provide habitat for wildlife such as the gray fox, raccoons, squirrels, wild turkeys, various birds, and waterfowl that have been observed passing through the Depot. Within the perimeter of the Depot, no known suitable habitat exists to support a viable population of animal species, despite incidental use by some wildlife (Cash 1998C:8).

3.1.5.2 Sensitive Habitats and Species. There are no wetland areas present at the Somerville Depot but several wetland areas are located within approximately 1,500 ft (457 m) of the Depot (Cash 1998C:8; USACE 2000C:4-29). As shown in Table 3–1, several State-listed species were identified as being located within a 2-mi (3.2-km) radius of the Depot. However, suitable habitat necessary to support endangered, threatened, or rare species does not exist within the perimeter fencing (Cash 1998C:8).

Table 3–1. Threatened and Endangered Species, Species of Concern, and Sensitive Species Occurring in the Vicinity of the Somerville Depot

Common Name	Scientific Name	Federal Status	State Status[a]
Amphibians and reptiles			
Wood turtle	*Lemmys insculpta*		ST
Birds			
Bobolink	*Dolichonyx oryzivorus*		ST
Grasshopper sparrow	*Ammodramus savannarum*		ST
Savannah sparrow	*Passerculus sandwichensis*		ST
Upland sandpiper	*Bartramia longicauda*		SE

[a] SE = endangered in New Jersey; ST = threatened in New Jersey.

Source: USACE 2000c

3.1.6 Cultural Resources

A pedestrian archeological survey was conducted on approximately three to five acres of undisturbed land on the Somerville Depot and no archeological material was found. Shovel testing was not warranted because the majority of the Depot has been leveled, paved, or covered with buildings or aggregate material. Subsurface testing was not conducted at the facility due to extensive ground disturbance, shallow soil depth, and lack of natural features that normally attract prehistoric settlement. Although the absence of nearby water features lessens the likelihood of prehistoric settlement being present on the Depot, the possibility of buried archeological resources remains (McLeod and Whetsell 1998B:11-12).

Of the nine buildings and two structures identified in the architectural survey, none are eligible for nomination to the National Register of Historic Places (NRHP). The loss of many structures and the removal of original roofing material has eliminated the chances for development of a historic district (McLeod and Whetsell 1998B:12).

The Duke Estate, which is located directly north of the Depot and includes the mansion and grounds, is eligible for listing on the NRHP and was identified as an historic site by the New Jersey State Historic Preservation Office and the New Jersey Department of Transportation. The integrity of the Duke Estate should, therefore, be considered when planning future activities within the Depot's boundaries (McLeod and Whetsell 1998B:7, 12-13).

3.1.7 Land Use and Visual Impacts

3.1.7.1 Land Use. The Somerville Depot occupies 77 acres (31 ha) in the western portion of the 355 acre (144 ha) site, while the Veterans Administration (VA) occupies 165 acres (67 ha) to the east. The remaining 113 acres (46 ha) to the southwest are used by the USPS, Somerset County, and Hillsborough County (USACE 2000C:3-1,3-4).

Land use at the Somerville Depot is consistent with light industrial land use. Facilities onsite include four warehouses, an administration building, maintenance building, decontamination trailer, pump house, scale house, switch gear house, and a small vault. Open storage areas cover approximately 455,000 ft^2 (42,271 m^2) of the Depot (USACE 2000C:3-1,3-4).

Land use beyond the perimeter fencing includes the Duke Estate to the north, a tract of 3,000 acres (1,214 ha) of largely undeveloped woodlands, and a firing range which was once part of the Depot. A park and recreational area is present to the southeast, and to the west, land use reflects a mixture of residences and commercial businesses along Roycefield Road. Land to the south is primarily residential, with some commercial businesses (Cash 1998C:2; USACE 2000C:3-4).

3.1.7.2 Visual Resources. The developed areas of the Somerville Depot are consistent with the U.S. Bureau of Land Management's Visual Resource Management (VRM) Classes III or IV. The viewshed around the Somerville Depot consists mainly of woodlands, residences, and light commercial areas and is generally consistent with VRM Class II to III (DiMarzio 2000C).

3.1.8 Infrastructure

3.1.8.1 Utilities. Water for drinking and fire suppression is supplied by the Elizabethtown Water Company via underground water mains to a large water tower. Electricity is supplied by the Public Service Electric & Gas Company and is transported to the Depot underground up to the gear house and then above ground to the various buildings. The Depot is responsible for repairs to electric lines within its fence line. Fuel oil and natural gas are used for building heating. Material handling equipment is powered by propane, diesel and gasoline fuel.

3.1.8.2 Transportation. Access to the Somerville Depot is obtained via the 2-lane U.S. Highway 206. Interstate Highway 287 is located approximately 4 miles (6.4 km) from the Depot. The Depot is served by the Norfolk and Southern and CSX Railroads (Farley, 2000).

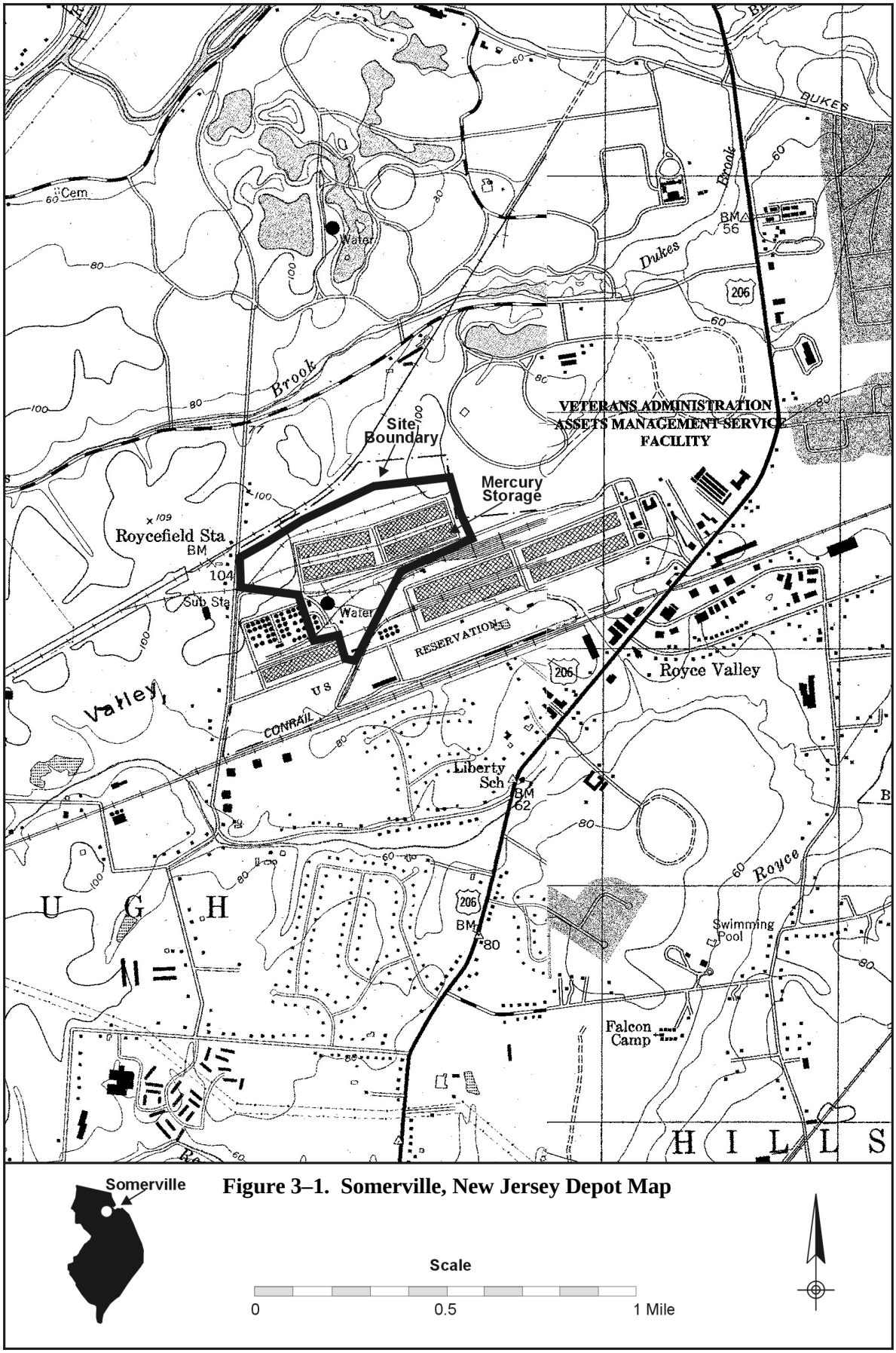

Figure 3–1. Somerville, New Jersey Depot Map

4.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVE

Appendix I, Defense Logistics Agency, Defense National Stockpile Center, Fort Belvoir, Virginia, Mercury Reflasking Environmental Assessment, October 2000, Section 4.0, ENVIRONMENTAL CONSEQUENCES, provides a description of the potential human health and environmental consequences of the No Action Alternative and a Mercury Reflasking Project, a project with a greater potential for adverse environmental impacts than the proposed Mercury Overpacking project.

4.1 No Action

Section 4.1 of Appendix I describes the potential environmental consequences of the No Action Alternative. Although descriptive of different Depots, the environmental consequences are reasonably expected to be the same or similar as at the Somerville Depot. Under No Action, the mercury would continue to be stored in existing flasks on pallets over drip pans which serve as secondary containment, with no further over-packaging of the flasks. Any hazardous waste would be handled in accordance with federal, state and local regulations.

4.2 Overpackage the Mercury-Containing Flasks into Steel Drums

Section 4.2 of Appendix I describes the potential environmental impacts of a mercury reflasking project with a greater potential for adverse environmental impacts than the proposed Mercury Overpacking project. With the exception of Sections 4.2.1, “Waste Management,” 4.2.2.3, “Transportation,” 4.4, “Cumulative Impacts,” and 4.5, “Comparison of Alternatives,” Appendix I is incorporated into this EA.

4.2.1 Waste Management.

Transferring the mercury-filled flasks into new thirty-gallon drums will generate waste pallets that may be contaminated with small amounts of mercury, and some waste flasks. These would be managed in accordance with applicable Federal and State regulations. The waste will be packaged and sent to a permitted offsite commercial facility for recycling, treatment or disposal by the Defense Reutilization and

Marketing Service; this would not cause major impacts to the waste management infrastructure at the Depot.

Table 4-1. Estimated Quantities of Waste To Be Generated

Item	Quantity (Ea.)	Weight (Lbs.)	Total Weight	Truck Loads
Pallets	1,660	225	373,500	
Drip Pans	500	25	12,500	
Flasks	100	12	1,200	
PPE[1]	8	280	2,240	
Hg[2] Wipes	2,168	5	10,840	
TOTAL			400,280	10

4.2.2 Transportation.

Approximately eleven truckloads of new pallets, drums, seventy-six pound (thirty-four kilogram) flasks, plastic bags, and other supplied would be transported onto the Depot, and used pallets and flasks (possibly contaminated with residual amounts of mercury) and small amounts of hazardous waste would be transported off the Depot. The transportation of these materials brings the normal risks associated with truck transportation (injuries or fatalities due to collisions).

Table 4-2. Estimated Supplies To Be Delivered

1.2.2.3. Transportation, Somerville Depot. Estimated quantities of supplies to be delivered.

Item	Quantity	Truckloads
Pallets	2,550	7
Flasks	500	1
Bags	13,000	1
Drip Pans	2,550	2
Mats	32,500	1
TOTAL		11

[1] Personal Protective Equipment
[2] Mercury

4.2.3 Cumulative Impacts.

Cumulative effects on the environment result from the incremental effect of an action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes other such actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time (40 C.F.R. §1598.7). The proposed action shows little or no impact on the Depot or the surrounding areas, and low or negligible risks associated with accidents. Because the contributions to adverse effects from the proposed action would be extremely small, and most would be temporary, it is expected that activities associated with the proposed actions would not exacerbate cumulative effects.

4.2.4 Comparison of Alternatives

Neither of the alternatives appear to be substantially more or less risky or to have greater or lesser environmental or human impact than the other. Low impacts could result to a number of resources during the process of placing the mercury-containing flasks into the steel drums and disposing of waste pallets. Once the flasks are in the drums, impacts of continued storage would be expected to be less than those of the No Action Alternative. Therefore, over the long term, overall conditions would be improved by transferring the mercury-containing flasks into the new storage containers.

5.0 SUMMARY AND CONCLUSIONS

Under authority delegated by the Secretary of Defense under the Strategic and Critical Materials Stock Piling Act of 1939, as amended (50 U.S.C. § 98 *et seq*.), the Defense National Stockpile Center (DNSC), a subordinate command of the Defense Logistics Agency (DLA), is responsible for all activities necessary to provide safe, secure and environmentally sound stewardship for all commodities in the National Defense Stockpile. The mercury stored at Somerville is one of these commodities. All mercury stored by DNSC has been declared excess to the needs of the Federal Government.

DNSC proposes to place the seventy-six pound flasks of mercury into plastic bags and place them in steel drums, six at a time, and brace and cushion (see Section 2.2 above). All work would occur in the warehouses where the mercury is currently stored. This proposed action would provide for additional secure containment and safety for the mercury until a long-term management decision is made following completion of an environmental impact statement as noted in section 1.3. There are 2,615 metric tons of mercury stored in 75,980 steel flasks at Somerville, fifty-nine percent of the excess mercury that DNSC has in storage.

This EA and the information provided in the October 2000 Mercury Reflasking EA for New Haven, Indiana and Warren, Ohio, provide sufficient information so that DNSC may determine whether a Finding of No Significant Impact (FONSI) is warranted or whether an environmental impact statement (EIS) must be prepared for the proposed action. A No Action Alternative has also been assessed as required by NEPA and provides a baseline for comparison of potential impacts of the overpacking alternatives.

DNSC and its predecessors have stored mercury for over 50 years with essentially no impact on the environment. However, to discharge its mission to ensure continued safe storage of the mercury until a long term management decision is made for the excess mercury, DNSC is proposing to take this interim step.

Under the No Action Alternative, the mercury would remain generally undisturbed, in sealed flasks inside locked warehouses. The condition of the stockpile would be monitored in accordance with DNSC mercury storage area inspection procedures. If any leaks were detected, or if there was an

abnormally high concentration of mercury in the air as measured by a mercury vapor analyzer, cleanup and personal protective equipment is available nearby. Although leaking flasks would be anticipated under this alternative, releases of mercury to the environment are unlikely. Therefore, no impacts to the environment, and low to negligible risks to workers and the public are expected.

Under the preferred alternative the mercury flasks would be bagged in plastic, and transferred into drums that would then be sealed (see Section 2.2 above). These activities would be carried out using procedures and personal protective equipment designed to protect workers and minimize any emissions of mercury to the environment.

Accident scenarios were considered in the October 2000 Reflasking EA mentioned above. The proposed action in this EA would entail the handling of a larger quantity of flasks than at the New Haven and Warren Depots, which were the subject sites of Appendix I, the Reflasking EA, but would not require the opening of each individual flask and would not require reflasking and the generation of a large quantity of empty and potentially contaminated flasks. Therefore, it is believed that this action would inherently be a less risky operation. Consequently, because all of the accident scenarios considered in the Reflasking EA for both the reflasking and No Action Alternative have low or negligible predicted risk to workers and the public, it is anticipated that the proposed over pack of the Somerville mercury would likewise have a negligible risk. Similarly, the ecological risk assessment concluded that the risk is low or negligible for all of the accident scenarios.

No serious truck accidents or accident fatalities are anticipated to result from transporting materials to, and removing waste from, the depot. Therefore, this EA is incorporating the findings of the Reflasking EA by reference. Both the no action and the proposed action alternatives would pose a low to negligible risk to workers and the public.

Transferring the mercury flasks into drums and replacing the present pallets would generate a large amount of solid waste. A small quantity of hazardous waste would be generated from some contaminated pallets, wipe down materials, and empty flasks from any reflasking. Because the waste would be packaged and sent to licensed offsite commercial facilities

for recycling, treatment or disposal, it is unlikely that significant impacts would occur.

Transferring the mercury flasks into drums would not change long-term employment at the depots; would not substantially increase air emissions and noise levels; would not involve construction or changes to existing land use; would not use any appreciable quantities of electricity, fuel oil, natural gas, or water; would take place inside warehouses in areas in which any spills would be contained; and would only marginally increase the traffic flow to and from the depots during the duration of the project. Therefore, no major impacts to the environment are anticipated.

Cumulative effects on the environment result from the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Because the contributions to adverse effects from either the no action or proposed alternative would be extremely small and most would be temporary, it is expected that activities associated with the alternatives would not exacerbate cumulative effects.

Neither of the alternatives discussed in this EA appears to be substantially more or less risky or to have greater or lesser environmental or human health impacts than the other. Low impacts could result for a number of resources during the process of over packing the mercury flasks into the new containers and disposing of flasks, pallets, and hazardous waste. Once the mercury is in the new containers, impacts of continued storage would be expected to be less than those of the No Action Alternative. Therefore, for the interim storage period, it is expected that conditions would be improved at Somerville by transferring the mercury flasks into the steel drums.

The preferred action would also have advantages for safe movement of the mercury in the event that that is the decision made during the Mercury Management EIS process. That EIS will provide information which will enable DNSC to determine what course of action should be taken for the long term management of the excess mercury in the DOD stockpile.

In consideration of the analyses contained in this EA, it is anticipated that the proposed action will not have a significant impact on the environment, and that the

preparation of an EIS is not required pursuant to the requirements of NEPA.

5.0 REFERENCES

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