Executive Summary

ES.1 INTRODUCTION

The Defense National Stockpile Center (DNSC) has prepared a *Draft Mercury Management Environmental Impact Statement* (MM EIS) to help determine how to manage its elemental mercury inventory over the long term, because it is no longer needed for our national defense.

DNSC's objectives in managing the mercury are to: protect human health and the environment, ensure the safety of the public and workers, comply with applicable laws and regulations, and minimize costs. Its approach has been to involve other Federal agencies, state, and local governments, community leaders, industry, public interest groups, and the general public in the decision process. The result is an MM EIS based on rigorous scientific research and analysis, public input, and review by the MM EIS Interagency Working Group,[1] and technical experts.

The **Proposed Action** is to select and implement an approach for the long-term [40 years] management of DNSC's excess mercury.

The MM EIS evaluates three alternative ways to manage DNSC mercury over the long term. It describes the potential environmental, human health, and socioeconomic effects of each alternative. The alternatives evaluated are:

- No Action: continuing mercury storage at current locations
- Consolidation and storage of mercury at one site
- Sale of the mercury

The MM EIS concludes that most of the environmental and socioeconomic impacts of alternatives for mercury management would be small (referred to as 'negligible' to 'minor' in the analysis) for each of the three alternatives, and differences among them would not be sufficient in themselves to support selection of one alternative over the others.

Why Is This Environmental Impact Statement Being Prepared?
The National Environmental Policy Act establishes a process for decisionmakers to use in considering the potential environmental impacts (both positive and negative) of major actions before making decisions. It requires a Federal agency to consider the potential environmental, human health, and socioeconomic effects of a proposed action and a range of reasonable alternatives for implementing the action, including the option of taking no action at all. The resulting environmental impact statement (EIS) is a detailed environmental analysis of the proposed action.

What Happens Next?
After consideration of public comments on the *Draft Mercury Management EIS* (MM EIS), the Defense National Stockpile Center (DNSC) will prepare a Final MM EIS that includes its responses to public comments. Next, a concise public record, referred to as the Record of Decision, will be published discussing all the factors considered and presenting DNSC's decision on which alternative to implement.

DNSC has selected Consolidated Storage as its Preferred Alternative based on a combination of environmental, economic and technical factors; policy considerations; and public and stakeholder comments. 'Preferred Alternative' means that, at this time, DNSC believes that storing the mercury at one site is the best way to meet its objectives. Managing the mercury at one site rather than at multiple sites would simplify storage operations and result in economies of scale (fewer resources would be

The **Preferred Alternative** is Consolidated Mercury Storage at one site. It would have negligible to minor impacts on the environment at the consolidation site, and it would have minor beneficial impacts at the existing storage locations after the mercury is removed.

[1] The Interagency Working Group, formed in early 2001, includes Federal agencies that either have significant mercury expertise or could be affected by decisions made as a result of the *Mercury Management Environmental Impact Statement*.

required to maintain the mercury inventory). Consolidating the excess DNSC mercury inventory at one site is not predicted to result in significant environmental impacts at that site and would improve environmental conditions at any sites where the mercury would be removed. The Preferred Alternative would also support DNSC's long-term closure plans for various depots and would make available the stored DNSC mercury for future beneficial uses. However, no final decision will be made until after the public has had the opportunity to comment on the Draft MM EIS and comments have been addressed in the Final MM EIS. After the Final MM EIS has been available for public review for a minimum of 30 days, a Record of Decision will be published that explains the basis for selection of the alternative that will be implemented.

What Is Mercury?

Elemental mercury is a dense, naturally occurring, silver-colored metallic element that is liquid at room temperature. Sometimes called "quicksilver," liquid mercury has been used extensively in manufacturing processes because it conducts electricity, reacts to temperature changes, and alloys with many other metals. Examples of products that contain mercury include electrical switches, hospital equipment and supplies, fluorescent lights, switches for automobile lighting, and dental fillings. While mercury has many uses, it is designated a hazardous substance under Federal law, and must be stored and managed appropriately.

ES.2 BACKGROUND

DNSC, which is part of the Defense Logistics Agency, manages materials in the National Defense Stockpile in a safe, secure, and environmentally sound manner. DNSC currently stockpiles 56 different commodities, including mercury, at government and private industry sites around the country. DNSC has safely stored mercury for more than 50 years.

After World War II, the National Defense Stockpile was created so that in times of national emergency the United States would not have to depend on foreign sources for strategic and critical materials. Many of these materials are no longer needed for national defense and have been declared excess by Congress. DNSC is scheduled to cease operation as an independent organization in 2007 and would prefer to arrange for the disposition of the mercury before this date.

DNSC manages these excess materials, often by selling them in domestic and international markets. Sales occur through open competitions. Mercury has been declared excess for more than 20 years, and Congress has granted DNSC the authority to sell the entire inventory. However, in 1994, DNSC voluntarily halted mercury sales because of concerns raised by the Environmental Protection Agency and others about the effect of mercury on the global environment.

ES.3 DNSC MERCURY

DNSC elemental mercury is between 99.5 and 99.9 percent pure. DNSC sold 1,912 tons (1,735 metric tons) of mercury to U.S. and foreign buyers during the 1980s and early 1990s for a total of $8.4 million in revenue to the U.S. Treasury. Money generated from the sale of commodities is used to support various Federal programs such as military retirement benefits.

Typical Mercury Storage Warehouse

DNSC's mercury is currently stored in warehouses at three of its own depots and at a U.S. Department of Energy (DOE) site.

The three DNSC sites are the New Haven, Indiana; Somerville, New Jersey; and Warren, Ohio, depots. The DOE site is the Y–12 National Security Complex (Y–12) in Oak Ridge, Tennessee (see Figure ES–1).

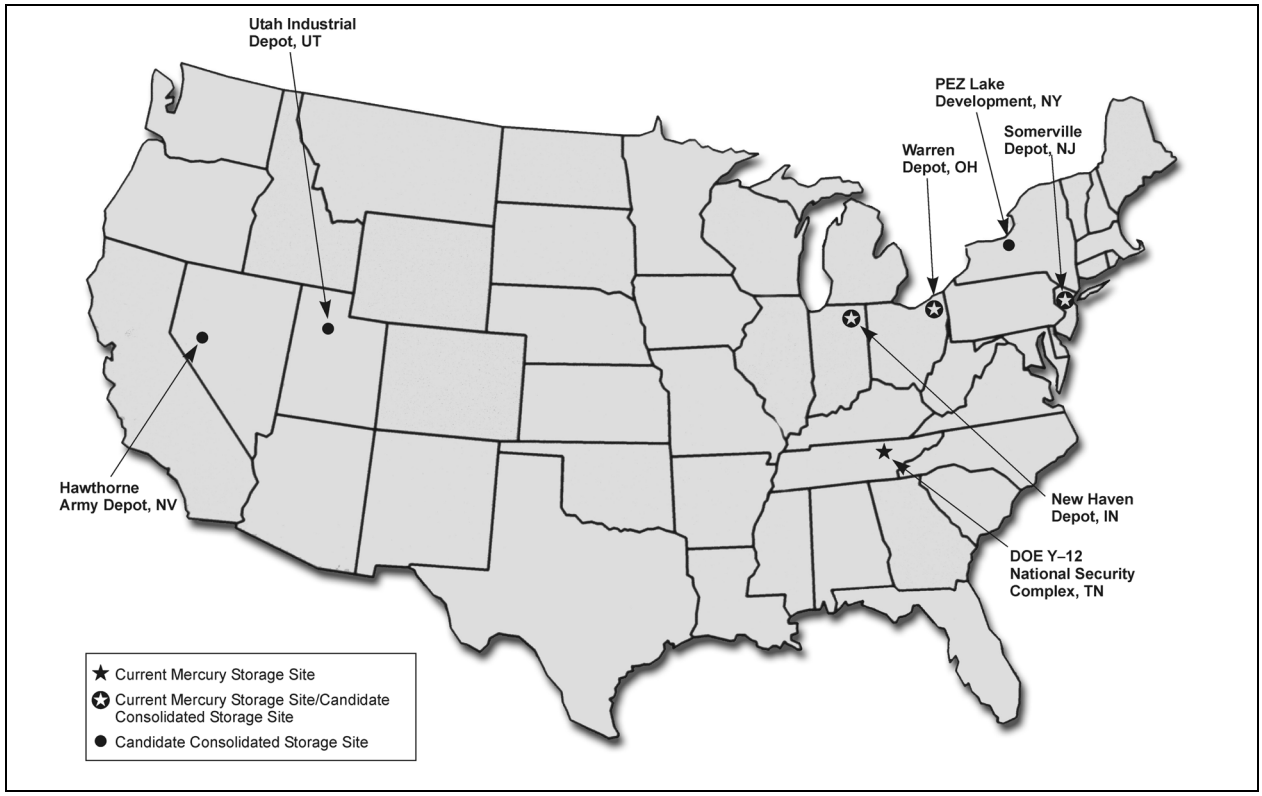


Figure ES–1. Locations of Current Mercury Storage Sites and Non-DNSC Candidate Consolidated Storage Sites

Approximately 4,890 tons (4,436 metric tons) of mercury is in storage. The mercury is in 128,662 steel flasks. Each flask contains 76 lb (34 kg) of mercury and has a current market value between $140 and $195. The total estimated value is $18 to $25 million.

Typical Steel Flask

Mercury is stored in flasks similar to the one shown in the photo on the far right. Some of the mercury storage flasks were made in the 1940s and 1950s; the DNSC mercury stored at Y–12 was placed in new flasks in the mid-1970s. The flasks at the three DNSC depots are stored in 30-gal (114-l) steel drums for extra protection, called "overpacking." The DNSC mercury flasks at the DOE site are not stored in drums because these seamless flasks are relatively new and not as subject to leakage as older, welded flasks.

Steel Storage Drums on Pallet

ES.4 THE NEED TO SAFELY MANAGE MERCURY

The toxic effects of mercury depend on its chemical form and the route of exposure. The organic form of mercury (e.g., methyl mercury) is the most toxic form. Mercury is emitted from human activities mostly in the inorganic form (e.g., elemental mercury vapor). Mercury can affect the immune system, alter genetic systems, and damage the nervous system, including coordination and senses of touch, taste, and sight. Methyl mercury can be particularly damaging to developing embryos. Exposure to methyl mercury is usually by ingestion; it is absorbed more readily than other forms of mercury. Elemental mercury vapors can cause tremors, gingivitis, and excitability when inhaled over a long period of time. If elemental mercury is ingested, it is absorbed slowly and may pass through the digestive system without causing damage.

Mercury is persistent, accumulates in the environment, is toxic, and poses human and ecological risks. As the quantity of mercury in the environment has increased, so have the risks of neurological and reproductive problems for humans and wildlife. This makes mercury a pollutant of environmental concern in the United States and throughout the world.

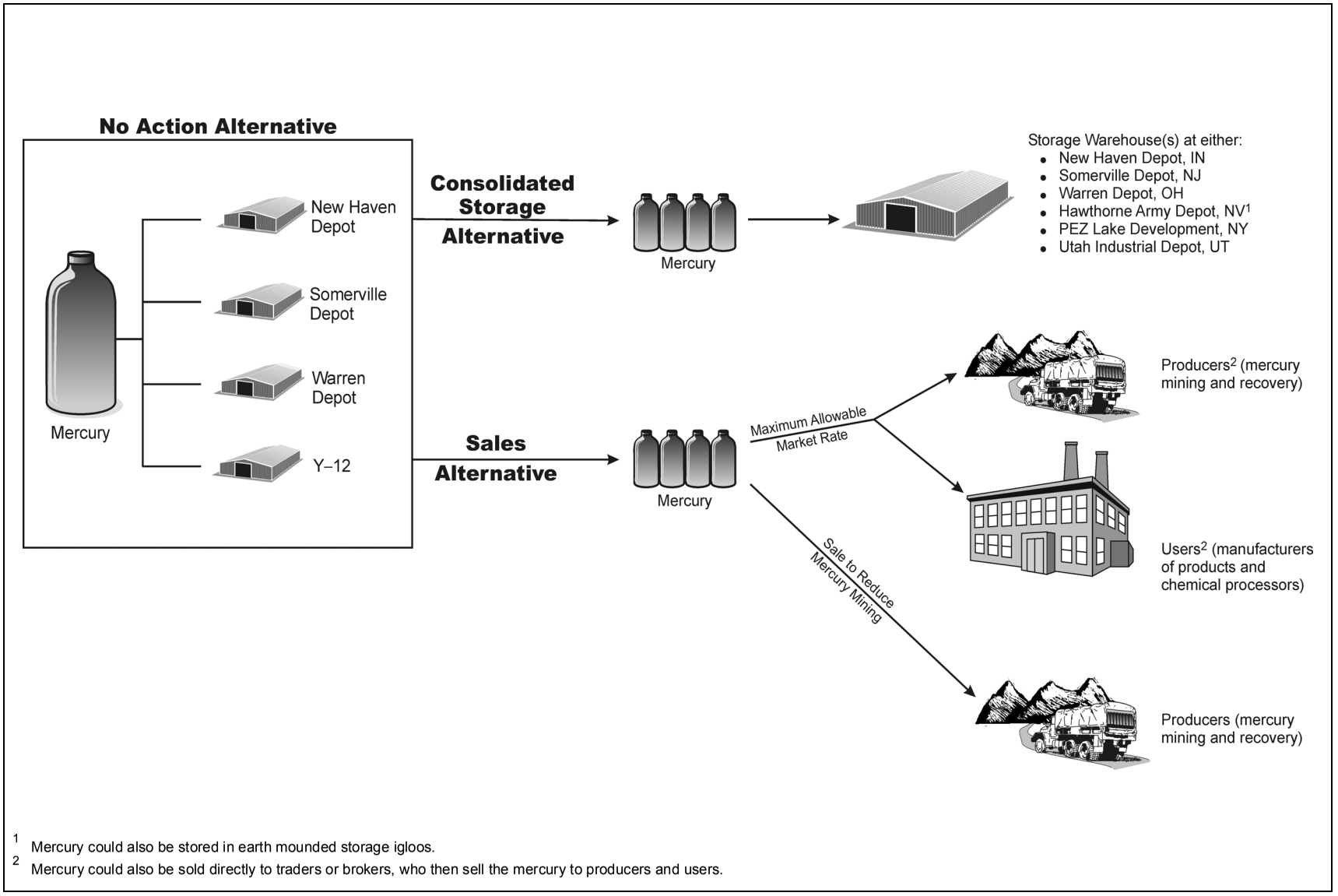
ES.5 ALTERNATIVES CONSIDERED IN THE DRAFT MM EIS

Three alternatives for managing DNSC mercury are evaluated in the MM EIS (see Figure ES–2).

Under the **No Action Alternative**, DNSC would continue to store its excess mercury at the current storage sites. Monitoring and maintenance would continue. There would be no major modifications to existing storage buildings or the mercury storage containers.

For the **Consolidated Storage Alternative**, the MM EIS analyzes the potential environmental impacts of consolidating and storing mercury flasks in drums at each of the three DNSC depots where mercury is currently stored and at three non-DNSC sites (see Figure ES–1) which were identified by DNSC issuing a Notice of Request for Expressions of Interest in the *Federal Register* on March 5, 2001. The additional sites are: the Hawthorne Army Depot, Nevada; PEZ Lake Development, New York; and Utah Industrial Depot, Utah. Y–12 is not being considered as an alternative for consolidated storage. It does not have enough space for all the mercury, and long-term storage of mercury is not part of Y–12's national security mission.

At this time, DNSC does not have a preference for one of the consolidated storage locations evaluated. The six sites analyzed represent a wide range of environmental settings. The environmental analysis presented in the MM EIS is sufficient to allow selection of one of these sites in the Record of Decision. However, the consolidation site ultimately chosen may not be one of those analyzed in the MM EIS. If a site that was not evaluated in the MM EIS is considered for selection as a consolidation location, additional environmental documentation may be needed, with additional public notification and review.



1 Mercury could also be stored in earth mounded storage igloos.

2 Mercury could also be sold directly to traders or brokers, who then sell the mercury to producers and users.

Figure ES–2. Alternatives for the Management of DNSC Excess Mercury Inventory

The **Sales Alternative** includes two options: selling mercury at the proposed maximum allowable market rate[2] over a period of years and selling the entire inventory all at once to reduce mercury mining.

Under the first option, the mercury would be sold directly to producers and users at the estimated maximum allowable market rate of 5,000 flasks per year. Producers include mercury mining, refining, and recovery companies. Users include chemical processors and manufacturers of such products as lighting, switches, thermometers, dental materials, and medicine. The mercury could also be sold to traders or brokers who would then sell it to producers and users.

The second sales option calls for sale of the entire inventory to a mercury mining company that, for the purpose of analysis in the MM EIS, is assumed to be in either Europe or Asia. It is expected that an agreement would be negotiated that would require the purchaser to sell DNSC mercury at a rate no greater than the rate of sale for newly mined mercury. Therefore, this alternative would also meet the requirements of the Strategic and Critical Materials Stock Piling Act of 1939 in that sales would not result in undue disruption of the mercury market.

Monitoring and Maintenance

As described in the statement of proposed action, the mercury management alternatives require storage in dedicated facilities for a period of time ranging up to 40 years. During this time, periodic inspections and maintenance activities would be performed by trained personnel to ensure that the mercury remains safe and secure. Public access would be restricted.

Resource Areas Analyzed in the MM EIS

Meteorology, Air Quality, and Noise
Waste Management
Socioeconomics
Human Health Risk
Transportation
Geology and Soils
Water Resources
Ecological Resources
Cultural Resources
Land Use and Visual Resources
Infrastructure
Environmental Justice

Transportation

If the mercury were to be stored at a single location or sold, it would need to be moved from site to site. Both trucks and railcars could be used to move the mercury, in accordance with the requirements of the Department of Transportation for shipping hazardous materials. If the mercury were sold to overseas buyers, it would be transported overland by truck or railcar and overseas by ship. The MM EIS analyzes moving materials, flasks, and overpacks as follows:

- Transport of mercury from existing storage locations to a consolidated storage site
- Transport of mercury from existing storage locations to buyers
- Transport of materials needed for operating a storage facility (e.g., new flasks and drums)

[2] The maximum allowable market rate is the rate that mercury can be sold without undue disruption of the usual markets of producers, processors, and consumers of mercury.

ES.6 IMPACTS SUMMARY AND COMPARISONS

This section summarizes the potential impacts of transporting and storing mercury for the various alternatives. Tables ES–1 and –2 provide the impact categories and definitions, and risk categories and definitions, respectively.

Table ES–1. Impact Categories and Definitions

Impact Category		Definition
Beneficial Impacts	Major	An action that would greatly improve current conditions
	Moderate	An action that would moderately improve current conditions
	Minor	An action that would slightly improve current conditions
Negligible or No Impact		An action that would neither improve nor degrade current conditions
Adverse Impacts	Minor	An action that would slightly degrade current conditions
	Moderate	An action that would moderately degrade current conditions
	Major	An action that would greatly degrade current conditions

Note: Impacts may also be categorized as short term (less than or equal to 5 years) or long term.

Table ES–2. Risk Categories and Definitions

Risk Category		Definition
Reduced Risk	High	An action that would greatly reduce risk
	Moderate	An action that would moderately reduce risk
	Low	An action that would slightly reduce risk
Negligible or No Increase in Risk		An action that would neither reduce nor increase risk
Increased Risk	Low	An action that would slightly increase risk
	Moderate	An action that would moderately increase risk
	High	An action that would greatly increase risk

Note: Risks may also be categorized as acute (less than or equal to 24 hours) or chronic.

Source: Based on the risk matrix presented in the *Draft Human Health and Ecological Risk Assessment Report for the Mercury Management Environmental Impact Statement*.

As shown in Table ES–3, the potential environmental and socioeconomic impacts of alternatives for mercury management are generally negligible to minor. Key resource areas include air quality and noise, waste management, socioeconomics, human health and ecological risk under normal operating and accident conditions, transportation risk, water resources, land use, infrastructure, and environmental justice. Other resources, including geology and soils, ecological resources, cultural resources, and visual resources, are not presented here because these resources are essentially unaffected by the mercury management alternatives. These resources are largely unaffected because the alternatives do not involve building construction and land disturbance. Few discriminating factors among the alternatives were identified. The major differences in impacts are largely due to the number of sites affected and the duration of the impacts.

The term **"impact"** when used in the MM EIS, refers to adverse, long-term impacts, unless otherwise stated.

Table ES–3. Comparison of the Impacts and Costs of Mercury Management Alternatives

	Topics	Alternatives			
				Sales	
		No Action[a]	Consolidated Storage[b]	At Maximum Allowable Market Rate[c]	To Reduce Mercury Mining[d]
Environmental and Socioeconomic Impacts	Meteorology, Air Quality, and Noise	Negligible	Minor short term	Minor	Minor short term
	Waste Management	Negligible short term	Minor short term	Negligible short term	Negligible short term
	Socioeconomics	Negligible	Negligible	Negligible	Negligible short term
	Water Resources	Negligible	Negligible to minor	Negligible	Negligible short term
	Land Use	No	No	No	Negligible short term
	Infrastructure	Negligible	Negligible to minor	Negligible	Negligible short term
	Environmental Justice	No	No	No	No
Human Health Risks/Ecological Risks	Risks from Normal Operations	Negligible/ Negligible	Negligible/ Negligible	Negligible/ Negligible	Negligible short term/Negligible short term
	Risks from Accidents	Low/ Negligible	Moderate/ Moderate	Moderate/ Moderate	Moderate/ Moderate
	Transportation Risk	No/No	Low/Moderate	Moderate/High	Moderate/High
Costs	Present Value	$30 million	$21 to 62 million	$(11) to 7 million	$(25) to (7) million

[a] This column indicates the potential impacts that would result at the existing storage locations.

[b] This column indicates the potential impacts that would result at the consolidation locations and along the transportation routes. This alternative would also result in minor beneficial impacts and low reduced risk at existing storage locations after the mercury is removed. This is DNSC's preferred alternative.

[c] This column indicates the potential impacts that would result at the existing storage locations and along the transportation routes. Minor beneficial impacts and low reduced risk would also occur at existing storage locations after the mercury is removed. This alternative would also result in negligible or no additional impacts and risks at the mercury buyer's and user's locations.

[d] This column indicates the potential impacts that would result at the existing storage locations and along the transportation routes. Minor beneficial impacts and low reduced risk would also occur at existing storage locations after the mercury is removed. This alternative would also result in moderate beneficial impacts and moderate reduced risk from reduced mercury mining and refining.

Note: Values in parenthesis () are revenues. Present value is the value today of a future payment, or stream of payments, discounted at an appropriate rate.

The **No Action Alternative** would have negligible impacts at the four existing storage locations. However, because DNSC depots would not be able to close, this alternative is incompatible with DNSC's long-term closure strategy.

The **Consolidated Storage Alternative** would affect the selected consolidation location with negligible to minor impacts. There would also be minor beneficial impacts at the existing storage locations after the removal of mercury.

The impacts of the **Sales Alternative** are described below:

- Sales at the Maximum Allowable Market Rate would primarily affect the four existing storage locations with negligible to minor impacts. Sales at the Maximum Allowable Market Rate would also result in negligible or no impacts at the mercury buyers' and users' locations.

- Sales to Reduce Mercury Mining would primarily affect the four existing storage locations with short-term negligible to minor impacts. Sales to Reduce Mercury Mining would also result in moderate beneficial impacts from reduced mercury mining and refining.

- Under the Sales Alternatives, minor beneficial impacts would also occur at the existing storage locations after the mercury is removed.

The human health and ecological risks of alternatives for mercury management are within the normal ranges to be expected for these types of activities. The human health risks would be negligible for all mercury management alternatives during normal operations. Human health risks from facility accidents would range from low for the No Action Alternative to moderate for the Consolidated Storage and Sales Alternatives. Human health risks from transportation accidents would range from no additional risk for the No Action Alternative to moderate risk for both Sales Alternatives.

The ecological risks would be negligible for all mercury management alternatives during normal operations. Ecological risks from facility accidents would range from negligible for the No Action Alternative to moderate for the Consolidated Storage and Sales Alternatives. Ecological risks from transportation accidents would range from no additional risk for the No Action Alternative to high ecological risk for both Sales Alternatives. The high ecological risk for both Sales Alternatives is a result of the longer transportation distances for the truck transport segments associated with shipping mercury to overseas buyers.

The Consolidated Storage and Sale Alternatives would result in low reduced human health risk at the existing storage locations after the mercury is removed. The Sales to Reduce Mercury Mining Alternative is estimated to result in moderate reduced human health and ecological risk from reduced mercury mining and refining.

Costs would range from $62 million for consolidated storage at the Hawthorne Army Depot, PEZ Lake Development, or Utah Industrial Depot to revenues of $25 million for the Sales to Reduce Mercury Mining Alternative. Costs for consolidated storage are lowest at the New Haven and Warren depots, ranging from $21 to $22 million.

ES.7 CUMULATIVE IMPACTS

Cumulative effects are impacts on the environment that result from an action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency or person undertakes the action. DNSC determined the following resource areas to have a potential for limited cumulative impacts and needed to be analyzed: air quality; waste management; human health risk from normal operations; transportation infrastructure; and employment, site infrastructure and land use. Cumulative impacts for

the other resources are omitted because, as described in Chapter 4 (Environmental Consequences) of the MM EIS, their potential for environmental impacts would be negligible. The methodology used to analyze cumulative impacts is described in more detail in Appendix E of the MM EIS.

Table ES–4 summarizes the cumulative impacts for the potential mercury management locations. Cumulative impacts were estimated to be minor at most locations. The impacts from mercury management activities would represent a negligible to minor contribution to the total cumulative impacts in the areas near these sites.

Table ES–4. Summary of Cumulative Impacts and Risks at Potential Mercury Management Locations[a]

	Impacts				
Site[b]	**Air Quality**	**Waste Management**	**Transportation Infrastructure**	**Employment, Site Infrastructure, and Land Use**	**Human Health Risk from Normal Operations**
New Haven Depot	Minor	Minor	Minor	Minor	Negligible
Somerville Depot	Moderate[c]	Minor	Moderate[c]	Moderate[c]	Negligible
Warren Depot	Minor	Minor	Minor	Minor	Negligible
Y–12	Minor	Minor	Minor	Minor	Negligible
Hawthorne Army Depot	Minor	Minor	Minor	Minor	Negligible
PEZ Lake Development	Minor	Minor	Moderate[d]	Moderate[d]	Negligible
Utah Industrial Depot	Moderate[c]	Moderate[d]	Moderate[c, d]	Moderate[c, d]	Negligible

[a] Cumulative impacts are estimated for the maximum impact alternative.

[b] The maximum impact alternative for these sites is the Consolidated Storage Alternative, except for the No Action Alternative for Y–12.

[c] Increased development in the regions around these sites could result in moderate impacts to these resources.

[d] Redevelopment of the PEZ Lake Development and Utah Industrial Depot in agreement with their reuse plans could result in moderate impacts to these resources.

However, at the Somerville Depot and Utah Industrial Depot, increased development could produce moderate impacts in the region around the depots. Forested and agricultural lands are increasingly being converted to housing developments, office parks, and commercial strips. Development results in increased land use, reduced and fragmented habitats for plants and animals, increased traffic, and increased air pollution from building heating, cars, and trucks. Nonetheless, the impacts from mercury management activities at the Somerville Depot and Utah Industrial Depot would still represent only a negligible to minor contribution to the total cumulative impacts from increased development near these depots.

At the PEZ Lake Development and Utah Industrial Depot, redevelopment in agreement with the sites' reuse plans could result in moderate impacts to transportation infrastructure, employment, site infrastructure, and land use.

Regional and Global Issues

Potential regional and global cumulative impacts for transportation, mercury concentrations and human health risk, ozone depletion and global warming, and biodiversity also are discussed in the MM EIS.

Transportation. The worst-case alternative for transportation is likely to be Sale of Mercury to Reduce Mercury Mining because it is estimated to result in 0.3 to 2.4 million truck miles or 0.2 to 1.3 million rail miles to move the mercury from the current storage locations to a U.S. port, 2.7 to 4.5 million vessel miles to ship the mercury across the ocean, and 154,000 truck miles to move the mercury from the foreign port to the buyer's location. These transportation distances would be a small increment of the transportation miles that are expected every year from other activities. Therefore, impacts to regional and global transportation are not expected.

Mercury Concentrations and Human Health Risk. Background mercury concentrations in the air around the world are estimated at 1 to 2.5 nanograms per cubic meter. Mercury concentrations tend to be higher around population centers where the effects of man's activities are the greatest. As described in Section 4.3.4, the small amount of mercury vapor that could escape from the mercury storage buildings would not cause an appreciable rise in regional or global concentrations of mercury and represents a negligible contribution to cumulative human health risk at a regional or global level.

Ozone Depletion and Global Warming. Alternatives for mercury management are not expected to use or discharge significant quantities of any ozone-depleting chemicals. Any release of ozone-depleting compounds during operations would be incidental to the mercury management activities, such as might occur during the repair or replacement of older air conditioning systems that contain ozone-depleting compounds. In any case, emissions of ozone-depleting compounds would be very small and would represent a negligible impact on the earth's protective ozone layer.

Most scientists believe that increases in atmospheric concentrations of certain pollutants such as carbon dioxide, can produce changes in the Earth-atmosphere energy balance and influence global climate. This is commonly referred to as global warming. Carbon dioxide is emitted during the burning of fossil fuels such as natural gas, oil, gasoline, and coal. As described in the air quality impacts sections of the MM EIS, emissions associated with incidental fuel burning and producing heat and electricity are expected to represent a negligible contribution to global warming.

Carbon dioxide is also emitted from vehicle exhaust. As described in the *Draft Human Health and Ecological Risk Assessment Report for the Mercury Management EIS*, sales to reduce mercury mining would have the largest emission of this pollutant over the shortest interval; a maximum of 1,643 tons (1,490 metric tons) of carbon dioxide. This would be a very small fraction of the carbon dioxide estimated to be emitted from vehicles in the United States each year and therefore, would represent a negligible contribution to increased global warming.

Biodiversity. Alternatives involving storage of mercury would involve no new construction and scant emissions of mercury. Therefore, there would be little chance for impacts on regional or global biodiversity.

Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable commitments of resources for each alternative potentially would include the commitment of land and material resources during the life of the project, and energy and water used in operating a mercury storage facility. The commitments of capital, energy, labor, and materials during the implementation of the alternatives generally would be irreversible. Commitment of these resources to support the storage or sale of mercury would make them unavailable for other purposes. Capital would be committed permanently. The commitment of equipment and labor would be only for the duration of the project. The Sales Alternatives would require the least commitment of land, materials, and energy resources.

Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

The use of land for mercury storage at existing mercury storage locations and at non-DNSC candidate consolidated storage locations would constitute short-term uses of the environment. Upon completion of mercury management activities at any of these locations, land could be returned to other uses, including long-term productive uses. Disposal of mercury packaging wastes (including contaminated drums and flasks) would occur at commercial facilities that commonly perform these types of activities. Although disposal of these materials could contribute to an associated long-term commitment of land subject to restricted uses, no substantial impacts to long-term productivity would be expected to result from any of the proposed mercury management alternatives.

ES.8 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

A number of alternatives were considered, but are not evaluated in detail in the MM EIS because of technical immaturity, prohibitive cost, regulatory unacceptability, or because they did not support the purpose and need of the proposed action.

Storage Related Options

Alternatives for consolidated storage at multiple (two to three) locations are not evaluated in the MM EIS. The MM EIS evaluates continued storage of the mercury stockpile at the four current locations (No Action Alternative) and storage of the entire mercury stockpile at one location (Consolidated Storage Alternative). Therefore, the range of alternatives evaluated encompasses alternatives for storage at two to three sites.

The MM EIS evaluates consolidated storage of excess DNSC mercury in warehouses and igloos. Alternatives for consolidated storage in below-ground facilities such as bunkers and mines were considered but are not evaluated. It is expected that conditions in below-ground facilities such as bunkers would be similar to the igloos at Hawthorne, which are evaluated in the MM EIS. Therefore, the analysis of the impacts of storage in igloos at Hawthorne can be used to represent other forms of below-ground storage. Because of the limited availability of existing mines, inspection considerations, additional material handling, and regulatory issues, the use of mines for storage of excess DNSC mercury is not considered to be a reasonable alternative.

DNSC considered evaluating the construction of a new storage building. This alternative was eliminated from detailed evaluation because existing facilities are currently available that would not need major modifications, avoiding the impacts that could occur during construction of a new building. For

comparison, construction specifications, resource needs, and potential impacts for construction of a new building are provided in Appendix F, Construction of a New Mercury Storage Building, of the MM EIS.

Treatment and Storage

DNSC considered evaluating a treatment and storage alternative that would have involved processing the mercury to a stabilized less toxic form and storing it so that it would be available for future beneficial uses. It was eliminated from detailed analysis in the MM EIS because mercury can be safely stored in its elemental form and because elemental mercury is the preferred form in most industrial processes that require mercury. Treatment and storage would result in additional environmental impacts and costs, without significant benefits.

Treatment and Disposal

DNSC considered evaluating treatment and disposal in a qualified landfill. However, DNSC's preliminary research found that there are no commercially available technologies to render large quantities of elemental mercury more stable or less toxic. Based on the immaturity of the bulk mercury treatment technologies and the lack of a U.S. Environmental Protection Agency-approved path forward for treatment and disposal of elemental mercury, this alternative is not evaluated in detail in the MM EIS.

Sales Related Options

In addition to selling the entire mercury inventory to a mercury mining company or selling the inventory at the maximum allowable market rate, unrestricted sale of mercury was considered. An unrestricted sales option would allow DNSC to sell any portion of the mercury inventory at any point in time. This could result in sales at a rate greater than the maximum allowable market rate. This option is considered to be unreasonable because it could result in undue disruption of the world mercury market, which is prohibited under the Strategic and Critical Materials Stock Piling Act of 1939 (50 U.S.C. 98 et seq.).

In addition to selling mercury directly from the existing storage locations, mercury could be sold after being moved to a consolidated storage location. Although this alternative is not expressly evaluated in the MM EIS, the transportation of mercury from the consolidation location to domestic or foreign buyers is likely to be bounded by the transportation evaluated for the Sales Alternative. In this alternative, mercury is shipped from the existing storage locations to ports in New York or San Francisco, and then overseas.

Transportation Methods

Air transport is not considered a reasonable option because of the additional cost and handling required to move the mercury by truck or rail to and from the airports. In part because mercury is very heavy, air transport costs 3 to 35 times more than transport by truck or rail. The movement of mercury within the continental United States by barge is also not a reasonable option due to the limited number of barge routes in the United States and the additional handling required to move the mercury by truck or rail to and from the barge route.

ES.9 ORGANIZATION OF THE DRAFT MM EIS

The Draft MM EIS consists of one volume that contains the main text of the MM EIS and technical appendixes that support the analyses. Volume II of the Final MM EIS will contain the comments received on the Draft MM EIS during the public review period, along with DNSC responses (i.e., the Comment Response Document). A separate *Draft Human Health and Ecological Risk Assessment Report for the Mercury Management Environmental Impact Statement* is also available on request.

The Draft MM EIS contains Chapters 1 through 9 as described below:

- Chapter 1, **Purpose of and Need for the Proposed Action**, outlines the proposed action and provides background information on the DNSC mercury stockpile. It also describes the scope of the MM EIS and applicable legal and regulatory requirements.

- Chapter 2, **Alternatives for the Management of Mercury**, describes the DNSC mercury analyzed in the MM EIS, the three alternatives for management of the mercury, how the alternatives were developed, the activities that would take place under each alternative, and alternatives that initially were considered and subsequently eliminated from detailed study in the MM EIS. This chapter also provides a summary of impacts and estimated costs of the alternatives and a description of DNSC's Preferred Alternative (i.e., consolidated storage).

- Chapter 3, **Affected Environment**, describes the potentially affected environments at the candidate sites and the approach taken in defining these affected environments. The level of detail presented for each resource (e.g., air, water, ecosystems) depends on the likelihood that the resource will be affected by mercury management activities.

- Chapter 4, **Environmental Consequences**, describes the potential impacts on the affected environments presented in Chapter 3 from the proposed mercury management alternatives, including cumulative impacts and unavoidable adverse impacts. It also discusses potential future decontamination and decommissioning activities, irreversible and irretrievable commitments of resources, and the relationship between short-term uses of the environment and long-term productivity.

- Chapter 5, **Environmental Regulations, Permits, and Consultations**, provides a description of the environmental and health and safety compliance requirements governing implementation of the alternatives, a summary of permit requirements, and the status of required consultations with Federal and state agencies and Native American tribal governments.

- Chapters 6, 7, 8, and 9 are the **Glossary**, **List of Preparers**, **Distribution List**, and **Index**, respectively.

The eight appendixes include descriptions of methods used to estimate environmental impacts of the alternatives and the detailed information to support the impact analyses. The appendixes are as follows:

- Appendix A – Federal Register Notices
- Appendix B – Contractor Disclosure Statement
- Appendix C – Facility and Activity Data
- Appendix D – Cost Analysis
- Appendix E – Impact Assessment Methods
- Appendix F – Construction of a New Mercury Storage Building
- Appendix G – Environmental Justice Analysis
- Appendix H – Cooperating Agency Agreements

ES.10 PUBLIC PARTICIPATION

DNSC is committed to communication with the public to ensure that all affected communities have a full understanding of the proposed action and are given the opportunity to participate in decisions that may affect them. DNSC representatives are available to work with communities, including minority and low-income communities, to explore the most effective ways to gain input from those who may be affected by the proposals presented in the MM EIS. Information meetings can be arranged throughout the EIS development process.

DNSC began the MM EIS process by publishing a Notice of Intent in the *Federal Register* on February 5, 2001, to let the public know that it was considering an action. The Notice of Intent described the proposed action, provided background information on anticipated issues and potential impacts, and identified a preliminary list of alternatives to implement the proposed action.

The public scoping process began once the Notice of Intent was published. DNSC welcomed comments from the public on the proposed alternatives, issues, and environmental impacts to be analyzed in the MM EIS. Five public scoping meetings were held in communities near current mercury storage sites and in Washington, DC. Issues raised at the meetings are documented in the report, *Scope of the Mercury Management EIS*. The scoping period closed on June 30, 2001.

The *Scope of the Mercury Management EIS* and the Draft MM EIS are available for public review at the MM EIS Information Repositories and on the MM EIS web site (www.mercuryeis.com). Public meetings will be held during the Draft MM EIS comment period in communities near potentially affected sites, and oral and written comments may be submitted at that time, as well as throughout the comment period, using the phone, fax, and web site mechanisms provided.

Meeting dates and locations will be advertised in local media, published in the *Federal Register*, and mailed to stakeholders on the MM EIS mailing list. To be placed on DNSC's mailing list, please contact DNSC using the information provided below.

To submit comments or to request additional information:

U.S. Mail—Attention: Project Manager,
Mercury Management EIS, DNSC-E
Defense National Stockpile Center
8725 John J. Kingman Road
Suite 3229
Ft. Belvoir, VA 22060-6223

Toll free—(888) 306-6682
Toll-free fax—(888) 306-8818

E-mail—information@mercuryeis.com
Web site—www.mercuryeis.com

Comments received on the Draft MM EIS will be reviewed to determine whether modifications or additions to the Final MM EIS are required. DNSC responses to comments will be presented in a Comment Response Document that will be included in the Final MM EIS. The Final MM EIS will be available to the public at the Information Repositories, on the MM EIS web site, and mailed on request.