



May 25, 2001

Subject: U.S. Locations Where Beryllium Was Used or Detected

This letter complements our May 2000 report dealing with government responses to beryllium uses and risks.¹ As agreed with your offices, this report identifies U.S. locations where beryllium was used in workplace processes or detected as present in the workplace. Also our work did not address whether the level of beryllium was sufficient to present a risk to human health or whether exposure occurred. The locations identified in this report are based on data provided by the Departments of Energy, Defense, and Labor's Occupational Safety and Health Administration. All agencies reported data for at least 1987 through 1999.

Beryllium is a strong and lightweight metal that is also a hazardous substance. Occupational exposure to beryllium occurs when it is extracted from ore, when the ore is processed into beryllium metal, when the metal is made into parts (e.g., machined, welded, cut, or ground), or when users of beryllium products perform similar operations during repairs or recycling (e.g., for computers, cell phones, and other electronic devices). Energy and Defense are the federal agencies that have most often used beryllium, or beryllium products, that they or their contractors produced. Labor's Occupational Safety and Health Administration has overall responsibility for protecting the health and safety of workers in most workplaces throughout the United States.

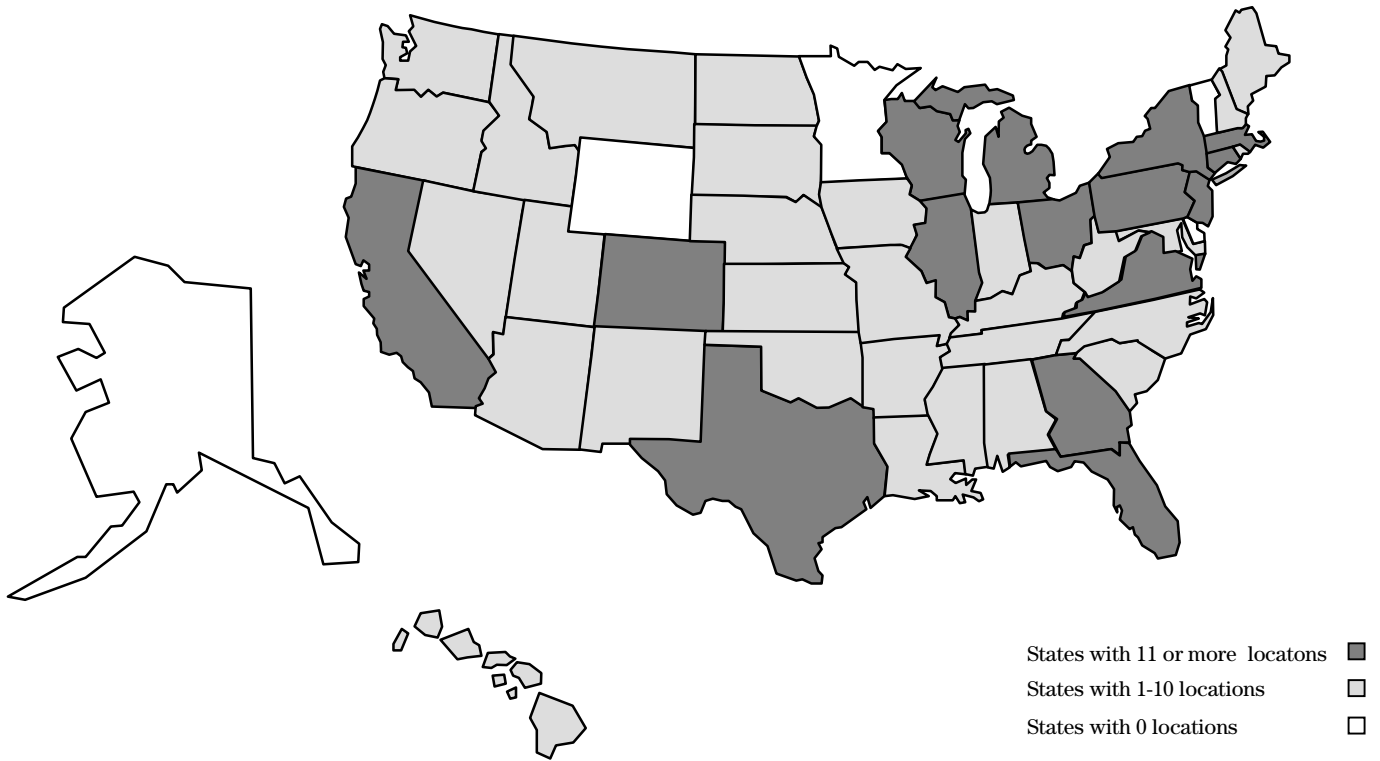
Summary

Data show that beryllium was used or detected at locations in 45 of 50 states, plus the District of Columbia. However, the number of locations varied by state as shown in figure 1. For example, 30 states and the District of Columbia were reported as having from 1 to 10 locations, while 15 states were reported as having from 11 to 41 locations.² The states without reported beryllium use were Alaska, Delaware, Minnesota, Vermont, and Wyoming.

¹*Occupational Safety and Health: Government Responses to Beryllium Uses and Risks* (GAO/OCG-00-6, May 19, 2000).

²Some locations were listed by more than one agency and may be counted twice in some states. For example, Tinker Air Force Base was reported by both Defense and the Occupational Safety and Health Administration. Although we could not identify all potential duplications, only three states (California, Florida, and Michigan) would move to the one-location to ten-location category with complete duplication.

Figure 1: States With Reported Beryllium Use or Detection



Source: GAO map based on Energy, Labor, and Defense data.

Enclosures II through IV identify beryllium use or detection locations reported by each agency. Enclosure II contains data provided by Energy on where beryllium is or was used, identifying 27 Energy or Energy-predecessor agency locations that are or were managed and operated by contractors. Enclosure II also contains data on 39 companies that had contracts to supply beryllium parts or to process beryllium for Energy's predecessors. Enclosure III contains data provided by Defense agencies that identify 73 military locations where beryllium was found in air samples. Enclosure IV contains data provided by the Occupational Safety and Health Administration that also identified 344 locations (primarily of private companies) where beryllium was found in air samples.

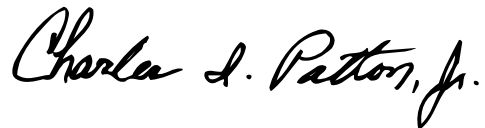
Enclosure V contains data that we received during our prior work on environmental restoration. According to the data, beryllium contamination was detected in soil and groundwater at 38 military locations. Because the samples identified prior contamination at cleanup sites rather than workplaces, these data were not used as input for the map in figure 1.

Agency Comments

We received official oral comments from an official from the Office of the Deputy Under Secretary of Defense for Environmental Security, Department of Defense and an official of the Office of the Chief Financial Officer, Department of Labor. We received written comments from the Acting Assistant Secretary for Environment, Safety, and Health, Department of Energy (enc. VI). All Departments concurred with the draft's contents. Technical comments from departmental officials have been incorporated as appropriate.

We conducted our review from May 2000 through March 2001 in accordance with generally accepted government auditing standards. Enclosure I contains the details of our scope and methodology. As arranged with your offices, we plan no further distribution of this report until 15 days from its issue date, unless you publicly announce the letter's contents earlier.

Please contact Mr. Adamsons at (202) 512-4289 or Mr. Brown at (202) 512-8606 if you or your staff have any questions. Other contributors to this letter were Arturo Holguin and Anthony Padilla.



Charles I. Patton, Jr., Director
Defense Capabilities and Management

Enclosures - 6

List of Requesters

The Honorable Christopher Shays
Chairman, Subcommittee on National Security,
Veterans' Affairs, and International Relations
Committee on Government Reform
House of Representatives

The Honorable Tim Holden
The Honorable Paul E. Kanjorski
The Honorable Marcy Kaptur
The Honorable Jim Kolbe
House of Representatives

The Honorable Robert F. Bennett
The Honorable Mike DeWine
The Honorable John McCain
U.S. Senate

Scope and Methodology

In response to our request for data from the Departments of Energy, Defense, and Labor on where beryllium was used, we obtained the following lists of locations:

- Energy provided lists of Energy/Energy predecessor agencies' locations that used beryllium and the companies that had beryllium contracts with Energy's predecessors.
- Defense provided data on the locations, by service, where beryllium was detected in the workplace.
- The Occupational Safety and Health Administration provided data on the locations where beryllium was detected in the workplace.

Although Defense and the Occupational Safety and Health Administration were unable to identify whether beryllium was used at a location, they provided us with data on cases where air samples indicated that beryllium was detected in the workplace. In addition, data from our prior work on Defense's environmental restoration identified 38 military locations in the United States where beryllium was detected during remediation assessments as a contaminant in soil and groundwater. Our work did not address whether the level of beryllium was sufficient to present a risk to human health or whether exposure occurred.

The data show agencies' reported locations of potential beryllium use and detection; these data have not been verified and may not be complete. For example, Energy is continuing research to identify contractors that may have used beryllium. Also, 30 of the cases of the beryllium-contaminated soil and groundwater identified in our prior work included cleanup sites at locations the military services have not identified.

We conducted our review from May 2000 through March 2001 in accordance with generally accepted government auditing standards.

**Locations Where Beryllium Was Used by Energy
and Its Predecessor Agencies and Companies With Contracts for Beryllium
With Energy Predecessors**

Energy identified 27 Energy or Energy-predecessor locations that are or were managed and operated by contractors who worked with parts made from beryllium. The locations include the Rocky Flats Environmental Technology Site and the Oak Ridge Y-12 Plant, both of which are currently operated by contractors. Work reported at the locations included beryllium research and development, testing, and fabrication, and may date back as far as 1943.

Energy also identified 39 companies/locations that supplied beryllium parts or processed beryllium for Energy’s predecessors: the Manhattan Engineer District, the Atomic Energy Commission, and the Energy Research and Development Administration.¹ Reported work involved processing and refining beryllium, and fabricating parts made from beryllium. Energy is researching records to determine if other companies had contracted with the Atomic Energy Commission to process beryllium. Table 1 below shows the locations as identified in the data provided by Energy.

Table 1: Energy Locations Where Beryllium Is or Was Used.

State	Location
Alabama	Speedring, Incorporated
California	Atomics International
California	Ceradyne, Incorporated
California	General Atomics Division, General Dynamics Corporation
California	Lawrence Berkeley National Laboratory (Energy site)
California	Lawrence Livermore National Laboratory (Energy site)
California	Stanford Linear Accelerator Center (Energy site)
Colorado	Coors Porcelain
Colorado	Rocky Flats Environmental Technology Site (Energy site)
Colorado	University of Denver Research Institute
Connecticut	Connecticut Aircraft Nuclear Engine Laboratory
Florida	American Beryllium Company (a subsidiary of Loral, Incorporated)
Florida	Pinellas Plant (Energy site)
Idaho	Idaho National Engineering and Environmental Laboratory (Energy site)
Illinois	Argonne National Laboratory East (Energy site)
Illinois	Fansteel Metallurgical Corporation
Illinois	Fermi National Accelerator Laboratory (Energy site)
Iowa	Ames Laboratory (Energy site)
Iowa	Iowa Army Ammunition Plant (Energy site; formerly Burlington Plant)
Massachusetts	Franklin Institute
Massachusetts	Massachusetts Institute of Technology
Massachusetts	National Research Corporation
Massachusetts	Norton Company
Massachusetts	StarMet Corporation (formerly Nuclear Metals, Incorporated)
Massachusetts	Wyman Gordon, Incorporated
Michigan	AC Spark Plug (a division of General Motors)
Michigan	Gerity-Michigan Corporation (formerly Canton Drop Forging and Manufacturing)

¹Additionally, Energy listed—but did not identify—the location of the following companies: Alfa Products, Allied Resinous Products, and Metals Reserve Company.

Enclosure II

State	Location
Michigan	Revere Copper & Brass, Incorporated
Michigan	Speedring, Incorporated
Missouri	Kansas City Plant (Energy site)
Nevada	Nevada Test Site (Energy site)
New Jersey	Cercom Quality Products (formerly General Ceramics)
New Jersey	National Beryllia (a subsidiary of Cercom Quality Products)
New Jersey	New Brunswick Atomic Energy Commission Laboratory (Energy site)
New Jersey	U.S. Pipe and Foundry
New Mexico	Los Alamos National Laboratory (Energy site)
New Mexico	Sandia National Laboratories (Energy site)
New York	Brookhaven National Laboratory (Energy site)
New York	Burns & Roe, Incorporated
New York	General Astrometals
New York	Knolls Atomic Power Laboratory (Energy site)
New York	Sylvania Products Corporation
New York	Trudeau Foundation
New York	University of Rochester Atomic Energy Project (Energy site)
North Carolina	Beryllium Metals and Chemical Corporation
North Carolina	University of North Carolina
Ohio	Battelle Memorial Institute
Ohio	Brush Wellman, Incorporated (formerly Brush Beryllium Company)
Ohio	Clifton Products Company
Ohio	Fernald Environmental Management Project (Energy site; formerly Feed Materials Production Center)
Ohio	General Electric Company
Ohio	Kettering Laboratory, University of Cincinnati
Ohio	Mound Plant (Energy site; also known as Miamisburg Environmental Management Project)
Pennsylvania	Footo Mineral Company
Pennsylvania	McDaniel Refractory Company
Pennsylvania	NGK Metals Corporation (its predecessors were Kawecki-Berylco, Cabot Corporation, BerylCo., and Beryllium Corporation of America)
Pennsylvania	Nuclear Materials and Equipment Corporation
South Carolina	Savannah River Site (Energy site)
Tennessee	Oak Ridge East Tennessee Technology Park (Energy site)
Tennessee	Oak Ridge National Laboratory (Energy site)
Tennessee	Oak Ridge Y-12 Plant (Energy site)
Tennessee	Vitro Corporation of America
Texas	Pantex Plant (Energy site)
Washington	Hanford Site (Energy site)
Washington	Pacific Northwest National Laboratory (Energy site)
Wisconsin	Ladish Company

Locations Where Defense Detected Beryllium

With the Office of the Deputy Under Secretary of Defense for Environmental Security’s assistance, we received data showing 17 Army, 5 Air Force, and 51 Navy locations where air sampling was conducted and showed that beryllium was present. Defense-reported air sampling was conducted in areas where welding, sandblasting, soldering, and grinding were involved. The time frames for sampling data varied by service: Air Force sampling was conducted during calendar years 1985 through 2000; Army sampling was conducted during calendar years 1987 to 2000;¹ and Navy sampling was conducted during calendar years 1982 through 1999.² Table 2 shows locations identified by each service.

Table 2: Defense Sampled Locations by State

State	Location
Alabama	Anniston Army Depot
California	Coronado Naval Amphibious Base
California	McClellan Air Force Base
California	North Island Naval Air Station
California	San Diego Naval Station
California	San Diego Navy Public Works Center
Colorado	Fort Carson (Army)
Connecticut	New London Naval Submarine Base
District of Columbia	Walter Reed Army Medical Center ^a
District of Columbia	Washington Navy Public Works Center
Florida	Jacksonville Naval Air Station
Florida	Jacksonville Naval Dental Center ^a
Florida	Jacksonville Naval Hospital ^a
Florida	Key West Naval Air Station
Florida	Mayport Naval Station
Florida	Naval Surface Warfare Center/Coastal Systems Station
Florida	Pensacola Naval Air Station
Florida	Pensacola Naval Aviation Depot
Florida	Pensacola Navy Public Works Center
Florida	Whiting Field Naval Air Station
Georgia	Albany Marine Corps Logistics Base
Georgia	Warner Robins Air Force Base
Hawaii	Pearl Harbor Naval Station
Hawaii	Tripler Army Medical Center ^a
Illinois	Great Lakes Naval Dental Center ^a
Indiana	Naval Air Warfare Center/Aircraft Division
Indiana	Naval Surface Warfare Center/Crane Division
Louisiana	Louisiana Army National Guard
Louisiana	Fort Polk (Army)
Maine	Brunswick Naval Air Station
Maine	Portsmouth Naval Ship Yard
Maryland	Aberdeen Proving Ground
Maryland	Carderock Naval Surface Warfare Center

¹The Army also provided beryllium-sampling data for an installation located at Wuersburg, Germany.

²The Navy also provided beryllium-sampling data for three installations located outside of the continental United States (Okinawa, Japan; Roosevelt Roads, Puerto Rico; Rota, Spain) as well as for five ships (the U.S.S. *Camden*, the U.S.S. *Enterprise*, the U.S.S. *John F. Kennedy*, the U.S.S. *Lasalle*, and the U.S.S. *Theodore Roosevelt*). Also, the Navy provided sampling data for 13 military activities but was unable to identify specific installations or locations.

Enclosure III

State	Location
Maryland	National Naval Dental Center ^a
Maryland	Naval Explosive Ordnance Disposal Technology Division
Maryland	Naval Surface Warfare Center/Indian Head Division
Maryland	Patuxent River Naval Air Station
Maryland	United States Naval Academy
Mississippi	Gulfport Naval Construction Battalion Center
Mississippi	Pascagoula Naval Station
Nevada	Fallon Naval Air Station
New York	Fort Drum (Army)
New York	Watervliet Arsenal (Army)
North Carolina	Camp Lejeune Marine Corps Base
North Carolina	Cherry Point Marine Corps Air Station
North Carolina	Fort Bragg (Army)
Oklahoma	Fort Sill (Army)
Oklahoma	McAlester Army Ammunition Plant
Oklahoma	Oklahoma Army National Guard
Oklahoma	Tinker Air Force Base
Pennsylvania	Tobyhanna Army Depot
Pennsylvania	Willow Grove Naval Air Station
South Carolina	Parris Island Marine Corps Recruiting Depot
Texas	Corpus Christi Army Depot
Texas	Corpus Christi Naval Air Station
Texas	Corpus Christi Naval Control of Shipping Organization
Texas	Fort Hood (Army)
Texas	Ingleside Naval Station
Texas	Kelly Air Force Base
Texas	Kingsville Naval Air Station
Utah	Hill Air Force Base
Virginia	Fort Eustis (Army)
Virginia	Little Creek Naval Amphibious Base
Virginia	Naval Inactive Ship Maintenance Facility
Virginia	Norfolk Fleet Training Center
Virginia	Norfolk Naval Aviation Depot
Virginia	Norfolk Naval Dental Center ^a
Virginia	Norfolk Naval Ship Yard
Virginia	Norfolk Naval Station
Virginia	Oceana Naval Air Station
Virginia	Quantico Marine Corps Base
Washington	Naval Undersea Warfare Center/Keyport Division
Washington	Puget Sound Naval Ship Yard

^aDefense Health Affairs officials stated that beryllium used in medical treatment facilities is controlled to ensure that detected beryllium levels are below all standards to prevent human health risks.

**Locations Where the Occupational Safety and Health Administration
Detected the Presence of Beryllium**

The Occupational Safety and Health Administration provided data on 344 U.S. locations, primarily company locations, where beryllium was detected through air samplings.¹ The data covered samplings taken from May 1979 through December 1999. Table 3 shows the locations, by state, as identified in the data provided by the Occupational Safety and Health Administration.

Table 3: Occupational Safety and Health Administration Sampled Locations by State

State	Locations
Alabama	Bender Shipbuilding and Repair
Alabama	Flame Refractories
Alabama	Imms Industrial Coatings
Alabama	Melco, Incorporated
Alabama	Speedring Manufacturing Company
Alabama	Steel Processors, Incorporated
Alabama	Triangle Recycling Services, Incorporated
Arizona	Brush Wellman, Incorporated
Arkansas	Accupower/Sureull
Arkansas	Amtran Corporation
Arkansas	El Paso Trailers
Arkansas	Spirit Homes, Incorporated
California	Aluminum Company of America
California	Bigger Than Life, Incorporated
California	California Concrete Pipe Corporation
California	Fleetwood Motor Homes of California
California	Norris Plumbing Fixtures
California	Rumiano Cheese Company
California	Techni-Cast Corporation
Colorado	Beryl Ores Company, Incorporated
Colorado	Goltra Castings, Incorporated
Colorado	Hollis Corporation
Colorado	Iam/Environmental, Incorporated
Colorado	Marathon Bronze
Colorado	Metal Castings of Colorado
Colorado	Mine & Smelter
Colorado	Peter Kiewit Sons, Incorporated
Colorado	Progress Rail Services
Colorado	Schlage Lock, Incorporated
Colorado	Soft Touch Sandblasting
Colorado	W.J. Whatley, Incorporated
Colorado	Wagner Equipment Company
Connecticut	A. Laugeni & Sons, Incorporated
Connecticut	Amtrak Corporation
Connecticut	Benu Corporation
Connecticut	Charles Batchfelder Company Incorporated
Connecticut	Cowan Engineering Company

¹In addition, data were also provided on locations in Puerto Rico and the Virgin Islands.

Enclosure IV

State	Location
Connecticut	Edro Corporation
Connecticut	Gerald Metals, Incorporated
Connecticut	Handy and Harman
Connecticut	Industrial Technologies, Incorporated
Connecticut	Jensen Industries
Connecticut	Jupiter Painting Contracting
Connecticut	Manafort Brothers
Connecticut	Norwalk Fabricators Incorporated
Connecticut	Parr Painting, Incorporated
Connecticut	South Windsor Metallurgical, Incorporated
Connecticut	Turner & Seymour Manufacturing
District of Columbia	Libia Panos
Florida	American Beryllium Company, Incorporated
Florida	Lee Lester, Incorporated
Florida	Sun State Marine Services, Incorporated
Georgia	Bankhead Transportation Equipment
Georgia	Dan's Painting & Sandblasting
Georgia	Diversified Fabricators Incorporated
Georgia	East Point Foundry, Incorporated
Georgia	E-Z-Go Textron
Georgia	Flour Daniel, Incorporated
Georgia	Glasride Trailers, Incorporated
Georgia	Kubota Manufacturing Corporation
Georgia	Monitor Manufacturing Company
Georgia	Ranew Fleet Service
Georgia	Stevens Equipment Company
Georgia	Tie Down Engineering, Incorporated
Georgia	Wika Instrument Corporation
Idaho	Custom Metal Fabricating, Incorporated
Idaho	Fabco Fireplaces and Stoves
Idaho	J.R. Simplot Company
Illinois	Amcast, Incorporated
Illinois	Alu Bra Foundry
Illinois	CBI Services, Incorporated
Illinois	Duplicraft, Incorporated
Illinois	Family Security Doors & Windows
Illinois	Francis & Nygren Foundry
Illinois	George Kountoupes Painting Company
Illinois	K.R. Komarek, Incorporated
Illinois	KVF Company
Illinois	Lake Dental Lab
Illinois	Louis Meskin
Illinois	M&R Printing Equipment, Incorporated
Illinois	Maxcor, Incorporated
Illinois	National Castings, Incorporated
Illinois	North Chicago Refiners & Smelters
Illinois	Patten Tractor & Equipment Company
Illinois	Plano Metal Specialties
Illinois	River City Demolition

Enclosure IV

State	Location
Illinois	Sarcol, Incorporated
Illinois	Standard Refrigeration Company
Illinois	The Chicago Faucet Company
Illinois	Travenal Laboratories, Incorporated
Illinois	Tricast Corporation
Illinois	Village Perfection Plating
Indiana	Aluminum Company of America
Kansas	Great Plains Manufacturing, Incorporated
Kentucky	Belden Electronic Wiact & Cable
Kentucky	Louisville Scrap Material Company, Incorporated
Kentucky	McHenry Brass, Incorporated
Kentucky	Mother Earth Recycling
Kentucky	Reed Construction, Incorporated
Louisiana	Tiger Shipyard
Maine	Bath Iron Works
Maryland	Pro-Tech Dental Lab, Incorporated
Massachusetts	Accuservice Corporation
Massachusetts	Babcock-Davis Hatchways, Incorporated
Massachusetts	Bird Machine Company
Massachusetts	Boston Steel & Manufacturing
Massachusetts	Cable Products, Incorporated
Massachusetts	Chicopee Alloys, Incorporated
Massachusetts	Flintab
Massachusetts	Fore River Shipyard and Iron Works
Massachusetts	Francis Harvey & Sons, Incorporated
Massachusetts	George Campbell Painting Corporation
Massachusetts	Industrial Enterprise
Massachusetts	J.J. Sirianni, Incorporated
Massachusetts	James River Mass, Incorporated
Massachusetts	N.U. Contractors, Incorporated
Massachusetts	New England Restoration, Incorporated
Massachusetts	North American Industries, Incorporated
Massachusetts	Prototyping Services, Incorporated
Massachusetts	Stan Cast, Incorporated
Massachusetts	Turner Trucking & Salvage, Incorporated
Massachusetts	Weymouth Engineering Company
Michigan	Extruded Metals, Incorporated
Michigan	Hackett Brass Foundry
Michigan	Icarus Industrial Painting & Company
Michigan	Knusaga Corp DBA Hydraulic Tub
Michigan	Prince Bridge & Marine Ltd.
Michigan	Progress Painting Company
Michigan	Trojan Heat Treat, Incorporated
Michigan	WWA, Incorporated
Missouri	Chrysler Corporation
Missouri	Continental Can Company
Missouri	Fabcon, Incorporated
Missouri	Fitzgerald Marine and Repair
Missouri	Four Process Ltd.

Enclosure IV

State	Location
Missouri	Specialloy Metals Company
Montana	Blue Star Canvas Products Incorporated
Montana	Holland Construction Company
Montana	Livingston Rebuild Center
Montana	SRS Crisafulli, Incorporated
Nebraska	Intersystems
Nebraska	Lincoln Plating Company
Nevada	Marley Erectors, Incorporated
Nevada	Southern California Valve
Nevada	Viking Metallurgical Corporation
New Hampshire	Fab-Braze Corporation
New Hampshire	Hebert Manufacturing Company, Incorporated
New Hampshire	Spencer Transformer And Equipment
New Hampshire	Wyman-Gordon Investment Casting
New Jersey	Accuratus Ceramics Corporation
New Jersey	Airtron Incorporated
New Jersey	Allied Signal, Incorporated
New Jersey	Anka Painting Company
New Jersey	AT&T Bell Laboratories
New Jersey	Atlantic Casting & Engineering
New Jersey	Beach Electric Company, Incorporated
New Jersey	Bellezza Company, Incorporated
New Jersey	Brush Wellman Company, Ceramics Division
New Jersey	Coil Metal Corporation
New Jersey	Commercial Hardware, Incorporated
New Jersey	Edward Chiovarou Painting Company
New Jersey	Kinz Staley & Sons, Incorporated
New Jersey	KSM Fastening Systems
New Jersey	Kullman Industries, Incorporated
New Jersey	Longview of Ocean County, Incorporated
New Jersey	LS Rubber Industries, Incorporated
New Jersey	Madison Industrial Old Bridge
New Jersey	Mansol Industries, Incorporated
New Jersey	National Beryllia Corporation
New Jersey	New Jersey Steel Corporation
New Jersey	P.S. Bruckel, Incorporated
New Jersey	Palmer Industries, Incorporated
New Jersey	Perth Amboy Dry Dock Company, Incorporated
New Jersey	PGA Dental Studios, Incorporated
New Jersey	Public Service Electric & Gas
New Jersey	RFE Industries, Incorporated
New Jersey	Riverside Metals, Incorporated
New Jersey	Robert A. Keasby Corporation
New Jersey	Rodermond Industries, Incorporated
New Jersey	U.S. Generating Company
New York	Bells Avenue Incinerator, New York City
New York	Berkman Brothers, Incorporated
New York	Bethlehem Steel, Incorporated
New York	Carabie, Incorporated

Enclosure IV

State	Location
New York	CMP Industries, Incorporated
New York	Delphi Painting & Decorating
New York	E&E Contractors, Incorporated
New York	Emil Von Dungen, Incorporated
New York	GBA Contracting Corporation
New York	Mapco Enterprises, Incorporated
New York	Mohawk Metal Products Company, Incorporated
New York	New Market Products
New York	Non Ferrous Processing Corporation
New York	P&V Sadowski Construction
New York	Rush-Henrietta CSD Maintenance Department
New York	Stone Bridge Iron & Steel
North Carolina	L. Gordon Iron and Metal Company
North Carolina	PE Hoover Enterprises, Incorporated
North Carolina	Schindler Elevator Corporation
North Dakota	Dakota Catalyst Products, Incorporated
North Dakota	Melroe Company
North Dakota	Newman Signs, Incorporated
Ohio	A.T.D. Corporation
Ohio	Accurate Rack Company, Incorporated
Ohio	Aluminum Waste Technology, Incorporated
Ohio	Atmosphere Annealing, Incorporated
Ohio	Brush Wellman, Incorporated
Ohio	Budd Company
Ohio	Carboline Company
Ohio	Chase Brass and Copper Company
Ohio	Chem-Fab Company
Ohio	Circleville Metal Works
Ohio	Eljer Manufacturing
Ohio	Envir-Con Construction Company
Ohio	Eureka Coach, CCE, Incorporated
Ohio	Excel Polishing & Buffing Company
Ohio	General Motors Corporation
Ohio	Hohman Plating and Manufacturing, Incorporated
Ohio	Johnson Metall-American Crucible
Ohio	Larson Consolidated, Incorporated
Ohio	Lomack Drum Company
Ohio	Marietta Industrial Enterprise
Ohio	Ortner Freight Car Company, Incorporated
Ohio	Packaging Material, Incorporated
Ohio	RCA Corporation
Ohio	RMI Company
Ohio	Rumpke Iron Works, Incorporated
Ohio	Ryder-Heil Bronze, Incorporated
Ohio	S.G.M. Company
Ohio	Southern Ohio Fabricators, Incorporated
Ohio	Special Tool, Incorporated
Ohio	Trailer Masters Ltd. Company
Ohio	Transco Railway Products, Incorporated

Enclosure IV

State	Location
Ohio	Ultra-Met Manufacturing Company
Ohio	United Foundries, Incorporated
Ohio	Whitaker & Son Plating, Incorporated
Oklahoma	American Casting, Incorporated
Oklahoma	Root Protective Coatings, Incorporated
Oklahoma	Smithco Engineering
Oklahoma	Tinker Air Force Base/Oklahoma City Air Logistics Center
Oregon	Boeing of Portland
Pennsylvania	Active Brass Foundry, Incorporated
Pennsylvania	Alfieri Scrap Metals, Incorporated
Pennsylvania	Bushings, Incorporated
Pennsylvania	Cabot Beryllium Products
Pennsylvania	Dereco, Incorporated
Pennsylvania	Dierolf & Son, Incorporated
Pennsylvania	Envirosafe Services, Incorporated
Pennsylvania	Erie Marine Enterprises, Incorporated
Pennsylvania	Flood City Brass and Pump Company
Pennsylvania	Franklin Smelting & Refining
Pennsylvania	Gesco, Incorporated
Pennsylvania	Johnstown Wire Technologies, Incorporated
Pennsylvania	Kimmins Industrial Service Corporation
Pennsylvania	Lehigh Consolidated Industries
Pennsylvania	Masel Industries, Incorporated
Pennsylvania	Muratone Company, Incorporated
Pennsylvania	NGK Metals, Incorporated
Pennsylvania	Pennline Industries, Incorporated
Pennsylvania	Piad Precision Castings Corporation
Pennsylvania	Ruch Tool Company, Incorporated
Pennsylvania	Sonoco Products Company
Pennsylvania	Stanley E. Flagg & Company, Incorporated
Pennsylvania	Superior Tube Company
Pennsylvania	Trafcon Industries, Incorporated
Pennsylvania	Weaver Industries, Incorporated
Rhode Island	Branch Metal Processing
Rhode Island	Gannon & Scott, Incorporated
Rhode Island	Metech International, Incorporated
Rhode Island	Newport Shipyard, Incorporated
Rhode Island	Parkers Brass Foundry, Incorporated
Rhode Island	Pease & Curren
Rhode Island	Robert E Derecktor of Rhode Island
Rhode Island	Rona, Incorporated
Rhode Island	Taylor Precision Casting, Incorporated
South Carolina	Braswell Service Group, Incorporated
South Dakota	Prest Rack
South Dakota	TCF Axial Division
Tennessee	NGK Metals Corporation
Tennessee	Tecumseh Products Company
Texas	Acor Dental Lab, Incorporated
Texas	Ampco Metal Manufacturing, Incorporated

Enclosure IV

State	Location
Texas	BEI Defense Systems
Texas	Bell Helicopter Textron, Incorporated
Texas	Bilt-Redi Corporation
Texas	Brown Fintube Company
Texas	Cardenas Motors, Incorporated
Texas	Carolina Color Corporation
Texas	Coastal Iron Works, Incorporated
Texas	Conway Technologies Corporation
Texas	Dynamic Coating Corporation
Texas	Dynamic Painting Corporation
Texas	Dyna-Therm Corporation
Texas	Eagle Construction
Texas	Eagle Die Casting, Incorporated
Texas	Farris Welding & Fabricating
Texas	Fuji Ceramics Dental Laboratory
Texas	J.E. Merit Constructors, Incorporated
Texas	Jonsil Manufacturing Company, Incorporated
Texas	Kessler Premium Castings Company
Texas	Layne Western DBA Drilling Service
Texas	Old World Products, Incorporated
Texas	R. Johns, Ltd.
Texas	Royal Seating Corporation
Texas	Tapco International, Incorporated
Texas	Tex Tin Corporation
Texas	Texas Engineered Products Company
Texas	Texas Steel Company
Texas	TMI Coatings, Incorporated
Virginia	Davis Boat Works, Incorporated
Virginia	General Electric Company
Virginia	Gerloff Painting, Incorporated
Washington	Omega Industries, Incorporated
West Virginia	CSX Transportation-Huntington
West Virginia	Pressure Concrete Construction
Wisconsin	AFW Foundry, Incorporated
Wisconsin	AO Smith Corporation
Wisconsin	Allister Fabricating, Incorporated
Wisconsin	Ampco Metal, Incorporated
Wisconsin	Basic American Medical Products
Wisconsin	Chippewa Brass & Aluminum Foundry
Wisconsin	Edwin Yeska #152
Wisconsin	Federal Manufacturing Company
Wisconsin	Fraser Shipyards, Incorporated
Wisconsin	Frost Company
Wisconsin	Harnischfeger Corporation
Wisconsin	Howard G. Hinz, Incorporated
Wisconsin	Iroquois Foundry Company
Wisconsin	J&D Manufacturing and Sales of Eau Claire
Wisconsin	Johnson Brass & Machine Foundry
Wisconsin	Kramer International, Incorporated

Enclosure IV

State	Location
Wisconsin	Milwaukee Sign Company, Incorporated
Wisconsin	Oscar J. Boldt Construction Company
Wisconsin	Oshkosh Radiator & Welding Company
Wisconsin	Rose Industries, Incorporated
Wisconsin	Siemens Power Corporation
Wisconsin	Stanley Fronczak D/B/A Custom
Wisconsin	Super Steel Products Corporation
Wisconsin	Thermal Engineering International
Wisconsin	Tri-Clover, Incorporated
Wisconsin	Varco-Pruden Buildings
Wisconsin	Vikron, Incorporated
Wisconsin	Walworth Foundries, Incorporated

Prior GAO Work Showing Where Defense Identified Locations With Beryllium Contamination

Information obtained during our prior work on Defense’s environmental restoration shows that beryllium contamination was detected in soil and groundwater at 38 of the 97 military locations¹ with high cleanup costs in the United States.² The data that we reviewed did not indicate how beryllium was actually used at the locations. The affected sites at an identified location included, for example, landfills, firing ranges, industrial waste pits, drainage ditches, and surface disposal areas. Table 4 lists the 38 military locations. Eight of the military locations reported by the Air Force and the Navy in enclosure III are also included in the list of 38 military locations. Neither we nor Defense included the other 30 locations in the total of beryllium-use locations because the contamination was at cleanup sites rather than at a workplace.

Table 4: Locations Where Beryllium Was Found in Soil and Groundwater

State	Military location
Alaska	Adak Naval Air Facility
Alaska	Elmendorf Air Force Base
California	Alameda Naval Air Station
California	China Lake Naval Weapons Warfare Center
California	Edwards Air Force Base
California	El Toro Marine Corps Air Station
California	Lemoore Naval Air Station
California	March Air Force Base
California	Mare Island Naval Ship Yard
California	Moffett Naval Air Station
California	North Island Naval Air Station ^a
California	Point Mugu Naval Air Warfare Center
California	Presidio of San Francisco
California	Stockton Naval Communication Station
California	Seal Beach Naval Weapons Station
California	Travis Air Force Base
California	Tustin Marine Corps Air Station
Colorado	Pueblo Chemical Depot
Florida	Jacksonville Naval Air Station ^a
Florida	Mayport Naval Station ^a
Florida	Pensacola Naval Air Station ^a
Hawaii	Barbers Point Naval Air Station
Missouri	Lake City Army Ammunition Plant
Missouri	Weldon Spring Ordnance Works
New Jersey	Picatinny Arsenal
New York	Seneca Army Depot
North Carolina	Cherry Point Marine Corps Air Station ^a

¹Additionally, a location on Guam was also identified as having beryllium contamination.

²Our report entitled *Environmental Cleanup: DOD’s Implementation of the Relative Risk Site Evaluation Process*, (NSIAD-99-25, Oct. 7, 1998) identifies installations that accounted for more than \$20 million in planned cleanup costs during 1996-98 or were projected to have more than \$100 million in cleanup costs for 1996 through completion. The beryllium contamination was reported in worksheets provided by the military services for each of the 97 installations.

Enclosure V

State	Location
Ohio	Wright-Patterson Air Force Base
Oklahoma	Tinker Air Force Base ^a
Rhode Island	Davisville Naval Construction Battalion Center
Texas	Kelly Air Force Base ^a
Utah	Dugway Proving Ground
Utah	Tooele Army Depot
Virginia	Norfolk Naval Ship Yard ^a
Virginia	Yorktown Naval Weapons Station
Washington	Bangor Naval Submarine Base
Wisconsin	Badger Army Ammunition Plant
Wyoming	F.E. Warren Air Force Base

^a Locations reported in enclosure III.

Official Written Comments From Energy



Department of Energy
Washington, DC 20585

April 11, 2001

Mr. Charles I. Patton
Director
Defense Capabilities and Management
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Patton:

The General Accounting Office draft report GAO-01-476R, "Locations Where Beryllium Was Used or Detected," was received by the Department of Energy for review and comment in March 2001. The Office of Environment, Safety and Health was designated as the lead review office for the Department. Submitted below are our comments:

- Page 2: The map legend is inconsistent with the narrative in the first paragraph of the summary. The legend reflects states with "1-10" locations; the paragraph states "1-9" locations.
- Page 6, first paragraph, last sentence. Since the research and development (R&D) at most of the listed SC sites did not include "beryllium R&D," the following change should be made in the text:

"Work reported at the locations **involved** beryllium research and development, testing, and fabrication, and may date back as far as 1943," should be revised to read, "Work reported at the locations **included** beryllium research and development, testing, and fabrication..."
- Our records show that Vitro Chemical (TN) was a division of Vitro Corporation of America (TN) and therefore should not be listed separately. In the Federal Register Notice, 66 FR 4003 "Energy Employees Occupational Illness Compensation Act of 2000," DOE has listed it as Vitro Corporation of America. We would recommend that this report do so as well.

If you have any questions, please contact Lesley A. Gasperow, audit liaison officer for this office, on 301-903-5577.

Sincerely,

A handwritten signature in black ink that reads "Steven V. Cary".

Steven V. Cary
Acting Assistant Secretary
Environment, Safety and Health



Printed with soy ink on recycled paper

Enclosure VI

cc:
Geoffrey Judge, EH-7
Lesley Gasperow, EH-71
Juanita McDuffie, CR-2

(709519)