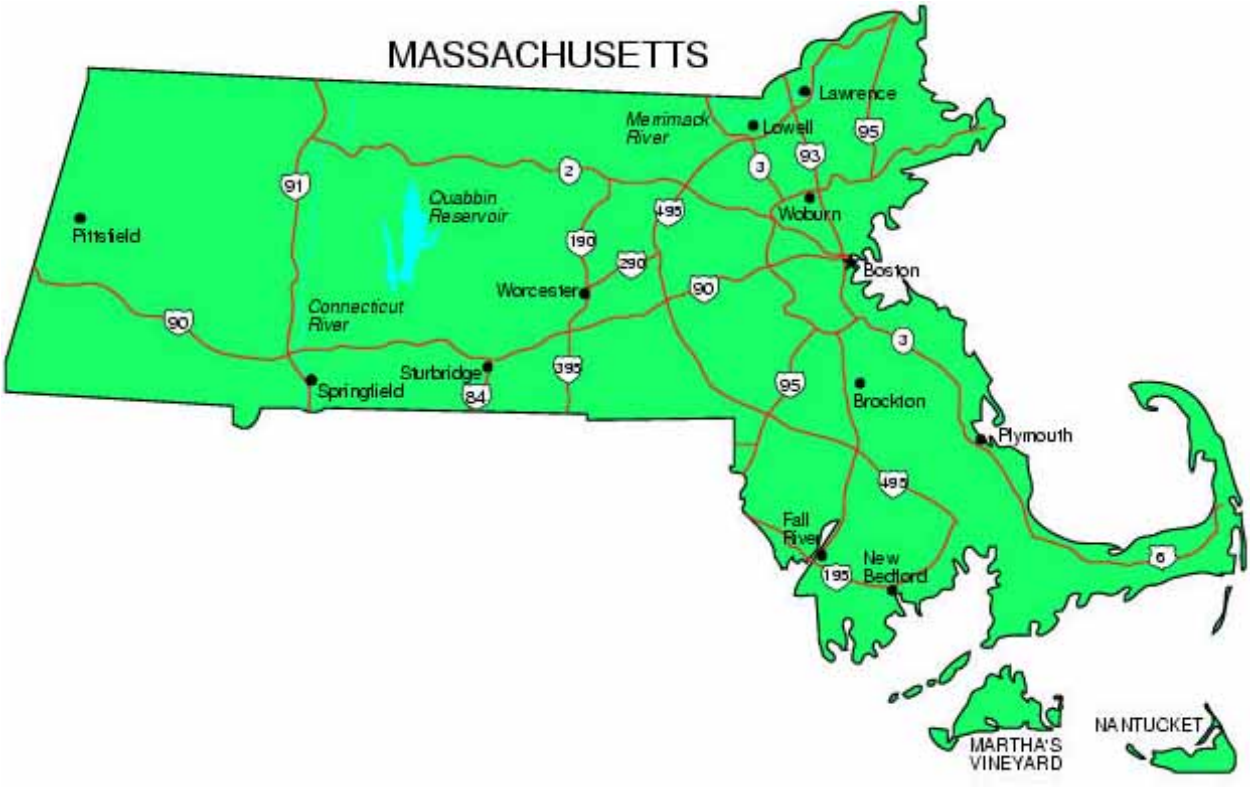
2006 MASSACHUSETTS LOW-LEVEL RADIOACTIVE WASTE SURVEY REPORT



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2006 MASSACHUSETTS LOW-LEVEL RADIOACTIVE WASTE SURVEY REPORT

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PREFACE

The Low-Level Radioactive Waste Management Board was established pursuant to the provisions of Chapter 111H, section 2 of the Massachusetts General Laws, and was the lead state agency responsible for planning and implementing the management of low-level radioactive waste (LLRW) in the Commonwealth. In 2002, the Board was abolished and its powers and duties were transferred to the Department of Public Health (DPH). The Radiation Control Program (RCP) under DPH is the lead agency now responsible.

The Massachusetts Low-Level Radioactive Waste Management Act (Chapter 111H, section 7) mandates that each person who generates, treats, stores, transports, or disposes of LLRW within the Commonwealth shall provide detailed information annually concerning the types, volumes, radioactivity, sources, and characteristics of LLRW produced. The information provided must include any current and projected LLRW management activities, which includes source minimization, volume minimization, and on-site storage, treatment, packaging, and transportation practices.

DPH conducts an annual survey to determine the characteristics of LLRW generated, stored, and transferred for out-of-state disposal. The less complex 2006 survey differs from pre-1997 Board surveys, because questions on management methods and characteristics, container and packing methods, storage off or on site, routine or non-routine waste, specific out-of-state disposal sites, and future projections were eliminated. A copy of the 3-page 2006 survey used is shown in figure 29.

This report summarizes data compiled from responses to the 2006 Radioactive Waste Survey of radioactive material users licensed in Massachusetts by the U.S. Nuclear Regulatory Commission (NRC) and the Massachusetts Department of Public Health. The data provided by the generators in the annual survey is used in connection with the Department of Public Health's activities to arrange storage, treatment, and disposal solutions for LLRW generated and to formulate LLRW policy in the Commonwealth.

Comments on this report and suggestions for future annual reports are welcome. Please send correspondence to:

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The 2006 LLRW report focuses on the characteristics and management of LLRW in the Commonwealth. The data collected enables DPH to formulate policy on the storage, treatment, disposal, and other management activities. The annual survey is used by DPH to determine the following:

- What classes of LLRW with relatively short half-lives may be stored for natural radioactive decay?

- What classes will require disposal?

- What classes will require special management procedures during the life of a disposal facility accepting LLRW in Massachusetts?

The annual survey is also used with the Department of Public Health's activities to arrange storage, treatment, and disposal solutions for the LLRW generated. Both in-state and out-of-state disposal options require the detailed characterization of: (1) the total waste inventory placed in a facility throughout its operating life; and (2) the amounts of activity remaining in the facility during the closure. The LLRW survey is the primary data source for the facility inventory projections.

Tables and figures in this report present survey responses rounded by standard methods; therefore, totals may not equal 100%.

Chapter 1

Executive Summary

1.1 2006 Survey Results Summary

Waste generators consist of licensees that either transfer and/or store LLRW.
In 2006, Massachusetts waste generators had generated **984,563.40 cubic feet** of low-level radioactive waste (LLRW) containing **18,674.09 curies**. Of this volume and activity, **973,628.35 cubic feet** containing **15,133.48 curies** were transferred and **10,945.40 cubic feet** containing **3,540.61 curies** were stored in-state for further treatment and disposal. A total of **57** different isotopes were reported generated with Tritium (H-3) being the most common.

The last survey report completed by the Board was in 1999 for calendar year 1997. No formal survey reports were compiled for years 1998-2001 by the Board. In 2002, the Department of Public Health completed its first formal survey. The 2006 survey is available on the Agency's website: www.mass.gov/dph/rcp under the heading **Radiation Control Topics**, then under the heading **ALow Level Radioactive Waste."**

The 2006 volume totals were greater than calendar year 2005, while the activity totals had decreased by 47%. The reason for the decrease in activity totals is that Entergy Nuclear Generation Company reported only those volumes and activity of waste actually generated. The increase in volume totals is due to Yankee Atomic Electric Company performing decommissioning work in Rowe, MA.

Massachusetts generators had access to three disposal facilities: Barnwell, South Carolina; Clive, Utah; and Richland, WA. Barnwell accepts Class A, B, C, and High Volume/Low Activity Waste (HVLA), but no waste mixed with, or exhibiting characteristics of, toxic chemical hazardous material (called mixed waste). The Clive site accepts only Class A and HVLA, while the Richland facility accepts waste from naturally-occurring or accelerator-produced radioactive material (NARM). The three disposal sites, however, are a temporary solution to LLRW management in Massachusetts.

Since Massachusetts is an **unaffiliated state** and not a member of any of the ten national interstate compacts, generators in Massachusetts can dispose of their LLRW to any licensed facility that is willing to accept it. A national map showing the various compact memberships is shown in figure 1.

The following disposal sites received LLRW from Massachusetts in 2006:

Clive, Utah: 788,114.80 cubic feet containing 0.304 curies.
Barnwell, South Carolina: 598.50 cubic feet containing 15,444.08 curies.

No LLRW was shipped to the Richland, Washington facility in 2006. According to the Manifest

Information Management System website, the highest level of activity was transferred to Barnwell, SC; the highest level of volume was transferred to Clive, UT.

Since the survey eliminated questions regarding the licensees' future projections, the Department of Public Health estimates that total future annual LLRW projections until 2012 will remain constant at 80,000 cubic feet and 20,000 curies. These numbers include both LLRW transferred and stored**.**

1.2 Distribution of Large and Small Generators by Transfers

Three hundred and twenty-one organizations reported transferring LLRW for disposal in 2006, representing an increase of 2% from 2005. Seventeen out of the 321 organizations shipped 100 cubic feet or less, compared to sixteen in 2005. (100 cubic feet is equivalent to just over thirteen 55-gallon drums).

Of the 321 organizations, 21 generators shipped one curie or less and can be classified as small activity generators. This is an increase of 24% from calendar year 2005.

Organizations that shipped large amounts of volume and activity are shown in Tables 1 and 2. Because the volume of waste transferred does not necessarily correlate with the amount of activity within the transferred waste, the 17 small quantity shippers by volume are not all the same small activity shippers. In addition, the data shows a consistent trend in Massachusetts: the majority of Massachusetts LLRW generators produce small volumes of waste**,** while only 24 out of the 321 generators produced large volumes (greater than 100 cubic feet) of waste.

Low-level radioactive waste is shipped by the following methods: rail car, truck, or ship. The US Department of Transportation (DOT) has strict packaging requirements for shipping LLRW using three types of containers which are classified as either LSA, Type A, or Type B.

TABLE 1	
LIST OF 24 LARGE GENERATORS THAT TRANSFERRED MORE THAN 100 CUBIC FEET OF LLRW IN 2006	
FACILITY NAME	**VOLUME IN CUBIC FEET**
1. Areva NP, Inc.	151
2. Boston University Medical Center	191.42
3. Brigham & Women's Hospital	300.80
4. Charles River Laboratories, Inc.	468
5. Dana-Farber Cancer Institute	288
6. Entergy Nuclear Generating Company	11,964
7. Genetics Institute, LLC	515
8. Genzyme Corporation	420
9. Joslin Diabetes Center, Inc.	102
10. Lantheus Medical Imaging, Inc. (formerly Bristol-Meyers Squibb)	3,440.50
11. Marine Biological Laboratory	123
12. Mass. General Hospital	187.50
13. Millennium Pharmaceuticals, Inc.	181.36
14. Molecular Insight Pharmaceuticals, Inc.	110
15. Novartis Institute for Biomedical Research	527.92
16. PerkinElmer Life & Analytical Science	729.80
17. Pfizer, Inc.	232.50

18. QSA Global, Inc.	450
19. Shire Human Genetic Therapies, Inc.	115.90
20. Springborn Smithers Lab, Inc.	307.30
21. Starmet NMI	27,857
22. Unitech Services Group, Inc.	3,300
23. U.S. Army Corps of Engineers, Shpack Site	72,894
24. Yankee Atomic Electric Company	822,000

One hundred cubic feet of waste per annum is a threshold in Chapter 111H, section 13. Licensees that generate at least 100 cubic feet must implement **a waste minimization plan**. More information is available in DPH Regulatory Guide No. 1.1 Revision 2.0 dated August 1995 and titled: Regulatory Guidance for Low Level Radioactive Waste Minimization.

TABLE 2

LIST OF 6 LARGE GENERATORS THAT TRANSFERRED MORE THAN ONE CURIE OF LLRW IN 2006	
FACILITY NAME	**ACTIVITY IN CURIES**
1. Communications & Power Indust.	41.30
2. Entergy Nuclear Generating Company	14,784.30
3. Mass. Dept. of Public Health	7.01
4. PerkinElmer Life & Analytical Science	168.388
5. QSA Global, Inc.	2.64
6. Starmet NMI	121

1.3 Distribution of Large and Small Generators by Storage

In 2006, 88 facilities reported in-state storage of LLRW. Of the 88 organizations, 81 or 92% stored **100 cubic feet or less** and can be classified as Asmall quantity@ in-state storage generators. The list of the largest generators storing more than 100 cubic feet of waste is shown in Table 3. Because the activity of waste in storage does not necessarily correlate with the amount of volume in storage, the 84 small activity in-state storage generators are not all the same small volume storage generators shippers.

Tables 3 and 4 show the storage by volume and activity of organizations that stored large amounts of LLRW. Because the volume of waste stored does not necessarily correlate with the amount of activity within the stored waste, the 81 small quantity storers by volume are not all the same small activity storers.

Of the 88 in-state storage generators, 84 or 95.4% stored less than one curie and can be classified as small quantity in-state storage generators. **The data shows a consistent trend in Massachusetts: that most Massachusetts generators produce small amounts of activity requiring disposal.**

The list of 4 generators storing more than one curie of waste is shown in Table 4.

Typical storage containers include 55 and 30 gallon steel drums and boxes. Other containers used less frequently are small steel pails or cans in the 2 to 5 gallon size and 9-10 cubic feet fiber drums used as temporary containment vessels prior to processing, such as incineration.

Table 3	
LIST OF 7 LARGE GENERATORS THAT STORED MORE THAN 100 CUBIC FEET OF LLRW IN 2006	
Facility Name	**Volume in Cubic Feet**
1. Bristol Myers Squibb Medical Imaging, Inc.	417.16
2. Entergy Nuclear Generating Company	5,019
3. Genetics Institute, LLC	312
4. Novartis Institute for Biomedical Research	120
5. PerkinElmer Life & Analytical Science	340.8
6. Toxikon Corporation	122.46
7. Unitech Services Group, Inc.	3,000

TABLE 4	
LIST OF 4 LARGE GENERATORS THAT STORED ONE CURIE OR MORE OF LLRW IN 2006	
Facility Name	

	Activity in Curies
1. AEA Technology QSA, Inc.	2,986.38
2. PerkinElmer Life & Analytical Science	547.84
3. Radiation Monitoring Device, Inc.	1.0
4. Thermo Niton Analyzers LLC	1.15

1.4 Distribution of Isotopes Generated for All Classes of Waste

A total of 57 different radionuclides were reported generated by all licensees, which is an increase of fourteen or 33% from 2005. The survey requested that licensees only report those isotopes with a half life greater than 120 days, and this excludes most medical radionuclides – e.g. I-125 and P-32. However, all principal isotopes listed were grouped together with other radionuclides on the survey report in terms of volume and activity.

Figure 20 shows the total RAM (radioactive material) reporting frequency for all classes of waste.

The 32 least reported isotopes were: I-123, U-234, TI-204, Po-210, U-235, I-131, Ag-110m, Gd-153, Cl-36, Cs-134, Co-58, Co-56, K-40, Bi-212, Tl-201, Tc-99m, Sn-113, Se-75, Pu-238, Po-209, Pm-147, Hg-203, Pa-234m, DU, In-111, Cr-51, Cu-64, Eu-156, Eu-155, Eu-154, Eu-152, and Pb-210. They are not listed in Figure 20.

Table 5 shows the ten most common isotopes reported transferred or stored.

Table 5
LIST OF 10 MOST COMMON ISOTOPES REPORTED TRANSFERRED OR STORED IN 2006

Isotope	Half Life	Number of Facilities
1. H-3	12.3 years	100
2. C-14	5,730 years	73
3. I-125	60.14 days	22
4. S-35	87.4 days	17
5. P-32	14.29 days	17
6. Cs-137	30.17 years	15
7. U-238	4.5 billion years	13
8. Fe-55	2.73 years	13
9. Co-60	5.27 years	13
10. Co-57	271 days	13

1.5 Distribution of Isotopes Transferred for All Classes of Waste

A total of 54 different isotopes were reported transferred by all licensees, which is an increase of 14 or 35% from 2005. The totals transferred and stored do not necessarily add up to the totals generated since some licensees transfer and store the same isotope, while others either store or transfer the same isotope, but not both.

The 32 least reported isotopes transferred were: I-123, U-234, TI-204, Po-210, Mn-54, U-235, I-131, Ag-110m, Gd-153, Cs-134, Co-56, Bi-212, Cd-109, TI-201, Tc-99m, Sn-113, Pu-238, Cl-36, Po-209, Pm-147, In-111, Pa-234m, Eu-152, K-40, Ir-192, Co-58, Cr-51, DU, Eu-156, Eu-155, Eu-154, and Pb-210.

Table 6 shows the top 10 most common isotopes reported transferred in 2006.

TABLE 6		
LIST OF 10 MOST COMMON ISOTOPES REPORTED TRANSFERRED IN 2006		
Isotope	**Half Life**	**Number of Facilities**
1. H-3	12.3 years	71
2. C-14	5,730 years	55
3. I-125	60.14 days	17
4. Cs-137	30.17 years	15
5. U-238	4.5 billion years	12
6. Co-60	5.27 years	12
7. S-35	87.51 days	11
8. Co-57	272 days	9
9. Fe-55	2.73 years	9
10. P-32	14.3 days	9

1.6 Distribution of Isotopes In-Storage for All Classes of Waste

A total of 37 different isotopes were reported in storage or stored by all licensees, which is an increase of three or 9% from 2005. The totals transferred and stored do not necessarily add up to the totals generated since some licensees transfer and store the same isotope, while others either store or transfer the same isotope, but not both.

The 21 least reported isotopes were: Am-241, Ca-45, Co-56, Co-58, Na-22, Tc-99, Cu-64, Sr-90, Se-75, Ra-226, Hg-203, Gd-153, Eu-156, Eu-155, Eu-152, Ag-110m, Cs-134, Cr-51, Cl-36, Ba-133, and Eu-154.

Table 7 shows the top 10 most common isotopes reported stored in 2006.

TABLE 7		
LIST OF 10 MOST COMMON ISOTOPES REPORTED STORED IN 2006		
Isotope	**Half Life**	**Number of Facilities**
1. H-3	12.3 years	73
2. C-14	5,730 years	53
3. P-32	14.29 days	12
4. I-125	60.14 days	12
5. S-35	87.51 days	10
6. Fe-55	2.73 years	**7**
7. Co-57	271 days	**7**
8. P-33	25 days	**7**
9. Zn-65	244.1 days	6
10. Co-60	5.27 years	5

1.7 Distribution of Isotopes Generated for Class A Waste.

A total of 56 different isotopes or radionuclides were reported generated by all licensees, which is an increase of 13 or 30.2% from 2005. Figure 21 shows the total RAM reporting frequency for the top 34 reported isotopes for Class A waste. The 3 most common were: H-3, C-14, and I-125. The 22 least reported isotopes were: Pa-234m, Cr-51, Cu-64, DU, Eu-152, Eu-154, Eu-155, Eu-156, In-111, Bi-212, K-40, U-235, Pb-210, Pm-147, Po-209, Pu-238, Se-75, Sn-113, Tc-99m, Tl-201, U-234, and Ir-192.

1.8 Distribution of Isotopes Generated for Class B Waste.

A total of 7 different isotopes were reported generated by all licensees, which is a decrease of two or 22% from 2005. Figure 22 shows the total RAM reporting frequency for all reported isotopes for Class B waste. The most common isotopes were: Zn-65, Sr-90, Ir-192, H-3, Fe-55, Cs-137, and Co-60.

1.9 Distribution of Isotopes Generated for Class C Waste.

A total of 6 different isotopes were reported generated by all licensees in 2006, which is an increase of 3 or 100% from 2005. Figure 23 shows the total RAM reporting frequency for all reported isotopes for Class C waste. The six (6) most common reported isotopes were: Ni-63, Ir-192, H-3, Fe-55, Co-60, and C-14.

1.10 Distribution of Isotopes Generated for Class HVLA Waste.

A total of 17 different isotopes were reported generated by all licensees, which is an increase of 2 or 13% from 2005. The increase in HVLA is due to a decommissioning project by Yankee Atomic Electric Company in Rowe, MA. Figure 24 shows the total RAM reporting frequency for all reported isotopes for Class HVLA waste. The two most common isotopes reported were: H-3 and C-14.

2.1 Sources and Types of LLRW

Low-level radioactive waste (LLRW) is radioactive material that (1) is neither high-level radioactive waste, nor spent fuel, nor uranium mill tailings; and (2) is classified by the U.S. Nuclear Regulatory Commission (NRC) as LLRW. It does not include waste which remains a federal responsibility, such as that owned or generated by the U.S. Department of Energy, the U.S. Navy as a result of decommissioning Navy vessels, or by the federal government as a result of any research, development, testing, or production of any atomic weapon.

LLRW is generated as a by-product of various uses of radionuclides. Typical applications include:

(1) The production of electricity by a nuclear power plant

(2) The production and end-use of radiopharmaceuticals for medical procedures such as cancer and thyroid dysfunction diagnosis and treatment, radioimmunoassay, and diagnostic imaging examinations

(3) Research and development in the life science and biotechnology industry for the treatment and prevention of various diseases and medical dysfunctions, and in the environmental field to study the effects of chemicals on plant and aquatic life, and for ocean studies

(4) Commercial uses such as within instruments that measure level, thickness, and density or that are used in moisture analysis and quality control; sealed sources that are used for industrial radiography of pressure vessels and other structural welds; smoke detectors and exit signs in buildings and commercial aircraft; and

(5) University education and research in medicine, material science, and biotechnology.

2.2 Regulations Pertaining to Radioactive Materials Licensees

On March 21, 1997, Massachusetts became an **Agreement State** with the NRC. Under the agreement, the NRC transferred to the Commonwealth the responsibility for regulating the use of (1) radioactive materials produced as byproducts of the operation of nuclear reactors; (2) uranium and thorium source materials; and (3) small quantities of fissionable materials. NRC retains jurisdiction over regulation of nuclear reactors, federal agencies that use nuclear materials, and companies that distribute certain materials (e.g. smoke detectors) to the public.

Massachusetts radioactive material licensees are regulated by the DPH Radiation Control Program under 105 Code of Massachusetts Regulations (CMR) 120.000 Massachusetts Regulations for the Control Of Radiation and 345 CMR Low Level Radioactive Waste

Management Board as amended. Licensees remaining under the jurisdiction of the NRC are regulated under Title 10 of the Code of Federal Regulations (CFR).

2.3 LLRW Generator Categories

Five hundred and seven colleges and universities, hospitals, government agencies, biotechnology firms, and other businesses, including two nuclear power plants (one operational and another undergoing decommissioning), held licenses[1] from the U.S. Nuclear Regulatory Commission **(**NRC) and the Department of Public Health to use or process source, special nuclear or by-product material**.** This is an increase of six licensees or 1% from 2005.

Much of the information in this report is grouped by waste category of generator:

(1) **Academic** (Acad) - universities, colleges, and other research institutions

(2) **Commercial** (Comm) - organizations such as biotechnology, engineering, and construction companies, testing laboratories, radiopharmaceutical manufacturers and suppliers, and companies using radioactive materials for process, quality control, and analysis (also referred to as **industry** by Department of Energy (DOE).

(3) **Government** (Govt) - local, state, and federal entities. (Federal does not include DOE, US Navy, or atomic weapon productions, and state does not include universities and colleges.)

(4) **Health** - hospitals, clinics, and physicians (also referred to as **medical** by DOE)

(5) **Utility** - companies that operate or are decommissioning nuclear power plants

The categories listed above are convenient for data analysis, but there is an inherent interrelationship among them.

Figures 10-17 show the volume and activity results for the five various waste generator categories according to survey results. The utility category leads the group as top volume generator from Figures 14 and 17, while the utility category leads as the top activity generator as shown in Figures 10 and 13. In storage activity and storage volume the commercial category leads the group according to Figures 11 and 15. In transferred activity the utility category is the leader from Figure 12, while in transferred volume the utility category is the leader as shown in Figure 16. The government category generates the least amount in all activity and volume productions.

2.4 Waste Classification System

[1]The total number of radioactive material licensees and registrants in Massachusetts varies from time to time due to expiration or termination of licenses and registrations, and the issuance of new ones.

Four classes of waste are defined by federal 10 CFR 61 and Massachusetts regulations 105 CMR 120.299 Appendix E regulations[2].

Class A wastes are characterized by their low concentrations of long lived radionuclides and concentrations of short-lived radionuclides that will decay to acceptable levels within a 100-year institutional control period when a disposal facility is actively maintained after closure. These concentration limits have been calculated on the basis of dose limits to an individual who might inadvertently intrude, occupy the disposal site, and encounter waste after this time.

Class B wastes are the next level of wastes that could represent a potential hazard to an inadvertent intruder, without additional protective measures, since they contain higher concentrations of short-lived and long lived radionuclides. They must meet NRC's minimum stability requirements so that the waste forms or containers can maintain gross physical properties and identity, over 300 years thus limiting the exposure to a potential intruder.

Class C wastes are wastes that, due to their greater concentrations of long-lived or short-lived radionuclides, must meet more stringent waste form requirements to ensure stability, and must be disposed of in such a way as to protect the inadvertent intruder for a longer period of time. These wastes must meet the stability requirements for form or container (300 years) and must be disposed of in a manner which protects against inadvertent intrusion for at least 500 years.

Greater than Class C (GTCC) wastes are wastes whose larger concentrations of radionuclides make them unacceptable for near-surface land disposal, unlike classes A, B and C. GTCC disposal remain the responsibility of the federal government and their present strategy is deep geological disposal. GTCC is not LLRW. A federal burial site under consideration is located at Yucca Mountain in Nevada.

The fifth class of waste is **HVLA** (High Volume Low Activity)[3], which is not defined in NRC or DPH regulations. The definition, however, is published in the old Board 345 CMR regulations[4].

HVLA waste are soils or demolition rubble that have average concentrations less than or equal to the concentrations set forth in 345 CMR 1.13, Table 1.13B and that have been accepted for disposal at a licensed LLRW disposal facility. HVLA is considered as Class A waste, but treated separately in Massachusetts so as to allow some licensees a reduced annual LLRW fee of 10% of the proportional assessment.

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[2]Website is www.state.ma.us/dph/rcp under heading quick links, click on heading regulations, then click on 105 CMR 120.200

[3]Website is www.state.ma.us/dph/rcp under heading quick links, click on heading regulations, then click on 345 CMR

[4]Website is www.state.ma.us/dph/rcp under heading quick links, click on heading regulations, then click on 345 CMR

Figures 2-9 and Table 8 show the volume and activity results for the four various waste classes. In terms of volume Class A waste was the biggest class in storage, while HVLA waste was the most transferred class. In terms of activity, Class C was the biggest class in storage, while Class C was the most transferred class.

Some of the licensees generated more than one class of waste so the totals may not equal 100%.

2.5 LLRW Management Method Terms

LLRW management refers to the storage, packing, treatment, transportation, or disposal of LLRW. Some of the terms used in past surveys were:

- **Incineration for disposal** - refers to procedure where LLRW, such as animal carcasses and liquid scintillation fluids, are incinerated per 10 CFR 20 which limits specific activity of waste to 0.05 microcuries of Hydrogen-3 (Tritium) or Carbon-14, per gram of material.

- **Mixed waste storage** - radioactive material contaminated by chemical or toxic material. Past surveys classified such waste with the addition of the letter AH@ after classification letter A, B, C, or HVLA. (i.e., Class AH, Class BH, etc.).

- **Shipped for disposal** - refers to LLRW delivered directly, or via a processor, to one of three NRC-licensed disposal facilities located in SC, UT, and WA.

- **Storage** - refers to LLRW that was generated during the survey year or prior years and that was held in storage. The waste may undergo additional radioactive decay prior to final packaging for disposal, and reported volume and activity may not reflect actual disposal properties.

- **Storage for decay** - refers to procedure in which LLRW with a relatively short half-life is held for natural radioactive decay (at least 10 half-lives). Storage for decay is a common practice.

- **Transfer to an authorized recipient** - refers to transfer of radioactive material for disposal or recycling to another licensee, such as sealed sources returned to the supplier since the energy being emitted is no longer useful.

- **Volume reduction** - refers to negative change in LLRW volume from sorting and segregating (the separation of the non-radioactive from the radioactive portion), compaction, incineration, and decontamination.

The survey did not ask the licensees which management method(s) were used as past pre-2001 surveys did.

2.6 Licensee LLRW Survey Results

The 2006 Radioactive Waste Survey requested data on LLRW produced or retained in storage from previous years. The survey was mailed in January 2007 to 507 companies and institutions licensed by the NRC and the Department of Public Health. A total of 507 or 100% of licensees returned the 2006 survey form, compared to a 97% return rate in 2005.

Licensees that did not return the form were evaluated by DPH to determine if they typically generated LLRW. Most non-respondents were identified as licensees that manage by storage for decay, or transfer sealed sources[5] to an authorized recipient, or did not generate any LLRW.

DPH is exploring the possibility of having licensees complete future annual radiation waste surveys on-line using a DPH assigned password. This would be optional. Comments regarding this proposal are encouraged**.**

Table 8 shows that 110 licensees out of the 507 reported producing LLRW for transfer or in storage. This is a decrease of 1% from calendar year 2005. The remainder used sealed sources or did not generate any long lived (half-life greater than 120 days) LLRW during 2006.

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Table 8 - 2006 Activity and Volume Summary:

- 984,563.40 cubic feet of LLRW containing 18,674.09 curies were generated
- Class A: 303.33 curies
- Class B: 892.24 curies
- Class C: 17,474.24 curies
- HVLA: 4.29 curies
- Class A: 63,408.75 cubic feet
- Class B: 452.76 cubic feet
- Class C: 95.95 cubic feet
- HVLA: 920,605.94 cubic feet

[5]Sealed sources are usually returned to the manufacturer for recycling or disposal. The most common sealed source is a lead paint detector containing the accelerator-produced radionuclide Cobalt 57 (Co-57).

- 973,628.35 cubic feet (98.9%) containing 15,133.48 curies (81%) of LLRW were transferred to licensed brokers[6] or disposal sites for disposal

- 10,945.40 cubic feet (1%) containing 3,540.61 curies (19%) of LLRW were placed in storage in Massachusetts

[6] Website is National Directory of Brokers and Processors www.bpdirectory.com for a listing

TABLE 8

Activity and Volume by Class for the Year: 2006

Class	*No. Submitted in the Class*	*Activity (curies)*			*Volume (cu. ft.)*		
		In Storage	*Transferred*	*TOTAL*	*In Storage*	*Transferred*	*TOTAL*
A	119	70.06	233.27	303.33	10,748.03	52,671.07	63,408.75
B	3	542.18	350.05	892.24	71.76	381.00	452.76
C	3	2,928.33	14,545.91	17,474.24	11.95	84.00	95.95
HVLA	12	0.04	4.25	4.29	113.66	920,492.28	920,605.94
Grand Totals:	137	3,540.61	15,133.48	18,674.09	10,945.40	973,628.35	984,563.40

Total Number of Surveys Submitted for 2006: **507**

Number without Any Waste Generation for 2006: **397**

Number with Waste Generation for 2006: **110**

Note: Some licensees generated more than one class, and totals may not equal 100%.

2.7 MA Historic, Current, and Projected Annual Transfer Disposal Rate Results

Figure 18 shows the total volume transferred from 2002-2006:

CY 2002: 30,921
CY 2003: 127,263
CY 2004: 222,996
CY 2005: 563,726
CY 2006: 973,628 – this increase was due to the increased utility transfers from a decommissioning project in Rowe, MA. At the conclusion of the decommissioning project, it is anticipated that the 2007 volume totals will be less.

The present survey does not distinguish between **routine** and **non-routine** LLRW shipped for disposal. Routine refers to LLRW from process operations that are expected to be generated annually for the foreseeable future. Non-routine refers to LLRW from one time decommissioning or site remediation projects. A non-routine example is a decommissioning project at the former nuclear power plant operated by Yankee Atomic Electric Company in Rowe, and one for site remediation is Starmet NMI (formerly Nuclear Metals, Inc.) in Concord, MA.

Figure 19 shows the total activity transferred from 2002-2006. The amount of activity transferred varies from one year to another.

Chapter 3

NATIONAL DATA

3.1 State-by-State Comparison

Table 9 shows how Massachusetts LLRW volume and activity shipped for disposal compared to other states in 2006. These totals include high volume low activity (HVLA) wastes shipped out-of-state.

In terms of ranking Massachusetts with the 49 states, including the District of Columbia (no data from Alaska, Oklahoma, Puerto Rico, and South Dakota), Massachusetts ranked **# 1** in terms of volume generated (Connecticut was ranked at # 2), and **6 th** largest in terms of activity generated (North Carolina was largest at #1) as reported by the Manifest Information Management System (MIMS) in 2006. MIMS is operated by the US Department of Energy, and does not assure quality of information. The totals reported do not agree exactly with DPH LLRW survey results.

TABLE 9

2006 LLRW VOLUME AND ACTIVITY SUMMARY FROM ALL STATES FROM MIMS

State	Volume (ft3)	Activity (curies)
Alabama	31,254.33	13,927.28
Alaska	ND	ND
Arizona	31,660.45	177.31
Arkansas	11,599.08	514.00
Army Out U.S.	25.60	0.88
California	452,430.69	1,182.49
Colorado	393.68	0.76
Connecticut	706,456.89	512.22
Delaware	59.18	11.85
Dist of Columbia	164.20	0.17
Florida	32,397.16	249.51
Georgia	15,643.45	1,188.63
Hawaii	2,297.52	166.16
Idaho	50.05	14.00
Illinois	614,726.45	41,367.36
Indiana	462.96	5.21
Iowa	1,654.87	16,049.79
Kansas	1,294.06	469.53
Kentucky	38,609.69	131.89
Louisiana	4,203.06	911.11

State	Volume (ft3)	Activity (curies)
Maine	3,977.30	8.60
Maryland	48,131.84	60.10
Massachusetts	**746,514.86**	**15,740.02**
Michigan	448,943.91	1,217.17
Minnesota	8,288.81	121.72
Mississippi	3,886.43	4,243.81
Missouri	3,442.15	923.40
Montana	204.66	0.32
Nebraska	7,452.51	467.19
Nevada	99.07	0.71
New Hampshire	1,889.15	226.17
New Jersey	93,768.08	4,571.52
New Mexico	206.95	0.03
New York	45,878.96	3,175.67
North Carolina	195,264.34	96,720.32
North Dakota	22.50	0.00
Ohio	39,091.27	2,510.02
Oklahoma	ND	ND
Oregon	575.25	0.07
Pennsylvania	57,890.24	91,719.13
Puerto Rico	ND	ND
Rhode Island	112.18	1.26
South Carolina	45,761.25	1,736.36
South Dakota	ND	ND
Tennessee	154,684.41	719.77
Texas	15,161.09	773.97
Utah	688.94	0.23
Vermont	3,170.39	18,813.65
Virginia	149,988.19	652.91
Washington	21,658.13	1,604.68
West Virginia	38.02	0.03
Wisconsin	4,596.59	5,959.10
Wyoming	22.90	0.07
Total:	**4,046,793.73**	**328,848.13**

ND = No Data Available

3.2 Manifest Information Management System (MIMS)

The Manifest Information Management System (MIMS)[7] provides information on waste shipments to 3 commercial disposal facilities: Barnwell, SC; Clive, UT; and Richland, WA. The Barnwell, SC site is operated by Chem-Nuclear, LLC; the Clive, UT site is operated by Energy Solutions; and, the Richland, WA site is operated by US Ecology, Inc. The Richland, WA facility is located within the United States Department of Energy's (USDOE) Hanford site.

According to MIMS, **30,289,464.48** million cubic feet of waste containing **6,024,511.49 million** curies of radioactivity were disposed from 1996 to 2006. The majority of waste activity (93%) came from nuclear facilities (utility), while only 30.5% came from waste volume. During the same time period, Massachusetts licensees generated 2,276,195.26 million cubic feet of waste containing 142,538.44 curies.

MIMS provides a comparison of the waste generated as reported by the 3 commercial waste disposal sites, including the LLRW survey results. However, there are discrepancies with the data reported by MIMS and the annual LLRW survey. Differences can not be readily explained, but possible explanations are:

1. LLRW is shipped to the generator's home office out-of-state and is combined with LLRW from other sites. This total is then reported to MIMS.

2. LLRW undergoes a degree of compaction or volume reduction[8]. One utility reports that its waste is shipped to a broker out-of-state where waste is segregated (free release) in order to reduce burial volume. The compaction method is by a glass melting process.

3. Generators estimating the volume of transferred LLRW. The actual volume is inflated by shipping container and packing which is later removed by broker.

4. Some waste held for convenience and deferred expenditures by broker or others, and sometimes for years.

5. Federal LLRW generators located in MA (example is US Food & Drug Administration) do not report to MDPH on waste activities, but are reported by the waste disposal sites.

6. Some waste may be reported shipped during the reporting year, but arrived at the disposal facility after December 31st, thus being counted for the following year by the disposal site. Actually the waste should be reported as disposed in the year that it arrives at the disposal site, not the year it was transferred or shipped.

DPH will stress in future surveys to report the volume in cf **actually transferred** to final disposal site.

[7]website is http://mims.apps.em.doe.gov

[8]Volume reduction refers to negative change in LLRW volume that occurs due to processing, either on or off site where waste was generated

[8]Volume reduction refers to negative change in LLRW volume that occurs due to processing, either on or off site where waste was generated

TABLE 10
4 COMPARISONS OF LLRW TRANSFERRED FROM MASSACHUSETTS FOR 2006

	Richland, WA*	Barnwell, SC	Clive, UT	Totals From The Three Disposal Sites	MIMS Database	DPH Database as entered and shown in tables and graphs
Volume, CF	0.000	598.50	788,114.80	788,713.30	746,514.86	973,628.35
Activity, Curies	0.000	15,444.08	0.304	15,444.38	15,740.02	15,133.48

*Richland, WA site last received LLRW from MA generators in 1992.

Table 10: Barnwell reported that Massachusetts generators shipped 598.50 cubic feet of LLRW totaling 15,444.08 curies, making the average concentration over 25.80 curie per cubic foot of waste. Clive, UT received 788,114.80 cubic feet with 0.304 curies or 0.000000386 curie per cubic foot.

TABLE 11

MASSACHUSETTS 2006 WASTE GENERATOR CATEGORY RESULTS FROM MIMS

Generator Class	Volume Transferred (Cubic Feet)	Activity Transferred (Curies)
Academic	0.00	0.00
Government	33,161.00	0.50
Industry	36,827.56	263.80
Medical	8,320.75	0.05
Undefined	192.30	28.59
Utility	668,013.25	15,447.08
Totals	746,514.86	15,740.02

TABLE 12
MA WASTE CLASSIFICATION AND GENERATOR CLASS FOR 2006 FROM MIMS

Disposal Site	Generator Class	Total Volume (cf)	Total Activity (curies)	Class A Volume (cf)	Class B Volume (cf)	Class C Volume (cf)
Barnwell, SC	Medical	0.75	0.00	0.00	0.00	0.75
Barnwell, SC	Utility	597.75	15,444.08	0.00	119.36	478.39
Clive, UT	Government	33,161.00	0.50	33,161.00	0.00	0.00
Clive, UT	Industry	36,827.56	263.80	36,827.56	0.00	0.00
Clive, UT	Medical	8,320.00	0.05	8,320.00	0.00	0.00
Clive, UT	Undefined	192.30	28.59	192.30	0.00	0.00
Clive, UT	Utility	667,415.50	3.00	667,415.50	0.00	0.00
		746,514.86	15,740.02	745,916.36	119.36	479.14

According to MIMS, Barnwell received a total of 21 shipments (20 utility and 1 medical), and Clive received a total of 644 shipments (308 utility, 260 industry, 57 government, 11 undefined, and 8 medical) from Massachusetts generators in 2006.

3.3 National Regulatory History for LLRW

1980s

In 1980, the United States Congress passed the Low-Level Radioactive Waste Policy Act (P.L. 96-573).

The Act established three major policies:

1. Each state is responsible for the LLRW generated within its boundaries.

2. States may form compacts (or groups of states) to facilitate managing LLRW generated within the boundaries of the compact states.

3. Compacts could not refuse waste from other states until U.S. Congress had ratified the compact.

On January 1, 1986 the Low Level Radioactive Waste Policy Amendment Act (P.L.99-240) was signed into law, making a generator's continued access to the three operating disposal sites contingent on its compact meeting specified milestones for new site development. The amended act clarified Congress's intent to require compacts (or individual states not within a compact) to provide disposal capacity for LLRW generated within its boundaries by January 1, 1993.

The chief mandate of these federal statues requires each state to provide for its LLRW disposal by January 1, 1996. If a state fails to achieve this mandate, it must assume ownership and liability for all LLRW produced within its borders after 1996.

In response to these federal laws, Massachusetts enacted MGL Chapter 111H in 1987. This 48 section general law, as amended in 2002, authorizes DPH to regulate the management of low level radioactive waste in the Commonwealth. Complete copies of the general law are available on the state's website:

http://www.mass.gov/legis/laws/mgl/gl-111h-toc.htm

Effective June 26, 1986, the State of Rhode Island created a Rhode Island-Massachusetts Interstate Low-Level Radioactive Waste Management Compact called Title 23 Health and Safety Chapter 23-19.9 Low-Level Radioactive Waste Compact. However, neither Massachusetts nor any other state ever approved or joined the compact. More information is available at the following State of Rhode Island link:

http://www.rilin.state.ri.us/Statutes/TITLE23/23-19.9/INDEX.HTM

1990s

In early 1990's, the 9 member Massachusetts Low Level Radioactive Waste Management Board (Athe board@) was established to manage LLRW in Massachusetts and to investigate whether a LLRW disposal site would be located in Massachusetts. In March 1996, the Board voted **not** to locate a LLRW disposal site in Massachusetts as three out-of-state disposal sites (SC, WA, and UT) were available to Massachusetts generators.

Present

In fall 2002, the Board was abolished by the Legislature and its powers and duties were transferred to DPH. Massachusetts remains an unaffiliated state and is not a member of any of the ten state LLRW compacts. The other unaffiliated states are: District of Columbia, Maine, Michigan, Nebraska, New Hampshire, New York, North Carolina, Puerto Rico, and Rhode Island.

Figure 1 is map of USA showing Low Level Radioactive Disposal Compact Membership by states and including District of Columbia and Puerto Rico. Membership changes do occur, and Maine recently left the Texas Compact.

Future

Barnwell, SC accepts LLRW through brokers or processors or directly from LLRW generators, only until June 30, 2008 as its disposal capacity has almost been reached. After 2008 they will only accept LLRW from Atlantic Compact members (formerly the Northeast Compact) consisting of states of SC, CT, and NJ. There is no immediate crisis to Massachusetts generators as small amounts of class B and C wastes may be stored on site. However, a solution must be found for the disposal of these classes of waste. If Massachusetts were to consider joining the Atlantic Compact, it would be required to become a host state. The Board had rejected that idea back in 1996**.**

Clive, Utah is accepting Class A and HVLA waste from all states; however, it does not include the eight states in the Northwest Compact. Clive does not accept Class B or C wastes from any states.

Richland, WA is not accepting Class A, B, C, or HVLA wastes, but they do accept NARM and NORM waste (not considered LLRW waste). Richland, WA currently serves the Rocky Mountain and Northwest Compact members, which consists of 11 states.

Texas has recently passed legislation to allow creation of two privately run LLRW disposal facilities to be licensed as one site by the state. On December 29, 2003, Texas opened up the process to accept applications from July 8-August 6, 2004 from any interested parties to license a LLRW disposal site. One site may dispose of federal facility waste and the other may dispose of commercial low-level radioactive waste. Texas is host state to the Texas Compact of which Vermont is a member, and Maine formally withdrew in April of 2004.

The Executive Director of the Texas Commission on Environmental Quality (TCEQ) directed staff to conduct a Technical Review on the application submitted on August 4, 2004 by Waste Control Specialists, LLC (WCS) for license authorization for the near-surface disposal of low-level radioactive waste at the company's site in Andrews County, Texas, which is near the New Mexico border.

After the technical review of WCS' application is completed, a Notice of the Completion of Technical Review will be published and distributed. It was declared administratively complete as of February 18, 2005. It is available on the internet at:

http://www.wcstexas.com/

http://64.224.191.188/wcs/

Chapter 428 of the MA Acts of 1993 was approved on January 11, 1994 and states in part:

The state treasurer, upon request of the Governor, may issue and sell bonds up to $45 million for a maximum term of 20 years for the purpose of siting LLRW storage, treatment, or disposal facilities. This bond authorization which expires in 2018 could be used to join a compact.

New membership cost is a minimum of $25,000,000.00. Massachusetts is currently considering its options.

New generators' fees called reimbursement surcharges would be needed to retire the Commonwealth's bonds, including interest charges.

The Low Level Radioactive Waste Bond Authorization was originally filed as House Bill no. 5655 in 1993. A complete copy of the Act is available at: Commonwealth of MA State Library, 442 State House, Boston, MA 02133 or by an e-mail request to: reference.department@state.ma.us

A solution must be identified by July 1, 2008 or Massachusetts and 35 other state generators will have no treatment option other than decay on site, unless Texas opens a new LLRW site for Class B and C wastes.

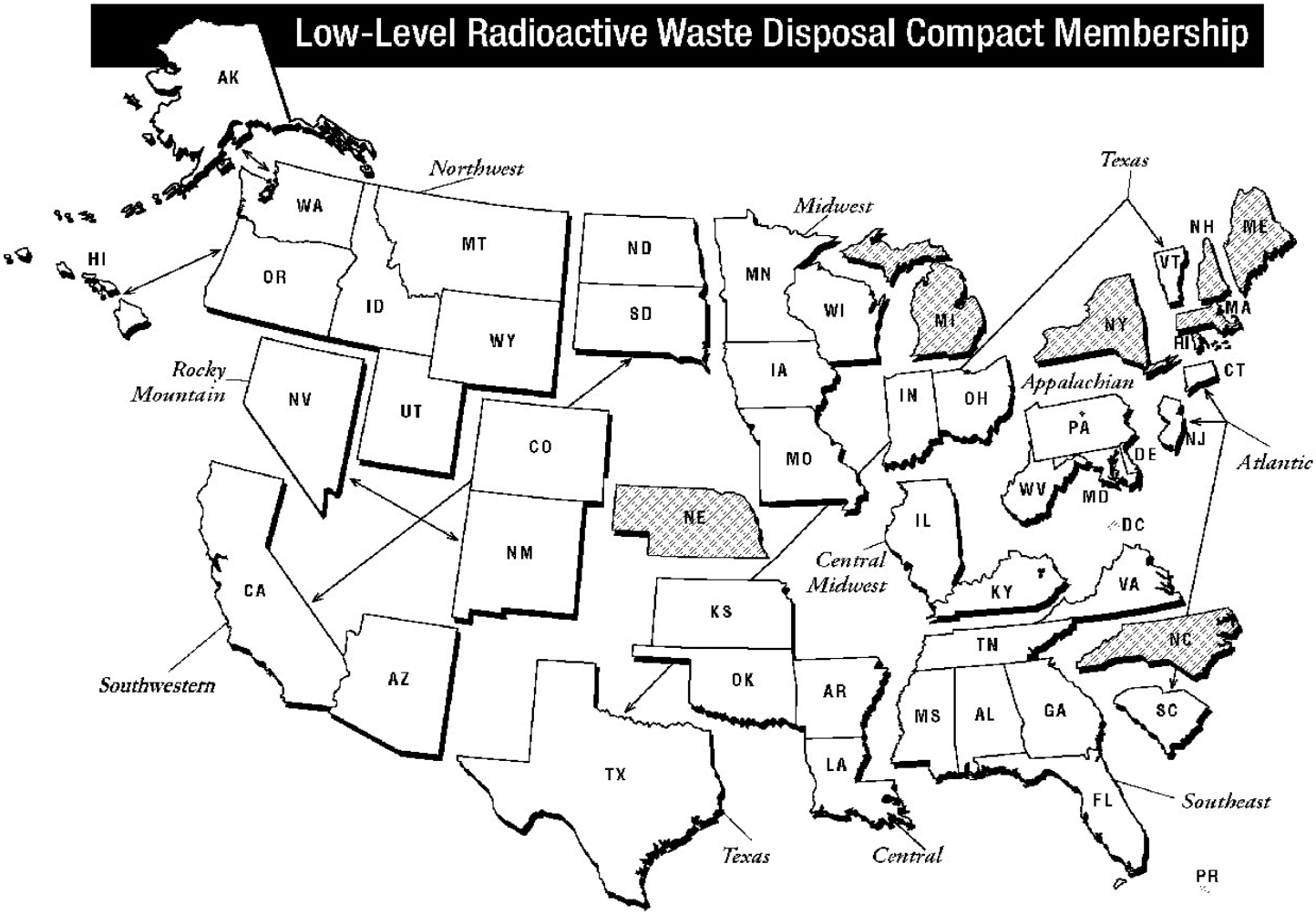
3.4 INTERREGIONAL COOPERATION

DPH continues to participate in the Low-Level Radioactive Waste Forum, Inc. (LLW Forum). The LLW Forum website is: www.llwforum.org.

The LLW Forum is a national association of representatives of compacts[9], host states, unaffiliated states, and states with currently operating disposal facilities and established to facilitate the implementation of the 1985 Low-Level Radioactive Waste Policy Amendments Act. The LLW Forum provides an opportunity for states and compacts to share information and exchange views with officials of federal agencies and other interested parties. LLW Forum participants also serve as liaisons to other entities, including the Conference of Radiation Control Program Directors, the Conference of State Legislatures, and the federal Facility Compliance Act Task Force. MA is represented on the LLW Forum by Mr. Robert Walker and Mr. William Sellers, Jr.

[9]Compact is a formal agreement between two or more states under Article 1, Section 10 of the US Constitution, states may form compacts with the consent of Congress to resolve conflicts or address common problems. More than 120 such compacts have focused on various subjects, including water, education, transportation, fisheries, health, and waste.

FIGURE 1



Appalachian Compact
Delaware
Maryland
Pennsylvania
West Virginia

Atlantic Compact
Connecticut
New Jersey
South Carolina

Central Compact
Arkansas
Kansas
Louisiana
Oklahoma

Central Midwest Compact
Illinois
Kentucky

Northwest Compact
Alaska
Hawaii
Idaho
Montana
Oregon
Utah
Washington
Wyoming

Midwest Compact
Indiana
Iowa
Minnesota
Missouri
Ohio
Wisconsin

Rocky Mountain Compact
Colorado
Nevada
New Mexico

Nothwest accepts Rocky Mountain waste as agreed between compacts

Southeast Compact
Alabama
Florida
Georgia
Mississippi
Tennessee
Virginia

Southwestern Compact
Arizona
California
North Dakota
South Dakota

Texas Compact
Texas
Vermont

Unaffiliated States
District of Columbia
Maine
Massachusetts
Michigan
Nebraska
New Hampshire
New York
North Carolina
Puerto Rico
Rhode Island

Chapter 4

Financial Data

4.1 Financing LLRW Management

In October of 2002 the Board was dissolved, and its remaining funds were transferred to DPH.

Funds to manage the requirements of MGL Chapter 111H, as amended come from an assessment on radioactive material users and LLRW generators; this is pursuant to MGL Chapter 111H sections 4A and 4B. A total of 476 users were assessed $290,122.10 starting in April of 2007 (using the same rates[10] as the Board last used in 2001) for period of calendar year (CY) 2006. This is a decrease from 482 users assessed in 2005. The number of users invoiced for CY 2006 does not include licensees that terminated or licensees that could not be located.

As of December 31, 2006, DPH had collected over $160,000 in LLRW assessments for the year 2005. The fees were deposited into the state's LLRW rebate trust fund. Any unpaid assessments were charged interest at 12% per annum on and after the due date, which is 90 days from the invoice date. After 180 days any outstanding fee users are issued a collection letter and subject to intercept of any state payments or tax refunds and referred to a collection agency.

The billed amounts range from the regulatory minimum of $75.00 to a maximum of $55,199.71 per licensee.

Cities and towns are exempt from the annual LLRW fees per MGL Chapter 29, section 27C, but must still submit the annual LLRW survey when requested. Eleven municipal licensees are in this category.

The flat assessment charged to all licensees and registrants is $75.00 per year and remains unchanged. In addition, a proportional assessment of $1.96 per cubic foot of the weighted volume is calculated for some licensees or registrants pursuant to 345 CMR 4.03(2)(c)3 and an additional assessment of $0.20 per cubic foot of the weighted volume of high volume, low activity waste is calculated for some licensees or registrants pursuant to 345 CMR 4.03(2)(c)4.

The total LLRW annual fee charged is based on billing formula:

$ LLRW ANNUAL FEE = $75.00 + (CRF (PF) (CA + 3CB +5CC)) + ((HVLA (0.1) (PF))

PF is proportional fee or the proportional assessment currently set at $1.96 per cubic foot of waste. The PF figure formerly was much higher and has decreased over time. The PF amount and $75.00 minimum amount remain unchanged since 2001.

CRF is classification radioactivity factor varying between 1.0 - 1.3 as shown in **Table 13**.

[10] According to FY 1997 Board's annual report, a total of 534 radioactive materials users and LLRW generators were assessed $275,872.63 during fiscal year 1997.

CA = Class A LLRW waste volume in cubic feet

CB = Class B LLRW waste volume in cubic feet

CC = Class C LLRW waste volume in cubic feet

PF = Proportional assessment set at $1.96 per cubic feet of weighted volume of waste per DPH

HVLA = HVLA waste volume in cubic feet

Table 13	
Classification of Radioactivity Factor (CRF) 345 CMR Table 4.03 B	
Radioactivity of Waste Shipped for Disposal Off Site or Stored for Later Disposal	**Classification of Radioactivity Factor (CRF)**
less than 1.0 curie per year	1.0
1.0 curie per year or more, but less than 10.0 curies per year	1.1
10.0 curies per year or more, but less than 100.0 curies per year	1.2
100.0 curies per year or more	1.3

Summary: The billing invoice amount is a function of volume, class, and activity of waste generated per year (except cities and towns) with a $75.00 minimum LLRW fee. The higher the volume and activity and class of LLRW generated, the higher the annual fee payable.

4.2 DOE FUNDING

No funds from the U.S. Department of Energy (DOE) were received in 2006 pursuant to the federal Low-Level Radioactive Waste Policy Act, as amended (P.L. 99-240). These funds were collected by certain LLRW disposal sites as a surcharge to use these disposal sites. The funds are held by DOE, and rebated to various states based upon their success in meeting milestones outlined in federal law. Since Massachusetts ceased its disposal siting activities in 1996 and remains an unaffiliated disposal state, no funds were received in 2006.

APPENDIX A

FIGURE 2

PERCENT OF TOTAL ACTIVITY BY WASTE CLASS FOR 2006

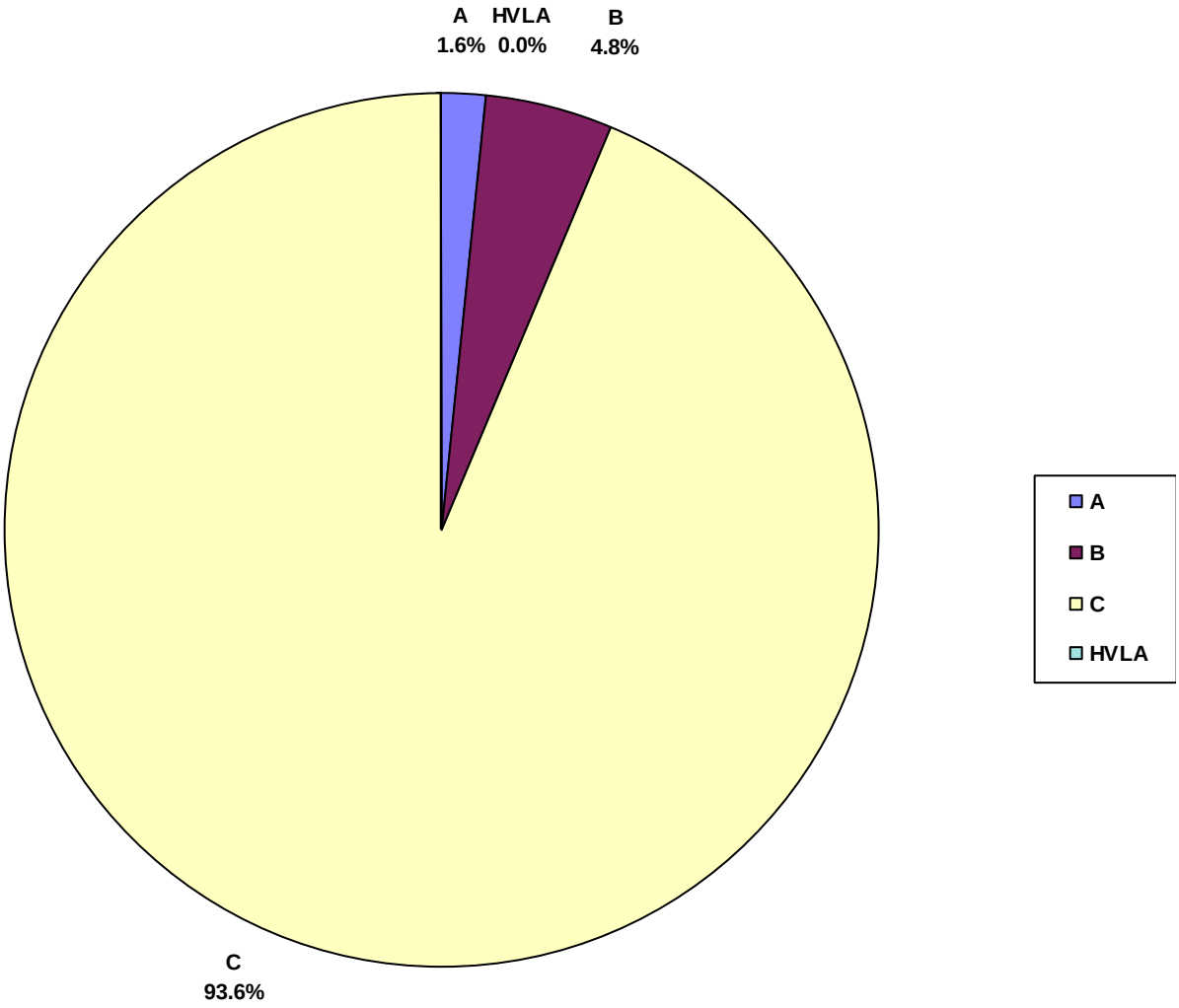


FIGURE 3

PERCENT ACTIVITY PLACED IN STORAGE BY WASTE CLASS FOR 2006

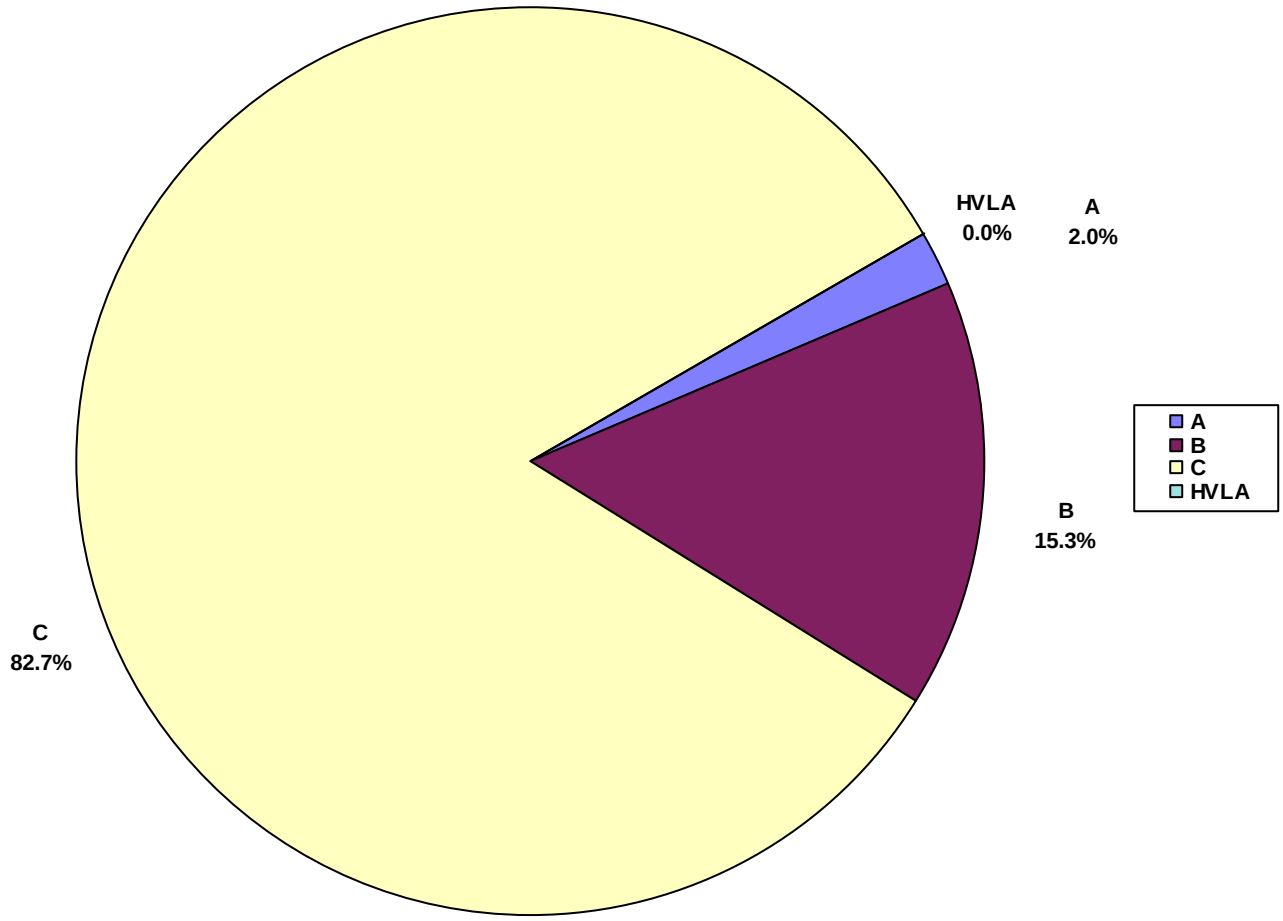


FIGURE 4

PERCENT ACTIVITY TRANSFERRED BY WASTE CLASS FOR 2006

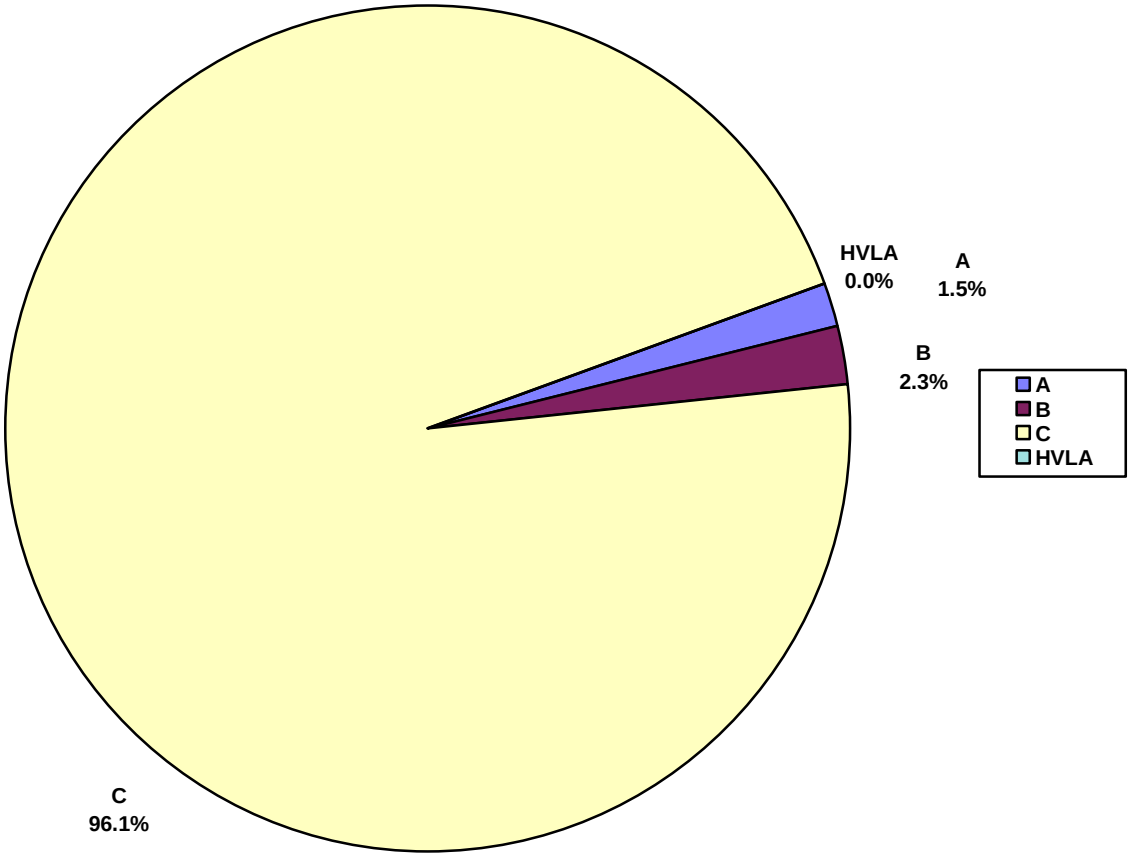


FIGURE 5

PERCENT TOTAL VOLUME BY WASTE CLASS FOR 2006

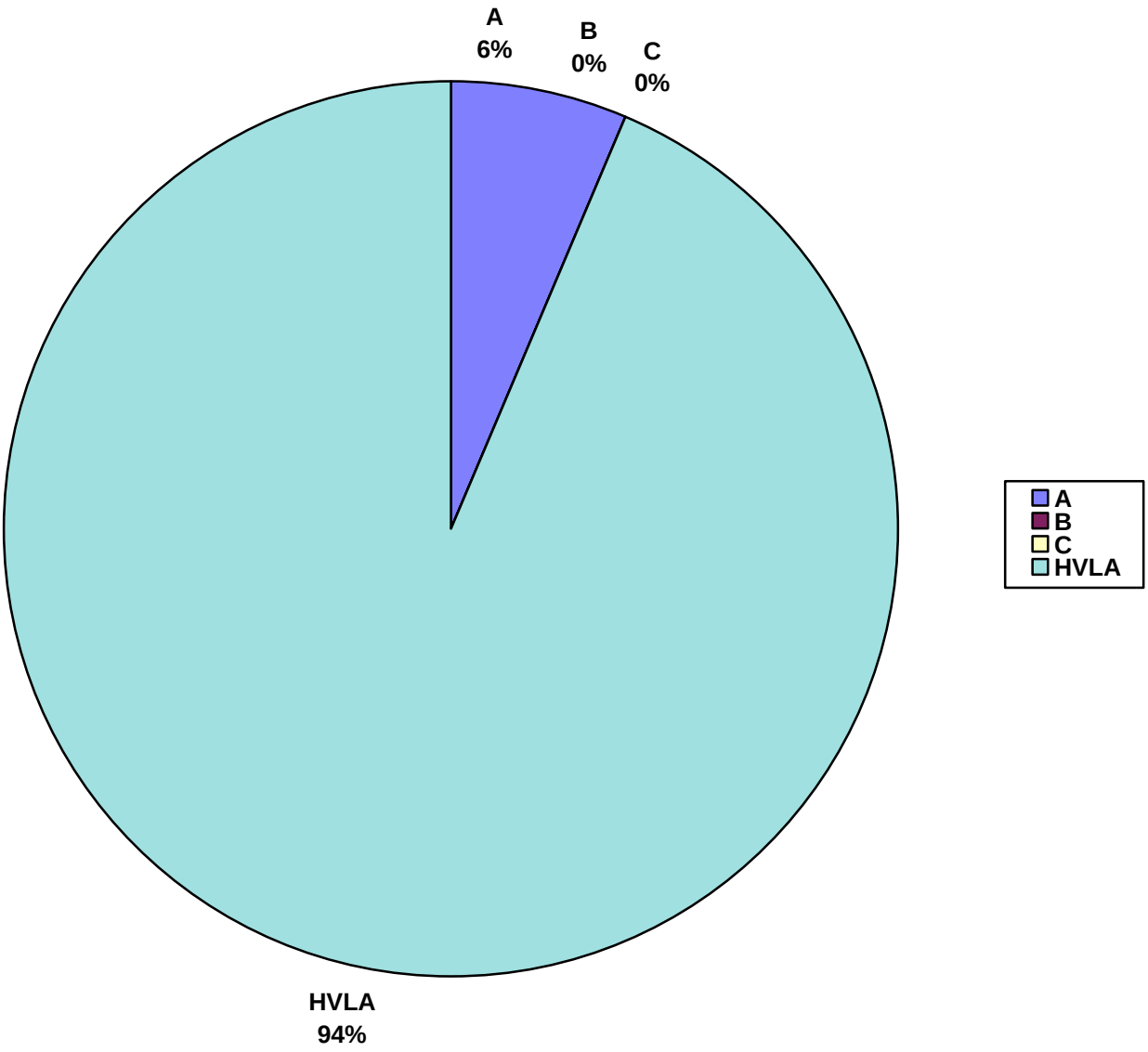


FIGURE 6

PERCENT VOLUME IN STORAGE BY WASTE CLASS FOR 2006

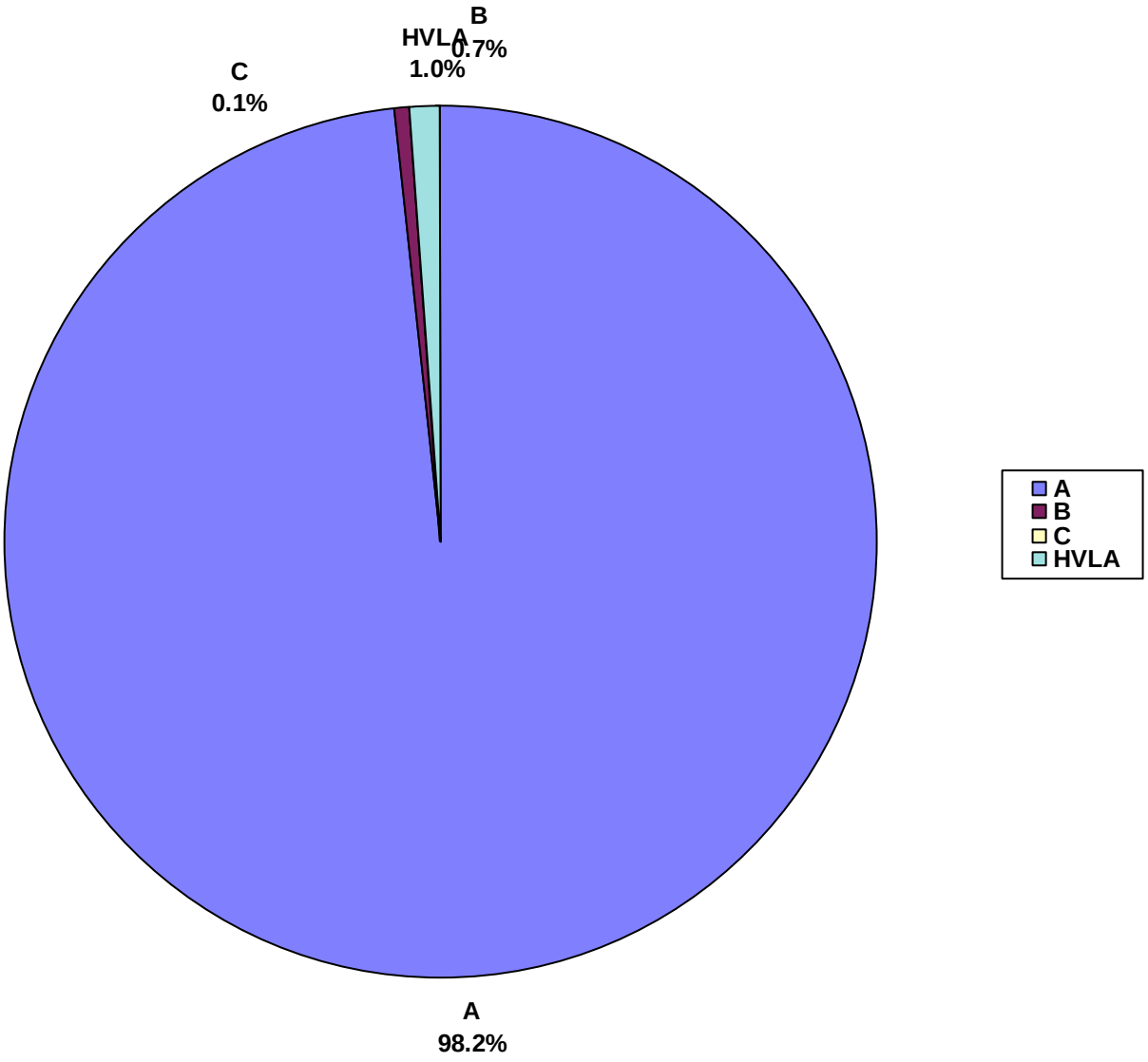


FIGURE 7

PERCENT VOLUME SHIPPED BY WASTE CLASS FOR 2006

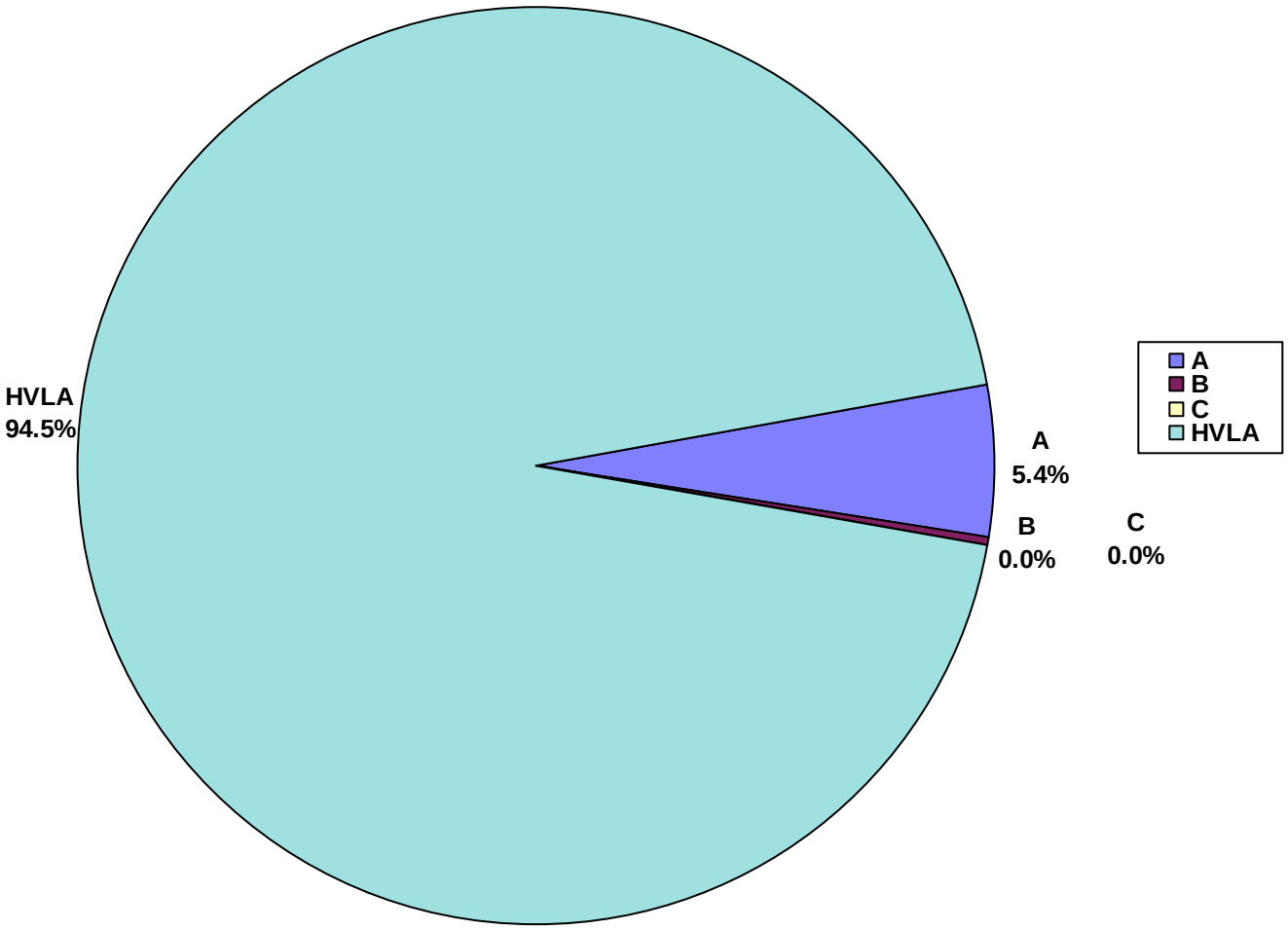
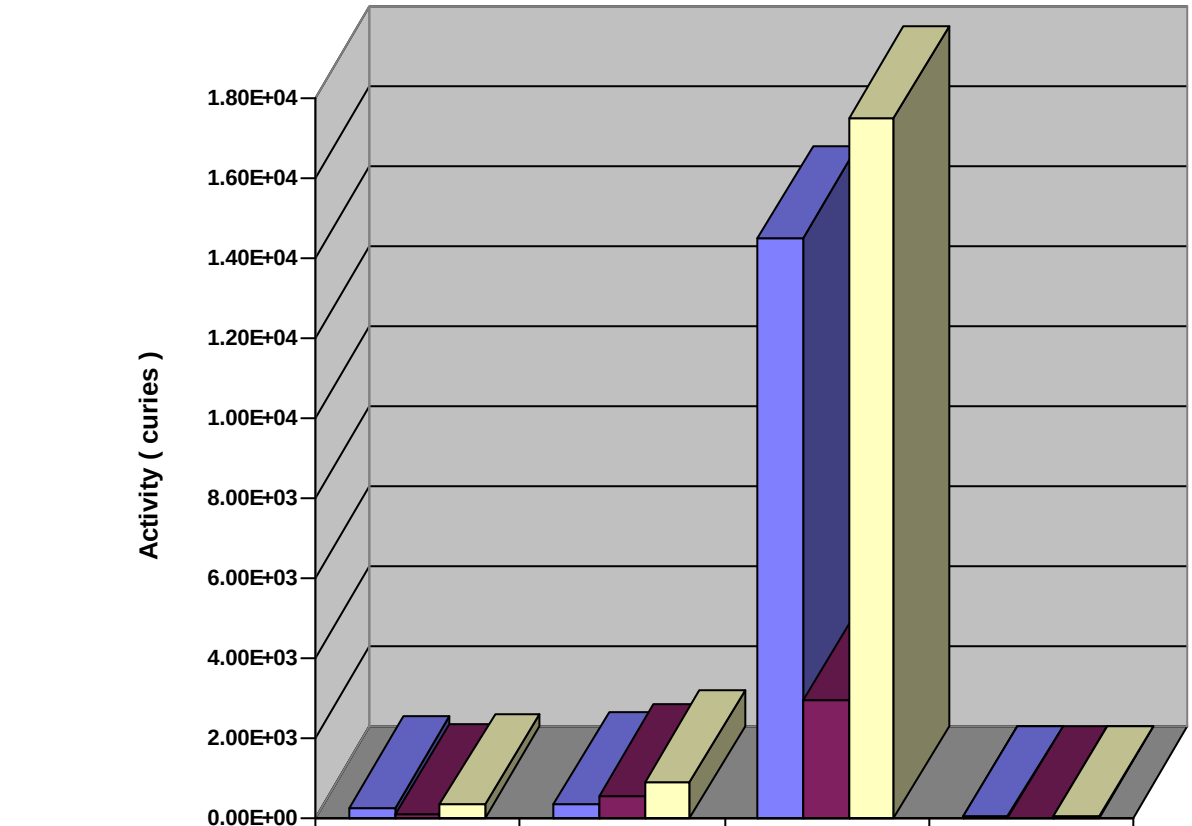


FIGURE 8

COMPARISON OF WASTE ACTIVITIES BY WASTE CLASS FOR 2006

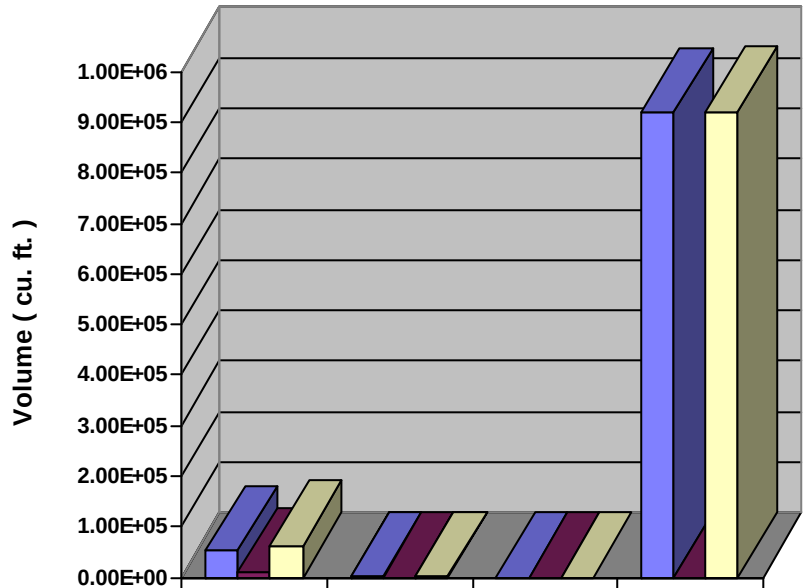


	A	B	C	HVLA
Activity Transferred	2.33E+02	3.50E+02	1.45E+04	4.25E+00
Activity Placed In Storage	7.01E+01	5.42E+02	2.93E+03	3.86E-02
Activity Total	3.03E+02	8.92E+02	1.75E+04	4.29E+00

Waste Class

FIGURE 9

COMPARISON OF WASTE VOLUMES BY WASTE CLASS FOR 2006



	A	B	C	HVLA
Volume Transferred	5.27E+04	3.81E+02	8.40E+01	9.20E+05
Volume Placed In Storage	1.07E+04	7.18E+01	1.19E+01	1.14E+02
Volume Total	6.34E+04	4.53E+02	9.59E+01	9.21E+05

Waste Class

FIGURE 10

PERCENT OF TOTAL ACTIVITY BY WASTE GENERATOR CATEGORY FOR 2006

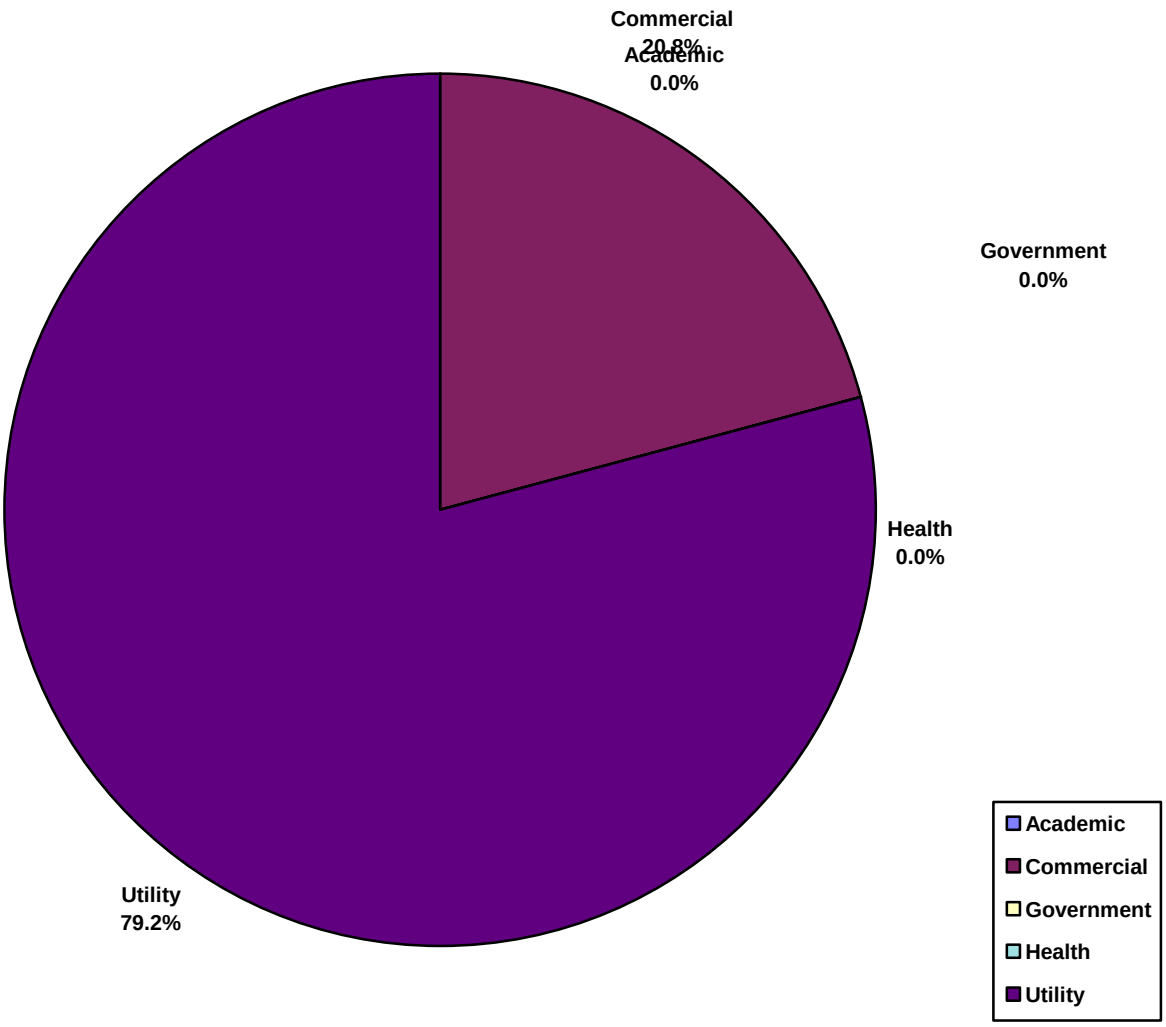


FIGURE 11

PERCENT OF IN-STORAGE ACTIVITY BY WASTE GENERATOR CATEGORY FOR 2006

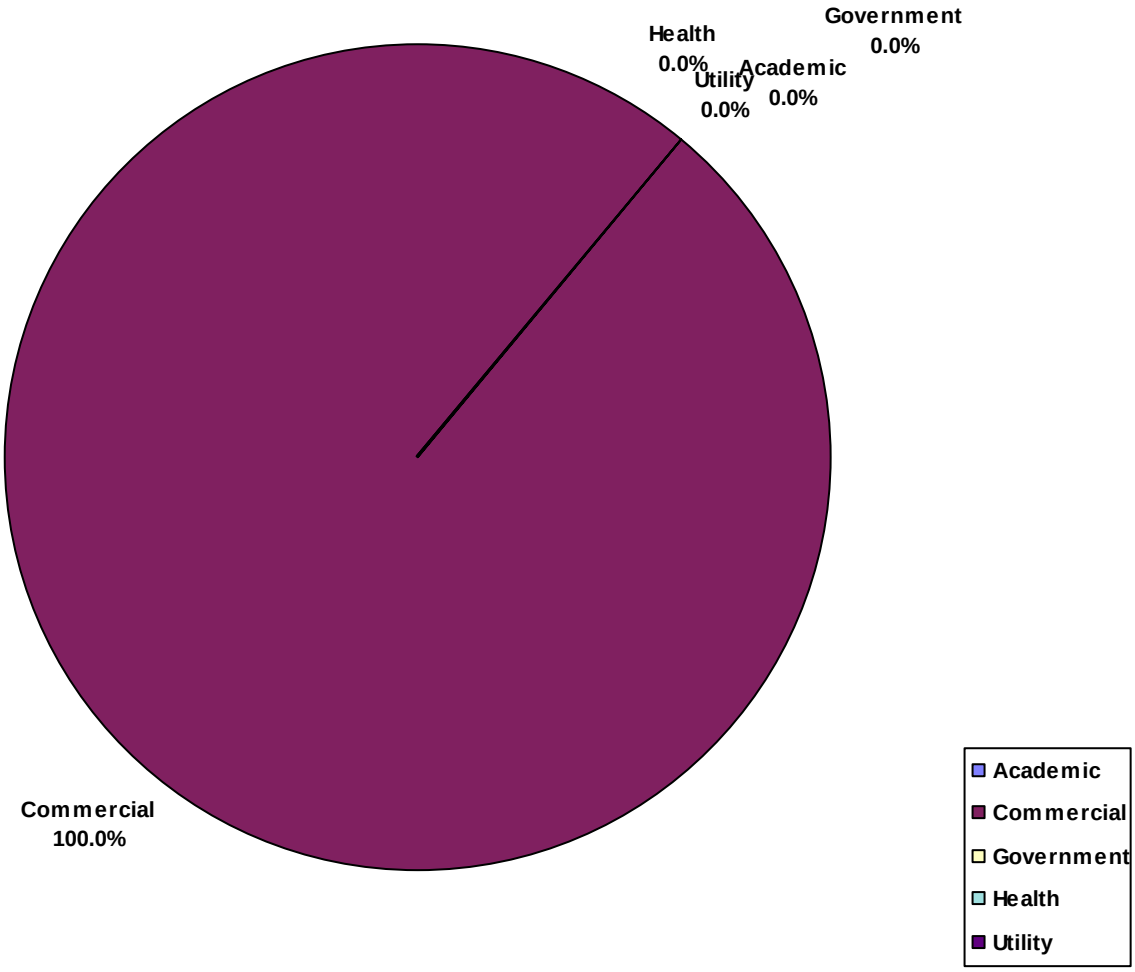


FIGURE 12

PERCENT OF TRANSFERRED ACTIVITY BY WASTE GENERATOR CATEGORY FOR 2006

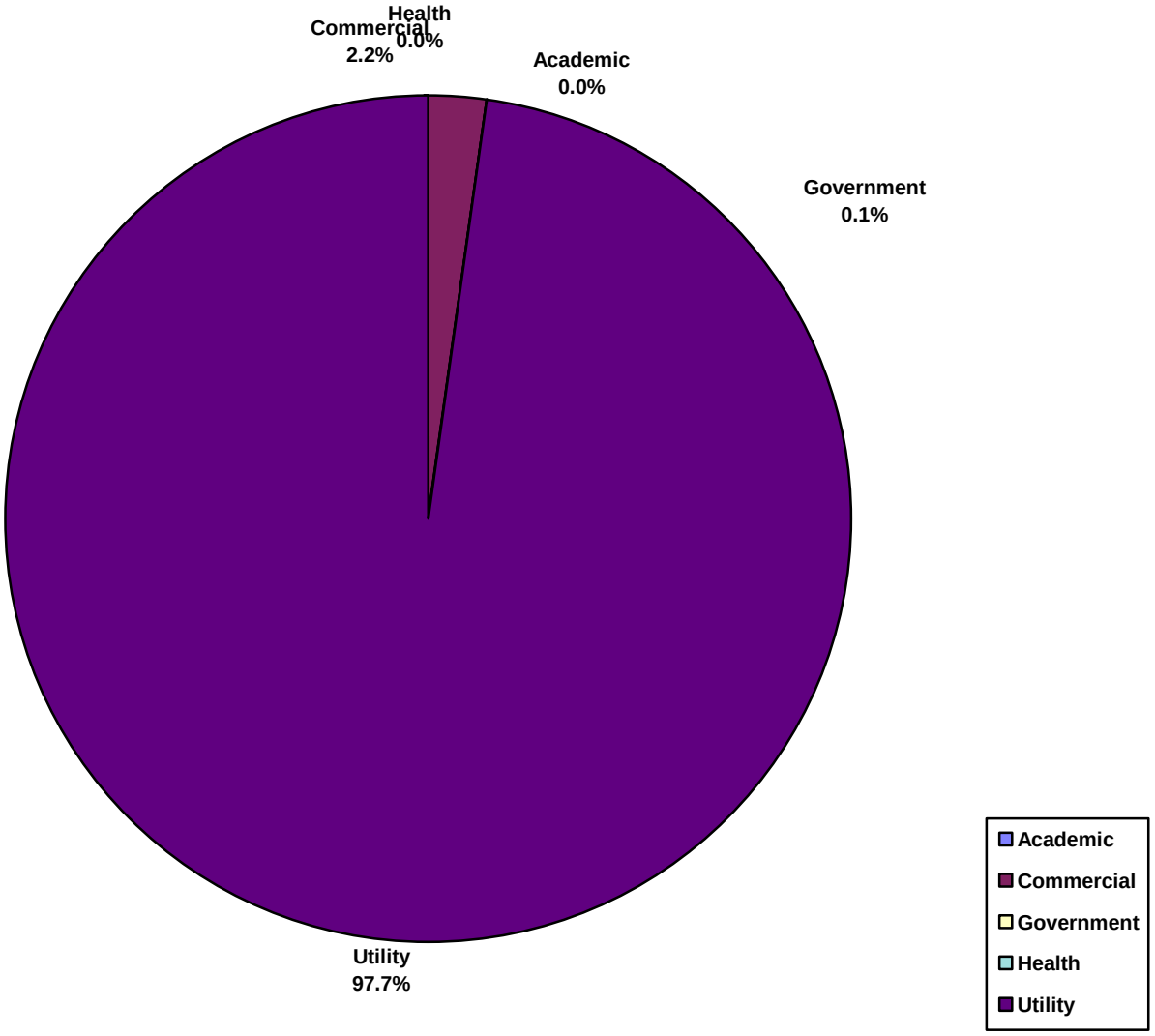
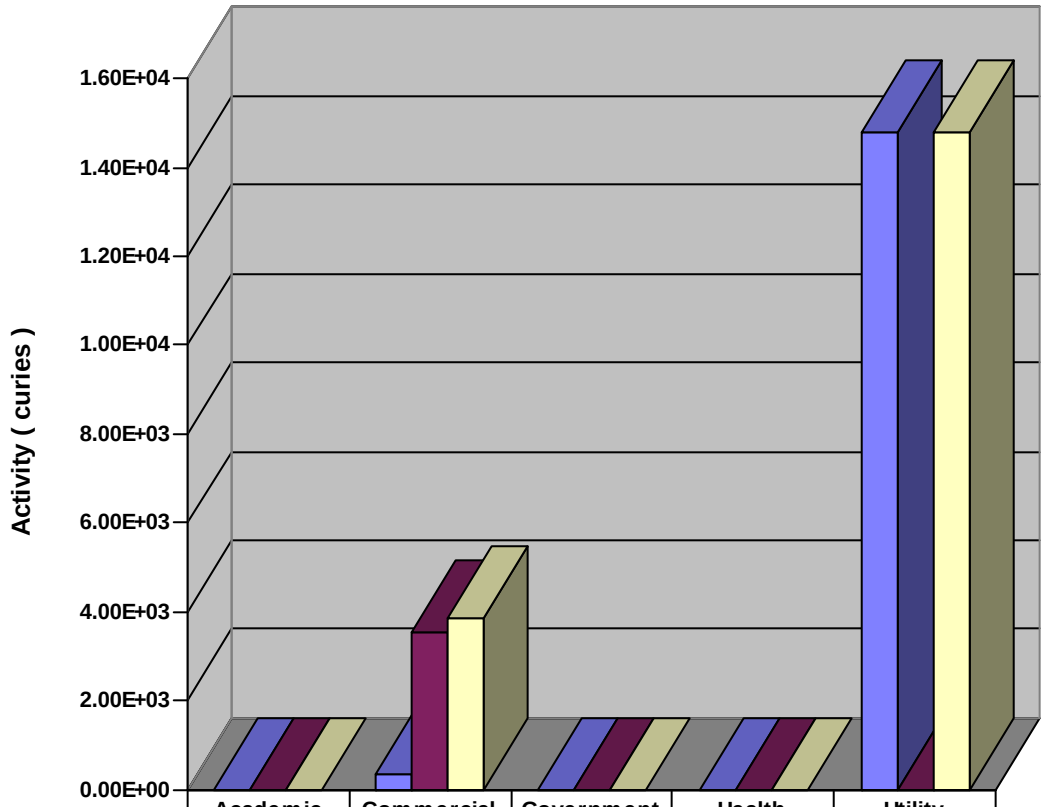


FIGURE 13

COMPARISON OF WASTE ACTIVITIES BY WASTE GENERATOR CATEGORY FOR 2006



	Academic	Commercial	Government	Health	Utility
Activity Transferred	6.24E-01	3.37E+02	7.62E+00	8.07E-01	1.48E+04
Activity Placed In Storage	8.29E-01	3.54E+03	0.00E+00	1.79E-01	5.31E-01
Activity Total	1.45E+00	3.88E+03	7.62E+00	9.86E-01	1.48E+04

Generator Category

FIGURE 14

PERCENT OF TOTAL VOLUME BY WASTE GENERATOR CATEGORY FOR 2006

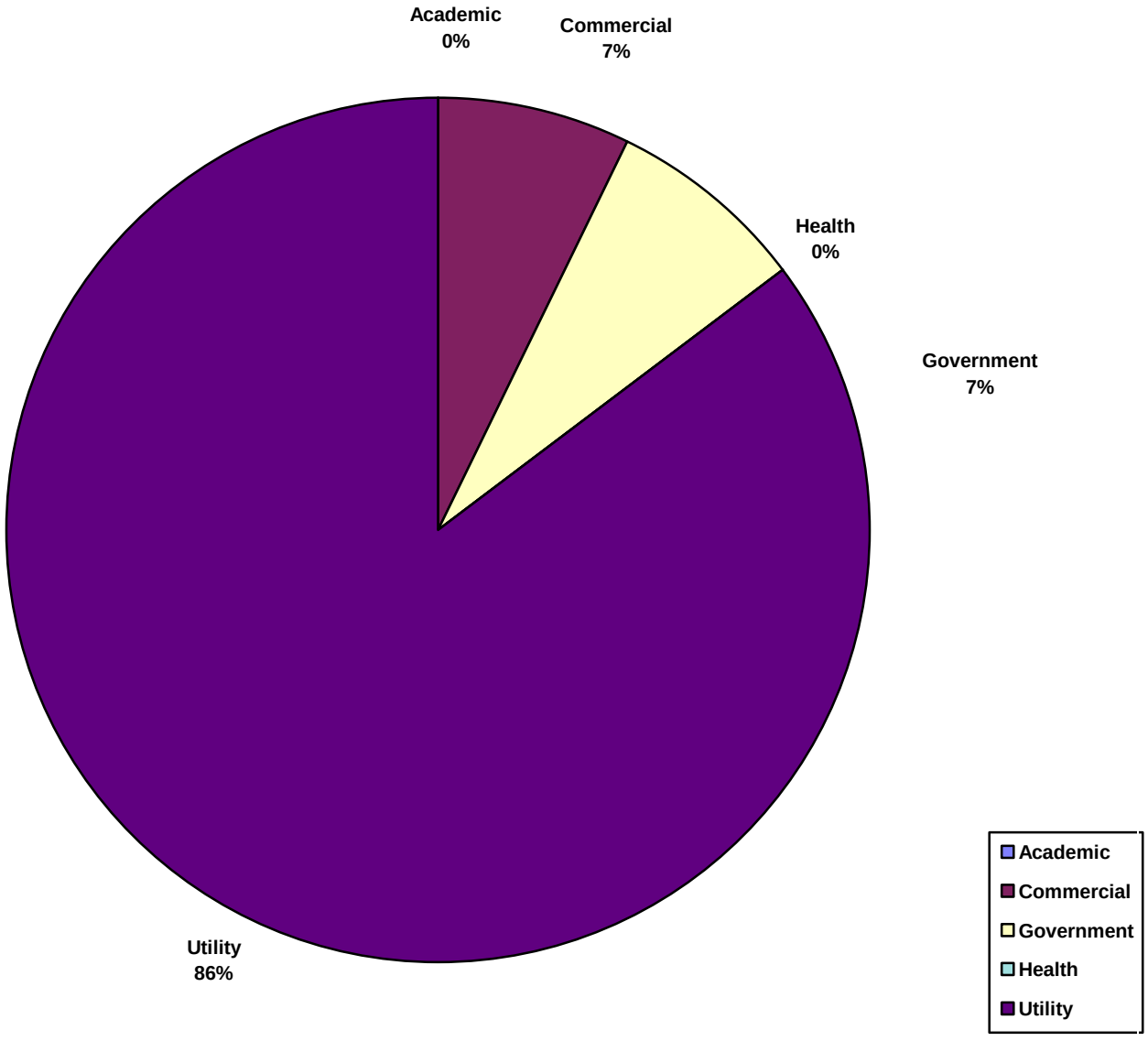


FIGURE 15

PERCENT OF IN-STORAGE VOLUME BY WASTE GENERATOR CATEGORY FOR 2006

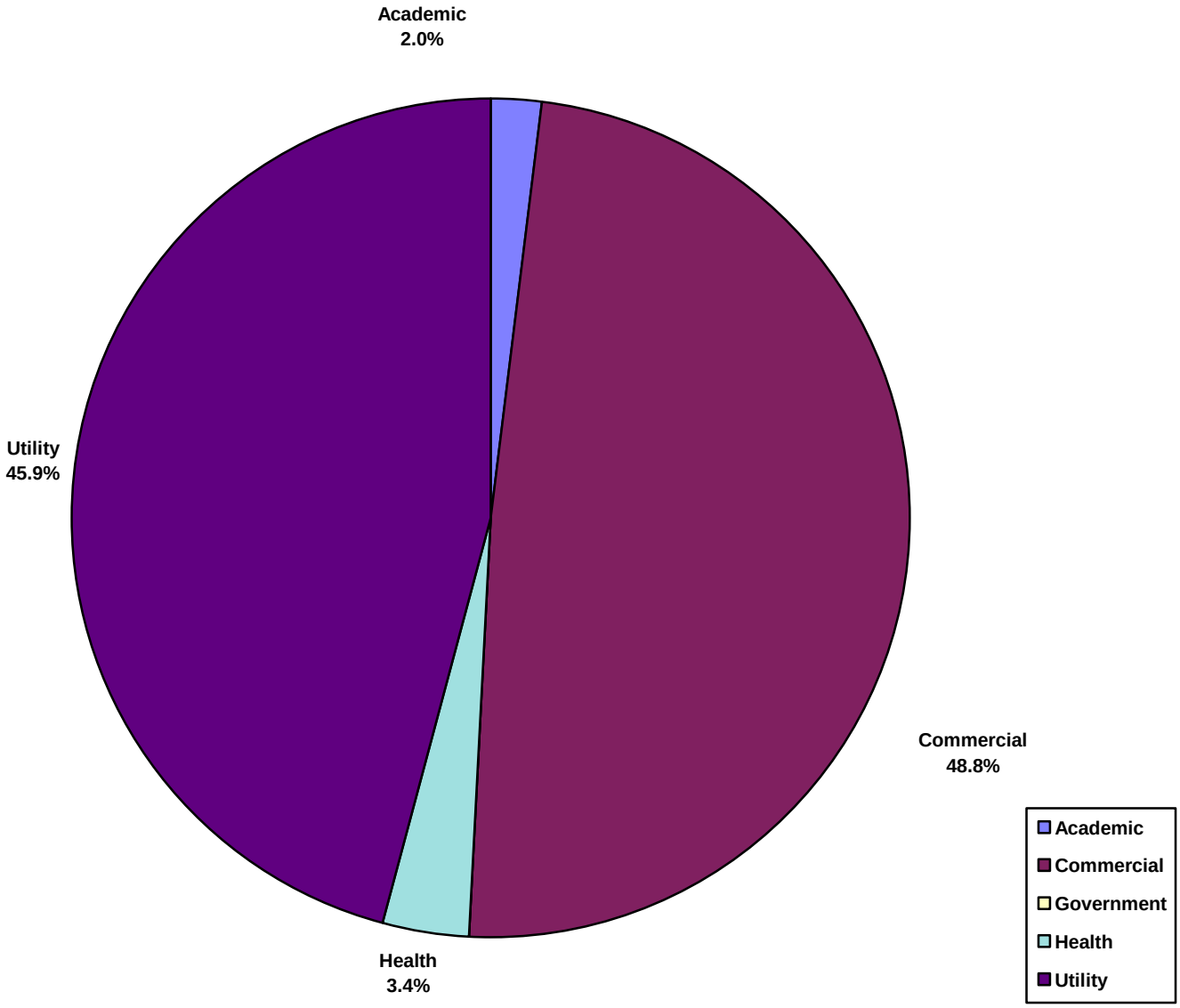


FIGURE 16

PERCENT OF TRANSFERRED VOLUME BY WASTE GENERATOR CATEGORY FOR 2006

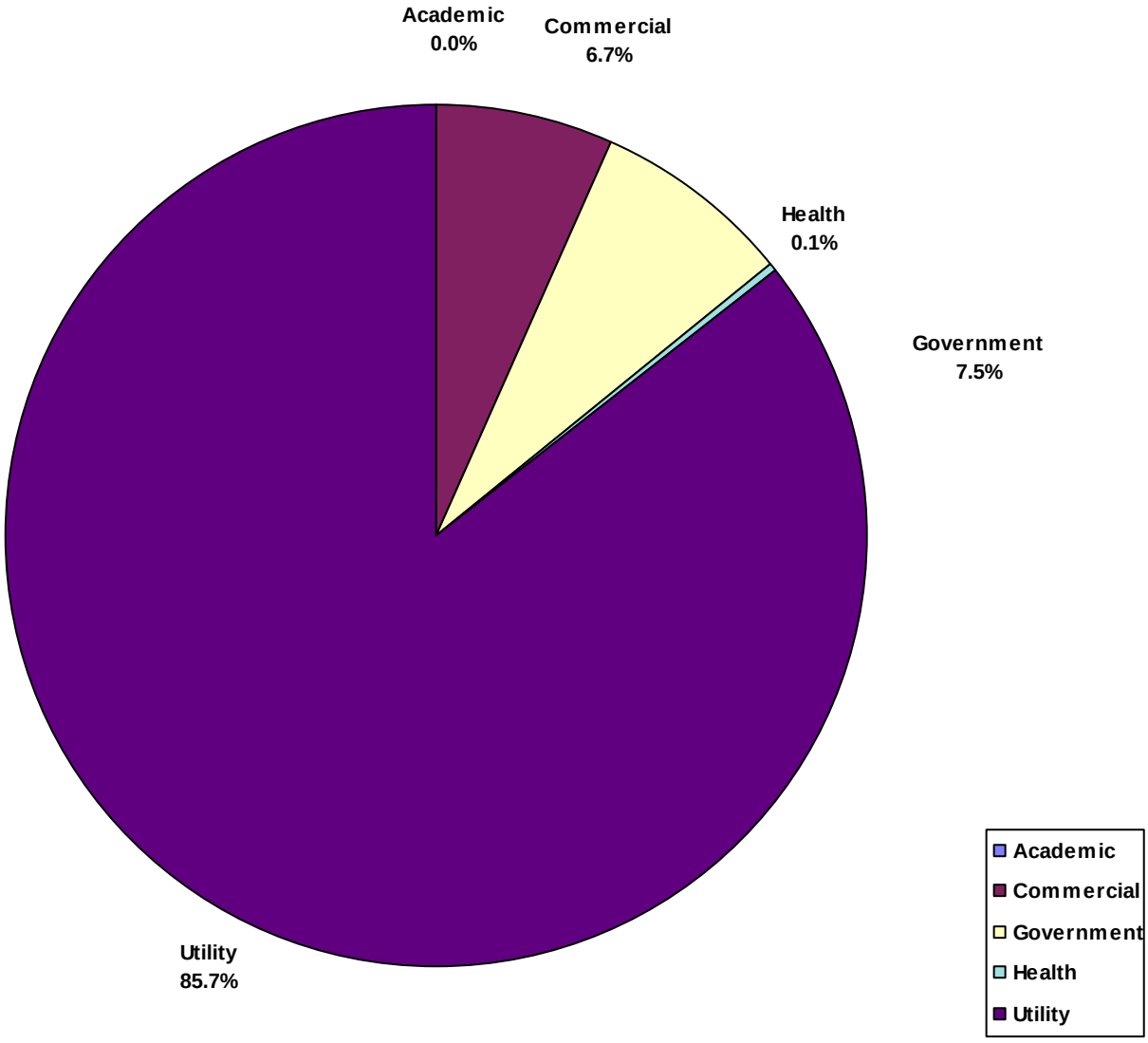
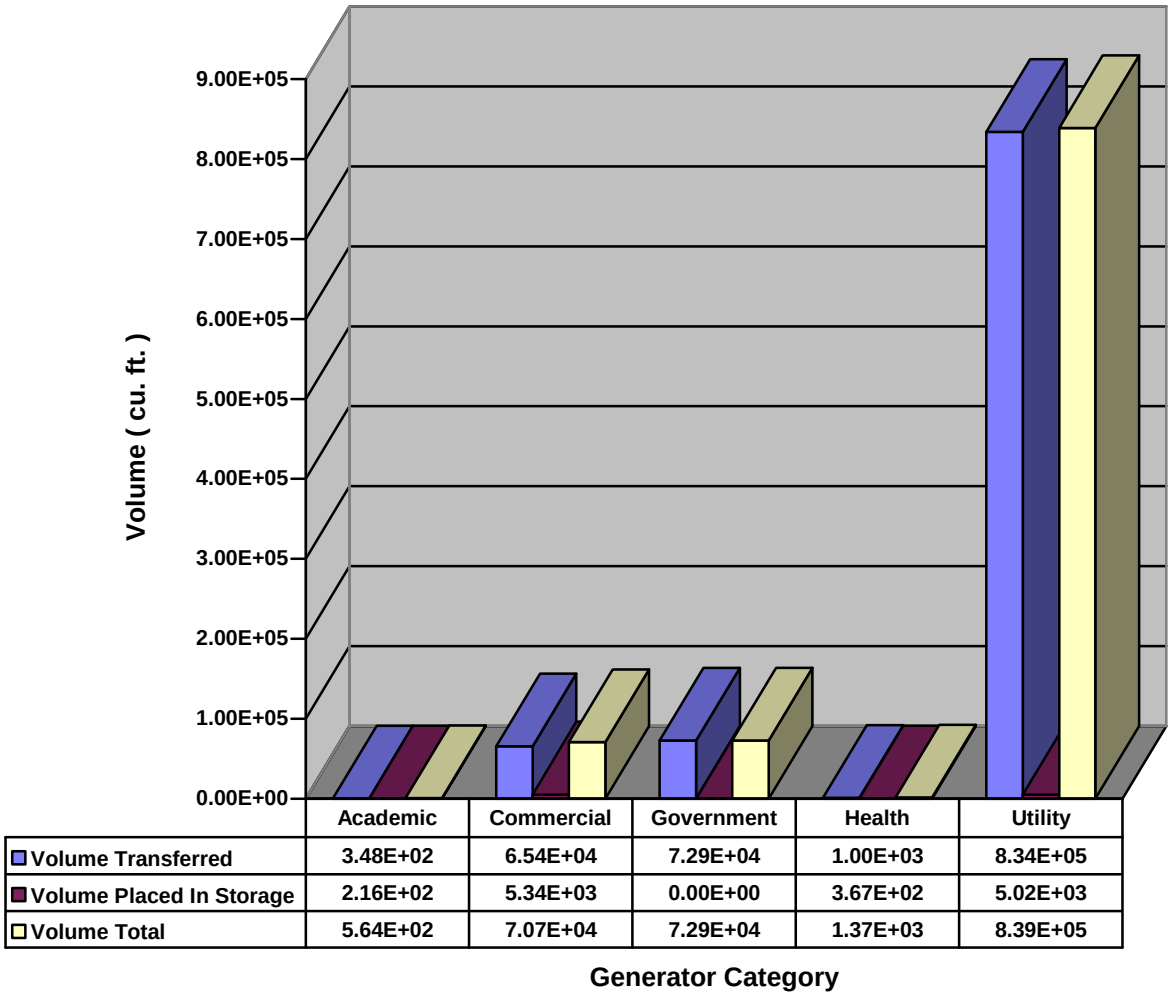


FIGURE 17

COMPARISON OF WASTE VOLUMES BY WASTE GENERATOR CATEGORY FOR 2006



	Academic	Commercial	Government	Health	Utility
Volume Transferred	3.48E+02	6.54E+04	7.29E+04	1.00E+03	8.34E+05
Volume Placed In Storage	2.16E+02	5.34E+03	0.00E+00	3.67E+02	5.02E+03
Volume Total	5.64E+02	7.07E+04	7.29E+04	1.37E+03	8.39E+05

Generator Category

TABLE 14

Activity and Volume by Waste Generator Category For 2006

Waste Generator Category	Activity (curies)			Volume (Cu. ft.)		
	Transferred	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
Academic	0.62	0.83	1.45	348.21	215.75	563.96
(Percent)	0.0%	0.0%	0.0%	0.0%	2.0%	0.1%
Commercial	337.23	3,539.07	3,876.30	65,373.74	5,343.45	70,706.84
(Percent)	2.2%	100.0%	20.8%	6.7%	48.8%	7.2%
Government	7.62	0.00	7.62	72,902.86	0.00	72,902.86
(Percent)	0.1%	0.0%	0.0%	7.5%	0.0%	7.4%
Health	0.81	0.18	0.99	1,004.54	367.20	1,371.74
(Percent)	0.0%	0.0%	0.0%	0.1%	3.4%	0.1%
Utility	14,787.20	0.53	14,787.73	833,999.00	5,019.00	839,018.00
(Percent)	97.7%	0.0%	79.2%	85.7%	45.9%	85.2%
Grand Total	**15,133.48**	**3,540.61**	**18,674.09**	**973,628.35**	**10,945.40**	**984,563.40**

FIGURE 18

VOLUME LLRW TRANSFERRED BY YEAR

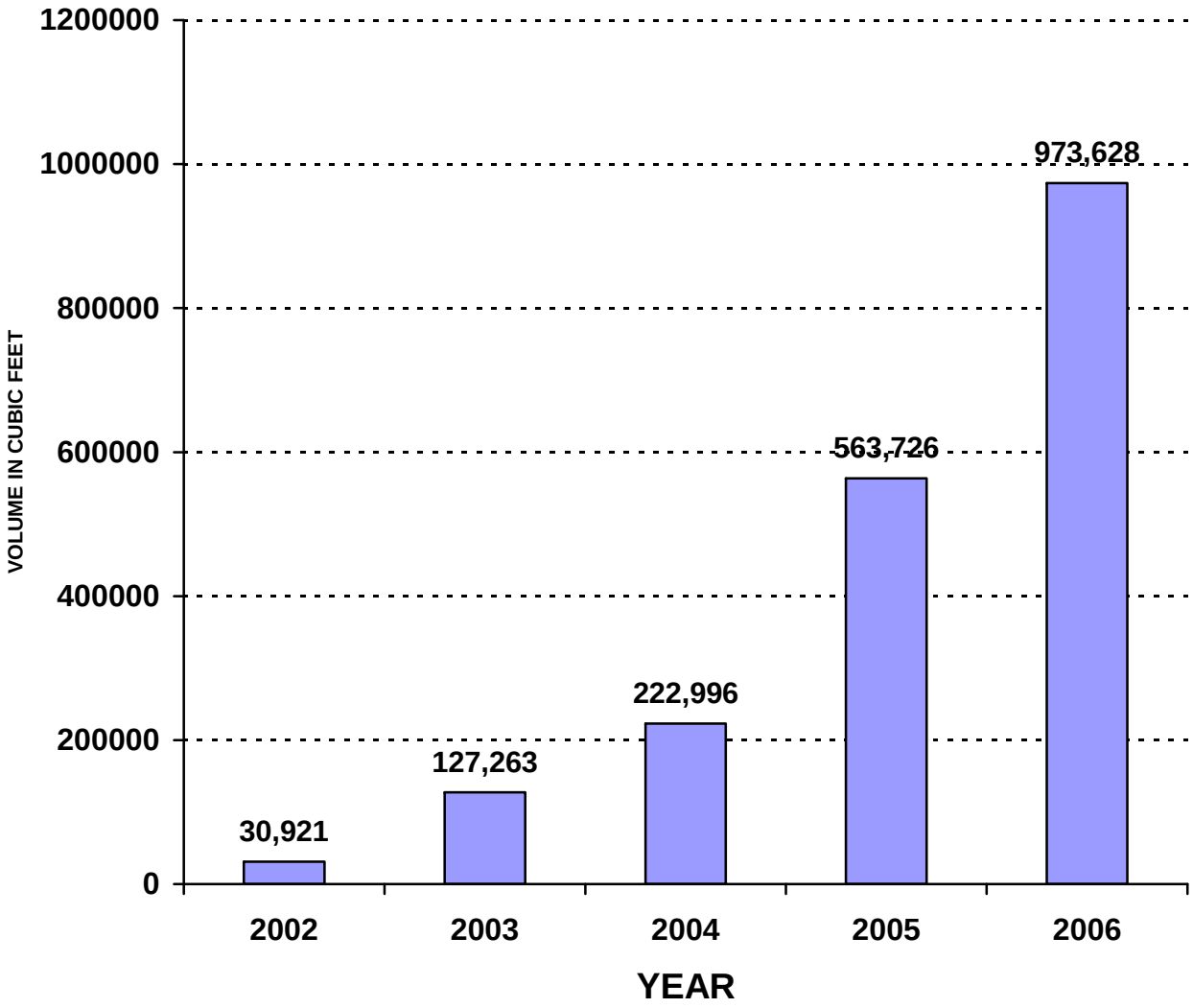


FIGURE 19
ACTIVITY LLRW TRANSFERRED BY YEAR

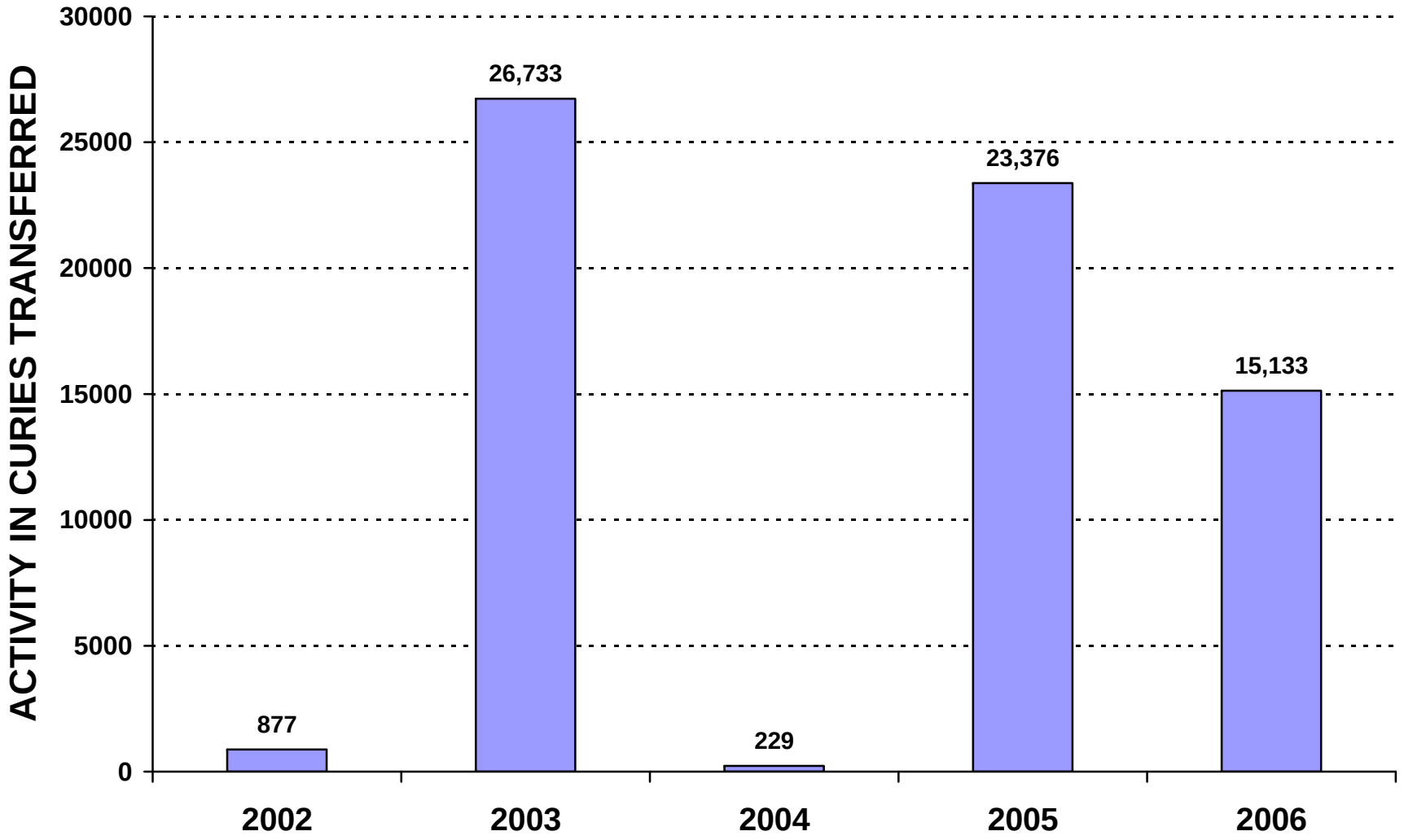
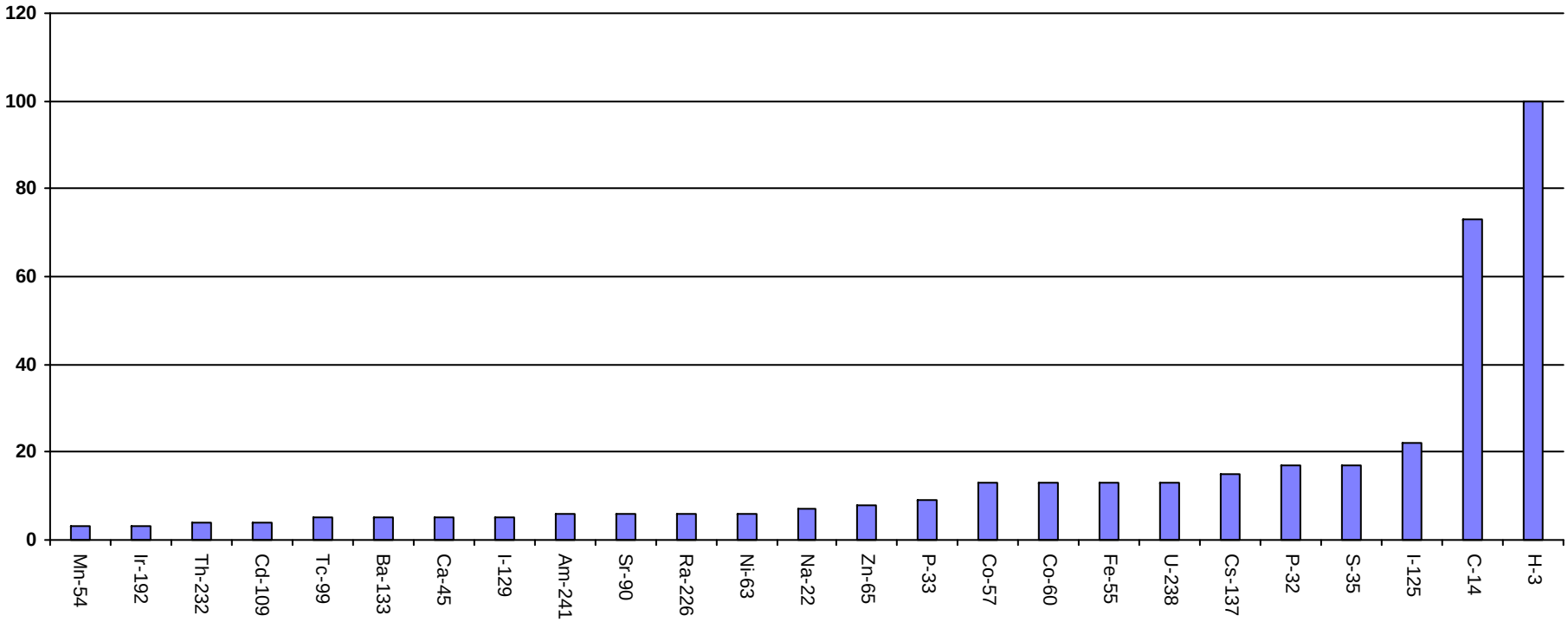


FIGURE 20



TOTAL RAM REPORTING FREQUENCY FOR ALL CLASSES OF WASTE IN 2006

FIGURE 21
TOTAL RAM REPORTING FREQUENCY FOR CLASS A WASTE IN 2006

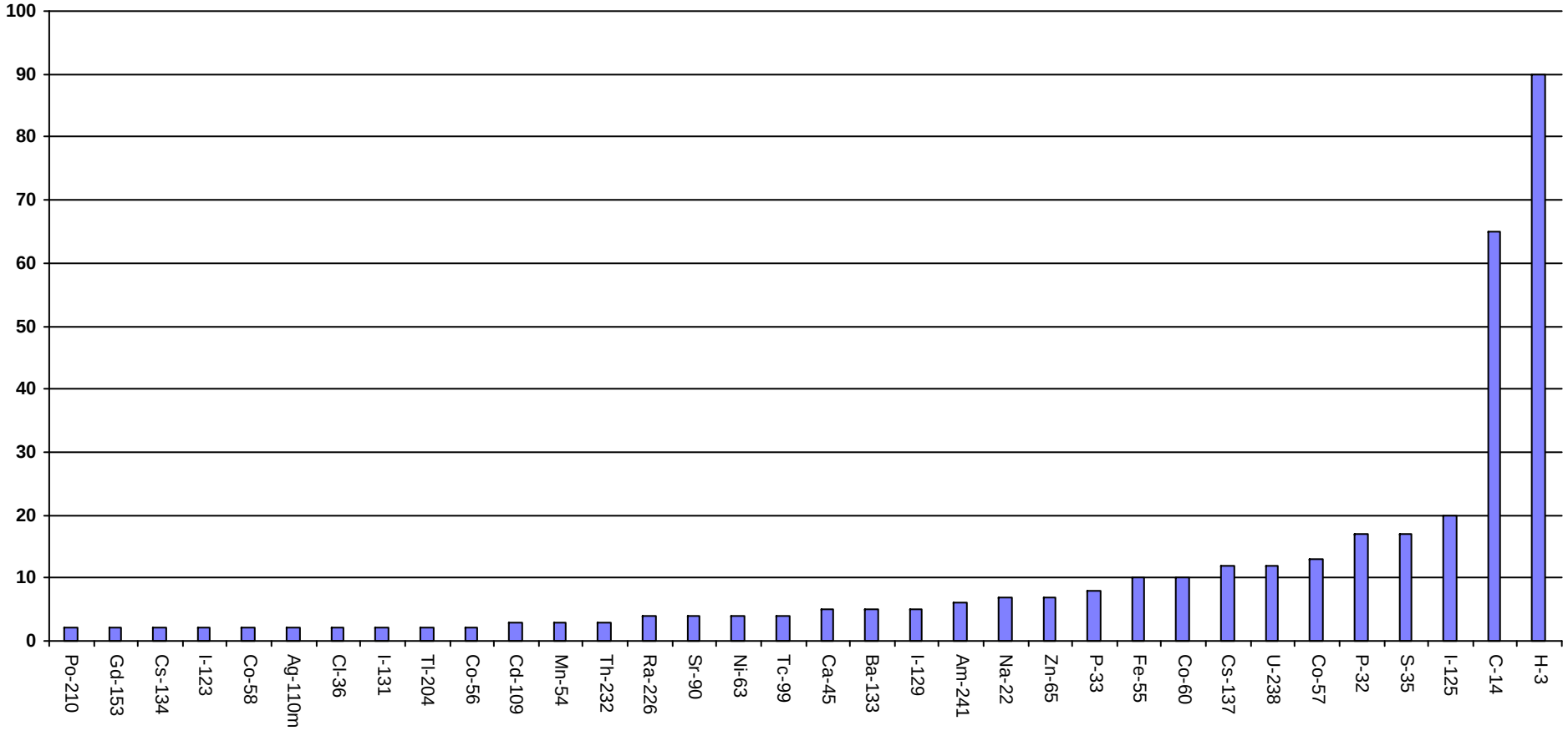


FIGURE 22
TOTAL RAM REPORTING FREQUENCY FOR CLASS B WASTE IN 2006

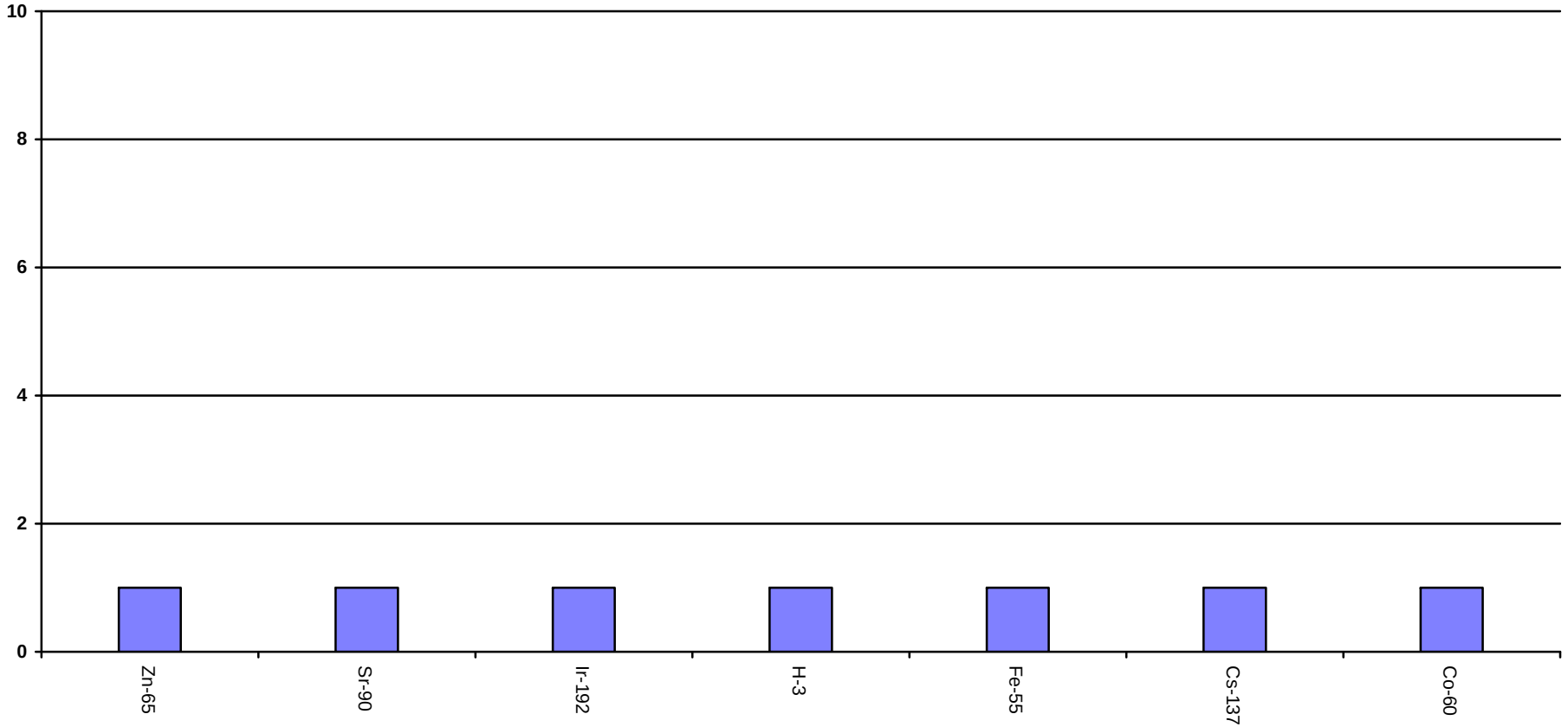


FIGURE 23
TOTAL RAM REPORTING FREQUENCY FOR CLASS C WASTE IN 2006

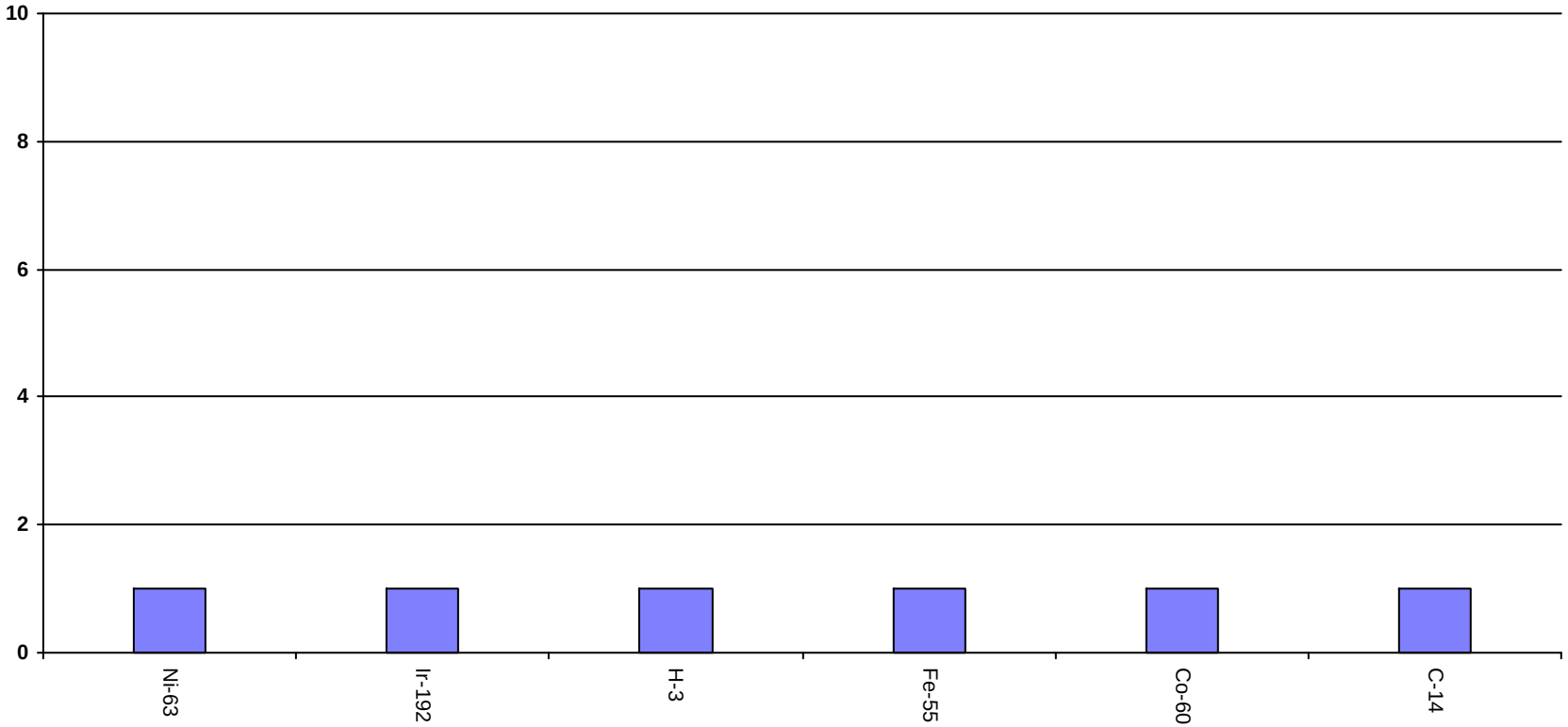


FIGURE 24
TOTAL RAM REPORTING FREQUENCY FOR HVLA WASTE IN 2006

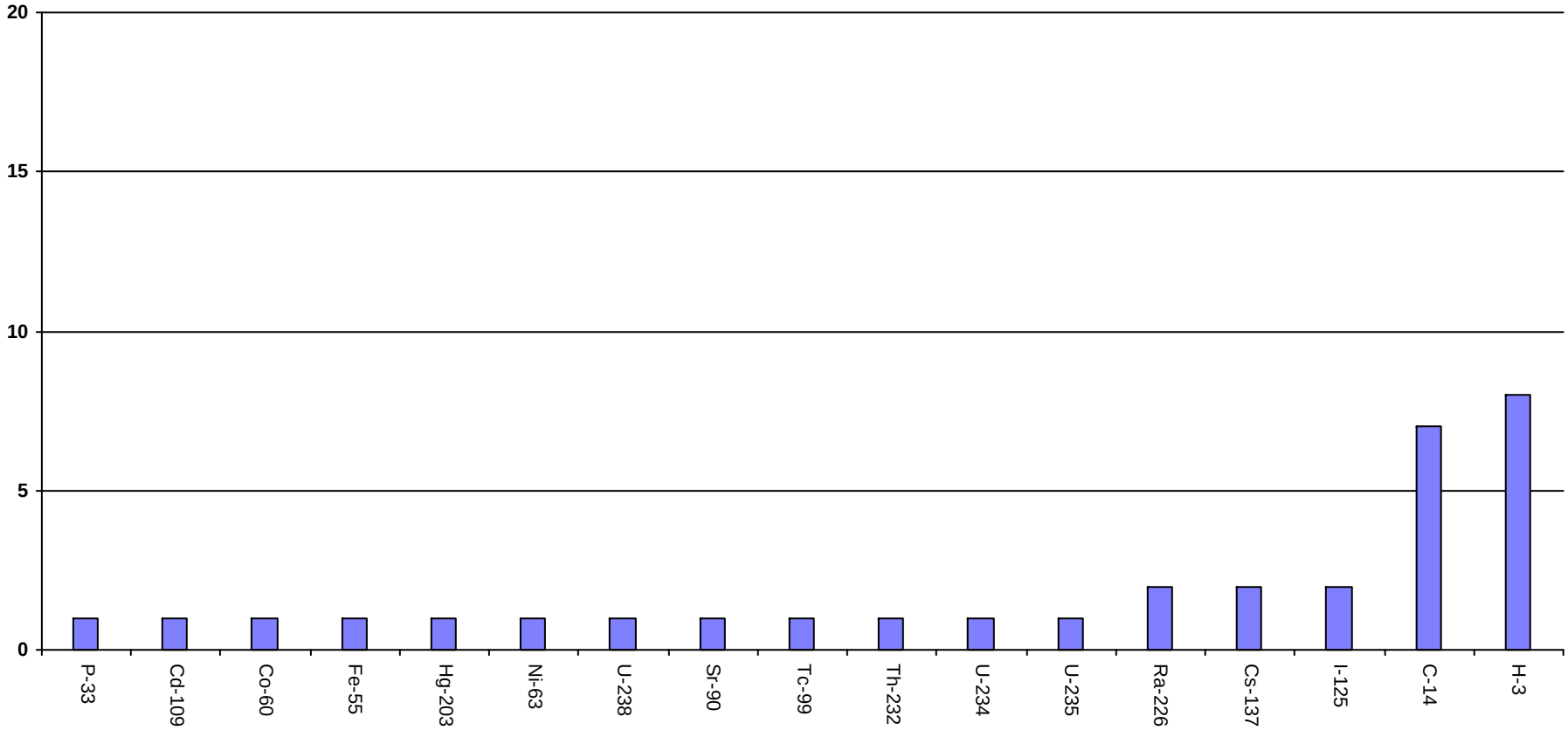


FIGURE 25
IN-STORAGE RAM REPORTING FREQUENCY FOR ALL CLASSES OF WASTE IN 2006

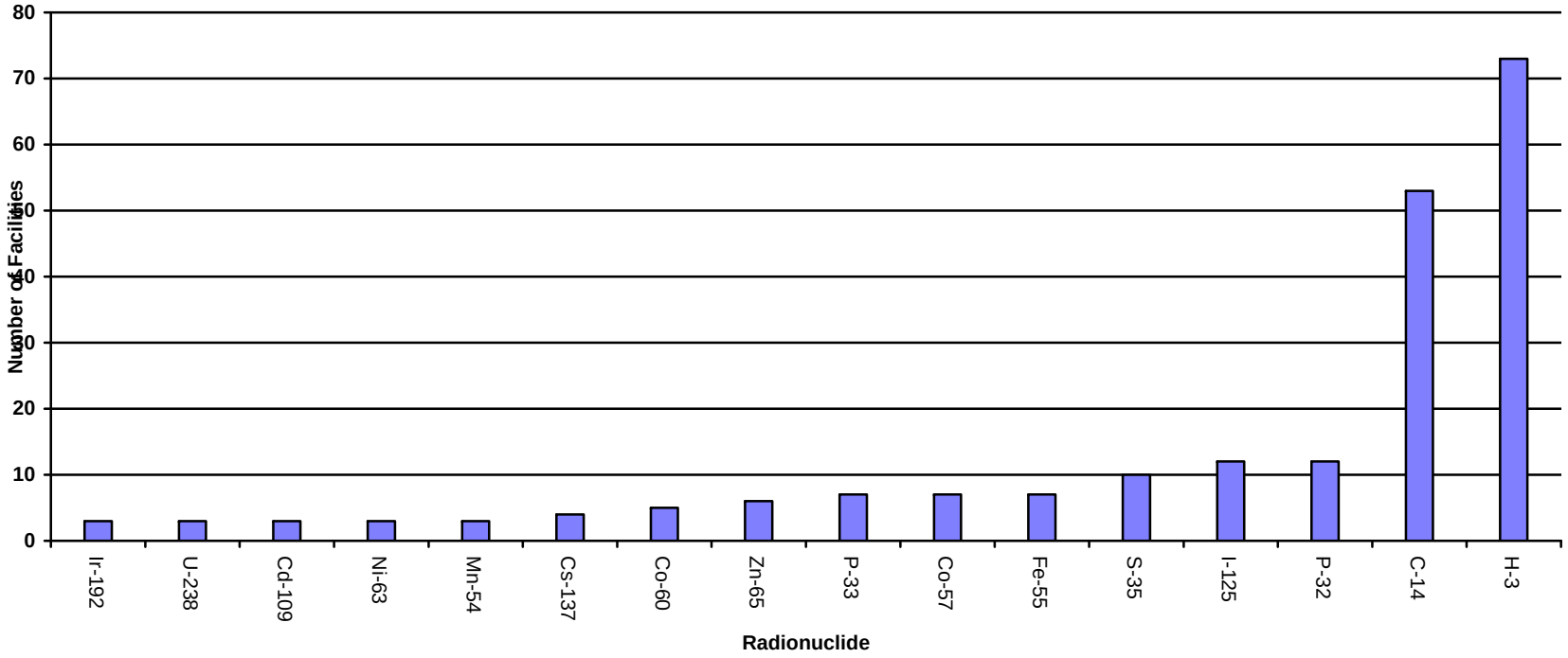


FIGURE 26
TRANSFERRED RAM REPORTING FREQUENCY FOR ALL CLASSES OF WASTE IN 2006

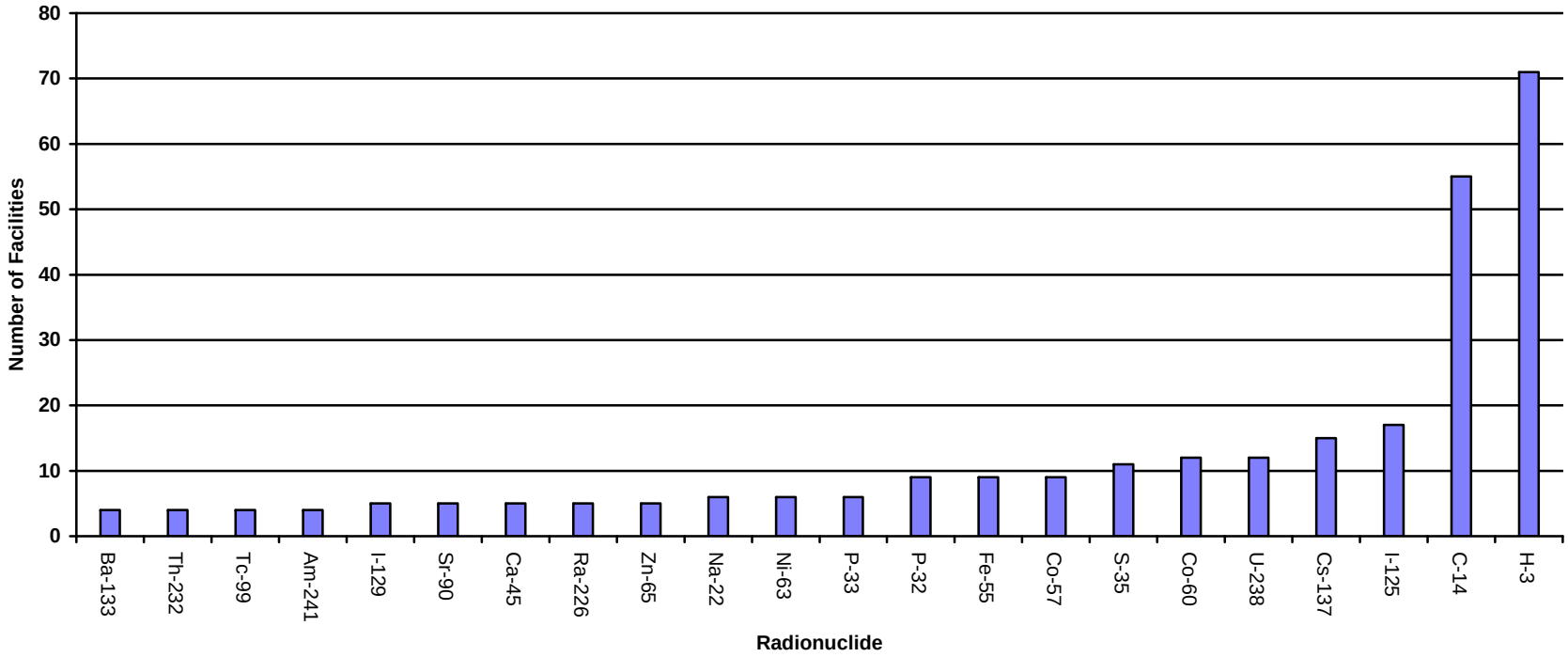


FIGURE 27
DISTRIBUTION OF ORGANIZATIONS THAT GENERATED WASTE IN 2006 - BY ACTIVITY

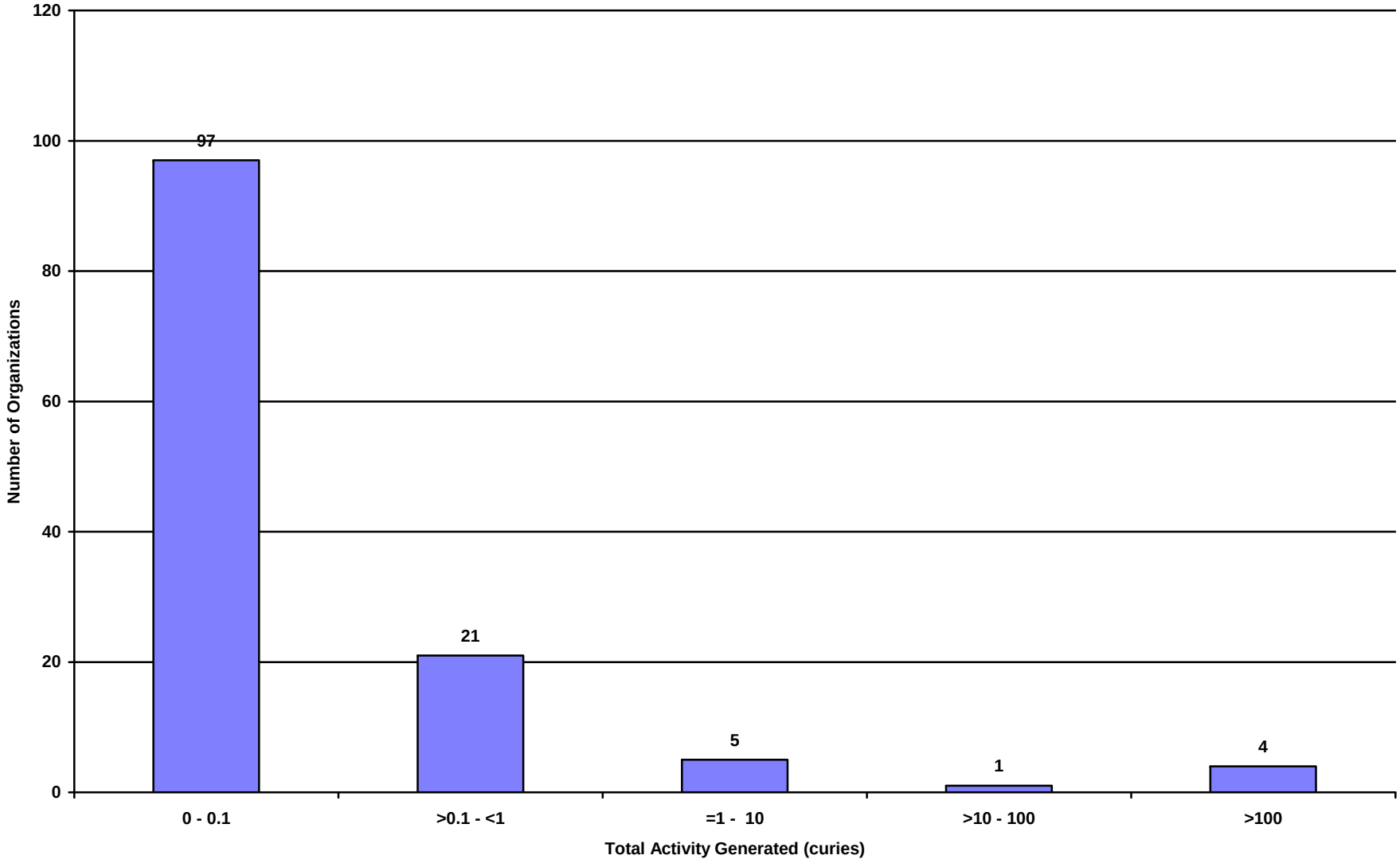


FIGURE 28
DISTRIBUTION OF ORGANIZATIONS THAT GENERATED WASTE IN 2006 - BY VOLUME

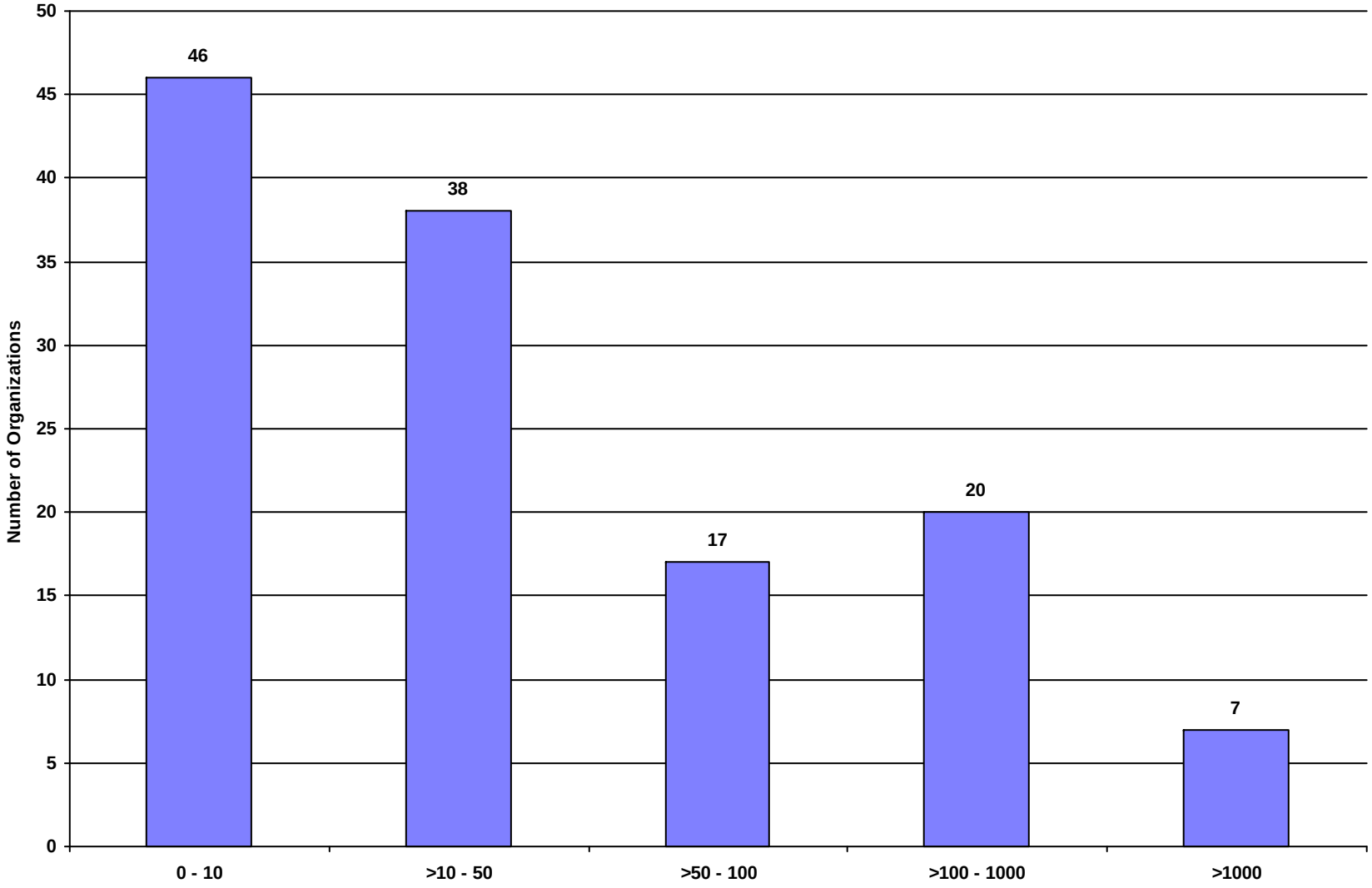


TABLE 15

List of Facilities Volumes and Activities Produced in 2006

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
ABC TESTING INC.	0.0	0.0	0.0	0.000	0.000	0.000
ACCELERON PHARMA	0.0	0.0	0.0	0.000	0.000	0.000
ACLIN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ADAPTIVE OPTICS ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ADNEXUS, A BRISTOL-MYERS SQUIBB R&D CO.	0.0	10.0	10.0	0.000	0.002	0.002
ADVANCE TESTING COMPANY, INC.	0.0	0.0	0.0	0.000	0.000	0.000
AGGREGATE INDUSTRIES-NORTHEAST	0.0	0.0	0.0	0.000	0.000	0.000
ALG ENVIRONMENTAL CONSULTING, LLC	0.0	0.0	0.0	0.000	0.000	0.000
ALKERMES, INC.	0.0	2.0	2.0	0.000	0.347	0.347
ALL STATE SERVICES ENVIRON.	0.0	0.0	0.0	0.000	0.000	0.000
ALLEGHENY RODNEY	0.0	0.0	0.0	0.000	0.000	0.000
ALLIANCE IMAGING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ALLIANCE IMAGING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ALLIED TESTING LABORATORIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ALNYLAM PHARMACEUTICALS, INC.	0.7	0.0	0.7	0.000	0.000	0.000
ALTANA RESEARCH INSTITUTE	0.0	0.0	0.0	0.000	0.000	0.000
ALTRAN SOLUTIONS CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
AMAG PHARMACEUTICALS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
AMERICAN ENG. & TESTING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
AMERICAN RED CROSS BLOOD SERV.	0.0	0.0	0.0	0.000	0.000	0.000
AMGEN, INC.	22.5	30.6	53.1	0.005	0.002	0.008
AMHERST COLLEGE	22.8	3.4	26.2	0.003	0.000	0.004

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
AMPTEK, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ANALYTICAL ANSWERS, INC	0.0	0.0	0.0	0.000	0.000	0.000
ANGELL ANIMAL MEDICAL CENTER - BOSTON	0.0	0.0	0.0	0.000	0.000	0.000
ANNA JAQUES HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
ANTIGENICS INC.	22.5	3.0	25.5	0.006	0.001	0.007
A-PAINTING & LEAD DETECT. SERV	0.0	0.0	0.0	0.000	0.000	0.000
APPLIED BIOSYSTEMS	0.0	0.0	0.0	0.000	0.000	0.000
ARCHEMIX CORP.	0.0	5.0	5.0	0.000	0.000	0.000
AREVA NP, INC.	151.0	7.0	158.0	0.003	0.000	0.003
ARIAD PHARMACEUTICALS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ARMY, DEPARTMENT OF	0.0	0.0	0.0	0.000	0.000	0.000
ARMY, DEPARTMENT OF	0.0	0.0	0.0	0.000	0.000	0.000
ARQULE, INC.	30.5	15.0	45.5	0.000	0.010	0.010
ASAP ENVIRONMENTAL INCORPORATED	0.0	0.0	0.0	0.000	0.000	0.000
ASSURANCE TECHNOLOGY CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
ASTRAZENECA PHARMACEUTICALS LP	47.1	25.7	72.7	0.018	0.000	0.018
ATC ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ATC ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ATC GROUP SERVICES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ATHENA DIAGNOSTICS, INC.	39.2	7.3	46.5	0.001	0.000	0.001
ATLANTIC NUCLEAR CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
AVANT IMMUNOTHERAPUTICS, INC.	10.5	0.0	10.5	0.006	0.000	0.006
AVEO PHARMACEUTICALS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
AXIOM PARTNERS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
B.J. EDGE & ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
BAKER TESTING SERVICES, INC.	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
BARTLETT NUCLEAR, INC.	0.0	0.0	0.0	0.000	0.000	0.000
BASCOM, SCOTT A.	0.0	0.0	0.0	0.000	0.000	0.000
BAYSTATE HEALTH	0.0	0.0	0.0	0.000	0.000	0.000
BEAUDETTE, MARC	0.0	0.0	0.0	0.000	0.000	0.000
BECHTEL/PARSONS BRINCKERHOFF	0.0	0.0	0.0	0.000	0.000	0.000
BERKSHIRE MEDICAL CENTER	0.0	0.0	0.0	0.000	0.000	0.000
BETH ISRAEL DEACON. MED. CTR.	2.8	0.0	2.8	0.080	0.000	0.080
BETH ISRAEL DEACON.MED CENTER	0.0	0.0	0.0	0.000	0.000	0.000
BETH ISRAEL DEACONESS HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
BEVERLY HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
BIO PROCESSORS CORPORATION	0.7	0.0	0.7	0.000	0.000	0.000
BIOGEN IDEC MA, INC.	22.5	37.5	60.0	0.001	0.002	0.003
BIOMEASURE, INC.	4.0	0.0	4.0	0.000	0.000	0.000
BIOMEDICAL RESEARCH MODELS, INC	0.0	1.5	1.5	0.000	0.000	0.000
BIOMEDICAL TECHNOLOGIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
BIOVEST INTERNATIONAL INCORPORATED	0.0	0.0	0.0	0.000	0.000	0.000
BLACKMAN, MEL	0.0	0.0	0.0	0.000	0.000	0.000
BOSTON BIOMEDICAL RES. INST.	0.2	0.0	0.2	0.006	0.000	0.006
BOSTON CHILDHOOD LEAD PAINT POISON PREV.	0.0	0.0	0.0	0.000	0.000	0.000
BOSTON COLLEGE	37.5	15.0	52.5	0.017	0.473	0.490
BOSTON SCIENTIFIC	0.7	0.0	0.7	0.005	0.000	0.005
BOSTON UNIV. CHARLES RIVER CAMPUS	1.4	9.5	10.9	0.001	0.009	0.010
BOSTON UNIVERSITY MED CTR HOSP	191.4	0.0	191.4	0.064	0.000	0.064
BRANDEIS UNIVERSITY	0.0	30.0	30.0	0.000	0.275	0.275
BRIDGEWATER GODDARD PARK MED	0.0	0.0	0.0	0.000	0.000	0.000
BRIDGEWATER STATE COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
BRIGHAM & WOMEN'S HOSPITAL	300.8	98.7	399.5	0.172	0.122	0.293
BRISTOL-MYERS SQUIBB MED. IMG.	3,440.5	417.2	3,857.7	0.000	0.000	0.000
BROCKTON BOARD OF HEALTH	0.0	0.0	0.0	0.000	0.000	0.000
BROCKTON CARDIOLOGY ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
BROCKTON HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
BROWN AND CALDWELL	0.0	0.0	0.0	0.000	0.000	0.000
BRUKER DALTONICS NBC DETECTION CORP.	0.0	0.0	0.0	0.000	0.000	0.000
CAMBRIDGE PUB. HEALTH ALLIANCE	8.9	0.0	8.9	0.018	0.000	0.018
CAMP DRESSER & MCKEE, INC.	0.0	0.0	0.0	0.000	0.000	0.000
CAPE COD HOSPITAL	0.7	0.0	0.7	0.000	0.000	0.000
CAPFILM / ELECTRONIC CONCEPTS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
CAPITAL CARDIOLOGY ASSOC.,P.C	0.0	0.0	0.0	0.000	0.000	0.000
CARDINAL HEALTH NUCLEAR PHARMACY SERVICE	0.0	0.0	0.0	0.000	0.000	0.000
CARDINAL HEALTH NUCLEAR PHARMACY SERVICES	0.0	0.0	0.0	0.000	0.000	0.000
CARDIOLOGY CONSULT.OF CENTRAL MASS., LLP	0.0	0.0	0.0	0.000	0.000	0.000
CARDIOVASCULAR SPECIALISTS, LLC	0.0	0.0	0.0	0.000	0.000	0.000
CARITAS CARNEY HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
CARITAS GOOD SAMARITAN MED CENTER	0.0	0.0	0.0	0.000	0.000	0.000
CARITAS HOLY FAMILY HOSPITAL AND MED CTR	0.0	0.0	0.0	0.000	0.000	0.000
CARITAS NORWOOD HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
CARITAS PET IMAGING, LLC	0.0	0.0	0.0	0.000	0.000	0.000
CARITAS ST. ELIZABETH'S MED. CNTER OF BO	0.0	0.0	0.0	0.000	0.000	0.000
CATALDO, JOSEPH P.	0.0	0.0	0.0	0.000	0.000	0.000
CAULFIELD ENVIRONMENTAL	0.0	0.0	0.0	0.000	0.000	0.000
CELL SIGNALING TECHNOLOGY	0.0	0.0	0.0	0.000	0.000	0.000
CHADWICK MEDICAL ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
CHARLES RIVER LABORATORIES,INC	468.0	56.0	524.0	0.005	0.000	0.005
CHARLES RIVER PHARMSERVICES	0.0	0.0	0.0	0.000	0.000	0.000
CHARLES STARK DRAPER LAB., INC	0.0	0.0	0.0	0.000	0.000	0.000
CHARM SCIENCES INC.	33.0	8.0	41.0	0.008	0.002	0.010
CHEMIC LABORATORIES, INC.	0.0	9.0	9.0	0.000	0.010	0.010
CHILD SAFE LEAD PAINT	0.0	0.0	0.0	0.000	0.000	0.000
CHILDREN'S HOSPITAL, THE	0.9	75.0	75.9	0.038	0.028	0.066
CIS-US, INC.	0.0	0.0	0.0	0.000	0.000	0.000
CITY OF FITCHBURG	0.0	0.0	0.0	0.000	0.000	0.000
CITY OF NEWTON	0.0	0.0	0.0	0.000	0.000	0.000
CLARK UNIVERSITY	4.2	0.0	4.2	0.000	0.000	0.000
CLINICAL SCIENCE LAB., INC.	0.0	0.0	0.0	0.000	0.000	0.000
CLINOMICS LABORATORIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
CLIPPER CARDIOVASCULAR ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
COLLEGE OF OUR LADY OF ELMS	0.0	0.0	0.0	0.000	0.000	0.000
COLLEGE OF THE HOLY CROSS	0.0	0.0	0.0	0.000	0.000	0.000
COMBINATORX, INC.	18.8	0.0	18.8	0.001	0.000	0.001
COMMUNICATIONS & POWER INDUST.	38.9	0.0	38.9	41.300	0.000	41.300
CONAM INSPECTION	0.0	0.0	0.0	0.000	0.000	0.000
COOLEY DICKINSON HOSPITAL, INC	0.0	0.0	0.0	0.000	0.000	0.000
COVINO ENVIRON. ASSOC. INC.	0.0	0.0	0.0	0.000	0.000	0.000
CRANE & CO., INC.	0.0	0.0	0.0	0.000	0.000	0.000
CRANE ENVIRONMENTAL CONSULTANTS, LLC	0.0	0.0	0.0	0.000	0.000	0.000
CRITICAL THERAPEUTICS, INC,	7.8	0.0	7.8	0.650	0.000	0.650
CUBIST PHARMACEUTICALS, INC.	15.0	0.0	15.0	0.004	0.000	0.004
CURIS, INC.	0.0	7.0	7.0	0.000	0.000	0.000

	VOLUME (cubic feet)			ACTIVITY (curies)		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
DANA-FARBER CANCER INSTITUTE	288.0	0.0	288.0	0.337	0.000	0.337
DAVID & SON LEAD INSPECTIONS	0.0	0.0	0.0	0.000	0.000	0.000
DIGIRAD IMAGING SOLUTIONS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
DILLARD, ANNETTE	0.0	0.0	0.0	0.000	0.000	0.000
DISCOVERY LABWARE, INC.	56.6	42.5	99.1	0.016	0.004	0.020
DIVERSIFIED ENVIRONMENTAL CORP	0.0	0.0	0.0	0.000	0.000	0.000
DOMINION ENERGY BRAYTON POINT, LLC	0.0	0.0	0.0	0.000	0.000	0.000
DOMINION ENERGY SALEM HARBOR, LLC	0.0	0.0	0.0	0.000	0.000	0.000
DOSITEC, INC.	0.0	0.0	0.0	0.000	0.000	0.000
E.T. & L. CORP.	0.0	0.0	0.0	0.000	0.000	0.000
EARTHWORKS ENGINEERING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
EDITH NOURSE ROGERS MEMORIAL VETERANS HOSPITAL	16.1	0.0	16.1	0.012	0.000	0.012
EISAI RESEARCH INSTITUTE	26.0	2.5	28.5	0.001	0.001	0.001
ELIXIR PHARMACEUTICALS, INC.	0.0	4.0	4.0	0.000	0.000	0.000
EMD LEXIGEN RESEARCH CENTER CORPORATION	0.0	22.0	22.0	0.000	0.005	0.005
EMD SERONO RESEARCH INSTITUTE, INC.	0.0	6.7	6.7	0.000	0.001	0.001
EMERALD LEAD TESTING CO.	0.0	0.0	0.0	0.000	0.000	0.000
EMERSON HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
ENANTA PHARMACEUTICALS	0.0	0.0	0.0	0.000	0.000	0.000
ENRIGHT, JOHN J.	0.0	0.0	0.0	0.000	0.000	0.000
ENSR INTERNATIONAL	0.0	0.0	0.0	0.000	0.000	0.000
ENTERGY NUCLEAR GENERATING COMPANY	11,999.0	5,019.0	17,018.0	14,784.300	0.531	14,784.831
ENVIRONMENTAL AND LEAD PT INSP	0.0	0.0	0.0	0.000	0.000	0.000
ENVIRONMENTAL CHEMICAL CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
ENVIRONMENTAL COMPLIANCE SERV	0.0	0.0	0.0	0.000	0.000	0.000
ENVIRONMENTAL HEALTH & ENGINEERING, INC.	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
ENVIRONMENTAL LEAD DETECTION, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ENVIRONMENTAL PARTNERS GROUP, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ENVIRONMENTAL STRATEGIES & MANAGE. INC.	0.0	0.0	0.0	0.000	0.000	0.000
ENVIRONMENTAL TESTING SVCS.INC	0.0	0.0	0.0	0.000	0.000	0.000
ENVIROSENSE, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ENVIROTEST LABORATORY	0.0	0.0	0.0	0.000	0.000	0.000
ENZYMATICS, INC.	0.0	0.5	0.5	0.000	0.300	0.300
EPIC THERAPEUTICS, INC.	52.5	25.5	78.0	0.006	0.003	0.008
EPIX PHARMACEUTICALS, INC.	34.8	0.0	34.8	0.005	0.000	0.005
EYETECH (OSI)	7.5	0.0	7.5	0.002	0.000	0.002
F. H. PETERSON MACHINE CORP.	0.0	0.0	0.0	0.000	0.000	0.000
F.X. MASSE ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
FAIRVIEW HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
FALLON CLINIC, INC.	0.0	0.0	0.0	0.000	0.000	0.000
FAULKNER HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
FELINE HEALTH, INC.	0.0	0.0	0.0	0.000	0.000	0.000
FITCHBURG BOARD OF HEALTH	0.0	0.0	0.0	0.000	0.000	0.000
FITCHBURG STATE COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000
FORSYTH INSTITUTE THE	0.0	7.5	7.5	0.000	0.001	0.001
FRANKLIN ANALYTICAL SERVICES	0.0	0.0	0.0	0.000	0.000	0.000
FSL ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
FUSS & O'NEILL ENVIRONSCIENCE, LLC	0.0	0.0	0.0	0.000	0.000	0.000
GAETA, NEIL A.	0.0	0.0	0.0	0.000	0.000	0.000
GAF MATERIALS CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
GALANEK, MITCHELL S.	0.0	0.0	0.0	0.000	0.000	0.000
GALENEA CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
GALEOTA ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GE HEALTHCARE BIO-SCIENCES CORP.	0.0	0.0	0.0	0.000	0.000	0.000
GE HOMELAND PROTECTION, INC.	4.0	0.0	4.0	0.000	0.000	0.000
GEI CONSULTANTS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GEM ENVIRONMENTAL	0.0	0.0	0.0	0.000	0.000	0.000
GENE LOGIC, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GENERAL DYNAMICS DEFENSE SYS.	0.0	0.0	0.0	0.000	0.000	0.000
GENERAL ELECTRIC COMPANY D/B/A GE HEALTH	0.0	0.0	0.0	0.000	0.000	0.000
GENETICS INSTITUTE, LLC	515.0	312.0	827.0	0.148	0.461	0.609
GENVEC, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GENZYME BIOSURGERY	0.0	0.0	0.0	0.000	0.000	0.000
GENZYME CORPORATION	420.0	75.0	495.0	0.131	0.016	0.146
GEOSYNTEC CONSULTANTS	0.0	0.0	0.0	0.000	0.000	0.000
GEOTECHNICAL CONSULTANTS, INC	0.0	0.0	0.0	0.000	0.000	0.000
GEOTECHNICAL GROUP INC.(TGG)	0.0	0.0	0.0	0.000	0.000	0.000
GEOTECHNICAL SERVICES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GEOTESTING EXPRESS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GILLETTE TECHNICAL CENTER	30.6	0.0	30.6	0.016	0.000	0.016
GOLDER ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GOLDMAN ENVIRONMENTAL CONSULT.	0.0	0.0	0.0	0.000	0.000	0.000
GPC BIOTECH, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GRANGER-LYNCH CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
GRANITE MEDICAL GROUP	0.0	0.0	0.0	0.000	0.000	0.000
GREATER BOSTON LEAD PAINT TESTING	0.0	0.0	0.0	0.000	0.000	0.000
GUNTLOW & ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
GWATHMEY, INC.	10.9	0.0	10.9	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
GZA GEOENVIRONMENTAL, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HACK, TERRENCE C.	0.0	0.0	0.0	0.000	0.000	0.000
HALEY & ALDRICH, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HALLMARK HEALTH SYSTEM, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HAMILTON THORNE BIOSCIENCES	0.0	0.0	0.0	0.000	0.000	0.000
HARBOR MEDICAL ASSOCIATES, PC	0.0	0.0	0.0	0.000	0.000	0.000
HARDIN-KIGHT ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HARRINGTON MEMORIAL HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
HARRIS, JEFFERY, W.	0.0	0.0	0.0	0.000	0.000	0.000
HARTIN, ROBERT	0.0	0.0	0.0	0.000	0.000	0.000
HARVARD ENVIRONMENTAL SERVICE	0.0	0.0	0.0	0.000	0.000	0.000
HARVARD UNIVERSITY	7.0	0.0	7.0	0.499	0.000	0.499
HARVARD VANGUARD MED. ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HAWTHORN MEDICAL ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
HEALTH & HUMAN SERVICES, DEPT. OF	0.0	0.0	0.0	0.000	0.000	0.000
HEART CENTER, THE	0.0	0.0	0.0	0.000	0.000	0.000
HEARTSAFE	0.0	0.0	0.0	0.000	0.000	0.000
HEMMILA, FREDERIC J.	0.0	0.0	0.0	0.000	0.000	0.000
HERLEY NEW ENGLAND	0.0	7.3	7.3	0.000	0.000	0.000
HEYWOOD HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
HIGGINS ENVIRONMENTAL ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HOLYOKE MEDICAL CENTER, INC.	0.0	0.0	0.0	0.000	0.000	0.000
HOMEINEX CORP.	0.0	0.0	0.0	0.000	0.000	0.000
HOPEDALE CARDIOLOGY, LLP	0.0	0.0	0.0	0.000	0.000	0.000
HORNE, DAVID C.	0.0	0.0	0.0	0.000	0.000	0.000
HOUSING ENVIRONMENTAL SERV.	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
HUSTON, GERALD F., SR.	0.0	0.0	0.0	0.000	0.000	0.000
HYGIENETICS ENVIRON. SERVICES	0.0	0.0	0.0	0.000	0.000	0.000
IBA MOLECULAR NORTH AMERICA, INC.	0.0	0.0	0.0	0.000	0.000	0.000
IDENIX (MASSACHUSETTS) INC.	11.6	0.5	12.1	0.002	0.001	0.003
IDERA PHARMACEUTICALS, INC.	22.5	15.0	37.5	0.006	0.004	0.010
IMAGING ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
IMAGING CONSULTANTS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
IMMUNE DISEASE INSTITUTE	0.0	30.0	30.0	0.000	0.010	0.010
IMMUNOGEN, INC.	21.2	7.5	28.7	0.143	0.002	0.145
IMPERIAL INSPECTION SERVICES	0.0	0.0	0.0	0.000	0.000	0.000
IMPLANT SCIENCES CORP.	0.0	0.0	0.0	0.000	0.000	0.000
INDUSTRIAL NUCLEAR COMPANY, INC.	0.0	0.0	0.0	0.000	0.000	0.000
INEOS NOVA LLC	0.0	0.0	0.0	0.000	0.000	0.000
INFINITY PHARMACEUTICALS, INC	25.5	9.6	35.0	0.166	0.010	0.176
INNOV-X SYSTEMS	0.0	0.0	0.0	0.000	0.000	0.000
INOTEK PHARMACEUTICAL CORPORATION	2.0	7.5	9.5	0.000	0.000	0.000
INSIGHT HEALTH CORP.	0.0	0.0	0.0	0.000	0.000	0.000
INTER MED ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
INTERNAL MEDICINE & CARDIOLOGY ASSOC.	0.0	0.0	0.0	0.000	0.000	0.000
J & M INSPECTIONAL SVCS. INC.	0.0	0.0	0.0	0.000	0.000	0.000
JACOBS CIVIL INC.	0.0	0.0	0.0	0.000	0.000	0.000
JAY CASHMAN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
JGI EASTERN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
JHR ENVIRONMENTAL TESTING	0.0	0.0	0.0	0.000	0.000	0.000
JOHN TURNER CONSULTING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
JOHNSON FOILS	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cu. ft.)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
JORDAN HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
JOSLIN DIABETES CENTER, INC.	102.0	7.5	109.5	0.074	0.001	0.075
KANE, JACK	0.0	0.0	0.0	0.000	0.000	0.000
KEVILLE ENTERPRISES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
KIDDE-FENWAL, INC.	0.0	0.0	0.0	0.000	0.020	0.020
LAHEY CLINIC FOUNDATION	0.0	0.0	0.0	0.000	0.000	0.000
LANE CONSTRUCTION CORP. THE	0.0	0.0	0.0	0.000	0.000	0.000
LAWRENCE GENERAL HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
LAWRENCE PUMPS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
LEADSAFE ENVIRONMENTAL SVCS.	0.0	0.0	0.0	0.000	0.000	0.000
LEVINSON HARRIS MEDICAL GROUP	0.0	0.0	0.0	0.000	0.000	0.000
LFR INC.	0.0	0.0	0.0	0.000	0.000	0.000
LONZA HOPKINTON, INC.	91.8	15.0	106.8	0.006	0.003	0.009
LOVELY, PAUL	0.0	0.0	0.0	0.000	0.000	0.000
LOWELL GENERAL HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
LOWN CARDIOVASCULAR GROUP, PC	0.0	0.0	0.0	0.000	0.000	0.000
LYNCH, BERNARD	0.0	0.0	0.0	0.000	0.000	0.000
M&M LEAD INSPECTIONAL SVCS.	0.0	0.0	0.0	0.000	0.000	0.000
M/A-COM INCORPORATED	0.0	0.0	0.0	0.000	0.000	0.000
MALDEN REDEVELOPMENT AUTHORITY	0.0	0.0	0.0	0.000	0.000	0.000
MALLINCKRODT, INC.	46.8	0.0	46.8	0.000	0.000	0.000
MARINE BIOLOGICAL LABORATORY	123.0	27.5	140.5	0.200	0.050	0.250
MASS. -AMHERST, UNIVERSITY OF	76.0	32.2	108.2	0.004	0.000	0.004
MASS. BIOMEDICAL INITIATIVES	0.0	0.0	0.0	0.000	0.000	0.000
MASS. -BOSTON, UNIVERSITY OF	0.0	0.0	0.0	0.000	0.000	0.000
MASS. COLLEGE OF PHARMACY	0.0	4.0	4.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
MASS. -DARTMOUTH, UNIV. OF	0.0	0.0	0.0	0.000	0.000	0.000
MASS. DEPT OF PUBLIC HEALTH	8.9	0.0	8.9	7.010	0.000	7.010
MASS. DEPT. ENVIRONMENTAL PROT	0.0	0.0	0.0	0.000	0.000	0.000
MASS. DPH CHILD LEAD POIS PREV	0.0	0.0	0.0	0.000	0.000	0.000
MASS. EMERG. MGT. AGENCY	0.0	0.0	0.0	0.000	0.000	0.000
MASS. EYE & EAR INFIRMARY	0.0	0.0	0.0	0.000	0.000	0.000
MASS. GENERAL HOSPITAL	187.5	42.0	229.5	0.082	0.008	0.090
MASS. HIGHWAY DEPARTMENT	0.0	0.0	0.0	0.000	0.000	0.000
MASS. INSTITUTE OF TECHNOLOGY	13.0	44.0	57.0	0.034	0.007	0.041
MASS. -LOWELL, UNIVERSITY OF	72.0	0.1	72.1	0.060	0.000	0.060
MASSACHUSETTS MOBILE PET, P.C.	0.0	0.0	0.0	0.000	0.000	0.000
MCARDLE GANNON ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MEDCATH, INC.	7.5	0.0	7.5	0.005	0.000	0.005
MEDI-PHYSICS, INC. DBA GE HEALTHCARE	0.0	0.0	0.0	0.000	0.000	0.000
MERCK & CO., INC.	0.0	52.8	52.8	0.000	0.007	0.007
MERCURY THERAPEUTICS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MERCY HOSPITAL, INC., THE	0.0	0.0	0.0	0.000	0.000	0.000
MERRIMACK PHARMACEUTICALS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MERRIMACK VALLEY CARD. ASSOC.	0.0	0.0	0.0	0.000	0.000	0.000
MERRIMACK VALLEY HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
METROWEST MEDICAL CENTER	0.0	0.0	0.0	0.000	0.000	0.000
MGI PHARMA , INC.	7.5	3.8	11.3	0.018	0.000	0.018
MICROBIA, INC.	8.1	41.8	49.9	0.003	0.005	0.008
MICROCHIPS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MICROTEST LABORATORIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MID-CITY SCRAP IRON & SALVAGE CO., INC.	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
MILFORD REGINAL MEDICAL CENTER	0.0	0.0	0.0	0.000	0.000	0.000
MILLENNIUM PHARMACEUTICALS, INC.	181.4	34.1	215.4	0.274	0.001	0.275
MILLER ENGINEERING & TESTING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MILLER, P. TERRY	0.0	0.0	0.0	0.000	0.000	0.000
MILLIPORE CORPORATION	0.0	17.5	17.1	0.000	0.001	0.001
MILTON HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
MINUTEMAN ENVIRONMENTAL SERVICES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
MOLECULAR INSIGHT PHARMACEUTICALS, INC.	110.0	0.0	110.0	0.468	0.000	0.468
MOMENTA PHARMACEUTICALS	0.0	2.0	2.0	0.000	0.000	0.000
MORTON HOSPITAL & MED. CENTER	0.0	0.0	0.0	0.000	0.000	0.000
MOUNT AUBURN HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
MOUNT HOLYOKE COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000
NASHOBA VALLEY MEDICAL CENTER	0.0	0.0	0.0	0.000	0.000	0.000
NAVIX DIAGNOSTIX, INC (FIXED)	0.0	0.0	0.0	0.000	0.000	0.000
NAVIX DIAGNOSTIX, INC (MOBILE)	0.0	0.0	0.0	0.000	0.000	0.000
NEUROLOGICA CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
NEUROPHYSICS CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
NEW BEDFORD HEALTH DEPARTMENT	0.0	0.0	0.0	0.000	0.000	0.000
NEW BEDFORD MEDICAL ASSOCIATE	0.0	0.0	0.0	0.000	0.000	0.000
NEW ENG. COLLEGE OF OPTOMETRY	0.0	0.0	0.0	0.000	0.000	0.000
NEW ENGLAND BAPTIST HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
NEW ENGLAND BIOLABS, INC.	0.0	45.0	45.0	0.000	0.025	0.025
NEW ENGLAND CARDIOLOGY, LLC	0.0	0.0	0.0	0.000	0.000	0.000
NEW ENGLAND MEDICAL SPECIALISTS	0.0	0.0	0.0	0.000	0.000	0.000
NEW ENGLAND PET IMAGING SYSTM	0.0	0.0	0.0	0.000	0.000	0.000
NEW ENGLAND PET OF GREATER LOWELL	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			ACTIVITY (curies)		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
NITROMED, INC.	0.0	0.0	0.0	0.000	0.000	0.000
NOBLE HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
NORFOLK COUNTY CARDIOLOGY ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
NORFOLK LEAD INSPECTION	0.0	0.0	0.0	0.000	0.000	0.000
NORTH ADAMS REGIONAL HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
NORTH SHORE CARDIOVASCULAR ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
NORTH SHORE LEAD PAINT TEST SERVICE	0.0	0.0	0.0	0.000	0.000	0.000
NORTH SHORE MEDICAL CENTER	0.0	0.0	0.0	0.000	0.000	0.000
NORTHAMPTON CARDIOLOGY ASSOC., PC	0.0	0.0	0.0	0.000	0.000	0.000
NORTHEASTERN UNIVERSITY	84.1	8.0	92.2	0.004	0.000	0.004
NORWICH LABORATORIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
NOVARTIS INST. FOR BIOMEDICAL RESEARCH	527.9	120.0	647.9	0.310	0.039	0.349
NUCLEAR INSTRUMENT CO.	0.0	0.0	0.0	0.000	0.000	0.000
OMNIGENE BIOPRODUCTS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ORGANON RESEARCH CENTER, USA	0.0	0.0	0.0	0.000	0.000	0.000
OSRAM SYLVANIA PRODUCTS, INC.	0.7	0.0	0.7	0.000	0.000	0.000
OST SERVICES LLC	0.0	0.0	0.0	0.000	0.000	0.000
P.A. TECHNOLOGIES, LLC	0.0	0.0	0.0	0.000	0.000	0.000
P.J. KEATING COMPANY, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PALMER PAVING CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
PANTHER ENVIRONMENTAL	0.0	0.0	0.0	0.000	0.000	0.000
PARATEK PHARMACEUTICALS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PARE CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
PELLETIER, LEO H.	0.0	0.0	0.0	0.000	0.000	0.000
PEPTIMMUNE, INC.	16.0	0.0	16.0	0.001	0.000	0.001
PERKINELMER LIFE & ANALYTI	25,915.8	340.8	26,256.6	168.833	547.839	716.672

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
PERKINELMER OPTOELECTRONICS	0.0	0.0	0.0	0.000	0.000	0.000
PETNET SOLUTIONS, INC.	0.0	0.1	0.1	0.000	0.050	0.050
PFIZER, INC.	232.5	70.0	302.5	0.197	0.032	0.228
PHARMA MAR USA, INCORPORATED	0.0	0.0	0.0	0.000	0.000	0.000
PHILOTECHNICS, LTD	0.0	0.0	0.0	0.000	0.000	0.000
PHOTODETECTION SYSTEMS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PHOTOVAC, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PINE & SWALLOW ASSOCIATES, INC	0.0	0.0	0.0	0.000	0.000	0.000
PIONEER VALLEY CARDIOLOGY, PC	0.0	0.0	0.0	0.000	0.000	0.000
PK ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PLEXUS CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
PLYMOUTH RUBBER CO., INC.	0.0	0.0	0.0	0.000	0.000	0.000
POLAROID CORPORATION	1.9	0.0	1.9	0.060	0.000	0.060
POVOLOTSKIY, LEONID	0.0	0.0	0.0	0.000	0.000	0.000
PRAECIS PHARMACEUTICALS, INC.	73.6	16.7	90.3	0.232	0.001	0.235
PRIMA CARE, P.C.	0.0	0.0	0.0	0.000	0.000	0.000
PRIME ENGINEERING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PROFESSIONAL SERV. INDUSTRIES	0.0	0.0	0.0	0.000	0.000	0.000
PROSCAN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
PROTEIN FORREST, INC.	10.0	0.0	10.0	0.002	0.000	0.002
PROTZE CONSULTING ENGINEERS	0.0	0.0	0.0	0.000	0.000	0.000
QSA GLOBAL, INC.	450.0	48.6	498.6	2.640	2,986.380	2,989.020
QUALITY ASSURANCE LAB, INC.	0.0	0.0	0.0	0.000	0.000	0.000
QUINCY MEDICAL CENTER, INC.	0.0	0.0	0.0	0.000	0.000	0.000
QUINLAN, MICHAEL A.	0.0	0.0	0.0	0.000	0.000	0.000
R. P. HOLMES ENVIRONMENTAL	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
RADIATION MONITORING DEVICE, INC, RMD IN	0.0	0.1	0.1	0.000	1.000	1.000
RADIATION MONITORING DEVICES, INC.; RMD	0.0	0.1	0.1	0.000	1.000	1.000
RADIOCAT	0.0	0.0	0.0	0.000	0.000	0.000
RADIOMED CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
RADIUS HEALTH, INC.	16.4	0.0	16.4	0.001	0.000	0.001
RAYTHEON COMPANY	0.0	0.0	0.0	0.000	0.000	0.000
RAYTHEON COMPANY	0.0	0.0	0.0	0.000	0.000	0.000
RCS LEAD PAINT DETECTION	0.0	0.0	0.0	0.000	0.000	0.000
READING CARDIOLOGY ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
REMSERV, INC.	0.0	0.0	0.0	0.000	0.000	0.000
REPLIGEN CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
RESIDENTIAL INSPECTION COMPANY	0.0	0.0	0.0	0.000	0.000	0.000
RESOLVYX PHARMACEUTICALS, INC.	0.0	8.6	8.6	0.000	0.000	0.000
RIVER BEND MEDICAL GROUP	0.0	0.0	0.0	0.000	0.000	0.000
ROXBURY COMMUNITY COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000
RSP ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
RXI PHARMACEUTICALS, INC.	22.5	3.8	26.3	0.008	0.030	0.038
S.V. HOSPITAL, L.L.C.	0.0	0.0	0.0	0.000	0.000	0.000
SAINTS MEMORIAL MED. CTR, INC. D.B.A	0.0	0.0	0.0	0.000	0.000	0.000
SANBORN, HEAD & ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
SANOFI-AVENTIS U.S., INC.	0.0	2.0	2.0	0.000	0.000	0.000
SATORI PHARMACEUTICALS INCORPORATED	0.0	0.0	0.0	0.000	0.000	0.000
SCHEPENS EYE RESEARCH INST.	0.4	0.0	0.4	0.001	0.000	0.001
SCHERING CORPORATION	42.9	0.0	42.9	0.002	0.000	0.002
SCHERING CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
SCHLUMBERGER TECHNOLOGY CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
SCINTITECH, INC.	0.0	0.0	0.0	0.000	0.000	0.000
SEA CONSULTANTS	0.0	0.0	0.0	0.000	0.000	0.000
SEAHORSE BIOSCIENCE	0.0	0.0	0.0	0.000	0.000	0.000
SELECTX PHARMACEUTICALS, INC.	0.0	3.0	3.0	0.000	0.001	0.001
SEPRACOR, INC.	42.0	14.0	56.0	0.040	0.023	0.063
SHARED DIAGNOSTIC SERVICES,INC	0.0	0.0	0.0	0.000	0.000	0.000
SHIELDS IMAGING OF MASS., LLC	0.0	0.0	0.0	0.000	0.000	0.000
SHIRE HUMAN GENETIC THERAPIES, INC.	115.9	23.2	139.1	0.004	0.006	0.009
SIEMENS HEALTHCARE DIGNOSTICS, INC.	15.0	0.0	15.0	0.002	0.000	0.002
SIEMENS MEDICAL SOLUTIONS USA, INC.	0.0	0.0	0.0	0.000	0.000	0.000
SIMMONS COLLEGE	0.0	17.0	17.0	0.000	0.002	0.002
SIONEX CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
SIRTEX WILMINGTON LLC	0.0	0.0	0.0	0.000	0.000	0.000
SIRTRIS PHARMACEUTICALS	0.0	2.9	2.9	0.000	0.003	0.003
SMITH AND WESSEL ASSOC. INC.	0.0	0.0	0.0	0.000	0.000	0.000
SMITH COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000
SMITHSONIAN INSTITUTE	0.0	0.0	0.0	0.000	0.000	0.000
SOLUTIA, INC.	0.0	0.0	0.0	0.000	0.000	0.000
SOUTH SHORE CARDIOLOGY, P.C.	0.0	0.0	0.0	0.000	0.000	0.000
SOUTH SHORE HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
SOUTH SHORE LEAD PAINT TESTING	0.0	0.0	0.0	0.000	0.000	0.000
SOUTHCOAST HOSPITAL GROUP	0.0	0.0	0.0	0.000	0.000	0.000
SPAULDING REHAB HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
SPINCRAFT	0.0	0.0	0.0	0.000	0.000	0.000
SPRINGBORN SMITHERS LAB., INC.	307.3	29.0	336.3	0.062	0.060	0.122
SPRINGFIELD HOUSING AUTHORITY	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
SPRINGFIELD NEIGHBORHOOD HOUSING SERVICE	0.0	0.0	0.0	0.000	0.000	0.000
SPRUCE ENVIRONMENTAL TECHNOLOGIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
ST. ANNE'S HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
starmet	0.0	30.0	30.0	0.000	0.024	0.024
STARMET NMI	27,857.0	0.0	27,857.0	121.000	0.000	121.000
STERIS ISOMEDIX SERVICES	0.0	0.0	0.0	0.000	0.000	0.000
STOWE AND WOODWARD	0.0	0.0	0.0	0.000	0.000	0.000
STURDY MEMORIAL HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
SUMMIT LTD.	0.0	0.0	0.0	0.000	0.000	0.000
SURFACE LOGIX, INC.	40.0	9.0	49.0	0.024	0.000	0.024
SYNTA PHARMACEUTICALS CORPORATION	0.0	8.0	8.0	0.000	0.002	0.002
SYNTONIX PHARMACEUTICALS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
TAMFELT, INC.	0.0	0.0	0.0	0.000	0.000	0.000
TEST AMERICA LABORATORIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
TGA SCIENCES INC.	0.0	0.0	0.0	0.000	0.000	0.000
THERION BIOLOGICS CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
THERMO EGS GAUGING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
THERMO FISHER SCIENTIFIC, INC. - ENVIRON	0.0	0.0	0.0	0.000	0.000	0.000
THERMO NITON ANALYZERS LLC	0.0	1.2	1.2	0.000	1.151	1.151
THRASOS	0.0	0.0	0.0	0.000	0.000	0.000
TIAX LLC	2.1	0.0	2.1	0.002	0.000	0.002
TIBBETTS ENGINEERING CORP.	0.0	0.0	0.0	0.000	0.000	0.000
TOLAN, RICHARD E.	0.0	0.0	0.0	0.000	0.000	0.000
TOLERRX, INC.	23.4	4.0	27.4	0.004	0.000	0.004
TOXIKON CORPORATION	0.0	122.5	122.5	0.000	0.031	0.031
TRANSMOLECULAR, INC.	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
TRANXENOGEN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
TRC ENVIRONMENTAL CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
TRUESDALE CARDIOLOGY ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
TUFTS UNIVERSITY	11.1	0.0	11.1	0.000	0.000	0.000
TUFTS UNIVERSITY, SCH. OF MED.	19.1	45.0	64.1	0.003	0.061	0.064
TUFTS-NEW ENGLAND MEDICAL CENTER	0.0	99.0	99.0	0.000	0.002	0.002
TURBOCARE, INC.	0.0	0.0	0.0	0.000	0.000	0.000
TW ENVIRONMENTAL SERVICES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
TYCO SAFETY PRODUCTS WESTMINSTER	0.0	0.0	0.0	0.000	0.000	0.000
U.S. GENOMICS	0.0	0.0	0.0	0.000	0.000	0.000
UMASS MEMORIAL HEALTHALLIANCE LEOMINSTER	0.0	0.0	0.0	0.000	0.000	0.000
UMASS MEMORIAL/MARLBOROUGH HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
UMASS/MEMORIAL HEALTH CARE	0.0	52.5	52.5	0.000	0.019	0.019
UNITECH SERVICES GROUP, INC.	3,300.0	3,000.0	6,300.0	0.095	0.086	0.181
URBAN, JERRY	0.0	0.0	0.0	0.000	0.000	0.000
US ARMY CORPS OF ENGINEERS, SHPACK SUPERFUND/FUSRAP SITE	72,894.0	0.0	72,894.0	0.614	0.000	0.614
UTS OF MASSACHUSETTS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
V.I. TECHNOLOGIES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
VA BOSTON HEALTH CARE SYSTEM	0.0	0.0	0.0	0.000	0.000	0.000
VALLEY SAFETY SERVICES ASSOCIATES	0.0	0.0	0.0	0.000	0.000	0.000
VANASSE, HANGEN, BRUSTLIN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
VERTEX PHARMACEUTICALS, INC.	41.3	9.4	50.6	0.000	0.001	0.001
VISEN MEDICAL, INC.	0.0	0.0	0.0	0.000	0.000	0.000
WAMPANOAG TRIBE OF GAY HEAD (AQUINNAH)	0.0	0.0	0.0	0.000	0.000	0.000
WARNER BROS., LLC	0.0	0.0	0.0	0.000	0.000	0.000
WELLESLEY COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000

	VOLUME (cubic feet)			*ACTIVITY (curies)*		
Facility Name	**Transferred**	**In Storage**	**Total**	**Transferred**	**In Storage**	**Total**
WESTON & SAMPSON ENGINEERS, I	0.0	0.0	0.0	0.000	0.000	0.000
WESTON SOLUTIONS, INC.	0.0	0.0	0.0	0.000	0.000	0.000
WHITEHEAD INST. FOR BIOMED RES	34.1	15.0	49.1	0.004	0.005	0.009
WILLIAM C. FINN ASSOCIATES, INC.	0.0	0.0	0.0	0.000	0.000	0.000
WILLIAM F. SULLIVAN & COMPANY, INC.	0.0	0.0	0.0	0.000	0.000	0.000
WILLIAMS COLLEGE	0.0	0.0	0.0	0.000	0.000	0.000
WINCHESTER HOSPITAL	0.0	0.0	0.0	0.000	0.000	0.000
WING MEMORIAL HOSPITAL CORP.	0.0	0.0	0.0	0.000	0.000	0.000
WOODARD & CURRAN, INC.	0.0	0.0	0.0	0.000	0.000	0.000
WOODS HOLE OCEANOGRAPHIC INSTITUTION	0.0	5.0	5.0	0.000	0.000	0.000
WORCESTER DEPT. OF HEALTH	0.0	0.0	0.0	0.000	0.000	0.000
WORCESTER POLYTECHNIC INST.	0.0	0.0	0.0	0.000	0.000	0.000
WTE RECYCLING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
XRF CORPORATION	0.0	0.0	0.0	0.000	0.000	0.000
YANKEE ATOMIC ELECTRIC CO.	822,000.0	0.0	822,000.0	2.900	0.000	2.900
YANKEE ENG. & TESTING, INC.	0.0	0.0	0.0	0.000	0.000	0.000
YEE CONSULTING GROUP, INC.	0.0	0.0	0.0	0.000	0.000	0.000
GRAND TOTALS:	**973,628.3**	**10,945.4**	**984,563.4**	**15,133.483**	**3,540.610**	**18,674.095**

Figure 29
Commonwealth of Massachusetts
DPH Radiation Control Program
Calendar Year (CY) 2006 Radioactive Waste Survey

Part One : General Information

Licensee Name	
Radiation Safety Officer	
Street Address	
City / State / Zip Code	/ /
E-Mail Address	
Radioactive Materials License Number	__ __ - __ __ __ __
Person Completing Survey / Title	/
Telephone / Telefax	/
Certifying Official / Title	/
Signature / Telephone	/
Date of Survey Completion	

	YES	NO
In 2006, did you generate any low level radioactive waste (LLRW) **with a half-life greater than 120 days**?		
In 2006, did you transfer any licensed material for disposal at a licensed low-level radioactive waste disposal facility?		
Did your organization have any long-lived radioactive waste requiring disposal in storage either on or off site on 12/31/06?		

If you answered YES to any of the above questions complete all applicable sections of Part Two. If you answered NO to all questions, STOP HERE and return this form.

Return Address:

Massachusetts DPH Radiation Control Program
529 Main Street, Suite 1M2A
Charlestown, MA 02129-1121
Fax 617-242-3457
ATT: Fred Barker 617-242-3035 X2047
Please return this survey by March 1, 2007 by mail or fax

License # __ __ - __ __ __ __

Commonwealth of Massachusetts DPH Radiation Control Program
CY 2006 Radioactive Waste Survey

Part Two : Waste Generation, Storage and Disposal Information

Section A : Radioactive Waste Generated in Calendar Year 2006

Class A (other than HVLA*)	Transferred for Disposal in CY 2006	In Storage as of 12/31/06	Total
Volume, ft3			
Activity, curies			
Principal Isotopes			

Class B (other than HVLA*)	Transferred for Disposal in CY 2006	In Storage as of 12/31/06	Total
Volume, ft3			
Activity, curies			
Principal Isotopes			

Class C (other than HVLA*)	Transferred for Disposal in CY 2006	In Storage as of 12/31/06	Total
Volume, ft3			
Activity, curies			
Principal Isotopes			

High Volume, Low Activity Waste	Transferred for Disposal in CY 2006	In Storage as of 12/31/06	Total
Volume, ft3			
Activity, curies			
Principal Isotopes			

License # ____-__ ____ __ __ __

Commonwealth of Massachusetts DPH Radiation Control Program
CY 2006 Radioactive Waste Survey

Part Two : Waste Generation, Storage and Disposal Information

Section B : Radioactive Waste Generated Prior to Calendar Year 2006
That Requires Disposal AND Was Not Reported on Previous Surveys

	Transferred for Disposal in CY 2006	In Storage as of 12/31/06	Total
Calendar Year(s) of Generation			
Class (A, B, C or HVLA)			
Volume, ft3			
Activity, curies			
Principal Isotopes			

Part Three : Waste Minimization Statement / Plan

Has your waste minimization statement or plan, which is on file with the Massachusetts DPH Radiation Control Program, changed since last year? If you answered YES, please include your updated statement and/or plan with this survey.	YES	NO

Many pertinent 105 CMR 120 regulations may be found on the Massachusetts DPH Radiation Control Program's web page at www.state.ma.us/dph/rcp including Class A, B, and C definitions in section 105 CMR 120.299.

High Volume, Low Activity Waste. Definition - Soils, demolition rubble or other LLRW that has average concentrations of radioactive material less than or equal to the concentrations set forth in 345 CMR 1.13, Table 1.13B, and has been or would be accepted by a licensed low-level radioactive waste disposal facility.

If you need assistance completing this survey, please contact the Radiation Control Program staff at (617) 242-3035 x 2047, att: Fred Barker.