

20 April 2005

Licensing Assistance Section  
U.S. Nuclear Regulatory Commission  
Division of Nuclear Materials Safety  
475 Allendale Road  
King of Prussia, PA 19406-1415

RE: Radioactive Materials License # 52-16345-02MD 03019134

Dear Licensing Personnel:

Please allow this letter to serve as notice that Amersham Acquisition Corporation intends to permanently cease principle activities of the license referenced above.

Amersham Acquisition Corporation intends to cease operations immediately or on the expiration date. The primary site has undergone a decommissioning process and the report is attached.

All records including those pertaining to the safe and effective decommissioning will be transferred to and maintained by Amersham Acquisition Corporation and GE Healthcare.

Should you have any additional questions, please feel free to contact me at 609-514-6647 Or 609-209-6832.

Sincerely,



Richard A. Hughes  
Corporate Radiation Safety Officer  
Director, Pharmacy Regulatory Assurance

RECEIVED  
REGION 1  
APR 22 P1:52 '05

General Electric Company  
Amersham plc  
101 Carnegie Center  
Princeton, NJ 08540  
U.S.A.

T 609-514-6000

136916  
NMSS/RGNI MATERIALS-002



(7-1998)  
10 CFR 30.36(c)(1)(iv)  
10 CFR 40.42(c)(1)(iv)  
10 CFR 70.38(c)(1)(iv)

Estimated burden per response to comply with this mandatory information collection request: 30 minutes. This submittal is used by NRC as part of the basis for its determination that the facility has been cleared of radioactive material before the facility is released for unrestricted use. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0028), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

# CERTIFICATE OF DISPOSITION OF MATERIALS

INSTRUCTIONS: ALL ITEMS MUST BE COMPLETED - PRINT OR TYPE  
SEND THE COMPLETED CERTIFICATE TO THE NRC OFFICE SPECIFIED ON THE REVERSE

## LICENSEE NAME AND ADDRESS

AMERASHAM ACQUISITION CORP  
BBVA TOWER/054 MANOZ RIVERA AVE 8TH FWR  
SAN JUAN, PR 00918

## LICENSE NUMBER

52-16345-02MD

## LICENSE EXPIRATION DATE

11A15 MARGINAL, LOS ANGELES, CALIFORNIA 90055 30 APR 11 2005

## A. MATERIALS DATA (Check one and complete as necessary)

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT:  
(Check and/or complete the appropriate item(s) below.)

- ☐ 1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE.
- OR
- ☒ 2. ALL ACTIVITIES AUTHORIZED BY THE LICENSE HAVE CEASED AND ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF IN THE FOLLOWING MANNER. (If additional space is needed, use the reverse side or provide attachments.)

Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal actions including the disposition of low-level radioactive waste, mixed waste, Greater-than-Class-C waste, and sealed sources, if applicable.

See Attached D

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement State name and license number.

N/A

If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the specific disposal procedures (e.g., decay in storage).

See Attached D

## B. OTHER DATA

- ☒ 1. OUR LICENSE HAS NOT YET EXPIRED; PLEASE TERMINATE IT.
2. A RADIATION SURVEY WAS CONDUCTED BY THE LICENSEE TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS AND TO DETERMINE WHETHER ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE.

☐ NO (Attach explanation)

☒ YES, THE RESULTS (Check one)

☒ ARE ATTACHED, or

☐ WERE FORWARDED TO NRC ON (Date)

3. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM

NAME

RICHARD A. HUGHES

TELEPHONE NUMBER  
(Include Area Code)

609-209-6832

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

RICHARD A. HUGHES GE HEALTHCARE  
101 CARRIAGE CENTER  
DUBLIN, OH 43017

## CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE

RICHARD A. HUGHES

SIGNATURE

RICHARD A. HUGHES

DATE

20 APR 05

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECTS. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTIONS.

**FILE CERTIFICATES AS FOLLOWS:**

**IF YOU ARE A DISTRIBUTOR OF EXEMPT PRODUCTS, SEND TO:**

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001

**ALL OTHERS, IF YOU ARE LOCATED IN:**

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE,  
MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW  
JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR  
VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANCE SECTION  
NUCLEAR MATERIALS SAFETY BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI,  
NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA,  
TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,  
SEND APPLICATIONS TO:

NUCLEAR MATERIALS SAFETY SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
ATLANTA FEDERAL CENTER, SUITE 23T85  
61 FORSYTH STREET, SW  
ATLANTA, GA 30303-3415

**IF YOU ARE LOCATED IN:**

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI,  
OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
801 WARRENVILLE ROAD  
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO,  
HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA,  
NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA,  
OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA,  
TEXAS, UTAH, WASHINGTON, OR WYOMING,  
SEND APPLICATIONS TO:

MATERIAL RADIATION PROTECTION SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-8064



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

JANUARY 29, 2005

AMERSHAM AQUISITION CORPORATION  
BBVA TOWER  
254 MUNOZ RIVERA AVENUE  
8TH FLOOR  
SAN JUAN, PR 00918

License No. 52-16345-02MD  
Expiration Date: 04/30/2005  
Program Code: 02500

Gentlemen:

SUBJECT: NOTICE OF LICENSE EXPIRATION

Your U.S. Nuclear Regulatory Commission (NRC) license, specified above, will expire on the date shown.

If you wish to continue your licensed program, you should prepare and submit a renewal application on NRC Form 313, following regulations (10 CFR Parts) and licensing guidance (NUREG 1556, Volume/s) listed for your program in Enclosure 3. NRC strongly encourages the use of NUREG-1556 guidance documents because they supercede much of the guidance previously used for licensing. Further, these documents will make preparation of your renewal application and the NRC staff's review easier and quicker. If the application reflects any significant changes in your licensed program, those changes must be clearly indicated.

You must submit an application for the renewal of your license at least 30 days before the expiration date on the license. If your renewal application is filed (delivered or post-marked) before the expiration date, NRC will use discretion and your license will remain in effect until NRC takes final action on your application.

However, if your renewal application cannot be filed before the expiration date, you should contact NRC immediately to see if you can obtain a temporary extension of the expiration date. Without NRC approval of that extension request, your license expires on the expiration date stated on the license. If your license expires, you no longer have a valid license, but you are required to maintain all licensed materials in safe, locked storage until your application for a license or request for termination is submitted and approved. Use of the licensed material after the expiration of your license may subject you to criminal and/or civil sanctions.

If you do not wish to renew your license, you must dispose of or transfer all licensed radioactive material in your possession in an authorized manner (see the appropriate requirements in 10 CFR 30.36, 40.42, or 70.38); then complete the enclosed Form NRC-314, "Certificate of Disposition of Materials" and return it before the expiration date of your license, with a request that your license be terminated. If you cannot dispose of or transfer all licensed radioactive material in your license before the expiration date, you must request a license renewal, for "storage only", of the radioactive material, to avoid enforcement action for violations involving the possession of licensable material without a valid license. Enforcement action may include a substantial monetary civil penalty that could also include daily civil penalties until you achieve compliance.

This notice of your license expiration is sent for your convenience only and does not mean that similar notices will be sent in the future. The responsibility for timely submission of the license renewal remains with the licensee. If you have any questions about this notice or license expiration/renewal, please contact the NRC Regional Office that handles your license.

Enclosures:

1. Form NRC 313
2. Form NRC 314
3. Table of 10 CFR Parts and NUREG-1556, Volume/s by Program Code



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

December 17, 2003

Amersham Acquisition Corporation  
ATTN: Kevin Kissane  
President  
BBVA Tower  
254 Munoz Rivera Avenue, 8th Floor  
San Juan, Puerto Rico 00918

SUBJECT: TRANSMITTAL AND EXPLANATION OF AMENDMENT TO LICENSE  
NO. 52-16345-02MD (REFERENCE: MAIL CONTROL NO. 134087; DOCKET ,  
NO. 030-19134)

Dear Mr. Kissane:

Enclosed please find Amendment No. 18 to the NRC materials license. Changes to the license are printed in **BOLD** typeface. We find that the changes in control over licensed activities meets the requirements of 10 CFR 30.41. We have issued this an amendment because we understand that Synor Caribe will cease to exist soon. We have approved the change in control as noted in your December 4, 2003 letter. The authorization of any Cardinal Health named Nuclear Pharmacist is restricted to the Syncor pharmacies, and has been removed in this amendment. I have copied the Radiation Safety Officer for the pharmacy and the Syncor staff.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify this office (ATTN: Ms. Karen McCallie at 404-562-4732) so that we can provide appropriate corrections and answers.

In accordance with 10 CFR 2.790 of NRC's "Rules of Practice," a copy of this letter and Enclosure 1 will be available electronically for public inspection in NRC's Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Thank you for your cooperation.

Sincerely,

/RA/

David J. Collins, Health Physicist  
Division of Nuclear Materials Safety

Enclosures: (See page 2)

JAN - 2 2004

Enclosures: 1. Amendment No. 18  
License No. 52-16345-02MD  
2. NRC Form 313

cc w/encl 1:  
Cardinal Health  
Nuclear Pharmacy Services  
ATTN: T. Mikell  
Quality and Regulatory  
6464 Canoga Avenue  
Woodland Hills, California 91367

Syncor Caribe  
ATTN: R. Rosado, RSO  
WA-15 Calle Marginal  
Urb. Los Angeles  
Carolina, Puerto Rico 00979

Amersham Health  
ATTN: R. Hughes, Director  
Pharmacy Regulatory Assurance  
101 Carnegie Center  
Princeton, New Jersey 08540

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## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. Amersham Acquisition Corporation BBVA Tower</p> <p>2. 254 Muñoz Rivera Avenue, 8th Floor San Juan, Puerto Rico 00918</p>	<p>In accordance with the letter dated <b>December 2, 2003</b></p> <p>3. License No. 52-16345-02MD is amended in its entirety to read as follows:</p> <p>Expiration Date: April 30, 2005</p> <p>5. Docket No. 030-19134</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any unsealed byproduct material used to prepare radioactive drugs for medical use.</p> <p>B. Any byproduct material authorized under 10 CFR 35.57(a).</p> <p>C. Any byproduct material identified in 10 CFR 31.11(a)</p>	<p>7. Chemical and/or physical form</p> <p>A. Any form of unsealed byproduct material used to prepare radioactive drugs for medical use</p> <p>B. Any sealed source listed in paragraph 10 CFR 35.57(a) of 10 CFR Part 35 that has been manufactured, labeled, packaged, and distributed in accordance with a specific license issued pursuant to Section 32.74 of 10 CFR Part 32 or a specific license issued to the manufacturer by an Agreement State pursuant to equivalent State regulations</p> <p>C. Prepackaged units for <u>in vitro</u> diagnostic tests</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Molybdenum 99 - 1.85 terabecquerels (TBq) (50 curies); Technetium 99m - 1.85 TBq (50 curies); Iodine 131 - 111 gigabecquerels (GBq) (3 curies); All others combined, 18.5 GBq (500 millicuries)</p> <p>B. 555 megabecquerels (MBq) (15 millicuries) total</p> <p>C. 1.85 GBq (50 millicuries)</p>

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**License No.  
52-16345-02MDDocket No.  
030-19134Amendment No.  
18

6. Byproduct, source, and/or special nuclear material
7. Chemical and/or physical form
8. Maximum amount that licensee may possess at any one time under this license

D. Any byproduct material in a brachytherapy source as listed in 10 CFR 35.400

D. Any sealed source listed in 10 CFR 35.400 that has been manufactured, labeled, packaged, and distributed in accordance with a specific license issued pursuant to Section 32.74 or a specific license issued to the manufacturer by an Agreement State pursuant to equivalent State regulations

D. 22.2 GBq (600 millicuries) total

E. Uranium (depleted in the isotope uranium 235)

E. Metal enclosed in stainless steel

E. 180 kilograms

9. Authorized Use:

- A. Preparation and distribution of radioactive drugs (includes Mo99/Tc99m generators) to authorized recipients. Pursuant to Section 32.72 of 10 CFR Part 32, the licensee is authorized to distribute byproduct material to persons licensed pursuant to Sections 35.100, 35.200 and 35.300 of 10 CFR Part 35, or under equivalent Agreement State licenses.
- B. Instrument calibration. Redistribution of sources to specifically authorized recipients. Pursuant to Section 32.74 of 10 CFR Part 32, the licensee is authorized to redistribute sources to persons licensed pursuant to Section 35.57(a) of 10 CFR Part 35 or under equivalent licenses of Agreement States.
- C. Redistribution to specific licensees or general licensees pursuant to Section 31.11 of 10 CFR Part 31 provided the packaging and labeling remains unchanged.
- D. Redistribution of sealed sources initially distributed by a manufacturer licensed pursuant to 10 CFR 32.74. Redistribution of sealed sources that have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess and use the devices.
- E. Shielding for molybdenum 99/technetium 99m generators.



**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**License No.  
52-16345-02MDDocket No.  
030-19134Amendment No.  
18**CONDITIONS**

10. Licensed material shall be used only at the licensee's facilities located at WA 15 Marginal, Los Angeles, Carolina, Puerto Rico.
11. A. Licensed material shall be used by, or under the supervision of Noel Rodriguez, Richard Rosado, R.Ph., or Jesus A. Collazo, or a pharmacist working or designated as an authorized nuclear pharmacist in accordance with 32.72(b)(2) and 32.72(b)(6) of 10 CFR Part 32
- B. The Radiation Safety Officer for this license is Richard Rosado, R.Ph., and in his absence, Jesus A. Collazo
12. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources need not be leak tested if:
- (i) they contain only hydrogen-3; or
  - (ii) they contain only a radioactive gas; or
  - (iii) the half-life of the isotope is 30 days or less; or
  - (iv) they contain not more than 3.7 megabecquerels (MBq) (100 microcuries) of beta and/or gamma emitting material or not more than 370 kilobecquerels (10 microcuries) of alpha emitting material; or
  - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

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12. F. The leak test shall be capable of detecting the presence of 185 becquerel (Bq) (0.005 microcurie) of radioactive material on the test sample. If the test reveals the presence of 185 Bq or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall specify the source involved, the test results, and corrective action taken.
- G. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
13. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders or detector cells by the licensee.
14. The licensee shall conduct a physical inventory every six months to account for all sources and/or devices received and possessed under this license.
15. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
16. Radioactive waste (e.g., syringes, vials) that contains or is contaminated with radioactive materials that the licensee originally supplied to its customers may be picked up from the licensee's customers and disposed of in accordance with the procedures, statements, and representations in the application dated December 7, 1988.
17. The licensee is authorized to hold radioactive material with a physical half-life of less than 120 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
  - B. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate meter set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
  - C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.
  - D. A record of each such disposal permitted under this License Condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.

# **MATERIALS LICENSE SUPPLEMENTARY SHEET**

License No.  
52-16345-02MD

Docket No.  
030-19134

Amendment No.  
18

18. In addition to the possession limits in Condition 8, the licensee shall further restrict the possession of licensed material so that at no time is a quantity of radioactive material possessed in excess of a quantity that requires decommissioning funding in accordance with 10 CFR 30.35(d), 10 CFR 40.36(b) or 10 CFR 70.25(d).
19. The licensee may use the Piglet™ and Piglet<sub>2</sub>™ for shielding iodine 131 for shipment, use and storage, as described in the letter and data sheets dated January 19, 1998. The licensee may use the Syncor tungsten Unit Dose shields, as described in the May 5, 2000 letter and data sheet, and supplemented by the letter and data sheet dated May 30, 2000.
20. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated December 7, 1988
- B. Letters dated:
- 1) April 20, 1989 [alternate RSO qualifications]
  - 2) March 2, 1994 [renewal application]
  - 3) April 5, 1995 [survey instruments; calibration of dose calibrator, safe use procedures]
  - 4) July 19, 1996 [transfer of assets to Syncor de P.R. (IAW IN 89-25 Rev. 1); changes to facility; increase I-131 authorization; I-131 handling procedures; dose container and labels; bioassay procedures]
  - 5) September 28, 1996 [approval of transfer by both Dr. Caamaño and Syncor de P.R., Inc.]
  - 6) October 24, 1996 (fax) [qualifications of Alicia Alpert]
  - 7) January 10, 1997 [delete Ms. Alpert, add J.S. Hilton as alternate RSO]
  - 8) June 11, 1997 [name Messrs. Rueda and Rodríguez as RSO and alternate]
  - 9) January 19, 1998 [per 32.74, request authorization to use Piglet™ and Piglet<sub>2</sub>™ shields for iodine 131; Name Messrs. Rodríguez and Cuesta as RSO and alternate]
  - 10) April 27, 1998 [use of any unsealed byproduct material for preparation of rad. drugs for medical use, increase in I-131 possession to 3 curies, change I-131 compounding procedure and air filtration system, and add Mr. Torrado-Archilla as authorized user]
  - 11) October 15, 1998 [additional information about iodine filtration system]
  - 12) April 12, 1999 [change RSO to Torrado, add Beltran-Vega]
  - 13) July 9, 1999 [change location of QC area next to garage]

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**License No.  
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20. B. 14) May 5, 2000 [use of Syncor Tungsten Unit Dose Shield, submit new labels]  
15) May 30, 2000 [additional radionuclides for Syncor Tungsten Unit Dose Shield, add brachytherapy source distribution and possession]  
16) May 17, 2001 [change of corporate name, reiteration of commitments, changes IAW IN 89-25 Rev 1 and NUREG-1556, Vol 15, App F]  
17) January 23, 2002 [change of mailing address]  
18) June 19, 2002 [change RSO and alternate RSO]  
19) August 1, 2002 [delete Beltran and Torado]  
20) December 31, 2002 [change of ownership to Cardinal Health, Inc.]  
21) September 10, 2003 [change RSO to Richard Rosado, R.Ph.]  
22) December 2, 2003 [request for transfer from Syncor Caribe]  
23) December 4, 2003 [request for transfer from Amersham Acquisition Corporation]



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

December 17, 2003

/RA/

DATE \_\_\_\_\_

BY \_\_\_\_\_

David J. Collins, Health Physicist  
Nuclear Materials Safety Branch 4  
Division of Nuclear Materials Safety  
Region I  
King of Prussia, Pennsylvania 19406-1415

# **Laboratory Close-Out Report**

U. S. Nuclear Regulatory Commission

Radioactive Materials License

Number 52-16345-02MD

Revision 0

GE Healthcare

WA-15 Marginal Los Angeles

Carolina, Puerto Rico 00979

February 14-18, 2005

March 7-10, 2005

Prepared by:



Philotechnics, Ltd.  
1740 Massachusetts Ave  
Boxborough, MA 01719

## **1.0 Introduction**

This report documents the final status survey of the GE Healthcare nuclear pharmacy facility at WA-15 Marginal Los Angeles in Carolina, Puerto Rico Facility, hereinafter designated as Carolina facility. GE Healthcare management has decided to close the facility and discontinue nuclear pharmacy operations in the Commonwealth of Puerto Rico. Licensed radiopharmaceutical operations were discontinued and terminated at the facility on December 28<sup>th</sup>, 2004. The Carolina Facility is being returned to the building owner for commercial occupancy.

The scope of the decommissioning project was to remove all materials except for fixed cabinetry from the facility. This included all laboratory fume hoods, ventilation systems, radioactive and hazardous materials. The project was completed in two mobilization phases. The first phase of the project was performed from February 14-18, 2005. During this phase project personnel inspected, characterized, and designated an appropriate disposal pathway for all non-fixed items at the site. The second phase of the project was performed March 7<sup>th</sup> thru 10<sup>th</sup>, 2005. This phase included the removal of radioactive materials from the facility for shipment to a licensed disposal facility.

### **Non-Hazardous Wastes**

Items from the non-restricted area were inspected to determine if they were hazardous or non-hazardous. Materials from the restricted area were further scrutinized to determine if radioactive contamination was present on or in the materials. Clearance surveys were performed on non-hazardous materials in restricted area to document the appropriate release for disposal. Non-hazardous items were disposed of in compliance with federal, state, and local regulations in a local landfill.

### **Hazardous Chemical Materials**

A number of hazardous materials (solvents, acids, bases, etc.) were present onsite. These materials were inventoried and segregated based on compatibility. Clean Harbors Environmental Services, Inc. of Barceloneta, Puerto Rico was contracted to recycle/dispose of these chemical wastes.

### **Radioactive Materials**

The site had a variety of radioactive materials present in the form of sealed calibration sources, contaminated materials, Technetium 99m generators and dry active waste (DAW) currently in storage for decay in storage. Materials from the restricted area were surveyed for total and removable radioactive contamination prior to removal from the restricted area. Non-contaminated materials were disposed of as described previously.

The sealed calibration sources were inventoried and packaged for offsite shipment. The DAW packages were inspected to insure the containers were undamaged prior to shipment. All the radioactive materials were sent to Pacific EcoSolutions LLC in Richland, Washington for processing and disposal.

Philotechnics, Ltd. personnel performed a final status survey of the Carolina Facility from February 17<sup>th</sup> and March 8<sup>th</sup>, 2005. The purpose of the survey was to ensure residual radioactive materials were not present above release criteria, such that the facility is suitable for return to the building owner. The survey was performed by Matt Norton and Frank Brown under the general direction of Glen Marshall a Certified Health Physicist (CHP) of Philotechnics Ltd. Oversight of the project was provided by Rick Hughes Pharmacy Regulatory Assurance Director for GE Healthcare.

The survey was conducted using the guidance provided in Draft NUREG 1757, Volume 1, "Consolidated NMSS Decommissioning Guidance". This facility is categorized as Group I, in accordance with NUREG 1757, for decommissioning purposes and was surveyed under a simplified survey process as outlined in Figure 8.1 of NUREG 1757. Final status surveys are designed to implement the protocols and guidance provided in NUREG 1575, MARSSIM to the extent that it is applicable to the simplified survey process.

The survey results provide conclusive evidence that residual surface contamination does not exceed any of the release criteria and the areas surveyed may be returned to the building owner for lease and re-occupancy. All static measurements for total surface contamination were below the ALARA release limit of  $3.25E5$  (Beta) and  $3.00E5$  (Gamma) disintegrations per minute/100 square centimeters (dpm/100 cm<sup>2</sup>). All of the samples from the removable surface contamination locations were less than the release limit of 200 dpm/100 cm<sup>2</sup>. External dose rate measurements were at background levels for all survey locations.

### Dose Modeling Results

The resultant dose from residual activity is calculated utilizing the survey results and NRC-approved DandD Version 2 software. The default screening values (DSV) determined by DandD software for the nuclides of concern are presented in Table 4.1 of this report. Since the distribution of radionuclides is not known, the most limiting DSVs (Sr-89 (Beta), DSV =  $1.3E6$  dpm/100 cm<sup>2</sup> and I-131 (Gamma), DSV =  $1.2E6$  dpm/100 cm<sup>2</sup>) are used.

The statistical mean value of the survey results for static activity is -23 dpm/100 cm<sup>2</sup> beta and -436 dpm/100 cm<sup>2</sup> gamma. These statistical values are less than the

calculated minimum detection capability of the instruments used to make the measurements. The calculated minimum detectable concentration (MDC) for beta static activity is 522 dpm/100 cm<sup>2</sup> (floors) and 1,630 dpm/100 cm<sup>2</sup>. Since the statistical mean values were significantly less than the calculated MDC, the maximum MDC values were used, as a conservative estimate, to calculate the resultant exposure possible from residual activity in the facility. The resultant dose from an average total activity equal to the maximum MDCs would be 0.042 mrem/year.

Gamma contribution:

$$1,630 \text{ dpm/100 cm}^2 / 1.3\text{E}6 \text{ dpm/100 cm}^2 \times 25 \text{ mrem/year} = 0.031 \text{ mrem/year}$$

Beta contribution:

$$522 \text{ dpm/100 cm}^2 / 1.2\text{E}6 \text{ dpm/100 cm}^2 \times 25 \text{ mrem/year} = 0.011 \text{ mrem/year}$$

$$\text{Total} = 0.081 + 0.011 = 0.092 \text{ mrem/year}$$

Therefore, the maximum exposure from possible residual activity associated with the licensed facility operations is 0.092 mrem/year. However, the fact that the statistical mean is significantly lower than the calculated MDC and that the maximum reading of all total activity survey measurements is less than the calculated MDC indicates that there is no residual radioactivity from licensed operations.

## 2.0 Site Description

The GE Healthcare facility is approximately 1900 square feet and is located in a single tenant building within a light industrial area on the western side of San Juan, Puerto Rico. The building is concrete construction of floors, walls and ceiling and is equipped with an intrusion alarm system connected to all operating entrances/exits.

The pharmacy laboratory comprises approximately 540 square feet located toward the rear of the facility. The walls are constructed of painted drywall or concrete painted. The floors are poured concrete with 12-inch by 12-inch vinyl tile. A bunker for storage of radioactive materials is located in an adjacent room on the south side of the facility.

## 3.0 Historical Usage of Radionuclides

The nuclear pharmacy has been in operation at the site under various ownership since the late 1960s. The current owner of facility is GE Healthcare and the NRC radioactive materials license number is 52-16345-02MD. Operations consisted of processing and dispensing radiopharmaceuticals for diagnostic imaging and



distributing the radiopharmaceuticals to local hospitals and clinics. Dispersible and non-dispersible forms of radionuclides that were used are summarized in Table 3.1.

**Table 3.1 – Radionuclides Used**

Processing – unsealed	Half-life	Form	Emissions
Chromium 51	27.7 days	Liquid	Electron capture
Cobalt 57	270.9 days	Sealed	Electron capture
Cobalt 58	70.8 days	Capsule	Electron capture/Beta
Cobalt 60	5.2 years	Sealed	Beta
Gallium 67	78.3 hrs	Liquid	Electron capture
Strontium 89	50.5 days	Liquid	Beta
Strontium 90	30 years	Sealed	Beta
Ytterbium 90	64 hours	Liquid	Beta
Molybdenum 99	66 hours	Liquid	Isomeric transition
Technetium 99m	6 hrs	Liquid	Isomeric transition
Indium 111	2.8 days	Liquid	Electron capture
Iodine 123	13.2 hrs	Capsule	Electron capture
Iodine 125	60 days	Liquid & Sealed	Electron capture
Iodine 129	15.7M Year	Sealed	Electron Capture
Iodine 131	44.5 days	Capsule	Beta
Barium 133	10.8 yrs	Solid	Electron capture
Xenon 133	5.25 days	Gas	Isomeric transition
Cesium 137	30.17 yrs	Solid	Beta
Gadolinium 153	241 days	Sealed	Electron Capture
Samarium 153	46.3	Liquid	Electron Capture/Beta
Thallium 201	73.1 hrs	Liquid	Electron capture

#### 4.0 Radiological Release Criteria

##### Total Contamination Limit

The nuclides of concern and their corresponding default screening values determined from DandD Version 2.0 dose modeling software are presented in Table 4.1. The default screening values are the individual radionuclide total surface activity limits resulting in exposures of 25 mrem/year under the modeling assumptions and conditions of NUREG/CR 5512 "Residual Radioactive Contamination from Decommissioning", Occupancy Scenario. One significant assumption contained in NUREG 5512 is that 10% of the total surface contamination limit is removable.

Of the nuclides present or used at the GE Healthcare facility, the radionuclides with the most limiting default screening values are Sr-89 (Beta) and I-131 (Gamma). Based on an analysis of their biokinetic and physical properties, the radionuclides not listed in the DandD software (Ga-67, I-123, and Ti-201) would not result in higher doses or more restrictive default screening values than Sr-89 or I-131.

In addition, it is impossible to establish fixed ratios of nuclides that may be present as they were used individually. Consequently, the most limiting DSVs (i.e., Sr-89 & I-131) were used as the Derived Concentration Guideline Values (DCGL) for total contamination. As an ALARA goal, a DCGL of 25% of the DSV of the limiting nuclides was established (25% of the DSVs are 3.25E5 dpm/100 cm<sup>2</sup> for Sr-89 and 3.00E5 dpm/100 cm<sup>2</sup> for I-131).

Also, it is impossible to establish fixed ratios of nuclides that may present as they were used individually. Consequently the most limiting default screening value (i.e., Co-58) was used as the Derived Concentration Guideline Value (DCGL) for total contamination.

Table 4.1 Facility DSV

Radionuclide	Half-life	Form	Predominant Emissions	Default Screening Value <sup>Note 1</sup> (dpm/100cm <sup>2</sup> )
Sr-89	50.5 Days	Liquid	Beta	3.25E+05
I-131	44.5 Days	Capsule	Beta/Photon	3.00E+05

<sup>1</sup> The default screening value is the 90% value obtained by running NRC-approved DandD, version 2 software under default conditions of the building occupancy scenario.

#### Removable Contamination Limit

The radiological release criteria used is the GE Healthcare administrative As Low As Reasonably Achievable (ALARA) criteria of less than 200 dpm/100cm<sup>2</sup> for removable surface contamination.

#### Dose Rate Limit

GE Healthcare has established an administrative limit of less than 20 micro-REM per hour (μR/hr) dose rate at one meter from any surface, as determined by pressurized ion chamber.

## 5.0 Instrumentation

Scanning surveys and total surface contamination measurements for beta emissions were obtained using a NE Technology Electra with probe Model #BP19DD (Serial #4807/#349). Removable contamination measurements for beta emissions were made in all occupied areas using a Packard Liquid Scintillation Counter (Serial #252284). Scanning surveys and total surface contamination measurements for gamma emitting nuclides were obtained using a NE Technology Selectra with probe Model #GP13A (Serial #3118/#334). Removable surface contamination measurements for gamma emitting nuclides were made using a well counter consisting of a Ludlum Model 2200 scaler and a Ludlum Model 243 shielded well counter (Serial # 211079, PR 209483). Dose rate measurements were taken with a Victoreen Model 451P pressurized ion chamber (Serial # 6289).

The instrumentation used for final status surveys is summarized in the following tables. Table 5.1 lists the standard features of each instrument such as probe size and efficiency. Determinations of scan rate, count times and the associated minimum detectable concentration (MDC) values are addressed in Section 5.2 and presented in Table 5.2.

**Table 5.1 Instrumentation Specifications**

Detector Model	Detector Type	Detector Area	Meter Model	Window Thickness	Typical Total Efficiency
NE BP19DD IBP19DD	Beta Scintillation	100 cm <sup>2</sup>	NE Electra NE Selectra	0.6 mg/cm <sup>2</sup>	18.9%
NE GP13A IBP13A	Gamma Scintillation	100 cm <sup>2</sup>	NE Electra NE Selectra	0.6 mg/cm <sup>2</sup>	15.3%
Victoreen 451P-RYN	Pressurized Ion Chamber	N/A	N/A	N/A	N/A
Ludlum Model 243	Sodium Iodide	N/A	Ludlum Model 2200	N/A	91.2%
Packard Tri- Carb	Liquid Scintillation	N/A	Packard 2200CA	N/A	60% - <sup>3</sup> H 90% - <sup>14</sup> C

**Table 5.2 Typical Instrument Operating Parameters and Sensitivities**

Measurement Type	Detector Model	Meter Model	Scan Rate	Count Time	Background (cpm)	MDC (dpm/100 cm <sup>2</sup> )
Surface Scans	BP19DD IBP19DD	NE Electra NE Selectra	1 in./sec.	N/A	422	1644
Total Surface Activity	BP19DD IBP19DD	NE Electra NE Selectra	N/A	60 sec.	422	522
Surface Scans	GP13A GP13A	NE Electra NE Selectra	1 in./sec.	N/A	2832	5258
Total Surface Activity	GP13A GP13A	NE Electra NE Selectra	N/A	60 sec.	2832	1638
Photon Exposure Rate	Victoreen 451P-RYN	Victoreen 451P-RYN	N/A	N/A	5-6 µR/hr	N/A

Removable $\beta$	Packard 2200CA	Packard 2200CA	N/A	60 sec.	$16-^3\text{H}$ $20-^{14}\text{C}$	$36-^3\text{H}$ $27-^{14}\text{C}$
Removable Photon	Ludlum Model 243	Ludlum Model 2200	N/A	60 sec.	454	112

### 5.1. Instrument Calibration

The NE Electra was calibrated on August 18, 2004, The NE Selectra was calibrated on April 2, 2004, the Packard 2200CA was calibrated on November 19, 2004 and The Ludlum Model 243 counting system was calibrated on November 11, 2004. The pressurized ion chamber was calibrated on May 3, 2004. Records of calibration for these instruments are maintained by GE Healthcare and are available upon request.

### 5.2. Determination of Counting Times and Minimum Detectable Concentrations

Minimum counting times for background determinations and counting times for measurement of removable contamination are based on providing a minimum detectable concentration (MDC) that is 10 to 50% of the release criteria. Count times and scanning rates were determined using the following equations:

#### 5.2.2. Static Counting

Static counting Minimum Detectable Concentration at a 95% confidence level was calculated using the following equation, (Strom & Stansbury, 1992):

$$MDC_{static} = \frac{3 + 3.29 \sqrt{B_r \cdot t_s \cdot (1 + \frac{t_s}{t_b})}}{t_s \cdot E_{tot} \cdot \frac{A}{100}}$$

Where:

$MDC_{static}$  = minimum detectable concentration level in dpm/100 cm<sup>2</sup>  
 $B_r$  = background count rate in counts per minute  
 $t_b$  = background count time in minutes  
 $t_s$  = sample count time in minutes  
 $E_{tot}$  = total detector efficiency for radionuclide emission of interest (includes combination of

$A$  = instrument and surface efficiencies)  
= detector probe area in  $\text{cm}^2$

### 5.2.3. Ratemeter Scanning

Scanning Minimum Detectable Concentration at a 95% confidence level was calculated using the following equation:

$$MDC_{scan} = \frac{d' \sqrt{b_i} \left( \frac{60}{i} \right)}{\sqrt{P} \cdot E_{tot} \cdot \frac{A}{100 \text{ cm}^2}}$$

Where:

$MDC_{scan}$  = minimum detectable concentration level in dpm/100  $\text{cm}^2$   
 $d'$  = desired performance variable (1.38)  
 $b_i$  = background counts during the residence interval  
 $I$  = residence interval  
 $P$  = surveyor efficiency (0.5)  
 $E_{tot}$  = total detector efficiency for radionuclide emission of interest (includes combination of instrument and surface efficiencies)  
 $A$  = detector probe area in  $\text{cm}^2$

### 5.2.4. Smear Counting

Smear counting Minimum Detectable Concentration at a 95% confidence level was calculated using the following equation, (Strom & Stansbury, 1992):

$$MDC_{smear} = \frac{3 + 3.29 \sqrt{B_r \cdot t_s \cdot \left( 1 + \frac{t_s}{t_b} \right)}}{t_s \cdot E}$$

Where:

$MDC_{smear}$  = minimum detectable concentration level in dpm/smear  
 $B_R$  = background count rate in counts per minute  
 $t_B$  = background count time in minutes  
 $t_S$  = sample count time in minutes  
 $E$  = instrument efficiency for radionuclide emission of interest

### 5.3. Uncertainty

The counting uncertainty for each total and removable contamination measurement is calculated using the following equation:

$$\sigma = 1.96 \sqrt{\frac{C_{s+b}}{T_{s+b}^2} \frac{C_b}{T_b^2}}$$

Where:

$\sigma$	=	uncertainty
1.96	=	multiplier to achieve 95% confidence level
$C_{s+b}$	=	gross counts of the sample (cpm)
$T_{s+b}$	=	Sample time (minutes)
$C_b$	=	Gross background counts (cpm)
$T_b$	=	Background count time (minutes)

## 6.0 Design and Performance of Final Status Surveys

A final status survey was performed to demonstrate that residual radioactivity was not present above the predetermined criteria for release for unrestricted use. Due to the limited size of the facility both the restricted area and support areas were treated as a single survey unit. The restricted area had the highest potential for contamination due to the routine use of unsealed radioactive materials. Radioactive contamination was considered less likely in the remaining administrative support area of the facility.

A final status survey was conducted by performing scanning surveys, total surface contamination measurements (static measurements), removable contamination measurements, and photon exposure rate measurements. The sample locations are depicted in Appendix A. The final status survey was performed by establishing a 1 x 1 meter reference grid for the facility. Wipe samples were collected at the center of each reference grid and at judgmental locations (door knobs, remaining furnishings, sinks, drains, vents, etc.). Photon exposure measurements were taken at a one-meter height above each reference grid.

### 6.1. Removable Activity

Photon removable contamination measurements were performed by wiping a dry swab over approximately 100 cm<sup>2</sup> of the surface to be measured using moderate hand pressure. The samples were grouped in

multiple sets and counted for sixty seconds in the Ludlum well counting system.

Beta removable contamination measurements were performed by wiping a dry glass fiber disc smear over approximately 100 cm<sup>2</sup> of the surface to be measured using moderate hand pressure and counted for one minute in the Packard 2200CA liquid scintillation counting system. The Counter was configured for dual channel counting (Tritium and Carbon-14) and an open channel above the Carbon-14 energy range (156-200 keV).

#### **6.2. Total Beta Activity**

Surveys for total beta were performed by scanning accessible surfaces at a rate of one inch per second with a plastic scintillation probe (NE Technology Electra with BP-19DD probe). One-minute static measurements were performed at a frequency of one per square meter in the applicable restricted areas. Background values were obtained in the non-restricted survey area with the probe shield in place.

#### **6.3. Total Gamma Activity**

Surveys for total gamma and beta were performed by scanning accessible surfaces at a rate of one inch per second with a plastic scintillation probe (NE Technology Electra with GP-13A probe). One-minute static measurements were performed at a frequency of one per square meter in the applicable restricted areas. Background values were obtained in the non-restricted survey area with the probe shield in place.

#### **6.4. Dose Rate Surveys**

Dose rate surveys were performed by walking through the areas to be measured with a Victoreen Model 451P pressurized ion chamber held at a one-meter height. The survey instrument was held at a one meter height from each sample location for at least 15-seconds allowing the instrument to stabilize. The average dose rate was recorded for each location and compared to a reference background collected in the non-restricted area (at the north end of the facility – entrance area). The reference background was 5-6 uR/hr using the pressurized ion chamber.

### **7.0 Survey Results**

Prior to the performance of the Final Status Survey, an inspection of the facility was performed to verify that all radioactive material had been removed from the facility. No radioactive material remains at the facility.

All removable contamination measurements were significantly less than GE Healthcare's administrative limit of 200 dpm/100cm<sup>2</sup>. All total beta activity measurements were less than the minimum detectable concentration of the instrument (522 dpm/100cm<sup>2</sup>). The majority of total gamma activity measurements were less than the minimum detectable concentration of the instrument (1638 dpm/100cm<sup>2</sup>). Analysis of these measurements indicate, they are within normal statistical and background variability for the survey instrument. All the total gamma measurements were less than the established DCGL. All photon exposure rates were at or below the reference background value of 5-6 uR/hr.

All survey results are presented in Appendix B.

## 8.0 Data Analysis

Contamination measurements were analyzed using the descriptive statistics function in Microsoft Excel. The survey unit was analyzed as a population, as well as all measurements together as a population. The statistical analysis indicates that the measurements fit an approximate normal distribution around the background level indicating that significant residual surface contamination does not exist in the areas surveyed. The results of statistical analyses are presented in Table 8.1.

Table 8.1 Data Analysis Results

All Survey Areas						
Parameter	LSC Removable			Removable Photon	Total Beta Activity	Total Gamma Activity
	Channel 1 <sup>3</sup> H	Channel 2 <sup>14</sup> C	Other (cpm)			
Mean	2.81E+01	1.91E+01	1.47E+01	2.09E+01	-2.32E+01	-4.36E+02
Standard Error	6.65E-01	4.55E-01	2.50E-01	4.99E-01	1.44E+01	1.62E+02
Median	2.70E+01	1.80E+01	1.40E+01	1.97E+01	-2.28E+01	-6.67E+02
Mode	2.00E+01	1.70E+01	1.30E+01	1.86E+01	-7.57E+01	-9.28E+02
Standard Deviation	1.03E+01	7.05E+00	3.88E+00	7.73E+00	2.14E+02	2.41E+03
Range	8.00E+00	6.00E+00	7.00E+00	6.58E+00	1.87E+03	-5.37E+03
Minimum	6.10E+01	7.50E+01	2.80E+01	8.22E+01	-5.20E+02	1.20E+04
Maximum	2.40E+02	2.40E+02	1.47E+01	2.40E+02	1.35E+03	-4.36E+02
Count (N samples)	240	240	240	240	221	221

All results are in dpm/100 cm<sup>2</sup> unless otherwise noted.

## 9.0 Survey Oversight

Oversight of the project was provided by Rick Hughes Pharmacy Regulatory Assurance Director for GE Healthcare.



## 10.0 Records

Original project records including survey data sheets and maps are maintained by GE Healthcare. Copies of project records are maintained at the Philotechnics, Ltd. corporate office in Oak Ridge, Tennessee.

*Julian A. Hughes*  
19 Apr 2005

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02MD  
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Revision 0

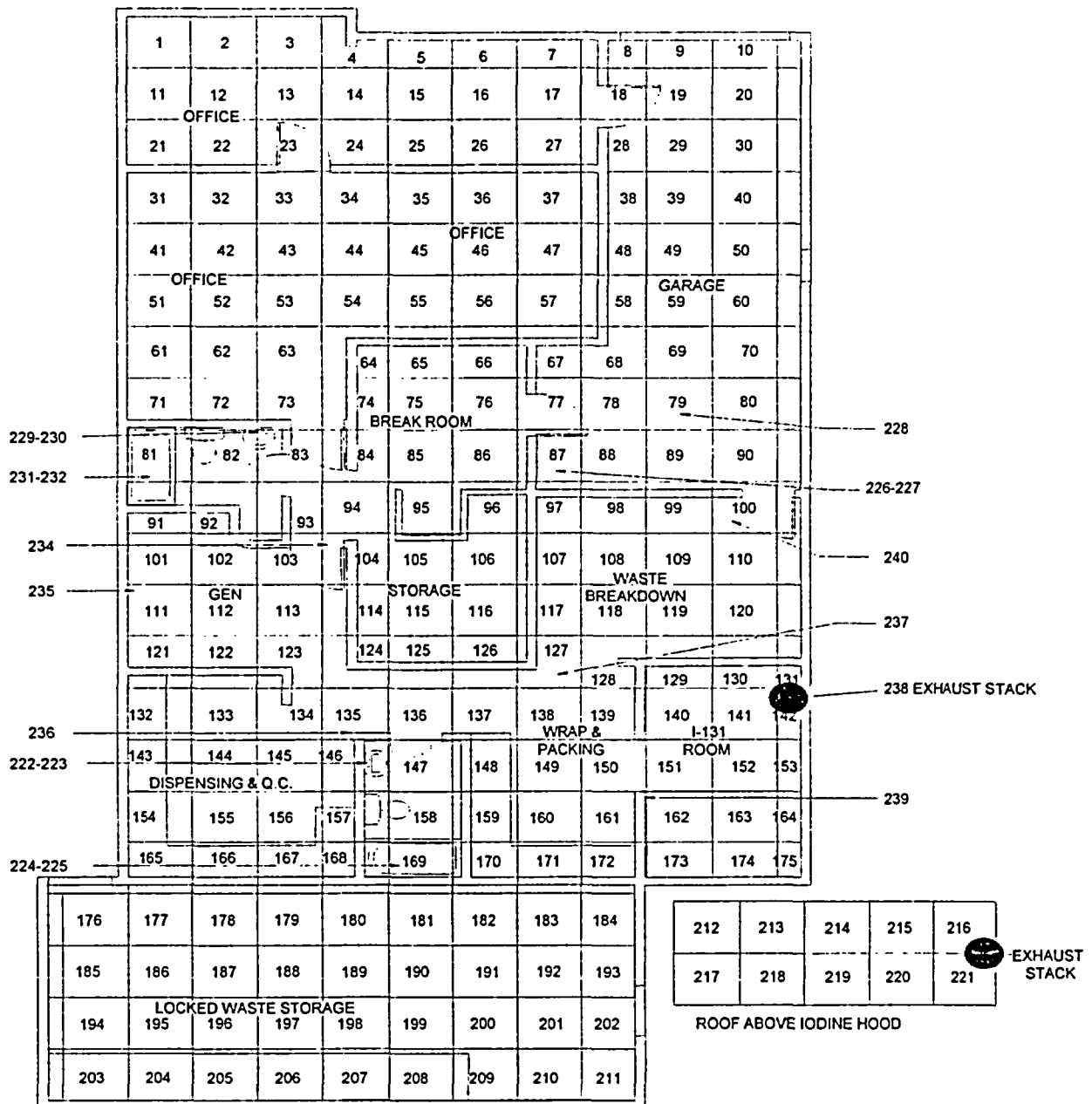
Laboratory Close-Out Report  
GE Healthcare  
Carolina, Puerto Rico  
Appendix A

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## Appendix A

### Survey Map

GE HEALTHCARE CAROLINA FACILITY



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Laboratory Close-Out Report  
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Appendix B

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## **Appendix B**

### **Final Status Survey Results**

# Philotechnics Analytical Worksheet

Appendix B

GE Healthcare  
Carolina, Puerto Rico

## Static Contamination Measurements Facility Areas

Sample	Beta			Gamma			Dose Rate	Comment
	CPM	DPM/100 cm2		CPM	DPM/100 cm2		uR/Hr	
	BKG		MDA	BKG		MDA	BKG	
	422		522	2832		1638	5 uR/hr	
Sample	Gross CPM	DPM/100cm2	Result	Gross CPM	DPM/100cm2	Result	Dose Rate	Comment
1	410	-65	<MDC	2860	183	<MDC	Bkg	
2	408	-76	<MDC	2690	-928	<MDC	Bkg	
3	426	20	<MDC	2450	-2497	<MDC	Bkg	
4	420	-12	<MDC	2770	-405	<MDC	Bkg	
5	476	284	<MDC	2680	-993	<MDC	Bkg	
6	468	242	<MDC	2730	-667	<MDC	Bkg	
7	482	316	<MDC	2630	-1320	<MDC	Bkg	
8	422	-2	<MDC	2620	-1386	<MDC	Bkg	
9	462	210	<MDC	2920	575	<MDC	Bkg	
10	447	131	<MDC	2960	837	<MDC	Bkg	
11	400	-118	<MDC	2750	-536	<MDC	Bkg	
12	446	125	<MDC	2970	902	<MDC	Bkg	
13	462	210	<MDC	3070	1556	<MDC	Bkg	
14	402	-107	<MDC	2540	-1908	<MDC	Bkg	
15	408	-76	<MDC	2660	-1124	<MDC	Bkg	
16	449	141	<MDC	2650	-1190	<MDC	Bkg	
17	425	14	<MDC	2540	-1908	<MDC	Bkg	
18	408	-76	<MDC	2770	-405	<MDC	Bkg	
19	445	120	<MDC	2830	-13	<MDC	Bkg	
20	435	67	<MDC	2680	-993	<MDC	Bkg	
21	416	-33	<MDC	3320	3190	<DCGL	Bkg	
22	426	20	<MDC	3010	1163	<MDC	Bkg	
23	378	-234	<MDC	3470	4170	<DCGL	Bkg	
24	414	-44	<MDC	3100	1752	<DCGL	Bkg	
25	436	72	<MDC	2520	-2039	<MDC	Bkg	
26	422	-2	<MDC	2560	-1778	<MDC	Bkg	
27	412	-54	<MDC	2490	-2235	<MDC	Bkg	
28	459	194	<MDC	2750	-536	<MDC	Bkg	
29	408	-76	<MDC	2840	52	<MDC	Bkg	
30	446	125	<MDC	2860	183	<MDC	Bkg	
31	368	-287	<MDC	2570	-1712	<MDC	Bkg	
32	356	-351	<MDC	2840	52	<MDC	Bkg	
33	374	-256	<MDC	2770	-405	<MDC	Bkg	
34	420	-12	<MDC	2710	-797	<MDC	Bkg	
35	418	-23	<MDC	2580	-1647	<MDC	Bkg	
36	390	-171	<MDC	2520	-2039	<MDC	Bkg	
37	430	41	<MDC	3040	1359	<MDC	Bkg	
38	417	-28	<MDC	2660	-1124	<MDC	Bkg	

# Philotechnics Analytical Worksheet

Appendix B

GE Healthcare  
Carolina, Puerto Rico

## Static Contamination Measurements Facility Areas

Sample	Beta			Gamma			Dose Rate	Comment
	CPM	DPM/100 cm2		CPM	DPM/100 cm2		uR/Hr	
39	437	78	<MDC	2810	-144	<MDC	Bkg	
40	459	194	<MDC	2810	-144	<MDC	Bkg	
41	366	-298	<MDC	2190	-4196	<MDC	Bkg	
42	394	-150	<MDC	2590	-1582	<MDC	Bkg	
43	356	-351	<MDC	2720	-732	<MDC	Bkg	
44	412	-54	<MDC	2690	-928	<MDC	Bkg	
45	386	-192	<MDC	3000	1098	<MDC	Bkg	
46	416	-33	<MDC	3170	2209	<DCGL	Bkg	
47	374	-256	<MDC	3080	1621	<MDC	Bkg	
48	429	35	<MDC	2970	902	<MDC	Bkg	
49	469	247	<MDC	2980	967	<MDC	Bkg	
50	459	194	<MDC	2960	837	<MDC	Bkg	
51	408	-76	<MDC	3000	1098	<MDC	Bkg	
52	362	-319	<MDC	2870	248	<MDC	Bkg	
53	428	30	<MDC	2670	-1059	<MDC	Bkg	
54	366	-298	<MDC	2350	-3150	<MDC	Bkg	
55	400	-118	<MDC	2650	-1190	<MDC	Bkg	
56	408	-76	<MDC	2530	-1974	<MDC	Bkg	
57	404	-97	<MDC	2570	-1712	<MDC	Bkg	
58	446	125	<MDC	3090	1686	<DCGL	Bkg	
59	449	141	<MDC	3050	1425	<MDC	Bkg	
60	451	152	<MDC	3000	1098	<MDC	Bkg	
61	410	-65	<MDC	2240	-3869	<MDC	Bkg	
62	418	-23	<MDC	2380	-2954	<MDC	Bkg	
63	356	-351	<MDC	2560	-1778	<MDC	Bkg	
64	448	136	<MDC	2540	-1908	<MDC	Bkg	
65	386	-192	<MDC	2240	-3869	<MDC	Bkg	
66	384	-203	<MDC	2250	-3804	<MDC	Bkg	
67	450	147	<MDC	2580	-1647	<MDC	Bkg	
68	424	9	<MDC	2810	-144	<MDC	Bkg	
69	418	-23	<MDC	2800	-209	<MDC	Bkg	
70	438	83	<MDC	2860	183	<MDC	Bkg	
71	462	210	<MDC	2310	-3412	<MDC	Bkg	
72	428	30	<MDC	2470	-2366	<MDC	Bkg	
73	386	-192	<MDC	2370	-3020	<MDC	Bkg	
74	416	-33	<MDC	2500	-2170	<MDC	Bkg	
75	426	20	<MDC	2590	-1582	<MDC	Bkg	
76	408	-76	<MDC	2220	-4000	<MDC	Bkg	
77	427	25	<MDC	2780	-340	<MDC	Bkg	
78	468	242	<MDC	2670	-1059	<MDC	Bkg	
79	459	194	<MDC	2680	-993	<MDC	Bkg	
80	436	72	<MDC	2700	-863	<MDC	Bkg	
81	480	305	<MDC	2670	-1059	<MDC	Bkg	
82	378	-234	<MDC	2790	-275	<MDC	Bkg	

# Philotechnics Analytical Worksheet

Appendix B

GE Healthcare  
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## Static Contamination Measurements Facility Areas

Sample	Beta		Gamma		Dose Rate	Comment
	CPM	DPM/100 cm2	CPM	DPM/100 cm2		
83	418	-23 <MDC	2520	-2039 <MDC	Bkg	
84	414	-44 <MDC	2600	-1516 <MDC	Bkg	
85	424	9 <MDC	2810	-144 <MDC	Bkg	
86	410	-65 <MDC	2650	-1190 <MDC	Bkg	
87	468	242 <MDC	2840	52 <MDC	Bkg	
88	453	162 <MDC	2790	-275 <MDC	Bkg	
89	440	94 <MDC	2620	-1386 <MDC	Bkg	
90	446	125 <MDC	2890	379 <MDC	Bkg	
91	472	263 <MDC	2830	-13 <MDC	Bkg	
92	460	199 <MDC	3010	1163 <MDC	Bkg	
93	440	94 <MDC	2730	-667 <MDC	Bkg	
94	408	-76 <MDC	2750	-536 <MDC	Bkg	
95	360	-330 <MDC	3220	2536 <DCGL	Bkg	
96	454	168 <MDC	3050	1425 <MDC	Bkg	
97	430	41 <MDC	2790	-275 <MDC	Bkg	
98	468	242 <MDC	2760	-471 <MDC	Bkg	
99	444	115 <MDC	2910	510 <MDC	Bkg	
100	476	284 <MDC	2940	706 <MDC	Bkg	
101	384	-203 <MDC	2840	52 <MDC	Bkg	
102	422	-2 <MDC	2900	444 <MDC	Bkg	
103	448	136 <MDC	2690	-928 <MDC	Bkg	
104	408	-76 <MDC	2780	-340 <MDC	Bkg	
105	418	-23 <MDC	2700	-863 <MDC	Bkg	
106	446	125 <MDC	2740	-601 <MDC	Bkg	
107	464	221 <MDC	3300	3059 <DCGL	Bkg	
108	442	104 <MDC	3580	4889 <DCGL	Bkg	
109	426	20 <MDC	3350	3386 <DCGL	Bkg	
110	434	62 <MDC	3730	5869 <DCGL	Bkg	
111	460	199 <MDC	2690	-928 <MDC	Bkg	
112	434	62 <MDC	2670	-1059 <MDC	Bkg	
113	436	72 <MDC	2840	52 <MDC	Bkg	
114	434	62 <MDC	2800	-209 <MDC	Bkg	
115	440	94 <MDC	2700	-863 <MDC	Bkg	
116	430	41 <MDC	2780	-340 <MDC	Bkg	
117	440	94 <MDC	3440	3974 <DCGL	Bkg	
118	452	157 <MDC	3540	4627 <DCGL	Bkg	
119	476	284 <MDC	3600	5020 <DCGL	Bkg	
120	506	443 <MDC	3400	3712 <DCGL	Bkg	
121	440	94 <MDC	3660	5412 <DCGL	Bkg	
122	370	-277 <MDC	2570	-1712 <MDC	Bkg	
123	392	-160 <MDC	3350	3386 <DCGL	Bkg	
124	434	62 <MDC	2890	379 <MDC	Bkg	
125	424	9 <MDC	2820	-78 <MDC	Bkg	
126	404	-97 <MDC	2750	-536 <MDC	Bkg	

# Philotechnics Analytical Worksheet

Appendix B

GE Healthcare  
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## Static Contamination Measurements Facility Areas

Sample	Beta			Gamma			Dose Rate	Comment
	CPM	DPM/100 cm2		CPM	DPM/100 cm2		uR/Hr	
127	430	41	<MDC	3510	4431	<DCGL	Bkg	
128	456	178	<MDC	3360	3451	<DCGL	Bkg	
129	444	115	<MDC	3460	4105	<DCGL	Bkg	
130	418	-23	<MDC	3440	3974	<DCGL	Bkg	
131	386	-192	<MDC	2900	444	<MDC	Bkg	
132	426	20	<MDC	2960	837	<MDC	Bkg	
133	388	-181	<MDC	3070	1556	<MDC	Bkg	
134	432	51	<MDC	2840	52	<MDC	Bkg	
135	386	-192	<MDC	2690	-928	<MDC	Bkg	
136	404	-97	<MDC	2940	706	<MDC	Bkg	
137	358	-340	<MDC	2660	-1124	<MDC	Bkg	
138	348	-393	<MDC	2890	379	<MDC	Bkg	
139	336	-457	<MDC	2240	-3869	<MDC	Bkg	
140	328	-499	<MDC	2370	-3020	<MDC	Bkg	
141	334	-467	<MDC	2390	-2889	<MDC	Bkg	
142	374	-256	<MDC	2650	-1190	<MDC	Bkg	
143	412	-54	<MDC	2940	706	<MDC	Bkg	
144	438	83	<MDC	2780	-340	<MDC	Bkg	
145	418	-23	<MDC	2880	314	<MDC	Bkg	
146	394	-150	<MDC	2700	-863	<MDC	Bkg	
147	678	1353	<DCGL	3610	5085	<DCGL	Bkg	Ceramic Tile
148	408	-76	<MDC	2860	183	<MDC	Bkg	
149	404	-97	<MDC	2900	444	<MDC	Bkg	
150	358	-340	<MDC	2430	-2627	<MDC	Bkg	
151	324	-520	<MDC	2510	-2105	<MDC	Bkg	
152	350	-383	<MDC	2270	-3673	<MDC	Bkg	
153	388	-181	<MDC	2200	-4131	<MDC	Bkg	
154	368	-287	<MDC	2830	-13	<MDC	Bkg	
155	414	-44	<MDC	2350	-3150	<MDC	Bkg	
156	396	-139	<MDC	2690	-928	<MDC	Bkg	
157	346	-404	<MDC	2800	-209	<MDC	Bkg	
158	576	813	<DCGL	4230	9137	<DCGL	Bkg	Ceramic Tile
159	372	-266	<MDC	2620	-1386	<MDC	Bkg	
160	352	-372	<MDC	2510	-2105	<MDC	Bkg	
161	356	-351	<MDC	2440	-2562	<MDC	Bkg	
162	336	-457	<MDC	2570	-1712	<MDC	Bkg	
163	344	-414	<MDC	2430	-2627	<MDC	Bkg	
164	390	-171	<MDC	2070	-4980	<MDC	Bkg	
165	394	-150	<MDC	2750	-536	<MDC	Bkg	
166	414	-44	<MDC	2210	-4065	<MDC	Bkg	
167	396	-139	<MDC	3610	5085	<DCGL	Bkg	
168	360	-330	<MDC	3690	5608	<DCGL	Bkg	
169	374	-256	<MDC	2790	-275	<MDC	Bkg	
170	376	-245	<MDC	4670	12013	<DCGL	Bkg	



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## Static Contamination Measurements Facility Areas

Sample	Beta			Gamma			Dose Rate	Comment
	CPM	DPM/100 cm2		CPM	DPM/100 cm2		uR/Hr	
171	362	-319	<MDC	2650	-1190	<MDC	Bkg	
172	390	-171	<MDC	2480	-2301	<MDC	Bkg	
173	480	305	<MDC	2540	-1908	<MDC	Bkg	
174	392	-160	<MDC	2530	-1974	<MDC	Bkg	
175	412	-54	<MDC	2690	-928	<MDC	Bkg	
176	424	9	<MDC	2710	-797	<MDC	Bkg	
177	438	83	<MDC	2900	444	<MDC	Bkg	
178	450	147	<MDC	2990	1033	<MDC	Bkg	
179	458	189	<MDC	2930	641	<MDC	Bkg	
180	444	115	<MDC	3000	1098	<MDC	Bkg	
181	432	51	<MDC	3080	1621	<MDC	Bkg	
182	454	168	<MDC	3090	1686	<DCGL	Bkg	
183	398	-129	<MDC	2890	379	<MDC	Bkg	
184	404	-97	<MDC	3020	1229	<MDC	Bkg	
185	422	-2	<MDC	3030	1294	<MDC	Bkg	
186	402	-107	<MDC	2700	-863	<MDC	Bkg	
187	472	263	<MDC	2630	-1320	<MDC	Bkg	
188	426	20	<MDC	2740	-601	<MDC	Bkg	
189	452	157	<MDC	2870	248	<MDC	Bkg	
190	400	-118	<MDC	2840	52	<MDC	Bkg	
191	446	125	<MDC	2500	-2170	<MDC	Bkg	
192	354	-361	<MDC	2730	-667	<MDC	Bkg	
193	444	115	<MDC	2440	-2562	<MDC	Bkg	
194	400	-118	<MDC	2680	-993	<MDC	Bkg	
195	400	-118	<MDC	2460	-2431	<MDC	Bkg	
196	412	-54	<MDC	2700	-863	<MDC	Bkg	
197	414	-44	<MDC	2470	-2366	<MDC	Bkg	
198	416	-33	<MDC	2580	-1647	<MDC	Bkg	
199	424	9	<MDC	2500	-2170	<MDC	Bkg	
200	386	-192	<MDC	2910	510	<MDC	Bkg	
201	420	-12	<MDC	2600	-1516	<MDC	Bkg	
202	386	-192	<MDC	2560	-1778	<MDC	Bkg	
203	438	83	<MDC	2660	-1124	<MDC	Bkg	
204	418	-23	<MDC	2610	-1451	<MDC	Bkg	
205	418	-23	<MDC	2650	-1190	<MDC	Bkg	
206	384	-203	<MDC	3020	1229	<MDC	Bkg	
207	368	-287	<MDC	2680	-993	<MDC	Bkg	
208	386	-192	<MDC	2440	-2562	<MDC	Bkg	
209	372	-266	<MDC	2490	-2235	<MDC	Bkg	
210	432	51	<MDC	2440	-2562	<MDC	Bkg	
211	450	147	<MDC	2100	-4784	<MDC	Bkg	
212	438	83	<MDC	2010	-5373	<MDC	Bkg	
213	434	62	<MDC	2180	-4261	<MDC	Bkg	
214	478	295	<MDC	2220	-4000	<MDC	Bkg	

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## Static Contamination Measurements Facility Areas

Sample	Beta			Gamma			Dose Rate	Comment
	CPM	DPM/100 cm2		CPM	DPM/100 cm2		uR/Hr	
215	448	136	<MDC	2360	-3085	<MDC	Bkg	
216	396	-139	<MDC	2250	-3804	<MDC	Bkg	
217	440	94	<MDC	2030	-5242	<MDC	Bkg	
218	423	4	<MDC	2100	-4784	<MDC	Bkg	
219	404	-97	<MDC	2190	-4196	<MDC	Bkg	
220	389	-176	<MDC	2340	-3216	<MDC	Bkg	
221	419	-17	<MDC	2260	-3739	<MDC	Bkg	
222	NA	NA	NA	NA	NA	NA	NA	
223	NA	NA	NA	NA	NA	NA	NA	
224	NA	NA	NA	NA	NA	NA	NA	
225	NA	NA	NA	NA	NA	NA	NA	
226	NA	NA	NA	NA	NA	NA	NA	
227	NA	NA	NA	NA	NA	NA	NA	
228	NA	NA	NA	NA	NA	NA	NA	
229	NA	NA	NA	NA	NA	NA	NA	
230	NA	NA	NA	NA	NA	NA	NA	
231	NA	NA	NA	NA	NA	NA	NA	
232	NA	NA	NA	NA	NA	NA	NA	
233	NA	NA	NA	NA	NA	NA	NA	
234	NA	NA	NA	NA	NA	NA	NA	
235	NA	NA	NA	NA	NA	NA	NA	
236	NA	NA	NA	NA	NA	NA	NA	
237	NA	NA	NA	NA	NA	NA	NA	
238	NA	NA	NA	NA	NA	NA	NA	
239	NA	NA	NA	NA	NA	NA	NA	
240	NA	NA	NA	NA	NA	NA	NA	

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## Removable Contamination Measurements Facility Areas

	Liquid Scintillation Counter			Gamma Counter			Comment
Sample	DPM/100 cm2		CPM/100 cm2	CPM	DPM/100 cm2		
	BKG	BKG	BKG	BKG		MDA	
	27	16	19	453.5		112.0	
Sample	Channel 1	Channel 2	Channel 3	Gross CPM	DPM/100cm2	Result	Comment
1	16	20	16	483	32	<MDC	
2	16	20	16	483	32	<MDC	
3	16	20	16	483	32	<MDC	
4	29	16	11	464	12	<MDC	
5	29	16	11	464	12	<MDC	
6	16	13	18	464	12	<MDC	
7	16	13	18	501	52	<MDC	
8	16	13	18	501	52	<MDC	
9	27	16	17	501	52	<MDC	
10	27	16	17	404	-54	<MDC	
11	20	24	13	404	-54	<MDC	
12	20	24	13	404	-54	<MDC	
13	20	24	13	462	9	<MDC	
14	32	17	19	462	9	<MDC	
15	32	17	19	462	9	<MDC	
16	42	31	13	499	50	<MDC	
17	42	31	13	499	50	<MDC	
18	42	31	13	499	50	<MDC	
19	28	22	17	450	-4	<MDC	
20	28	22	17	450	-4	<MDC	
21	25	20	20	450	-4	<MDC	
22	25	20	20	453	-1	<MDC	
23	25	20	20	453	-1	<MDC	
24	30	16	12	453	-1	<MDC	
25	30	16	12	461	8	<MDC	
26	41	6	14	461	8	<MDC	
27	41	6	14	461	8	<MDC	
28	41	6	14	462	9	<MDC	
29	41	15	17	462	9	<MDC	
30	41	15	17	462	9	<MDC	
31	25	17	28	476	25	<MDC	
32	25	17	28	476	25	<MDC	
33	25	17	28	476	25	<MDC	
34	18	16	15	470	18	<MDC	
35	18	16	15	470	18	<MDC	
36	29	18	11	470	18	<MDC	
37	29	18	11	470	18	<MDC	
38	29	18	11	470	18	<MDC	

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## Removable Contamination Measurements Facility Areas

Sample	Liquid Scintillation Counter			Gamma Counter		Comment
	DPM/100 cm2	CPM/100 cm2	CPM	DPM/100 cm2		
39	35	20	20	470	18	<MDC
40	35	20	20	430	-26	<MDC
41	43	15	11	430	-26	<MDC
42	43	15	11	430	-26	<MDC
43	43	15	11	452	-2	<MDC
44	20	21	20	452	-2	<MDC
45	20	21	20	452	-2	<MDC
46	21	21	11	500	51	<MDC
47	21	21	11	500	51	<MDC
48	21	21	11	500	51	<MDC
49	24	16	7	428	-28	<MDC
50	24	16	7	428	-28	<MDC
51	34	22	13	428	-28	<MDC
52	34	22	13	447	-7	<MDC
53	34	22	13	447	-7	<MDC
54	38	15	21	447	-7	<MDC
55	38	15	21	488	38	<MDC
56	42	19	18	488	38	<MDC
57	42	19	18	488	38	<MDC
58	42	19	18	456	3	<MDC
59	25	16	14	456	3	<MDC
60	25	16	14	456	3	<MDC
61	34	16	20	453	-1	<MDC
62	34	16	20	453	-1	<MDC
63	34	16	20	453	-1	<MDC
64	21	20	17	466	14	<MDC
65	21	20	17	466	14	<MDC
66	10	24	21	466	14	<MDC
67	10	24	21	452	-2	<MDC
68	10	24	21	452	-2	<MDC
69	19	18	12	452	-2	<MDC
70	19	18	12	440	-15	<MDC
71	27	20	9	440	-15	<MDC
72	27	20	9	440	-15	<MDC
73	27	20	9	472	20	<MDC
74	45	11	12	472	20	<MDC
75	45	11	12	472	20	<MDC
76	24	26	9	496	47	<MDC
77	24	26	9	496	47	<MDC
78	24	26	9	496	47	<MDC
79	46	12	14	451	-3	<MDC
80	46	12	14	451	-3	<MDC
81	10	20	13	451	-3	<MDC
82	10	20	13	452	-2	<MDC

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## Removable Contamination Measurements Facility Areas

Sample	Liquid Scintillation Counter			Gamma Counter		Comment
	DPM/100 cm2	CPM/100 cm2	CPM	DPM/100 cm2		
83	10	20	13	452	-2	<MDC
84	18	18	21	452	-2	<MDC
85	18	18	21	464	12	<MDC
86	10	20	18	464	12	<MDC
87	10	20	18	464	12	<MDC
88	10	20	18	458	5	<MDC
89	50	75	15	458	5	<MDC
90	50	75	15	458	5	<MDC
91	30	26	15	454	1	<MDC
92	30	26	15	454	1	<MDC
93	30	26	15	454	1	<MDC
94	28	17	13	450	-4	<MDC
95	28	17	13	450	-4	<MDC
96	17	27	9	450	-4	<MDC
97	17	27	9	502	53	<MDC
98	17	27	9	502	53	<MDC
99	43	17	13	502	53	<MDC
100	43	17	13	462	9	<MDC
101	20	17	15	462	9	<MDC
102	20	17	15	462	9	<MDC
103	20	17	15	435	-20	<MDC
104	28	17	12	435	-20	<MDC
105	28	17	12	435	-20	<MDC
106	37	17	21	455	2	<MDC
107	37	17	21	455	2	<MDC
108	37	17	21	455	2	<MDC
109	35	21	19	498	49	<MDC
110	35	21	19	498	49	<MDC
111	17	18	14	498	49	<MDC
112	17	18	14	458	5	<MDC
113	17	18	14	458	5	<MDC
114	45	20	15	458	5	<MDC
115	45	20	15	389	-71	<MDC
116	24	26	12	389	-71	<MDC
117	24	26	12	389	-71	<MDC
118	24	26	12	456	3	<MDC
119	39	23	9	456	3	<MDC
120	39	23	9	456	3	<MDC
121	18	25	14	424	-32	<MDC
122	18	25	14	424	-32	<MDC
123	18	25	14	424	-32	<MDC
124	17	22	16	448	-6	<MDC
125	17	22	16	448	-6	<MDC
126	26	24	13	448	-6	<MDC

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## Removable Contamination Measurements

### Facility Areas

Sample	Liquid Scintillation Counter			Gamma Counter		Comment
	DPM/100 cm2	CPM/100 cm2	CPM	DPM/100 cm2		
127	26	24	13	458	5	<MDC
128	26	24	13	458	5	<MDC
129	42	8	15	458	5	<MDC
130	42	8	15	438	-17	<MDC
131	29	21	19	438	-17	<MDC
132	29	21	19	438	-17	<MDC
133	29	21	19	440	-15	<MDC
134	37	29	19	440	-15	<MDC
135	37	29	19	440	-15	<MDC
136	45	16	14	454	1	<MDC
137	45	16	14	454	1	<MDC
138	45	16	14	454	1	<MDC
139	30	25	11	474	22	<MDC
140	30	25	11	474	22	<MDC
141	53	14	19	474	22	<MDC
142	53	14	19	438	-17	<MDC
143	53	14	19	438	-17	<MDC
144	42	17	13	438	-17	<MDC
145	42	17	13	500	51	<MDC
146	22	23	15	500	51	<MDC
147	22	23	15	500	51	<MDC
148	22	23	15	456	3	<MDC
149	21	22	11	456	3	<MDC
150	21	22	11	456	3	<MDC
151	34	14	13	482	31	<MDC
152	34	14	13	482	31	<MDC
153	34	14	13	482	31	<MDC
154	27	17	20	490	40	<MDC
155	27	17	20	490	40	<MDC
156	38	17	8	490	40	<MDC
157	38	17	8	466	14	<MDC
158	38	17	8	466	14	<MDC
159	23	26	18	466	14	<MDC
160	23	26	18	499	50	<MDC
161	27	18	15	499	50	<MDC
162	27	18	15	499	50	<MDC
163	27	18	15	486	36	<MDC
164	19	17	13	486	36	<MDC
165	19	17	13	486	36	<MDC
166	37	14	17	474	22	<MDC
167	37	14	17	474	22	<MDC
168	37	14	17	474	22	<MDC
169	37	16	14	481	30	<MDC
170	37	16	14	481	30	<MDC

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## Removable Contamination Measurements

### Facility Areas

Sample	Liquid Scintillation Counter			Gamma Counter		Comment
	DPM/100 cm2	CPM/100 cm2	CPM	DPM/100 cm2		
171	18	25	12	481	30	<MDC
172	18	25	12	442	-13	<MDC
173	18	25	12	442	-13	<MDC
174	29	24	15	442	-13	<MDC
175	29	24	15	478	27	<MDC
176	15	26	12	478	27	<MDC
177	15	26	12	478	27	<MDC
178	15	26	12	450	-4	<MDC
179	14	21	11	450	-4	<MDC
180	14	21	11	450	-4	<MDC
181	36	10	11	451	-3	<MDC
182	36	10	11	451	-3	<MDC
183	36	10	11	451	-3	<MDC
184	26	21	15	430	-26	<MDC
185	26	21	15	430	-26	<MDC
186	20	9	16	430	-26	<MDC
187	20	9	16	431	-25	<MDC
188	20	9	16	431	-25	<MDC
189	31	24	15	431	-25	<MDC
190	31	24	15	422	-35	<MDC
191	8	16	10	422	-35	<MDC
192	8	16	10	422	-35	<MDC
193	8	16	10	473	21	<MDC
194	28	17	13	473	21	<MDC
195	28	17	13	473	21	<MDC
196	25	14	16	418	-39	<MDC
197	25	14	16	418	-39	<MDC
198	25	14	16	438	-17	<MDC
199	36	13	13	438	-17	<MDC
200	36	13	13	438	-17	<MDC
201	39	20	14	444	-10	<MDC
202	33	10	10	444	-10	<MDC
203	17	21	17	444	-10	<MDC
204	50	16	17	420	-37	<MDC
205	35	22	16	420	-37	<MDC
206	20	23	16	420	-37	<MDC
207	25	14	28	460	7	<MDC
208	24	19	17	460	7	<MDC
209	12	16	12	460	7	<MDC
210	34	18	13	437	-18	<MDC
211	25	16	13	437	-18	<MDC
212	20	18	15	437	-18	<MDC
213	26	21	11	474	22	<MDC
214	20	12	12	474	22	<MDC

# Philotechnics Analytical Worksheet

Appendix B

GE Healthcare  
Carolina, Puerto Rico

## Removable Contamination Measurements Facility Areas

Sample	Liquid Scintillation Counter			Gamma Counter		Comment
	DPM/100 cm2	CPM/100 cm2	CPM	DPM/100 cm2		
215	20	19	15	474	22	<MDC
216	37	16	17	398	-61	<MDC
217	26	16	12	398	-61	<MDC
218	32	21	17	398	-61	<MDC
219	27	17	16	433	-22	<MDC
220	28	14	27	433	-22	<MDC
221	40	17	20	474	22	<MDC
222	24	19	13	466	14	<MDC
223	28	15	13	464	12	<MDC
224	25	17	15	447	-7	<MDC
225	30	10	10	440	-15	<MDC
226	61	17	19	454	1	<MDC
227	30	22	13	472	20	<MDC
228	28	14	7	428	-28	<MDC
229	13	16	19	430	-26	<MDC
230	31	18	15	458	5	<MDC
231	29	28	8	470	18	<MDC
232	24	19	19	462	9	<MDC
233	18	16	13	436	-19	<MDC
234	18	24	15	398	-61	<MDC
235	19	12	8	438	-17	<MDC
236	21	13	12	478	27	<MDC
237	24	11	9	473	21	<MDC
238	45	15	12	481	30	<MDC
239	18	23	16	466	14	<MDC
240	20	10	16	456	3	<MDC



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MAILROOM  
GE/AMERSHAM  
101 CARNEGIE CENTER

PRINCETON, NJ 08540  
UNITED STATES US

Ship Date: 21APR05  
Actual Wgt: 1.4 LB  
System#: 0735726/CAFE2246  
Account: S 179827751

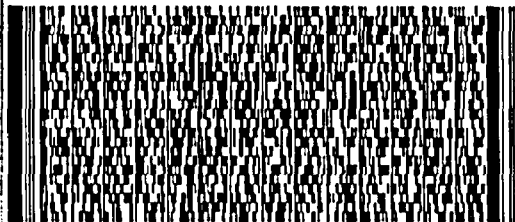
TO LICENSING ASSISTANCE SEINAN

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DIVISION OF NUCLEAR MATERIALS SAFE  
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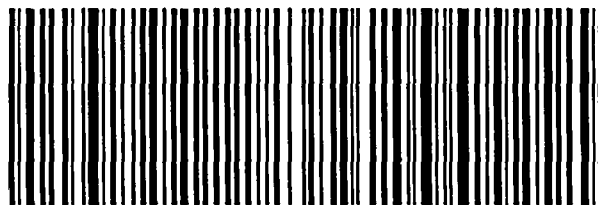
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Part # 154250-354 NRIT 5-04

13692

This is to acknowledge the receipt of your letter/application dated

4/20/2005, and to inform you that the initial processing which includes an administrative review has been performed.

☒ Term 52-16345-02 MD  
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned Mail Control Number 136916.  
When calling to inquire about this action, please refer to this control number.  
You may call us on (610) 337-5398, or 337-5260.

License Fee Management Branch, ARM  
and  
Regional Licensing Sections

**LICENSE FEE TRANSMITTAL**

### A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: AMERSHAM AQUISITION CORPORATION  
Received Date: 20050421  
Docket No: 3019134  
Control No.: 136916  
License No.: 52-16345-02MD  
Action Type: Termination

**2. FEE ATTACHED**

Amount:

**Check No. :**

### 3. COMMENTS

**Signed**

Date \_\_\_\_\_

**B. LICENSE FEE MANAGEMENT BRANCH** (Check when milestone 03 is entered /\_\_/) \_\_\_\_\_

1. Fee Category and Amount:

2. Correct Fee Paid. Application may be processed for:

### Amendment

## Renewal

## License

### 3. OTHER

**Signed**

Date \_\_\_\_\_