Bayer HealthCare
Pharmaceuticals

J-6

April 17, 2007

License No. 06-13053-04
Control No. ~~140051~~ 140429 03030292

Mr. Dennis Lawyer
Nuclear Materials Safety Branch #2
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Dear Mr. Lawyer,

Enclosed is the Radiological Decommissioning Report for the Bayer Pharmaceuticals Corporation's West Haven, CT facility. This document is being submitted with the request for the termination of the NRC license and the release of the facility for unrestricted use.

Bayer Pharmaceuticals Corporation
400 Morgan Lane
West Haven, CT 06516-4175

Phone: 203 812-2000
Fax: 203 812-2299

As per our discussion, please disregard the previous amendment requesting that I, Mr. Peter D. Babin, be the Radiation Safety Officer, as I will be leaving the company. Please add Mr. Gary Toczylowski , Director of Health, Environment and Safety, as the acting Radiation Safety Officer until the license termination process is complete. 140051

Please let me know if you require any additional information.

Sincerely,

Peter D. Babin
Health, Environment and Safety
Bayer Pharmaceuticals Corporation

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APPENDIX A

Bayer Pharmaceuticals Site Diagrams Identifying Decommissioning Areas

PHILOTECHNICS

Radiological Decommissioning Report

Bayer

Prepared for:
Bayer Pharmaceuticals
400 Morgan Lane
West Haven, CT 06516
Radioactive Materials License # 06-13053-04

03030292

Surveyed: January 3 – February 2, 2007
Report Completed: February 16, 2007

Prepared by:
Philotechnics, Ltd.
7676 Hazard Center Drive, Suite 500
San Diego, CA 92108

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Section 1.0 – Executive Summary

A radiological survey was completed utilizing the guidance provided in NUREG 1757, "Consolidated Nuclear Materials Safety and Safeguards (NMSS) Decommissioning Guidance" and NUREG 1575, "Multi-Agency Radiation Survey and Site Investigation Manual" (MARSSIM) in order to provide pertinent information for the decommissioning and ultimate unrestricted release of the Bayer Pharmaceuticals facility located at 400 Morgan Lane Road, West Haven, CT from radioactive material license #06-13053-04. A review of all data collection and analysis supports our professional opinion that the facility meets the criterion for unrestricted release and removal from Bayer Pharmaceuticals Radioactive Materials License based upon the following:

- ***All scanning measurements were less than the $DCGL_w$ based upon Bayer's administrative release criterion of 1 mRem/yr.***

- ***All static measurements were less than the $DCGL_w$ based upon Bayer's administrative release criterion of 1 mRem/yr.***

- ***All wipe surveys were less than the $DCGL_w$ based upon Bayer's administrative release criterion of 1 mRem/yr.***

Section 2.0 – Project Scope, Findings and Summary

Prior to removal from the license, the Nuclear Regulatory Commission (NRC) requires that an appropriate decommissioning survey and report be submitted for their review. This document provides the licensee with appropriate information to request removal of the facility through an amendment request with the NRC.

In accordance with our agreement with Bayer Pharmaceuticals, Philotechnics performed a radiological decommissioning of all impacted research buildings at the facility located at 400 Morgan Lane Road, West Haven, CT. The survey and report provide pertinent information for the radiological decommissioning. The Final Status Survey and analytical data follow the guidance of the NUREG 1757, NUREG 1575 and NUREG-1507. The Bayer property in West Haven consists of approximately 130 acres containing 13 buildings. Research involving the use of radioactive materials was performed in specific laboratories located in Buildings A21, B24, B31 and B36 only.

The following summarizes the independent conclusions representing Philotechnics's best professional judgment based on information and data available to us during the course of this assignment. Factual information regarding operations, conditions and test data provided by the client, owner or their representative has been assumed correct and complete based upon careful and diligent review of the safety program and past inspection records. Additionally, the conclusions presented are based on the conditions that existed at the time of the assessment. Note that on-site observation of the above referenced facilities consisted of readily visible, accessible areas only.

Table 1: Assessment Review

Assessment Component	Acceptable	Unacceptable	Section
License Review & Historical Use	X		4.0
Radiation Surveys			
A) Static Measurements – Hand-held instruments	X		5.0
B) Static Measurements – Scintillation Counter	X		5.0
C) Scanning Measurements – Hand-held instruments	X		5.0

Conclusions and Recommendations

Based upon the results of our survey, it is our professional opinion that the impacted buildings located at 400 Morgan Lane Road, West Haven, CT are free of any radioactive contamination and/or radioactive material sources and may be removed from Bayer's Radioactive Materials License in accordance with Code of Federal Regulations Title 10 30.36 "Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas." During the survey, Philotechnics verified that all labels, signs or other similar markings indicating the presence of radioactive materials had been removed or obliterated. Additionally, no concerns requiring further investigation exist at this time.

Project Team

The project team consisted of the following individuals:

Researched by:	Tim Pratt
Surveyed by:	Tim Pratt, Tracie Clemons, Vicki Litton, Steve Kapetan and Dave Aguero
Project Manager and Contact:	Robert Trimble
Written by:	Robert Trimble

Closing

We appreciate the opportunity to provide this radiological decommissioning and trust that the enclosed information is adequate for decision-making needs. Should you have any questions, please do not hesitate to call the undersigned.

Robert Trimble, M.S.
Health Physicist
Philotechnics, Ltd.

Section 3.0 – Assessment, Methodology and Report Limitations

The decommissioning process evaluates a property's environmental status for release of impacted areas to allow unrestricted use by current or future occupants. The assessment involves the review of operations as they pertain to radioactive materials (RAM) use in order to identify potential radioactive contamination.

Assessment activities related to the laboratory decommissioning for the facility included the following tasks:

- A visual survey of both current and past RAM use areas in order to identify potential contamination and/or presence of radioactive materials
- Interviews with client personnel regarding current and historical use of RAM at the facility
- Review of the radioactive material licenses, license applications and amendment requests
- Review of existing documentation, as provided, regarding prior inspections, investigations, events or conditions at the facility related to RAM use
- Direct surveys of all specified areas with the use of portable hand-held radiation detection equipment to identify the presence of radioactive materials
- Indirect surveys to test for removable contamination with the use of a liquid scintillation counter and smears taken throughout the specified areas
- Preparation of a report documenting our findings, recommendations and professional opinions regarding observed or suspected radiological concerns

Facility Point of Contact

During the week of December 14-18, 2006, Tim Pratt met with William Galdenzi and Peter Babin, who are the Radiation Safety Officer and EH&S Associate respectively at Bayer Pharmaceuticals. Mr. Galdenzi and Mr. Babin were able to provide specific information regarding radioactive materials use at the facility based upon their historical knowledge and implemented practices at Bayer.

Report Limitations

This report has been prepared solely for the use and benefit of Bayer Pharmaceuticals in compliance with requirements and recommendations by the NRC. Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of environmental science. This warranty is in lieu of all other warranties either expressed or implied. Philotechnics is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration presented in this report.

It must be noted that no investigation, or survey, can absolutely rule out the existence of radioactive materials. However, the survey was provided using acceptable industry practices and utilizing appropriate technology to provide statistical confidence with the data provided. This assessment has been based upon prior history, observable conditions, direct surveys and indirect surveys. There are limitations based upon this approach where contaminants can escape

detection using these methods. Minimum detectable concentrations have been specified for the instrumentation used to qualify the detection limits.

The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and location given. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated. In addition, this report is not intended as a regulatory agency compliance/safety audit or for the purpose of ensuring that all applicable permits and/or operating procedures are current and/or appropriate.

Section 4.0 License Review and Historical Use

Radioactive Materials (RAM) License

This decommissioning request for unrestricted release pertains to all impacted buildings at the Bayer site located at 400 Morgan Lane Road, West Haven, CT operated under radioactive materials license 06-13053-04. A summary of areas where radionuclides were currently or historically used is detailed in the Restricted Area Summary (Table 3).

Bayer is currently authorized to possess the following radionuclides as referenced by Amendment Number 11 of Radioactive Materials License 06-13053-04 with an expiration date of July 31, 2014:

Table 2: RAM License Possession Limits

	Nuclide	Form	License Limit
A.	Any byproduct material with atomic numbers 1 through 83 with a physical half-life less than or equal to 120 days.	Any	Not to exceed 100 millicuries per radionuclide and 1 curie total
B.	Hydrogen-3 (H-3)	Any	Not to exceed 5 curies (Ci)
C.	Carbon-14 (C-14)	Any	Not to exceed 5 curies (Ci)
D.	Phosphorus-32 (P-32)	Any	Not to exceed 10 curies (Ci)
E.	Phosphorus-33 (P-33)	Any	Not to exceed 10 curies (Ci)
F.	Sulfur-35 (S-35)	Any	Not to exceed 10 curies (Ci)
G.	Chlorine-36 (Cl-36)	Any	Not to exceed 10 millicuries (mCi)
H.	Calcium-45 (Ca-45)	Any	Not to exceed 350 millicuries (mCi)
I.	Iron-55 (Fe-55)	Any	Not to exceed 100 millicuries (mCi)
J.	Iodine-125 (I-125)	Any	Not to exceed 1 curie (Ci)
K.	Iodine-131 (I-131)	Any	Not to exceed 1 curie (Ci)
L.	Gadolinium-153 (Gd-153)	Any	Not to exceed 10 millicuries (mCi)
M.	Nickel-63 (Ni-63)	Sealed Sources	Not to exceed 500 millicuries (mCi)

Authorized Use

A. – M. A. through M. Research and development as defined in 10 CFR 30.4; animal studies

Restricted Area Summary

The areas being requested for release are specified in the table below and are identified on the diagram in Appendix A.

Table 3: Restricted Area Summary

Restricted Area	Current Action	Typical Radionuclide Usage
400 Morgan Lane, West Haven, CT 06516		
Building A21	Decommissioned	H-3, C-14, P-33, S-35 and I-125
Building B24	Decommissioned	H-3, C-14, P-33, S-35 and I-125
Building B31	Decommissioned	H-3, C-14, P-33, S-35 and I-125
Building B36	Decommissioned	H-3, C-14, P-33, S-35 and I-125

Historical Use

Bayer is a pharmaceutical research and manufacturing company that uses radioactive materials for purposes of tracers in chemical and biological studies. Historically, H-3, C-14, P-32, P-33, S-35 and I-125 been the primary radionuclides used in the facility located at 400 Morgan Lane Road. P-32 has not been used at the site for approximately 10 years; based on its short half-life, it was excluded from the survey design. The survey model was developed and implemented to detect the isotopes used in each specific area.

Several Ni-63 sealed sources were utilized at the site. At the time of the decommissioning survey all of the sealed sources have been returned to the manufacturer for disposal. A review of sealed source leak tests for the last three years was performed during the historical site assessment. All leak test results were satisfactory.

Waste Disposal

No radioactive materials remain at the Bayer site located at 400 Morgan Lane. All radioactive waste and materials in the facility have been shipped to an authorized waste disposal site. A copy of the shipping manifest is attached as Appendix L.

Radioactive Materials Spills

By completing a review of pertinent records and an interview with Bill Galdenzi, the Radiation Safety Officer, we were able to ascertain that there have not been any significant radioactive materials spills affecting the areas being requested for release. Significant spills are defined as those spills that were not readily cleaned up by the researcher and/or caused contamination in excess of regulatory limits to be found during follow-up or routine contamination surveys. Weekly contamination surveys were included in the historical review of the license and there were no indications of contamination levels over the criteria for release affecting the laboratories included in this decommissioning survey.

Section 5.0 – Radiation Surveys

Description of Radiation Surveys

During the period of January 3 – February 2, 2007, Philotechnics completed a comprehensive scan, wipe and meter survey in all accessible impacted areas, which included benches, floors, cabinets, drains and drain lines, sinks, vacuum lines, hoods and ventilation systems. Survey maps depicting these areas are included as Appendix C.

The following instrumentation was used to quantify radiation levels:

- Bicron Electra 1B, with the following
  - ✓ BP19DD (beta probe)
    Serial # 5056 (Calibrated on 6/20/06)
- Bicron Electra 1B, with the following
  - ✓ BP19DD (beta probe)
    Serial # 5057 (Calibrated on 10/05/06)
- Bicron Electra 1B, with the following
  - ✓ GP13A (gamma probe)
    Serial # 4422 (Calibrated on 2/22/06)
- Bicron Electra 1B, with the following
  - ✓ GP13A (gamma probe)
    Serial # 4807 (Calibrated on 2/17/06)
- Ludlum 2221, with the following
  - ✓ 43-37 (beta probe)
    Serial # 149981 (Calibrated on 6/16/06)
- Packard Scintillation Counter (Operational Test 1/3/07)
  NIST certificate for H-3 and C-14 standards included

The instrument calibrations were completed using NIST traceable sources and the Certificates of Calibration are included as Appendix B.

Minimum Detectable Concentration (MDC) Calculations

Philotechnics analytical sheets are included as Appendix E, which show calculations for Static MDC for the Scintillation Counter, Static MDC for Hand-Held Instruments and Scanning MDC for Hand-Held Instruments. These calculations follow the guidance from NUREG-1507. This information is used to verify the effectiveness of the instrumentation used in units of dpm/100 cm^2.

Area Classifications

Based on the results of the historical site assessment, facility areas were classified as impacted or non-impacted areas. Non-impacted areas are areas with no potential residual radioactivity from licensed activities. These include all property outside the building and non-laboratory areas inside the building. Impacted areas are those areas that may have some level of potential residual radioactivity from licensed activities.

Impacted areas are typically divided into Class 1, 2, or 3 areas. Class 1 areas have the greatest potential for contamination and therefore receive the highest degree of survey effort for the final status survey, followed by Class 2 and then Class 3. Table 4 lists the recommended maximum

survey unit sizes based on floor area. It should be noted that these limits are recommended and are not absolute.

Class 1 Areas – Areas with the highest potential for contamination, and meet the following criterion: (1) impacted; (2) potential for delivering a dose above the release criterion; (3) potential for small areas of elevated activity; and (4) insufficient evidence to support classification as Class 2 or Class 3.

Class 2 Areas – Areas that meet the following criterion: (1) impacted; (2) low potential for delivering a dose above the release criterion; and (3) little or no potential for small areas of elevated activity.

Class 3 Areas – Areas that meet the following criterion: (1) impacted; (2) little or no potential for delivering a dose above the release criterion; and (3) little or no potential for small areas of elevated activity.

Non-impacted: Building exterior, outside grounds, indoor areas other than those identified as restricted areas by the RAM license, and surfaces above two meter height in the areas specified below.

Table 4: Recommended Maximum Survey Unit Size Limits

Type of Survey Unit	Class 1	Class 2	Class 3
Structures	Up to 100 m^2	100 m^2 to 1,000 m^2	No limit
Land	Up to 2,000 m^2	2,000 m^2 to 10,000 m^2	No limit

Table 5: Laboratory Classification

Survey Unit	Classification	Building	Areas Covered
1	2	B-36	RG-180
2	2	B-31	RA-260, RA-262, RA-267, RA-269
3	2	B-31	RA-221
4	2	B-31	RA-204, RA-204A, RA-204B, RA-209, RA-216
5	2	B-31	RA-217, RA-219
6	2	B-31	RA-210, RA-212, RA-212A
7	2	B-31	RA-323
8	2	B-31	RA-311, RA-313
9	2	B-24	RB020, RB022, RB024 (Waste Storage Rooms)
10	2	B-24	RB008A, RB010B, RB010D, RB012B
11	2	B-24	RB010A, RB010C
12	3	B-24	RB013, RB015, RB015A, RB015B
13	2	B-24	RB231
14	3	B-36	Corridor outside RG-180
15	3	B-31	Areas adjacent to survey unit 2
16	3	B-31	Areas adjacent to survey units 3, 4, 5, 6
17	3	B-31	Areas adjacent to survey units 4 & 21
18	3	B-31	RA-256, RA-268
19	3	B-31	Areas around and including Labs 360, 364, 357 and 367
20	2	B-31	RA-251
21	2	B-31	RA-211TC, RA-213
22	3	B-31	Areas around Labs 306 and 307

Survey Unit	Classification	Building	Areas Covered
23	3	B-31	Areas around Labs 311 and 313
24	3	B-31	Areas around Lab 320, 323 and 351
25	3	B-31	Areas around Class 2 survey units in B-24 basement
26	3	A-21	A102, A103, A103A, A104 and A105
27	3	A-21	D101, D103, D232, D233, D234 and D234A
28	3	A-21	D121, D130 and D135
29	3	B-24	Lab 209 and adjacent hallway
30	3	B-24	Lab 215, 216, 216A, 217, 218, 218A, 220C and hallways
31	3	B-24	Hallways adjacent to Lab 231
32	3	B-31	Labs 11, 113, 113A, 113B and adjacent hallway
33	3	B-31	Labs 105, 105A, 105B and adjacent hallway
34	3	B-31	Labs 160, 160A, 160B, 160C and 160D
35	3	B-31	Lab 169B
36	3	B-24	Hallway adjacent to RB107, RB109, RB115
37	3	B-24	Hallways adjacent to RB117 and RB121

Survey Methodology

Determination of Class 1 survey unit sample locations is accomplished by first determining sample spacing and then systematically plotting the sample locations from a randomly generated start location. The random starting point of the grid provides an unbiased method for obtaining measurement locations to be used in the statistical tests. Class 1 survey units have the highest potential for small areas of elevated activity so the areas between measurement locations may be adjusted to ensure that these areas can be detected by scanning techniques. None of the impacated labatories at the Bayer facility were initially classified, nor upgraded to Class 1; however, the methodology was described to give a comprehensive overview of our surveying approach.

Similar systematic spacing methods are used for Class 2 survey units because there is an increased probability of small areas of elevated activity. The use of a systematic grid allows the decision-maker to draw conclusions about the size of the potential areas of elevated activity based on the area between measurement locations.

The guidance in MARSSIM recommends simple random measurement patterns for Class 3 survey units to ensure that the measurements are independent and support the assumptions of the statistical tests. However, for the purposes of this plan, we will choose measurements locations on a judgmental basis. We feel that selecting measurement locations in areas of higher contamination potential will better assess residual contamination in Class 3 areas (high traffic areas, potential spill areas, areas with limited housekeeping and collection points, such as floor cracks or crevices). The survey technician chose these locations at the time of the survey.

For Class 2 and Class 3 survey units, the sensitivity for scanning techniques was not tied to the area between measurement locations as they apply only to Class 1 areas. The scanning techniques selected represent the best reasonable effort based on the survey data quality objectives.

In laboratory areas, permanent counter tops and other horizontal surfaces which block floor surfaces, were included as a replacement to the blocked floor surface. Likewise, fixed cabinetry faces and other permanent equipment replace blocked wall surfaces.

Internal surfaces of permanent furnishings (i.e., drawer or cabinetry interior surfaces) are not included in the systematic measurement location placement. However, these surfaces were included in the scan surveys and judgmental measurements were taken. Additional surface activity measurements were collected at each area of elevated activity identified during the scan surveys.

Previous Decommissioning

Bayer Safety Department personnel along with a number of radiological consulting companies have previously decommissioned specific labs and areas at the facility as early as 1997. Not all of the decommissioned areas were performed using the protocols outlined in NUREG 1575 and NUREG 1757. Some areas only were surveyed for removable contamination without scanning or acquiring static measurements. Other decommissioning efforts included only direct surveys and dose rate measurements. Philotechnics took a conservative approach when planning the overall survey design; any area previously decommissioned using protocols other than those outlined in NUREG's 1575 and 1757 were re-surveyed and initially classified as Class 3. All current radioactive use areas were initially classified as Class 2. In addition, we expanded the area of our surveys to include offices and hallways adjacent to areas which have a history of radioactive usage.

The table in Appendix D shows all laboratories at the facility that previously used radionuclides. Recent decommissioning efforts performed by Scientech in 2005 and Philotechnics in 2006 followed MARSSIM guidelines, were determined to be satisfactory and no additional surveys were performed in these areas. However, hallways and offices adjacent to these decommissioned labs were surveyed as Class 3 areas. Copies of previous decommissioning reports are on file in the Radiation Safety Office.

Portable Instrumentation

Portable instrument calibration requirements and response checks followed Philotechnics procedure HP-IN-01 detailed below:

- Portable instruments are calibrated annually
- Portable analytical instrument results are based upon a 2-pi efficiency in accordance with MARSSIM
- Instruments were calibrated using similar geometry and energy to that expected to be encountered in this decommissioning project
- Portable instruments were response checked daily or prior to each day's use
- The source and geometry used for daily response checks was the same used for initial setup

Background Determination

Five 1-minute backgrounds were taken with each portable survey meter in each survey unit. The average of these five measurment were used to determine the background. Appendix F provides a summary of background data points, which were collected in an area of similar construction to the area being requested for release. In the case of a survey unit having a high variablility of background radiation due to structural materials, an additional set of five backgrounds were taken with each portable survey meter. This would occur in a survey unit where one of the

rooms contained drywall and the room next to it had cinder block walls. On the static measurement sheet provided as Appendix G there will be a note explaining why multiple backgrounds were taken.

Surface Scans

The following table compares MARSSIM recommendations and actual area coverage for the scan survey completed at Bayer.

Table 6: Scan Survey Coverage Comparison

Classification	Percentage of Surface Area Requiring Scan Coverage (MARSSIM)	Bayer Surface Area Scan Coverage
1	100%	N/A
2	10 – 100% (Judgmental)	100% Floors, 50% Structures
3	Judgmental	50% Floors, 10% Structures

Class 2 survey areas received a 100% scan of all accessible floor areas and a 50% scan of permanent structures. Permanent structures are defined as hoods, benches, casework and walls. Class 3 survey areas received a 50% scan of all accessible floor areas and a 10% scan of permanent structures. These scan survey percentages were chosen in order to provide a more comprehensive survey of the impacted areas and a higher confidence that there was not any contamination present in excess of our release criterion. In the event of any elevated activity noted from the survey, the location would have been marked and additional measurements performed to quantify the activity. ***All scanning measurements were less than the $DCGL_w$ based upon Bayer's administrative release criterion of 1 mRem/yr; therefore additional measurements were not required.***

Fixed or Static Measurements

Class 1 survey units generally consist of one or two rooms or laboratories. Class 2 and Class 3 survey units generally consist of many rooms. Representing each room in a "folded-out" view to show all surfaces presents a difficult and time-consuming mapping challenge. The process to identify, map and locate measurement coordinates in survey units with many rooms is complicated due to the noncontiguous nature of the survey unit once walls are "folded-out".

For the reasons above, the MARSSIM sample measurement locations (i.e., random static and wipe measurements) for Class 2 and Class 3 survey units was determined on horizontal surfaces only as determined on overhead floor maps. This protocol increased the sample density on the surfaces with the highest probability for residual contamination. The appropriate percentage of all survey unit surfaces (including vertical surfaces) was scanned according to the survey unit classification.

As part of the survey process, the technician judgmentally selected an additional 10 locations in the Class 2 areas with the highest probability of contamination on horizontal and vertical surfaces for a static and smear measurement such as light switches, door knobs, door pulls, sinks and other locations. These measurements (highlighted in gray on the static measurement spreadsheet, Appendix G, and removable measurement spreadsheet, Appendix H) are in addition to the locations required by MARSSIM protocols and not included in the statistical analysis.

Static measurements were performed at locations specified in the survey design. No additional areas were identified during the scanning survey that would warrant specific static measurements. The probe was held as close to the surface as practicable to determine a count rate in counts per minute. The data calculations from this survey are included as Appendix G. The static statistic worksheet, Appendix H, details the classification for each survey unit, the reference code used to subtract the background for each meter, the efficiency of each meter used and calculations showing the mean, median, maximum, minimum and standard deviation of each meter for each survey unit. ***All static measurements were less than the $DCGL_w$ based upon Bayer's administrative release criterion of 1 mRem/yr.***

Removable Measurements

Removable contamination measurements (smears) were collected on building structural surfaces at each sample location. Additionally, removable contamination measurements were collected for building system internals. Each smear encompassed an area of approximately $100cm^2$. If an area of less than $100cm^2$ was wiped, a comment was added to the survey data sheet estimating the surface area wiped to allow for area correction of the results. Swabs were used when system or component access points were not large enough to allow for a wipe of a $100cm^2$ surface area.

All of the smear samples taken at the facility were counted on a Packard Liquid Scintillation Counter for one minute. A data sheet, included as Appendix I, details the CPM results, the Auto-DPM conversions for H-3 and C-14 and indicates if the result is below the $DCGL_W$. The channels for the Packard Liquid Scintillation counter were set up so that H-3 and I-125 would be detected in Channel A (0-12 KeV), C-14 and S-35 in Channel B (12-156 KeV) and all other beta emitters with energies above 156 KeV in Channel C (156-2000 KeV). We used a gross beta efficiency of 64.5% (calculations shown in Appendix B) to convert the CPM readings in Channel C to DPM. For I-125, we used a conservative efficiency of 60%, which we applied to the CPM values in Channel A to convert to DPM. This efficiency was derived by averaging the efficiencies for Channel A and Channel B to create a gross beta efficiency. ***All wipe surveys were less than the $DCGL_w$ based upon Bayer's administrative release criterion of 1 mRem/yr.***

Surveys of Building Mechanical Systems Internals

Surveys of various building system components were performed. The survey design for these systems is out of the scope of MARSSIM. For purposes of identifying potential residual contamination within these systems, a survey protocol has been established and is presented in the following sections.

Drain Systems

Surveys of building drain system internals consisted of surveys of accessible sink drains, sink drain traps, floor drains and collection points such as sumps and neutralization tanks. Removable contamination surveys of sink drains, sink drain traps and floor drains were collected since scan surveys and static measurements are not practical due to their small geometry. The frequency of the survey effort was dependent on the classification of the surrounding area. Drain system initial survey requirements are summarized in Table 9.

Table 9 – Drain System Survey Requirements

Component(s)	Classification of	Survey Requirements

	Area in Which Components Exist	Scan Surveys and Static (Total Activity) Measurements	Removable Contamination Measurements
Drain system inlets	Class 1	N/A[1]	At least one smear on the internal surfaces of 100% of the existing sink drains, sink drain traps and floor drains[2].
	Class 2	N/A[1]	At least one smear on the internal surfaces of 50% of the existing sink drains, sink drain traps and floor drains[2].
	Class 3	N/A[1]	At least one smear on the internal surfaces of 10% of the existing sink drains, sink drain traps and floor drains[2].
Drain system collection points such as accumulator tanks, sumps and outfalls	All	Scan surveys, total surface activity measurements and removable contamination measurements will be collected in sumps and at drain system outfalls as applicable. Sediment samples will be collected at these locations, if possible.	

[1] Scan surveys and static measurements are not practical for these locations due to the small geometry of the drain system components.
[2] Some disassembly of system components were necessary to complete these surveys.

If contamination was detected during the previous survey schemes additional surveys or removal of components would have been performed at various locations. This might have required some disassembly of components downstream of the affected location. Additional instructions were provided in the survey package instructions. A data sheet, included as Appendix K, details the CPM results, the Auto-DPM conversions for H-3 and C-14 and indicates if the result is below the $DCGL_W$ for the drain, vacuum and ventilation systems. A surface area correction was applied to the drains and traps due to the small geometry of the drain system components. For the drains it was estimated that an area of 50 cm2 was smeared and 20 cm2 for the traps. A correction factor of 2 and 5 respectively was used on the spreadsheet to give values in terms of 100 cm2.

Vacuum System

Surveys of building vacuum system internals consisted of removable contamination measurements of accessible vacuum inlet points. Scan surveys and static measurements are not practical due to the small geometry of the vacuum inlet points. Additionally, surveys of potential collection points were performed. The frequency of the survey effort was dependent on the classification of the surrounding area. Vacuum system initial survey requirements are summarized in Table 8.

Table 8 – Vacuum System Survey Requirements

Component(s)	Classification of Area in Which Components Exist	Survey Requirements	
		Scan Surveys and Static (Total Activity) Measurements	Removable Contamination Measurements
General ventilation and fume hood exhaust ducts	Class 1	N/A[1]	At least one smear/swipe on the internal surfaces of 100% of the existing vacuum inlet points[2]
	Class 2	N/A[1]	At least one smear/swipe on the internal surfaces of 50% of the existing vacuum inlet points[2]

	Class 3	N/A[1]	At least one smear/swipe on the internal surfaces of 20% of the existing vacuum inlet points[2]
Collection points within ventilation fan units	All	N/A[1]	At least one smear/swipe on the internal surfaces of all accessible locations within the vacuum system moisture accumulator(s) and filtration points[2]

[1] Scan surveys and static measurements are not practical for these locations due to the small geometry of the vacuum inlet points.
[2] Some disassembly of system components were necessary to complete these surveys.

Ventilation Systems

Surveys of building ventilation and fume hood ventilation consisted of scan surveys, total activity measurements and removable contamination measurements of accessible ventilation exhaust points and at locations of potential collection buildup. The frequency of the survey effort depended on the classification of the surrounding area. Ventilation system initial survey requirements are summarized in Table 7. The static data calculations for the ventilation systems are included as Appendix J and removable data calculations as Appendix K. Due to the small geometry of the drain and vacuum systems, static measurements were only performed for ventillation systems.

Table 7 – Ventilation System Survey Requirements

Component(s)	Classification of Area in Which Components Exist	Survey Requirements		
		Scan Surveys	Static (Total Activity) Measurements	Removable Contamination Measurements
General ventilation and fume hood exhaust ducts	Class 1	100% scan survey of accessible[1] internal surfaces of all existing exhaust ducts	At least one static measurement taken on the internal surfaces of 100% of existing exhaust duct openings	One smear taken at each static measurement location
	Class 2	100% scan survey of accessible[1] internal surfaces of at least 50% of existing exhaust ducts	At least one static measurement taken on the internal surfaces 50% of existing exhaust duct openings	One smear taken at each static measurement location
	Class 3	100% scan survey of accessible[1] internal surfaces of at least 10% of the existing exhaust ducts	At least one static measurement taken on the internal surfaces of 10% of the existing exhaust duct openings	One smear taken at each static measurement location
Collection points within ventilation fan units	All	100% scan survey of accessible[1] internal surfaces of all applicable ventilation fan units	At least one static measurement taken on each internal surface of each accessible[1] opening on the units	One smear taken at each static measurement location

[1] Within reach of duct or component opening

Components were de-energized and Lock-out/Tag-out procedures were initiated prior to access to mechanical or electrical components.

Section 6.0 - Data Quality Assessment and Interpretation of Survey Results

The statistical guidance contained in Section 8 of MARSSIM was used to determine if areas are acceptable for unrestricted release, and whether additional surveys or sample measurements were needed.

The following table summarizes MARSSIM guidance for conclusions based upon data provided by the Final Status Survey.

Table 10: Guidance for Survey Conclusions

Survey Result	Conclusion
All measurements less than $DCGL_w$	Survey unit meets release criterion
Average greater than $DCGL_w$	Survey unit does not meet release criterion
Any measurement greater than $DCGL_w$ and the average less then $DCGL_w$	Conduct Sign test and elevated measurement comparison

The Derived Concentration Guideline Limit (DCGL) is used as a determining factor to the survey unit meeting the criterion for unrestricted release. At the time of this report Connecticut has a dose based release criterion of 25 millirem (0.25 mSv) per year. As an ALARA measure, the $DCGL_w$'s were selected by using a 1 millirem (0.01 mSv) per year release criterion.

Table 11: Established $DCGL_w$'s for Survey

Isotope	Total Activity $DCGL_w$'s (DPM/100 cm^2)	Removable Activity Limit (DPM/100 cm^2)
H-3	4.80×10^6	4.80×10^5
C-14	1.40×10^5	1.40×10^4
P-33	1.40×10^6	1.40×10^5
S-35	5.20×10^5	5.20×10^4
I-125	2.60×10^4	2.60×10^3

Based on a 1.0 mRem/yr release criterion, the limiting $DCGL_w$ for beta emitters is C-14 at 1.4×10^5 dpm/100 cm^2. For gamma emitters the limiting $DCGL_w$ is I-125 at 2.60×10^4 dpm/100 cm^2.

A preliminary data review was performed for each survey unit to identify any patterns, relationships or potential anomalies. Appendix H shows the calculated values for each survey unit's mean, median, maximum, minimum and standard deviation for each type of reading. Additionally, measurement data was reviewed and compared with the DCGLs and investigation levels to identify areas of elevated activity and confirm the correct classification of survey units. If an area was misclassified with a less restrictive classification, the area was upgraded and surveyed accordingly.

Calculation of Relative Shift – Determining the Number of Samples

A minimum number of samples are needed to obtain sufficient statistical confidence that the conclusions drawn from the samples are correct. The number of samples will depend on the Relative Shift (the ratio of the concentration to be measured relative to the statistical variability of the contaminant concentration). The minimum number of samples is obtained from MARSSIM tables or calculated using equations in Section 5 of MARSSIM. For the Bayer project we estimated that the relative shift would be close to 2. With a relative shift of 2 and

decision errors of 0.05 for Type I and Type II, the number of samples for each survey unit was determined to be 15. As a conservative measure, the minimum number of samples for each survey unit was increased to 20. In addition to the number of samples recommended by MARSSIM and additional 10 samples were judgmentally selected by the survey technicians as an ALARA measure.

Table 12 compares the actual relative shift to the assumed relative shift in order to determine if the number of systematic measurements for each survey unit satisfies the statistical criteria listed in section 5 of MARSSIM. For each class 2 survey unit the actual number of locations sampled were compared to the number required by MARSSIM Table 5.5 "Values of N for Use with the Sign Test" for both beta and gamma measurements. ***As a result of the analysis, no additional sample locations were necessary.***

Table 12: Survey Unit Data Analysis

Survey Unit #	Class	Actual	Type I Error	Type II Error	Beta Relative Shift	Beta Static Locations Required	Gamma Relative Shift	Gamma Static Locations Required	Additional Static Locations Required?
1	2	21	0.05	0.05	44.93	14	10.17	14	No
2	2	27	0.05	0.05	95.94	14	4.37	14	No
3	2	22	0.05	0.05	58.52	14	n/a	0	No
4	2	24	0.05	0.05	57.44	14	n/a	0	No
5	2	20	0.05	0.05	86.32	14	n/a	0	No
6	2	28	0.05	0.05	48.88	14	5.09	14	No
7	2	27	0.05	0.05	67.08	14	2.17	15	No
8	2	21	0.05	0.05	59.32	14	4.17	14	No
9	2	27	0.05	0.05	23.01	14	3.43	14	No
10	2	25	0.05	0.05	49.31	14	1.54	18	No
11	2	24	0.05	0.05	32.05	14	1.85	16	No
13	2	26	0.05	0.05	30.91	14	4.44	14	No
20	2	23	0.05	0.05	58.47	14	11.60	14	No

Section 7.0 –Decontamination / Decommissioning Review

Decontamination

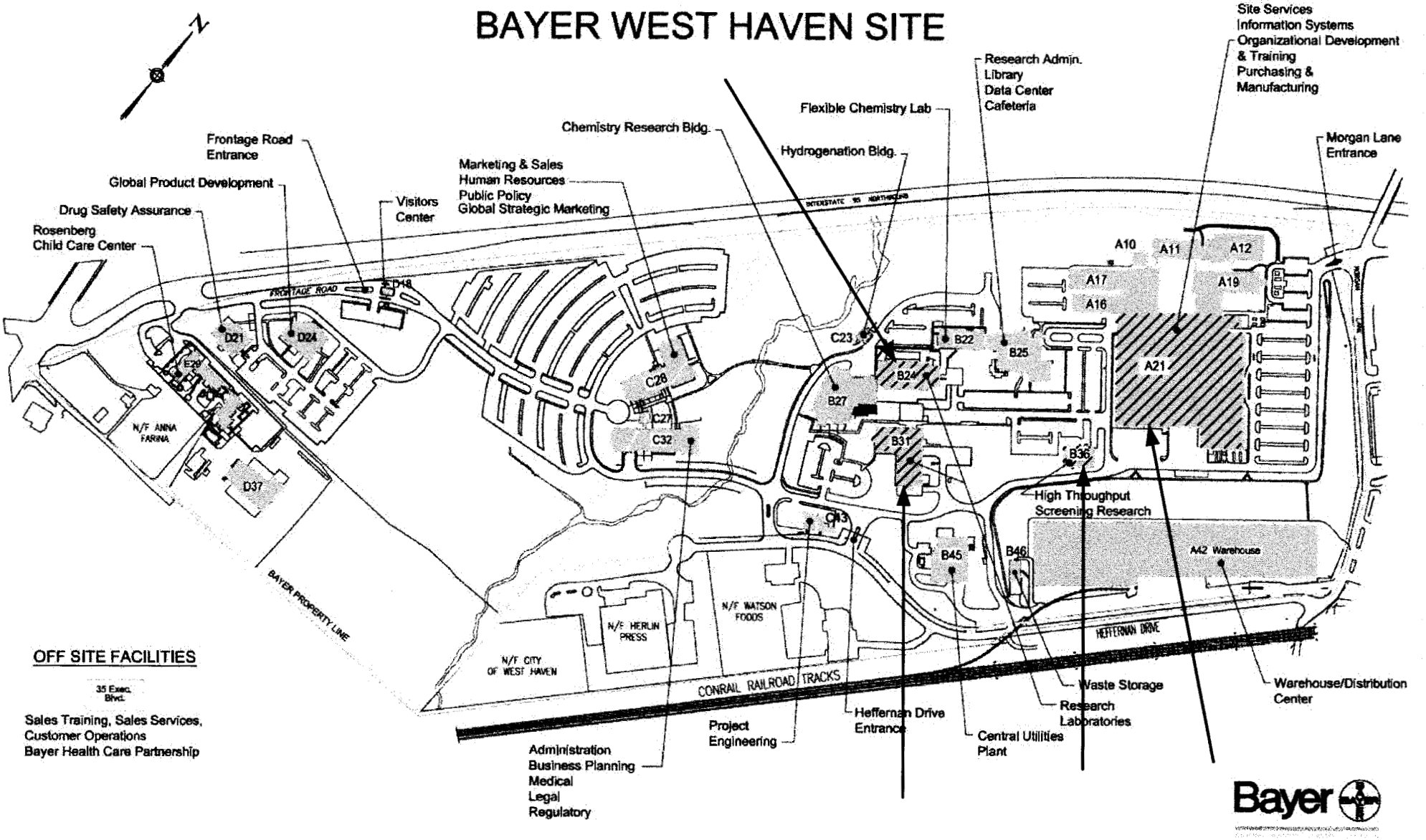
Full decontamination is the physical or chemical process of reducing and preventing the spread or potential exposure of contamination. Decontamination options include the use of commercially available materials and/or equipment that will effectively remove radioactive materials from surface areas so that the contamination can be collected and properly disposed.

Radiation decontamination of the impacted areas was not required as part of the decommissioning survey. All laboratory survey results did not indicate the presence of any level of radioactive materials that would require decontamination based upon our established action levels. At the time of our review, the action levels were based upon a 1 millirem per year release criterion. However, there were two areas which we remediated as an ALARA measure. A small section of sheet vinyl in Building B31, Lab 221 had approximately 30,000 dpm of beta contamination and a drain pipe in Building B36, Lab RG-180 had approximately 20,000 dpm of beta contamination respectively. Both the sheet vinyl and drain pipe were removed and discarded as radioactive waste. Remedial actions surveys confirmed the areas were decontaminated properly.

Decommissioning Review

Philotechnics has reviewed all of the applicable data pertaining to the history of radioactive material use as well as the static and wipe surveys completed at the Bayer Pharmaceuticals facility located at 400 Morgan Lane, West Haven, CT. It is our professional opinion that the facility is free of any radioactive materials and/or radioactive contamination, would qualify for unrestricted release, and may be removed from Bayer's Radioactive Materials License in accordance with Code of Federal Regulations Title 10 30.36 "Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas."

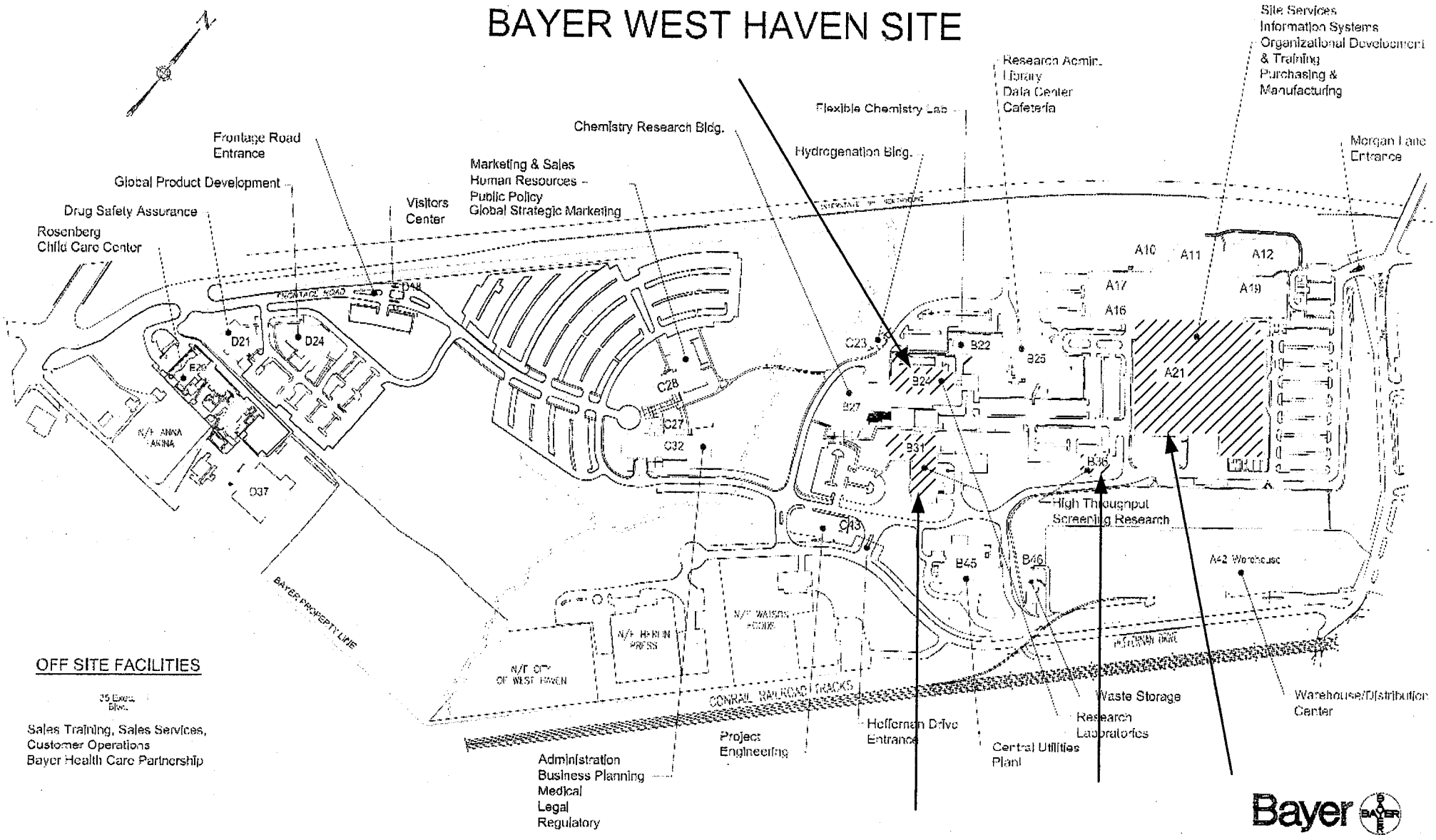
BAYER WEST HAVEN SITE



- Decommissioned Areas

Appendix A

BAYER WEST HAVEN SITE



- Decommissioned Areas

APPENDIX B

Certificates of Calibration & Scintillation Check

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
Instrument Operational Check
1/3/2007

Counting Data:

Standard	CPM
H-3	111,059
C-14	114,635
Blank	9

Isotope Information:

Analytical Sampling Date: 1/3/2007

Isotope	Initial Activity (DPM)	Calib. Date	Current Activity (DPM)
H-3	279,300	2/22/2002	212,318
C-14	137,900	2/22/2002	137,819

Efficiency Calculations:

Isotope	CPM	Corrected DPM	Efficiency
H-3	111,059	212,318	52.31%
C-14	114,635	137,819	83.18%
Gross Beta	225,694	350,137	64.46%

Packard Instrument Company 2200 Warrenville Road Downers Grove, IL 60515 Tel. 630-969-6000 Fax: 630-969-6511

Packard
A Packard BioScience Company

CERTIFICATE OF RADIOACTIVITY

PRODUCT:	^{3}H Extended Range Quenched Standard Set
PART NUMBER:	6018594
RADIONUCLIDE:	^{3}H (Tritium)
DATE OF ASSAY:	22 Feb 2002
ASSAYED VALUE:	279,300 dpm/std ± 1.6%
SERIAL NO.	2

REFERENCE STANDARD: National Institute of Standards and Technology SRM 4947C

METHOD OF STANDARDIZATION:

The bulk solution is standardized by liquid scintillation counting using SRM 4947C as the reference material.

COMMENTS:

The dpm value of each set of standards is confirmed by liquid scintillation counting against a reference standard set. The assigned value is automatically calculated by the liquid scintillation spectrometer using an appropriate algorithm.

I hereby certify that the above information is accurate.

Chemist

Packard Instrument Company 2200 Warrenville Road Downers Grove, IL 60515 Tel. 630-969-6000 Fax: 630-969-6511

Packard
A Packard BioScience Company

CERTIFICATE OF RADIOACTIVITY

PRODUCT:	^{14}C Extended Range Quenched Standard Set
PART NUMBER:	6018595
RADIONUCLIDE:	^{14}C (Carbon-14)
DATE OF ASSAY:	22 Feb 2002
ASSAYED VALUE:	137,900 dpm/std ± 1.3%
SERIAL NO.	2

REFERENCE STANDARD: National Institute of Standards and Technology SRM 4222C

METHOD OF STANDARDIZATION:

The bulk solution is standardized by liquid scintillation counting using SRM 4222C as the reference material.

COMMENTS:

The dpm value of each set of standards is confirmed by liquid scintillation counting against a reference standard set. The assigned value is automatically calculated by the liquid scintillation spectrometer using an appropriate algorithm.

I hereby certify that the above information is accurate.

Chemist

Duratek™

CALIBRATION CERTIFICATE

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: Philotechnics, Ltd.		Manufacturer: NE Technology	
Address: 118 Mitchell Road Oak Ridge,TN 37830		Model: Electra1B	Serial Number: 5056
Contact Name: Tim Pratt		Probe: BP19DD	Serial Number: 213
Contract Purchase Order Number: PO-0000366	Work Order Number: 2006-03785	Calibration Method: Electronic and Source	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range (Auto Ranging)	Calibration Standard Value (cpm)	Instrument Response (cpm)		Comments	
		Before Calibration	After Calibration		
0-1K	200	200	200	Pulser: 101500	Cal Due: 09/28/06
0-1K	500	499	499	DVM: TW12662	Cal Due: 02/23/07
0-1K	800	800	800	D-814: 2551	Cal Due10/13/06
1K-10K	2,000	2,000	2,000	Humidity: 958670	Cal Due: 03/29/07
1K-10K	5,000	5,000	5,000	Temp: 23.2°C	Pressure: 742mmHg
1K-10K	8,000	8,000	8,000	Humidity: 60%	
10K-100K	20,000	20,000	20,000		
10K-100K	50,000	50,000	50,000	Audio: SAT	Backlight: SAT
10K-100K	80,000	80,000	80,000	Batt. Check: SAT	Overange: SAT
100K-1M	200,000	200,000	200,000		
100K-1M	500,000	500,000	500,000		
100K-1M	800,000	799,000	799,000	Calibrated in accordance with OEM Technical Manual and Industry applicable standards	
All readings within ±10% of Standard Values					

METER CALIBRATION TESTS				COMMENTS
Test 1 – Software Version	15	Test 5,6,7 Dac Tests	SAT	See detector calibration sheet for detector specific information. Calibration performed with dead time off.
Test 2 – Keypad Test	SAT	Test 8 – Calibrate HV	SAT	
Test 3 – Display Test	SAT	Test 9 – HV Error Check	SAT	
Test 4 – Option Switches	SAT			

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument		
Calibrated By: M. Pauli	Reviewed By: Jeff Dabrinson	Date: 6/20/06
Calibration Date: 06/20/06		Calibration Due: 06/20/07

Duratek™

CALIBRATION CERTIFICATE

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		DETECTOR INFORMATION	
Customer Name: Philotechnics, Ltd.		Manufacturer: NE Technology	
Address: 118 Mitchell Road Oak Ridge,TN 37830		Model: BP19DD	Serial Number: 213
Contact Name: Tim Pratt		Calibration Method: Electronic and Source	
Contract Purchase Order Number: PO-0000366	Work Order Number: 2006-03785		

DETECTOR PARAMETER SETUPS

Parameter	As Found	As Left	Parameter	As Found	As Left	Comments	
0	4.5	4.5	8	unit CPM	unit CPM	Pulser: 101500	Cal Due: 09/28/06
1	Off	Off	A	On	Off	D-814: 2551	Cal Due: 10/13/06
3	1000V	1000V	b	Off	Off	Humidity: 958670	Cal Due: 03/29/07
4	3.00uA	3.00uA	c	Auto	Auto		
5	3uS	3uS	E	int	int	Temp: 23.2 °C	Pressure: 742mmHg
6	1.50V	1.50V	F	S66	S66	Humidity: 60%	
7	60s	60s	n	Off	Off	**Detector specific parameters must be entered into instrument manually in the SUPERVISOR mode**	

INSTRUMENT INFORMATION

Model	Serial Number	Calibration Due Date
Electra 1B	5056	06/20/07

USED FOR EFFICIENCY DETERMINATION AND HV PLATEAUING

EFFICIENCY DETERMINATION FOR C^{14} #010002 at 260,460 DPM Certification Date: 12/14/99
EFFICIENCY DETERMINATION FOR Tc^{99} #119718 at 20,520 DPM Certification Date: 10/14/97

Background (CPM)	Gross Source Counts (CPM)	Net Source Counts (CPM)	Efficiency in % (Determined on contact)
573	18,100	17,527	6.7% for C^{14}
573	4,139	3,566	17.4% for Tc^{99}

****Gross source counts taken from an average of three one minute counts from the Heel, Middle, and Toe of Detector****

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument		
Calibrated By: M. Paul	Reviewed By: Jeff Dubrisso	Date: 6/20/06
Calibration Date: 06/20/06		Calibration Due: 06/20/07

GRIFFIN INSTRUMENTS
977 Hamilton Lane
Kingston, TN 37763
865-376-1313
e-mail - griffininst@comcast.net

CALIBRATION DATA SHEET

MODEL	SERIAL #	CALIBRATION DATE	CALIBRATION DUE
ELECTRA 1B	**5057**	10/5/06	**10/5/07**
PERFORMED BY	**LOCATION**	**PHYSICAL COND.**	**AUDIO RESPONSE**
Joanne Glenn	Griffin Instruments	Worn	SAT
PULSER MODEL	**SERIAL #**	**CALIBRATION DATE**	**CALIBRATION DUE**
500	114512	11/14/05	11/14/06

Battery Check: AF 4.2 V AL 4.2 V

METER ELECTRONIC CALIBRATION					
PULSER	INPUT CPM	A.F. CPM	A.F. ERROR	A.L. CPM	A.L. ERROR
1st Decade	350	350	0%	A.F.	A.F.
	650	652	0.03%	A.F.	A.F.
2nd Decade	3500	3507	0.02%	A.F.	A.F.
	6500	6516	0.02%	A.F.	A.F.
3rd Decade	35000	35.1 kcpm	0.03%	A.F.	A.F.
	65000	65.3 kcpm	0.05%	A.F.	A.F.
4th Decade	350000	357 kcpm	2.0%	A.F.	A.F.
	650000	673 kcpm	3.5%	A.F.	A.F.
Are all Errors <10%? YES					

METER CALIBRATION TESTS				
Software version	Keypad Test	Display Test	Option Switches	Calibrate HV
15	SAT	SAT	SAT	SAT

Remarks: Calibrated w/BP19DD #212.

Performed/Reviewed By: Joanne Glenn Date: 10/5/06

Entered in computer by: JP Initial

GRIFFIN INSTRUMENTS

CALIBRATION CERTIFICATE FOR BP19DD PROBE # 212

Owner: PHILOTECHNICS

DATE:	10/16/06	**LOCATION:**	Griffin Inst
TECH:	Joanne Glenn	**DATE LAST CAL EXPIRES:**	10/05/07

REASON FOR CALIBRATION:

○ Due For Calibration ○ Repair (See Remarks) ◉ Other (See Remarks) ○ Due and Repair

CABLE LENGTH: 39" **INPUT SENSITIVITY:**

NIST TRACEABLE EQUIPMENT USED DURING CALIBRATION

MODEL:	Electra 1B	**SERIAL #:**	5057	**CAL. DUE:**	10/05/07
MODEL:		**SERIAL #:**		**CAL. DUE:**	

NIST TRACEABLE SOURCES

SOURCE #:	99TC470-1814	**SOURCE #:**	
ISOTOPE:	Tc99	**ISOTOPE:**	
ACTIVITY (dpm):	37300	**ACTIVITY:**	
ASSAY DATE:	08/03/99	**ASSAY DATE:**	

PHYSICAL CONDITION: Sat **EFF. FROM LAST CAL.:** 16.93% **AF BKG:** 357 HV 900V

3 ONE MINUTE COUNTS: 7458 7685 7746 **AVERAGE:** 7629.7

TC-99 EFFICIENCY: 19.50% **C-14 COUNT:** **C-14 EFF:**

AS LEFT ONE MINUTE COUNTS: **AVERAGE:**

TC-99 EFFICIENCY: **C-14 COUNT:** **C-14 EFF:**

Is the as found efficiency within 20% of eff. from last cal.?	◉ Yes	○ No *See Remarks
Saturation Test Satisfactory	◉ Yes	○ No
Reproducibility: Are the individual counts within 10% of the average?	◉ Yes	○ No
Does the probe meet final acceptance criteria?	◉ Yes	○ No
Calibration sticker attached?	◉ Yes	○ No

Remarks: Prev. cal'ed w. 1.2 mylar - redid eff.Calibrated w/Electra 1B #5057. Cal due 10/5/07 to match box.

DATE PROBE IS DUE FOR NEXT CALIBRATION: 10/05/07

Performed/Reviewed by: Joanne Glenn **Date:** 10/16/2006 **Entered by:** _____ **Initials**

Geometry: Flat surface unless otherwise noted. Calibrations performed to ANSI N323A-1997 standards

GRIFFIN INSTRUMENTS

CALIBRATION CERTIFICATE FOR BP19DD PROBE # 212

Owner: PHILOTECHNICS

DATE:	10/05/06	**LOCATION:**	Griffin Inst
TECH:	Joanne Glenn	**DATE LAST CAL EXPIRES:**	09/26/06

REASON FOR CALIBRATION:

(●) Due For Calibration ( ) Repair (See Remarks) ( ) Other (See Remarks) ( ) Due and Repair

CABLE LENGTH: 3' **INPUT SENSITIVITY:** n/a

NIST TRACEABLE EQUIPMENT AND STANDARDS USED DURING CALIBRATION

MODEL:	Electra 1B	**SERIAL #:**	5057	**CAL. DUE:**	10/05/07
MODEL:		**SERIAL #:**		**CAL. DUE:**	

NIST TRACEABLE SOURCES USED

SOURCE #:	2695-00	**SOURCE #:**	D2-091
ISOTOPE:	Tc99	**ISOTOPE:**	C14
ACTIVITY(dpm):	18400	**ACTIVITY:**	45,600 dpm
ASSAY DATE:	03/01/00	**ASSAY DATE:**	04/01/06

Condition: (●) Sat ( ) Unsat **Efficiency from last cal.:** Pu: Tc Ni: Th: C-14:

	HV	Vernier
Setpoints from last cal.:	920	

Source	Alpha Response CPM	Beta Response CPM	
Background:			
Pu-239:			**A-B XTLK:**
Tc-99 Ni:			**B-A XTLK:**
As Found Efficiencies Pu, Tc:			
Th-230 / C-14	/		/
Background:			
Pu-239:			**A-B XTLK:**
Tc-99 Ni:			**B-A XTLK:**
As Found Efficiencies Pu, Tc:			
Th-230 / C-14	/		/

Is as found efficiency within 20% of the efficiency from the last cal? ( ) Yes (●) No (See Remarks)

Note: If the as found data is within 10% of the last calibration and the B-A Xtalk is <1% and the A-B Xtalk is <10%, then the technician may N/A the plateau section and go directly to remarks.

GRIFFIN INSTRUMENTS

PROBE #: 212

Date: 10/05/06

PLATEAU AND SET POINT DATA

HV / Vernier:	Tc-99 Source Response (CPM):			Pu-239 Source Response (CPM):			Background (CPM):		Net A to B Xtalk: <10%	B to A Xtalk: <1%
	A ch.	B ch.	Net Eff.	A ch.	B ch.	Net Eff.	A ch.	B ch.		
750		1621	8.2%					115		
800		3713	19.1%					205		
850		4743	24.2%					296		
875		5083	25.9%					323		
900								544		

Alpha / Beta Bkg (cpm) 416

HV / Vernier		Pu-239	Tc-99 Ni	Tc-99 SS	Th-230	C-14	Sr-90
890	**CPM:**			6732		2071	
	AL Efficiencies:			**16.93%**		**3.63%**	

Th-230 Source #99TH470-1815 4/11/06 30,000 dpm Pu-239 Source #2696-00 7/18/06 18,500dpm

Tc-99 on Stainless Steel Source #99TC470-1814 8/3/99 37,300 dpm

Remarks: No previous cal data. Calibrated w/Electra 1B #5057.

Does Instrument Meet Final Acceptance Criteria?: ◉ Yes ○ No

Calibration Sticker Attached?: ◉ Yes ○ No

Date Instrument is Due For Next Calibration: **10/05/07**

Performed/Reviewed by: Joanne Glenn **Date:** 10/5/2006 **Entered by** ____ **Initials**

Calibrations performed to ANSI N323A-1997 standards.

Duratek™

CALIBRATION CERTIFICATE

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: Philotechnics Ltd.		Manufacturer: NE Technology	
Address: 118 Mitchell Road Oak Ridge, TN 37830		Model: Electra 1B	Serial Number: 4422
Contact Name: Tim Pratt		Probe: GP13A	Serial Number: 336
Contract Purchase Order Number: PO-0000366	Work Order Number: 2006-03556	Calibration Method: Electronic and Source	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range (Auto Ranging)	Calibration Standard Value (cpm)	Instrument Response (cpm)		Comments	
		Before Calibration	After Calibration		
0-1K	200	199	199	Pulser: 101500	Cal Due: 09/28/06
0-1K	500	499	499	DVM: TW12663	Cal Due: 03/30/06
0-1K	800	800	800	D-812: 2816	Cal Due: 04/19/06
1K-10K	2,000	2,000	2,000	Humidity: 958670	Cal Due: 03/22/06
1K-10K	5,000	4,996	4,996		
1K-10K	8,000	8,002	8,002	Temp: 24.6 °C	Pressure: 739mmHg
10K-100K	20,000	20,000	20,000	Humidity: 30%	
10K-100K	50,000	50,000	50,000		
10K-100K	80,000	80,300	80,300	Audio: SAT	Backlight: SAT
100K-1M	200,000	203,000	203,000	Batt. Check: SAT	Overange: SAT
100K-1M	500,000	512,000	512,000		
100K-1M	800,000	833,000	833,000	Calibrated in accordance with OEM Technical Manual and Industry applicable standards	
All readings within ±10% of Standard Values					

METER CALIBRATION TESTS				COMMENTS
Test 1 – Software Version	14	Test 5,6,7 Dac Tests	SAT	See detector calibration sheet for detector specific information. Calibration performed with dead time off. Instrument left in "User Mode" with parameters unlocked per customer request.
Test 2 – Keypad Test	SAT	Test 8 – Calibrate HV	SAT	
Test 3 – Display Test	SAT	Test 9 – HV Error Check	SAT	
Test 4 – Option Switches	SAT			

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: M. Pauli	Reviewed By: Robert Woodell	Date: 2/22/06
Calibration Date: 02/22/06	Calibration Due: 02/22/07	

Duratek™

CALIBRATION CERTIFICATE

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		DETECTOR INFORMATION	
Customer Name: Philotechnics Ltd.		Manufacturer: NE Technology	
Address: 118 Mitchell Road Oak Ridge, TN 37830		Model: GP13A	Serial Number: 336
Contact Name: Tim Pratt		Calibration Method: Electronic and Source	
Contract Purchase Order Number: PO-0000366	Work Order Number: 2006-03556		

DETECTOR PARAMETER SETUPS

Parameter	As Found	As Left	Parameter	As Found	As Left	Comments	
0	3.6	4.5	8	unit CPM	unit CPM	DVM: TW12663	Cal Due: 03/30/06
1	Off	Off	A	Off	On	D-812: 2816	Cal Due: 04/19/06
3	980V	960V	b	Off	Off	Humidity: 958670	Cal Due: 03/22/06
4	3.00uA	3.00uA	c	Auto	Auto		
5	3uS	3uS	E	int	int	Temp: 26.0 °C	Pressure: 748mmHg
6	1.50V	1.50V	F	566	566	Humidity: 33%	
7	30s	60s	n	Off m	Off m		

INSTRUMENT INFORMATION

Model	Serial Number	Calibration Due Date
Electra 1B	4422	02/22/07

USED FOR EFFICIENCY DETERMINATION AND HV PLATEAUING

EFFICIENCY DETERMINATION FOR I^{129} #040202 at 95,682 DPM Certification Date: 04/13/99
EFFICIENCY DETERMINATION FOR C^{14} # at 260,460 DPM Certification Date: 12/14/99
EFFICIENCY DETERMINATION FOR Tc^{99} #119718 at 20,520DPM Certification Date: 10/14/97

Background (CPM)	Gross Source Counts (CPM)	Net Source Counts (CPM)	Efficiency in % (Determined on contact)
3,800	14,100	10,300	10.8% for I^{129}
3,800	20,400	16,600	6.4% for C^{14}
3,800	6,500	2,700	13.2% for Tc^{99}

Gross source counts taken from a one minute count from the middle of detector

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument		
Calibrated By: M. Pauli	Reviewed By: Robert Nordell	Date: 2/22/06
Calibration Date: 02/22/06		Calibration Due: 02/22/07

Duratek™

CALIBRATION CERTIFICATE

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: Philotechnics Ltd.		Manufacturer: NE Technology	
Address: 118 Mitchell Road Oak Ridge, TN 37830		Model: Electra 1B	Serial Number: 4807
Contact Name: Tim Pratt		Probe: GP13A	Serial Number: 333
Contract Purchase Order Number: PO-0000366	Work Order Number: 2006-03538	Calibration Method: Electronic and Source	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range (Auto Ranging)	Calibration Standard Value (cpm)	Instrument Response (cpm) Before Calibration	Instrument Response (cpm) After Calibration	Comments	
0-1K	200	199	199	Pulser: 101500	Cal Due: 09/28/06
0-1K	500	499	499	DVM: TW12663	Cal Due: 03/30/06
0-1K	800	799	799	D-812: 2816	Cal Due: 04/19/06
1K-10K	2,000	1,992	1,992	Humidity: 958670	Cal Due: 03/22/06
1K-10K	5,000	4,990	4,990		
1K-10K	8,000	8,007	8,007	Temp: 26.0 °C	Pressure: 748mmHg
10K-100K	20,000	19,900	19,900	Humidity: 33%	
10K-100K	50,000	50,100	50,100		
10K-100K	80,000	80,400	80,400	Audio: SAT	Backlight: SAT
100K-1M	200,000	202,000	202,000	Batt. Check: SAT	Overange: SAT
100K-1M	500,000	516,000	516,000		
100K-1M	800,000	843,000	843,000	Calibrated in accordance with OEM Technical Manual and Industry applicable standards	
All readings within ±10% of Standard Values					

METER CALIBRATION TESTS				COMMENTS
Test 1 – Software Version	15	Test 5,6,7 Dac Tests	SAT	See detector calibration sheet for detector specific information. Calibration performed with dead time off. Instrument left in "User Mode" with parameters unlocked per customer request.
Test 2 – Keypad Test	SAT	Test 8 – Calibrate HV	SAT	
Test 3 – Display Test	SAT	Test 9 – HV Error Check	SAT	
Test 4 – Option Switches	SAT			

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: M. Pauli	Reviewed By: Robert Hoopes	Date: 2/17/06
Calibration Date: 02/17/06		Calibration Due: 02/17/07

Duratek™

CALIBRATION CERTIFICATE

Duratek Instrument Services
628 Gallaher Road
Kingston, TN 37763
Phone: (865) 376-8337
Fax: (865) 376-8331

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		DETECTOR INFORMATION	
Customer Name: Philotechnics Ltd.		Manufacturer: NE Technology	
Address: 118 Mitchell Road Oak Ridge, TN 37830		Model: GP13A	Serial Number: 333
Contact Name: Tim Pratt		Calibration Method: Electronic and Source	
Contract Purchase Order Number: PO-0000366	Work Order Number: 2006-03538		

DETECTOR PARAMETER SETUPS

Parameter	As Found	As Left	Parameter	As Found	As Left	Comments	
0	3.9	4.5	8	unit CPM	unit CPM	DVM: TW12663	Cal Due: 03/30/06
1	Off	Off	A	Off	On	D-812: 2816	Cal Due: 04/19/06
3	880V	880V	b	Off	Off	Humidity: 958670	Cal Due: 03/22/06
4	3.00uA	3.00uA	c	Auto	Auto		
5	4uS	4uS	E	int	int	Temp: 26.0 °C	Pressure: 748mmHg
6	1.50V	1.50V	F	566	566	Humidity: 33%	
7	60s	60s	n	Off m	Off m		

INSTRUMENT INFORMATION

Model	Serial Number	Calibration Due Date
Electra 1B	4807	02/17/07

USED FOR EFFICIENCY DETERMINATION AND HV PLATEAUING

EFFICIENCY DETERMINATION FOR I^{129} #040202 at 95,682 DPM Certification Date: 04/13/99
EFFICIENCY DETERMINATION FOR C^{14} # at 260,460 DPM Certification Date: 12/14/99
EFFICIENCY DETERMINATION FOR Tc^{99} #119718 at 20,520DPM Certification Date: 10/14/97

Background (CPM)	Gross Source Counts (CPM)	Net Source Counts (CPM)	Efficiency in % (Determined on contact)
3,360	18,200	14,840	15.5% for I^{129}
3,360	22,500	19,140	7.3% for C^{14}
3,360	7,100	3,740	18.2% for Tc^{99}

Gross source counts taken from a one minute count from the middle of detector

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology. (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated By: M. Pauli	Reviewed By: Robert [illegible]	Date: 2/17/06
Calibration Date: 02/17/06		Calibration Due: 02/17/07

GRIFFIN INSTRUMENTS

CALIBRATION CERTIFICATE FOR 2221 SERIAL# 149981

Owner: PHILOTECHNICS

DATE: 06/16/06 LOCATION: Griffin Inst

TECH: Joanne Glenn DATE LAST CAL EXPIRES: 03/18/04

Reason For Calibration: (●) Due For Calibration ( ) Repair (See Remarks) ( ) Other (See Remarks) ( ) Due and Repair (See Remarks)

NIST TRACEABLE EQUIPMENT USED DURING CALIBRATION

MODEL: M-500 SERIAL #: 114512 CAL. DUE: 11/14/06

MODEL: SERIAL #: CAL DUE:

☑ Fast/Slow Switch working properly ☑ Audio Response ☑ Geotropism CABLE LENGTH 6'

CONDITION: Sat AF MECHANICAL ZERO: 0 AL MECHANICAL ZERO: 0

NEW BATTERIES: ( ) Yes (●) No BATTERY CHECK: 5.4

HV	AS FOUND HV	AS LEFT HV
600 V:	573	596
1200 V:	1177	1200
1800 V:	1758	1799

AF INPUT SENSITIVITY (mV): 10 AL INPUT SENSITIVITY (mV): 10

SCALE	RATE CPM	AS FOUND		% ERROR	AS LEFT	% ERROR	AS FOUND	% ERROR	AS LEFT	% ERROR
x.1 or x1	100	100		0.0%	A.F.					
	250	250		0.0%	A.F.		252	0.8%	A.F.	
	400	400		0.0%	A.F.					
x1 or x10	1000	1000		0.0%	A.F.					
	2500	2500		0.0%	A.F.					
	4000	4000		0.0%	A.F.					
x10 or x100	10K	10	K	0.0%	A.F.					
	25K	25	K	0.0%	A.F.					
	40K	40	K	0.0%	A.F.					
x100 or x1000	100K	100	K	0.0%	A.F.					
	250K	250	K	0.0%	A.F.					
	400K	400	K	0.0%	A.F.					

Is the As Found Data Within 20% of the Set Point?: (●) Yes ( ) No

SCALE	RATE CPM	AS FOUND		% ERROR	AS LEFT	% ERROR
Log	200	200		0.0%	A.F.	
	2000	2000		0.0%	A.F.	
	20K	20	K	0.0%	A.F.	
	200K	200	K	0.0%	A.F.	

Is the As Found Data Within 20% of the Set Point?: (●) Yes ( ) No

GRIFFIN INSTRUMENTS

SERIAL # 149981
06/16/06

Audio Divide:	◉ Sat ○ Unsat	**Push Buttons:**	◉ Sat ○ Unsat
Lamp:	◉ Sat ○ Unsat	**Scaler/Digital:**	◉ Sat ○ Unsat

Remarks: Calibrated w/43-37 #PR136494.

Does Instrument Meet Final Acceptance Criteria?: ◉ Yes ○ No

Calibration Sticker Attached?: ◉ Yes ○ No

Date Instrument is Due For Next Calibration: 06/16/07

Performed/Reviewed by: Joanne Glenn **Date:** 6/16/2006 **Entered by:** _____ **Initials**

GRIFFIN INSTRUMENTS

CALIBRATION CERTIFICATE FOR 43-37 PROBE # PR136494

Owner: PHILOTECHNICS

DATE:	06/16/06	**LOCATION:**	Griffin Inst
TECH:	Joanne Glenn	**DATE LAST CAL EXPIRES:**	06/15/06

REASON FOR CALIBRATION:

(●) Due For Calibration ( ) Repair (See Remarks) ( ) Other (See Remarks) ( ) Due and Repair

CABLE LENGTH: 6' **INPUT SENSITIVITY:** 10 mV

NIST TRACEABLE EQUIPMENT AND STANDARDS USED DURING CALIBRATION

MODEL:	2221	**SERIAL #:**	149981	**CAL. DUE:**	06/16/07
MODEL:		**SERIAL #:**		**CAL. DUE:**	

NIST TRACEABLE SOURCES USED

SOURCE #:	2695-00	**SOURCE #:**	D2-091
ISOTOPE:	Tc99	**ISOTOPE:**	C14
ACTIVITY(dpm):	18400	**ACTIVITY:**	45,600 dpm
ASSAY DATE:	03/01/00	**ASSAY DATE:**	04/01/06

Condition: (●) Sat ( ) Unsat **Efficiency from last cal.:** Pu: Tc Ni: Th: C-14:

	HV	Vernier
Setpoints from last cal.:	N/A	

Source	Alpha Response CPM	Beta Response CPM	
Background:			
Pu-239:			**A-B XTLK:**
Tc-99 Ni:			**B-A XTLK:**
As Found Efficiencies Pu, Tc:			
Th-230 / C-14	/		/
Background:			
Pu-239:			**A-B XTLK:**
Tc-99 Ni:			**B-A XTLK:**
As Found Efficiencies Pu, Tc:			
Th-230 / C-14	/		/

Is as found efficiency within 20% of the efficiency from the last cal? ( ) Yes (●) No (See Remarks)

Note: If the as found data is within 10% of the last calibration and the B-A Xtalk is <1% and the A-B Xtalk is <10%, then the technician may N/A the plateau section and go directly to remarks.

GRIFFIN INSTRUMENTS

PROBE #: **PR136494**
Date: 06/16/06

PLATEAU AND SET POINT DATA

HV / Vernier:	Tc-99 Source Response (CPM):			Pu-239 Source Response (CPM):			Background (CPM):		Net A to B Xtalk: <10%	B to A Xtalk: <1%
	A ch.	B ch.	Net Eff.	A ch.	B ch.	Net Eff.	A ch.	B ch.		
1700		1499	7.1%	4684		24.5%	194	194		
1750		2534	12.1%	4775		24.4%	303	303		
1800		4009	18.9%	5304		26.1%	523	523		
1850		4852	21.7%	5654		26.2%	853	853		
1875							931	931		

Alpha / Beta Bkg (cpm) 853 853

HV / Vernier		Pu-239	Tc-99 Ni	Tc-99 SS	Th-230	C-14	Sr-90
1850	CPM:	5654	4852	7490	9293	4162	
	AL Efficiencies:	**26.23%**	**21.73%**	**17.79%**	**28.13%**	**7.26%**	

Th-230 Source #99TH470-1815 4/11/06 30,000 dpm Pu-239 Source #2696-00 3/1/00 18,300dpm
Tc-99 on Stainless Steel Source #99TC470-1814 8/3/99 37,300 dpm

Remarks: No previous plateau data. Calibrated w/2221 #149981.

Does Instrument Meet Final Acceptance Criteria?: ◉ Yes ○ No

Calibration Sticker Attached?: ◉ Yes ○ No

Date Instrument is Due For Next Calibration: **06/16/07**

Performed/Reviewed by: Joanne Glenn **Date:** 6/16/2006 **Entered by:**_____**Initials**

Calibrations performed to ANSI N323A-1997 standards.

APPENDIX C

Laboratory Survey Maps

Appendix C

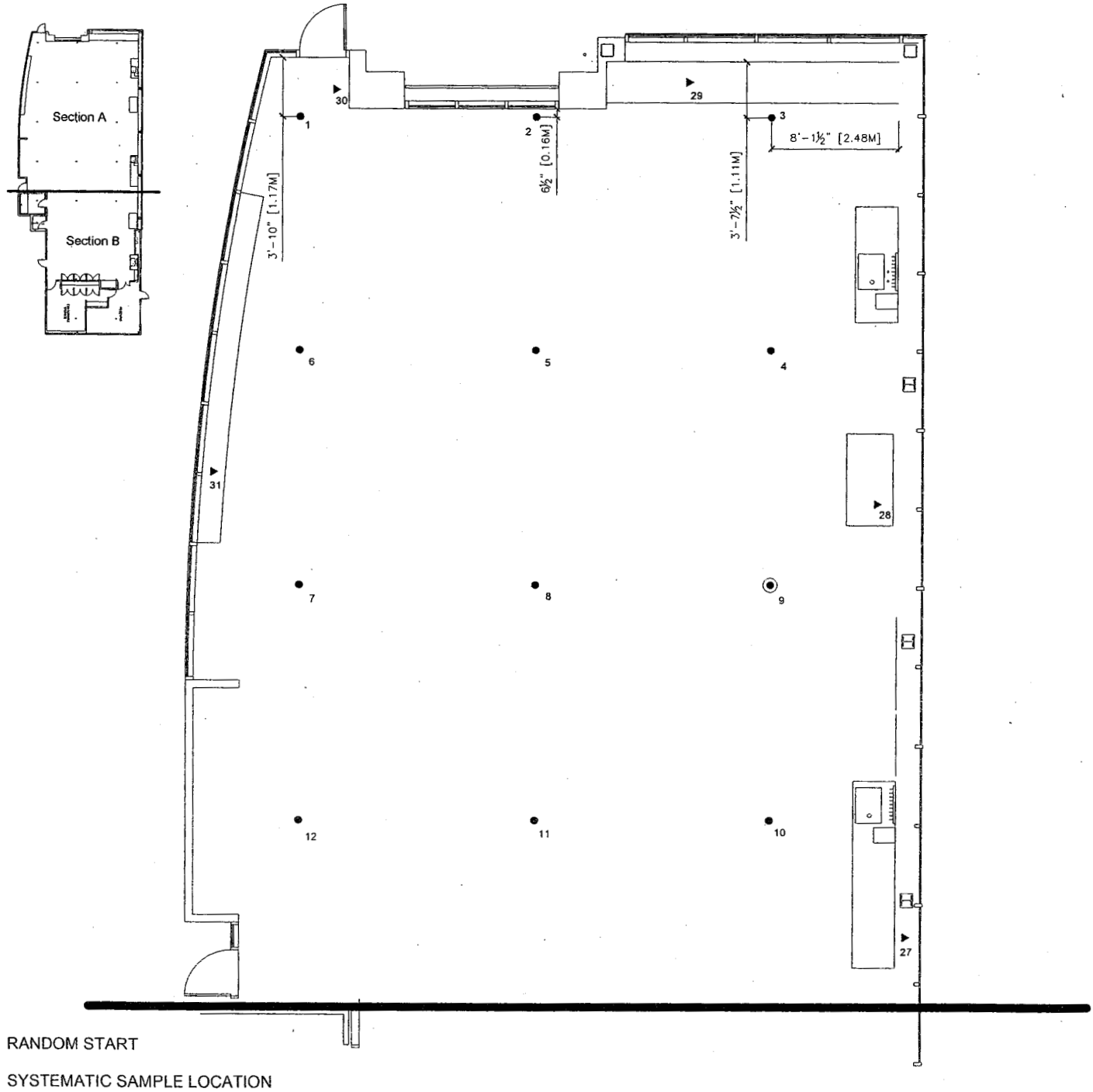
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: 1 Room(s): RG-180 Date: 1/10/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1B (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 15.36m or 15' 4¼"

Section A

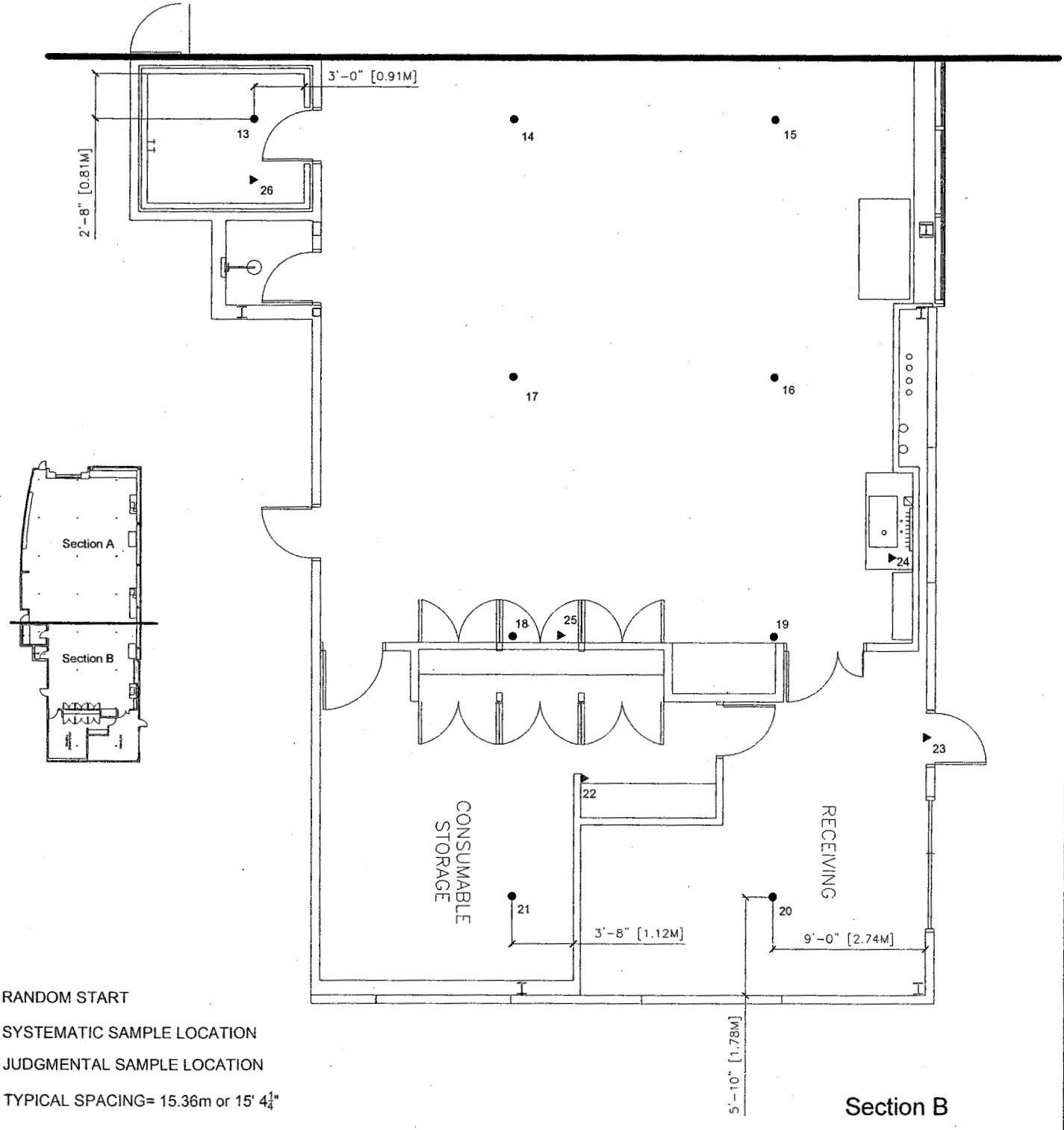
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: 1 Room(s): RG-180 Date: 1/10/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1B (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



Section B

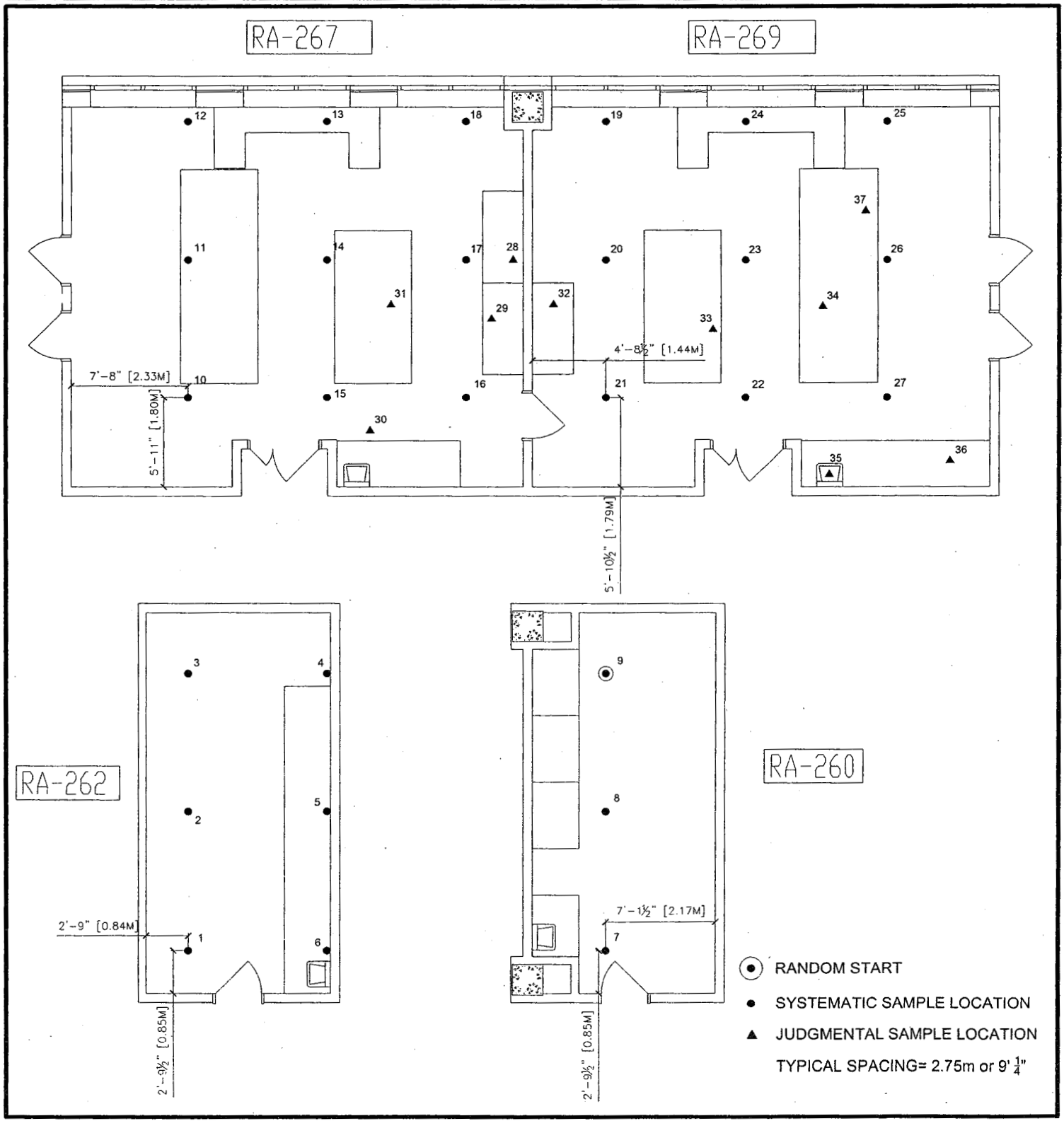
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 2 Room(s): RA-260, 262, 267 and 269 Date: 1/11/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1B (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



Appendix C

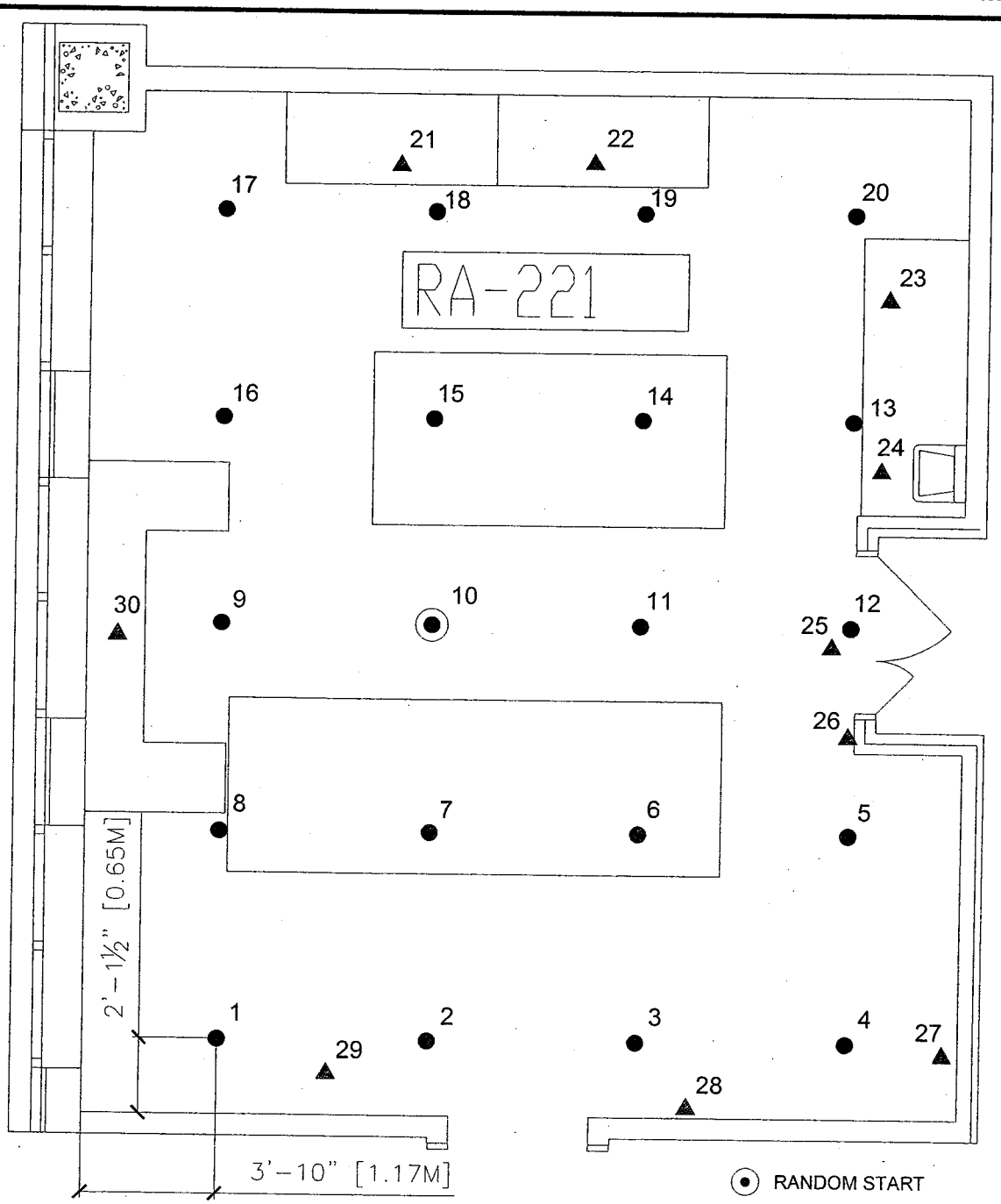
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 3 Room(s): RA-221 Date: 1/11/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 1.76m or 5' 11 ½"

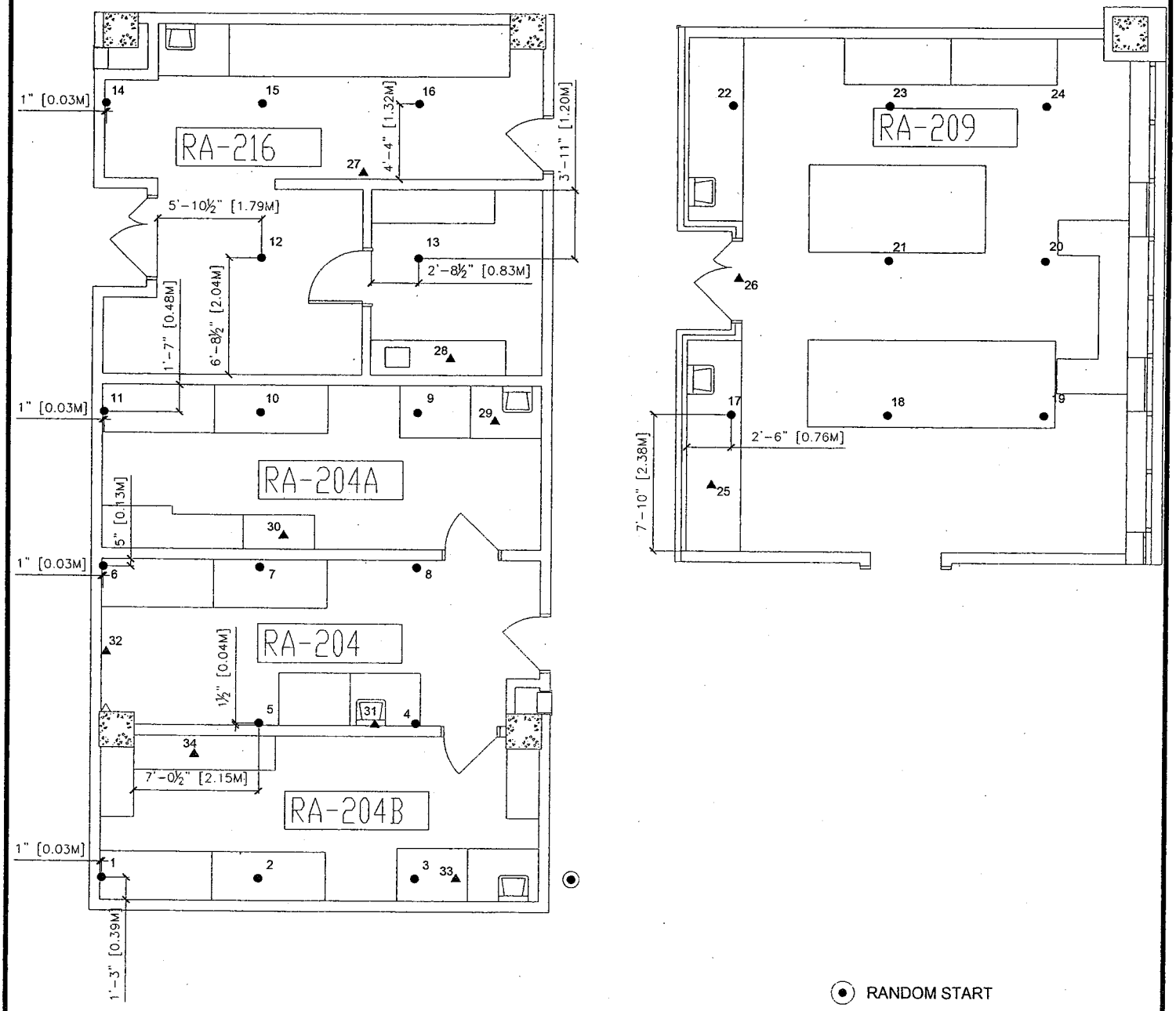
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 4 Room(s): 204, 204A, 204B, 209 and 216 Date: 1/12/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



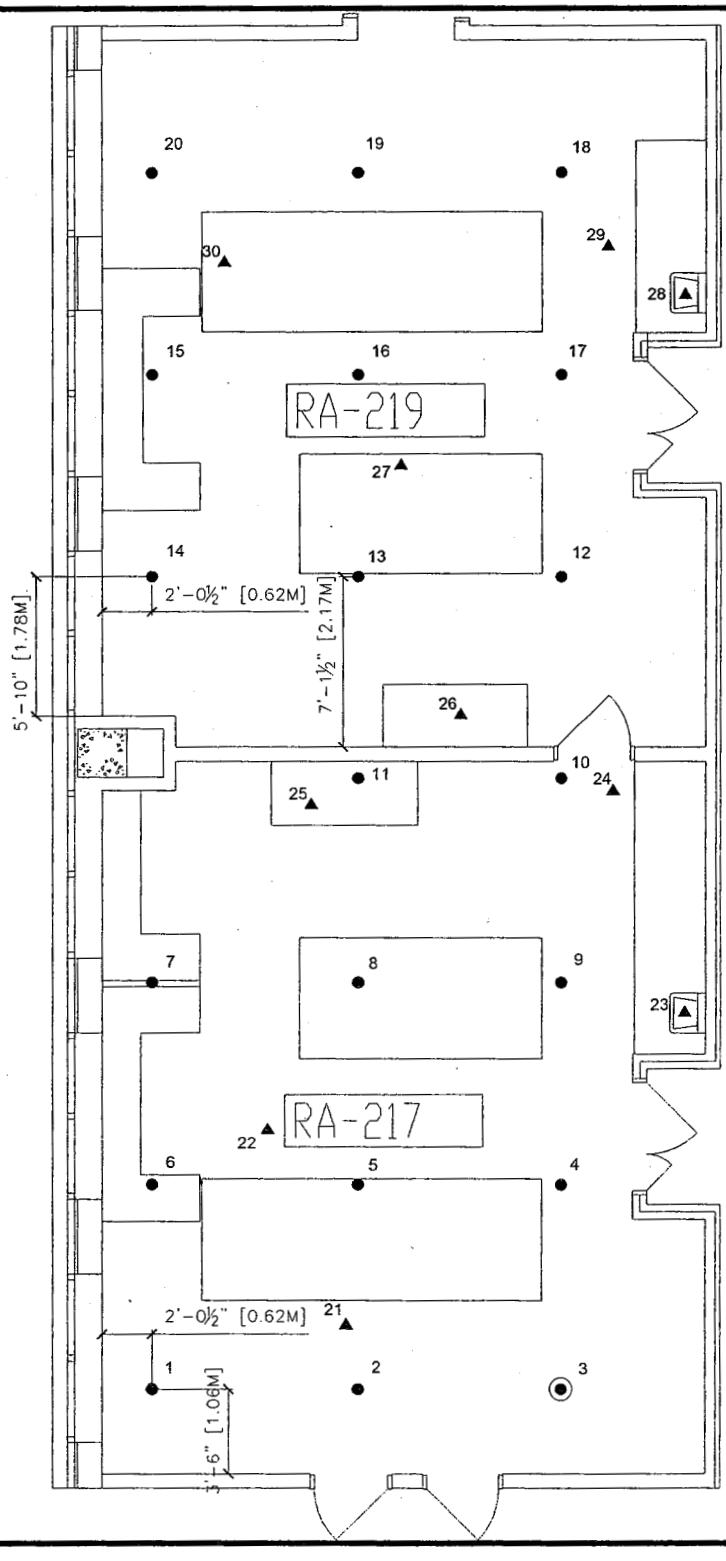
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 5 Room(s): RA-217 and RA-219 Date: 1/12/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1B (Ser.#4422), GP13A Detector, Calibrated on 2/22/06

Surveyor: Dave Aguero, Steve Kapetan



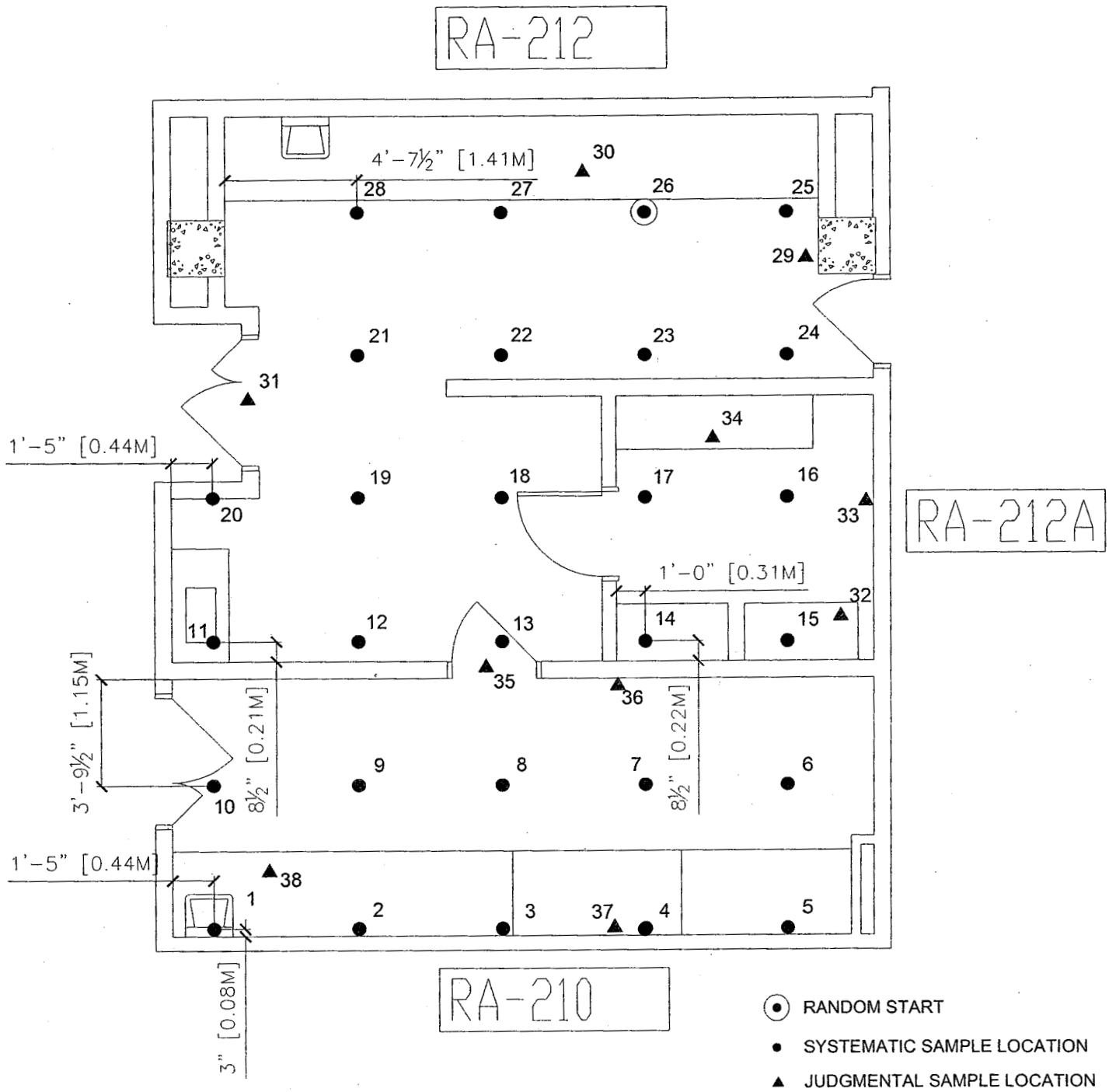
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 6 Room(s): 210, 212 and 212A Date: 1/15/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1B (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Trace M. Clemons, Vicki Litton



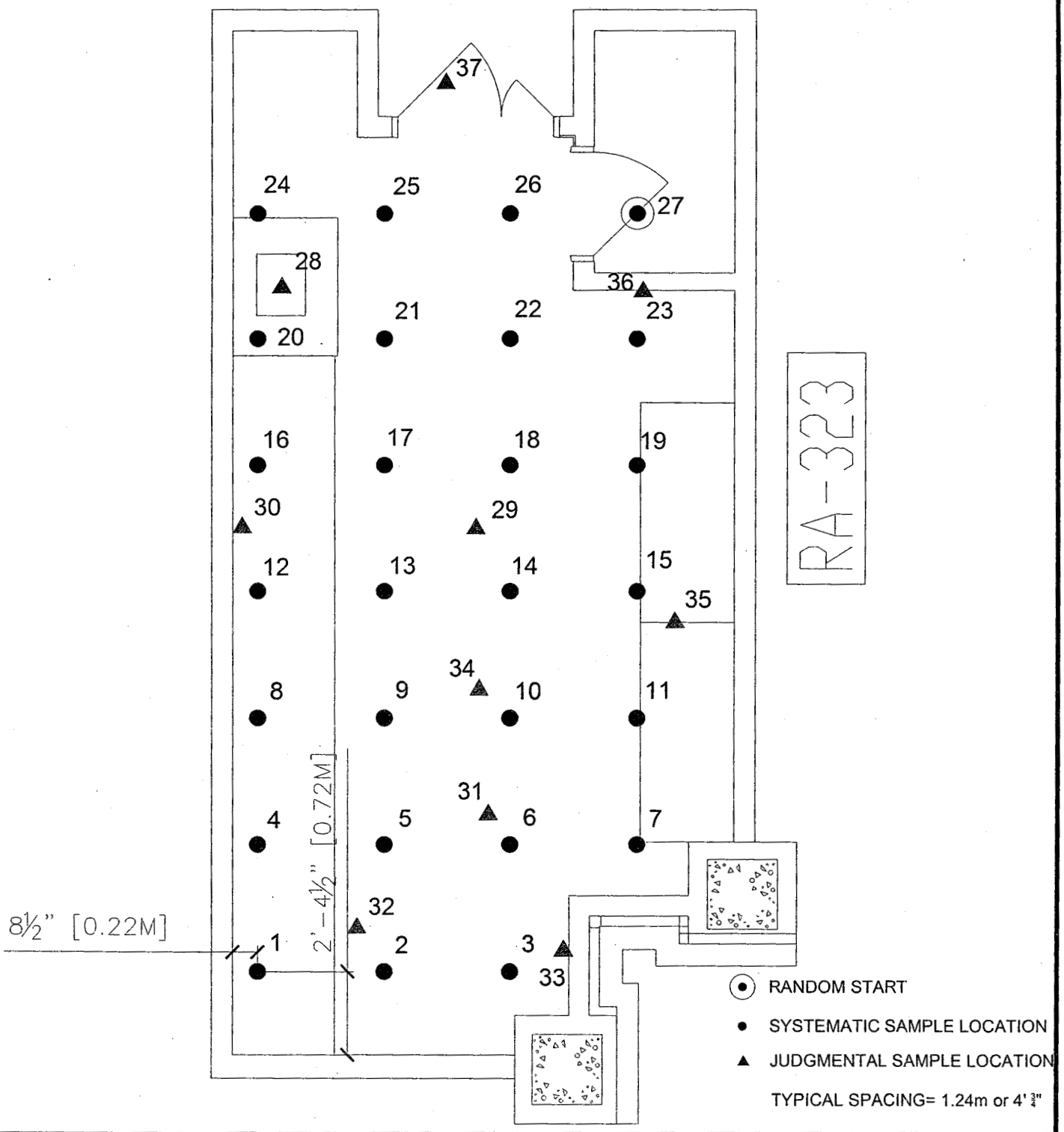
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 7 Room(s): RA-323 Date: 1/15/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1B (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



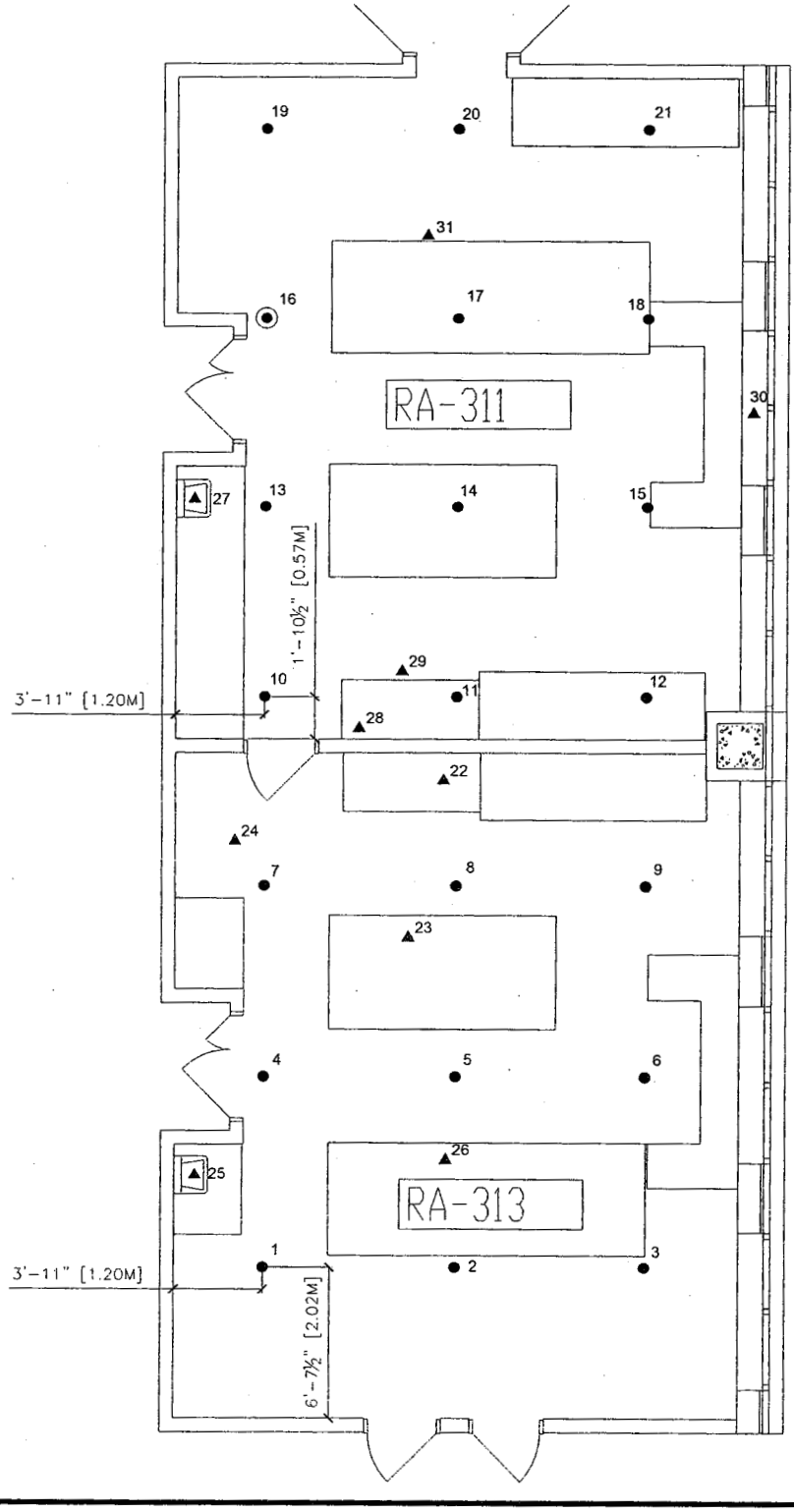
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 8 Room(s): RA-311 and RA-313 Date: 1/15/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1B (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 2.56m or 8' 5"

Appendix C

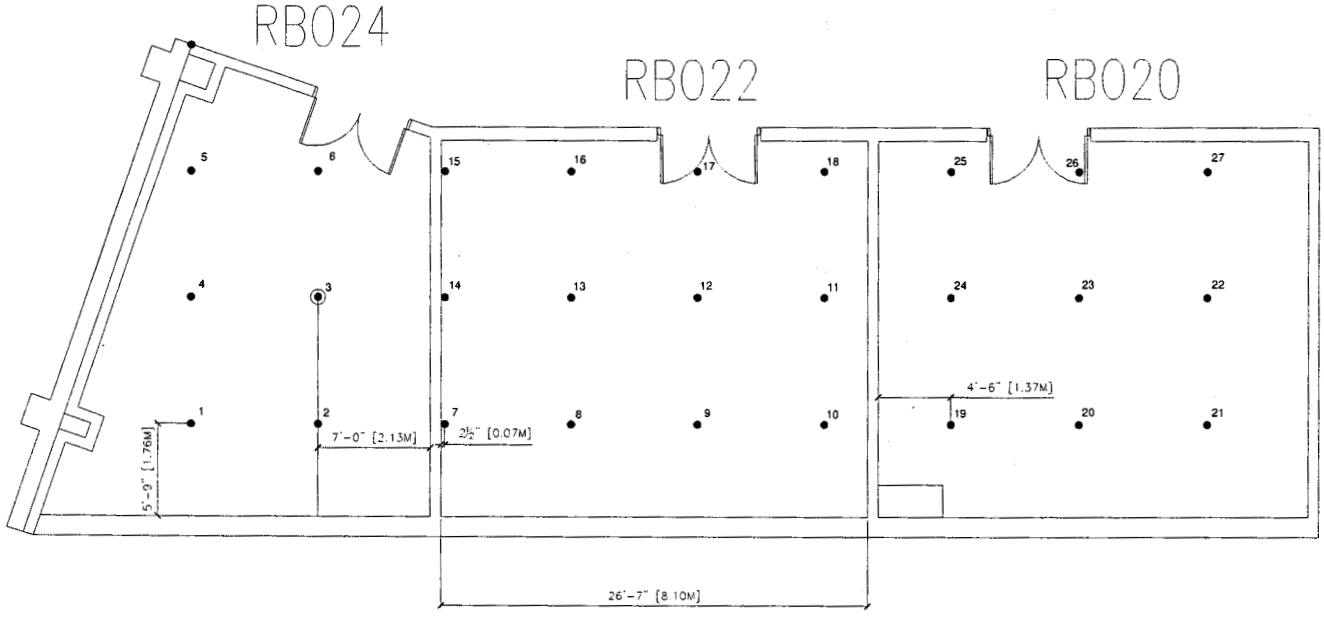
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 9 Room(s): RB-020, 022 and 024 Date: 1/25/2007 Class: 2

Instruments: Bicron Electra 1B (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1B (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 2.40m or 7' 10 ½"

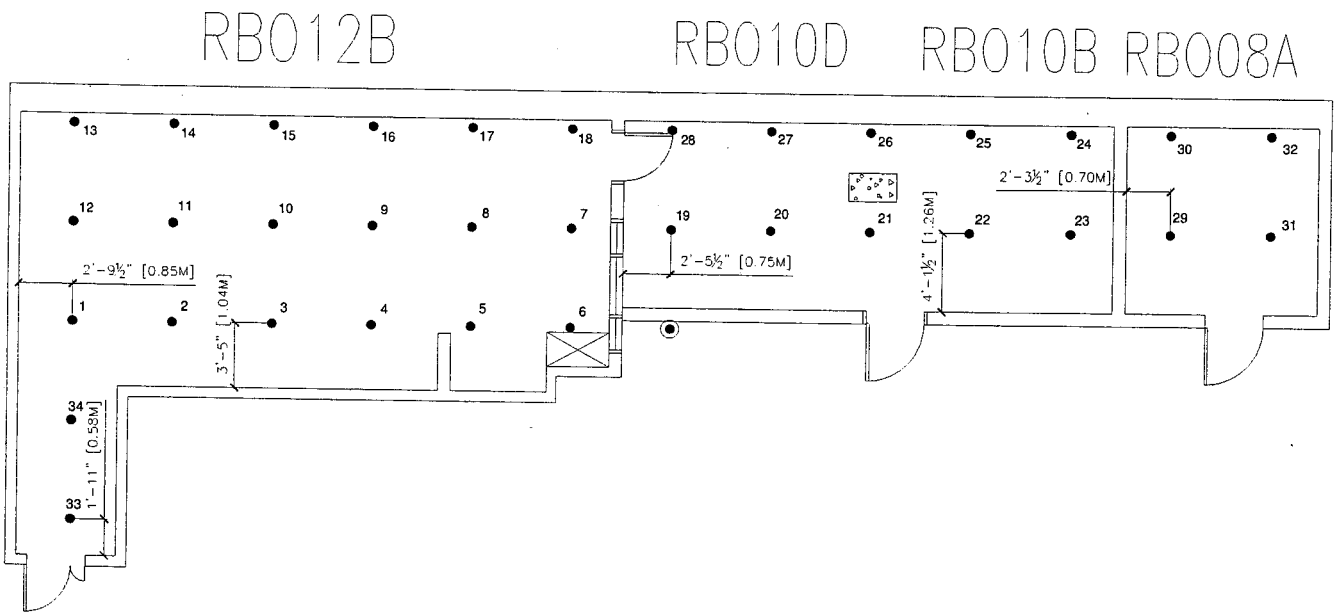
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 10 Room(s): RB008A, 010B, 010D and 012B Date: 1/31/2007 Class: 2

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13B Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 1.58m or 5' 2¼"

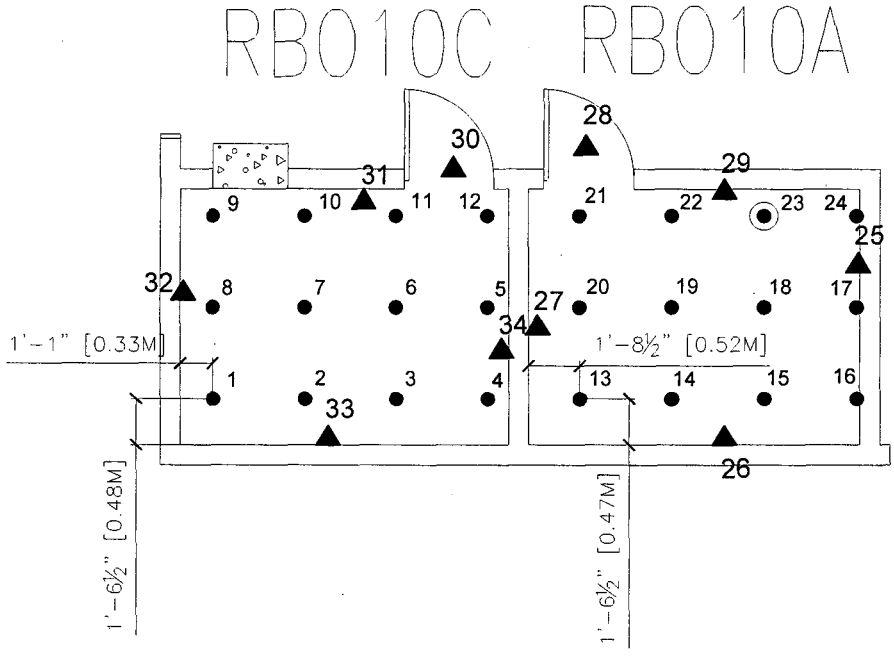
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 11 Room(s): RB010A and 010C Date: 1/30/2007 Class: 2

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13B Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 0.94m or 3' ¾"

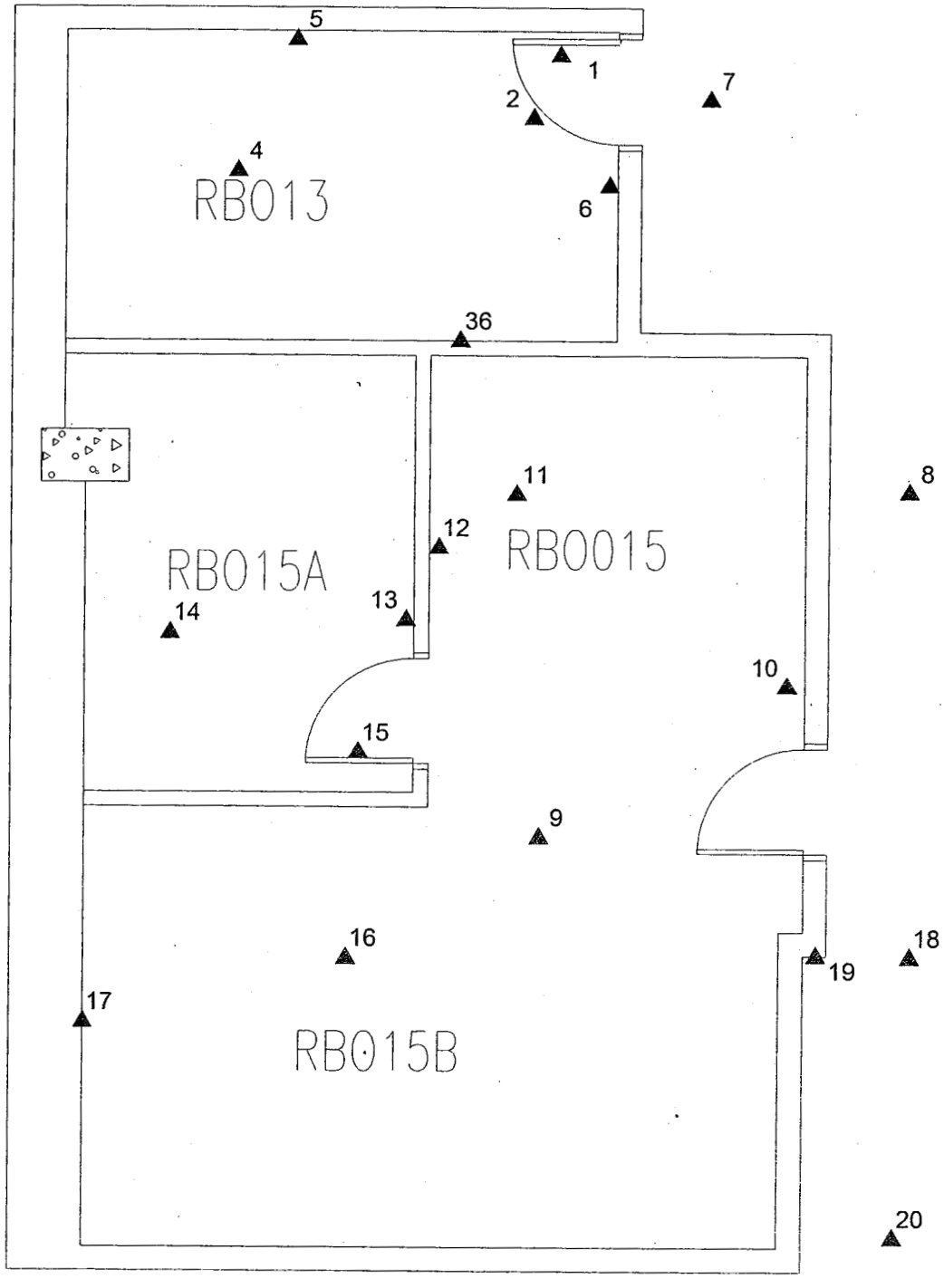
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 12 Room(s): RB013,015, 015A, 015B Date: 1/25/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

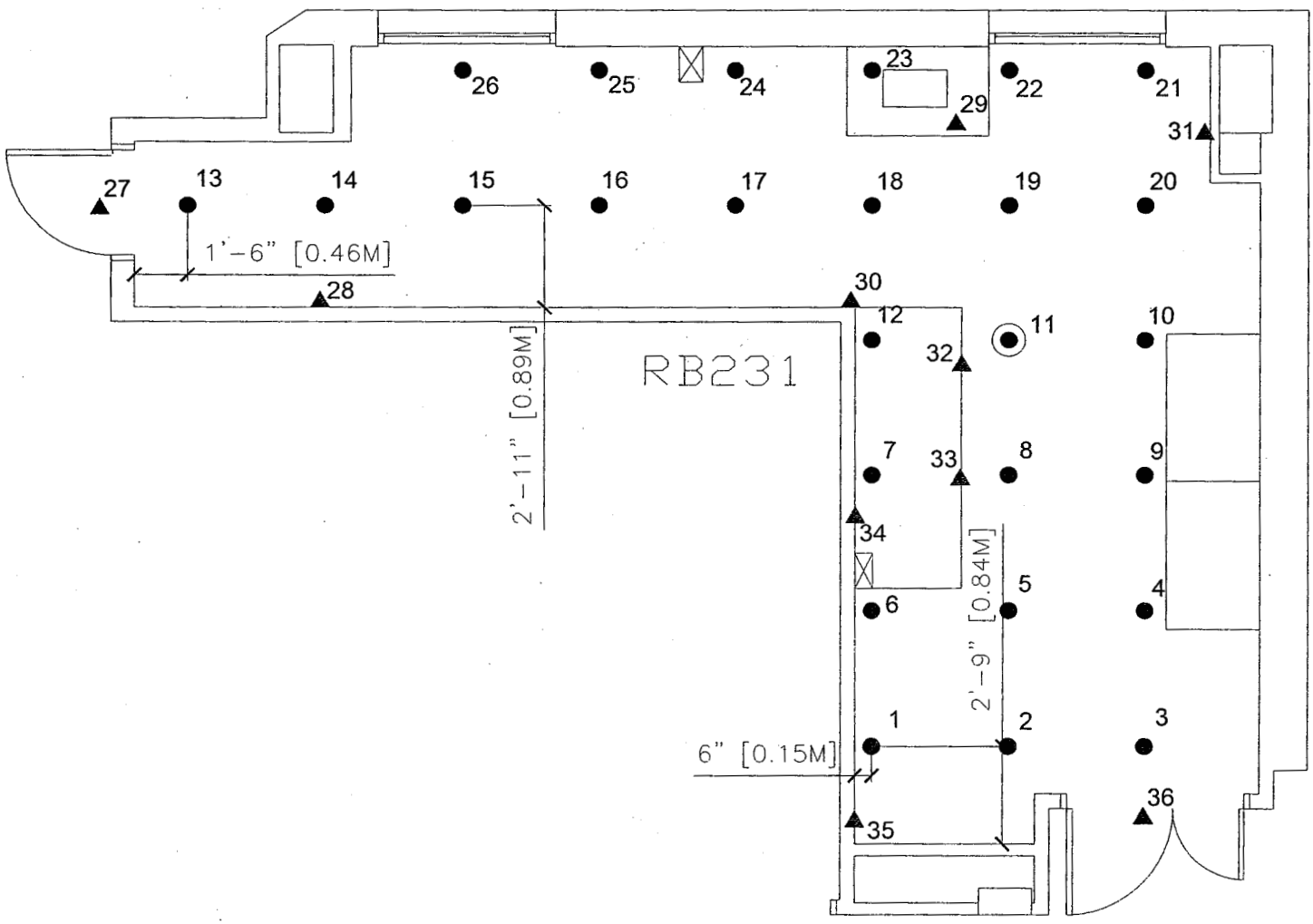
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 13 Room(s): RB231 Date: 1/24/2007 Class: 2

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13B Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



RANDOM START

SYSTEMATIC SAMPLE LOCATION

JUDGMENTAL SAMPLE LOCATION

TYPICAL SPACING= 1.18m or 3' 10 $\frac{1}{4}$"

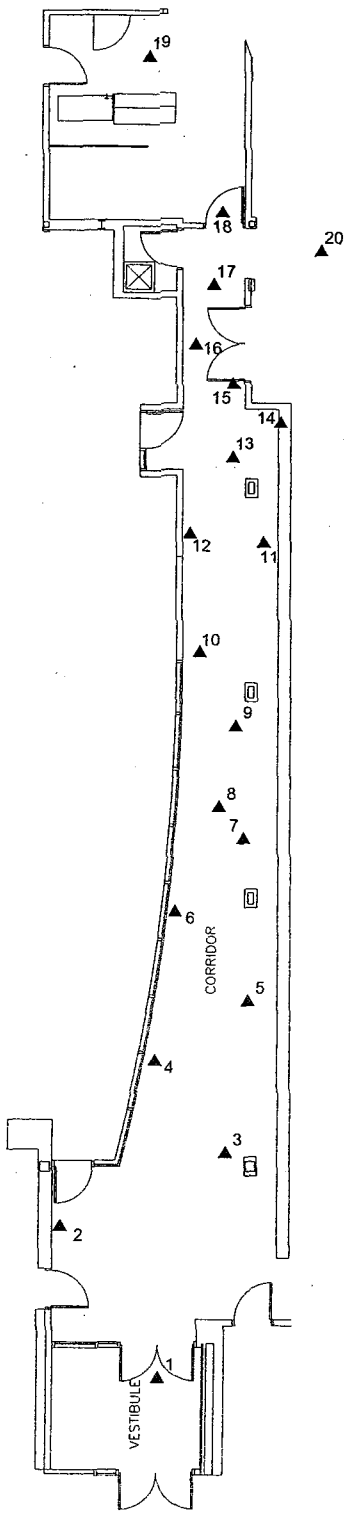
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: 14 Room(s): Area outside of Lab 180 Date: 1/17/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

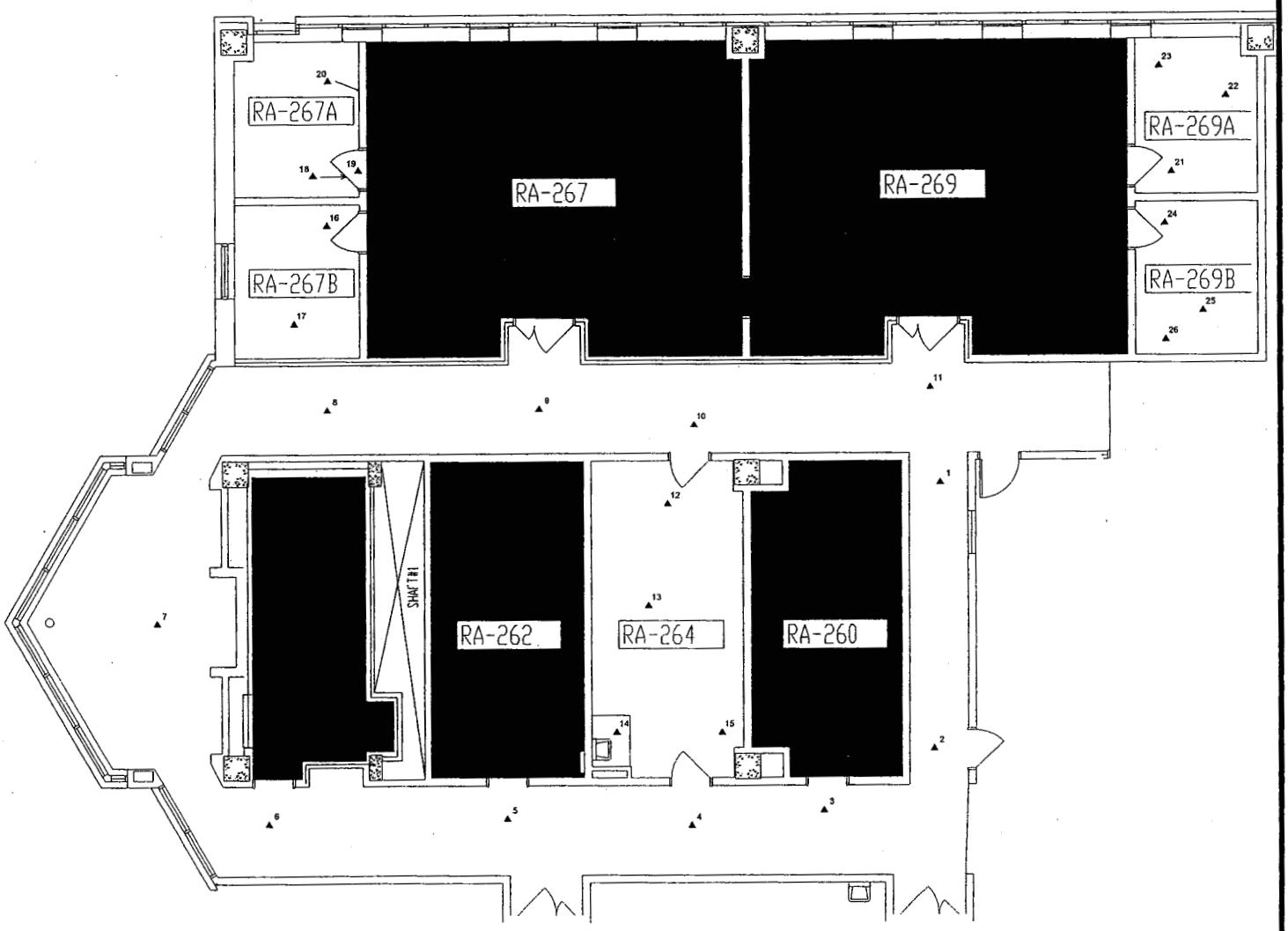
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 15 Room(s): Areas Adjacent to Survey Unit 2 Date: 1/17/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

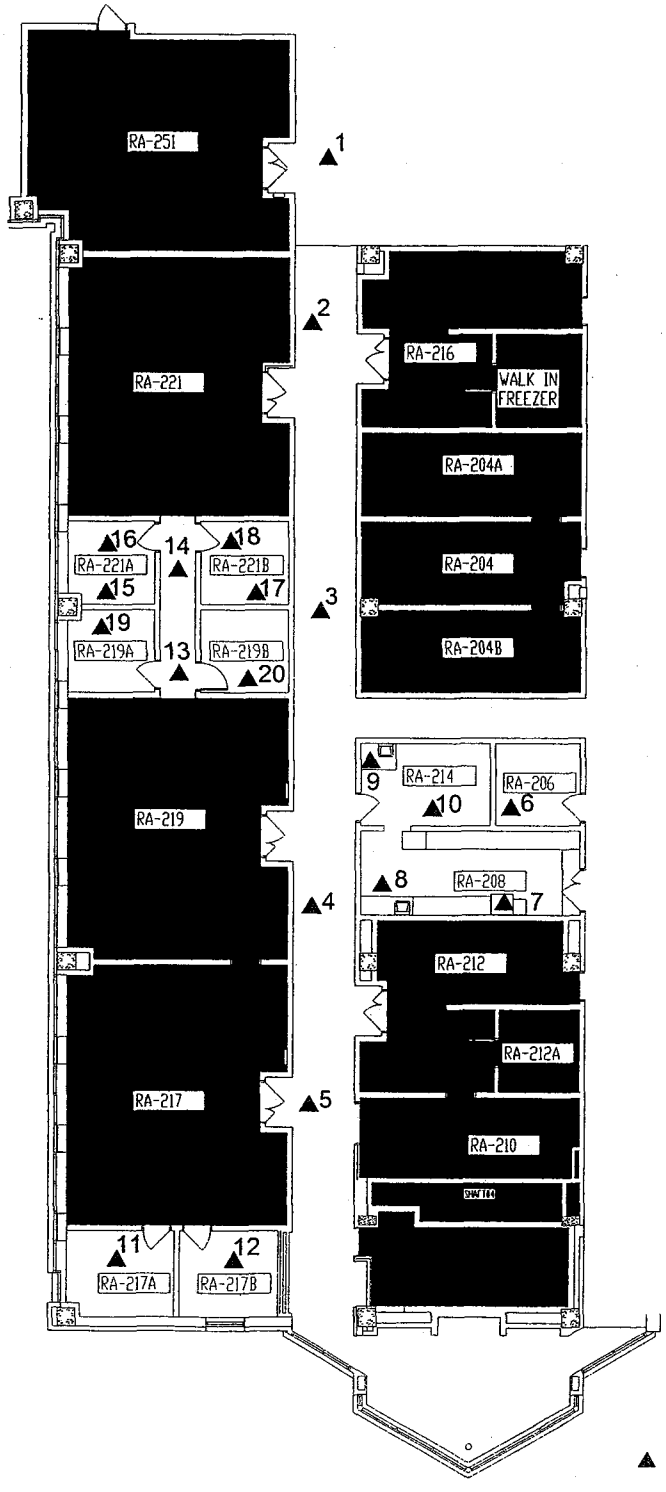
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 16 Room(s): Areas Adjacent to Survey Units 3, 4, 5 & 6 Date: 1/17/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M.Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

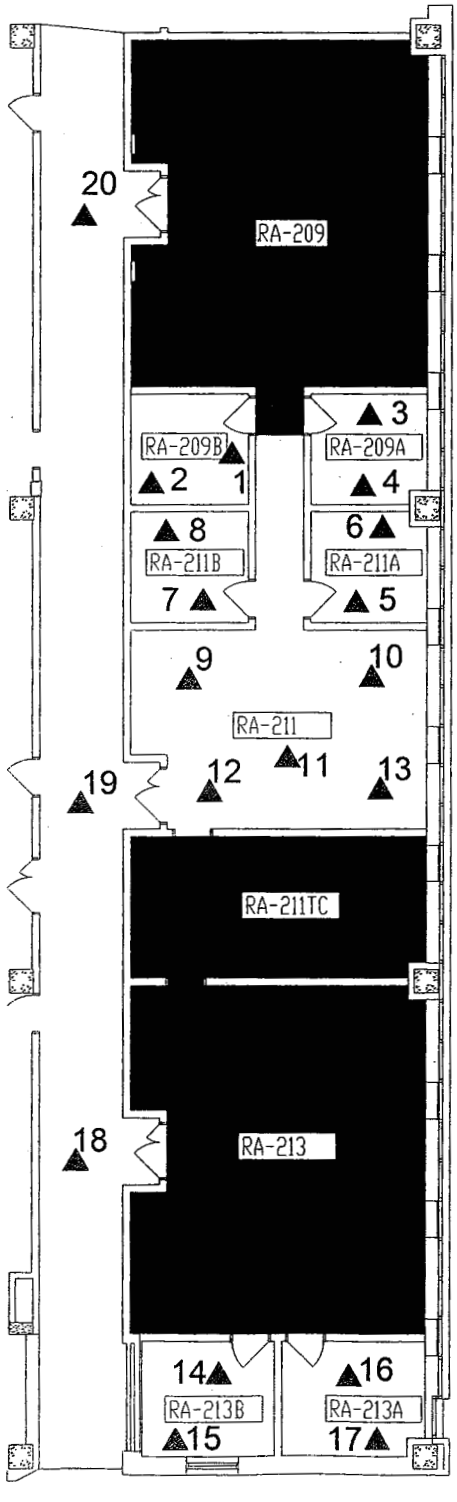
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 17 Room(s): Areas Adjacent to Survey Units 4 & 21 Date: 1/18/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

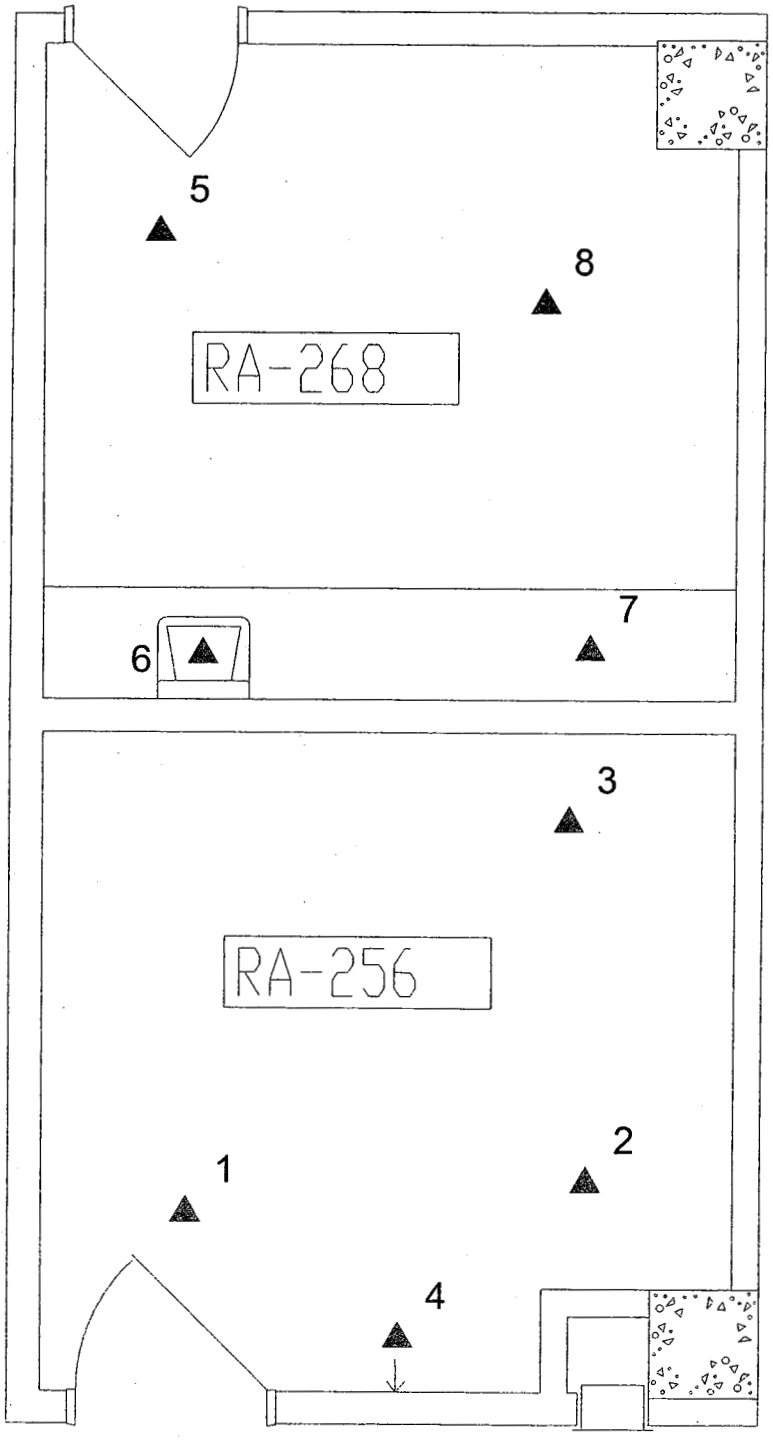
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 18 Room(s): Rooms 256 and 258 Date: 1/18/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

Appendix C

Bayer Pharmaceuticals Corporation

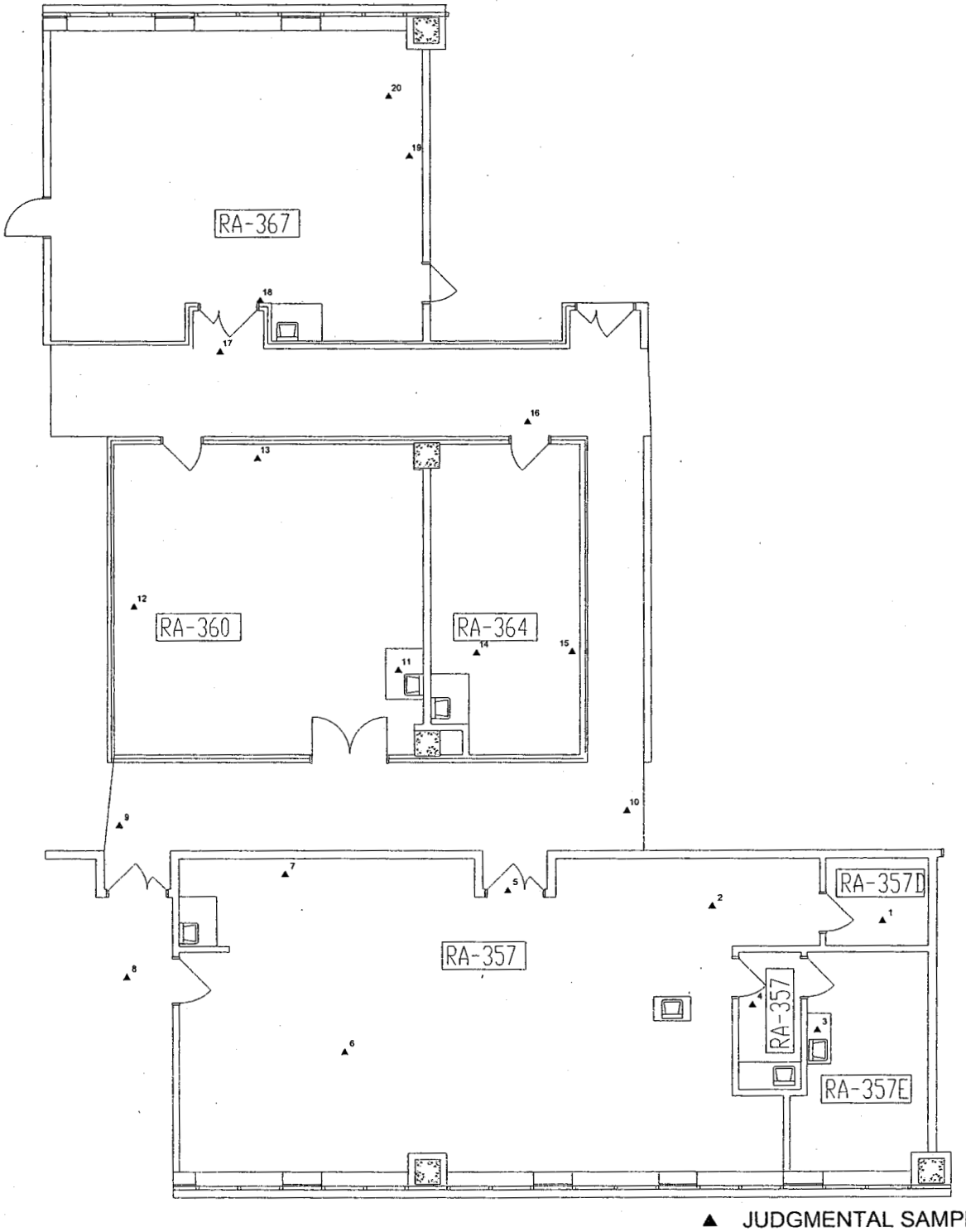
Radiation Contamination Survey Report

Building: B31 Survey Unit: 19 Date: 1/18/2007 Class: 3

Room(s): Areas around and including previously decommissioned Labs 360, 364, 357 and 367

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

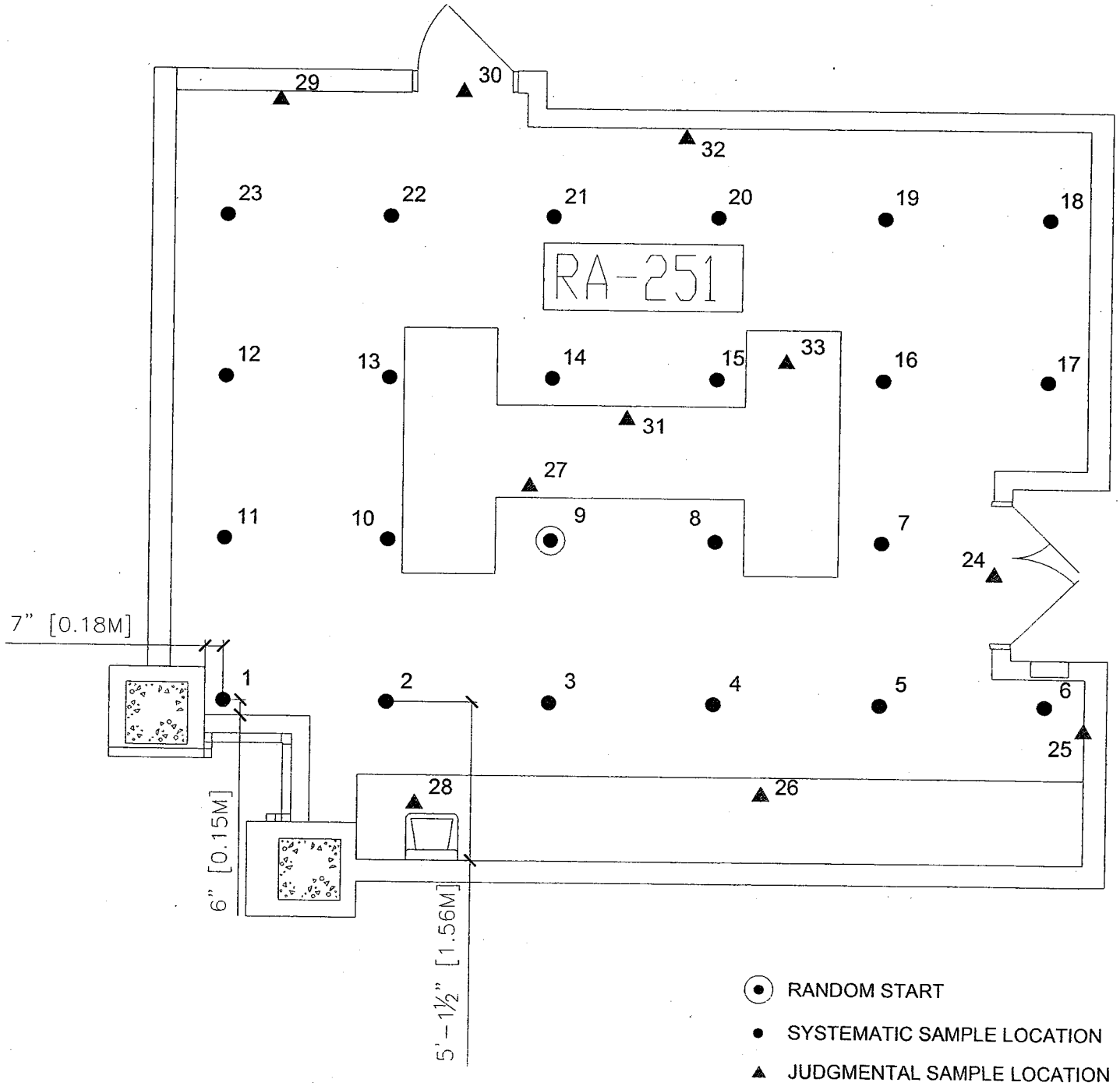
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 20 Room(s): RA251 Date: 1/16/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



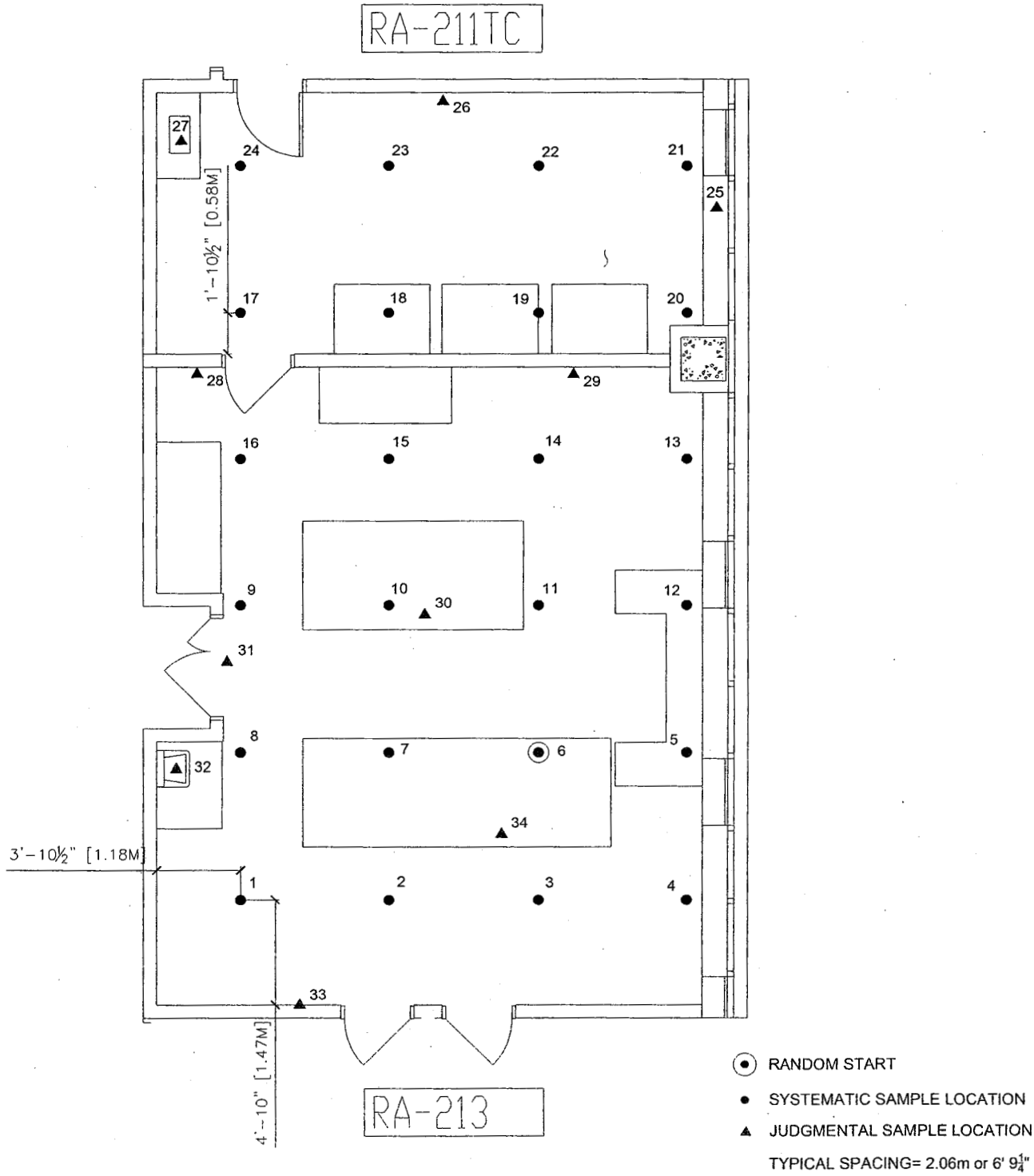
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 21 Room(s): RA211TC and 213 Date: 1/16/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



Bayer Pharmaceuticals Corporation

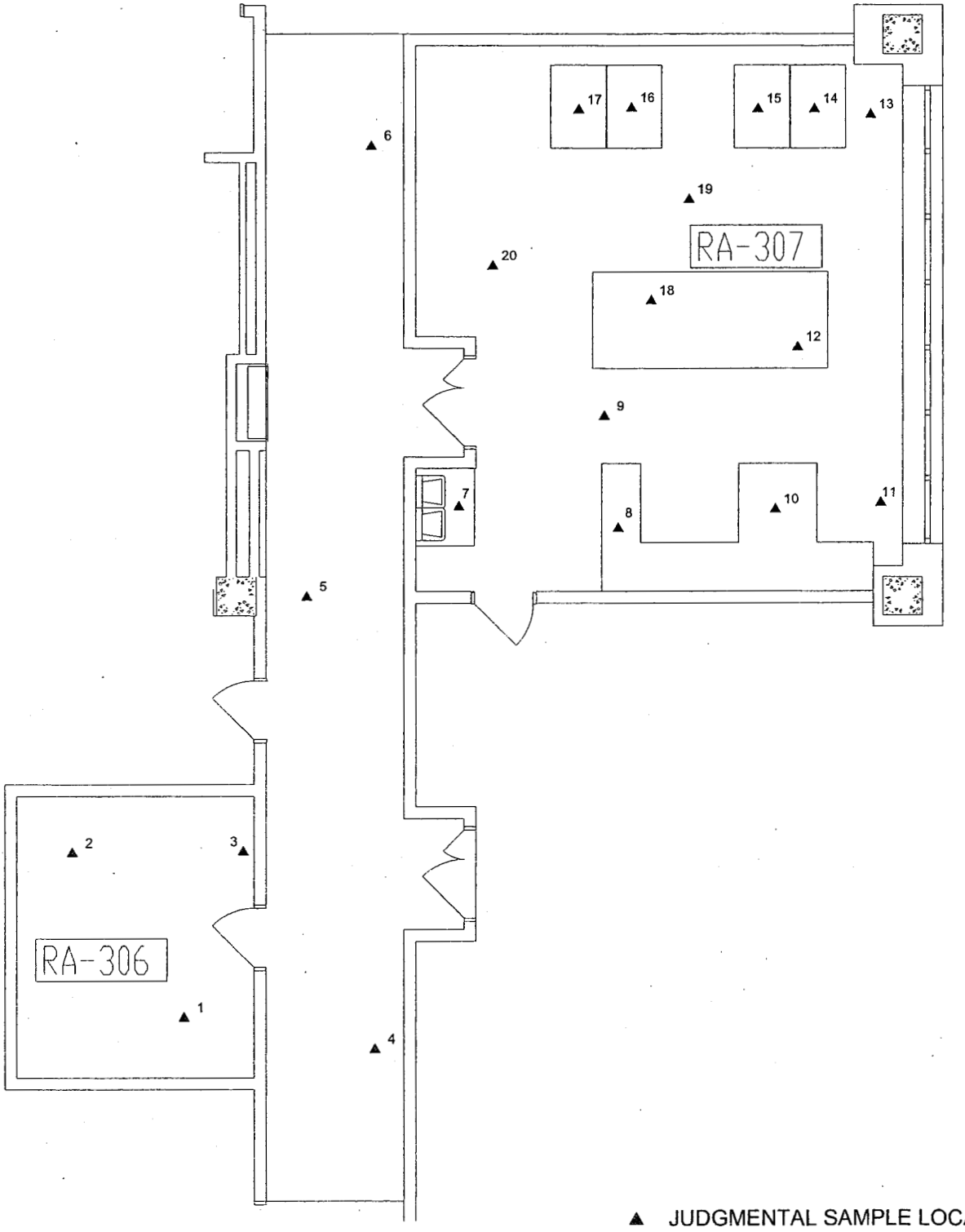
Radiation Contamination Survey Report

Building: B31 Survey Unit: 22 Date: 1/19/2007 Class: 3

Room(s): Areas around and including previously decommissioned Labs 306 and 307

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

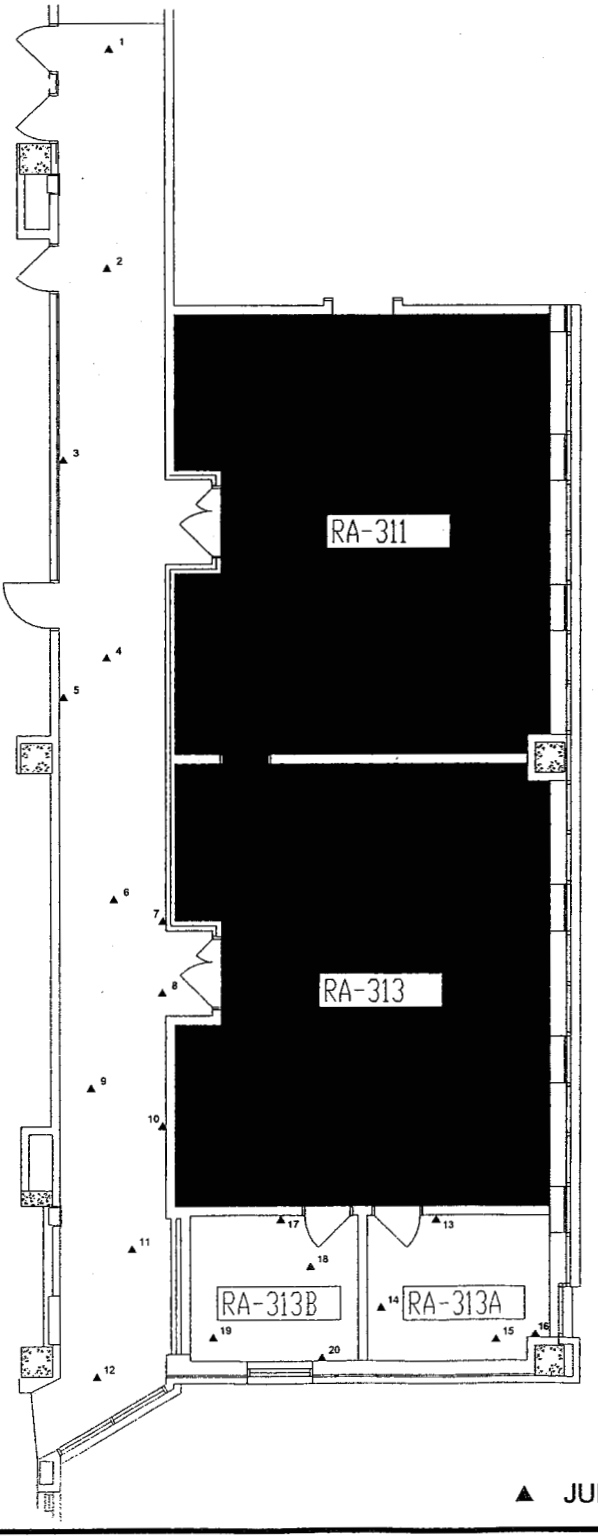
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 23 Room(s): Areas around Labs 311 and 313 Date: 1/22/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

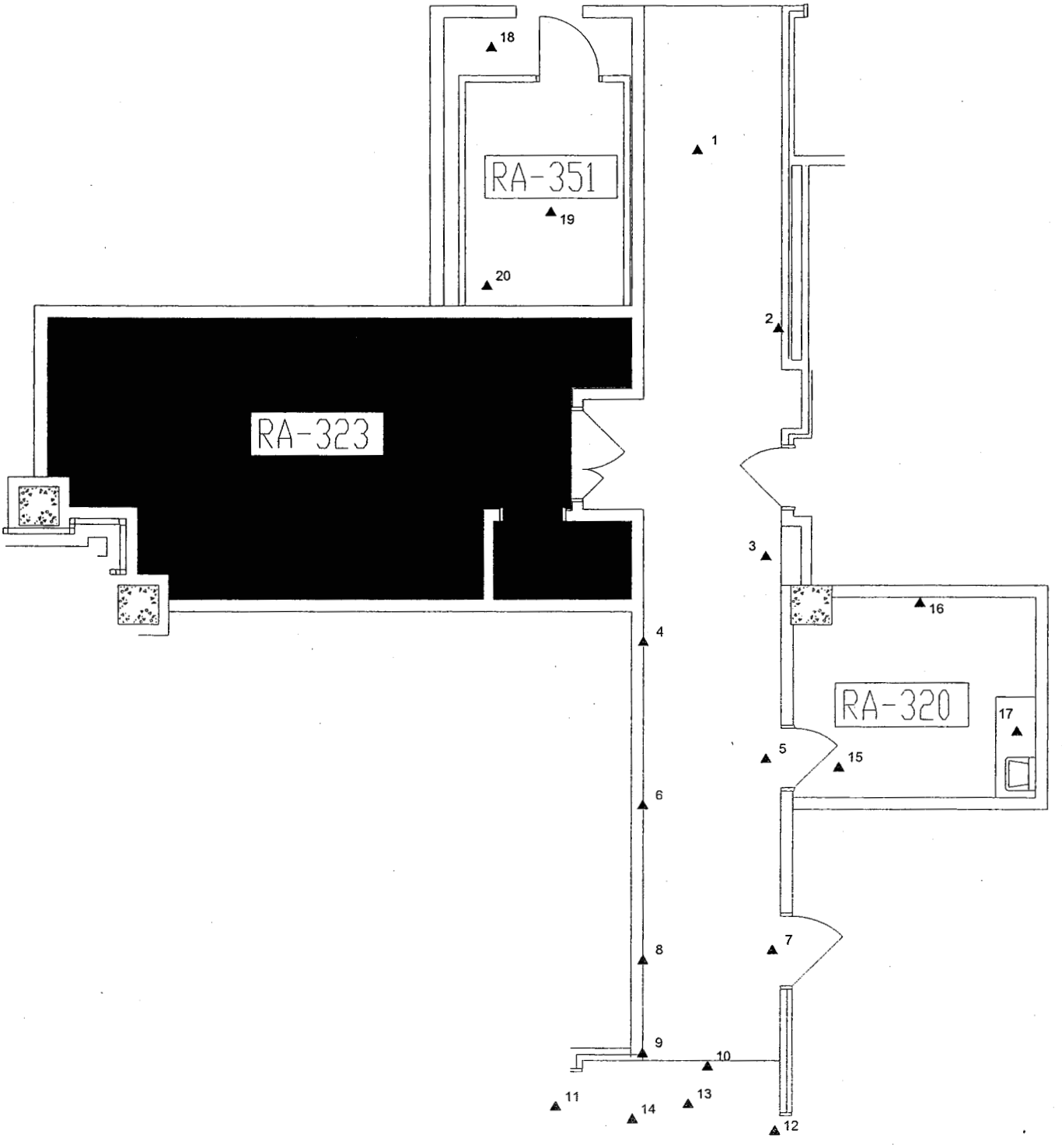
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 24 Room(s): Area around Lab 320, 323, 351 Date: 1/19/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

Bayer Pharmaceuticals Corporation

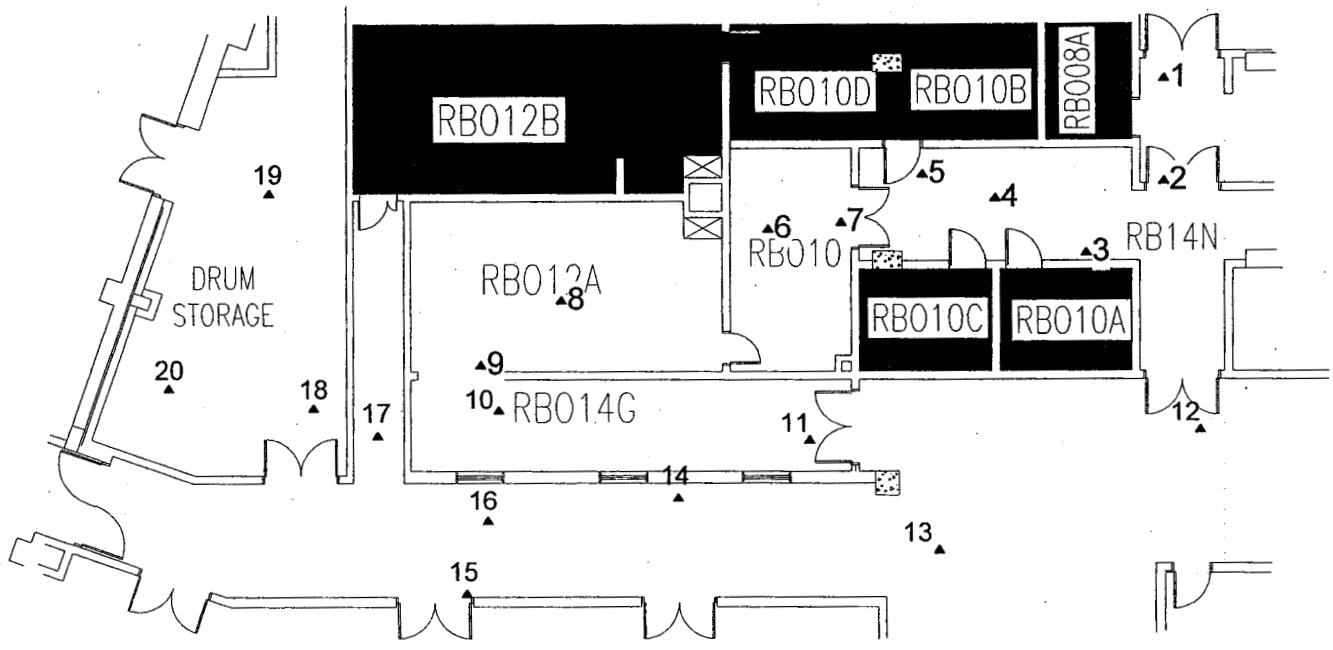
Radiation Contamination Survey Report

Building: B24 Survey Unit: 25 Date: 2/1/2007 Class: 3

Room(s): Areas and rooms around Class 2 Survey Units in B24 Basement

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13B Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

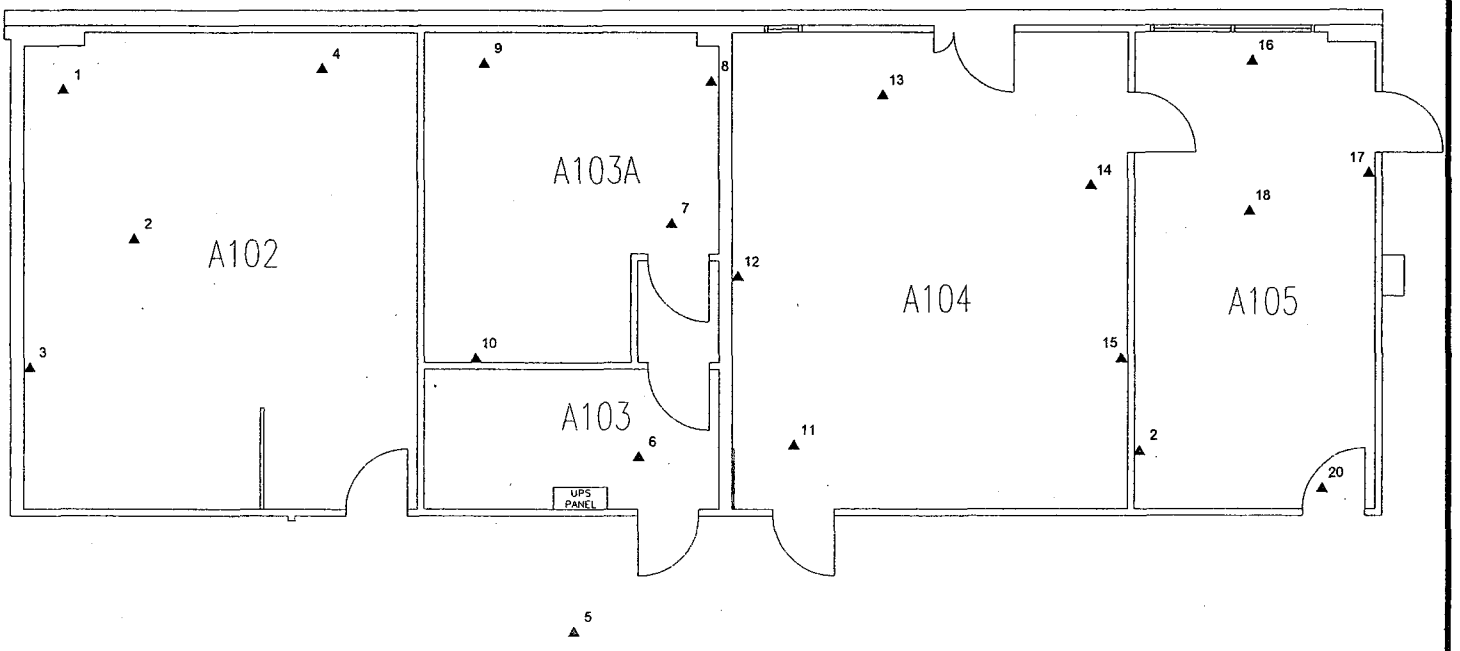
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: 26 Room(s): A102, A103, A103A, A104 and A105 Date: 1/22/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

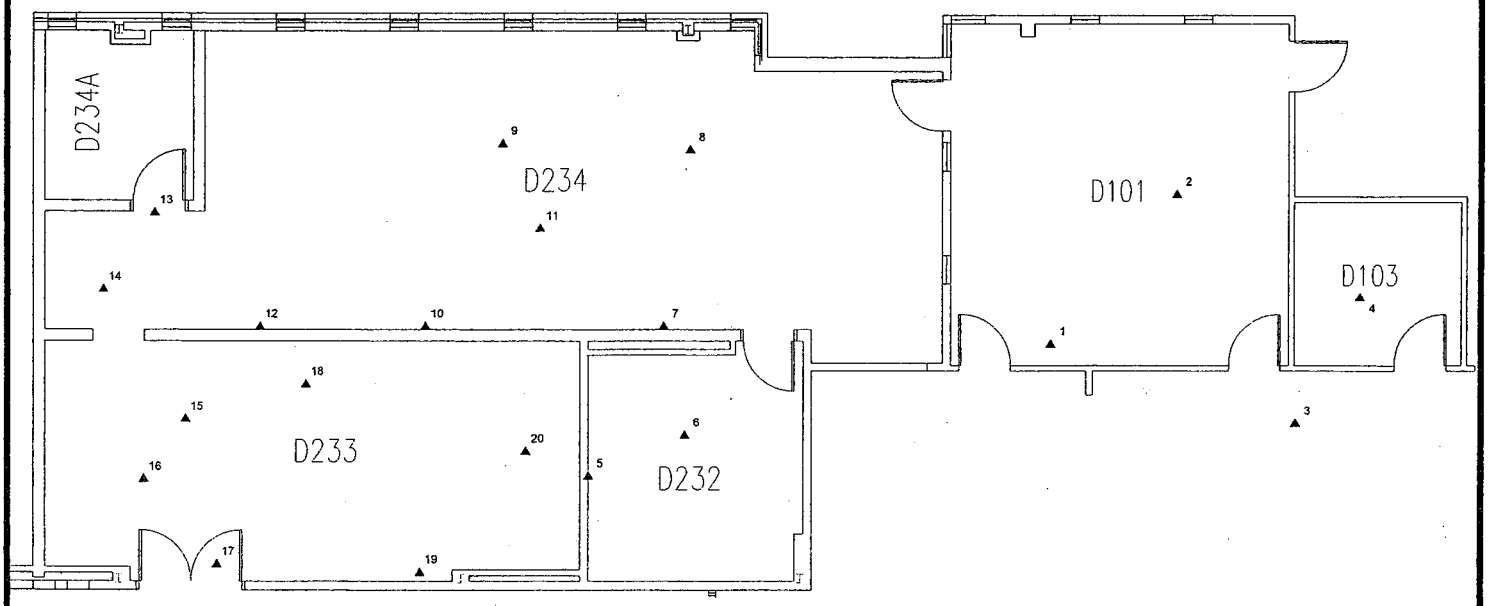
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: 27 Room(s): D101, D103, D232, D233, D234 and D234A Date: 1/23/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vick Litton



▲ JUDGMENTAL SAMPLE LOCATION

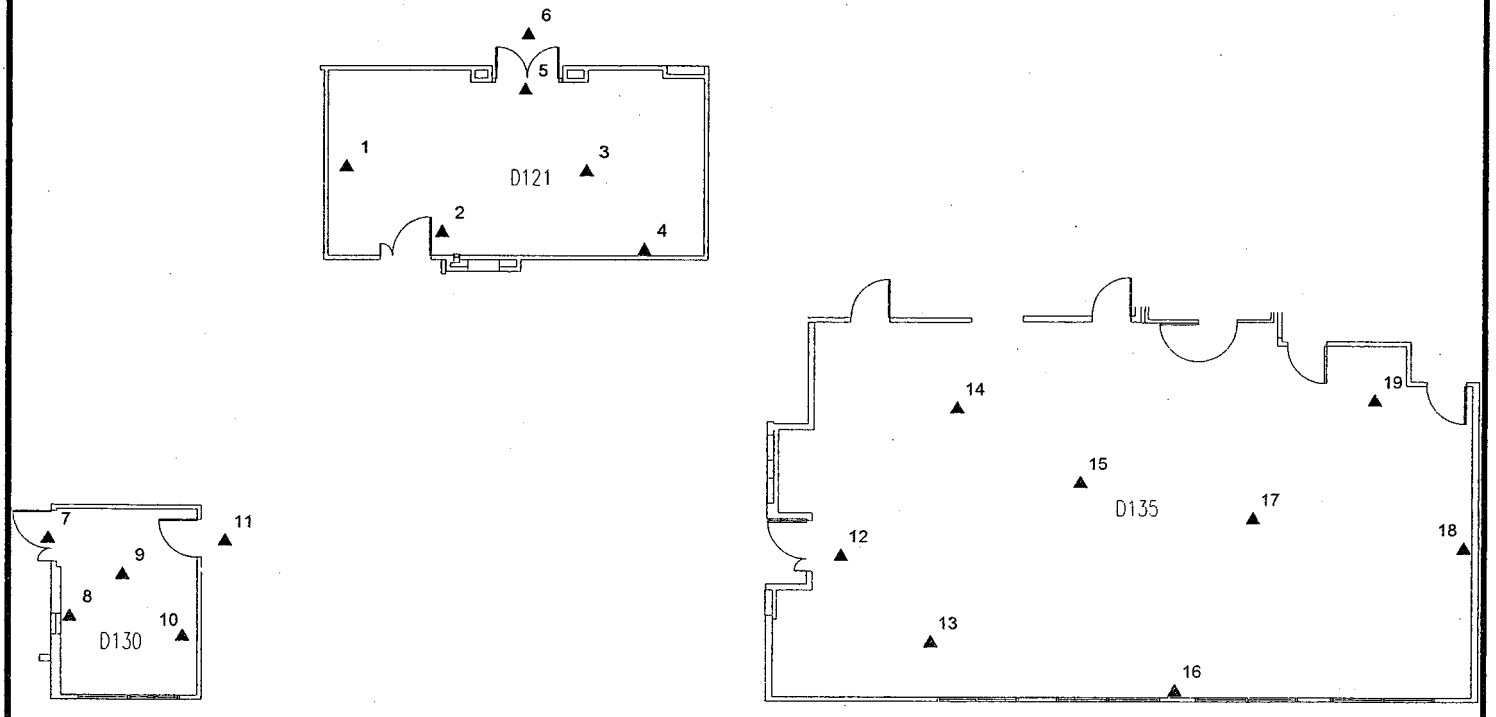
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: 28 Room(s): D121, D130 and D135 Date: 1/22/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

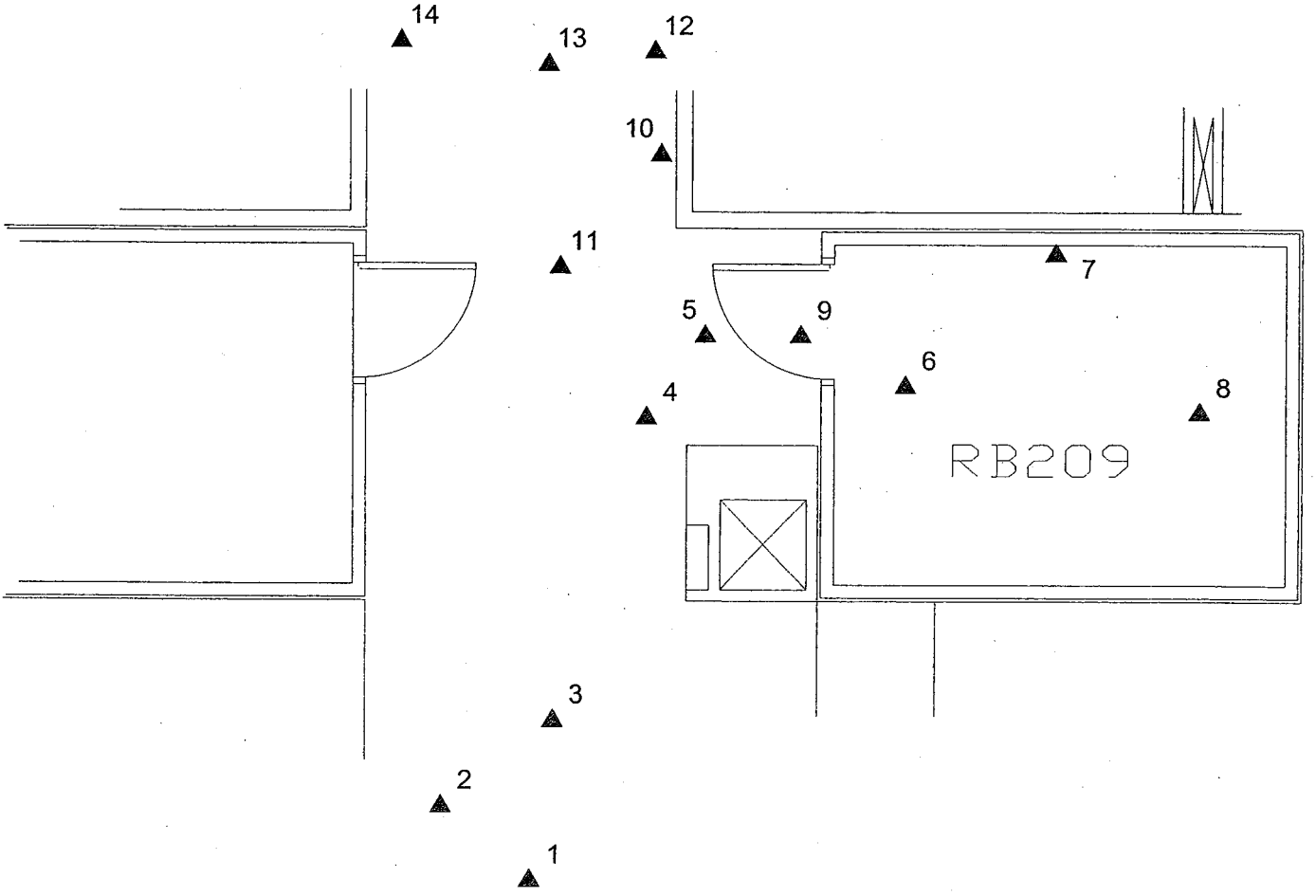
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 29 Room(s): RB209 and Adjacent Hallway Date: 1/19/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

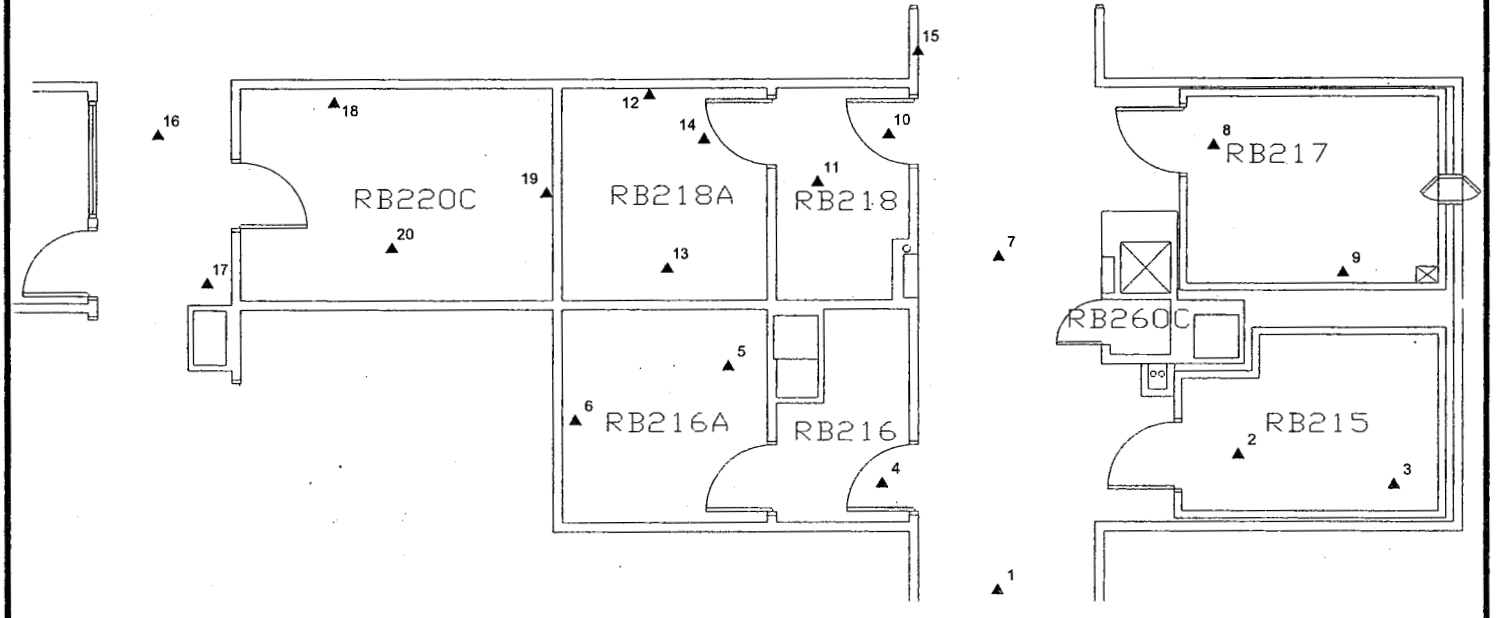
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 30 Date: 1/23/2007 Class: 3
Room(s): 215, 216, 216A, 217, 218, 218A, 220C and adjacent hallways

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

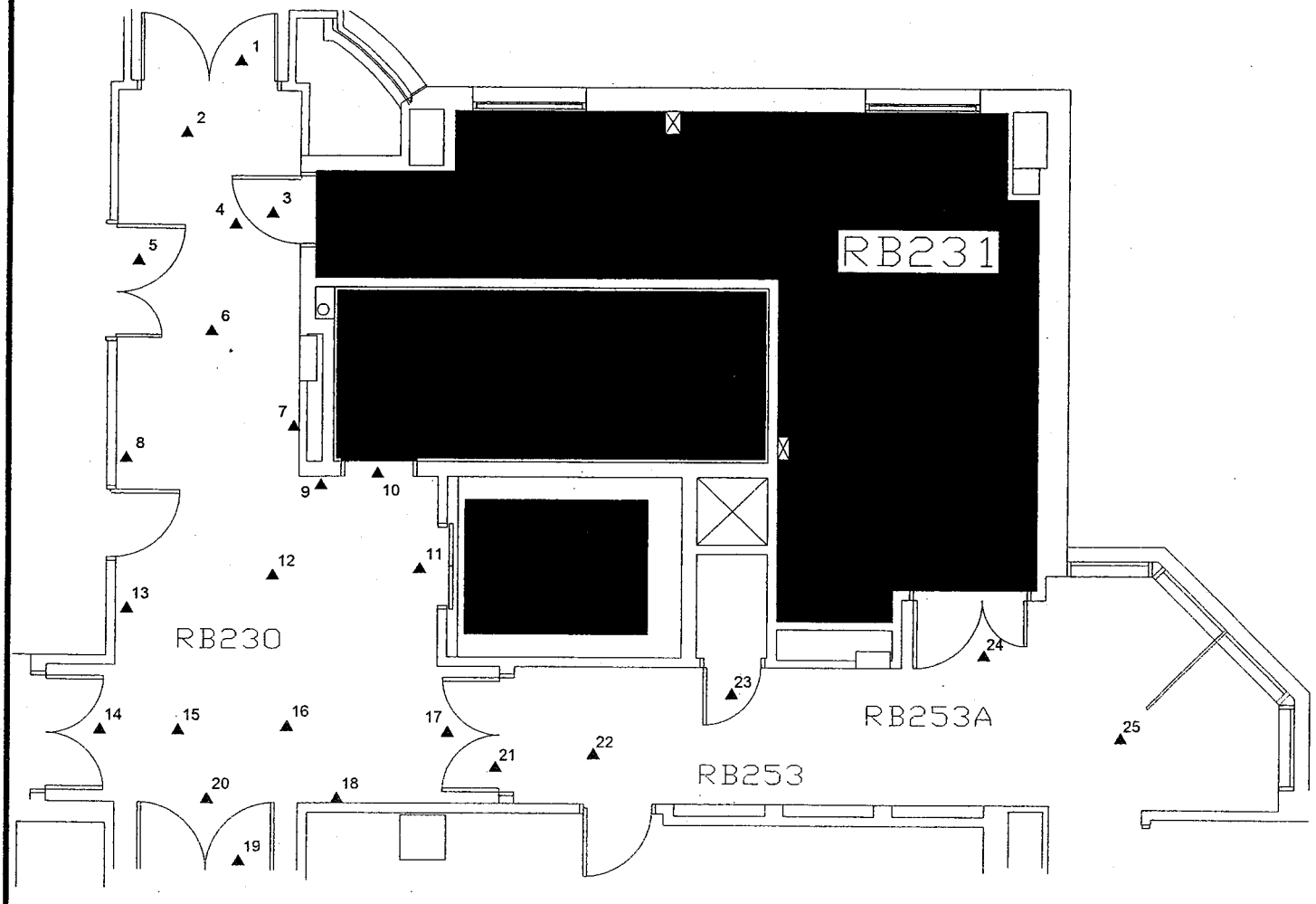
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: 31 Room(s): Hallways adjacent to Room 231 Date: 1/24/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Bicron Electra 1A (Ser.#4807), GP13A Detector, Calibrated on 2/17/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

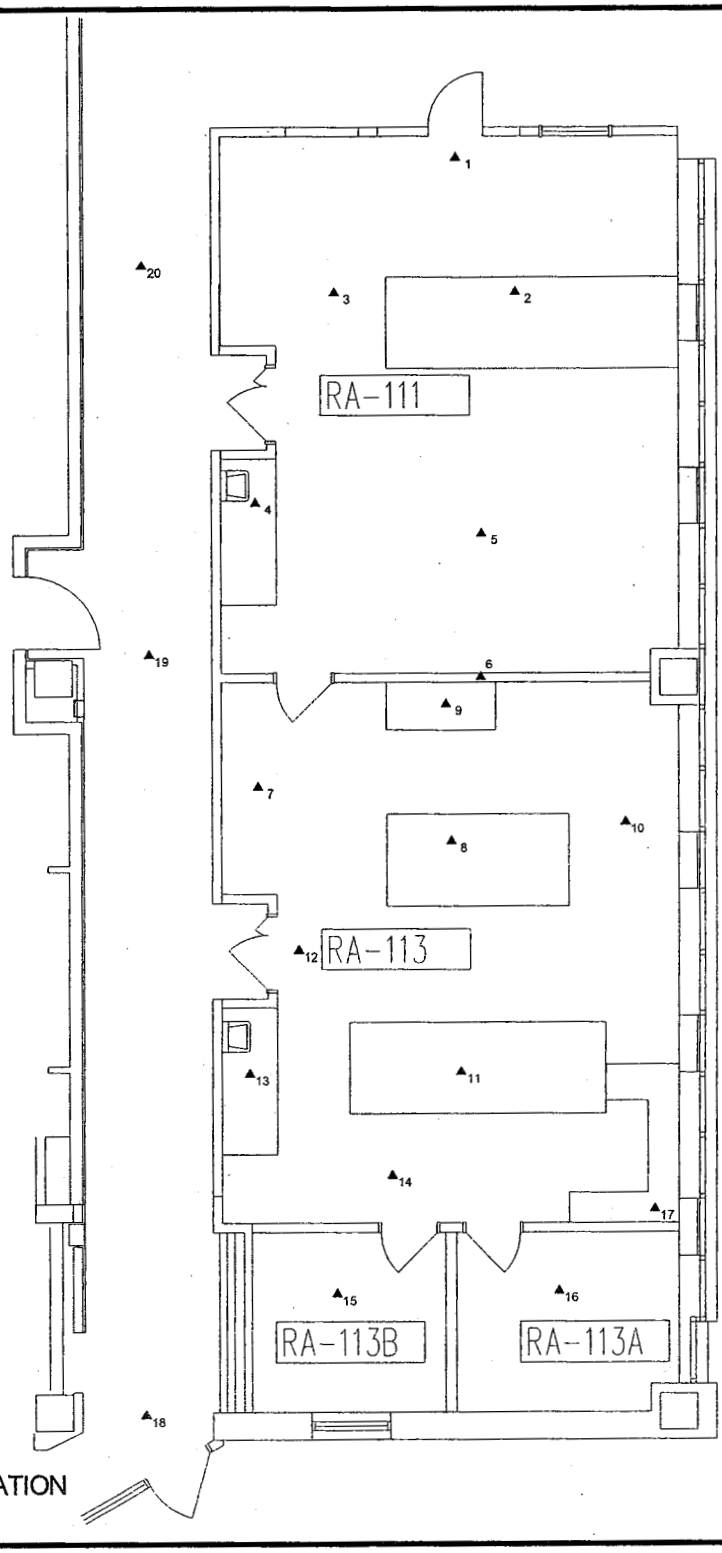
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 32 Room(s): 111,113, 113A, 113B and adjacent hallway Date: 1/22/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

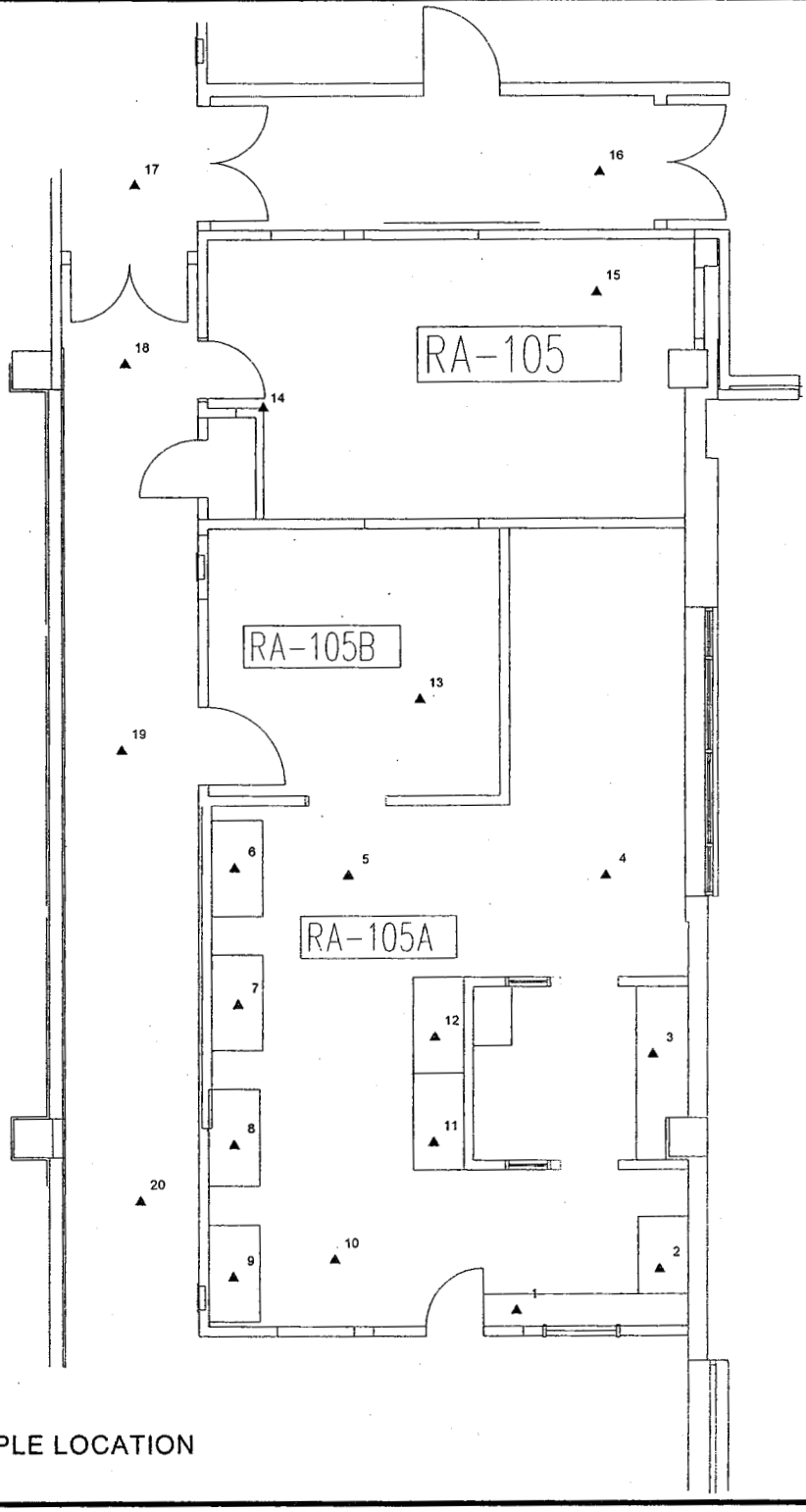
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 33 Room(s): 105, 105A, 105B and adjacent hallways Date: 1/23/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

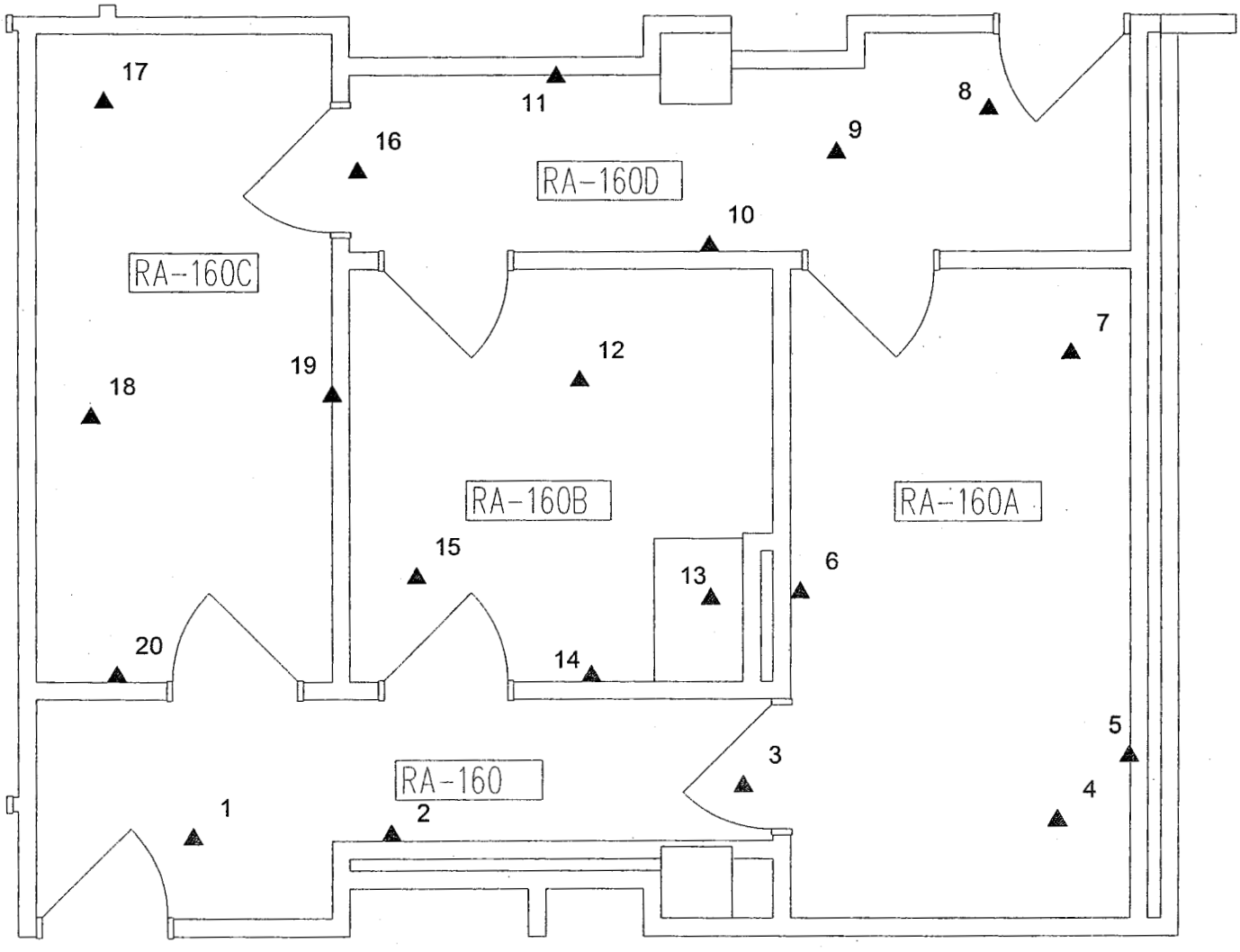
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 34 Room(s): 160, 160A, 160B, 160C and 160D Date: 1/23/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

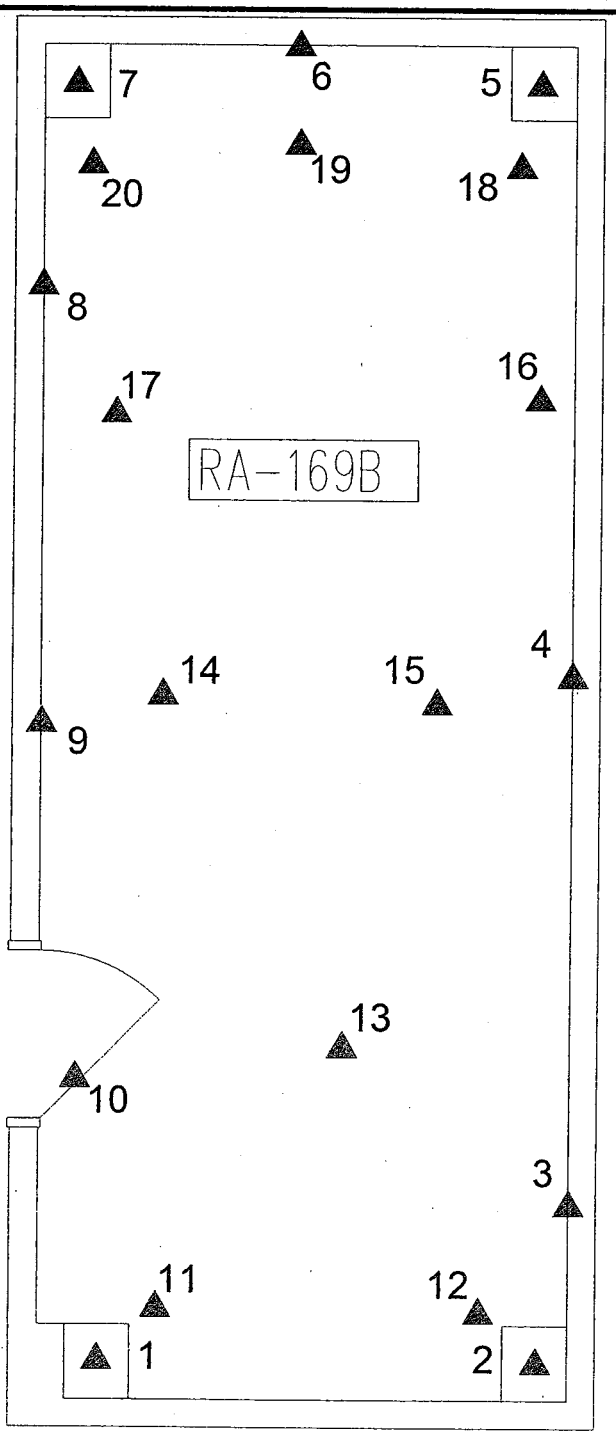
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: 35 Room(s): 169B Date: 1/24/2007 Class: 3

Instruments: Bicron Electra 1A (Ser.#5056), BP19DD Detector, Calibrated on 6/20/06
Bicron Electra 1A (Ser.#4422), GP13A Detector, Calibrated on 2/22/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Dave Aguero, Steve Kapetan



▲ JUDGMENTAL SAMPLE LOCATION

Bayer Pharmaceuticals Corporation

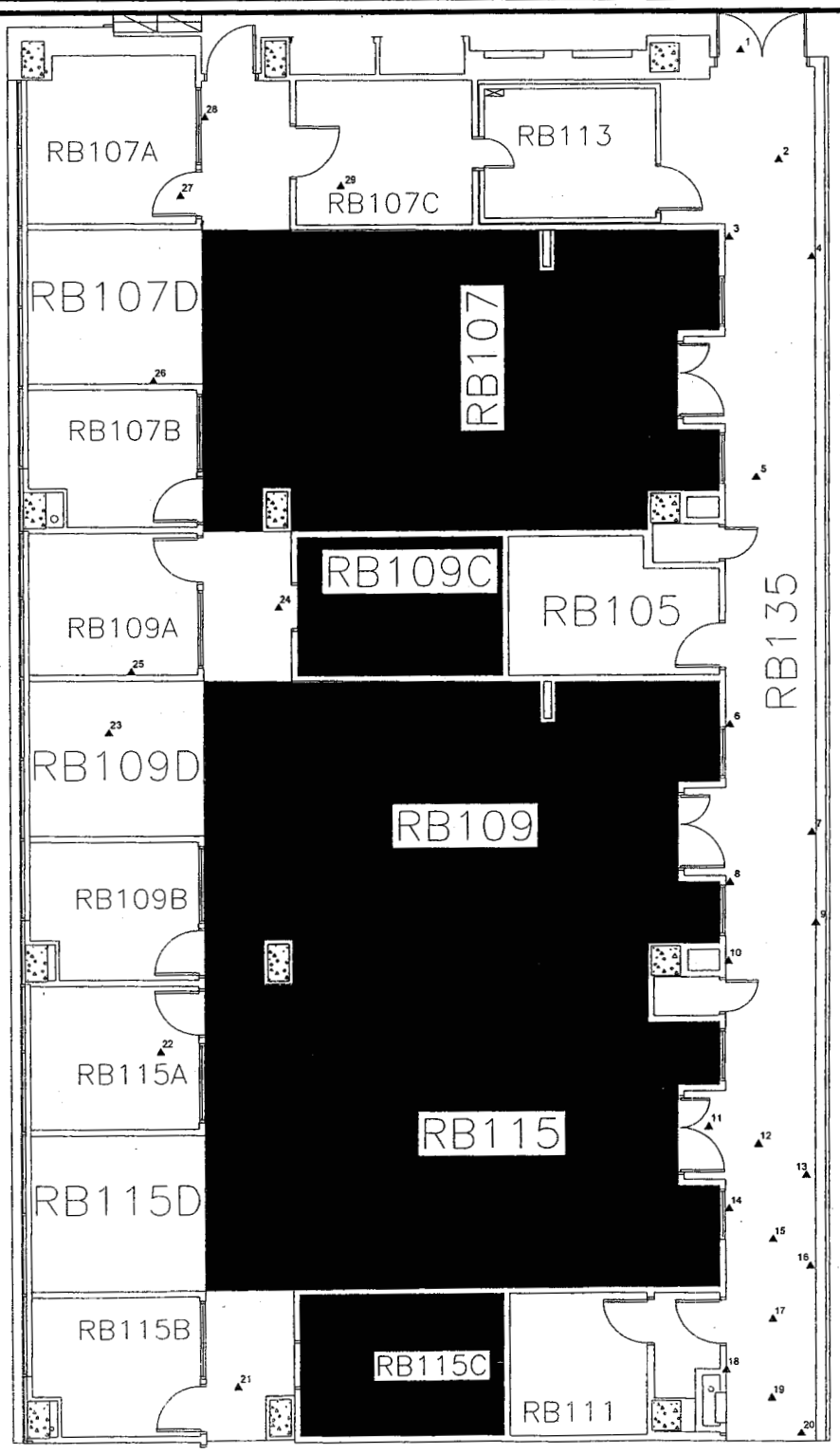
Radiation Contamination Survey Report

Building: B24 Survey Unit: 36 Date: 1/24/2007 Class: 3

Room(s): Hallways and offices adjacent to previously decommissioned areas

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

Bayer Pharmaceuticals Corporation

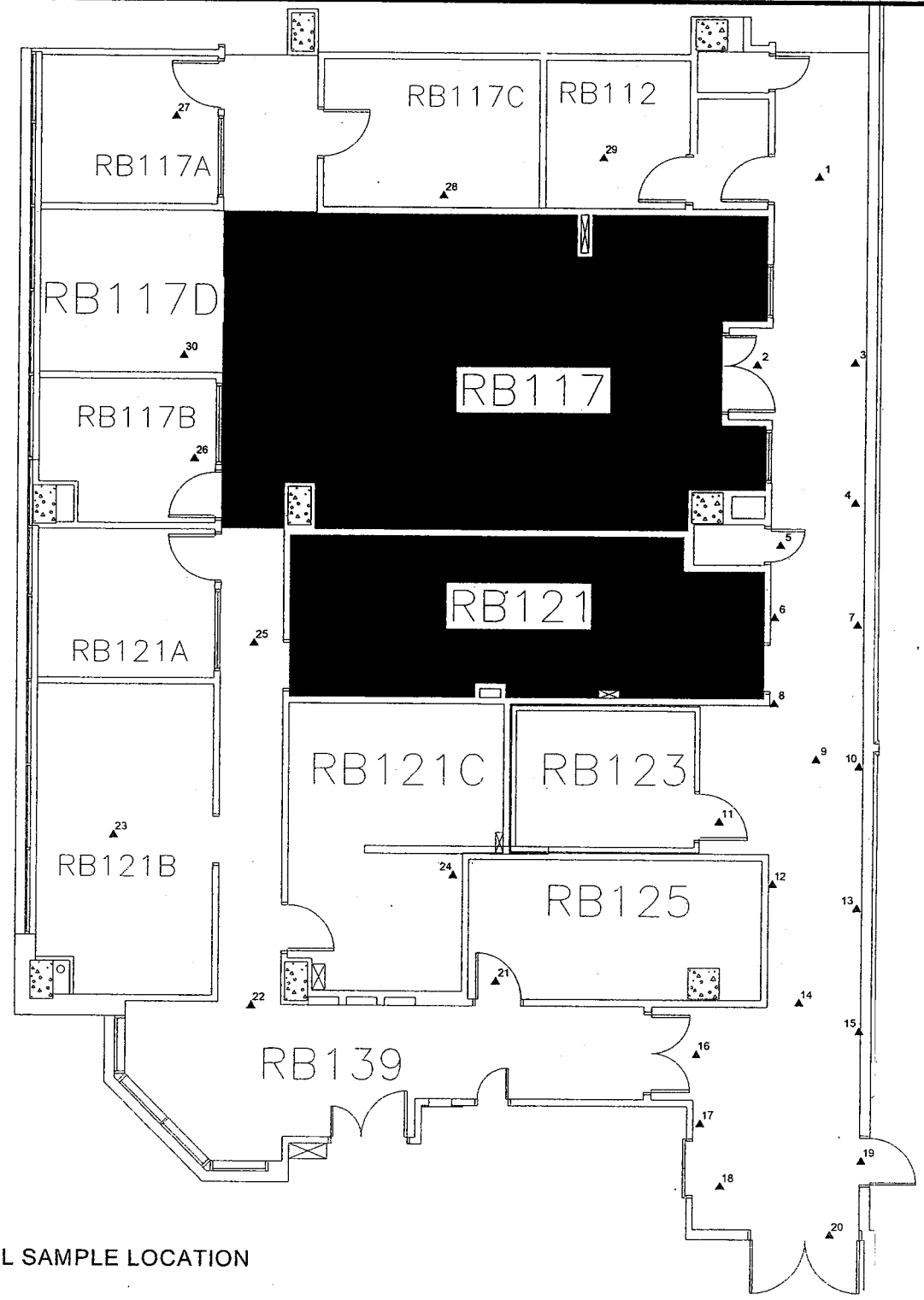
Radiation Contamination Survey Report

Building: B24 Survey Unit: 37 Date: 1/24/2007 Class: 3

Room(s): Hallways and offices adjacent to previously decommissioned areas

Instruments: Bicron Electra 1A (Ser.#5057), BP19DD Detector, Calibrated on 10/5/06
Ludlum 2221 (Ser. #149981), w/ 43-37 Detector, Calibrated on 6/16/06

Surveyor: Tracie M. Clemons, Vicki Litton



▲ JUDGMENTAL SAMPLE LOCATION

APPENDIX C

Drains

Appendix C

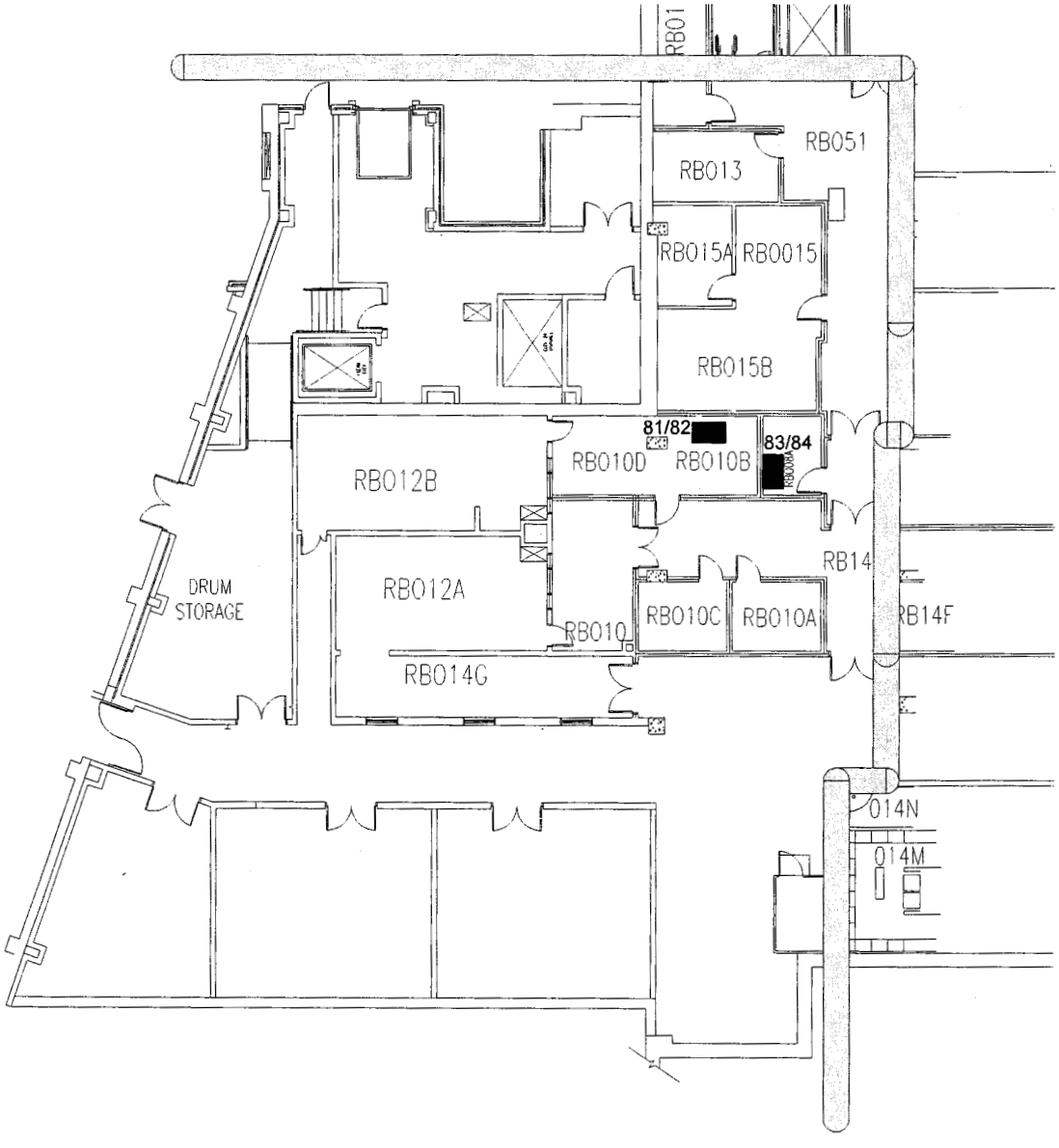
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): Basement Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

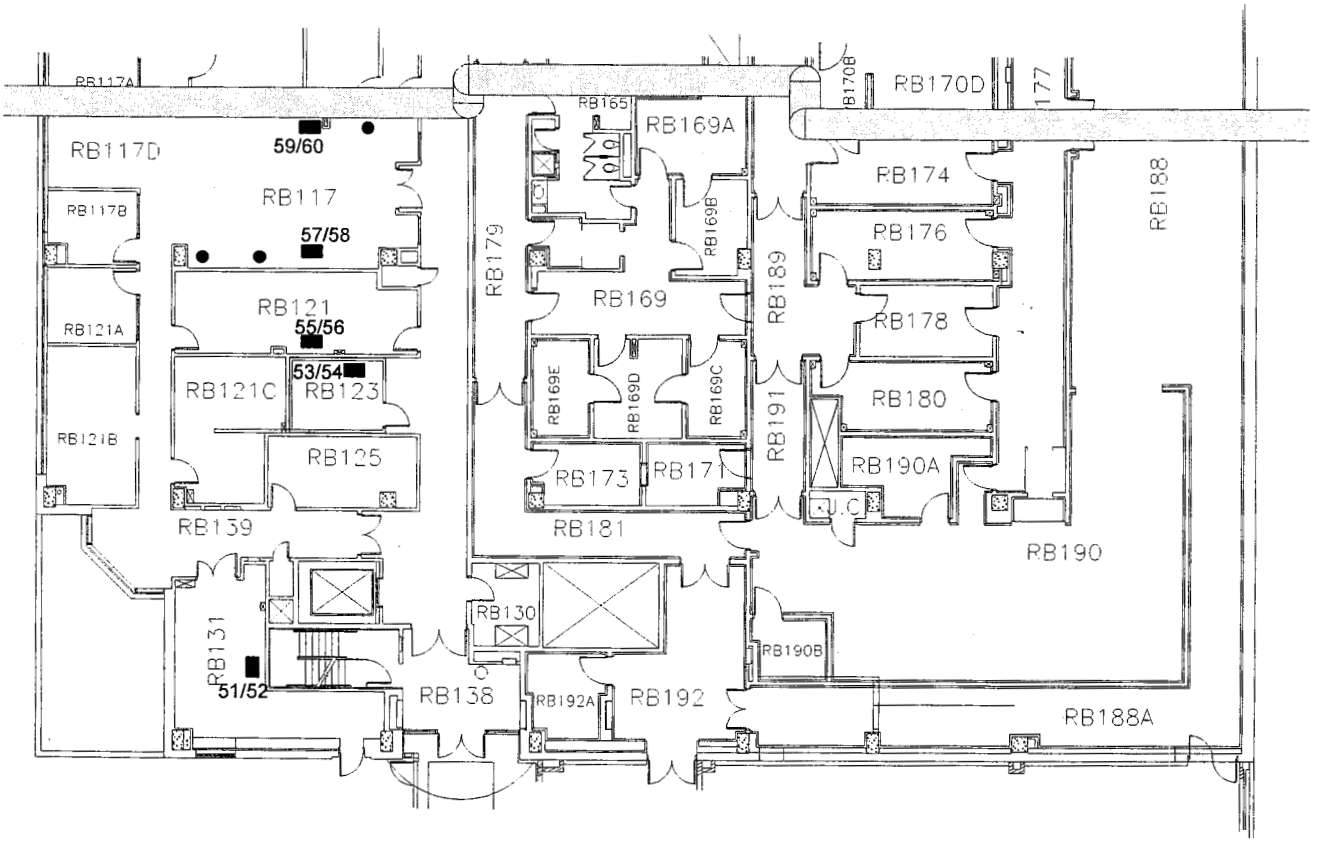
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): 1st Floor (1) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

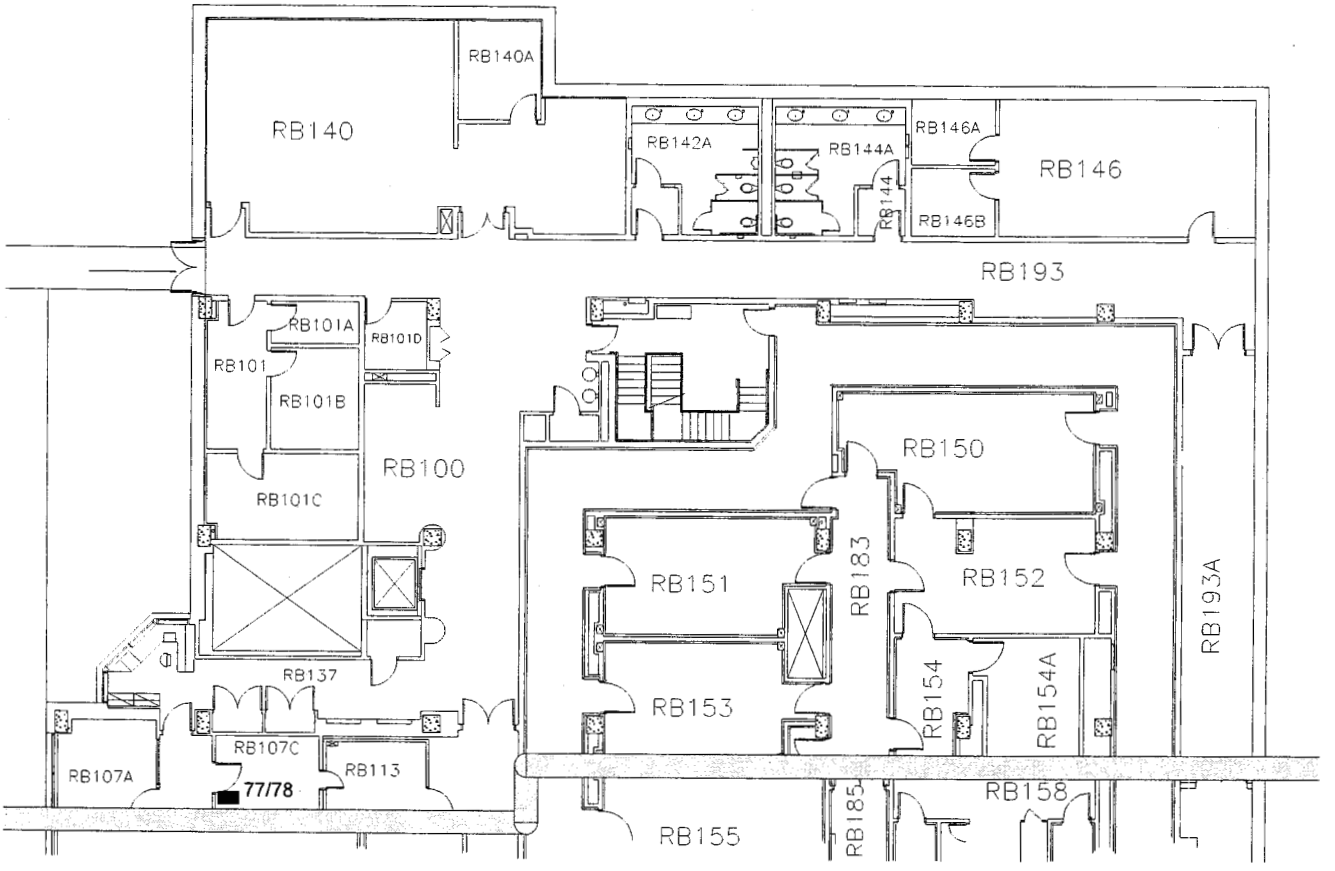
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): 1st Floor (2) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

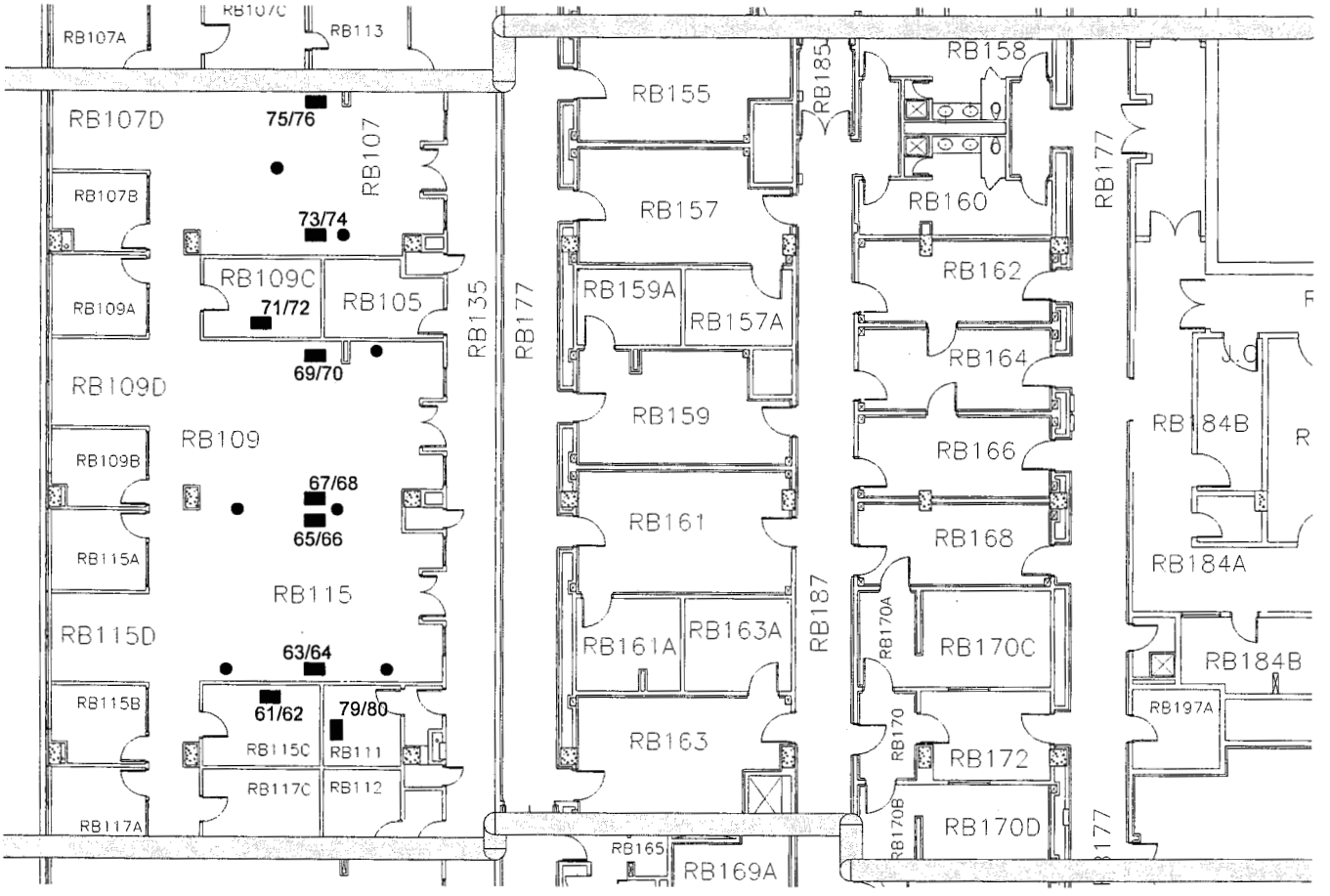
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): 1st Floor (3) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

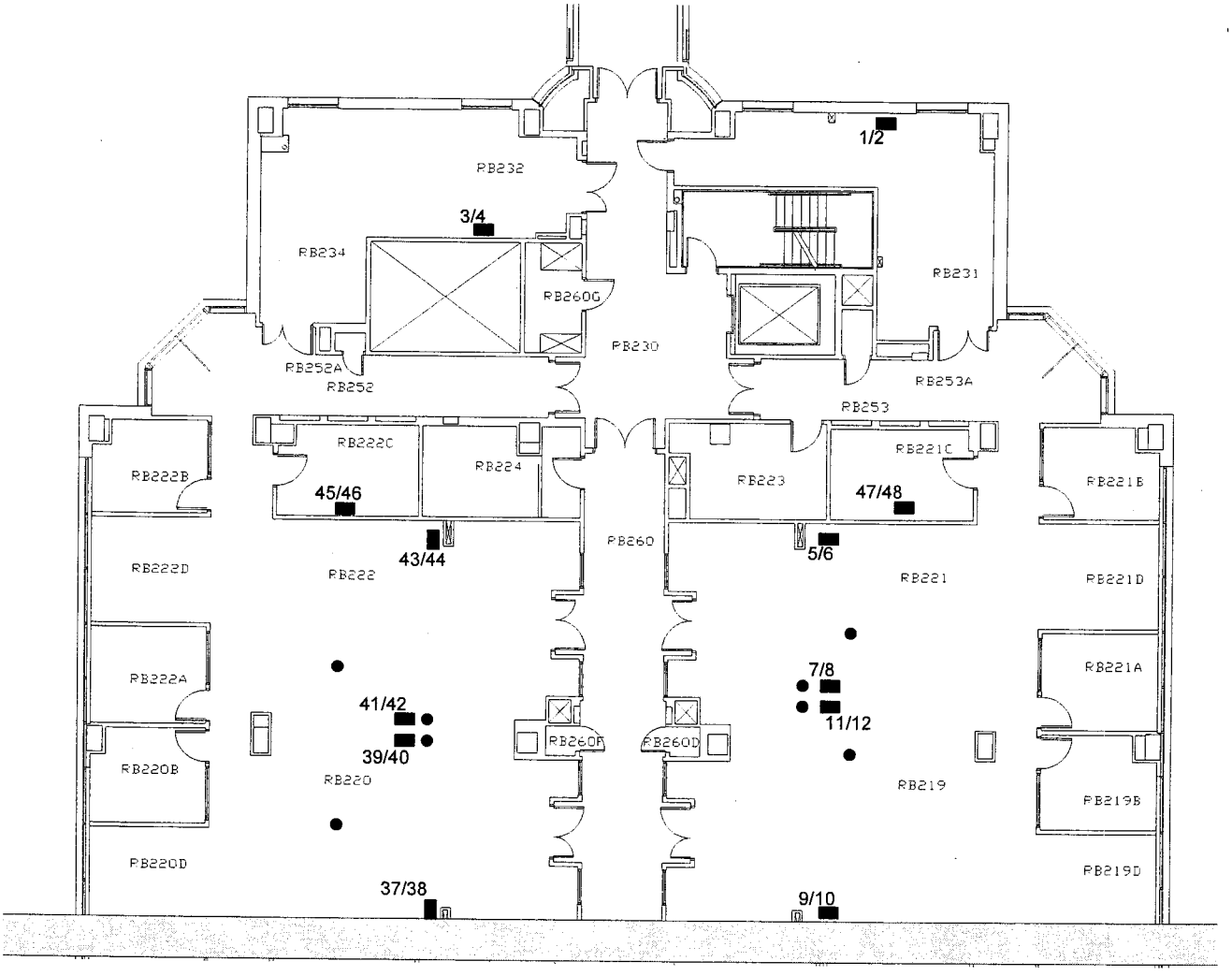
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): 2nd Floor (1) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

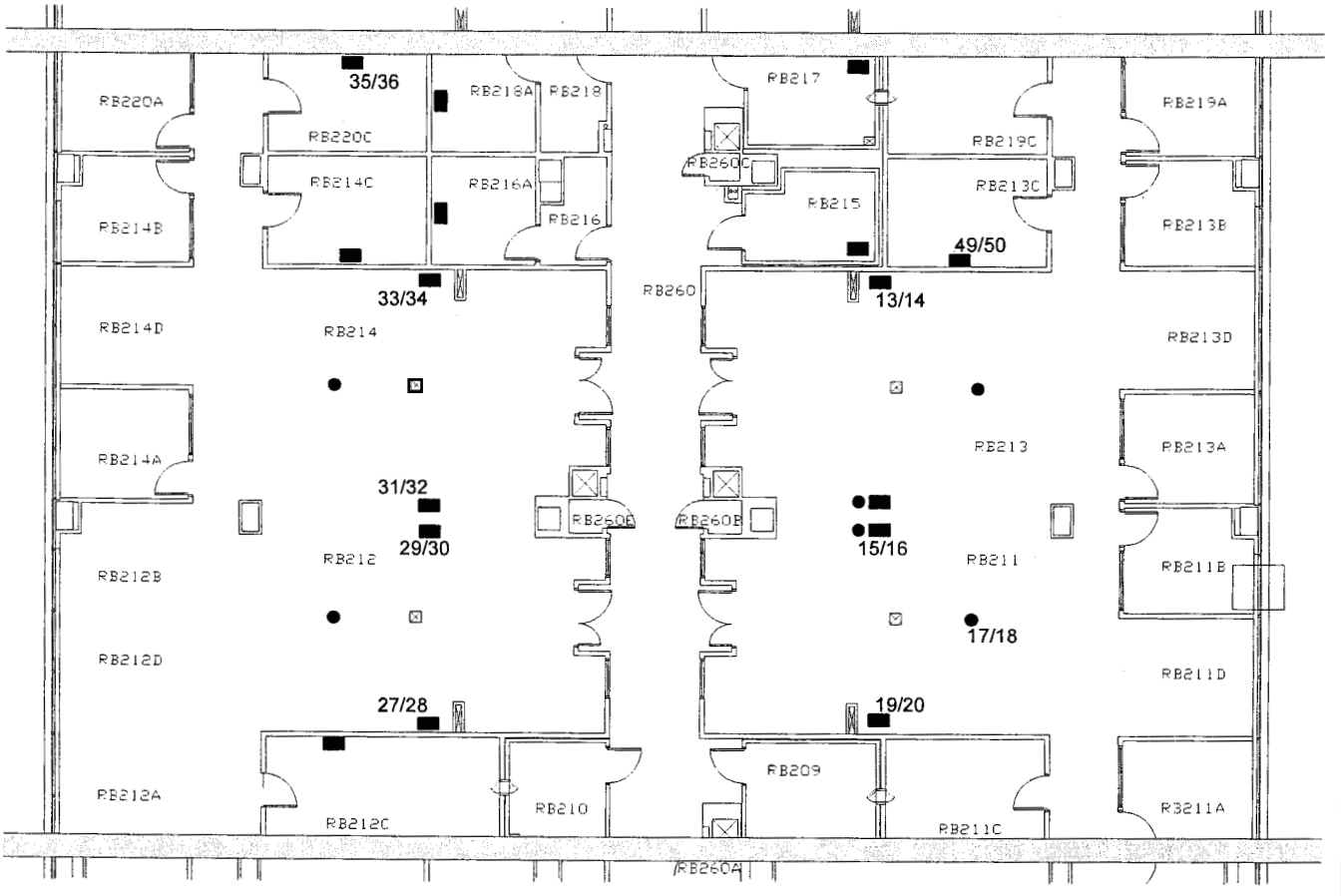
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): 2nd Floor (2) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

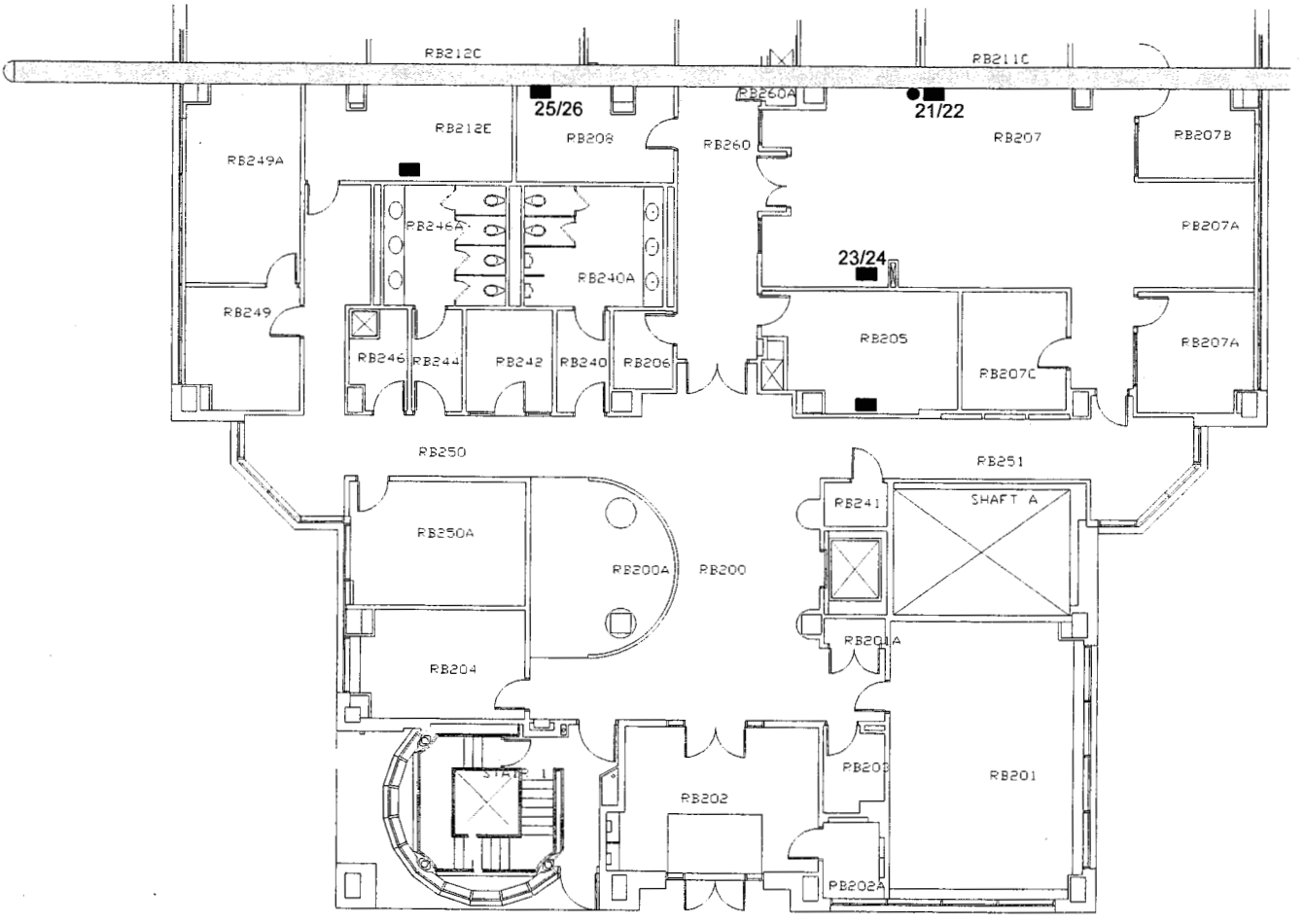
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Drain Systems Room(s): 2nd Floor (3) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

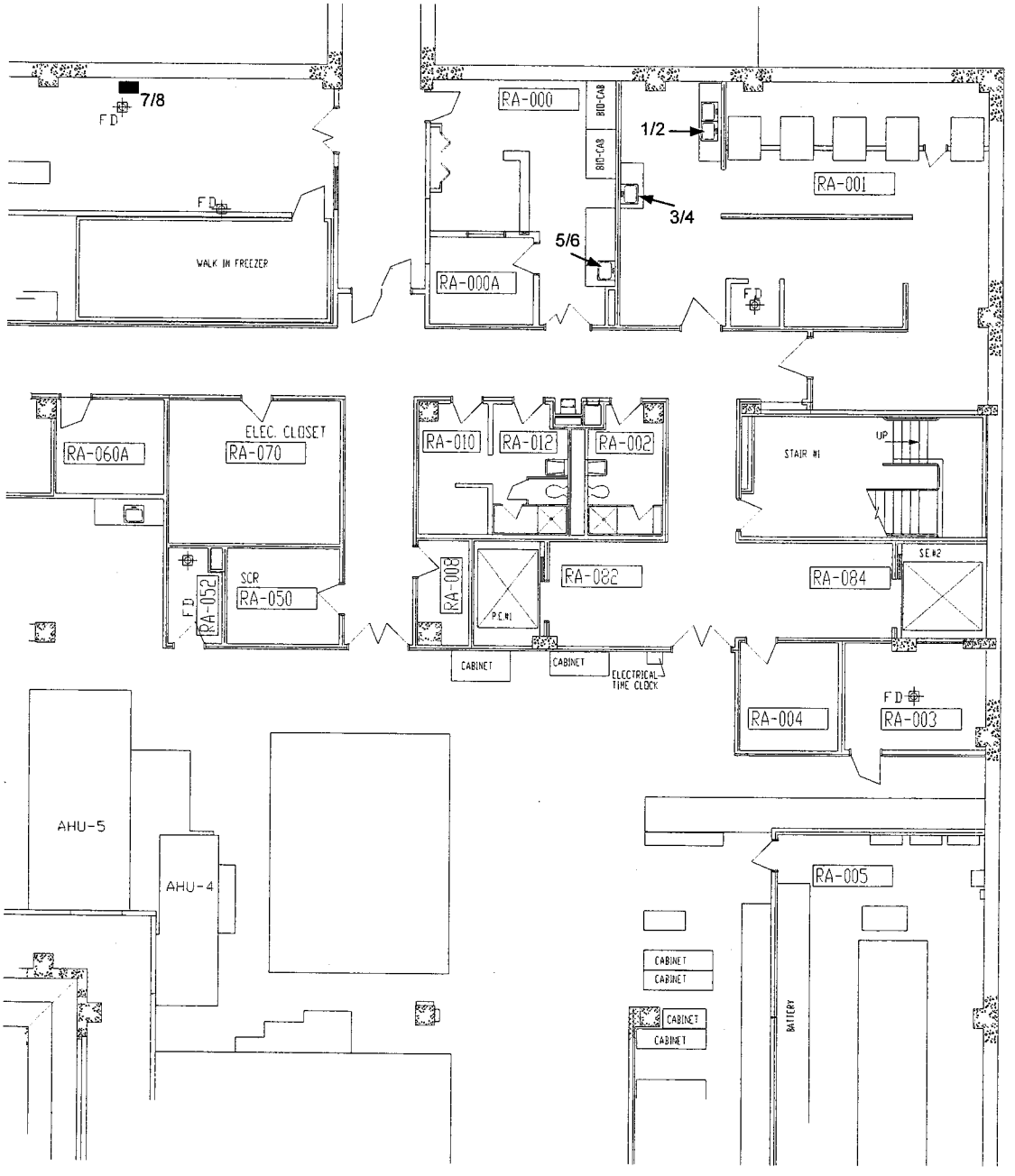
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): Basement (1) Date: 1/19/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

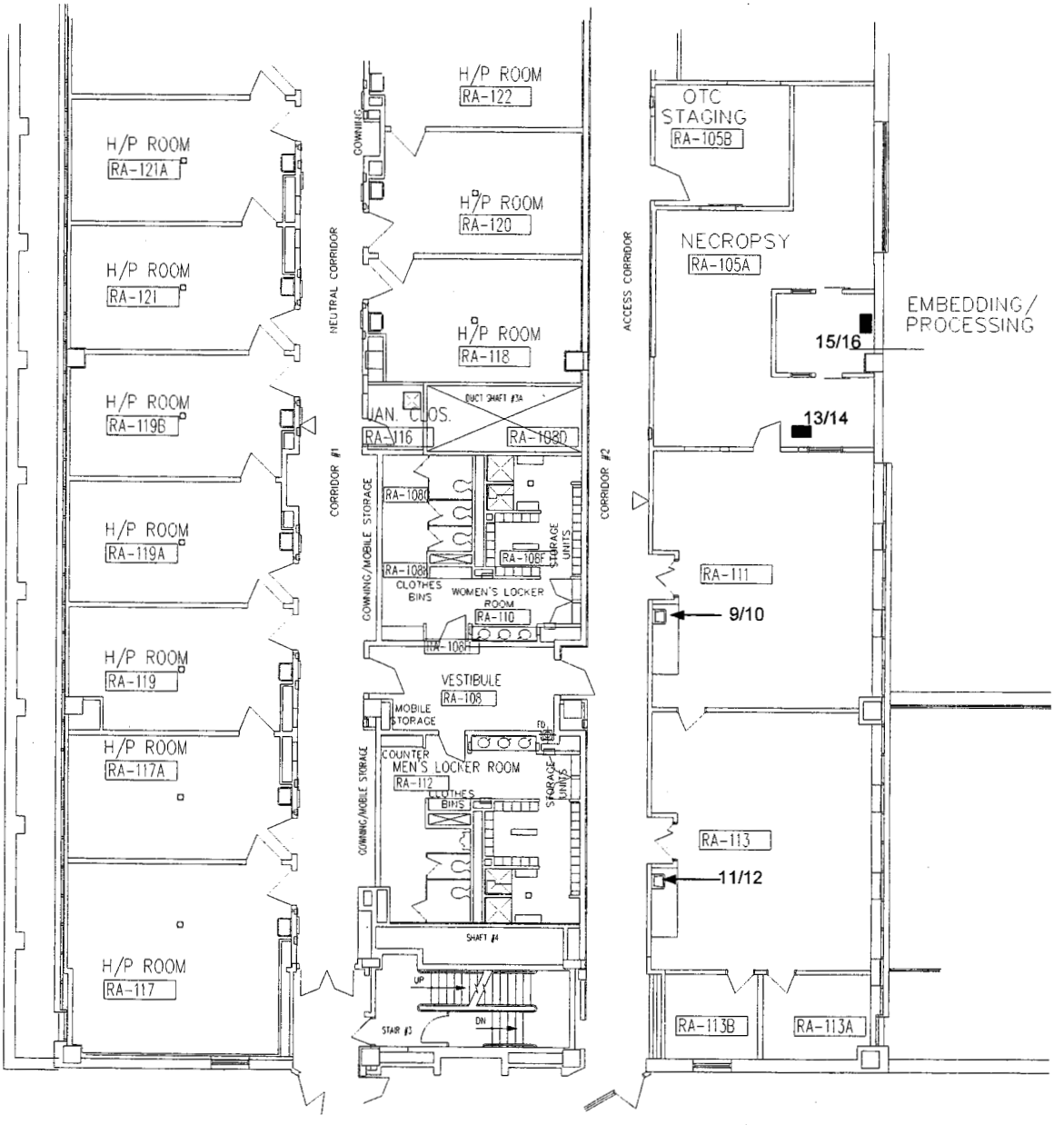
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 1st Floor (1) Date: 1/19/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

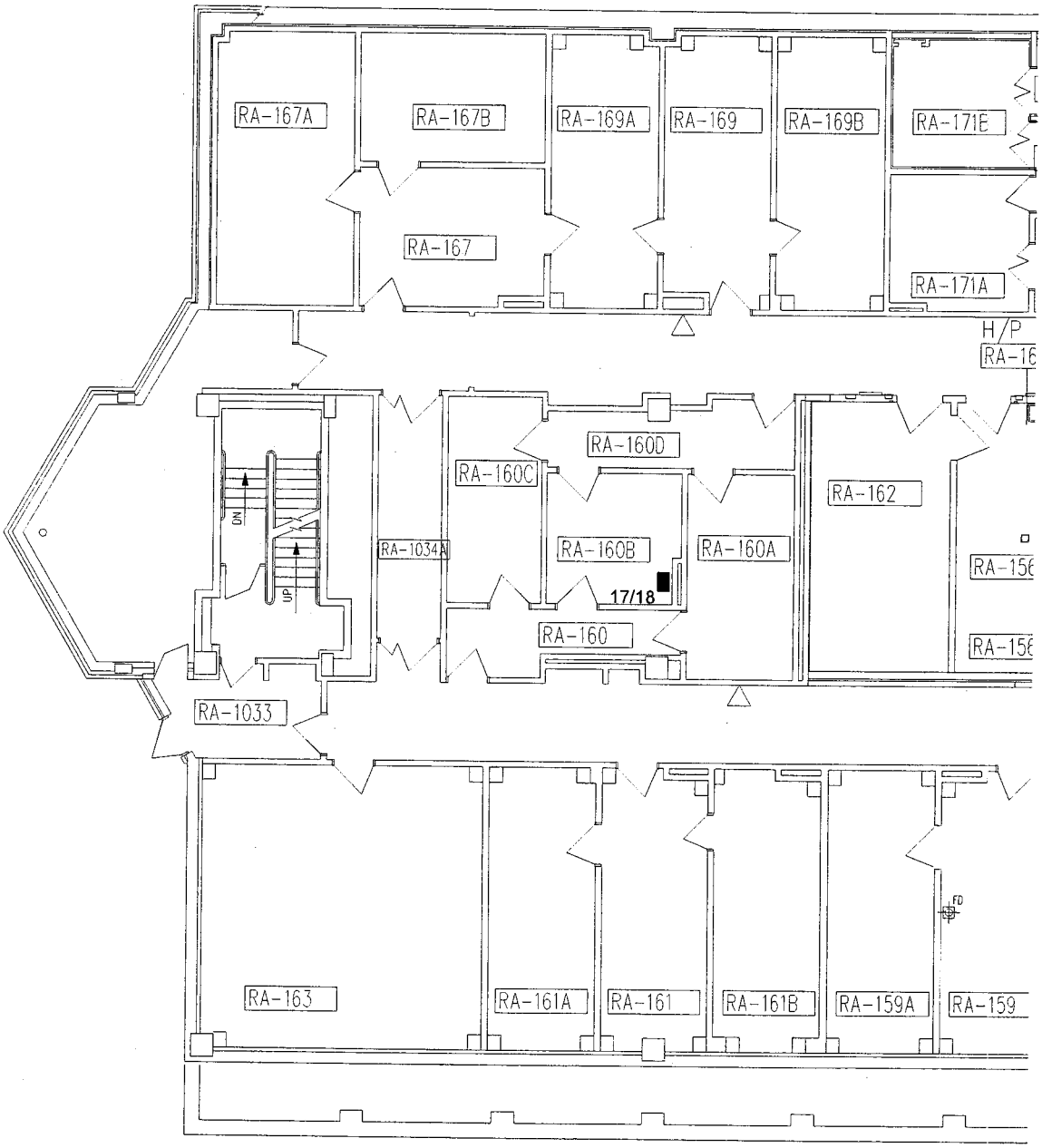
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 1st Floor (3) Date: 1/19/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

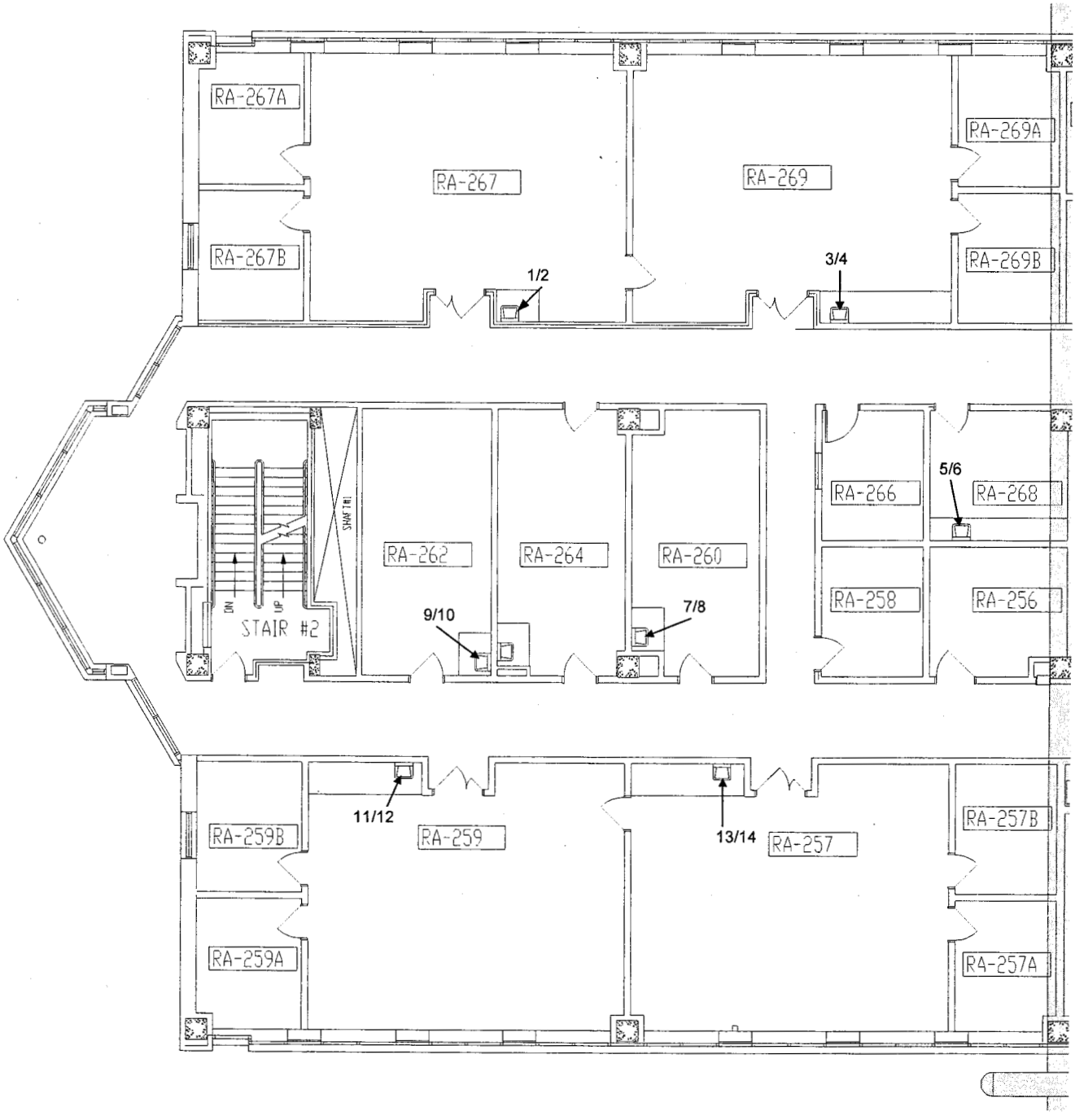
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 2nd Floor (1) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

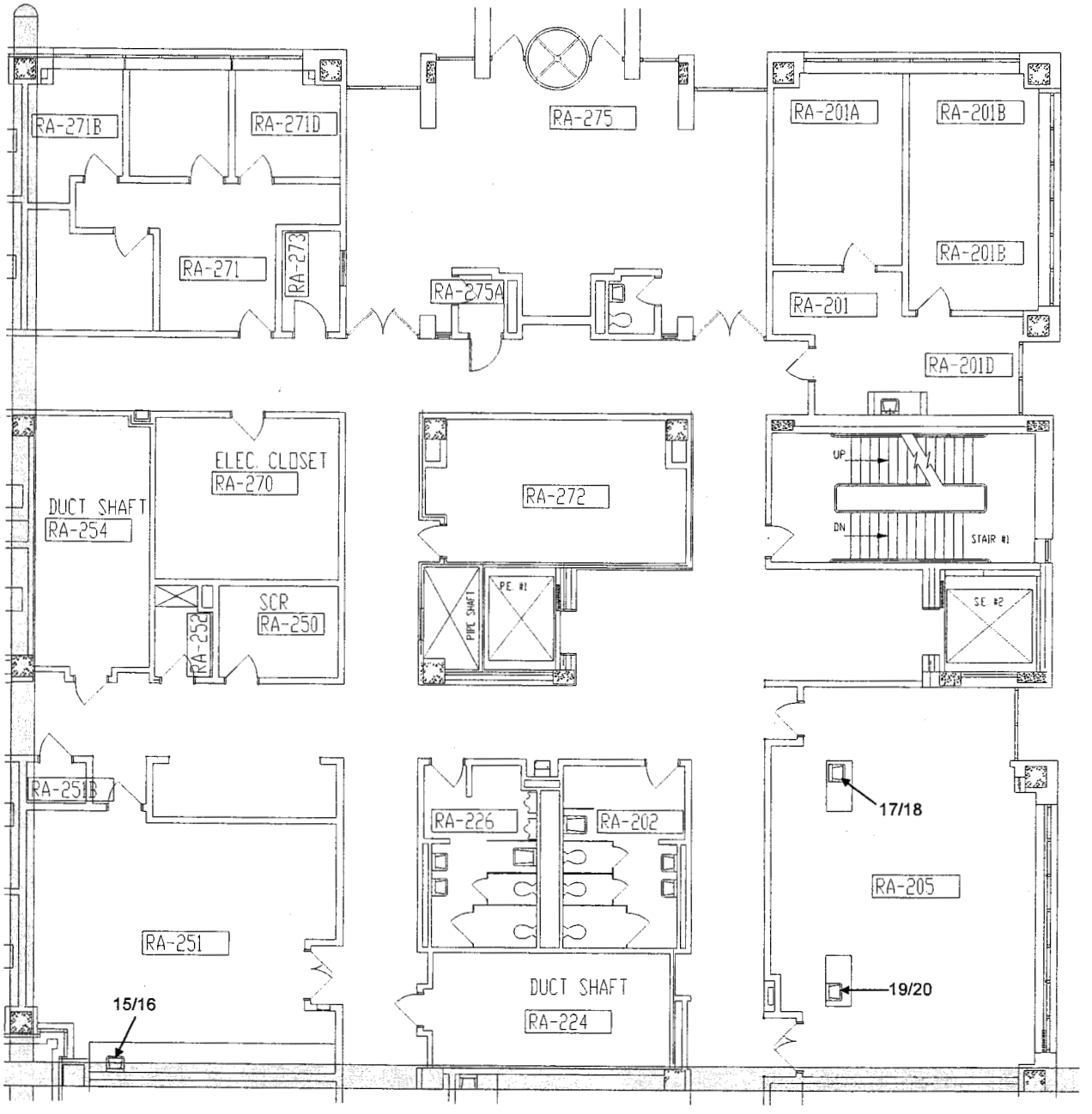
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 2nd Floor (2) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

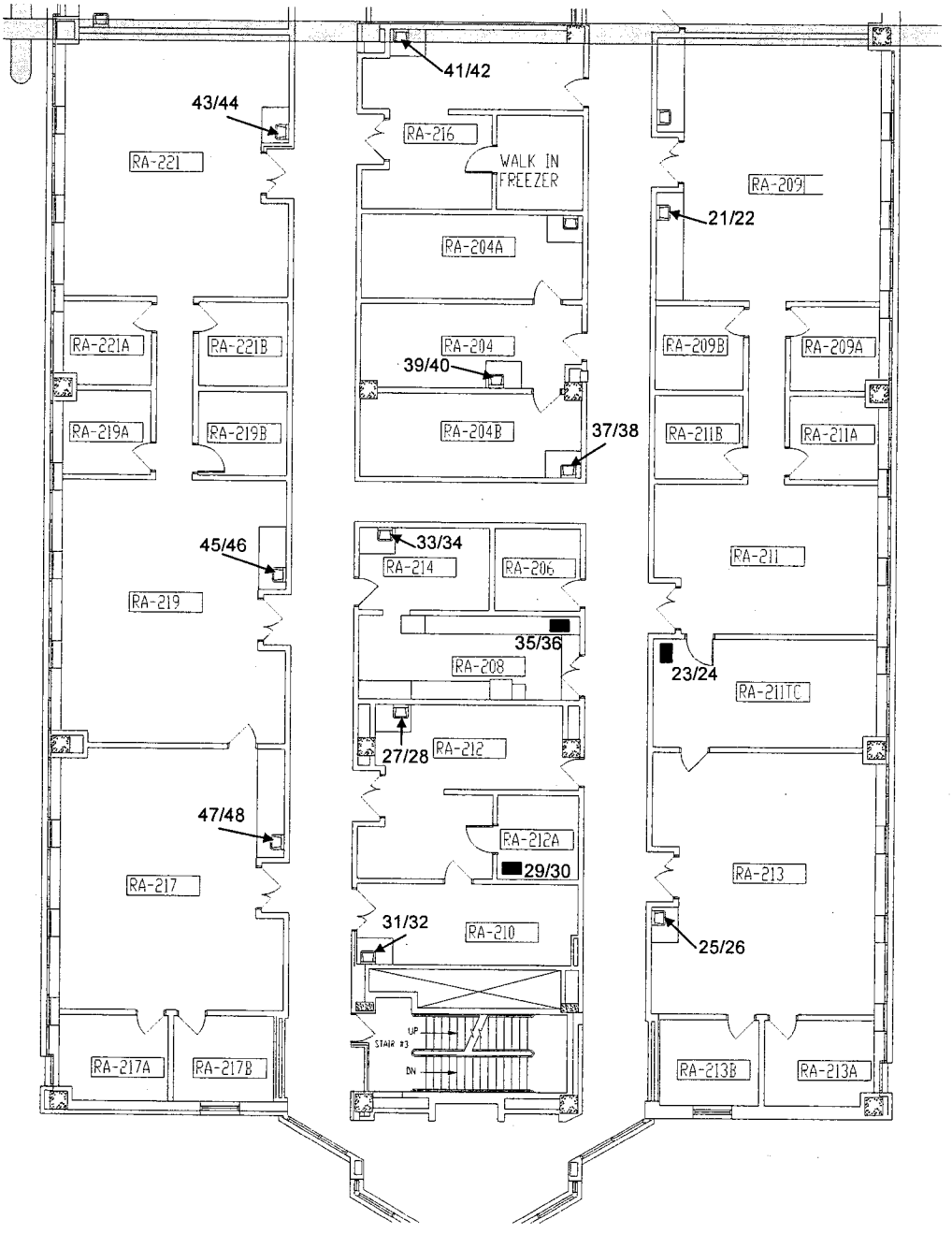
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 2nd Floor (3) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

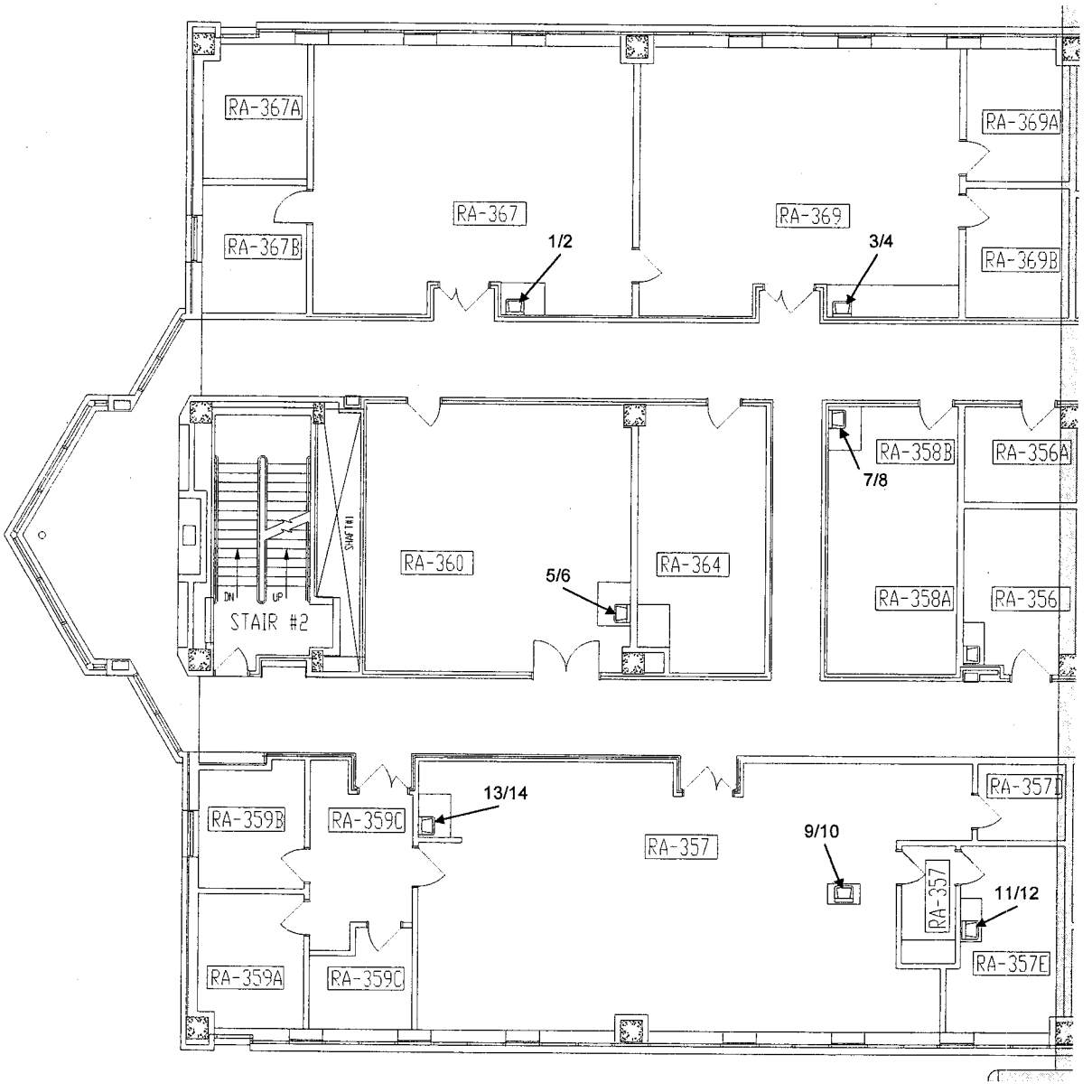
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 3rd Floor (1) Date: 1/18/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

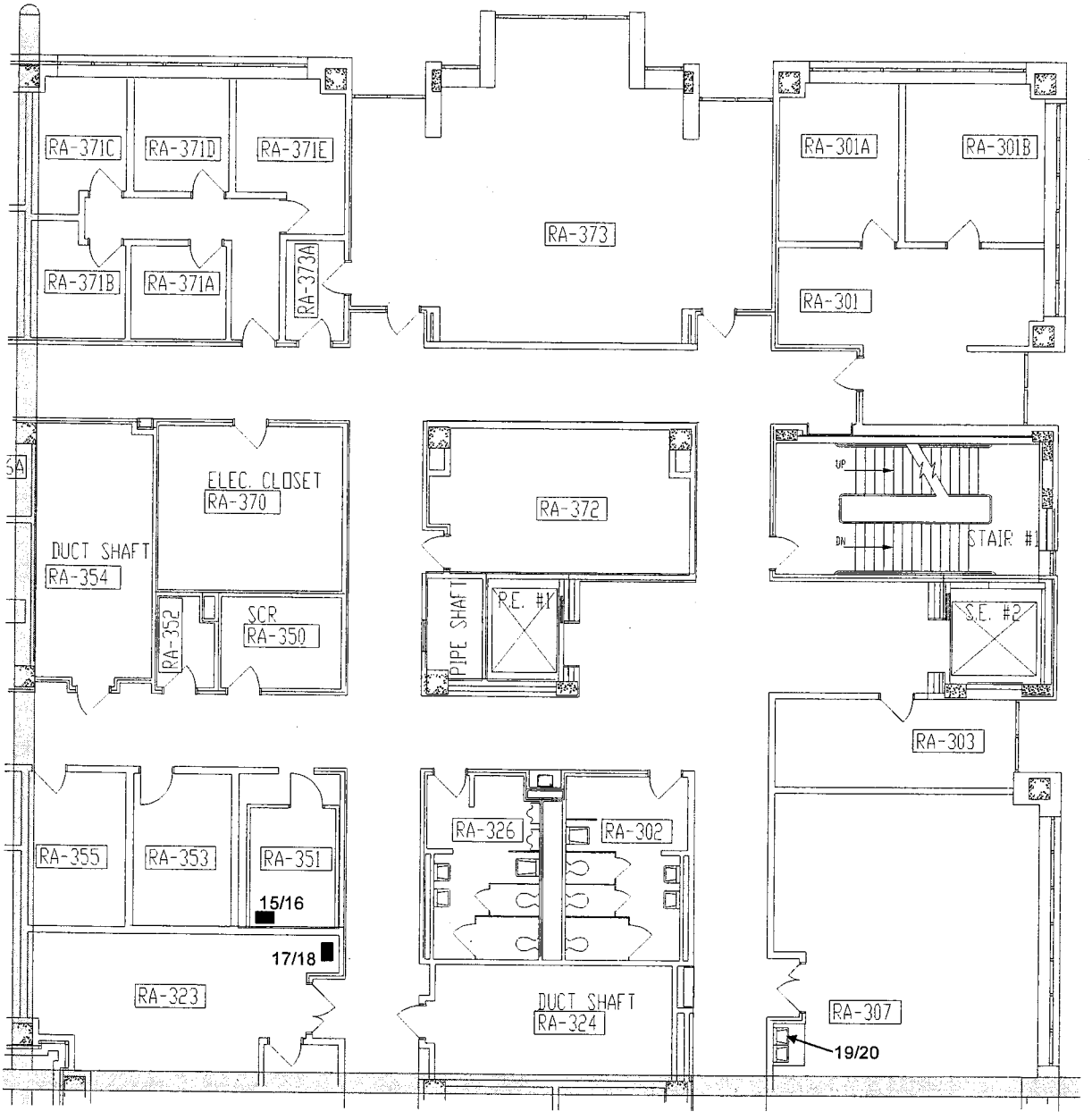
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 3rd Floor (2) Date: 1/18/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

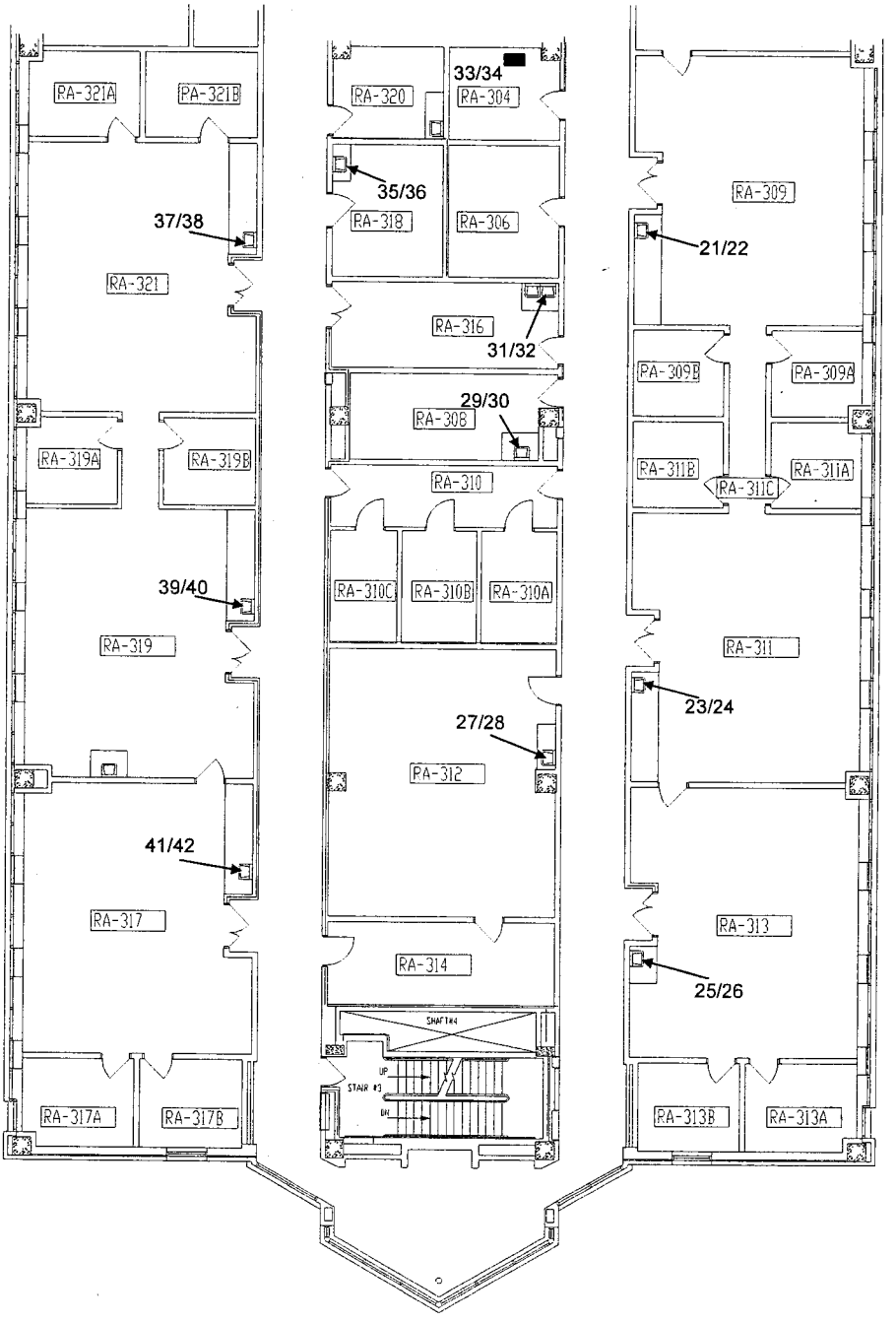
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Drain Systems Room(s): 3rd Floor (3) Date: 1/18/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

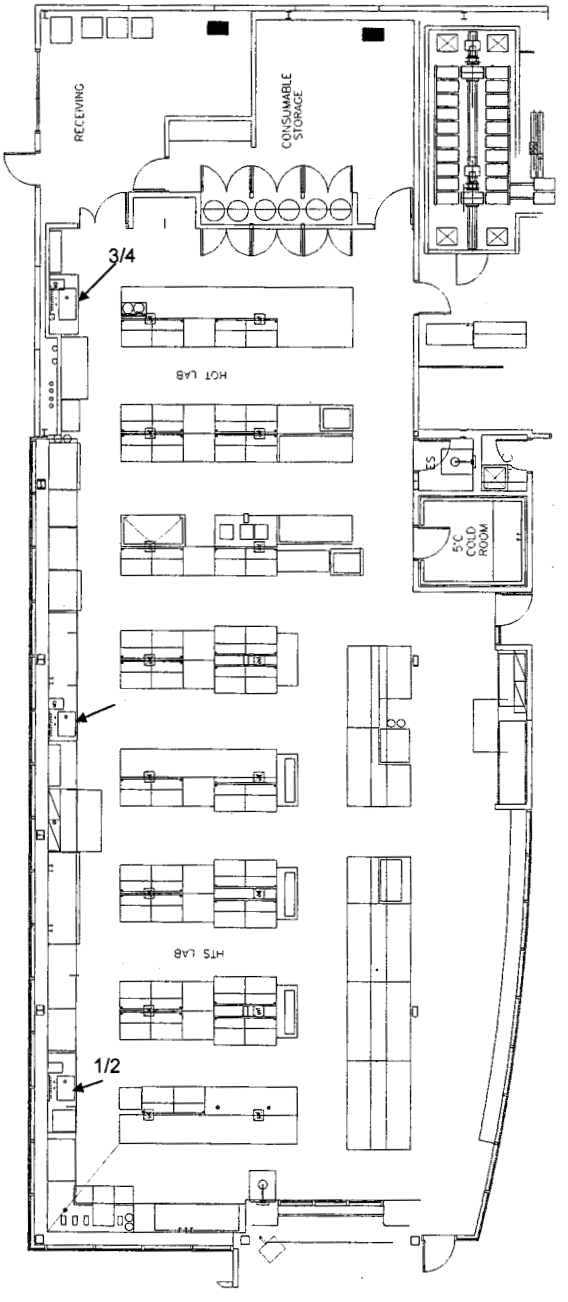
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: Drain Systems Room(s): 1st Floor Date: 1/15/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



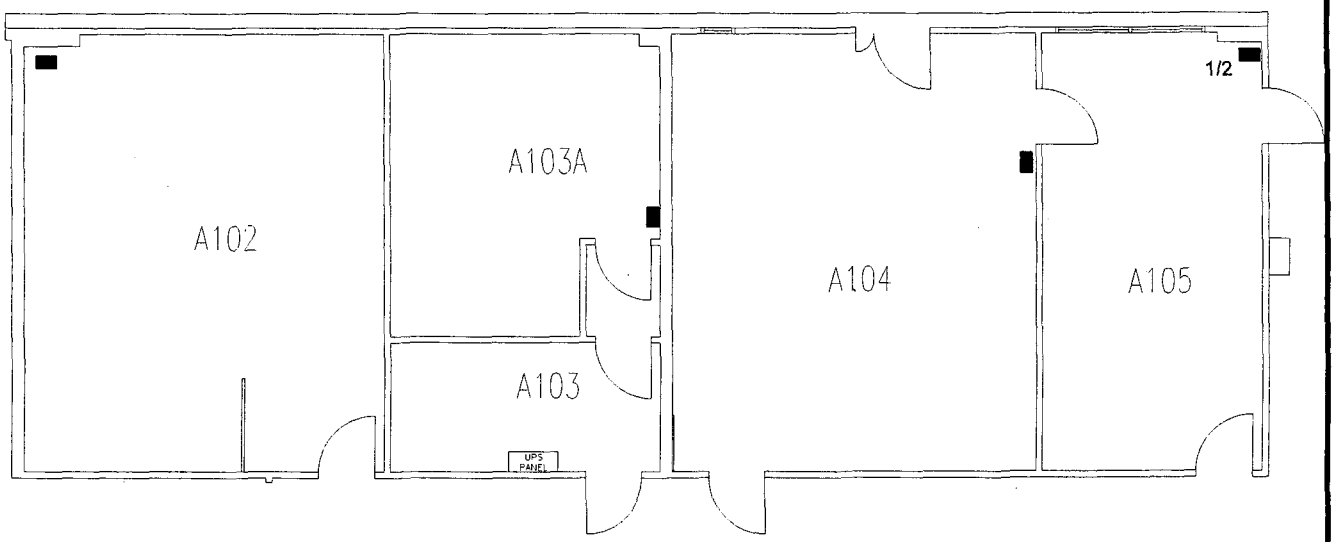
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Drain Systems Room(s): A102-A105 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

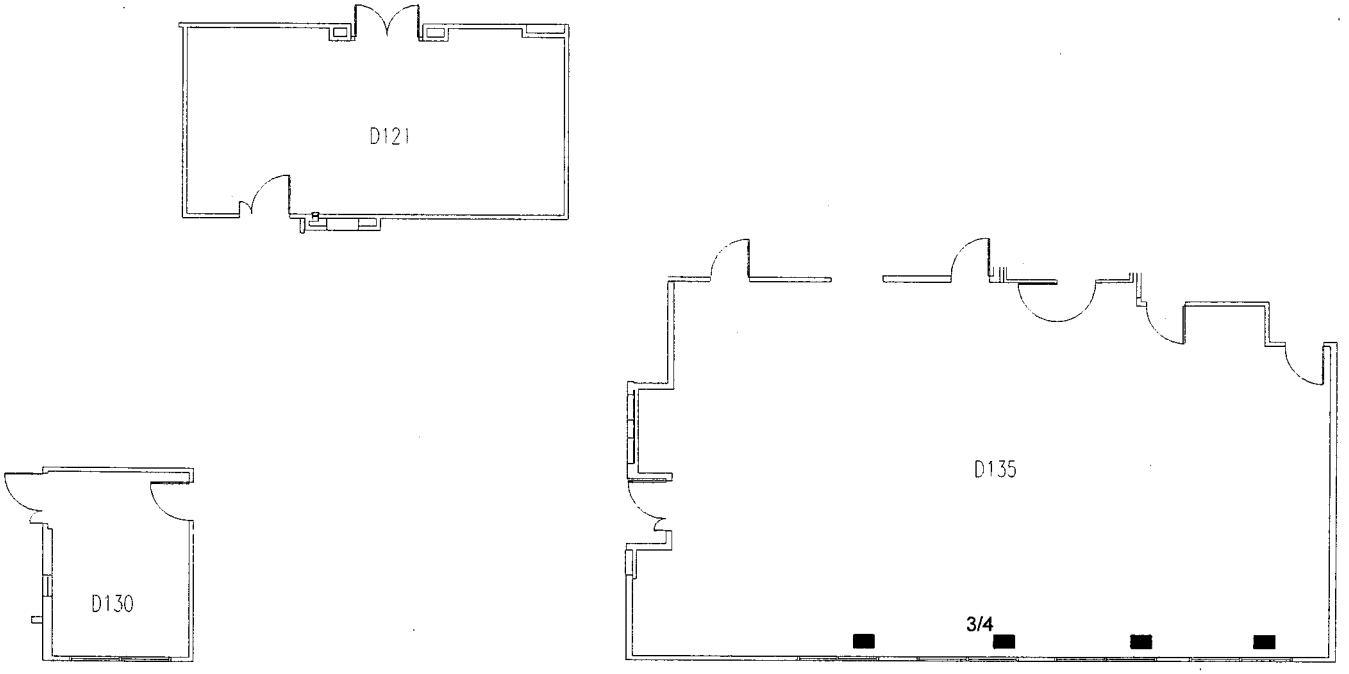
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Drain Systems Room(s): D121, 130, 135 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

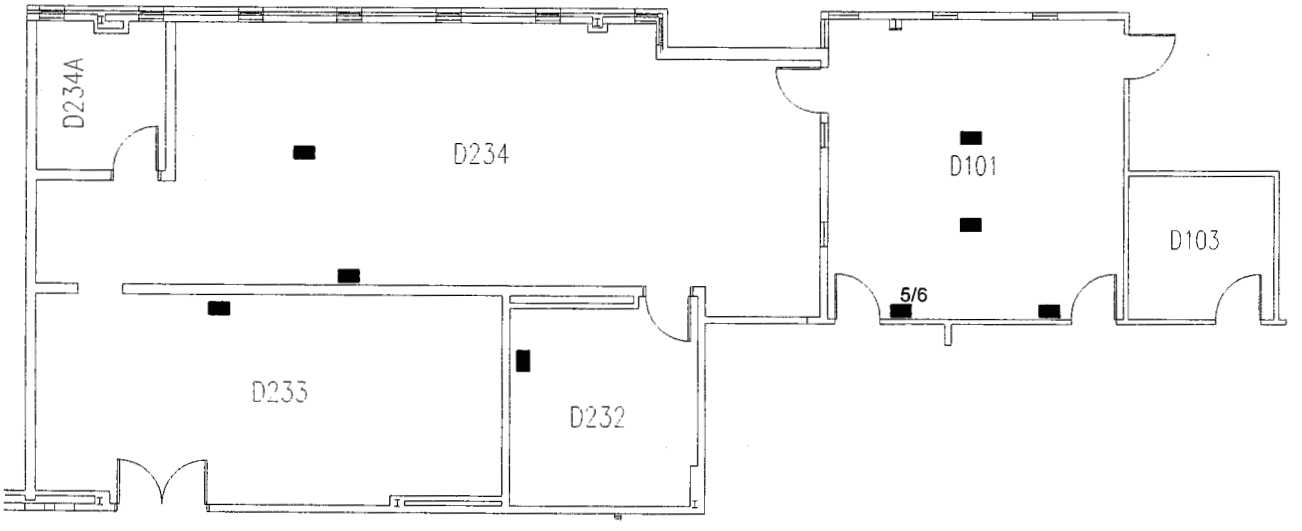
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Drain Systems Room(s): D101, D103, D232, D233, D23 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

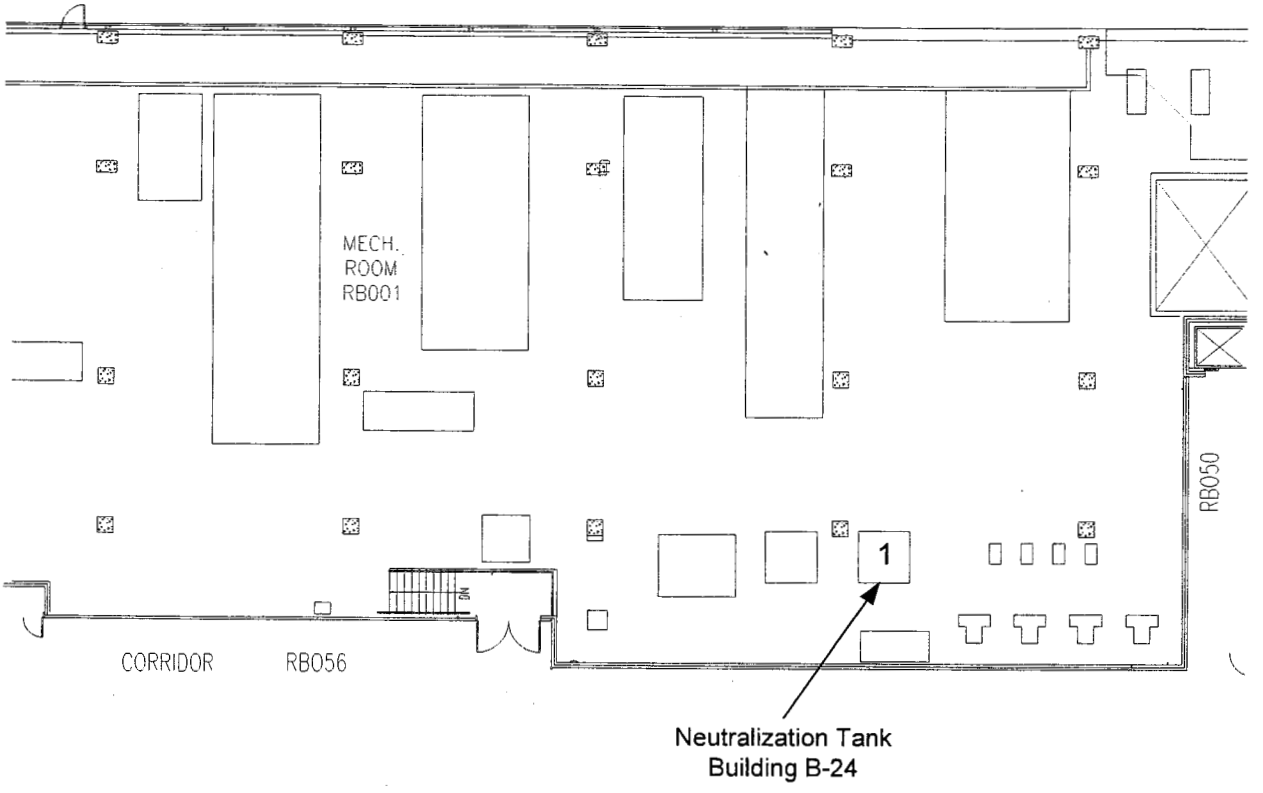
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Neutralization Tanks Room(s): N/A Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

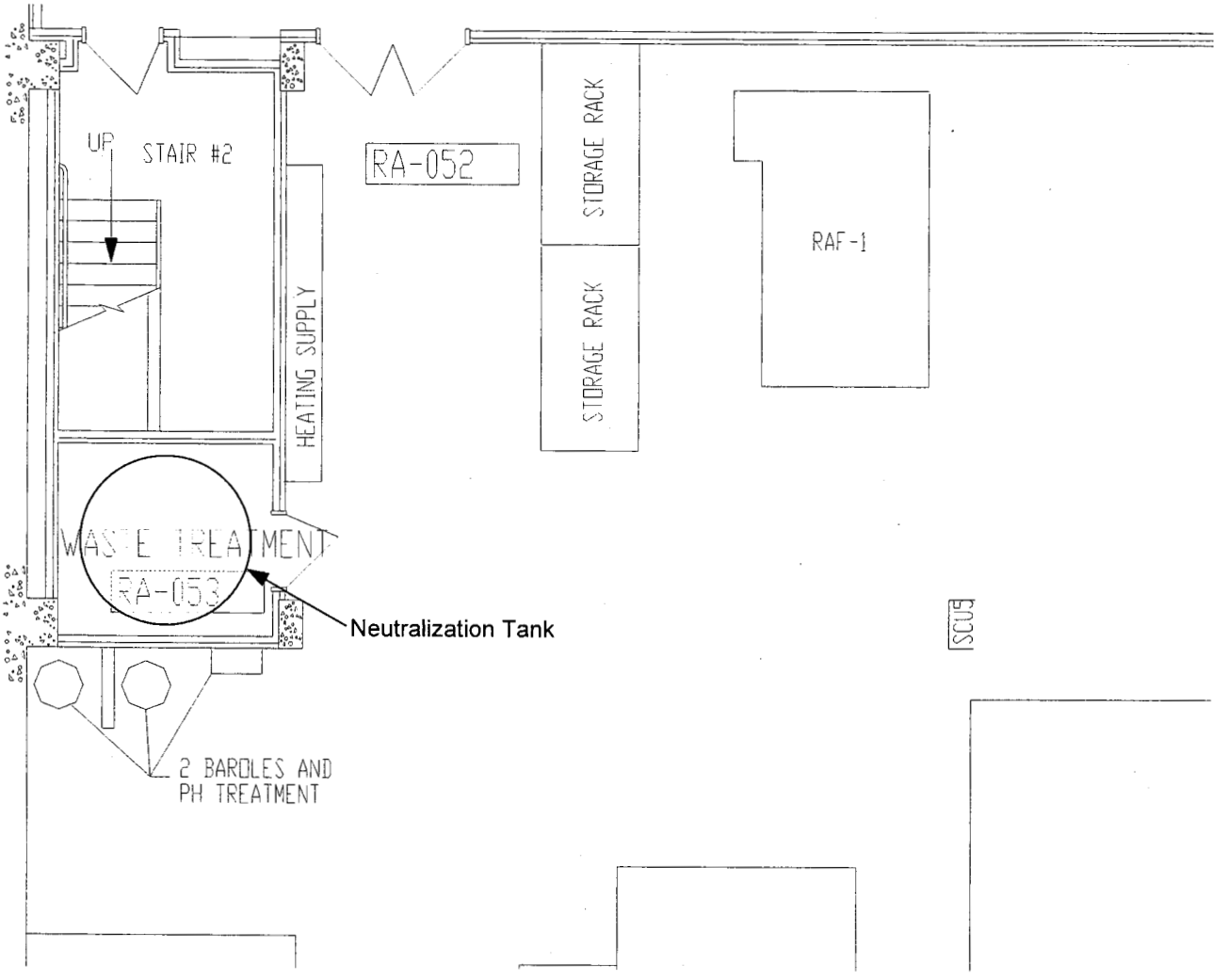
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Neutralization Tank Room(s): N/A Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

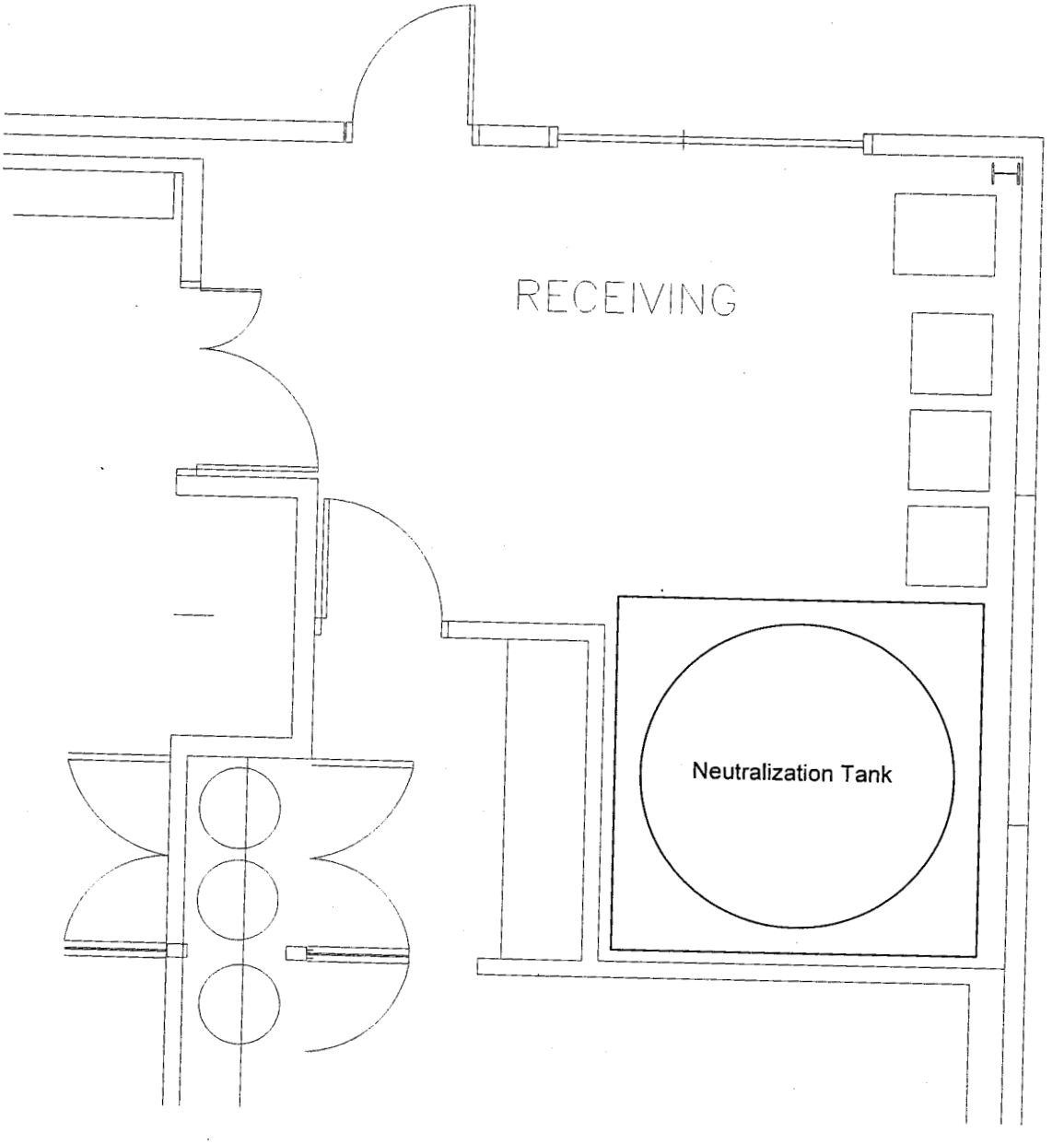
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: Neutralization Tank Room(s): N/A Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



APPENDIX C

Vacuum

Appendix C

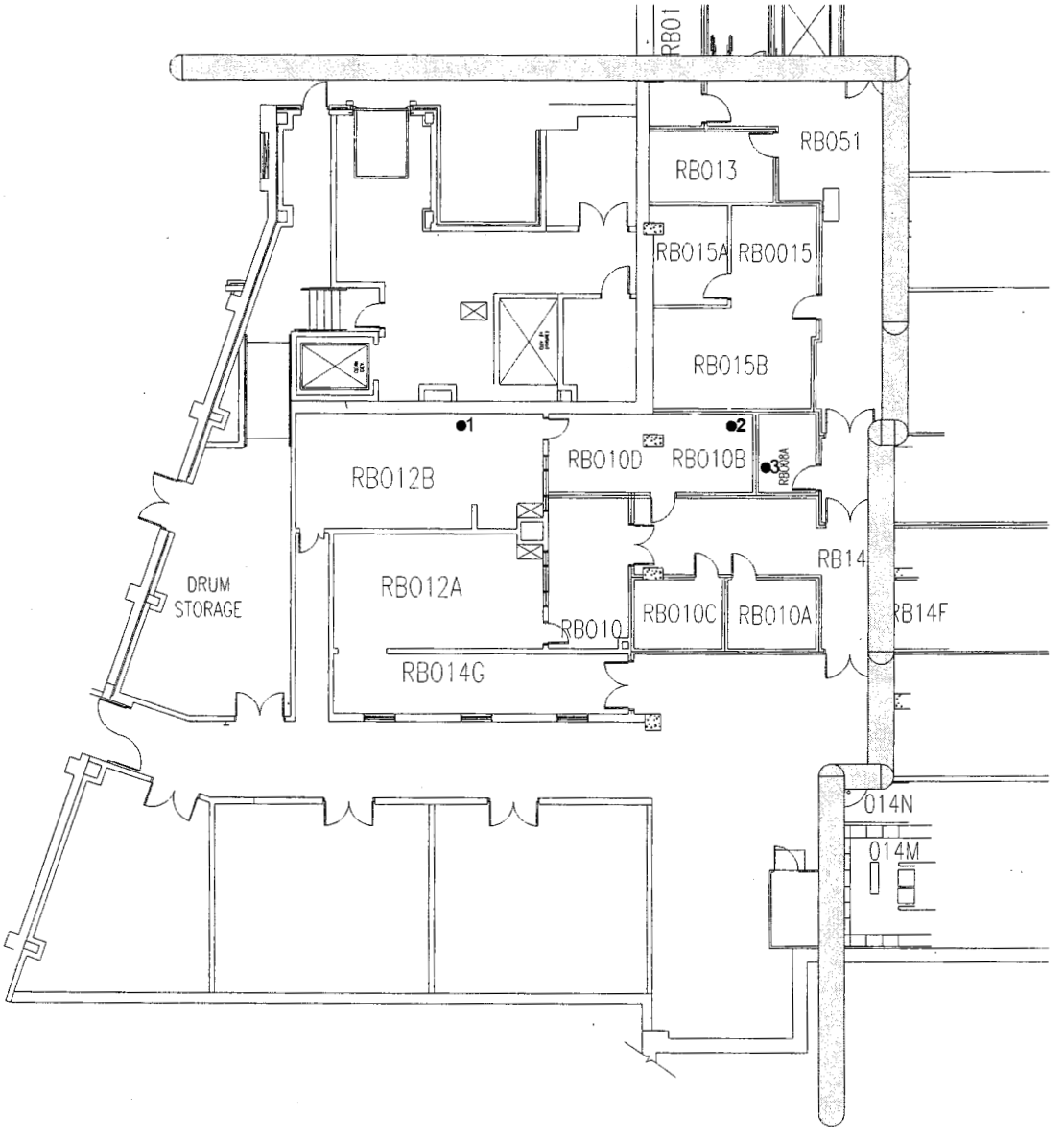
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Vacuum Systems Room(s): Basement Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

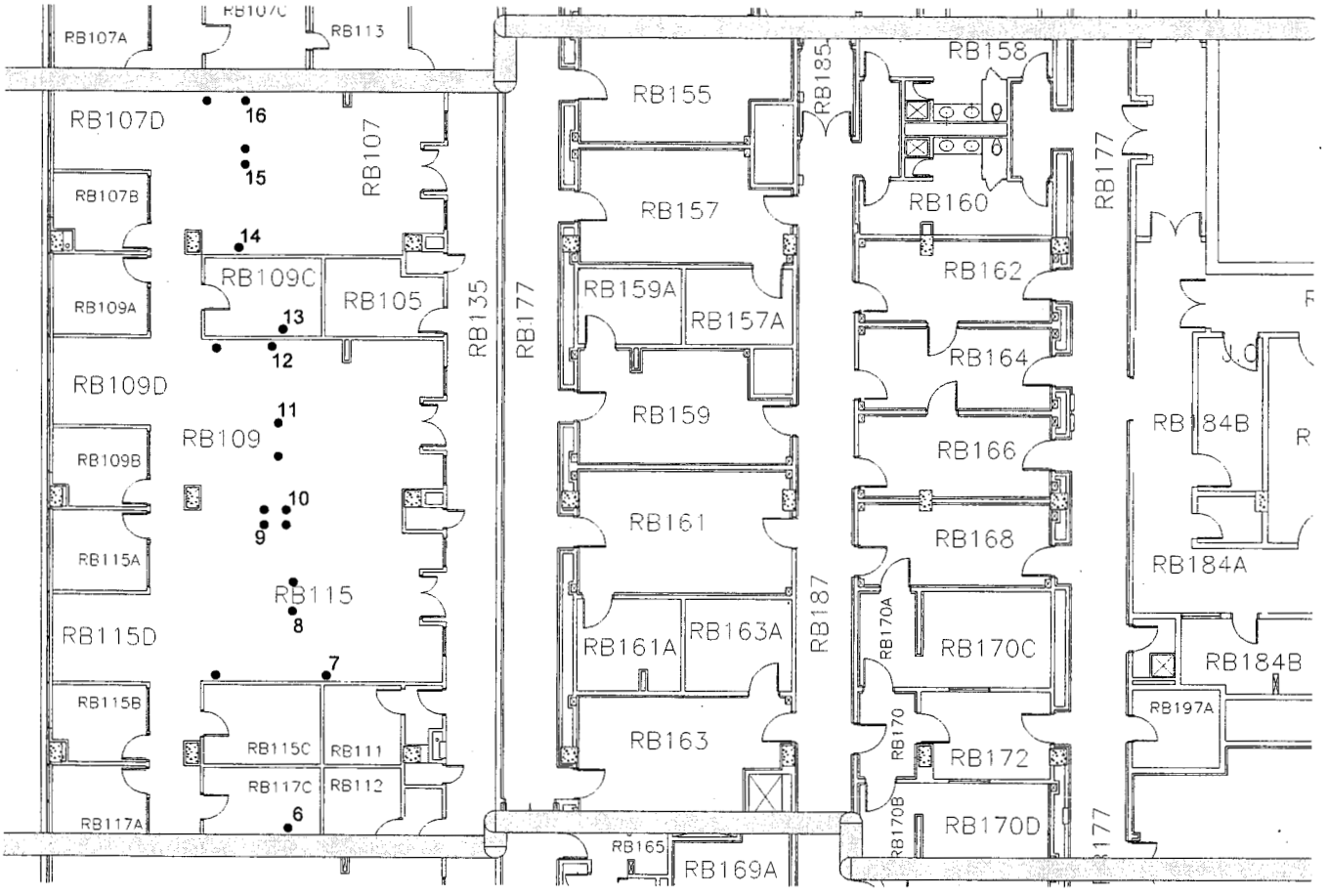
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Vacuum Systems Room(s): 1st Floor (2) Date: 1/21/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

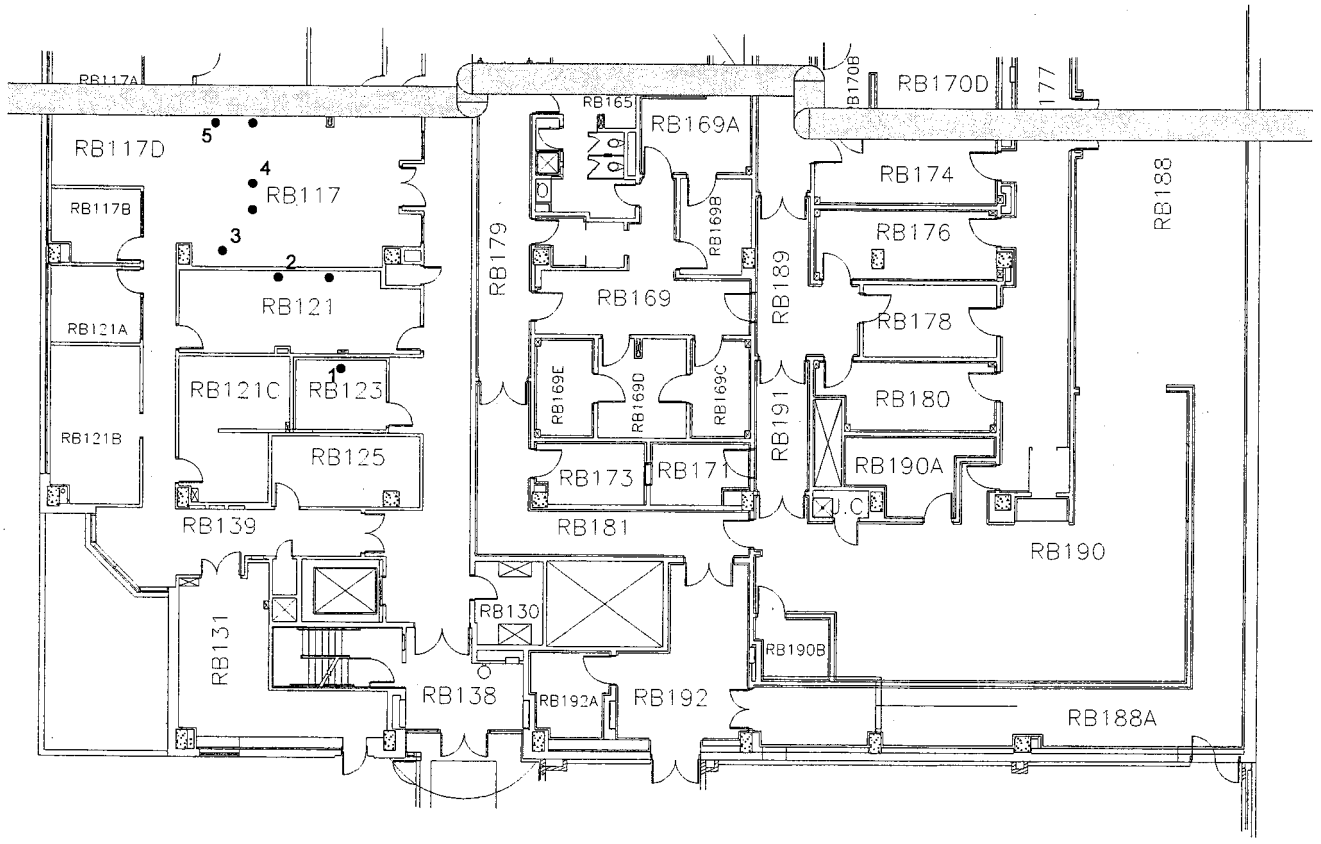
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Vacuum Systems Room(s): 1st Floor (3) Date: 1/21/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

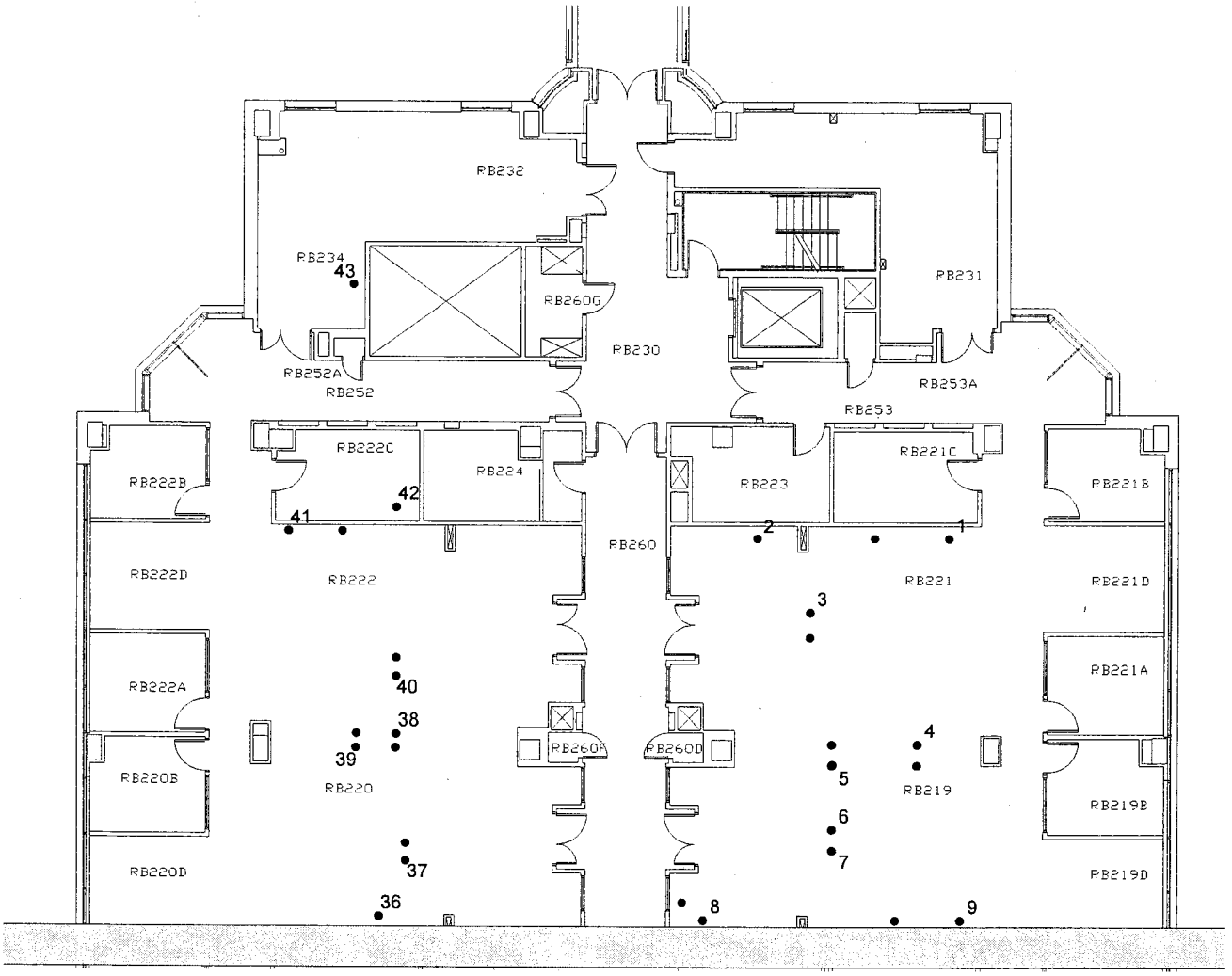
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Vacuum Systems Room(s): 2nd Floor (1) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

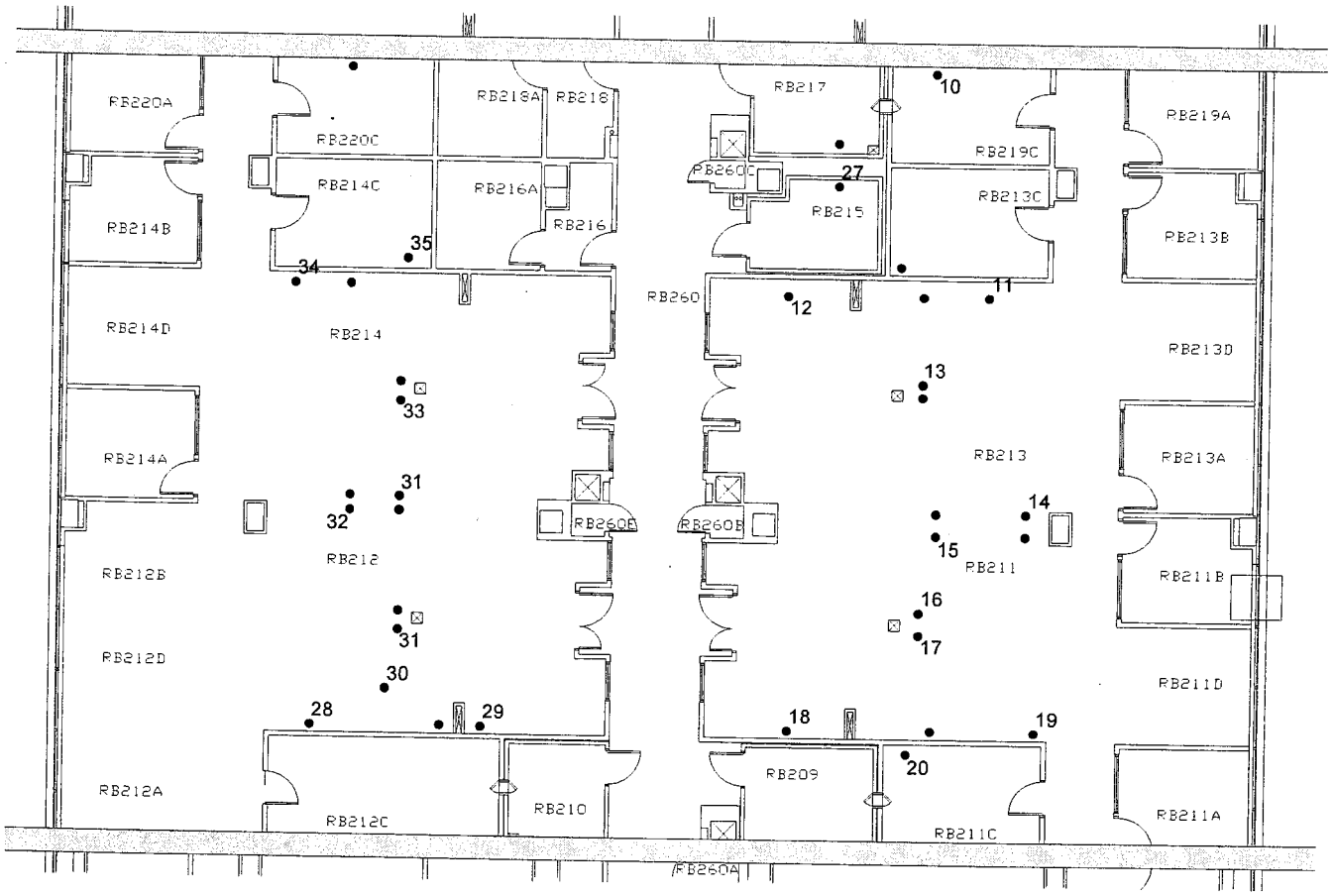
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Vacuum Systems Room(s): 2nd Floor (2) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

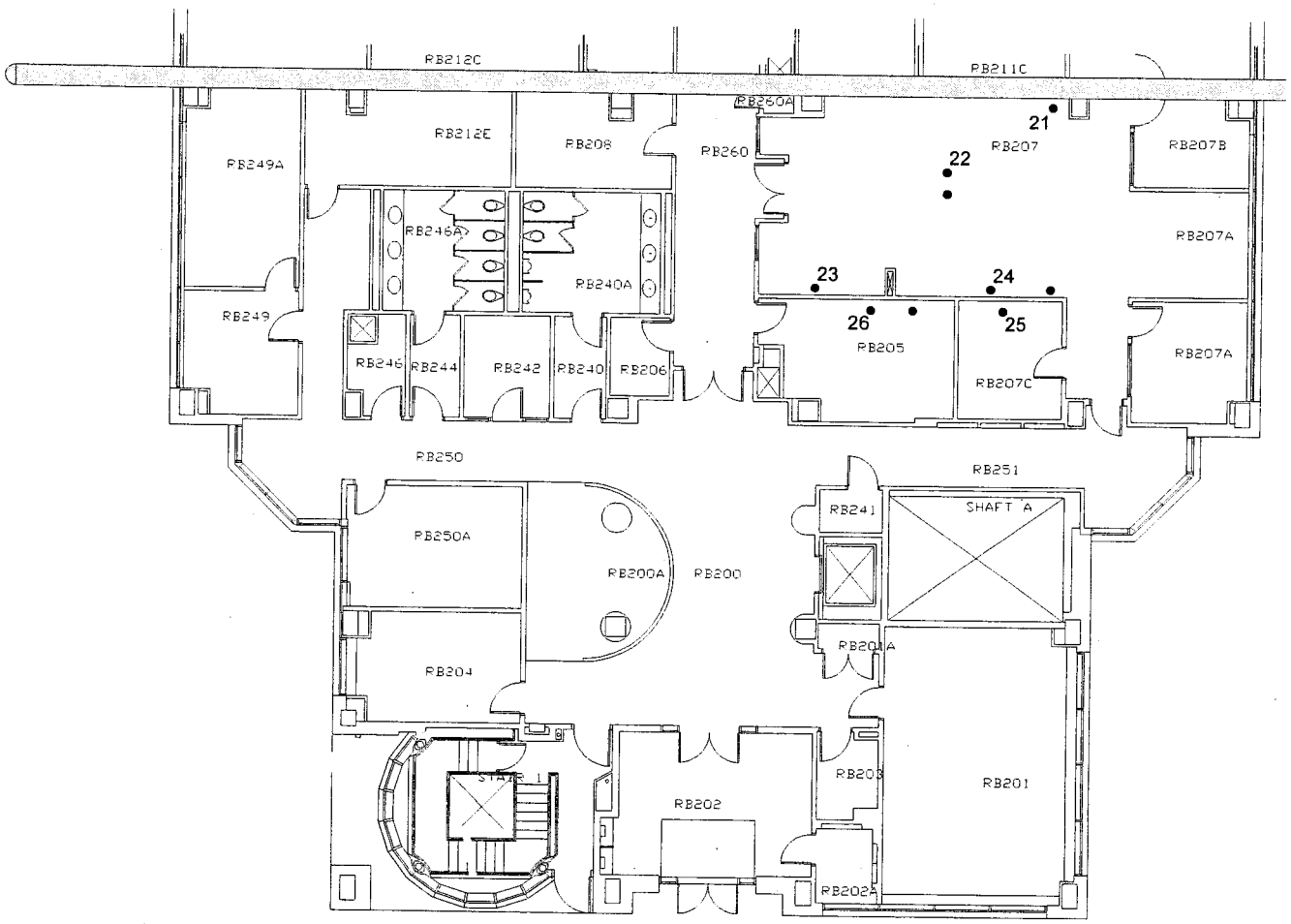
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Vacuum Systems Room(s): 2nd Floor (3) Date: 1/22/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

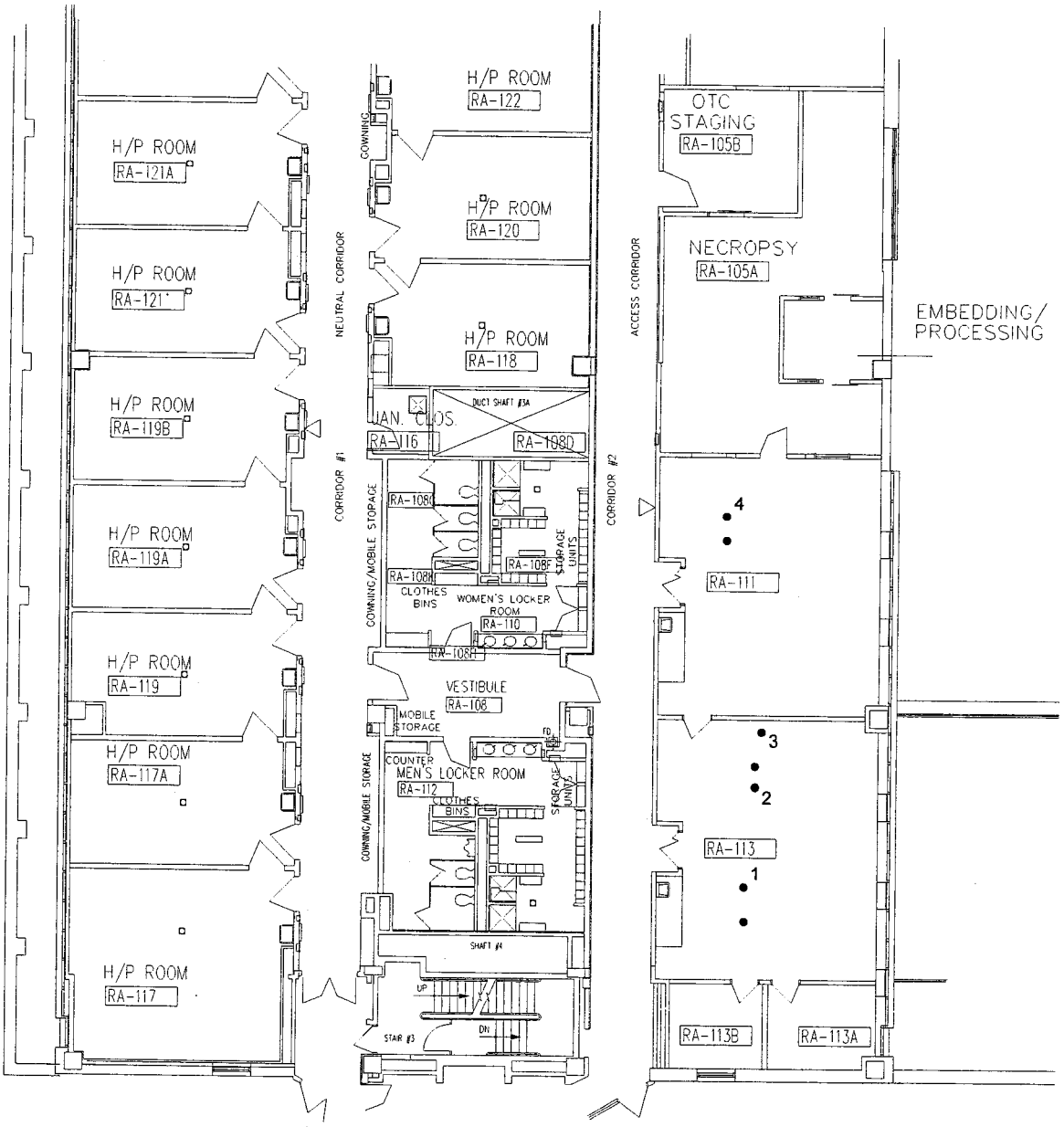
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 1st Floor (1) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

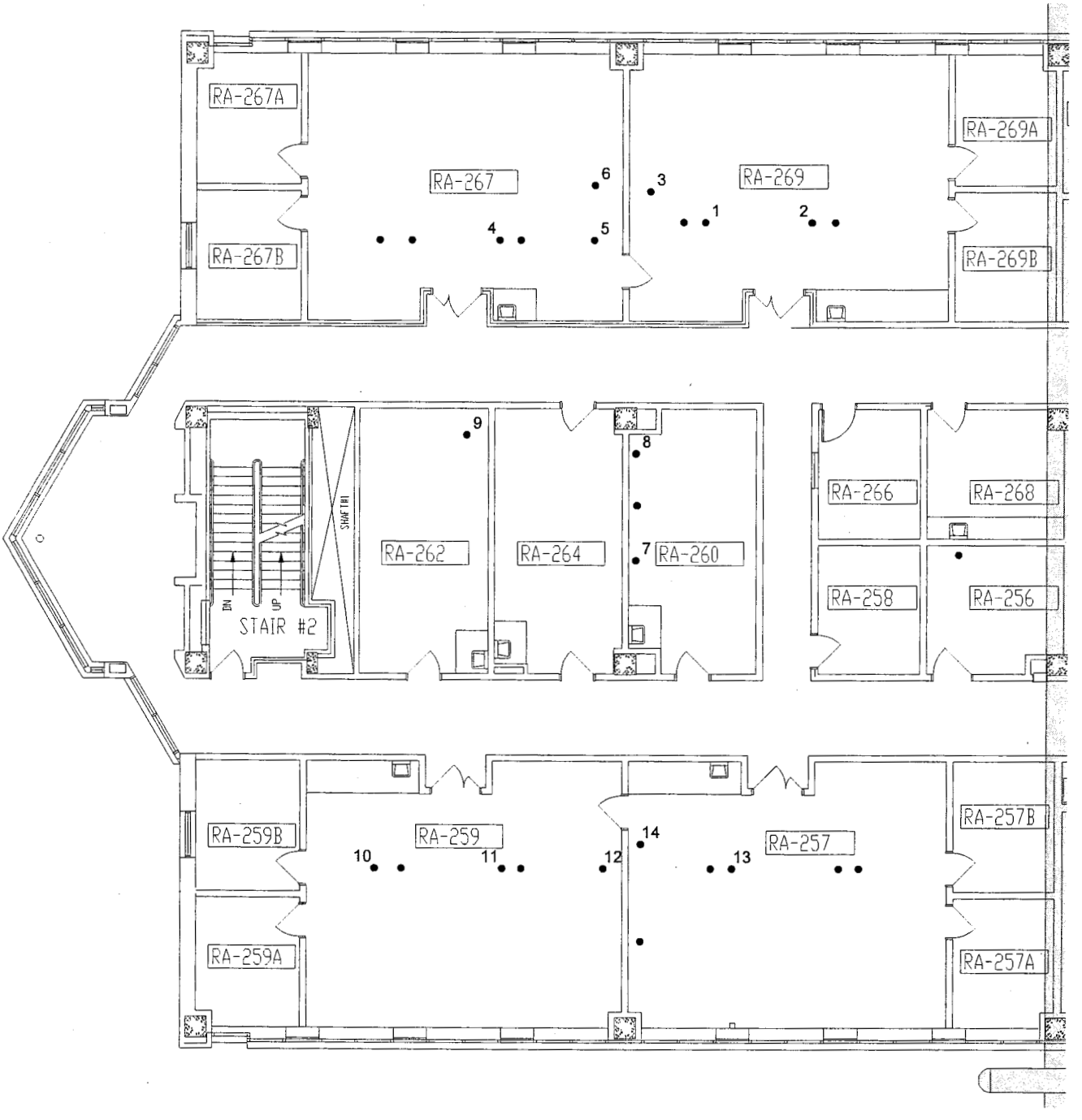
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 2nd Floor (1) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

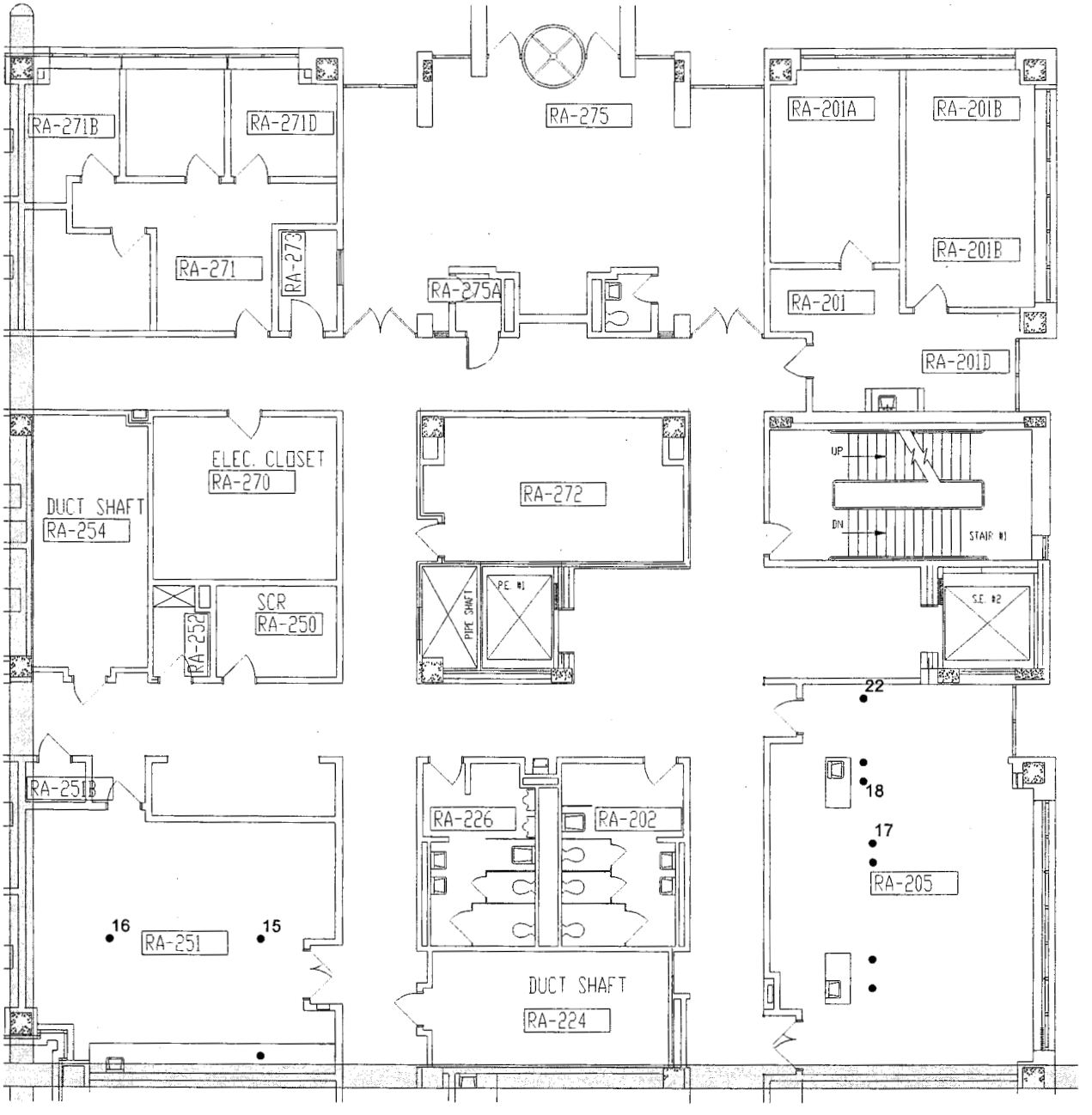
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 2nd Floor (2) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

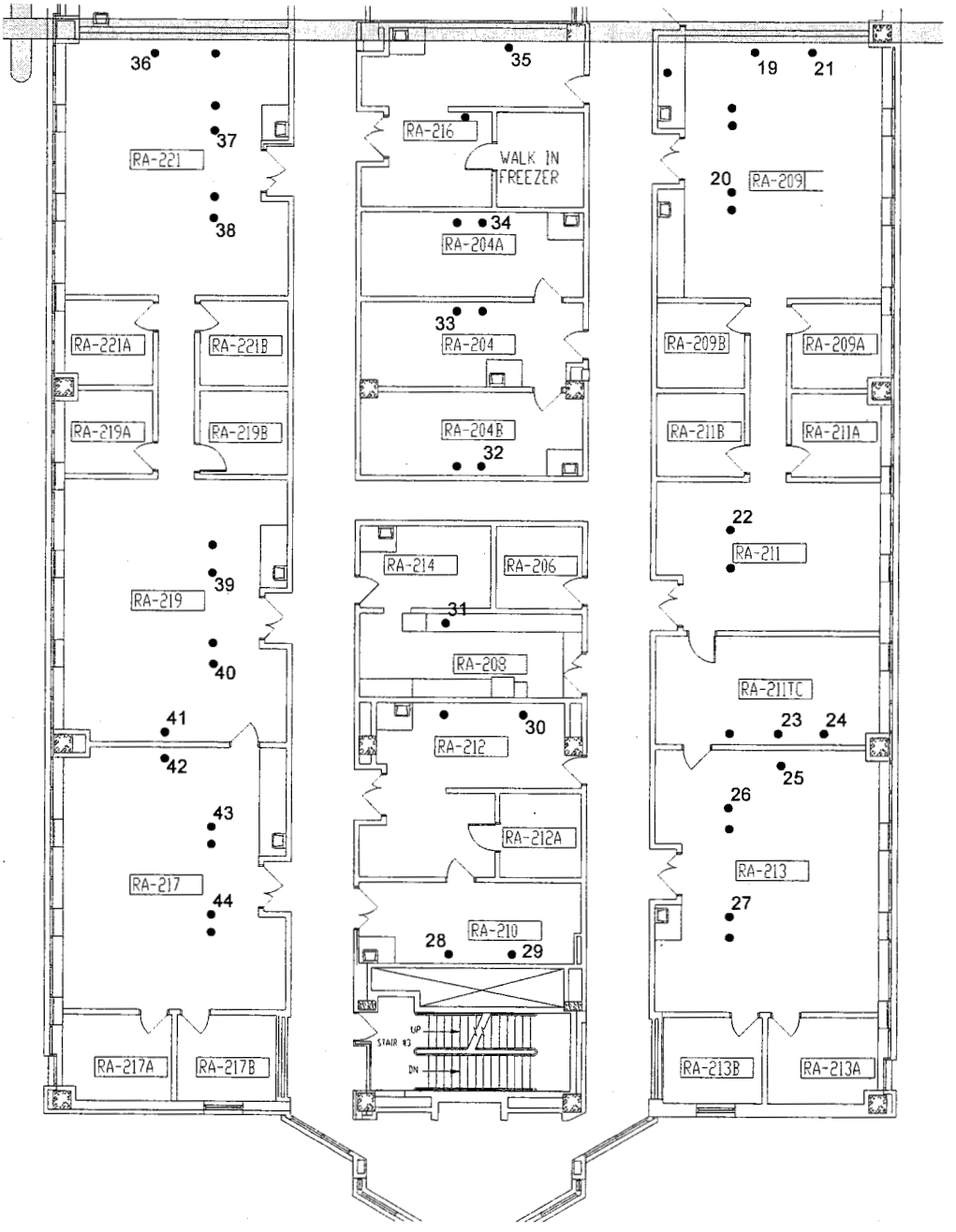
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 2nd Floor (3) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

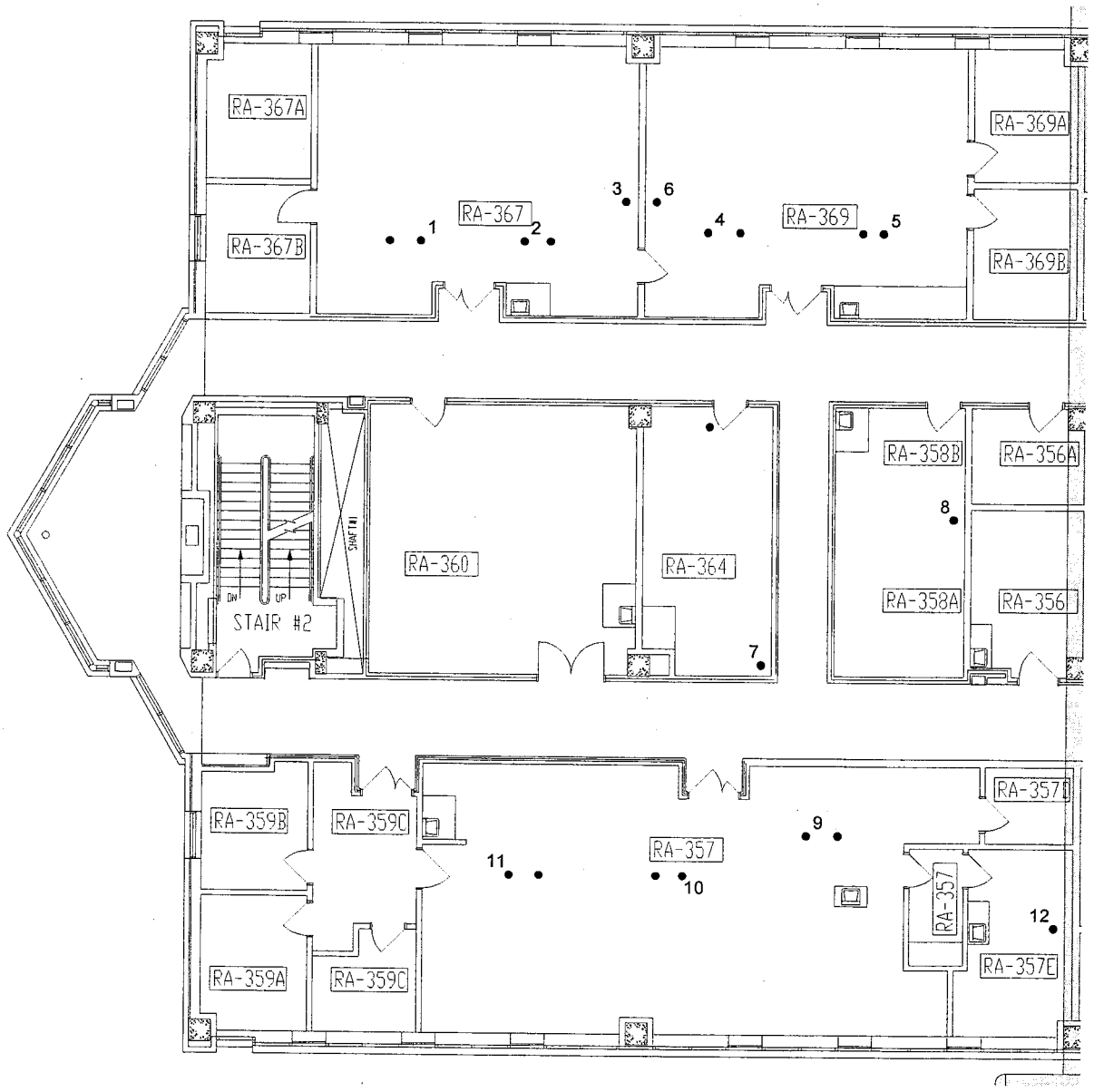
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 3rd Floor (1) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

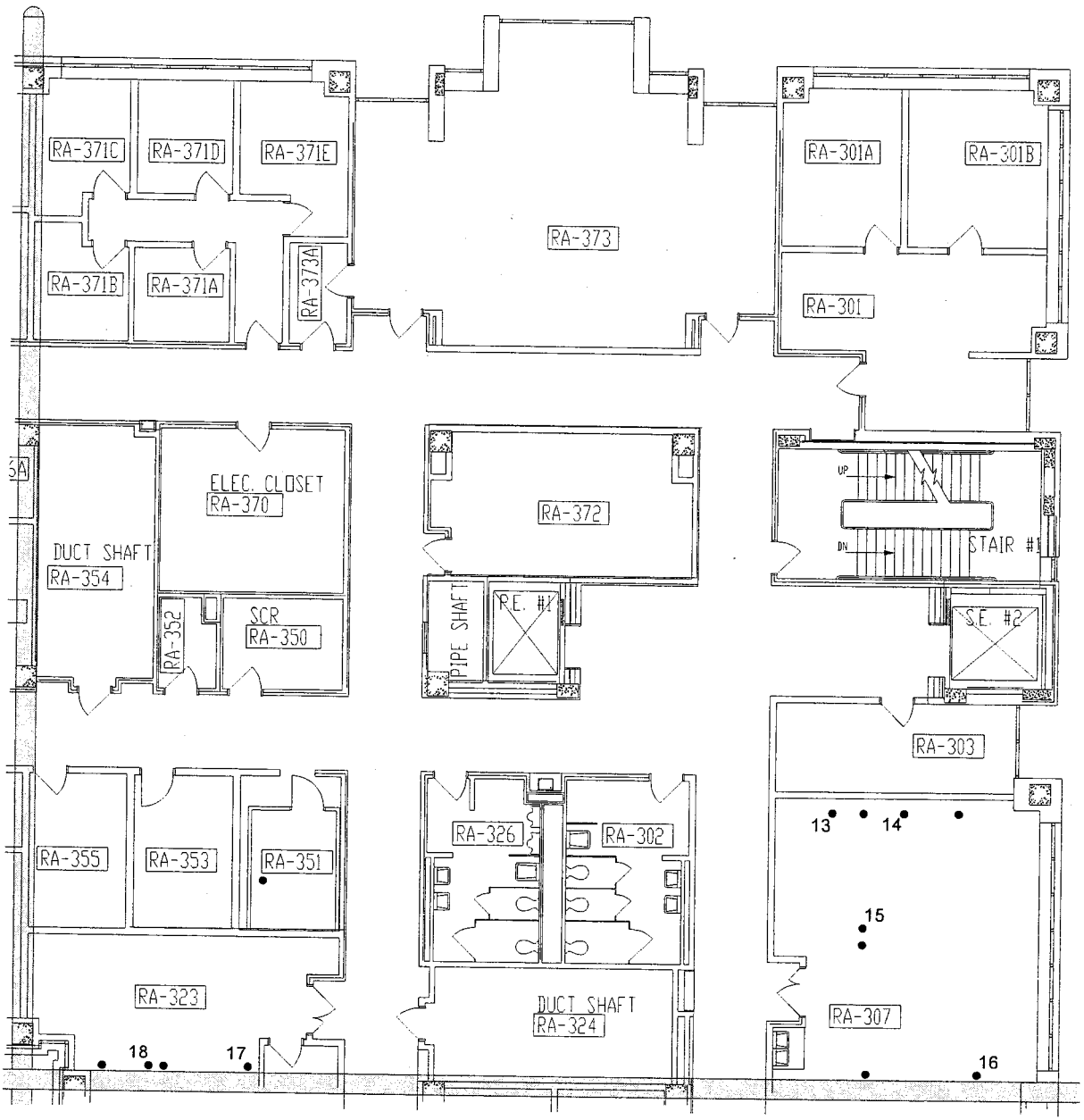
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 3rd Floor (2) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



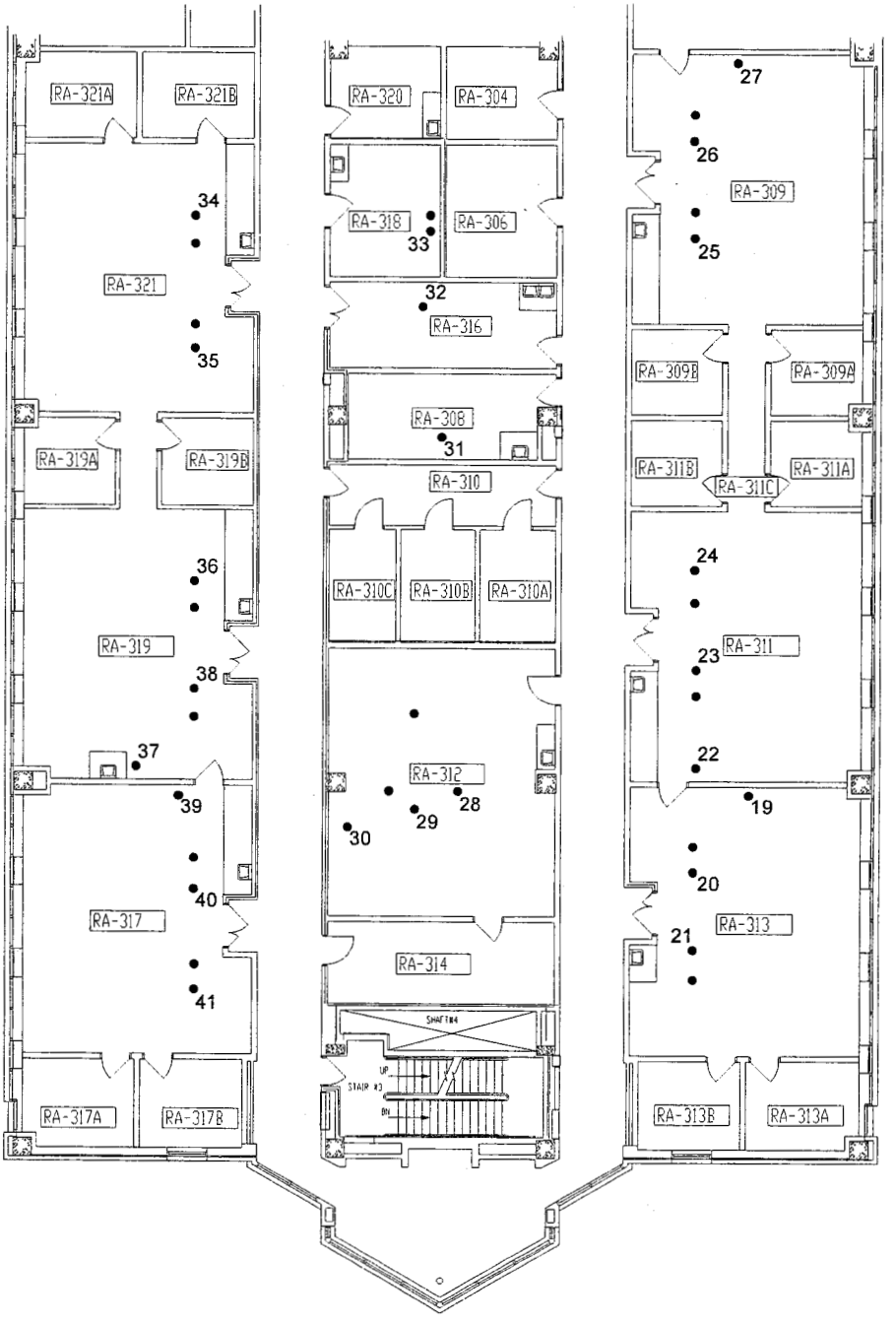
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Vacuum Systems Room(s): 3rd Floor (3) Date: 1/17/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

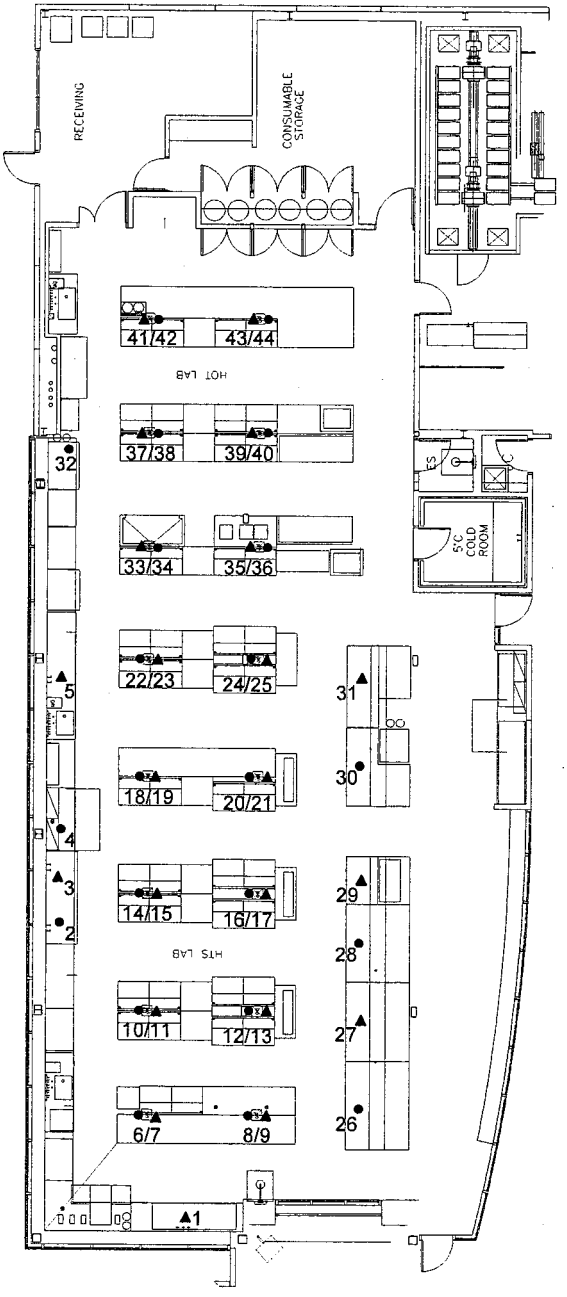
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: Vacuum Systems Room(s): 1st Floor Date: 1/15/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



▲ - Wipes taken

Appendix C

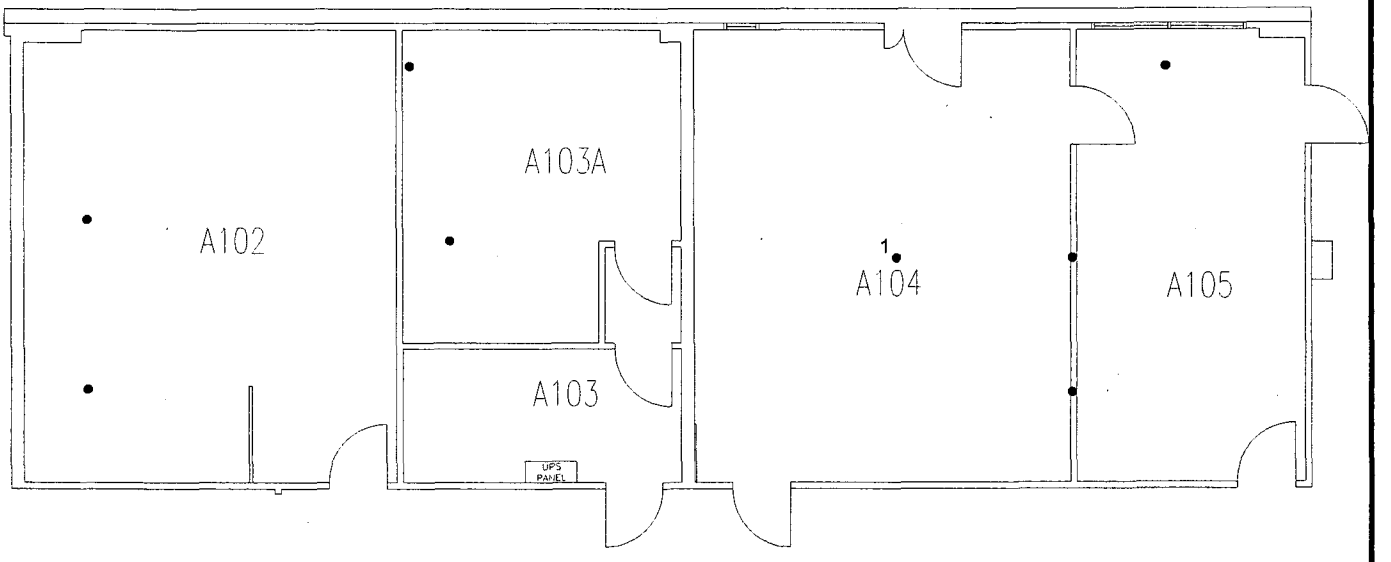
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Vacuum Systems Room(s): A102-A105 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



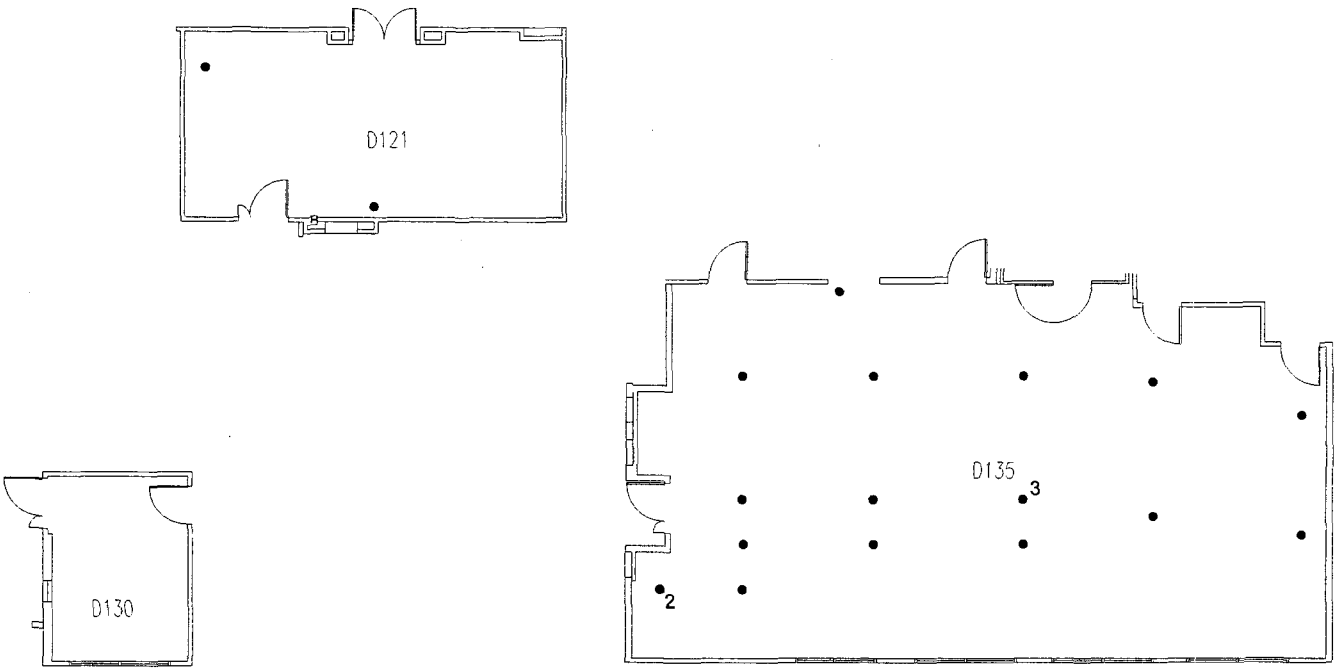
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Vacuum Systems Room(s): D121, D130, D135 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

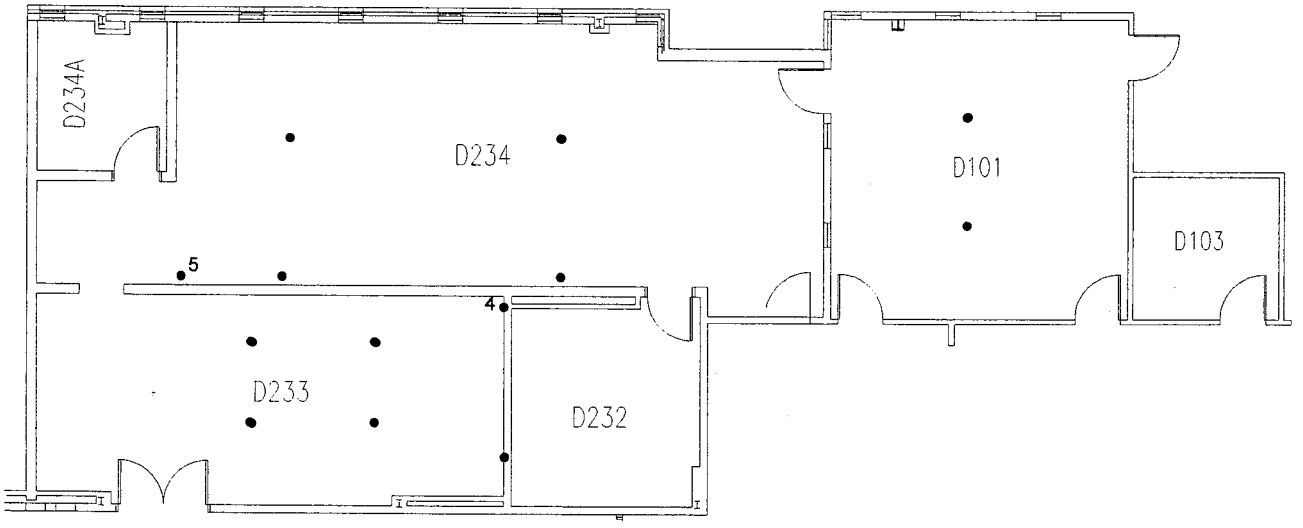
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Vacuum Systems Room(s): D101, D103, D232, D233, D234 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



APPENDIX C

Ventilation

Appendix C

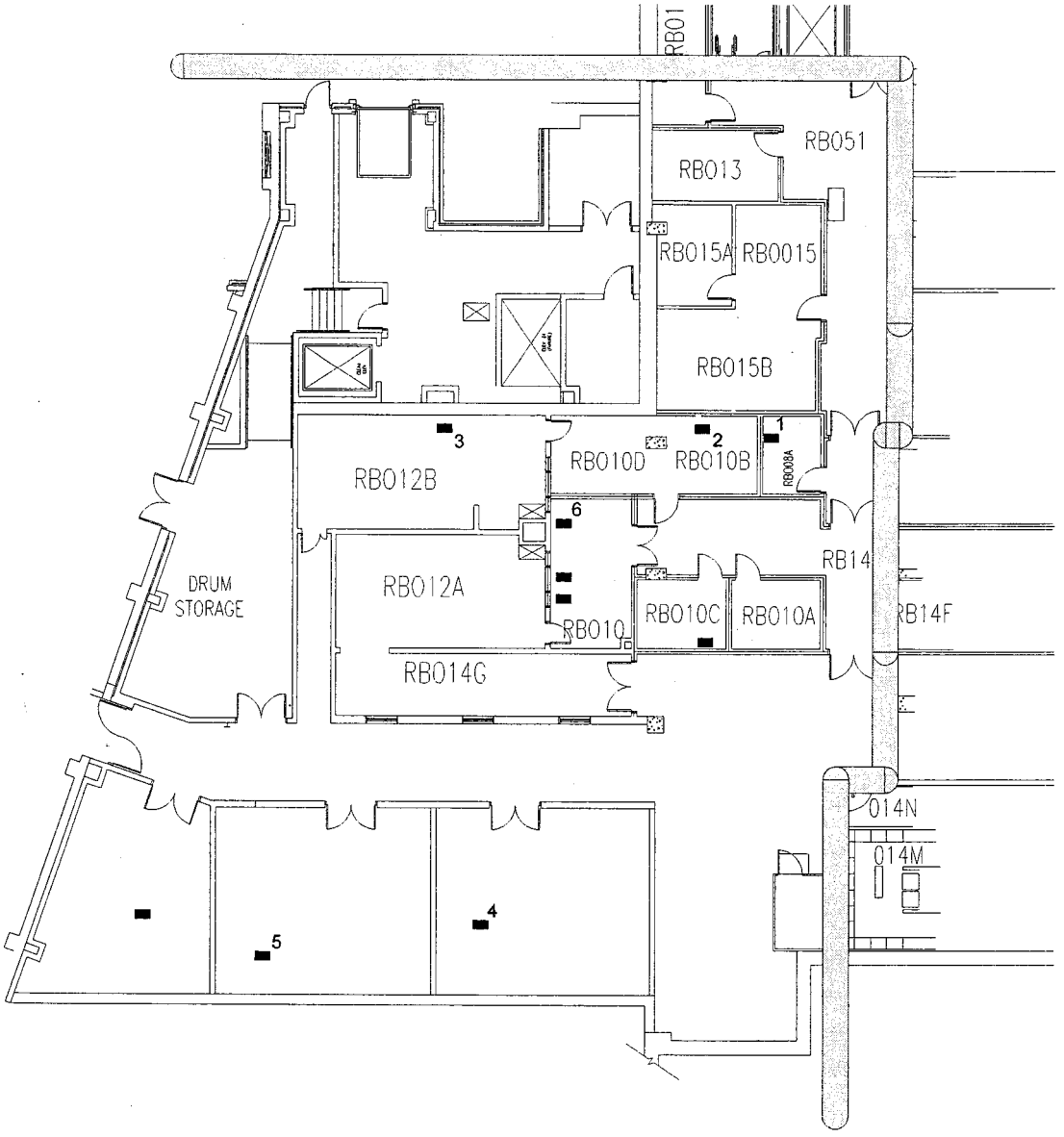
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): Basement Date: 1/24/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



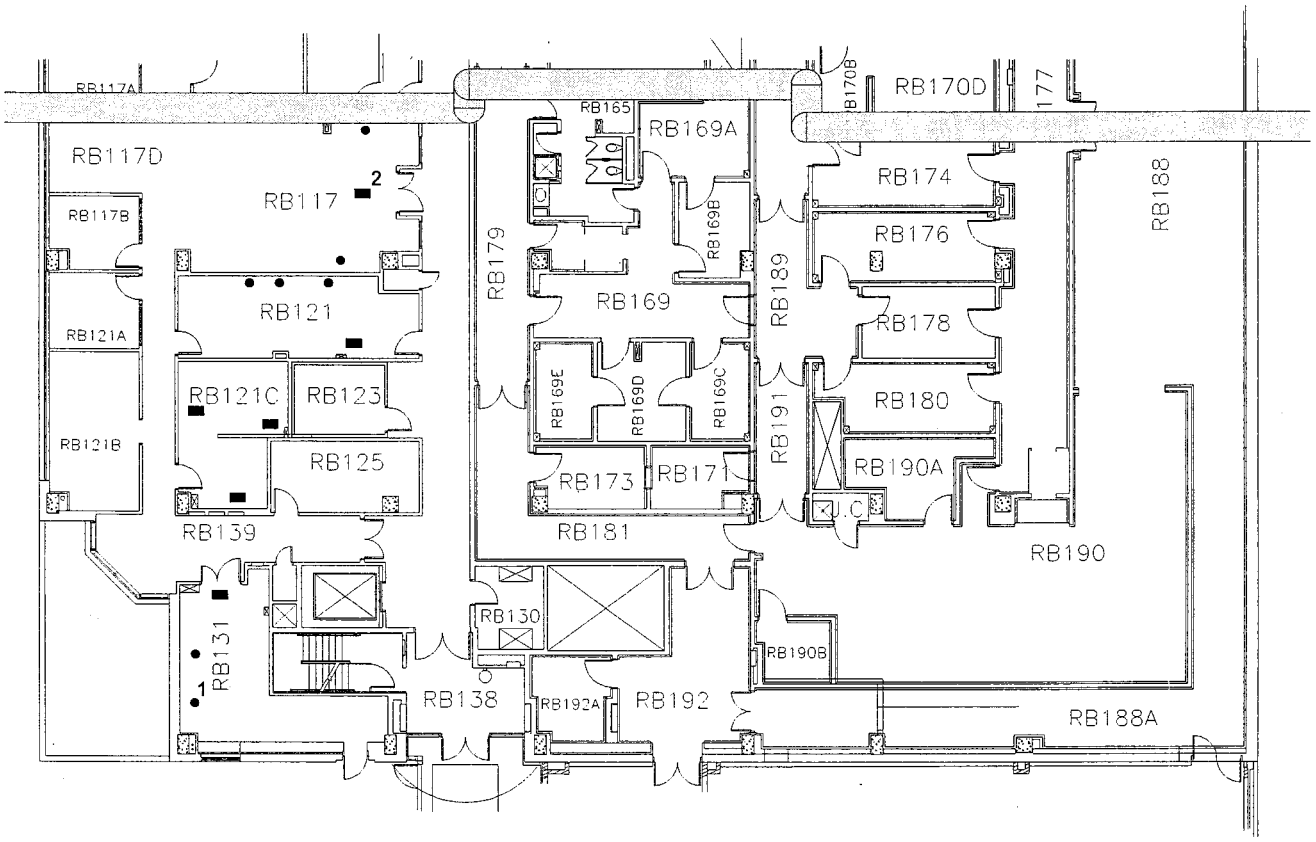
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): 1st Floor (1) Date: 1/24/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

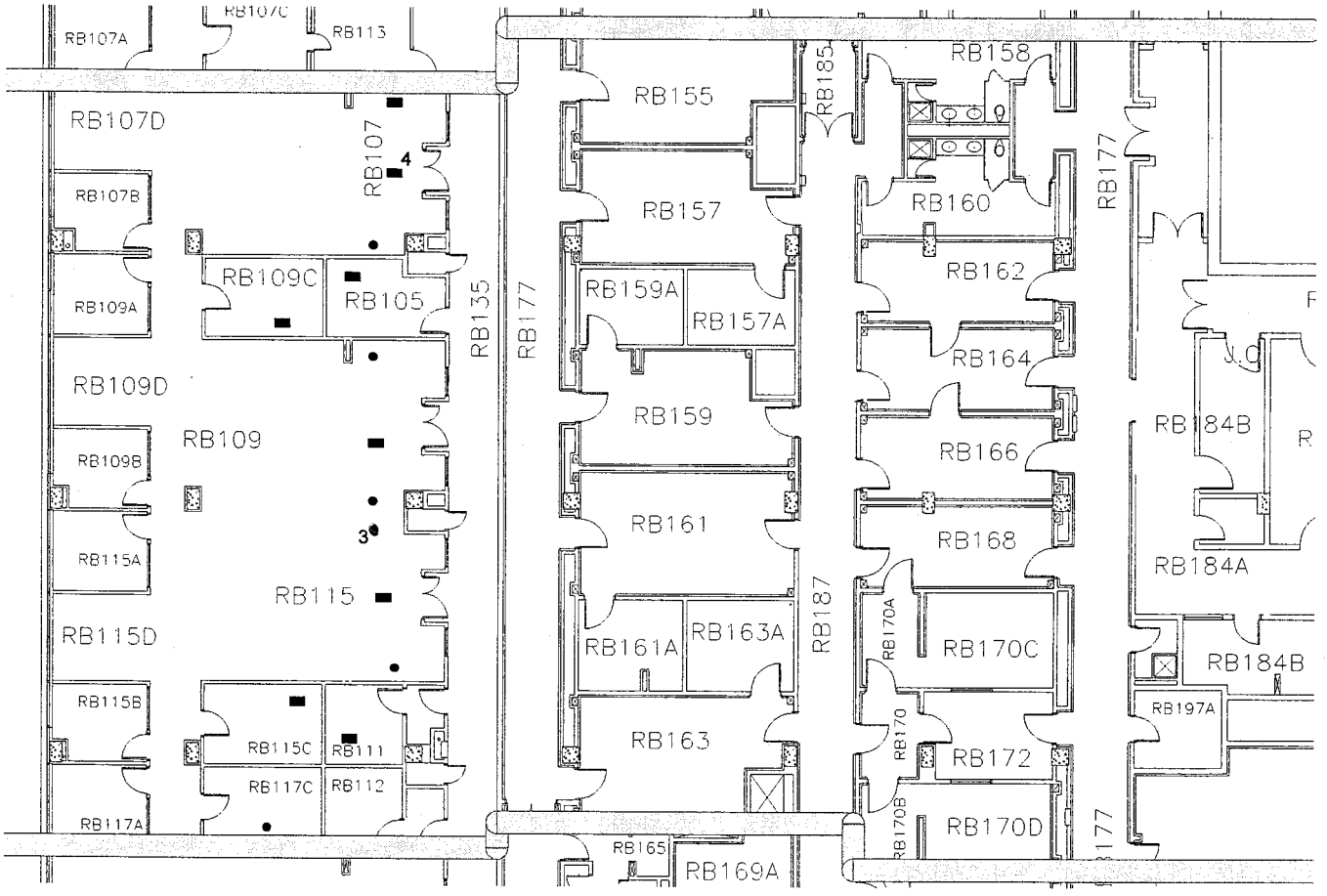
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): 1st Floor (3) Date: 1/24/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

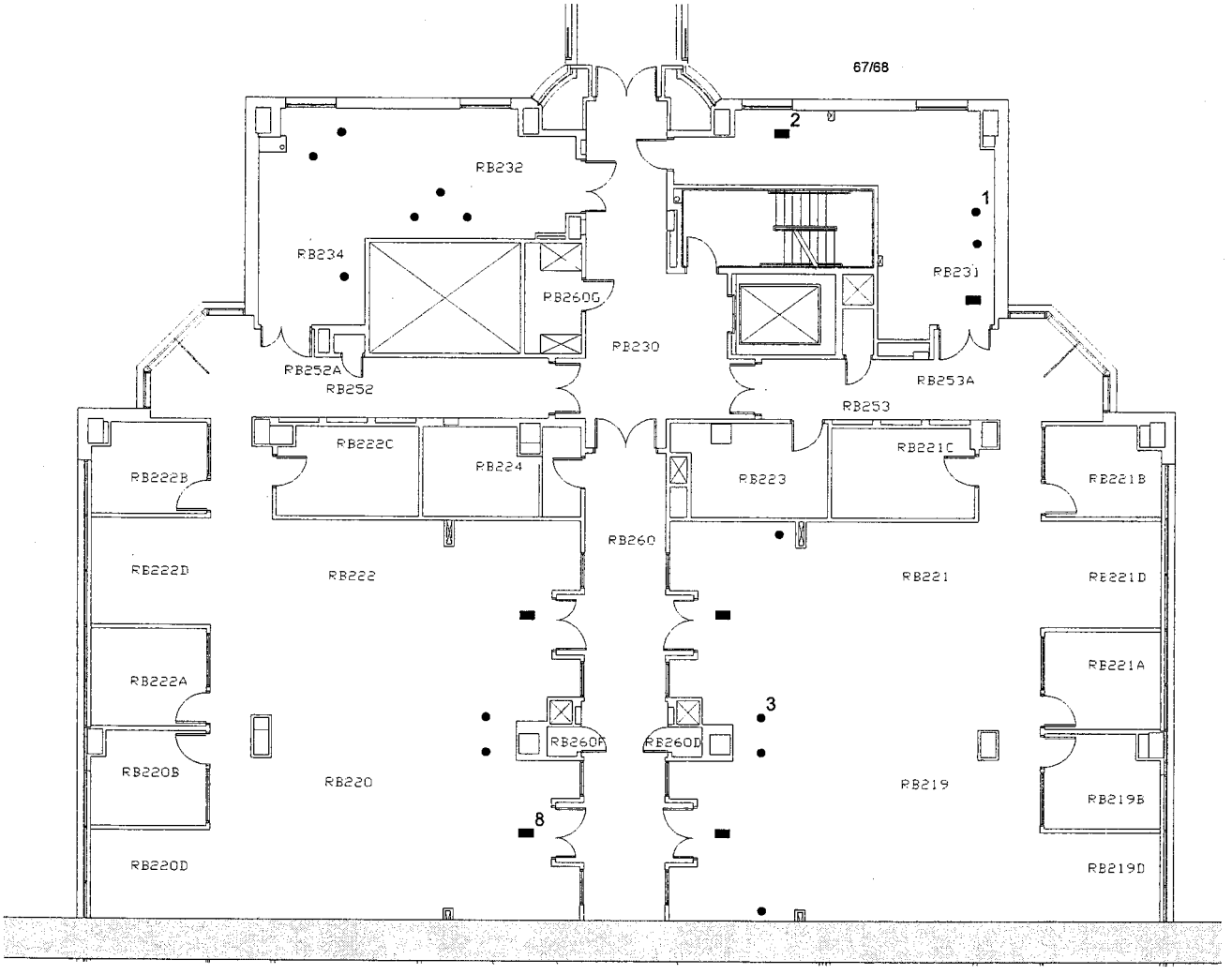
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): 2nd Floor (1) Date: 1/24/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

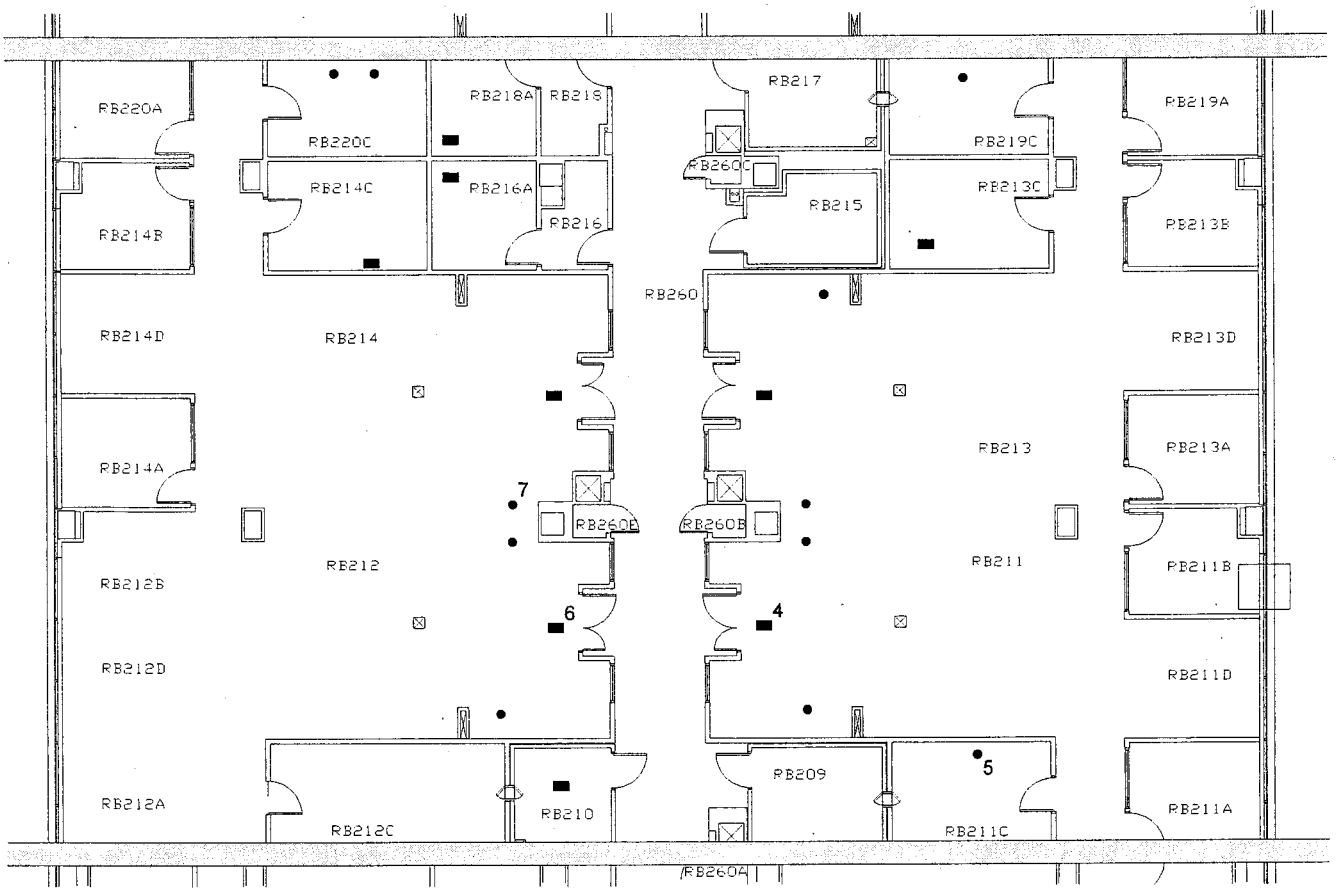
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): 2nd Floor (2) Date: 1/24/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

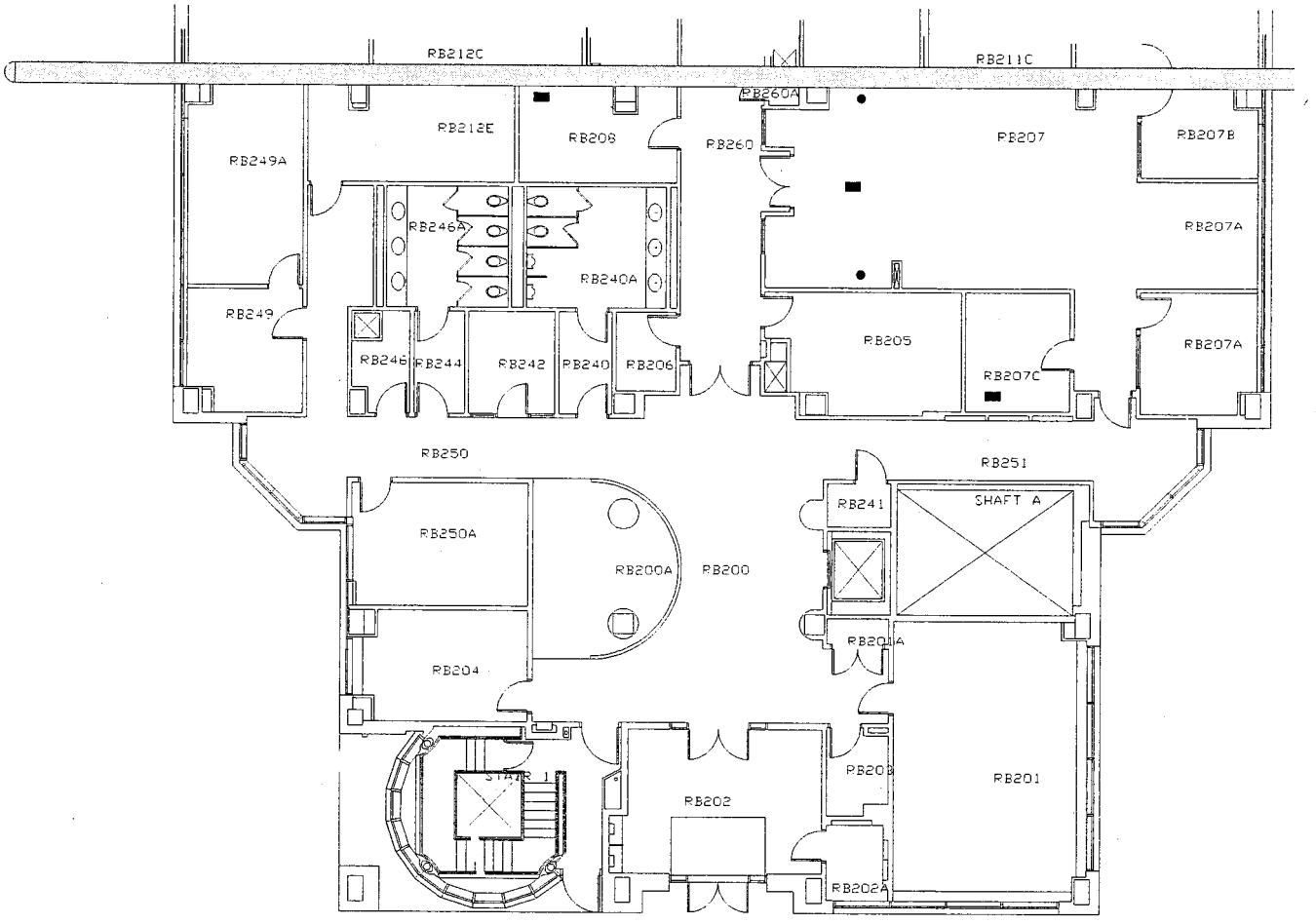
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): 2nd Floor (3) Date: 1/24/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

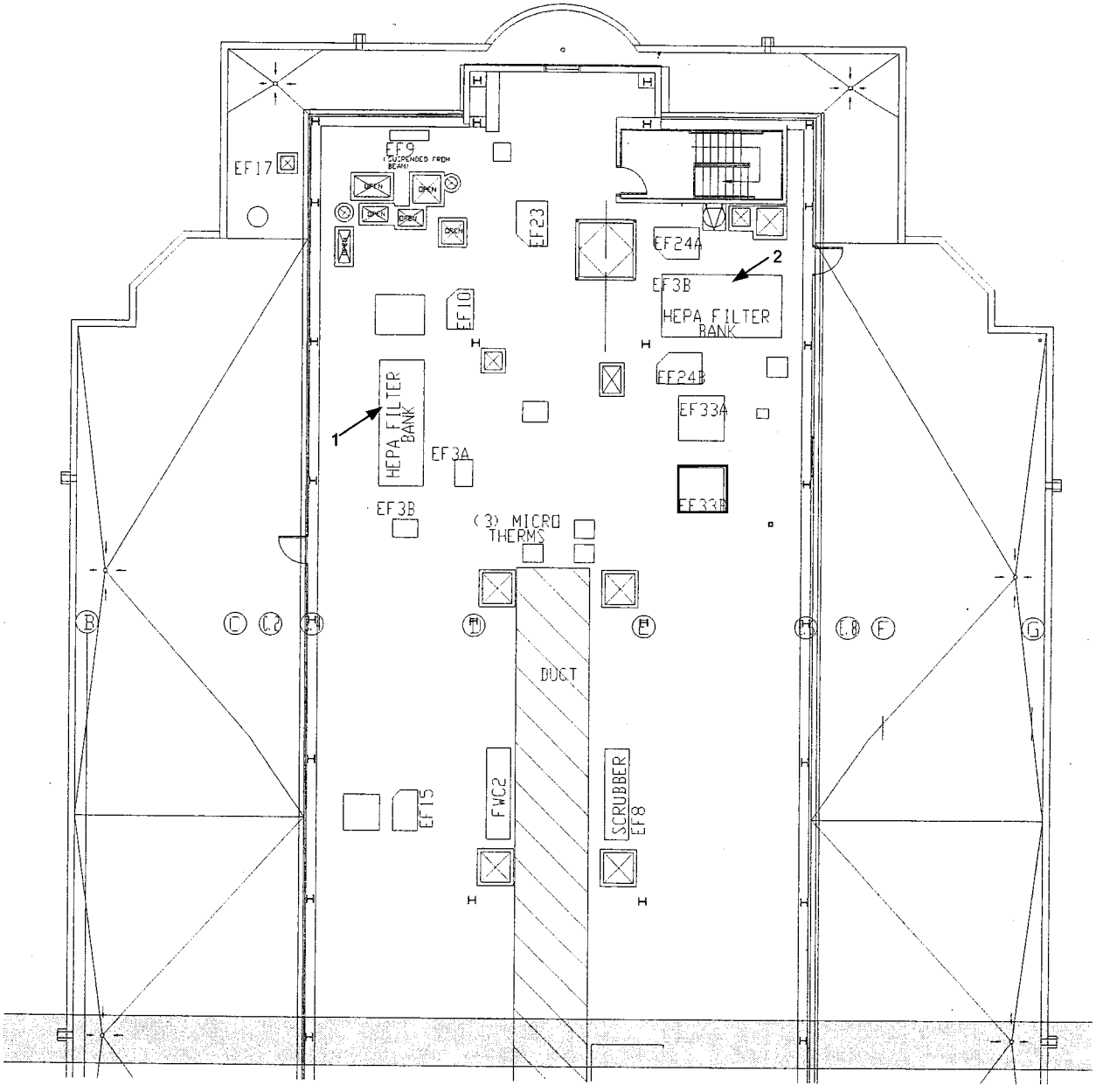
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): Penthouse (1) Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

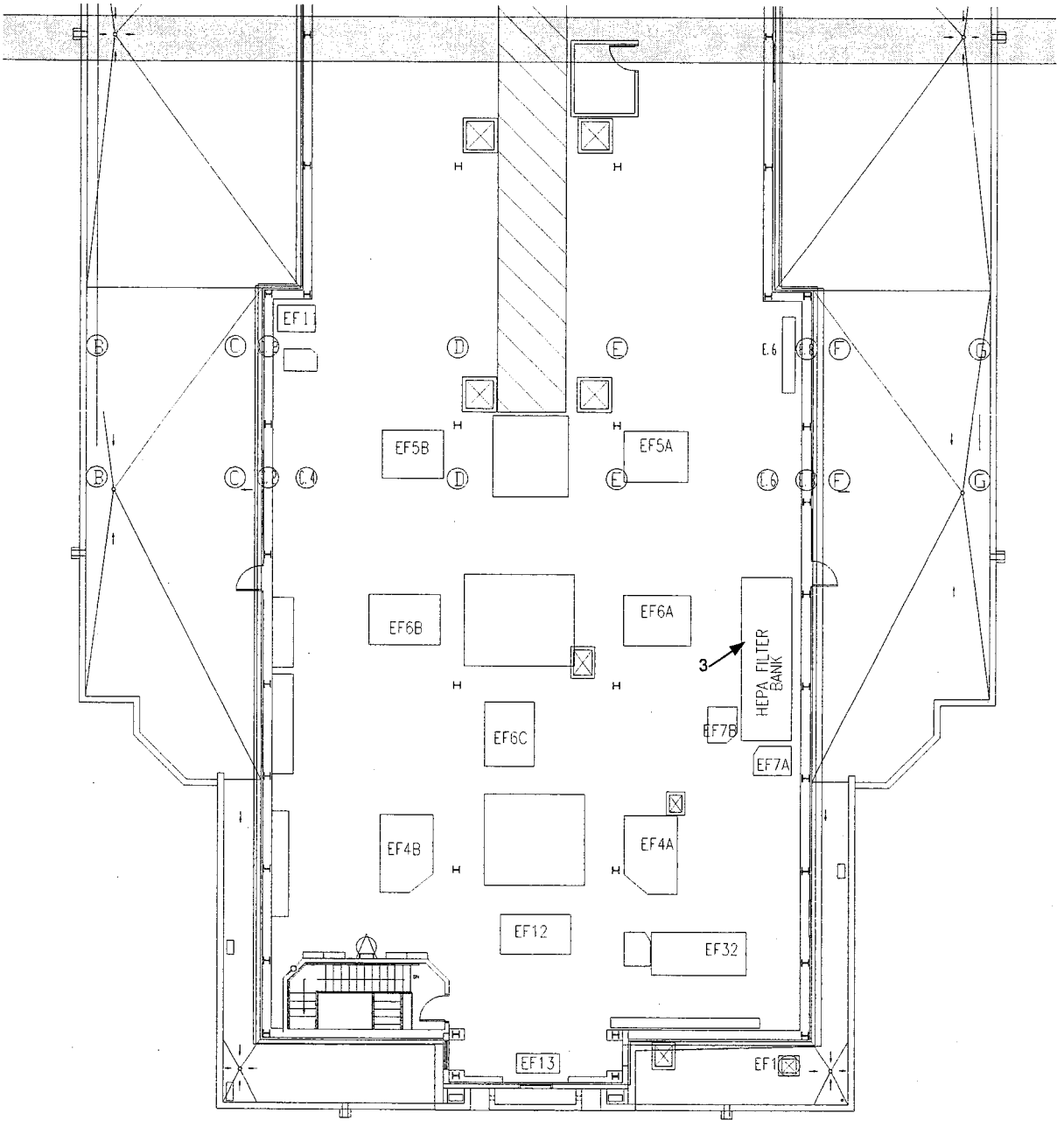
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B24 Survey Unit: Ventilation Systems Room(s): Penthouse (2) Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

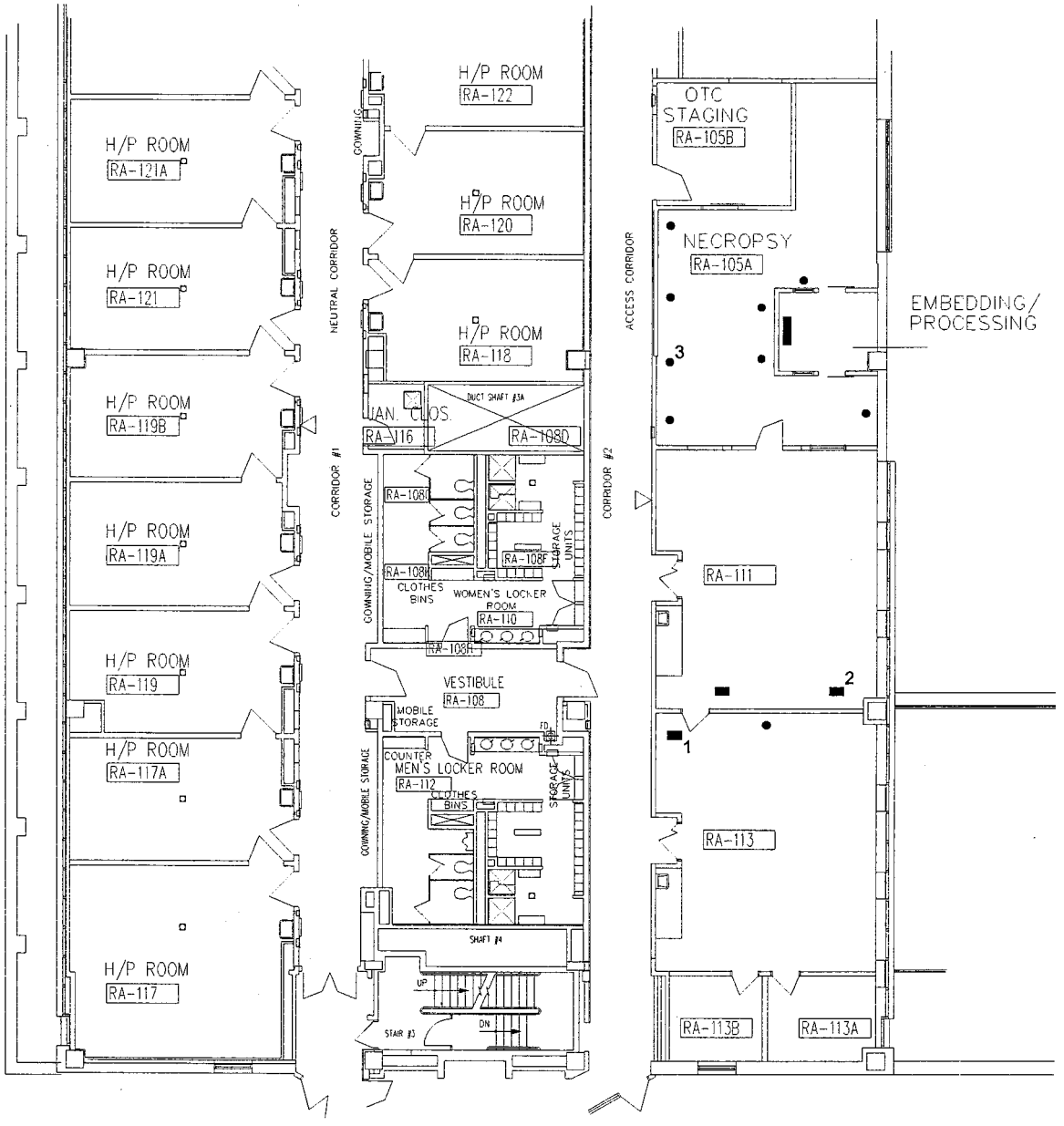
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 1st Floor (1) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

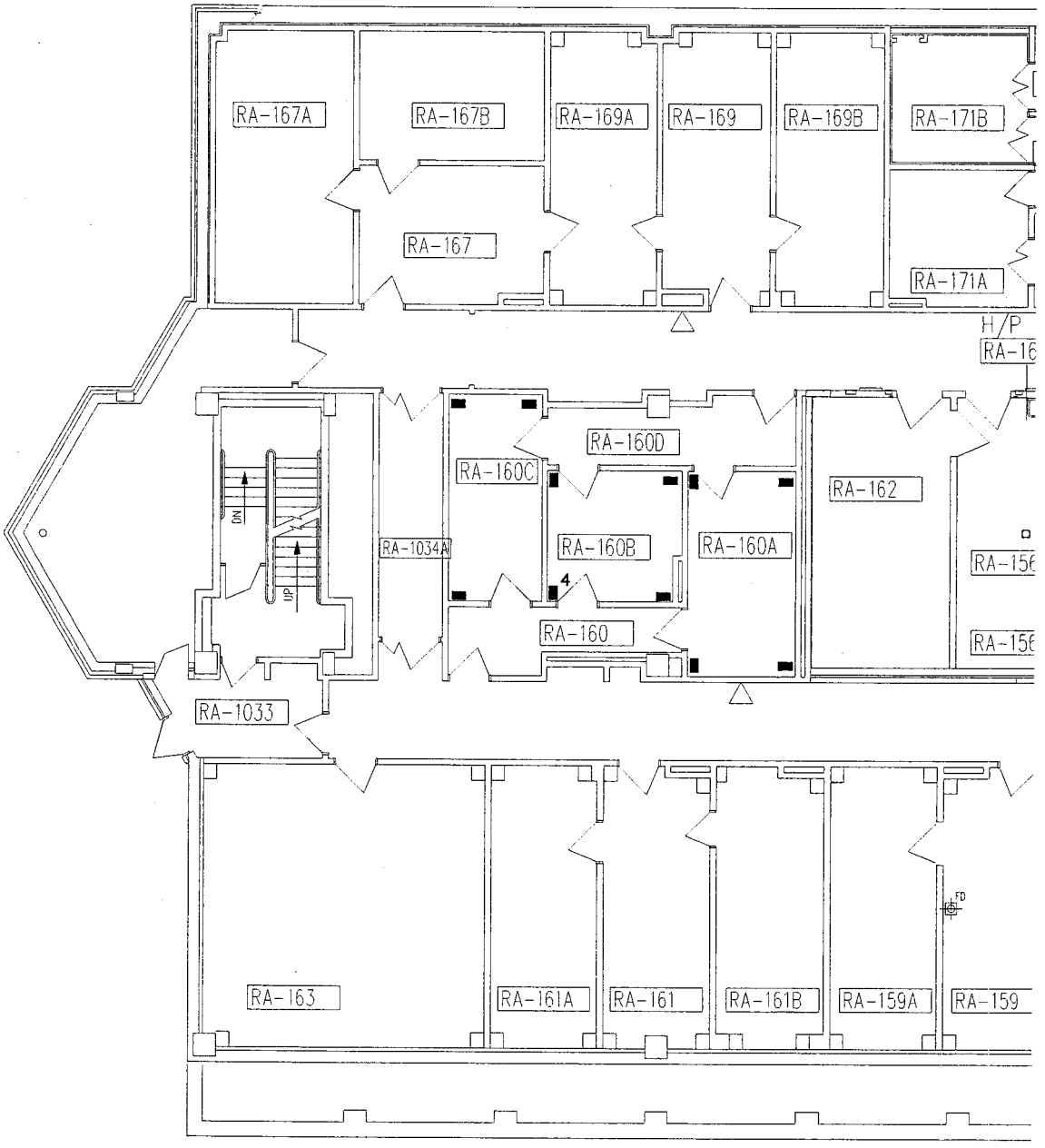
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 1st Floor (3) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

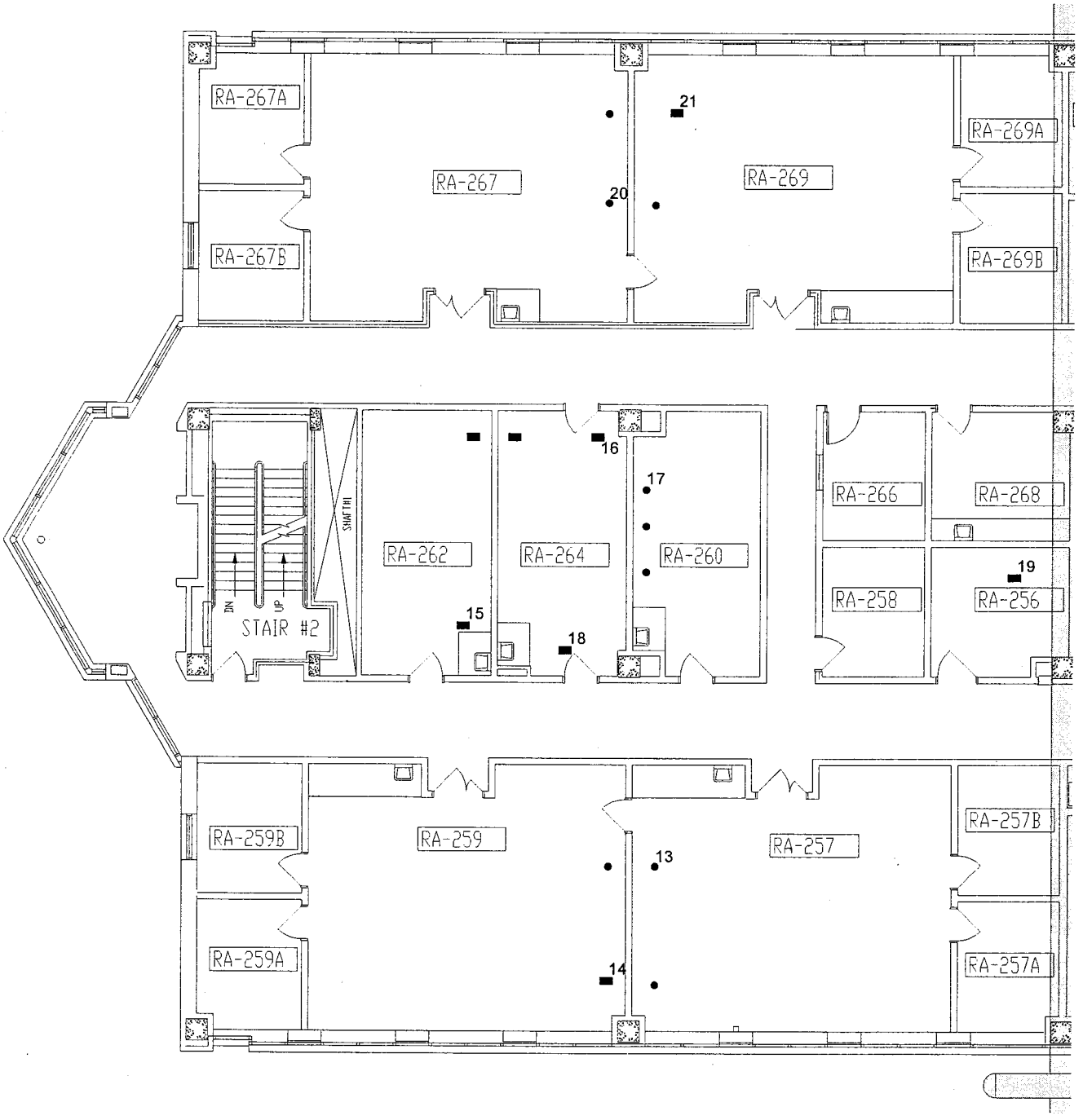
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 2nd Floor (1) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

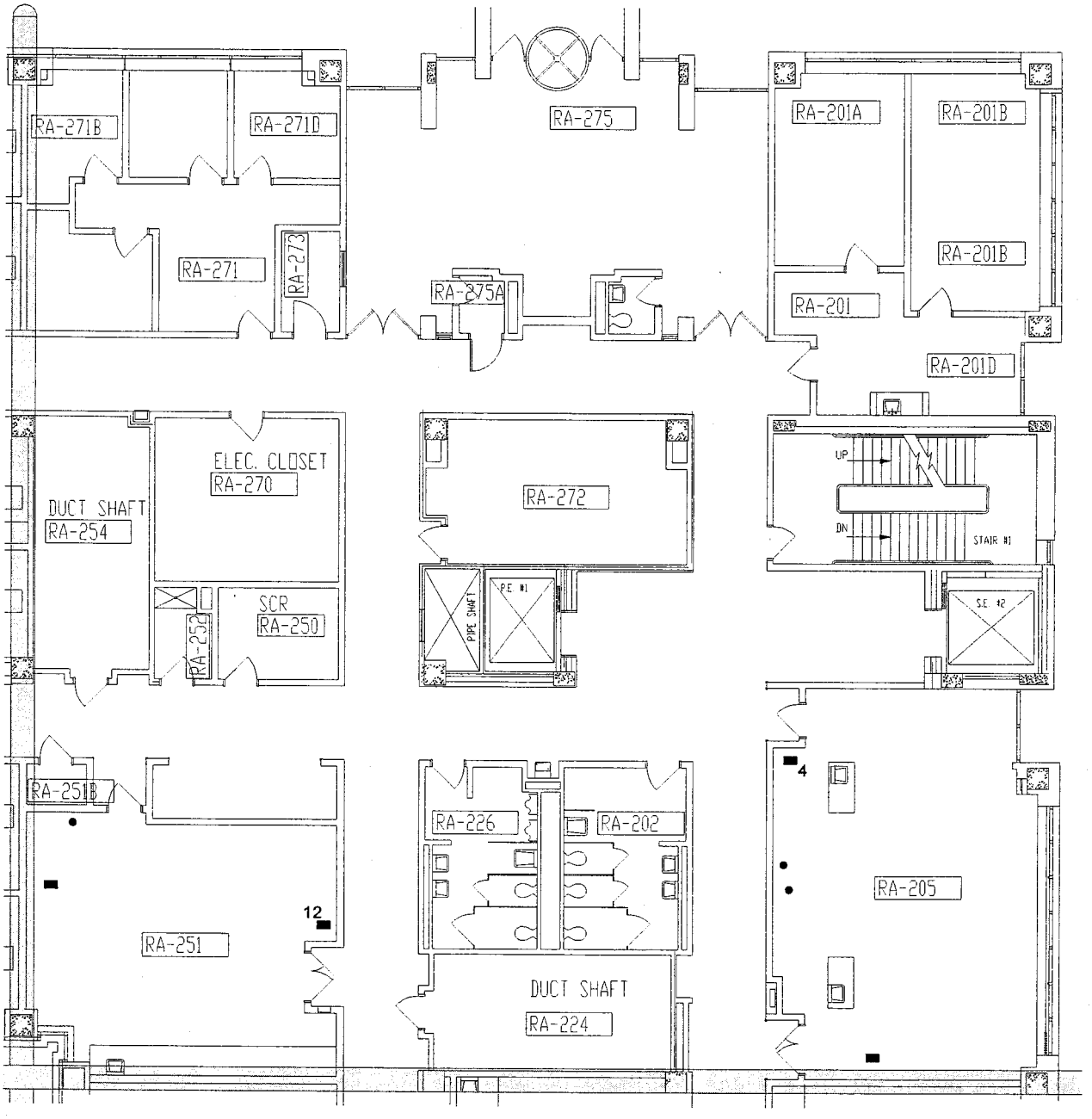
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 2nd Floor (2) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

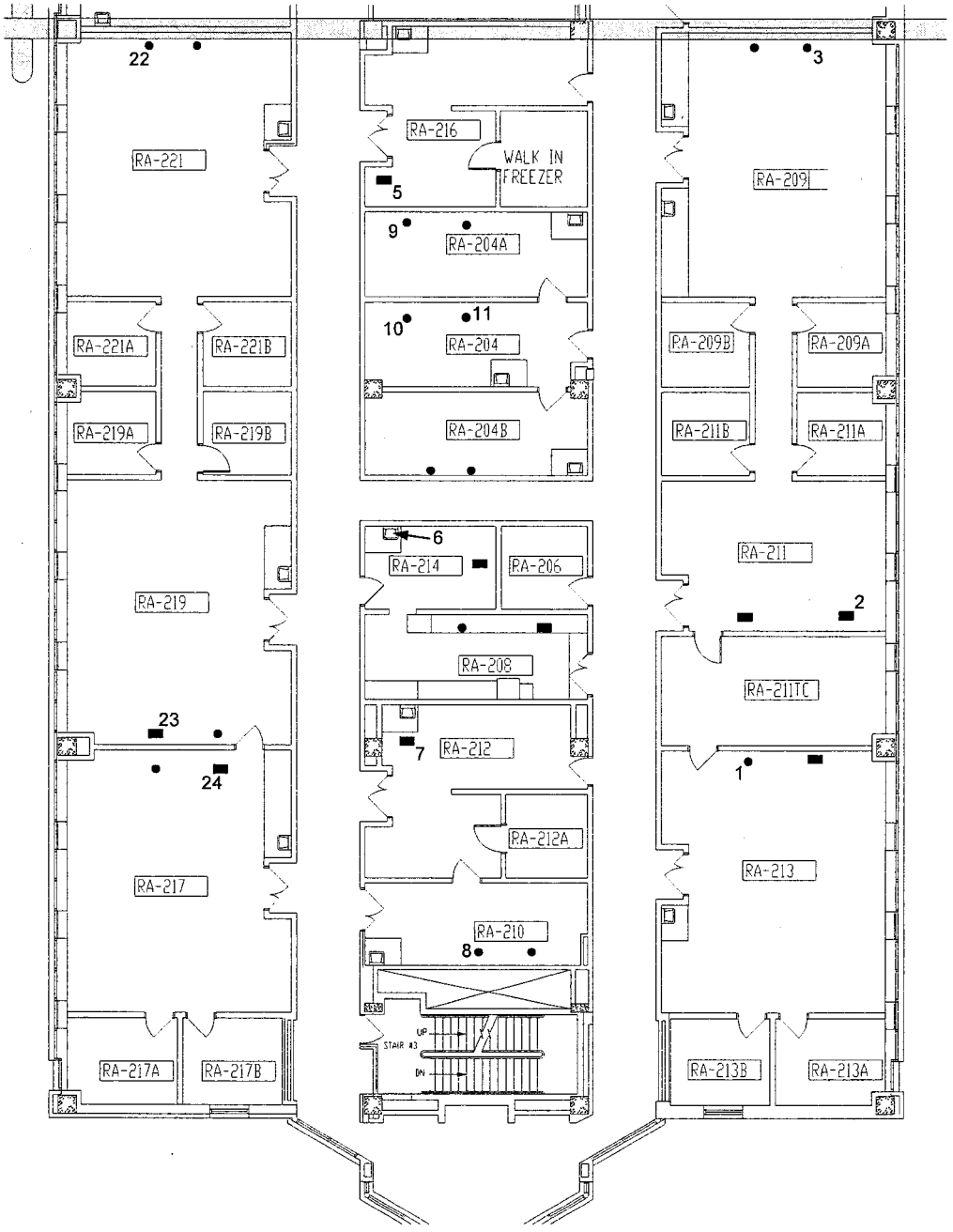
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 2nd Floor (3) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

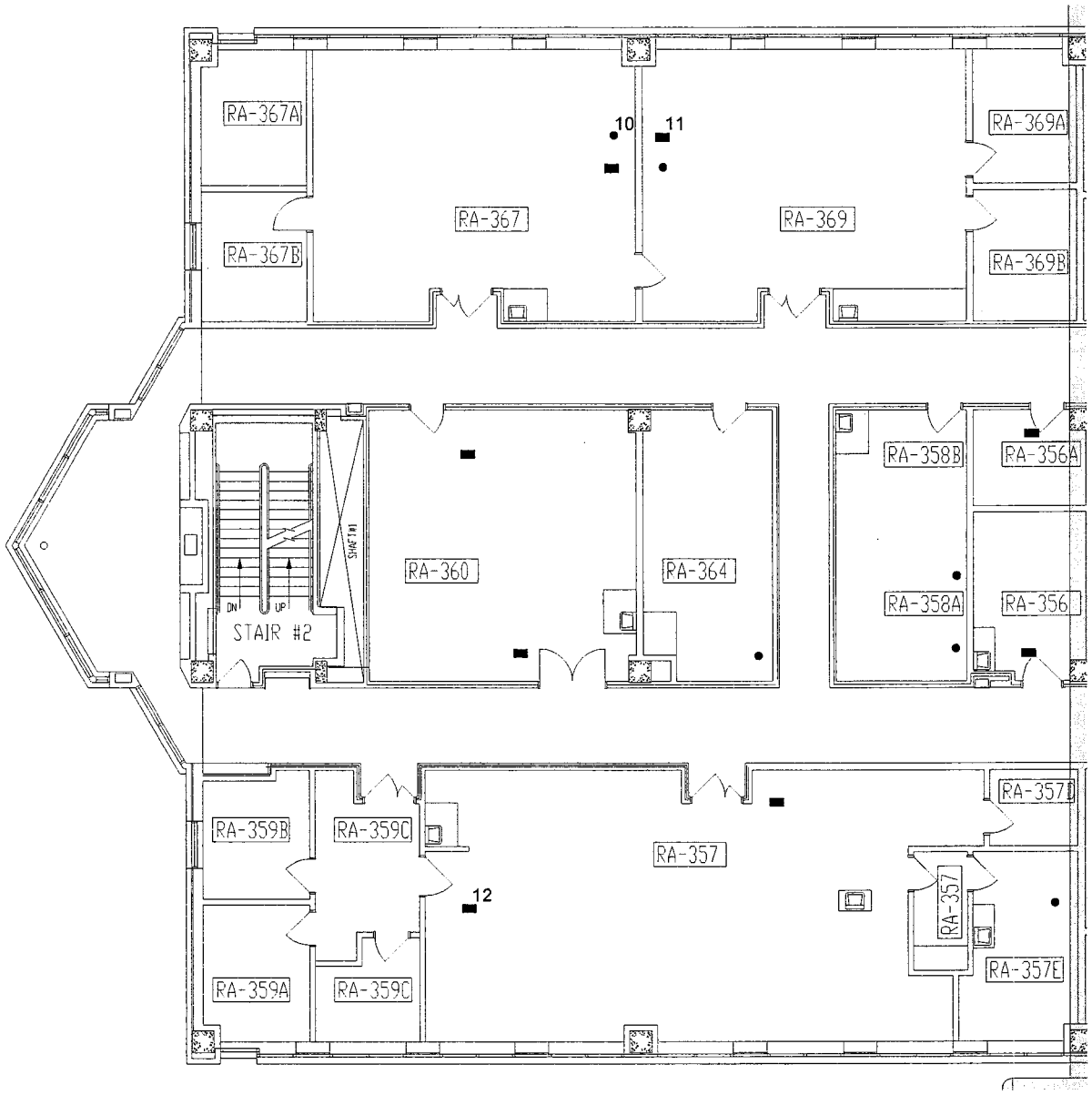
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 3rd Floor (1) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

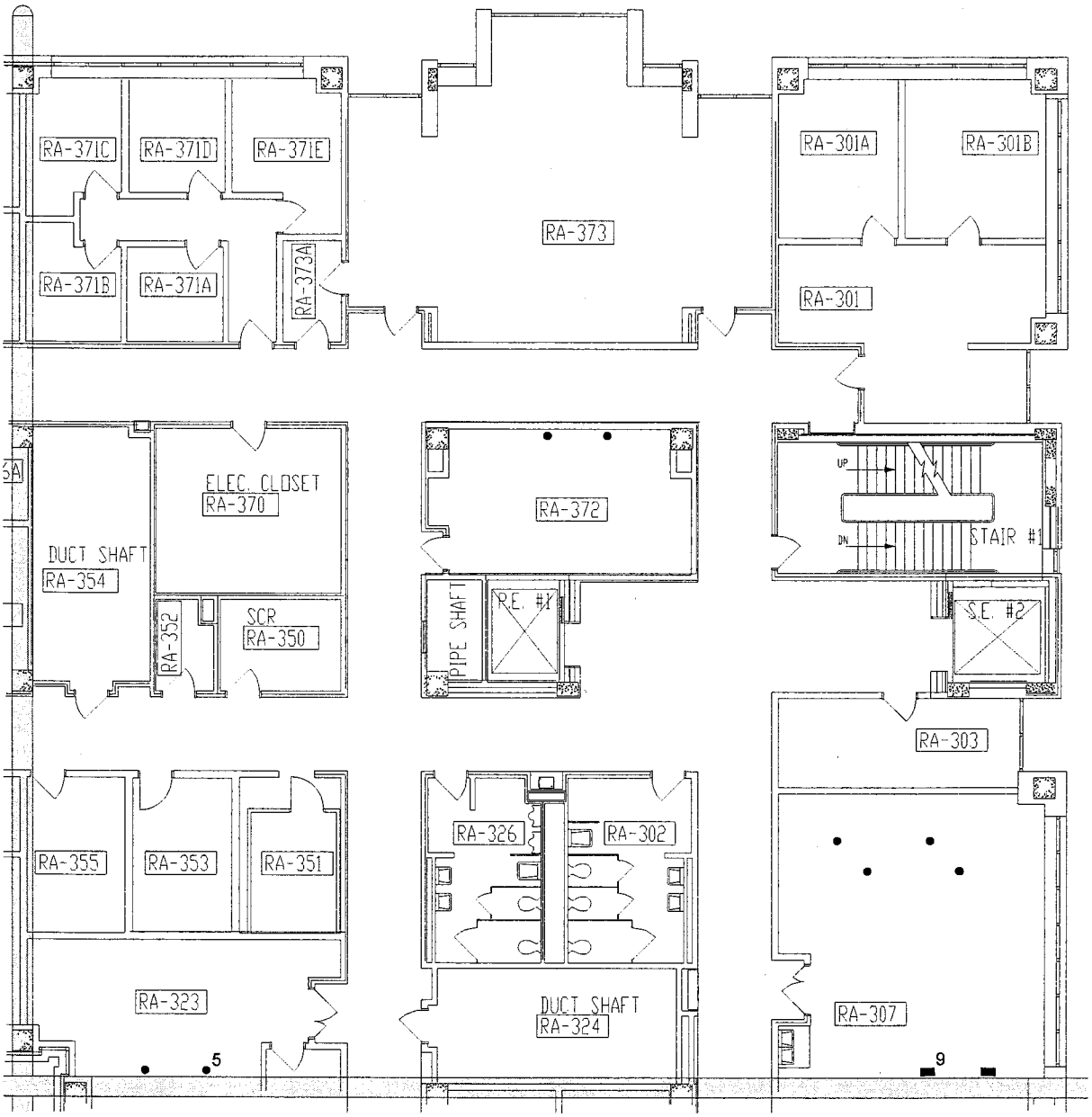
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 3rd Floor (2) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

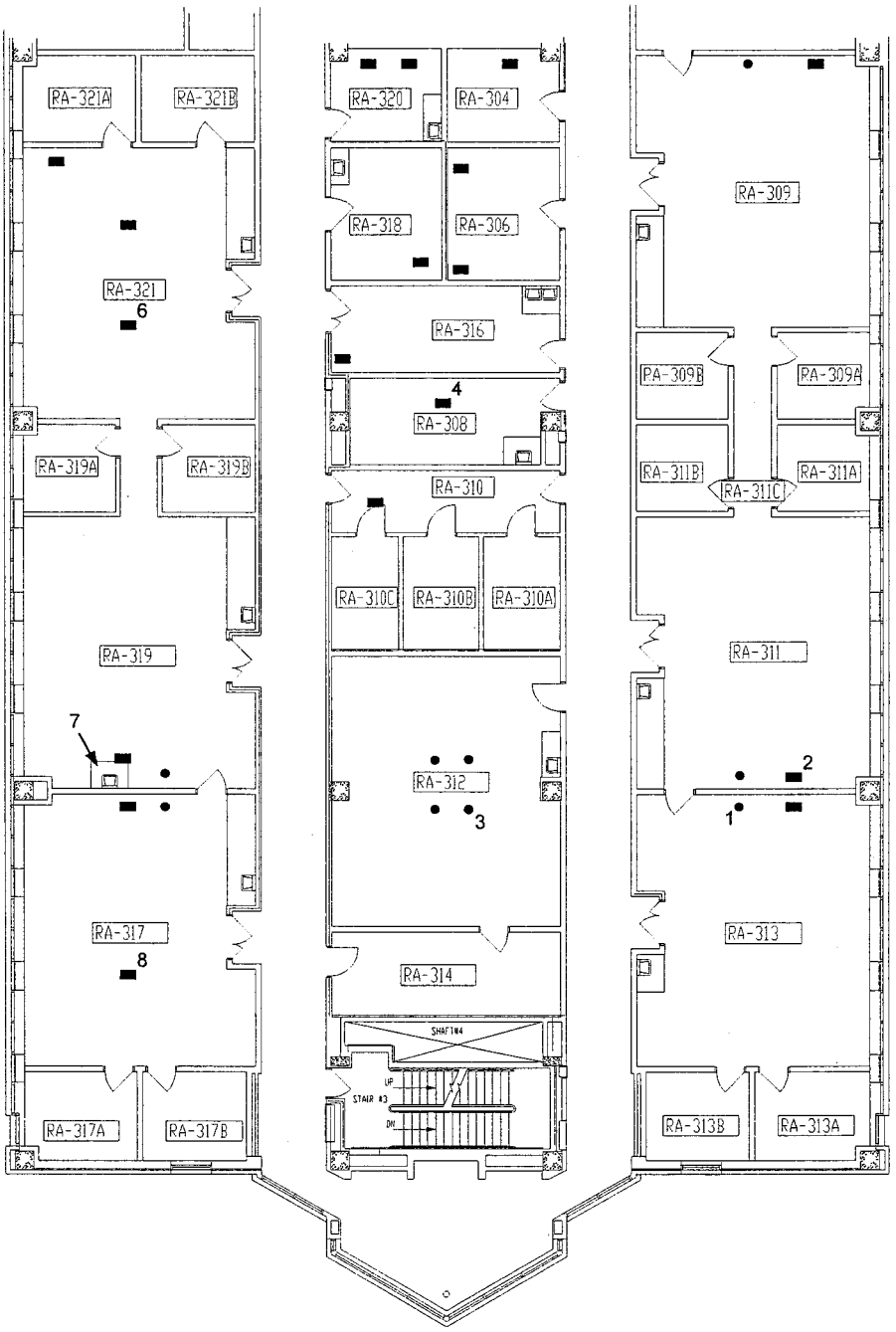
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B31 Survey Unit: Ventilation Systems Room(s): 3rd Floor (3) Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

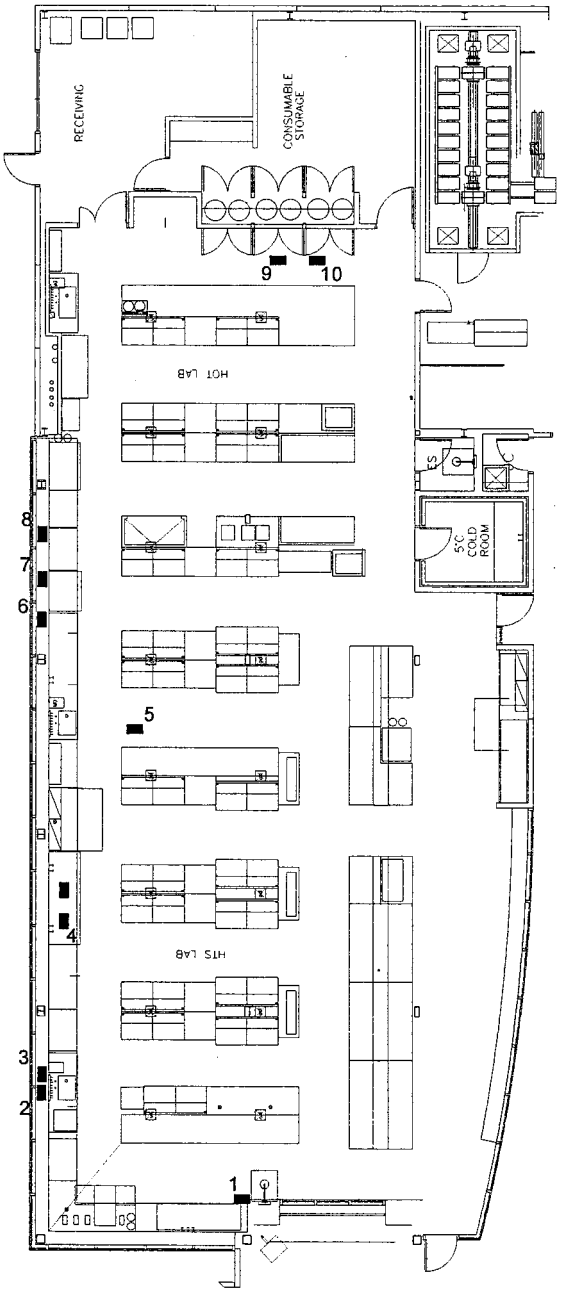
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: Ventilation Systems Room(s): 1st Floor Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

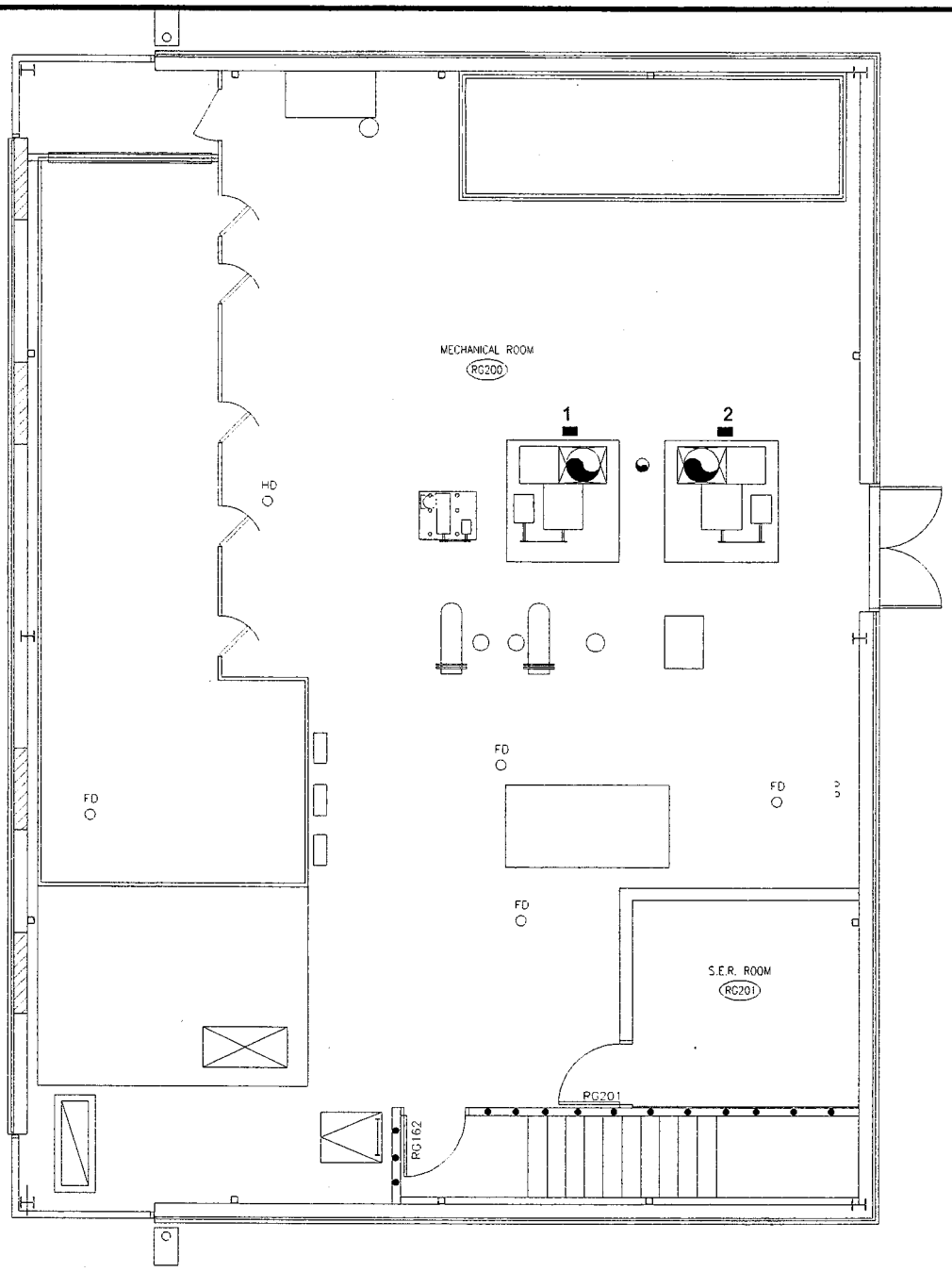
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: B36 Survey Unit: Ventilation Systems Room(s): Penthouse Date: 1/25/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



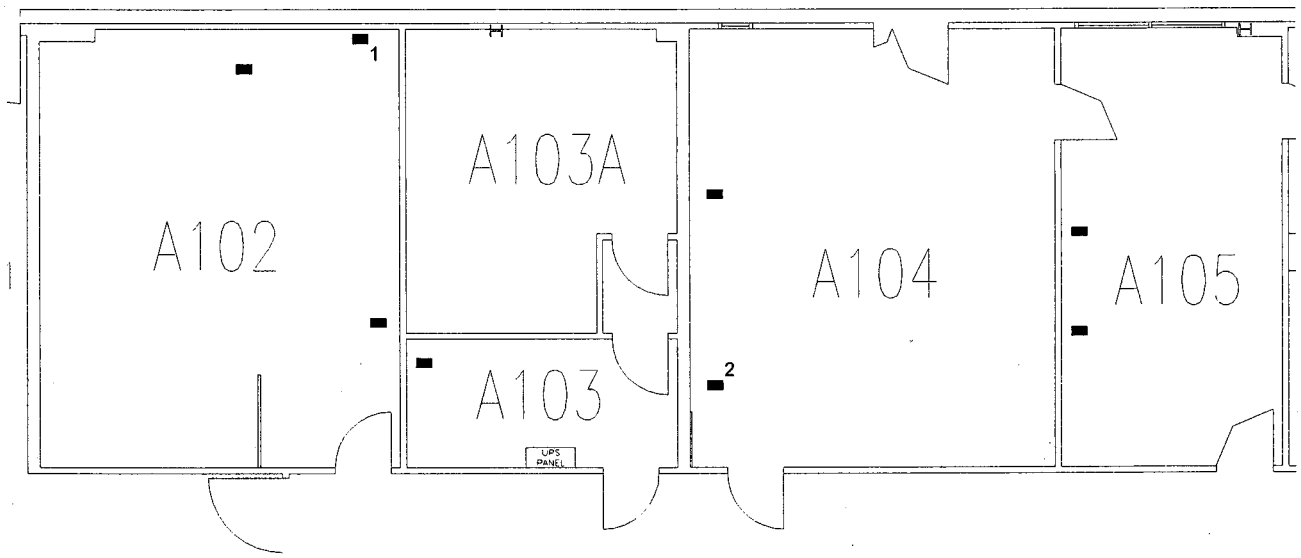
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Ventilation Systems Room(s): A102-A105 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



Appendix C

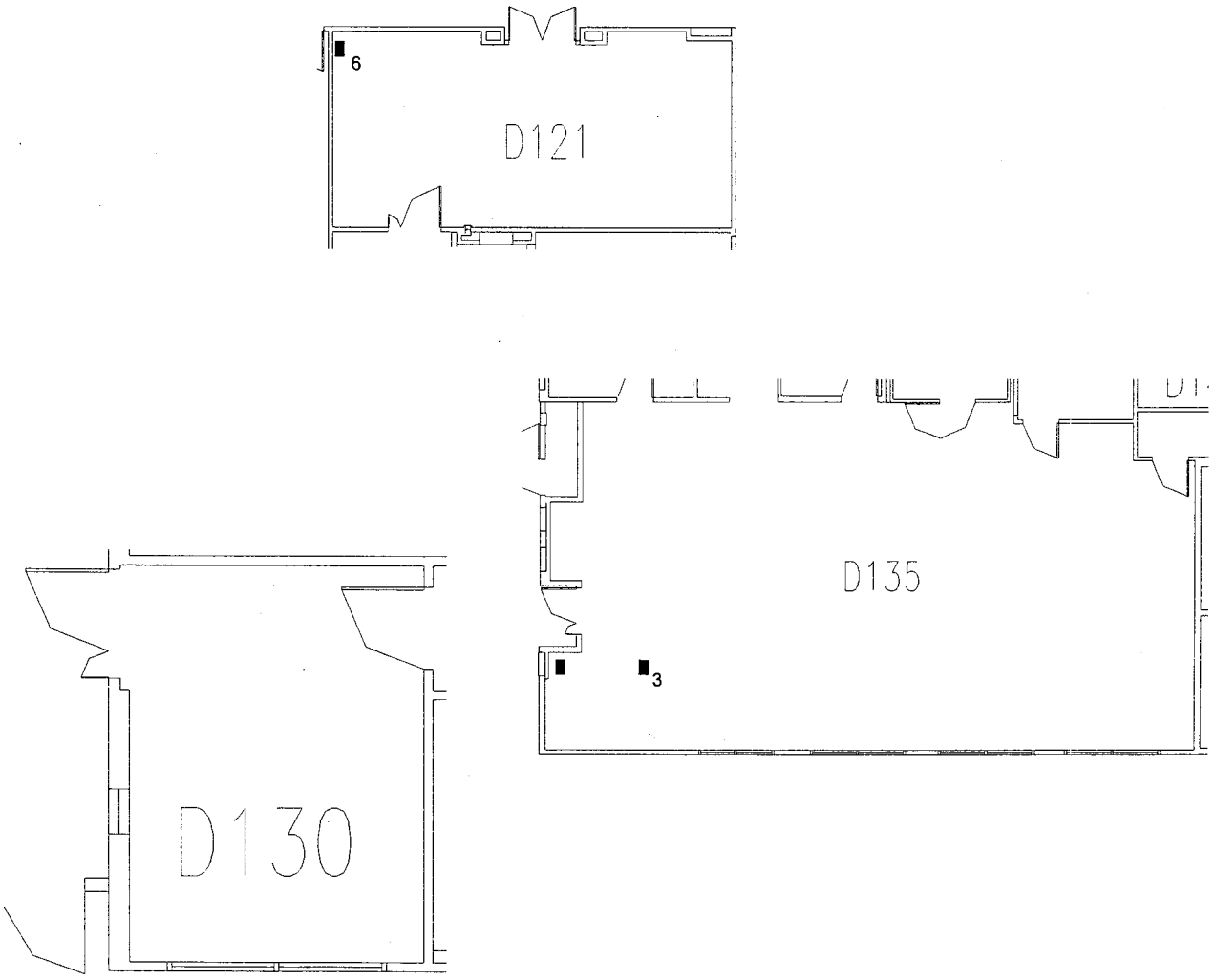
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Ventilation Systems Room(s): D121, 130, 135 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



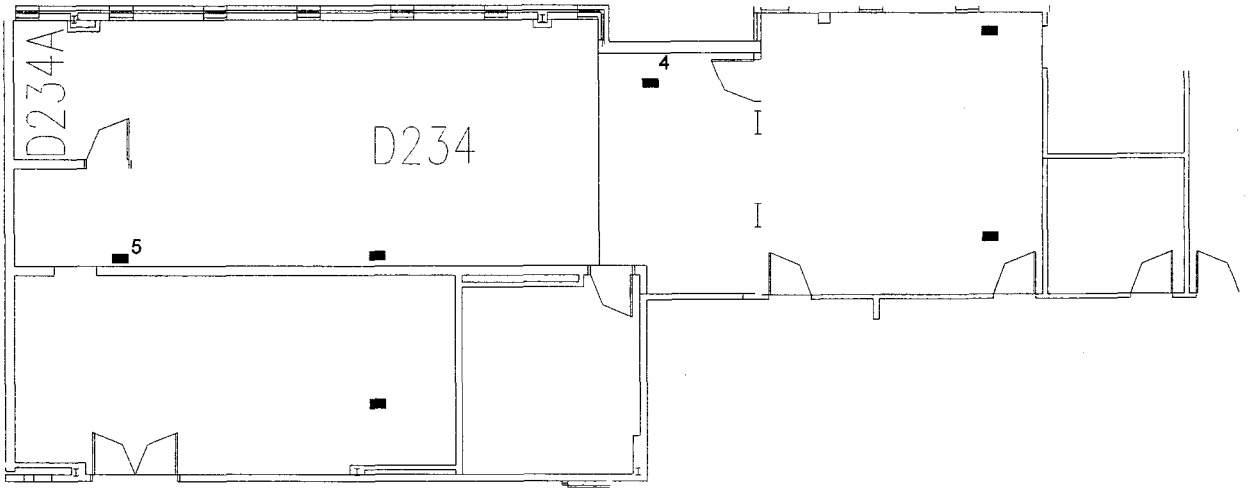
Bayer Pharmaceuticals Corporation

Radiation Contamination Survey Report

Building: A21 Survey Unit: Ventilation Systems Room(s): D101, D103, D232, D233, D234 Date: 1/30/2007

Instruments: Packard Liquid Scintillation Counter

Surveyor: Tim Pratt



APPENDIX D

Historical Decommissioning Activities

Bayer Historical Decommissioning Activities

Appendix D

Current Use Areas	Older Decommissioning	Recent Decom.	No Decom. History	Notes	Survey Unit
			A-102	Mentioned in D&D Records	26
			A-103	Mentioned in D&D Records	26
	A-103A			On Peter Babin's 2003 Survey List	26
			A-104	Mentioned in D&D Records	26
	A-105-26			D&D by HP Consulting Services 9/97	26
			A-233	Mentioned in D&D Records- may be D-233	27
RG-180				Current Use lab/Area	1
	D-101			D&D by HP Consulting Services 9/97	27
	D-103			D&D by HP Consulting Services 9/97	27
	D-121			D&D by HP Consulting Services 9/97	28
	D-130			D&D by HP Consulting Services 9/97	28
	D-135			D&D by HP Consulting Services 9/97	28
	D-233			D&D by HP Consulting Services 9/97	27
	D-234+Darkroom			D&D by HP Consulting Services 9/97	27
	RA-111			Internal D&D	32
	RA-113			Internal D&D	32
			RA-160A	On Peter Babin's 2003 Survey List	34
			RA-160B	On Peter Babin's 2003 Survey List	34
			RA-160C	On Peter Babin's 2003 Survey List	34
			RA-169B	On Peter Babin's 2003 Survey List	35
RA-204A				Current Use lab/Area	4
RA-204B				Current Use lab/Area	4
		RA-205		Scientech 2005	N/A
RA-209				Current Use lab/Area	4
RA-210				Current Use lab/Area	6
	RA-211			Internal D&D	17
RA-211TC				Current Use lab/Area	21
RA-212				Current Use lab/Area	6
RA-212A				Current Use lab/Area	6
RA-213				Current Use lab/Area	21
RA-216				Current Use lab/Area	4
RA-217				Current Use lab/Area	5
RA-219				Current Use lab/Area	5
RA-221				Current Use lab/Area	3
RA-251				Current Use lab/Area	21
	RA-256			Internal D&D	18
		RA-257		Scientech 2005	N/A
	RA-258			Internal D&D	18
		RA-259		Scientech 2005	N/A
RA-260				Current Use lab/Area	2
RA-262				Current Use lab/Area	2
		RA-264		Scientech 2005	N/A
RA-267				Current Use lab/Area	2
RA-269				Current Use lab/Area	2
			RA-306	On Peter Babin's 2003 Survey List	22
	RA-307			RSA D&D 1997	22
		RA-309		RSA D&D 1997/ Scientech 2005	N/A
RA-311				Surveyed in 1997 and Scientech in 2005 - Still on Current List	8
RA-313				Surveyed in RSA D&D 1997	8
		RA-316		Scientech 2005	N/A
		RA-317		Internal D&D/ Scientech 2005	N/A
		RA-319		Scientech 2005	N/A
	RA-320			Internal D&D	24
		RA-321		Scientech 2005	N/A

Bayer Historical Decommissioning Activities

Current Use Areas	Older Decommissioning	Recent Decom.	No Decom. History	Notes	Survey Unit
RA-323				Current Use lab/Area	7
	RA-351			D&D by NES 2000	24
	RA-357			D&D by NES 2000	19
	RA-357B			Internal D&D	19
	RA-360			Internal D&D/D&D by NES 2000	19
	RA-364			D&D by NES 2000	19
	RA-367			D&D by NES 2000	19
		RA-369		Scientech 2005	N/A
	RB-008			Internal D&D	10
RB-008A				Current Use lab/Area	10
RB-010A				Current Use lab/Area	11
RB-010B				Current Use lab/Area	10
RB-010C				Current Use lab/Area	11
RB-012B				Current Use lab/Area	10
RB-013				Current Use lab/Area	12
RB-015				Current Use lab/Area	12
RB-020				Current Use lab/Area	9
RB-022				Current Use lab/Area	9
RB-024				Current Use lab/Area	9
		RB-107		Scientech 2005	N/A
		RB-109		Scientech 2005	N/A
		RB-109C		Scientech 2005	N/A
	RB-111A			Internal D&D	32
	RB-113			Internal D&D	32
		RB-115		Scientech 2005	N/A
		RB-115C		Scientech 2005	N/A
		RB-117		Scientech 2005	N/A
	RB-117C			Internal D&D	37
	RB-119			Internal D&D	37
		RB-121		Scientech 2005	N/A
		RB-123		Scientech 2005	N/A
		RB-131		decommissioned by Philotechnics	N/A
		RB-169A		decommissioned by Philotechnics	N/A
		RB-169B		decommissioned by Philotechnics	N/A
		RB-205		decommissioned by Philotechnics	N/A
		RB-207		decommissioned by Philotechnics	N/A
		RB-207C		decommissioned by Philotechnics	N/A
	RB-209			Internal D&D	4
		RB-210		Scientech 2005	N/A
		RB-211		decommissioned by Philotechnics	N/A
		RB-211C		decommissioned by Philotechnics	N/A
		RB-212		Scientech 2005	N/A
		RB-212C		Scientech 2005	N/A
		RB-213		decommissioned by Philotechnics	N/A
		RB-213C		decommissioned by Philotechnics	N/A
		RB-214		Scientech 2005	N/A
		RB-214C		Scientech 2005	N/A
	RB-215			Internal D&D	30
	RB-216			Internal D&D	30
	RB-217			Internal D&D	30
		RB-218		decommissioned by Philotechnics	N/A
		RB-219		decommissioned by Philotechnics	N/A
		RB-219C		decommissioned by Philotechnics	N/A
		RB-220		Scientech 2005	N/A

Bayer Historical Decommissioning Activities

Current Use Areas	Older Decommissioning	Recent Decom.	No Decom. History	Notes	Survey Unit
	RB-220C			Internal D&D	30
		RB-221		decommissioned by Philotechnics	N/A
		RB-221C		decommissioned by Philotechnics/Scientech 2005	N/A
		RB-222		Scientech 2005	N/A
		RB-222C		Scientech 2005	N/A
		RB-224		decommissioned by Philotechnics	N/A
RB-231				Current Use lab/Area	13
		RB-234		Scientech 2005	N/A

APPENDIX E

Analytical Calculation Sheets

Philotechnics
Analytical Worksheet

Minimum Detectable Concentration (MDC) Static Count Calculations for Liquid Scintillation Counter

(95% confidence level via NUREG 1507 method)

$$MDC\,(dpm/100cm^2) = \frac{3+3.29\sqrt{(R_b)(T_{s+b})(1+T_{s+b}/T_b)}}{(Eff.)(T_{s+b})} \qquad \text{(Eq. 1)}$$

Where:

Eff. = Liquid Scintillation Counter efficiency
R_b = LSC background rate (cpm)
T_{s+b} = Sample count time (minutes)
T_b = Background count time (minutes)

Static Count MDC Calculations					
Isotope	**Eff.**	**R_b**	**T_{s+b}**	**T_b**	**MDC (Static)**
H-3	52.3%	8.2	1	10	24.6 dpm/100 cm^2
S-35 / C-14*	83.2%	7.6	1	10	15.0 dpm/100 cm^2
Gross Beta	64.5%	6.6	1	10	18.4 dpm/100 cm^2
I-125	60.0%	8.2	1	10	21.5 dpm/100 cm^2

***S-35 efficiency is estimated by C-14**

Minimum Detectable Concentration (MDC) Static Count Calculations for Hand-Held Monitors

(95% confidence level via NUREG 1507 method)

$$MDC\,(dpm/100cm^2) = \frac{3+3.29\sqrt{(R_b)(T_{s+b})(1+T_{s+b}/T_b)}}{(Eff.)(T_{s+b})(probeareacm^2/100cm^2)} \qquad \text{(Eq. 2)}$$

Where:

Eff. = Probe efficiency (2π geometry)
R_b = Average background rate (cpm)
T_{s+b} = Sample count time (minutes)
T_b = Background count time (minutes)
P = Probe area (cm2)

Philotechnics
Analytical Worksheet

Static Count MDC Calculations							
Isotope	**Eff.**	**R_b**	**T_{s+b}**	**T_b**	**P**	**MDC (Static)**	
Probe: BP19DD							
P-32*	8.70%	393.8	1	1	100	1095.8 dpm/100 cm^2	#5056
C-14 / S-35*	3.35%	393.8	1	1	100	2845.7 dpm/100 cm^2	#5056
P-32*	8.46%	333.2	1	1	100	1039.4 dpm/100 cm^2	#5057
C-14 / S-35*	1.80%	333.2	1	1	100	4885.0 dpm/100 cm^2	#5057
Probe: GP13A							
I-125	10.8%	2364.0	1	1	100	2122.4 dpm/100 cm^2	#4422
I-125	15.5%	3204.0	1	1	100	1718.5 dpm/100 cm^2	#4807

* P-32 efficiency is estimated by Sr-90 efficiency and S-35 efficiency by C-14

Scan Minimum Detectable Concentration (MDC)
Calculations for Hand-Held Monitors
(Scan MDA per NUREG-1575, NUREG-1507 methodology)

$$Scan\,MDC = \frac{MDCR}{\sqrt{p}\,(\varepsilon_i)(\varepsilon_s)\left(\frac{A}{100cm^2}\right)} \qquad \text{(Eq. 3)}$$

Where:

p = surveyor efficiency, per NUREG 1507 (0.5)
ε_i = total efficiency (2π geometry)
ε_s = surface efficiency, 1 for gammas and high energy betas >1 MeV Emax (e.g. P-32, Cl-36, S/Y-90, etc.), 0.5 for low energy betas (e.g. C-14, P-33, S-35, Tc-99, Ca-45, etc.)
A = probe active area (cm^2)

And,

$$MDCR = S_i\,(60\,\text{sec}/\text{min})/i\,\text{sec} \qquad \text{(Eq. 4)}$$

Where:

MDCR = Minimum detectable count rate (cpm)
S_i = source counts in time interval, i.

Philotechnics
Analytical Worksheet

And,

$$S_i = d'\sqrt{B_i} \qquad \text{(Eq. 5)}$$

Where:

d' = 1.38 for 95% true positive scan detection rate, per, NUREG 1507, Table 6.1

B_i = Background counts in interval, i

And,

$$B_i = (P_b)(i)(1\,\text{min}/60\,\text{sec}) \qquad \text{(Eq. 6)}$$

Where:

P_b = probe background count rate (cpm)

i = observation interval

Scan Minimum Detectable Concentration (MDC)
Calculations for Hand-Held Monitors
(Scan MDA per NUREG-1575, NUREG-1507 methodology)

Specific Scan MDC calculation results:

BP19DD #5056	
P_b =	393.8
i =	2
B_i =	13.13
d' =	1.38
S_i =	5.00
MDCR =	150.0

BP19DD #5057	
P_b =	333.2
i =	2
B_i =	11.11
d' =	1.38
S_i =	4.60
MDCR =	138.0

2221 w/43-37 #149941	
P_b =	634.2
i =	2
B_i =	21.14
d' =	1.38
S_i =	6.34
MDCR =	190.3

GP13A #4422	
P_b =	2364.0
i =	2
B_i =	78.80
d' =	1.38
S_i =	12.25
MDCR =	367.5

GP13A #4807	
P_b =	3204.0
i =	2
B_i =	106.80
d' =	1.38
S_i =	14.26
MDCR =	427.8

Philotechnics
Analytical Worksheet

Scan MDC Calculations					
Isotope	ε_i	ε_s	**A**	**MDC (Scan)**	
Probe: IBP19DD					
P-32*	8.70%	1.00	100	2438.2 dpm/100 cm^2	#5056
C-14 / S-35*	3.35%	0.50	100	12664.2 dpm/100 cm^2	#5056
P-32*	8.46%	1.00	100	2306.4 dpm/100 cm^2	#5057
C-14 / S-35*	1.80%	0.50	100	21680.3 dpm/100 cm^2	#5057
Probe: GP13A					
I-125	10.8%	1.00	100	4812.3 dpm/100 cm^2	#4422
I-125	15.5%	1.00	100	3903.6 dpm/100 cm^2	#4807
Probe: 43-37					
P-32*	8.9%	1.00	582	520.3 dpm/100 cm^2	#149981
C-14 / S-35*	3.6%	0.50	582	2548.4 dpm/100 cm^2	#149981

* P-32 efficiency is estimated by Sr-90 efficiency and S-35 efficiency by C-14

APPENDIX F

Background Documentation

Philotechnics Analytical Worksheet

Background Documentation

Fail Levels

Ld, system detection limit is the net count having 95% probability of being detected when a survey sample point contains activity at Ld, which translates to a 5% probability of falsely interpreting sample activity as activity due to background (NUREG-1507 Table 3-8)

$$L_d(cpm) = 3 + 4.65\sqrt{B} \qquad \text{(Eq. 7)}$$

Fail Level CPM = Bkg cpm + Ld cpm

Fail Level Calculations (Static) #5056				
Probe	**Surface**	**Bkg**	**Ld (cpm)**	**Fail Level (cpm)**
BP19DD	Ambient	393.8	95.3	**489.1**
Fail Level Calculations (Static) #5057				
Probe	**Surface**	**Bkg**	**Ld (cpm)**	**Fail Level (cpm)**
BP19DD	Ambient	333.2	87.9	**421.1**
Fail Level Calculations (Static) #4422				
Probe	**Surface**	**Bkg**	**Ld (cpm)**	**Fail Level (cpm)**
GP13A	Ambient	2364.0	229.1	**2593.1**
Fail Level Calculations (Static) #4807				
Probe	**Surface**	**Bkg**	**Ld (cpm)**	**Fail Level (cpm)**
GP13A	Ambient	3204.0	266.2	**3470.2**
Fail Level Calculations (Static) #43-37				
Probe	**Surface**	**Bkg**	**Ld (cpm)**	**Fail Level (cpm)**
43-37	Ambient	634.2	120.1	**754.3**

Background Data

Bicron Electra 1A with BP19DD probe #5056					
Surface	Counts (cpm)				
Ambient	373	431	426	373	366
	Average:	**393.8 cpm**			
Bicron Electra 1A with BP19DD probe #5057					
Surface	Counts (cpm)				
Ambient	330	337	322	331	346
	Average:	**333.2 cpm**			
Bicron Electra 1A with GP13A probe #4422					
Surface	Counts (cpm)				
Ambient	2450	2400	2280	2340	2350
	Average:	**2364.0 cpm**			

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Bicron Electra 1A with IBP19DD probe #4807					
Surface	Counts (cpm)				
Ambient	3060	3460	3160	3370	2970
	Average:	**3204.0 cpm**			

Ludlum 2221 w/ 44-37 probe #149981					
Surface	Counts (cpm)				
Ambient	629	592	596	665	689
	Average:	**634.2 cpm**			

Scintillation Counter Counts (cpm)						
Sample	Time	Chan A	Chan B	Chan C	Auto DPM A	Auto DPM B
1	10 min.	8	7	6	17	7
2	10 min.	9	8	7	18	8
3	10 min.	7	7	6	15	7
4	10 min.	9	8	7	19	9
5	10 min.	8	8	7	16	8
	Average:	**8.2**	**7.6**	**6.6**	**17.0**	**7.8**

APPENDIX G

Static Measurement Data Sheets and DPM Calculations - Structures

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Static Measurements

Survey Unit 1			Beta Background 342			Gamma Background 3140						
Sample	BKG Ref.	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B01	404	3370	62	230	3444	±	54	1484	±	158	<DCGL
2	B01	383	3210	41	70	2278	±	53	452	±	156	<DCGL
3	B01	390	3160	48	20	2667	±	53	129	±	156	<DCGL
4	B01	366	2990	24	-150	1333	±	52	-968	±	153	<DCGL
5	B01	379	3180	37	40	2056	±	53	258	±	156	<DCGL
6	B01	379	3330	37	190	2056	±	53	1226	±	158	<DCGL
7	B01	387	3310	45	170	2500	±	53	1097	±	157	<DCGL
8	B01	404	3080	62	-60	3444	±	54	-387	±	155	<DCGL
9	B01	344	3200	2	60	111	±	51	387	±	156	<DCGL
10	B01	404	3000	62	-140	3444	±	54	-903	±	154	<DCGL
11	B01	329	3230	-13	90	-722	±	51	581	±	156	<DCGL
12	B01	345	3280	3	140	167	±	51	903	±	157	<DCGL
13	B01	352	3070	10	-70	556	±	52	-452	±	154	<DCGL
14	B01	361	2890	19	-250	1056	±	52	-1613	±	152	<DCGL
15	B01	392	2520	50	-620	2778	±	53	-4000	±	147	<DCGL
16	B01	378	3080	36	-60	2000	±	53	-387	±	155	<DCGL
17	B01	398	3050	56	-90	3111	±	53	-581	±	154	<DCGL
18	B01	379	3200	37	60	2056	±	53	387	±	156	<DCGL
19	B01	363	3370	21	230	1167	±	52	1484	±	158	<DCGL
20	B01	459	3380	117	240	6500	±	55	1548	±	158	<DCGL
21	B01	360	3230	18	90	1000	±	52	581	±	156	<DCGL
22	B01	277	2060	-65	-1080	-3611	±	49	-6968	±	141	<DCGL
23	B01	260	1710	-82	-1430	-4556	±	48	-9226	±	136	<DCGL
24	B01	300	2950	-42	-190	-2333	±	50	-1226	±	153	<DCGL
25	B01	287	2970	-55	-170	-3056	±	49	-1097	±	153	<DCGL
26	B01	270	2120	-72	-1020	-4000	±	48	-6581	±	142	<DCGL
27	B01	264	2210	-78	-930	-4333	±	48	-6000	±	143	<DCGL
28	B01	320	2690	-22	-450	-1222	±	50	-2903	±	150	<DCGL
29	B01	347	3180	5	40	278	±	51	258	±	156	<DCGL
30	B01	285	2490	-57	-650	-3167	±	49	-4194	±	147	<DCGL
31	B01	299	3230	-43	90	-2389	±	50	581	±	156	<DCGL

Survey Unit 2			Beta Background 393			Gamma Background 2364					
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B02	420	3300	27	936	806	±	56	8667	±	148	<DCGL
2	B02	423	3520	30	1156	896	±	56	10704	±	150	<DCGL
3	B02	423	3560	30	1196	896	±	56	11074	±	151	<DCGL
4	B02	361	2750	-32	386	-955	±	54	3574	±	140	<DCGL
5	B02	387	2240	-6	-124	-179	±	55	-1148	±	133	<DCGL
6	B02	418	2640	25	276	746	±	56	2556	±	139	<DCGL
7	B02	429	2729	36	365	1075	±	56	3380	±	140	<DCGL
8	B02	437	2810	44	446	1313	±	56	4130	±	141	<DCGL
9	B02	398	2720	5	356	149	±	55	3296	±	140	<DCGL
10	B02	387	2450	-6	86	-179	±	55	796	±	136	<DCGL
11	B02	394	2340	1	-24	30	±	55	-222	±	134	<DCGL
12	B02	379	2800	-14	436	-418	±	54	4037	±	141	<DCGL
13	B02	375	3070	-18	706	-537	±	54	6537	±	144	<DCGL
14	B02	431	2830	38	466	1134	±	56	4315	±	141	<DCGL
15	B02	378	2980	-15	616	-448	±	54	5704	±	143	<DCGL
16	B02	429	2820	36	456	1075	±	56	4222	±	141	<DCGL
17	B02	401	2850	8	486	239	±	55	4500	±	142	<DCGL

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18	B02	404	2990	11	626	328	±	55	5796	±	143	<DCGL
19	B02	446	3340	53	976	1582	±	57	9037	±	148	<DCGL
20	B02	389	2690	-4	326	-119	±	55	3019	±	139	<DCGL
21	B02	403	2830	10	466	299	±	55	4315	±	141	<DCGL
22	B02	406	3150	13	786	388	±	55	7278	±	146	<DCGL
23	B02	424	2970	31	606	925	±	56	5611	±	143	<DCGL
24	B02	421	2670	28	306	836	±	56	2833	±	139	<DCGL
25	B02	350	2520	-43	156	-1284	±	53	1444	±	137	<DCGL
26	B02	432	2850	39	486	1164	±	56	4500	±	142	<DCGL
27	B02	422	3090	29	726	866	±	56	6722	±	145	<DCGL
28	B02	389	2480	-4	116	-119	±	55	1074	±	136	<DCGL
29	B02	366	2270	-27	-94	-806	±	54	-870	±	133	<DCGL
30	B02	438	2850	45	486	1343	±	57	4500	±	142	<DCGL
31	B02	385	2540	-8	176	-239	±	55	1630	±	137	<DCGL
32	B02	320	2300	-73	-64	-2179	±	52	-593	±	134	<DCGL
33	B02	343	1970	-50	-394	-1493	±	53	-3648	±	129	<DCGL
34	B02	364	2240	-29	-124	-866	±	54	-1148	±	133	<DCGL
35	B02	361	2530	-32	166	-955	±	54	1537	±	137	<DCGL
36	B02	388	2750	-5	386	-149	±	55	3574	±	140	<DCGL
37	B02	446	2650	53	286	1582	±	57	2648	±	139	<DCGL

Survey Unit 3			Beta Background 312			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B03	380	n/a	68	n/a	3778	±	52	n/a	±	n/a	<DCGL
2	B03	310	n/a	-2	n/a	-111	±	49	n/a	±	n/a	<DCGL
3	B03	340	n/a	28	n/a	1556	±	50	n/a	±	n/a	<DCGL
4	B03	347	n/a	35	n/a	1944	±	50	n/a	±	n/a	<DCGL
5	B03	344	n/a	32	n/a	1778	±	50	n/a	±	n/a	<DCGL
6	B03	328	n/a	16	n/a	889	±	50	n/a	±	n/a	<DCGL
7	B03	329	n/a	17	n/a	944	±	50	n/a	±	n/a	<DCGL
8	B03	352	n/a	40	n/a	2222	±	51	n/a	±	n/a	<DCGL
9	B03	338	n/a	26	n/a	1444	±	50	n/a	±	n/a	<DCGL
10	B03	346	n/a	34	n/a	1889	±	50	n/a	±	n/a	<DCGL
11	B03	322	n/a	10	n/a	556	±	49	n/a	±	n/a	<DCGL
12	B03	340	n/a	28	n/a	1556	±	50	n/a	±	n/a	<DCGL
13	B03	368	n/a	56	n/a	3111	±	51	n/a	±	n/a	<DCGL
14	B03	344	n/a	32	n/a	1778	±	50	n/a	±	n/a	<DCGL
15	B03	336	n/a	24	n/a	1333	±	50	n/a	±	n/a	<DCGL
16	B03	294	n/a	-18	n/a	-1000	±	48	n/a	±	n/a	<DCGL
17	B03	372	n/a	60	n/a	3333	±	51	n/a	±	n/a	<DCGL
18	B03	326	n/a	14	n/a	778	±	50	n/a	±	n/a	<DCGL
19	B03	324	n/a	12	n/a	667	±	49	n/a	±	n/a	<DCGL
20	B03	308	n/a	-4	n/a	-222	±	49	n/a	±	n/a	<DCGL
21	B03	316	n/a	4	n/a	222	±	49	n/a	±	n/a	<DCGL
22	B03	310	n/a	-2	n/a	-111	±	49	n/a	±	n/a	<DCGL
23	B03	326	n/a	14	n/a	778	±	50	n/a	±	n/a	<DCGL
24	B03	336	n/a	24	n/a	1333	±	50	n/a	±	n/a	<DCGL
25	B03	250	n/a	-62	n/a	-3444	±	46	n/a	±	n/a	<DCGL
26	B03	310	n/a	-2	n/a	-111	±	49	n/a	±	n/a	<DCGL
27	B03	338	n/a	26	n/a	1444	±	50	n/a	±	n/a	<DCGL
28	B03	314	n/a	2	n/a	111	±	49	n/a	±	n/a	<DCGL
29	B03	304	n/a	-8	n/a	-444	±	49	n/a	±	n/a	<DCGL
30	B03	312	n/a	0	n/a	0	±	49	n/a	±	n/a	<DCGL
31	B03	264	n/a	-48	n/a	-2667	±	47	n/a	±	n/a	<DCGL
32	B03	306	n/a	-6	n/a	-333	±	49	n/a	±	n/a	<DCGL

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Survey Unit 4			Beta Background 314			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B04	342	n/a	28	n/a	1556	±	50	n/a	±	n/a	<DCGL
2	B04	340	n/a	26	n/a	1444	±	50	n/a	±	n/a	<DCGL
3	B04	310	n/a	-4	n/a	-222	±	49	n/a	±	n/a	<DCGL
4	B04	307	n/a	-7	n/a	-389	±	49	n/a	±	n/a	<DCGL
5	B04	300	n/a	-14	n/a	-778	±	49	n/a	±	n/a	<DCGL
6	B04	350	n/a	36	n/a	2000	±	51	n/a	±	n/a	<DCGL
7	B04	332	n/a	18	n/a	1000	±	50	n/a	±	n/a	<DCGL
8	B04	306	n/a	-8	n/a	-444	±	49	n/a	±	n/a	<DCGL
9	B04	337	n/a	23	n/a	1278	±	50	n/a	±	n/a	<DCGL
10	B04	312	n/a	-2	n/a	-111	±	49	n/a	±	n/a	<DCGL
11	B04	328	n/a	14	n/a	778	±	50	n/a	±	n/a	<DCGL
12	B04	382	n/a	68	n/a	3778	±	52	n/a	±	n/a	<DCGL
13	B04	351	n/a	37	n/a	2056	±	51	n/a	±	n/a	<DCGL
14	B04	335	n/a	21	n/a	1167	±	50	n/a	±	n/a	<DCGL
15	B04	349	n/a	35	n/a	1944	±	50	n/a	±	n/a	<DCGL
16	B04	370	n/a	56	n/a	3111	±	51	n/a	±	n/a	<DCGL
17	B04	350	n/a	36	n/a	2000	±	51	n/a	±	n/a	<DCGL
18	B04	306	n/a	-8	n/a	-444	±	49	n/a	±	n/a	<DCGL
19	B04	343	n/a	29	n/a	1611	±	50	n/a	±	n/a	<DCGL
20	B04	349	n/a	35	n/a	1944	±	50	n/a	±	n/a	<DCGL
21	B04	299	n/a	-15	n/a	-833	±	49	n/a	±	n/a	<DCGL
22	B04	324	n/a	10	n/a	556	±	50	n/a	±	n/a	<DCGL
23	B04	346	n/a	32	n/a	1778	±	50	n/a	±	n/a	<DCGL
24	B04	337	n/a	23	n/a	1278	±	50	n/a	±	n/a	<DCGL
25	B04	334	n/a	20	n/a	1111	±	50	n/a	±	n/a	<DCGL
26	B04	258	n/a	-56	n/a	-3111	±	47	n/a	±	n/a	<DCGL
27	B04	317	n/a	3	n/a	167	±	49	n/a	±	n/a	<DCGL
28	B04	348	n/a	34	n/a	1889	±	50	n/a	±	n/a	<DCGL
29	B04	278	n/a	-36	n/a	-2000	±	48	n/a	±	n/a	<DCGL
30	B04	324	n/a	10	n/a	556	±	50	n/a	±	n/a	<DCGL
31	B04	254	n/a	-60	n/a	-3333	±	47	n/a	±	n/a	<DCGL
32	B04	297	n/a	-17	n/a	-944	±	48	n/a	±	n/a	<DCGL
33	B04	293	n/a	-21	n/a	-1167	±	48	n/a	±	n/a	<DCGL
34	B04	301	n/a	-13	n/a	-722	±	49	n/a	±	n/a	<DCGL

Survey Unit 5			Beta Background 378			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B05	433	n/a	55	n/a	1642	±	56	n/a	±	n/a	<DCGL
2	B05	413	n/a	35	n/a	1045	±	55	n/a	±	n/a	<DCGL
3	B05	408	n/a	30	n/a	896	±	55	n/a	±	n/a	<DCGL
4	B05	399	n/a	21	n/a	627	±	55	n/a	±	n/a	<DCGL
5	B05	344	n/a	-34	n/a	-1015	±	53	n/a	±	n/a	<DCGL
6	B05	347	n/a	-31	n/a	-925	±	53	n/a	±	n/a	<DCGL
7	B05	347	n/a	-31	n/a	-925	±	53	n/a	±	n/a	<DCGL
8	B05	350	n/a	-28	n/a	-836	±	53	n/a	±	n/a	<DCGL
9	B05	405	n/a	27	n/a	806	±	55	n/a	±	n/a	<DCGL
10	B05	357	n/a	-21	n/a	-627	±	53	n/a	±	n/a	<DCGL
11	B05	372	n/a	-6	n/a	-179	±	54	n/a	±	n/a	<DCGL
12	B05	397	n/a	19	n/a	567	±	55	n/a	±	n/a	<DCGL
13	B05	376	n/a	-2	n/a	-60	±	54	n/a	±	n/a	<DCGL
14	B05	392	n/a	14	n/a	418	±	54	n/a	±	n/a	<DCGL
15	B05	410	n/a	32	n/a	955	±	55	n/a	±	n/a	<DCGL

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16	B05	410	n/a	32	n/a	955	±	55	n/a	±	n/a	<DCGL
17	B05	410	n/a	32	n/a	955	±	55	n/a	±	n/a	<DCGL
18	B05	397	n/a	19	n/a	567	±	55	n/a	±	n/a	<DCGL
19	B05	415	n/a	37	n/a	1104	±	55	n/a	±	n/a	<DCGL
20	B05	399	n/a	21	n/a	627	±	55	n/a	±	n/a	<DCGL
21	B05	400	n/a	22	n/a	657	±	55	n/a	±	n/a	<DCGL
22	B05	407	n/a	29	n/a	866	±	55	n/a	±	n/a	<DCGL
23	B05	350	n/a	-28	n/a	-836	±	53	n/a	±	n/a	<DCGL
24	B05	365	n/a	-13	n/a	-388	±	53	n/a	±	n/a	<DCGL
25	B05	384	n/a	6	n/a	179	±	54	n/a	±	n/a	<DCGL
26	B05	376	n/a	-2	n/a	-60	±	54	n/a	±	n/a	<DCGL
27	B05	399	n/a	21	n/a	627	±	55	n/a	±	n/a	<DCGL
28	B05	413	n/a	35	n/a	1045	±	55	n/a	±	n/a	<DCGL
29	B05	356	n/a	-22	n/a	-657	±	53	n/a	±	n/a	<DCGL
30	B05	319	n/a	-59	n/a	-1761	±	52	n/a	±	n/a	<DCGL

Survey Unit 6			Beta Background 331			Gamma Background 2760						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B06	365	2500	34	-260	1889	±	52	-1677	±	142	<DCGL
2	B06	344	2730	13	-30	722	±	51	-194	±	145	<DCGL
3	B06	362	2320	31	-440	1722	±	52	-2839	±	140	<DCGL
4	B06	366	2040	35	-720	1944	±	52	-4645	±	136	<DCGL
5	B06	328	1810	-3	-950	-167	±	50	-6129	±	132	<DCGL
6	B06	363	2850	32	90	1778	±	52	581	±	147	<DCGL
7	B06	341	3090	10	330	556	±	51	2129	±	150	<DCGL
8	B06	350	3120	19	360	1056	±	51	2323	±	150	<DCGL
9	B06	343	3280	12	520	667	±	51	3355	±	152	<DCGL
10	B06	376	3060	45	300	2500	±	52	1935	±	150	<DCGL
11	B06	276	2000	-55	-760	-3056	±	48	-4903	±	135	<DCGL
12	B06	368	2740	37	-20	2056	±	52	-129	±	145	<DCGL
13	B06	349	2930	18	170	1000	±	51	1097	±	148	<DCGL
14	B06	321	2240	-10	-520	-556	±	50	-3355	±	139	<DCGL
15	B06	320	2130	-11	-630	-611	±	50	-4065	±	137	<DCGL
16	B06	359	1990	28	-770	1556	±	51	-4968	±	135	<DCGL
17	B06	339	1950	8	-810	444	±	51	-5226	±	135	<DCGL
18	B06	361	2620	30	-140	1667	±	52	-903	±	144	<DCGL
19	B06	321	2770	-10	10	-556	±	50	65	±	146	<DCGL
20	B06	310	2700	-21	-60	-1167	±	50	-387	±	145	<DCGL
21	B06	287	2740	-44	-20	-2444	±	49	-129	±	145	<DCGL
22	B06	304	2250	-27	-510	-1500	±	49	-3290	±	139	<DCGL
23	B06	335	2610	4	-150	222	±	51	-968	±	144	<DCGL
24	B06	362	2890	31	130	1722	±	52	839	±	147	<DCGL
25	B06	340	2700	9	-60	500	±	51	-387	±	145	<DCGL
26	B06	321	2690	-10	-70	-556	±	50	-452	±	145	<DCGL
27	B06	302	2630	-29	-130	-1611	±	49	-839	±	144	<DCGL
28	B06	333	2780	2	20	111	±	51	129	±	146	<DCGL
29	B06	292	2640	-39	-120	-2167	±	49	-774	±	144	<DCGL
30	B06	332	2500	1	-260	56	±	50	-1677	±	142	<DCGL
31	B06	280	2180	-51	-580	-2833	±	48	-3742	±	138	<DCGL
32	B06	337	1850	6	-910	333	±	51	-5871	±	133	<DCGL
33	B06	244	1930	-87	-830	-4833	±	47	-5355	±	134	<DCGL
34	B06	303	2150	-28	-610	-1556	±	49	-3935	±	137	<DCGL
35	B06	251	2150	-80	-610	-4444	±	47	-3935	±	137	<DCGL
36	B06	285	2130	-46	-630	-2556	±	49	-4065	±	137	<DCGL
37	B06	365	2440	34	-320	1889	±	52	-2065	±	141	<DCGL
38	B06	335	2620	4	-140	222	±	51	-903	±	144	<DCGL

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Survey Unit 7			Beta Background 415			Gamma Background 2746						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B07	470	2880	55	134	1642	±	58	1241	±	147	<DCGL
2	B07	458	3620	43	874	1284	±	58	8093	±	156	<DCGL
3	B07	450	3760	35	1014	1045	±	58	9389	±	158	<DCGL
4	B07	419	2340	4	-406	119	±	57	-3759	±	140	<DCGL
5	B07	459	3220	44	474	1313	±	58	4389	±	151	<DCGL
6	B07	487	3190	72	444	2149	±	59	4111	±	151	<DCGL
7	B07	421	1790	6	-956	179	±	57	-8852	±	132	<DCGL
8	B07	406	1760	-9	-986	-269	±	56	-9130	±	132	<DCGL
9	B07	397	2840	-18	94	-537	±	56	870	±	146	<DCGL
10	B07	416	2860	1	114	30	±	57	1056	±	147	<DCGL
11	B07	395	1650	-20	-1096	-597	±	56	-10148	±	130	<DCGL
12	B07	372	1670	-43	-1076	-1284	±	55	-9963	±	130	<DCGL
13	B07	430	2800	15	54	448	±	57	500	±	146	<DCGL
14	B07	393	2770	-22	24	-657	±	56	222	±	146	<DCGL
15	B07	372	1780	-43	-966	-1284	±	55	-8944	±	132	<DCGL
16	B07	348	1700	-67	-1046	-2000	±	54	-9685	±	131	<DCGL
17	B07	443	2680	28	-66	836	±	57	-611	±	144	<DCGL
18	B07	459	2770	44	24	1313	±	58	222	±	146	<DCGL
19	B07	387	1320	-28	-1426	-836	±	56	-13204	±	125	<DCGL
20	B07	440	2030	25	-716	746	±	57	-6630	±	135	<DCGL
21	B07	432	2790	17	44	507	±	57	407	±	146	<DCGL
22	B07	428	2910	13	164	388	±	57	1519	±	147	<DCGL
23	B07	411	2400	-4	-346	-119	±	56	-3204	±	141	<DCGL
24	B07	441	2960	26	214	776	±	57	1981	±	148	<DCGL
25	B07	393	2660	-22	-86	-657	±	56	-796	±	144	<DCGL
26	B07	371	2870	-44	124	-1313	±	55	1148	±	147	<DCGL
27	B07	379	3250	-36	504	-1075	±	55	4667	±	152	<DCGL
28	B07	409	1740	-6	-1006	-179	±	56	-9315	±	131	<DCGL
29	B07	407	1910	-8	-836	-239	±	56	-7741	±	134	<DCGL
30	B07	357	1920	-58	-826	-1731	±	54	-7648	±	134	<DCGL
31	B07	429	2850	14	104	418	±	57	963	±	147	<DCGL
32	B07	462	3280	47	534	1403	±	58	4944	±	152	<DCGL
33	B07	373	3220	-42	474	-1254	±	55	4389	±	151	<DCGL
34	B07	377	1670	-38	-1076	-1134	±	55	-9963	±	130	<DCGL
35	B07	435	2100	20	-646	597	±	57	-5981	±	136	<DCGL
36	B07	362	2110	-53	-636	-1582	±	55	-5889	±	137	<DCGL
37	B07	410	2830	-5	84	-149	±	56	778	±	146	<DCGL

Survey Unit 8			Beta Background 391			Gamma Background 2290						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B08	405	2875	14	585	418	±	55	5417	±	141	<DCGL
2	B08	392	2675	1	385	30	±	55	3565	±	138	<DCGL
3	B08	407	2690	16	400	478	±	55	3704	±	138	<DCGL
4	B08	423	2839	32	549	955	±	56	5083	±	140	<DCGL
5	B08	410	2859	19	569	567	±	55	5269	±	141	<DCGL
6	B08	426	2824	35	534	1045	±	56	4944	±	140	<DCGL
7	B08	446	2714	55	424	1642	±	57	3926	±	139	<DCGL
8	B08	390	2786	-1	496	-30	±	55	4593	±	140	<DCGL
9	B08	324	2652	-67	362	-2000	±	52	3352	±	138	<DCGL
10	B08	446	2779	55	489	1642	±	57	4528	±	140	<DCGL
11	B08	424	2132	33	-158	985	±	56	-1463	±	130	<DCGL

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12	B08	326	2150	-65	-140	-1940	±	52	-1296	±	131	<DCGL
13	B08	422	2710	31	420	925	±	56	3889	±	139	<DCGL
14	B08	377	1910	-14	-380	-418	±	54	-3519	±	127	<DCGL
15	B08	364	2050	-27	-240	-806	±	54	-2222	±	129	<DCGL
16	B08	454	2740	63	450	1881	±	57	4167	±	139	<DCGL
17	B08	349	2140	-42	-150	-1254	±	53	-1389	±	130	<DCGL
18	B08	372	1970	-19	-320	-567	±	54	-2963	±	128	<DCGL
19	B08	468	2610	77	320	2299	±	57	2963	±	137	<DCGL
20	B08	423	2780	32	490	955	±	56	4537	±	140	<DCGL
21	B08	403	2200	12	-90	358	±	55	-833	±	131	<DCGL
22	B08	386	2990	-5	700	-149	±	55	6481	±	142	<DCGL
23	B08	384	2140	-7	-150	-209	±	55	-1389	±	130	<DCGL
24	B08	429	2432	38	142	1134	±	56	1315	±	135	<DCGL
25	B08	327	2450	-64	160	-1910	±	53	1481	±	135	<DCGL
26	B08	404	2050	13	-240	388	±	55	-2222	±	129	<DCGL
27	B08	332	2310	-59	20	-1761	±	53	185	±	133	<DCGL
28	B08	394	2210	3	-80	90	±	55	-741	±	131	<DCGL
29	B08	402	2600	11	310	328	±	55	2870	±	137	<DCGL
30	B08	360	2480	-31	190	-925	±	54	1759	±	135	<DCGL
31	B08	436	2650	45	360	1343	±	56	3333	±	138	<DCGL

Survey Unit 9			Beta Background 546			Gamma Background 6406						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B09	562	4900	16	-1506	889	±	65	-9716	±	208	<DCGL
2	B09	422	3370	-124	-3036	-6889	±	61	-19587	±	194	<DCGL
3	B09	504	5040	-42	-1366	-2333	±	64	-8813	±	210	<DCGL
4	B09	512	5110	-34	-1296	-1889	±	64	-8361	±	210	<DCGL
5	B09	566	5320	20	-1086	1111	±	65	-7006	±	212	<DCGL
6	B09	504	4840	-42	-1566	-2333	±	64	-10103	±	208	<DCGL
7	B09	508	5570	-38	-836	-2111	±	64	-5394	±	214	<DCGL
8	B09	530	4780	-16	-1626	-889	±	64	-10490	±	207	<DCGL
9	B09	542	4840	-4	-1566	-222	±	65	-10103	±	208	<DCGL
10	B09	498	4510	-48	-1896	-2667	±	63	-12232	±	205	<DCGL
11	B09	518	4770	-28	-1636	-1556	±	64	-10555	±	207	<DCGL
12	B09	556	4870	10	-1536	556	±	65	-9910	±	208	<DCGL
13	B09	514	4980	-32	-1426	-1778	±	64	-9200	±	209	<DCGL
14	B09	546	5650	0	-756	0	±	65	-4877	±	215	<DCGL
15	B09	606	5320	60	-1086	3333	±	67	-7006	±	212	<DCGL
16	B09	476	4490	-70	-1916	-3889	±	63	-12361	±	205	<DCGL
17	B09	510	4470	-36	-1936	-2000	±	64	-12490	±	204	<DCGL
18	B09	490	4850	-56	-1556	-3111	±	63	-10039	±	208	<DCGL
19	B09	448	4440	-98	-1966	-5444	±	62	-12684	±	204	<DCGL
20	B09	450	4330	-96	-2076	-5333	±	62	-13394	±	203	<DCGL
21	B09	506	4290	-40	-2116	-2222	±	64	-13652	±	203	<DCGL
22	B09	462	4210	-84	-2196	-4667	±	62	-14168	±	202	<DCGL
23	B09	470	4600	-76	-1806	-4222	±	62	-11652	±	206	<DCGL
24	B09	494	4780	-52	-1626	-2889	±	63	-10490	±	207	<DCGL
25	B09	532	4510	-14	-1896	-778	±	64	-12232	±	205	<DCGL
26	B09	508	4450	-38	-1956	-2111	±	64	-12619	±	204	<DCGL
27	B09	486	4810	-60	-1596	-3333	±	63	-10297	±	208	<DCGL
28	B09	356	5070	-190	-1336	-10556	±	59	-8619	±	210	<DCGL
29	B09	614	6820	68	414	3778	±	67	2671	±	225	<DCGL
30	B09	402	4320	-144	-2086	-8000	±	60	-13458	±	203	<DCGL
31	B09	664	7100	118	694	6556	±	68	4477	±	228	<DCGL
32	B09	708	7180	162	774	9000	±	69	4994	±	228	<DCGL
33	B09	402	4960	-144	-1446	-8000	±	60	-9329	±	209	<DCGL

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34	B09	324	3400	-222	-3006	-12333	±	58	-19394	±	194	<DCGL
35	B09	622	5980	76	-426	4222	±	67	-2748	±	218	<DCGL
36	B09	596	6020	50	-386	2778	±	66	-2490	±	218	<DCGL
37	B09	416	4600	-130	-1806	-7222	±	61	-11652	±	206	<DCGL
38	B09	406	4240	-140	-2166	-7778	±	60	-13974	±	202	<DCGL
39	B09	592	6450	46	44	2556	±	66	284	±	222	<DCGL
40	B09	390	4480	-156	-1926	-8667	±	60	-12426	±	204	<DCGL
41	B09	334	3850	-212	-2556	-11778	±	58	-16490	±	198	<DCGL
42	B09	634	6640	88	234	4889	±	67	1510	±	224	<DCGL
43	B09	416	3190	-130	-3216	-7222	±	61	-20748	±	192	<DCGL
44	B09	436	4780	-110	-1626	-6111	±	61	-10490	±	207	<DCGL
45	B09	604	6650	58	244	3222	±	66	1574	±	224	<DCGL

Survey Unit 10			Beta Background 429			Gamma Background 5306						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B10	502	5640	73	334	2179	±	60	3093	±	205	<DCGL
2	B10	440	3990	11	-1316	328	±	58	-12185	±	189	<DCGL
3	B10	502	6140	73	834	2179	±	60	7722	±	210	<DCGL
4	B10	460	5770	31	464	925	±	58	4296	±	206	<DCGL
5	B10	508	5360	79	54	2358	±	60	500	±	202	<DCGL
6	B10	404	4430	-25	-876	-746	±	57	-8111	±	193	<DCGL
7	B10	414	4440	-15	-866	-448	±	57	-8019	±	193	<DCGL
8	B10	470	5680	41	374	1224	±	59	3463	±	205	<DCGL
9	B10	478	5800	49	494	1463	±	59	4574	±	207	<DCGL
10	B10	430	5630	1	324	30	±	57	3000	±	205	<DCGL
11	B10	474	5490	45	184	1343	±	59	1704	±	204	<DCGL
12	B10	412	5550	-17	244	-507	±	57	2259	±	204	<DCGL
13	B10	484	5210	55	-96	1642	±	59	-889	±	201	<DCGL
14	B10	476	4320	47	-986	1403	±	59	-9130	±	192	<DCGL
15	B10	378	3030	-51	-2276	-1522	±	56	-21074	±	179	<DCGL
16	B10	434	3700	5	-1606	149	±	58	-14870	±	186	<DCGL
17	B10	396	4490	-33	-816	-985	±	56	-7556	±	194	<DCGL
18	B10	436	4490	7	-816	209	±	58	-7556	±	194	<DCGL
19	B10	482	5030	53	-276	1582	±	59	-2556	±	199	<DCGL
20	B10	434	5140	5	-166	149	±	58	-1537	±	200	<DCGL
21	B10	564	4960	135	-346	4030	±	62	-3204	±	199	<DCGL
22	B10	422	4650	-7	-656	-209	±	57	-6074	±	196	<DCGL
23	B10	494	5870	65	564	1940	±	60	5222	±	207	<DCGL
24	B10	552	3720	123	-1586	3672	±	61	-14685	±	186	<DCGL
25	B10	394	2950	-35	-2356	-1045	±	56	-21815	±	178	<DCGL
26	B10	398	4380	-31	-926	-925	±	56	-8574	±	193	<DCGL
27	B10	510	4450	81	-856	2418	±	60	-7926	±	194	<DCGL
28	B10	436	4770	7	-536	209	±	58	-4963	±	197	<DCGL
29	B10	406	3590	-23	-1716	-687	±	57	-15889	±	185	<DCGL
30	B10	424	2950	-5	-2356	-149	±	57	-21815	±	178	<DCGL
31	B10	410	4380	-19	-926	-567	±	57	-8574	±	193	<DCGL
32	B10	418	3640	-11	-1666	-328	±	57	-15426	±	185	<DCGL
33	B10	470	5450	41	144	1224	±	59	1333	±	203	<DCGL
34	B10	434	6160	5	854	149	±	58	7907	±	210	<DCGL
35	B10	442	5000	13	-306	388	±	58	-2833	±	199	<DCGL
36	B10	384	5140	-45	-166	-1343	±	56	-1537	±	200	<DCGL
37	B10	388	3420	-41	-1886	-1224	±	56	-17463	±	183	<DCGL
38	B10	374	4590	-55	-716	-1642	±	56	-6630	±	195	<DCGL
39	B10	340	3130	-89	-2176	-2657	±	54	-20148	±	180	<DCGL
40	B10	440	3940	11	-1366	328	±	58	-12648	±	188	<DCGL
41	B10	410	3570	-19	-1736	-567	±	57	-16074	±	185	<DCGL

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42	B10	510	5780	81	474	2418	±	60	4389	±	206	<DCGL
43	B10	370	4420	-59	-886	-1761	±	55	-8204	±	193	<DCGL
44	B10	498	5770	69	464	2060	±	60	4296	±	206	<DCGL
45	B10	380	3390	-49	-1916	-1463	±	56	-17741	±	183	<DCGL
46	B10	514	3160	85	-2146	2537	±	60	-19870	±	180	<DCGL
47	B10	568	6820	139	1514	4149	±	62	14019	±	216	<DCGL
48	B10	418	3090	-11	-2216	-328	±	57	-20519	±	180	<DCGL
49	B10	444	3090	15	-2216	448	±	58	-20519	±	180	<DCGL
50	B10	430	4320	1	-986	30	±	57	-9130	±	192	<DCGL

Survey Unit 11			Beta Background 380			Gamma Background 2926						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B11	362	3330	-18	404	-537	±	53	3741	±	155	<DCGL
2	B11	394	3600	14	674	418	±	55	6241	±	158	<DCGL
3	B11	378	3110	-2	184	-60	±	54	1704	±	152	<DCGL
4	B11	394	3250	14	324	778	±	55	3000	±	154	<DCGL
5	B11	438	3320	58	394	3222	±	56	3648	±	155	<DCGL
6	B11	410	3630	30	704	1667	±	55	6519	±	159	<DCGL
7	B11	404	3490	24	564	1333	±	55	5222	±	157	<DCGL
8	B11	364	3190	-16	264	-889	±	53	2444	±	153	<DCGL
9	B11	378	3300	-2	374	-111	±	54	3463	±	155	<DCGL
10	B11	340	3310	-40	384	-2222	±	53	3556	±	155	<DCGL
11	B11	368	3380	-12	454	-667	±	54	4204	±	156	<DCGL
12	B11	400	367	20	-2559	1111	±	55	-23694	±	112	<DCGL
13	B38	510	5590	130	-754	3000	±	58	-6981	±	181	<DCGL
14	B38	496	5530	116	-814	2222	±	58	-7537	±	180	<DCGL
15	B38	478	5630	98	-714	1222	±	57	-6611	±	181	<DCGL
16	B38	350	5400	-30	-944	-5889	±	53	-8741	±	179	<DCGL
17	B38	396	5420	16	-924	-3333	±	55	-8556	±	179	<DCGL
18	B38	450	6140	70	-204	-333	±	56	-1889	±	187	<DCGL
19	B38	478	6140	98	-204	1222	±	57	-1889	±	187	<DCGL
20	B38	460	6270	80	-74	222	±	57	-685	±	188	<DCGL
21	B38	400	5340	20	-1004	-3111	±	55	-9296	±	178	<DCGL
22	B38	416	5620	36	-724	-2222	±	55	-6704	±	181	<DCGL
23	B38	398	5940	18	-404	-3222	±	55	-3741	±	185	<DCGL
24	B38	446	5950	66	-394	-556	±	56	-3648	±	185	<DCGL
25	B38	562	6570	182	226	5889	±	60	2093	±	191	<DCGL
26	B38	500	6010	120	-334	2444	±	58	-3093	±	185	<DCGL
27	B38	498	6660	118	316	2333	±	58	2926	±	192	<DCGL
28	B38	366	3420	-14	-2924	-5000	±	54	-27074	±	156	<DCGL
29	B38	574	7430	194	1086	6556	±	61	10056	±	199	<DCGL
30	B11	294	2560	-86	-366	-4778	±	51	-3389	±	145	<DCGL
31	B11	344	2050	-36	-876	-2000	±	53	-8111	±	138	<DCGL
32	B11	346	1850	-34	-1076	-1889	±	53	-9963	±	135	<DCGL
33	B11	344	1880	-36	-1046	-2000	±	53	-9685	±	136	<DCGL
34	B11	384	2170	4	-756	222	±	54	-7000	±	140	<DCGL

Survey Unit 12			Beta Background 403			Gamma Background 4938						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B12	426	4100	23	-838	1278	±	56	-5406	±	186	<DCGL
2	B12	460	4870	57	-68	3167	±	58	-439	±	194	<DCGL
3	B12	338	4660	-65	-278	-3611	±	53	-1794	±	192	<DCGL
4	B12	488	5140	85	202	4722	±	59	1303	±	197	<DCGL
5	B12	396	5770	-7	832	-389	±	55	5368	±	203	<DCGL

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6	B12	430	5170	27	232	1500	±	57	1497	±	197	<DCGL
7	B12	428	5460	25	522	1389	±	57	3368	±	200	<DCGL
8	B12	468	5590	65	652	3611	±	58	4206	±	201	<DCGL
9	B12	452	4850	49	-88	2722	±	57	-568	±	194	<DCGL
10	B12	328	4860	-75	-78	-4167	±	53	-503	±	194	<DCGL
11	B12	360	5000	-43	62	-2389	±	54	400	±	195	<DCGL
12	B12	366	4170	-37	-768	-2056	±	54	-4955	±	187	<DCGL
13	B12	330	3710	-73	-1228	-4056	±	53	-7923	±	182	<DCGL
14	B12	474	4560	71	-378	3944	±	58	-2439	±	191	<DCGL
15	B12	298	2640	-105	-2298	-5833	±	52	-14826	±	171	<DCGL
16	B12	390	4770	-13	-168	-722	±	55	-1084	±	193	<DCGL
17	B12	350	3430	-53	-1508	-2944	±	54	-9729	±	179	<DCGL
18	B12	406	5630	3	692	167	±	56	4465	±	201	<DCGL
19	B12	572	8400	169	3462	9389	±	61	22335	±	226	<DCGL
20	B12	444	5710	41	772	2278	±	57	4981	±	202	<DCGL

Survey Unit 13			Beta Background 342			Gamma Background 1970						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B13	318	2096	-24	126	-1333	±	50	813	±	125	<DCGL
2	B13	328	2238	-14	268	-778	±	51	1729	±	127	<DCGL
3	B13	336	2370	-6	400	-333	±	51	2581	±	129	<DCGL
4	B13	320	2330	-22	360	-1222	±	50	2323	±	129	<DCGL
5	B13	332	2222	-10	252	-556	±	51	1626	±	127	<DCGL
6	B13	272	2374	-70	404	-3889	±	49	2606	±	129	<DCGL
7	B13	290	878	-52	-1092	-2889	±	49	-7045	±	105	<DCGL
8	B13	392	2330	50	360	2778	±	53	2323	±	129	<DCGL
9	B13	314	2342	-28	372	-1556	±	50	2400	±	129	<DCGL
10	B13	320	2428	-22	458	-1222	±	50	2955	±	130	<DCGL
11	B13	340	2486	-2	516	-111	±	51	3329	±	131	<DCGL
12	B13	254	978	-88	-992	-4889	±	48	-6400	±	106	<DCGL
13	B13	260	2402	-82	432	-4556	±	48	2787	±	130	<DCGL
14	B13	278	2350	-64	380	-3556	±	49	2452	±	129	<DCGL
15	B13	310	2376	-32	406	-1778	±	50	2619	±	129	<DCGL
16	B13	322	2358	-20	388	-1111	±	51	2503	±	129	<DCGL
17	B13	318	2356	-24	386	-1333	±	50	2490	±	129	<DCGL
18	B13	340	2206	-2	236	-111	±	51	1523	±	127	<DCGL
19	B13	340	2612	-2	642	-111	±	51	4142	±	133	<DCGL
20	B13	262	2338	-80	368	-4444	±	48	2374	±	129	<DCGL
21	B13	330	2434	-12	464	-667	±	51	2994	±	130	<DCGL
22	B13	382	2362	40	392	2222	±	53	2529	±	129	<DCGL
23	B13	402	2186	60	216	3333	±	53	1394	±	126	<DCGL
24	B13	388	1288	46	-682	2556	±	53	-4400	±	112	<DCGL
25	B13	328	2638	-14	668	-778	±	51	4310	±	133	<DCGL
26	B13	380	2676	38	706	2111	±	53	4555	±	134	<DCGL
27	B13	292	1250	-50	-720	-2778	±	49	-4645	±	111	<DCGL
28	B13	250	1190	-92	-780	-5111	±	48	-5032	±	110	<DCGL
29	B13	334	1398	-8	-572	-444	±	51	-3690	±	114	<DCGL
30	B13	252	1230	-90	-740	-5000	±	48	-4774	±	111	<DCGL
31	B13	258	1340	-84	-630	-4667	±	48	-4065	±	113	<DCGL
32	B13	292	1274	-50	-696	-2778	±	49	-4490	±	112	<DCGL
33	B13	326	1698	-16	-272	-889	±	51	-1755	±	119	<DCGL
34	B13	266	948	-76	-1022	-4222	±	48	-6594	±	106	<DCGL
35	B13	260	1138	-82	-832	-4556	±	48	-5368	±	109	<DCGL
36	B13	258	1232	-84	-738	-4667	±	48	-4761	±	111	<DCGL

Survey Unit 14		Beta Background 416	Gamma Background 3280

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Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B14	482	7210	66	3930	3667	±	59	25355	±	201	<DCGL
2	B14	294	3320	-122	40	-6778	±	52	258	±	159	<DCGL
3	B14	395	3460	-21	180	-1167	±	56	1161	±	161	<DCGL
4	B14	302	3140	-114	-140	-6333	±	53	-903	±	157	<DCGL
5	B14	309	3320	-107	40	-5944	±	53	258	±	159	<DCGL
6	B14	274	3020	-142	-260	-7889	±	51	-1677	±	156	<DCGL
7	B14	251	2320	-165	-960	-9167	±	51	-6194	±	147	<DCGL
8	B14	409	3370	-7	90	-389	±	56	581	±	160	<DCGL
9	B14	245	2670	-171	-610	-9500	±	50	-3935	±	151	<DCGL
10	B14	398	3360	-18	80	-1000	±	56	516	±	160	<DCGL
11	B14	317	2670	-99	-610	-5500	±	53	-3935	±	151	<DCGL
12	B14	305	2360	-111	-920	-6167	±	53	-5935	±	147	<DCGL
13	B14	406	3260	-10	-20	-556	±	56	-129	±	159	<DCGL
14	B14	413	3240	-3	-40	-167	±	56	-258	±	158	<DCGL
15	B14	331	2790	-85	-490	-4722	±	54	-3161	±	153	<DCGL
16	B14	296	2300	-120	-980	-6667	±	52	-6323	±	146	<DCGL
17	B14	429	3250	13	-30	722	±	57	-194	±	158	<DCGL
18	B14	315	2710	-101	-570	-5611	±	53	-3677	±	152	<DCGL
19	B14	363	3060	-53	-220	-2944	±	55	-1419	±	156	<DCGL
20	B14	403	3400	-13	120	-722	±	56	774	±	160	<DCGL

Survey Unit 15			Beta Background 443			Gamma Background 3758						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B15	425	2870	-18	-888	-537	±	58	-8222	±	160	<DCGL
2	B15	434	2910	-9	-848	-269	±	58	-7852	±	160	<DCGL
3	B15	425	2930	-18	-828	-537	±	58	-7667	±	160	<DCGL
4	B15	443	3040	0	-718	0	±	58	-6648	±	162	<DCGL
5	B15	468	3180	25	-578	746	±	59	-5352	±	163	<DCGL
6	B15	469	3840	26	82	776	±	59	759	±	171	<DCGL
7	B15	536	4540	93	782	2776	±	61	7241	±	179	<DCGL
8	B15	506	4040	63	282	1881	±	60	2611	±	173	<DCGL
9	B15	455	3120	12	-638	358	±	59	-5907	±	163	<DCGL
10	B15	465	3050	22	-708	657	±	59	-6556	±	162	<DCGL
11	B15	475	3120	32	-638	955	±	59	-5907	±	163	<DCGL
12	B15	384	2680	-59	-1078	-1761	±	56	-9981	±	157	<DCGL
13	B15	451	2760	8	-998	239	±	59	-9241	±	158	<DCGL
14	B15	368	2000	-75	-1758	-2239	±	56	-16278	±	149	<DCGL
15	B15	477	2850	34	-908	1015	±	59	-8407	±	159	<DCGL
16	B15	416	2840	-27	-918	-806	±	57	-8500	±	159	<DCGL
17	B15	421	2950	-22	-808	-657	±	58	-7481	±	161	<DCGL
18	B15	330	2570	-113	-1188	-3373	±	54	-11000	±	156	<DCGL
19	B15	415	2730	-28	-1028	-836	±	57	-9519	±	158	<DCGL
20	B15	331	2350	-112	-1408	-3343	±	55	-13037	±	153	<DCGL
21	B15	417	2170	-26	-1588	-776	±	57	-14704	±	151	<DCGL
22	B15	414	3120	-29	-638	-866	±	57	-5907	±	163	<DCGL
23	B15	397	3030	-46	-728	-1373	±	57	-6741	±	161	<DCGL
24	B15	419	2820	-24	-938	-716	±	58	-8685	±	159	<DCGL
25	B15	429	3100	-14	-658	-418	±	58	-6093	±	162	<DCGL
26	B15	377	2340	-66	-1418	-1970	±	56	-13130	±	153	<DCGL

Survey Unit 16		Beta Background 326	Gamma Background 3058

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Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B16	412	4590	86	1532	4778	±	53	9884	±	171	<DCGL
2	B16	358	3150	32	92	1778	±	51	594	±	154	<DCGL
3	B16	316	3010	-10	-48	-556	±	50	-310	±	153	<DCGL
4	B16	250	2670	-76	-388	-4222	±	47	-2503	±	148	<DCGL
5	B16	378	3240	52	182	2889	±	52	1174	±	156	<DCGL
6	B16	262	2450	-64	-608	-3556	±	48	-3923	±	145	<DCGL
7	B16	362	2020	36	-1038	2000	±	51	-6697	±	140	<DCGL
8	B16	400	2900	74	-158	4111	±	53	-1019	±	151	<DCGL
9	B16	332	2700	6	-358	333	±	50	-2310	±	149	<DCGL
10	B16	270	2090	-56	-968	-3111	±	48	-6245	±	141	<DCGL
11	B16	356	2180	30	-878	1667	±	51	-5665	±	142	<DCGL
12	B16	236	2100	-90	-958	-5000	±	46	-6181	±	141	<DCGL
13	B16	360	3130	34	72	1889	±	51	465	±	154	<DCGL
14	B16	352	3020	26	-38	1444	±	51	-245	±	153	<DCGL
15	B16	356	2900	30	-158	1667	±	51	-1019	±	151	<DCGL
16	B16	286	1880	-40	-1178	-2222	±	48	-7600	±	138	<DCGL
17	B16	348	3120	22	62	1222	±	51	400	±	154	<DCGL
18	B16	294	2140	-32	-918	-1778	±	49	-5923	±	141	<DCGL
19	B16	360	2870	34	-188	1889	±	51	-1213	±	151	<DCGL
20	B16	284	2340	-42	-718	-2333	±	48	-4632	±	144	<DCGL

Survey Unit 17			Beta Background 416			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B17	412	n/a	-4	n/a	-119	±	56	n/a	±	n/a	<DCGL
2	B17	382	n/a	-34	n/a	-1015	±	55	n/a	±	n/a	<DCGL
3	B17	379	n/a	-37	n/a	-1104	±	55	n/a	±	n/a	<DCGL
4	B17	414	n/a	-2	n/a	-60	±	56	n/a	±	n/a	<DCGL
5	B17	376	n/a	-40	n/a	-1194	±	55	n/a	±	n/a	<DCGL
6	B17	401	n/a	-15	n/a	-448	±	56	n/a	±	n/a	<DCGL
7	B17	383	n/a	-33	n/a	-985	±	55	n/a	±	n/a	<DCGL
8	B17	444	n/a	28	n/a	836	±	57	n/a	±	n/a	<DCGL
9	B17	412	n/a	-4	n/a	-119	±	56	n/a	±	n/a	<DCGL
10	B17	407	n/a	-9	n/a	-269	±	56	n/a	±	n/a	<DCGL
11	B17	391	n/a	-25	n/a	-746	±	56	n/a	±	n/a	<DCGL
12	B17	437	n/a	21	n/a	627	±	57	n/a	±	n/a	<DCGL
13	B17	381	n/a	-35	n/a	-1045	±	55	n/a	±	n/a	<DCGL
14	B17	417	n/a	1	n/a	30	±	57	n/a	±	n/a	<DCGL
15	B17	386	n/a	-30	n/a	-896	±	56	n/a	±	n/a	<DCGL
16	B17	458	n/a	42	n/a	1254	±	58	n/a	±	n/a	<DCGL
17	B17	421	n/a	5	n/a	149	±	57	n/a	±	n/a	<DCGL
18	B17	425	n/a	9	n/a	269	±	57	n/a	±	n/a	<DCGL
19	B17	428	n/a	12	n/a	358	±	57	n/a	±	n/a	<DCGL
20	B17	423	n/a	7	n/a	209	±	57	n/a	±	n/a	<DCGL

Survey Unit 18			Beta Background 403			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B18	400	n/a	-3	n/a	-90	±	56	n/a	±	n/a	<DCGL
2	B18	412	n/a	9	n/a	269	±	56	n/a	±	n/a	<DCGL
3	B18	413	n/a	10	n/a	299	±	56	n/a	±	n/a	<DCGL
4	B18	385	n/a	-18	n/a	-537	±	55	n/a	±	n/a	<DCGL
5	B18	429	n/a	26	n/a	776	±	57	n/a	±	n/a	<DCGL

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6	B18	404	n/a	1	n/a	30	±	56	n/a	±	n/a	<DCGL
7	B18	356	n/a	-47	n/a	-1403	±	54	n/a	±	n/a	<DCGL
8	B18	408	n/a	5	n/a	149	±	56	n/a	±	n/a	<DCGL

Survey Unit 19			Beta Background 392			Gamma Background 4082						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B19	442	4070	50	-12	2778	±	57	-77	±	177	<DCGL
2	B19	418	3980	26	-102	1444	±	56	-658	±	176	<DCGL
3	B19	402	4790	10	708	556	±	55	4568	±	185	<DCGL
4	B19	424	5190	32	1108	955	±	56	7148	±	189	<DCGL
5	B19	348	3550	-44	-532	-2444	±	53	-3432	±	171	<DCGL
6	B19	374	3460	-18	-622	-1000	±	54	-4013	±	170	<DCGL
7	B19	382	3160	-10	-922	-299	±	55	-5948	±	167	<DCGL
8	B19	442	4790	50	708	2778	±	57	4568	±	185	<DCGL
9	B19	444	4440	52	358	2889	±	57	2310	±	181	<DCGL
10	B19	426	3980	34	-102	1889	±	56	-658	±	176	<DCGL
11	B19	324	3050	-68	-1032	-3778	±	52	-6658	±	166	<DCGL
12	B19	376	3310	-16	-772	-889	±	54	-4981	±	169	<DCGL
13	B19	340	2590	-52	-1492	-1552	±	53	-9626	±	160	<DCGL
14	B19	368	3370	-24	-712	-1333	±	54	-4594	±	169	<DCGL
15	B19	314	2370	-78	-1712	-4333	±	52	-11045	±	157	<DCGL
16	B19	392	3330	0	-752	0	±	55	-4852	±	169	<DCGL
17	B19	346	3460	-46	-622	-2556	±	53	-4013	±	170	<DCGL
18	B19	316	2920	-76	-1162	-4222	±	52	-7497	±	164	<DCGL
19	B19	358	2600	-34	-1482	-1889	±	54	-9561	±	160	<DCGL
20	B19	344	2950	-48	-1132	-2667	±	53	-7303	±	164	<DCGL

Survey Unit 20			Beta Background 342			Gamma Background 3176						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B20	385	3240	43	64	2389	±	53	413	±	157	<DCGL
2	B20	345	3040	3	-136	167	±	51	-877	±	155	<DCGL
3	B20	369	2920	27	-256	1500	±	52	-1652	±	153	<DCGL
4	B20	336	2990	-6	-186	-333	±	51	-1200	±	154	<DCGL
5	B20	351	3170	9	-6	500	±	52	-39	±	156	<DCGL
6	B20	334	3230	-8	54	-444	±	51	348	±	157	<DCGL
7	B20	328	3130	-14	-46	-778	±	51	-297	±	156	<DCGL
8	B20	318	3010	-24	-166	-1333	±	50	-1071	±	154	<DCGL
9	B20	314	2720	-28	-456	-1556	±	50	-2942	±	150	<DCGL
10	B20	336	2910	-6	-266	-333	±	51	-1716	±	153	<DCGL
11	B20	301	2600	-41	-576	-2278	±	50	-3716	±	149	<DCGL
12	B20	301	3040	-41	-136	-2278	±	50	-877	±	155	<DCGL
13	B20	344	3240	2	64	111	±	51	413	±	157	<DCGL
14	B20	303	3070	-39	-106	-2167	±	50	-684	±	155	<DCGL
15	B20	333	3240	-9	64	-500	±	51	413	±	157	<DCGL
16	B20	353	2920	11	-256	611	±	52	-1652	±	153	<DCGL
17	B20	361	3190	19	14	1056	±	52	90	±	156	<DCGL
18	B20	329	3110	-13	-66	-722	±	51	-426	±	155	<DCGL
19	B20	330	2880	-12	-296	-667	±	51	-1910	±	153	<DCGL
20	B20	350	3070	8	-106	444	±	52	-684	±	155	<DCGL
21	B20	349	3060	7	-116	389	±	52	-748	±	155	<DCGL
22	B20	326	3310	-16	134	-889	±	51	865	±	158	<DCGL
23	B20	314	2940	-28	-236	-1556	±	50	-1523	±	153	<DCGL
24	B20	287	2740	-55	-436	-3056	±	49	-2813	±	151	<DCGL
25	B20	347	3060	5	-116	278	±	51	-748	±	155	<DCGL

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26	B20	293	2260	-49	-916	-2722	±	49	-5910	±	145	<DCGL
27	B20	323	2150	-19	-1026	-1056	±	51	-6619	±	143	<DCGL
28	B20	293	2900	-49	-276	-2722	±	49	-1781	±	153	<DCGL
29	B20	269	2840	-73	-336	-4056	±	48	-2168	±	152	<DCGL
30	B20	275	2150	-67	-1026	-3722	±	49	-6619	±	143	<DCGL
31	B20	272	2020	-70	-1156	-3889	±	49	-7458	±	141	<DCGL
32	B20	264	2490	-78	-686	-4333	±	48	-4426	±	148	<DCGL
33	B20	309	2370	-33	-806	-1833	±	50	-5200	±	146	<DCGL

Survey Unit 21			Beta Background 332			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B21	365	n/a	33	n/a	1833	±	52	n/a	±	n/a	<DCGL
2	B21	340	n/a	8	n/a	444	±	51	n/a	±	n/a	<DCGL
3	B21	357	n/a	25	n/a	1389	±	51	n/a	±	n/a	<DCGL
4	B21	334	n/a	2	n/a	111	±	51	n/a	±	n/a	<DCGL
5	B21	298	n/a	-34	n/a	-1889	±	49	n/a	±	n/a	<DCGL
6	B21	314	n/a	-18	n/a	-1000	±	50	n/a	±	n/a	<DCGL
7	B21	329	n/a	-3	n/a	-167	±	50	n/a	±	n/a	<DCGL
8	B21	339	n/a	7	n/a	389	±	51	n/a	±	n/a	<DCGL
9	B21	336	n/a	4	n/a	222	±	51	n/a	±	n/a	<DCGL
10	B21	380	n/a	48	n/a	2667	±	52	n/a	±	n/a	<DCGL
11	B21	368	n/a	36	n/a	2000	±	52	n/a	±	n/a	<DCGL
12	B21	337	n/a	5	n/a	278	±	51	n/a	±	n/a	<DCGL
13	B21	323	n/a	-9	n/a	-500	±	50	n/a	±	n/a	<DCGL
14	B21	344	n/a	12	n/a	667	±	51	n/a	±	n/a	<DCGL
15	B21	352	n/a	20	n/a	1111	±	51	n/a	±	n/a	<DCGL
16	B21	328	n/a	-4	n/a	-222	±	50	n/a	±	n/a	<DCGL
17	B21	342	n/a	10	n/a	556	±	51	n/a	±	n/a	<DCGL
18	B21	303	n/a	-29	n/a	-1611	±	49	n/a	±	n/a	<DCGL
19	B21	341	n/a	9	n/a	500	±	51	n/a	±	n/a	<DCGL
20	B21	317	n/a	-15	n/a	-833	±	50	n/a	±	n/a	<DCGL
21	B21	332	n/a	0	n/a	0	±	51	n/a	±	n/a	<DCGL
22	B21	348	n/a	16	n/a	889	±	51	n/a	±	n/a	<DCGL
23	B21	324	n/a	-8	n/a	-444	±	50	n/a	±	n/a	<DCGL
24	B21	358	n/a	26	n/a	1444	±	51	n/a	±	n/a	<DCGL
25	B21	289	n/a	-43	n/a	-2389	±	49	n/a	±	n/a	<DCGL
26	B21	301	n/a	-31	n/a	-1722	±	49	n/a	±	n/a	<DCGL
27	B21	320	n/a	-12	n/a	-667	±	50	n/a	±	n/a	<DCGL
28	B21	275	n/a	-57	n/a	-3167	±	48	n/a	±	n/a	<DCGL
29	B21	285	n/a	-47	n/a	-2611	±	49	n/a	±	n/a	<DCGL
30	B21	311	n/a	-21	n/a	-1167	±	50	n/a	±	n/a	<DCGL
31	B21	300	n/a	-32	n/a	-1778	±	49	n/a	±	n/a	<DCGL
32	B21	337	n/a	5	n/a	278	±	51	n/a	±	n/a	<DCGL
33	B21	322	n/a	-10	n/a	-556	±	50	n/a	±	n/a	<DCGL
34	B21	322	n/a	-10	n/a	-556	±	50	n/a	±	n/a	<DCGL

Survey Unit 22			Beta Background 402			Gamma Background 2302						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B22	398	2510	-4	208	-119	±	55	1926	±	136	<DCGL
2	B22	397	2560	-5	258	-149	±	55	2389	±	137	<DCGL
3	B22	396	2040	-6	-262	-179	±	55	-2426	±	129	<DCGL
4	B22	437	2810	35	508	1045	±	57	4704	±	140	<DCGL
5	B22	432	2650	30	348	896	±	57	3222	±	138	<DCGL
6	B22	511	4380	109	2078	3254	±	59	19241	±	160	<DCGL

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7	B22	394	2450	-8	148	-239	±	55	1370	±	135	<DCGL
8	B22	358	2160	-44	-142	-1313	±	54	-1315	±	131	<DCGL
9	B22	436	2850	34	548	1015	±	57	5074	±	141	<DCGL
10	B22	354	1910	-48	-392	-1433	±	54	-3630	±	127	<DCGL
11	B22	395	2830	-7	528	-209	±	55	4889	±	140	<DCGL
12	B22	374	1960	-28	-342	-836	±	55	-3167	±	128	<DCGL
13	B22	432	3530	30	1228	896	±	57	11370	±	150	<DCGL
14	B22	413	1910	11	-392	328	±	56	-3630	±	127	<DCGL
15	B22	423	1710	21	-592	627	±	56	-5481	±	124	<DCGL
16	B22	415	1780	13	-522	388	±	56	-4833	±	125	<DCGL
17	B22	426	1920	24	-382	716	±	56	-3537	±	127	<DCGL
18	B22	445	2100	43	-202	1284	±	57	-1870	±	130	<DCGL
19	B22	452	2980	50	678	1493	±	57	6278	±	142	<DCGL
20	B22	447	2940	45	638	1343	±	57	5907	±	142	<DCGL

Survey Unit 23			Beta Background 408			Gamma Background 2494						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B23	479	2790	71	296	2119	±	58	2741	±	142	<DCGL
2	B23	444	2810	36	316	1075	±	57	2926	±	143	<DCGL
3	B23	326	2250	-82	-244	-2448	±	53	-2259	±	135	<DCGL
4	B23	440	3020	32	526	955	±	57	4870	±	146	<DCGL
5	B23	387	2790	-21	296	-627	±	55	2741	±	142	<DCGL
6	B23	450	3080	42	586	1254	±	57	5426	±	146	<DCGL
7	B23	359	2430	-49	-64	-1463	±	54	-593	±	138	<DCGL
8	B23	467	2840	59	346	1761	±	58	3204	±	143	<DCGL
9	B23	441	3240	33	746	985	±	57	6907	±	148	<DCGL
10	B23	403	2800	-5	306	-149	±	56	2833	±	143	<DCGL
11	B23	427	3910	19	1416	567	±	57	13111	±	157	<DCGL
12	B23	390	3980	-18	1486	-537	±	55	13759	±	158	<DCGL
13	B23	350	2420	-58	-74	-1731	±	54	-685	±	137	<DCGL
14	B23	429	2800	21	306	627	±	57	2833	±	143	<DCGL
15	B23	426	2640	18	146	537	±	57	1352	±	140	<DCGL
16	B23	382	2950	-26	456	-776	±	55	4222	±	145	<DCGL
17	B23	355	2360	-53	-134	-1582	±	54	-1241	±	137	<DCGL
18	B23	427	2900	19	406	567	±	57	3759	±	144	<DCGL
19	B23	453	2680	45	186	1343	±	58	1722	±	141	<DCGL
20	B23	387	2400	-21	-94	-627	±	55	-870	±	137	<DCGL

Survey Unit 24			Beta Background 352			Gamma Background 3090						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B24	448	4520	96	1430	5333	±	55	9226	±	171	<DCGL
2	B24	452	6210	100	3120	5556	±	56	20129	±	189	<DCGL
3	B24	312	3040	-40	-50	-2222	±	51	-323	±	153	<DCGL
4	B24	284	2550	-68	-540	-3778	±	49	-3484	±	147	<DCGL
5	B24	312	2300	-40	-790	-2222	±	51	-5097	±	144	<DCGL
6	B24	368	3170	16	80	889	±	53	516	±	155	<DCGL
7	B24	364	2960	12	-130	667	±	52	-839	±	152	<DCGL
8	B24	258	2730	-94	-360	-5222	±	48	-2323	±	150	<DCGL
9	B24	286	2340	-66	-750	-3667	±	50	-4839	±	144	<DCGL
10	B24	370	3320	18	230	1000	±	53	1484	±	157	<DCGL
11	B24	307	2530	-45	-560	-2500	±	50	-3613	±	147	<DCGL
12	B24	272	2520	-80	-570	-4444	±	49	-3677	±	147	<DCGL
13	B24	372	3770	20	680	1111	±	53	4387	±	162	<DCGL
14	B24	362	4030	10	940	556	±	52	6065	±	165	<DCGL

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15	B24	376	2870	24	-220	1333	±	53	-1419	±	151	<DCGL
16	B24	314	2510	-38	-580	-2111	±	51	-3742	±	147	<DCGL
17	B24	330	2100	-22	-990	-1222	±	51	-6387	±	141	<DCGL
18	B24	396	3400	44	310	2444	±	54	2000	±	158	<DCGL
19	B24	364	2390	12	-700	667	±	52	-4516	±	145	<DCGL
20	B24	316	2520	-36	-570	-2000	±	51	-3677	±	147	<DCGL

Survey Unit 25			Beta Background 454			Gamma Background 5122						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B25	468	5930	14	808	418	±	60	7481	±	206	<DCGL
2	B25	382	4040	-72	-1082	-2149	±	57	-10019	±	188	<DCGL
3	B25	572	6520	118	1398	3522	±	63	12944	±	211	<DCGL
4	B25	444	5570	-10	448	-299	±	59	4148	±	203	<DCGL
5	B25	496	5860	42	738	1254	±	60	6833	±	205	<DCGL
6	B25	498	5710	44	588	1313	±	60	5444	±	204	<DCGL
7	B25	398	3520	-56	-1602	-1672	±	57	-14833	±	182	<DCGL
8	B25	612	7540	158	2418	4716	±	64	22389	±	221	<DCGL
9	B25	534	7090	80	1968	2388	±	62	18222	±	217	<DCGL
10	B25	518	5480	64	358	1910	±	61	3315	±	202	<DCGL
11	B25	360	3750	-94	-1372	-2806	±	56	-12704	±	185	<DCGL
12	B25	332	3690	-122	-1432	-3642	±	55	-13259	±	184	<DCGL
13	B25	526	4240	72	-882	2149	±	61	-8167	±	190	<DCGL
14	B25	298	4380	-156	-742	-4657	±	54	-6870	±	191	<DCGL
15	B25	520	4740	66	-382	1970	±	61	-3537	±	195	<DCGL
16	B25	574	5790	120	668	3582	±	63	6185	±	205	<DCGL
17	B25	532	4820	78	-302	2328	±	62	-2796	±	195	<DCGL
18	B25	458	4630	4	-492	119	±	59	-4556	±	194	<DCGL
19	B25	460	3650	6	-1472	179	±	59	-13630	±	184	<DCGL
20	B25	438	3910	-16	-1212	-478	±	59	-11222	±	186	<DCGL

Survey Unit 26			Beta Background 411			Gamma Background 3980						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B26	365	3290	-46	-690	-2556	±	55	-4452	±	167	<DCGL
2	B26	428	3150	17	-830	944	±	57	-5355	±	166	<DCGL
3	B26	326	3850	-85	-130	-4722	±	53	-839	±	173	<DCGL
4	B26	373	3440	-38	-540	-2111	±	55	-3484	±	169	<DCGL
5	B26	391	3140	-20	-840	-1111	±	56	-5419	±	165	<DCGL
6	B26	395	3670	-16	-310	-889	±	56	-2000	±	171	<DCGL
7	B26	400	3520	-11	-460	-611	±	56	-2968	±	170	<DCGL
8	B26	356	4690	-55	710	-3056	±	54	4581	±	183	<DCGL
9	B26	431	2640	20	-1340	1111	±	57	-8645	±	159	<DCGL
10	B26	372	2710	-39	-1270	-2167	±	55	-8194	±	160	<DCGL
11	B26	395	3540	-16	-440	-889	±	56	-2839	±	170	<DCGL
12	B26	339	4010	-72	30	-4000	±	54	194	±	175	<DCGL
13	B26	435	3690	24	-290	1333	±	57	-1871	±	172	<DCGL
14	B26	388	3180	-23	-800	-1278	±	55	-5161	±	166	<DCGL
15	B26	339	2640	-72	-1340	-4000	±	54	-8645	±	159	<DCGL
16	B26	335	3880	-76	-100	-4222	±	54	-645	±	174	<DCGL
17	B26	320	4210	-91	230	-5056	±	53	1484	±	177	<DCGL
18	B26	442	4220	31	240	1722	±	57	1548	±	177	<DCGL
19	B26	374	4760	-37	780	-2056	±	55	5032	±	183	<DCGL
20	B26	322	4480	-89	500	-4944	±	53	3226	±	180	<DCGL

Survey Unit 27		Beta Background 401	Gamma Background n/a

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Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B27	417	n/a	16	n/a	889	±	56	n/a	±	n/a	<DCGL
2	B27	436	n/a	35	n/a	1944	±	57	n/a	±	n/a	<DCGL
3	B27	424	n/a	23	n/a	1278	±	56	n/a	±	n/a	<DCGL
4	B27	403	n/a	2	n/a	111	±	56	n/a	±	n/a	<DCGL
5	B27	446	n/a	45	n/a	2500	±	57	n/a	±	n/a	<DCGL
6	B27	502	n/a	101	n/a	5611	±	59	n/a	±	n/a	<DCGL
7	B27	420	n/a	19	n/a	1056	±	56	n/a	±	n/a	<DCGL
8	B27	380	n/a	-21	n/a	-1167	±	55	n/a	±	n/a	<DCGL
9	B27	401	n/a	0	n/a	0	±	56	n/a	±	n/a	<DCGL
10	B27	442	n/a	41	n/a	2278	±	57	n/a	±	n/a	<DCGL
11	B27	346	n/a	-55	n/a	-3056	±	54	n/a	±	n/a	<DCGL
12	B27	446	n/a	45	n/a	2500	±	57	n/a	±	n/a	<DCGL
13	B27	371	n/a	-30	n/a	-1667	±	54	n/a	±	n/a	<DCGL
14	B27	450	n/a	49	n/a	2722	±	57	n/a	±	n/a	<DCGL
15	B27	416	n/a	15	n/a	833	±	56	n/a	±	n/a	<DCGL
16	B27	412	n/a	11	n/a	611	±	56	n/a	±	n/a	<DCGL
17	B27	354	n/a	-47	n/a	-2611	±	54	n/a	±	n/a	<DCGL
18	B27	387	n/a	-14	n/a	-778	±	55	n/a	±	n/a	<DCGL
19	B27	487	n/a	86	n/a	4778	±	58	n/a	±	n/a	<DCGL
20	B27	440	n/a	39	n/a	2167	±	57	n/a	±	n/a	<DCGL

Survey Unit 28			Beta Background 383			Gamma Background 3450						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B28	373	2940	-10	-510	-556	±	54	-3290	±	157	<DCGL
2	B28	396	3460	13	10	722	±	55	65	±	163	<DCGL
3	B28	370	2570	-13	-880	-722	±	54	-5677	±	152	<DCGL
4	B28	380	4200	-3	750	-167	±	54	4839	±	171	<DCGL
5	B28	358	4220	-25	770	-1389	±	53	4968	±	172	<DCGL
6	B28	415	4020	32	570	1778	±	55	3677	±	169	<DCGL
7	B28	484	5090	101	1640	5611	±	58	10581	±	181	<DCGL
8	B28	387	3460	4	10	222	±	54	65	±	163	<DCGL
9	B28	424	4280	41	830	2278	±	56	5355	±	172	<DCGL
10	B28	402	4530	19	1080	1056	±	55	6968	±	175	<DCGL
11	B28	430	4500	47	1050	2611	±	56	6774	±	175	<DCGL
12	B28	394	3520	11	70	611	±	55	452	±	164	<DCGL
13	B28	344	2770	-39	-680	-2167	±	53	-4387	±	155	<DCGL
14	B28	386	3230	3	-220	167	±	54	-1419	±	160	<DCGL
15	B28	353	1860	-30	-1590	-1667	±	53	-10258	±	143	<DCGL
16	B28	351	2430	-32	-1020	-1778	±	53	-6581	±	150	<DCGL
17	B28	367	2240	-16	-1210	-889	±	54	-7806	±	148	<DCGL
18	B28	422	4260	39	810	2167	±	56	5226	±	172	<DCGL
19	B28	408	4000	25	550	1389	±	55	3548	±	169	<DCGL
20	B28	326	2790	-57	-660	-3167	±	52	-4258	±	155	<DCGL

Survey Unit 29			Beta Background 330			Gamma Background 3146						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B29	308	2370	-22	-776	-1222	±	50	-5006	±	146	<DCGL
2	B29	354	3330	24	184	1333	±	51	1187	±	158	<DCGL
3	B29	352	3450	22	304	1222	±	51	1961	±	159	<DCGL
4	B29	342	3200	12	54	667	±	51	348	±	156	<DCGL
5	B29	300	2730	-30	-416	-1667	±	49	-2684	±	150	<DCGL

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6	B29	330	2450	0	-696	0	±	50	-4490	±	147	<DCGL
7	B29	228	2330	-102	-816	-5667	±	46	-5265	±	145	<DCGL
8	B29	348	2500	18	-646	1000	±	51	-4168	±	147	<DCGL
9	B29	264	2930	-66	-216	-3667	±	48	-1394	±	153	<DCGL
10	B29	302	3070	-28	-76	-1556	±	49	-490	±	155	<DCGL
11	B29	324	3230	-6	84	-333	±	50	542	±	157	<DCGL
12	B29	400	3180	70	34	3889	±	53	219	±	156	<DCGL
13	B29	264	2120	-66	-1026	-3667	±	48	-6619	±	142	<DCGL
14	B29	244	2710	-86	-436	-4778	±	47	-2813	±	150	<DCGL

Survey Unit 30			Beta Background 348			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B30	346	n/a	-2	n/a	-111	±	52	n/a	±	n/a	<DCGL
2	B30	340	n/a	-8	n/a	-444	±	51	n/a	±	n/a	<DCGL
3	B30	366	n/a	18	n/a	1000	±	52	n/a	±	n/a	<DCGL
4	B30	304	n/a	-44	n/a	-2444	±	50	n/a	±	n/a	<DCGL
5	B30	294	n/a	-54	n/a	-3000	±	50	n/a	±	n/a	<DCGL
6	B30	304	n/a	-44	n/a	-2444	±	50	n/a	±	n/a	<DCGL
7	B30	310	n/a	-38	n/a	-2111	±	50	n/a	±	n/a	<DCGL
8	B30	300	n/a	-48	n/a	-2667	±	50	n/a	±	n/a	<DCGL
9	B30	262	n/a	-86	n/a	-4778	±	48	n/a	±	n/a	<DCGL
10	B30	290	n/a	-58	n/a	-3222	±	50	n/a	±	n/a	<DCGL
11	B30	328	n/a	-20	n/a	-1111	±	51	n/a	±	n/a	<DCGL
12	B30	254	n/a	-94	n/a	-5222	±	48	n/a	±	n/a	<DCGL
13	B30	374	n/a	26	n/a	1444	±	53	n/a	±	n/a	<DCGL
14	B30	332	n/a	-16	n/a	-889	±	51	n/a	±	n/a	<DCGL
15	B30	300	n/a	-48	n/a	-2667	±	50	n/a	±	n/a	<DCGL
16	B30	356	n/a	8	n/a	444	±	52	n/a	±	n/a	<DCGL
17	B30	336	n/a	-12	n/a	-667	±	51	n/a	±	n/a	<DCGL
18	B30	318	n/a	-30	n/a	-1667	±	51	n/a	±	n/a	<DCGL
19	B30	242	n/a	-106	n/a	-5889	±	48	n/a	±	n/a	<DCGL
20	B30	380	n/a	32	n/a	1778	±	53	n/a	±	n/a	<DCGL

Survey Unit 31			Beta Background 317			Gamma Background 3696						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B31	340	3860	23	164	687	±	50	1519	±	170	<DCGL
2	B31	292	3150	-25	-546	-746	±	48	-5056	±	162	<DCGL
3	B31	288	1870	-29	-1826	-866	±	48	-16907	±	146	<DCGL
4	B31	380	3040	63	-656	1881	±	52	-6074	±	161	<DCGL
5	B31	280	1960	-37	-1736	-1104	±	48	-16074	±	147	<DCGL
6	B31	368	2930	51	-766	1522	±	51	-7093	±	160	<DCGL
7	B31	278	2470	-39	-1226	-1164	±	48	-11352	±	154	<DCGL
8	B31	346	2370	29	-1326	866	±	50	-12278	±	153	<DCGL
9	B31	290	2670	-27	-1026	-806	±	48	-9500	±	156	<DCGL
10	B31	320	1960	3	-1736	90	±	49	-16074	±	147	<DCGL
11	B31	330	3050	13	-646	388	±	50	-5981	±	161	<DCGL
12	B31	352	3140	35	-556	1045	±	51	-5148	±	162	<DCGL
13	B31	286	2900	-31	-796	-925	±	48	-7370	±	159	<DCGL
14	B31	282	2190	-35	-1506	-1045	±	48	-13944	±	150	<DCGL
15	B31	340	3000	23	-696	687	±	50	-6444	±	160	<DCGL
16	B31	366	2950	49	-746	1463	±	51	-6907	±	160	<DCGL
17	B31	280	2020	-37	-1676	-1104	±	48	-15519	±	148	<DCGL
18	B31	292	830	-25	-2866	-746	±	48	-26537	±	132	<DCGL
19	B31	270	3410	-47	-286	-1403	±	47	-2648	±	165	<DCGL

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20	B31	274	2150	-43	-1546	-1284	±	48	-14315	±	150	<DCGL
21	B31	267	1930	-50	-1766	-1493	±	47	-16352	±	147	<DCGL
22	B31	320	2890	3	-806	90	±	49	-7463	±	159	<DCGL
23	B31	248	1740	-69	-1956	-2060	±	47	-18111	±	145	<DCGL
24	B31	280	1790	-37	-1906	-1104	±	48	-17648	±	145	<DCGL
25	B31	300	3190	-17	-506	-507	±	49	-4685	±	163	<DCGL

Survey Unit 32			Beta Background 437			Gamma Background 2944						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B32	476	2880	39	-64	1164	±	59	-593	±	150	<DCGL
2	B32	417	2180	-20	-764	-597	±	57	-7074	±	140	<DCGL
3	B32	474	3260	37	316	1104	±	59	2926	±	154	<DCGL
4	B32	437	2930	0	-14	0	±	58	-130	±	150	<DCGL
5	B32	440	3200	3	256	90	±	58	2370	±	154	<DCGL
6	B32	357	2590	-80	-354	-2388	±	55	-3278	±	146	<DCGL
7	B32	452	3370	15	426	448	±	58	3944	±	156	<DCGL
8	B32	338	2140	-99	-804	-2955	±	55	-7444	±	140	<DCGL
9	B32	405	2430	-32	-514	-955	±	57	-4759	±	144	<DCGL
10	B32	470	3250	33	306	985	±	59	2833	±	154	<DCGL
11	B32	366	2210	-71	-734	-2119	±	56	-6796	±	141	<DCGL
12	B32	457	3150	20	206	597	±	59	1907	±	153	<DCGL
13	B32	408	3130	-29	186	-866	±	57	1722	±	153	<DCGL
14	B32	472	3030	35	86	1045	±	59	796	±	151	<DCGL
15	B32	465	3000	28	56	836	±	59	519	±	151	<DCGL
16	B32	440	2870	3	-74	90	±	58	-685	±	149	<DCGL
17	B32	424	2880	-13	-64	-388	±	58	-593	±	150	<DCGL
18	B32	445	3880	8	936	239	±	58	8667	±	162	<DCGL
19	B32	484	3510	47	566	1403	±	59	5241	±	157	<DCGL
20	B32	528	4440	91	1496	2716	±	61	13852	±	168	<DCGL

Survey Unit 33			Beta Background 450			Gamma Background 3302						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B33	421	2630	-29	-672	-866	±	58	-6222	±	151	<DCGL
2	B33	442	2970	-8	-332	-239	±	59	-3074	±	155	<DCGL
3	B33	404	1920	-46	-1382	-1373	±	57	-12796	±	142	<DCGL
4	B33	477	3180	27	-122	806	±	60	-1130	±	158	<DCGL
5	B33	522	3650	72	348	2149	±	61	3222	±	163	<DCGL
6	B33	466	2740	16	-562	478	±	59	-5204	±	152	<DCGL
7	B33	437	2550	-13	-752	-388	±	58	-6963	±	150	<DCGL
8	B33	421	2270	-29	-1032	-866	±	58	-9556	±	146	<DCGL
9	B33	412	1980	-38	-1322	-1134	±	58	-12241	±	142	<DCGL
10	B33	457	3240	7	-62	209	±	59	-574	±	159	<DCGL
11	B33	395	1940	-55	-1362	-1642	±	57	-12611	±	142	<DCGL
12	B33	427	1960	-23	-1342	-687	±	58	-12426	±	142	<DCGL
13	B33	483	3730	33	428	985	±	60	3963	±	164	<DCGL
14	B33	428	3710	-22	408	-657	±	58	3778	±	164	<DCGL
15	B33	425	3430	-25	128	-746	±	58	1185	±	161	<DCGL
16	B33	502	4030	52	728	1552	±	60	6741	±	168	<DCGL
17	B33	491	4150	41	848	1224	±	60	7852	±	169	<DCGL
18	B33	474	4250	24	948	716	±	60	8778	±	170	<DCGL
19	B33	532	5100	82	1798	2448	±	61	16648	±	180	<DCGL
20	B33	496	4640	46	1338	1373	±	60	12389	±	175	<DCGL

Survey Unit 34		Beta Background 631	Gamma Background n/a

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Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B34	602	n/a	-29	n/a	-866	±	69	n/a	±	n/a	<DCGL
2	B34	639	n/a	8	n/a	239	±	70	n/a	±	n/a	<DCGL
3	B34	587	n/a	-44	n/a	-1313	±	68	n/a	±	n/a	<DCGL
4	B34	600	n/a	-31	n/a	-925	±	69	n/a	±	n/a	<DCGL
5	B34	694	n/a	63	n/a	1881	±	71	n/a	±	n/a	<DCGL
6	B34	686	n/a	55	n/a	1642	±	71	n/a	±	n/a	<DCGL
7	B34	600	n/a	-31	n/a	-925	±	69	n/a	±	n/a	<DCGL
8	B34	310	n/a	-321	n/a	-9582	±	60	n/a	±	n/a	<DCGL
9	B34	647	n/a	16	n/a	478	±	70	n/a	±	n/a	<DCGL
10	B34	736	n/a	105	n/a	3134	±	72	n/a	±	n/a	<DCGL
11	B34	587	n/a	-44	n/a	-1313	±	68	n/a	±	n/a	<DCGL
12	B34	610	n/a	-21	n/a	-627	±	69	n/a	±	n/a	<DCGL
13	B34	590	n/a	-41	n/a	-1224	±	68	n/a	±	n/a	<DCGL
14	B34	706	n/a	75	n/a	2239	±	72	n/a	±	n/a	<DCGL
15	B34	561	n/a	-70	n/a	-2090	±	68	n/a	±	n/a	<DCGL
16	B34	570	n/a	-61	n/a	-1821	±	68	n/a	±	n/a	<DCGL
17	B34	591	n/a	-40	n/a	-1194	±	69	n/a	±	n/a	<DCGL
18	B34	595	n/a	-36	n/a	-1075	±	69	n/a	±	n/a	<DCGL
19	B34	715	n/a	84	n/a	2507	±	72	n/a	±	n/a	<DCGL
20	B34	692	n/a	61	n/a	1821	±	71	n/a	±	n/a	<DCGL

Survey Unit 35			Beta Background 584			Gamma Background 6754						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B35	614	6730	30	-24	896	±	68	-222	±	228	<DCGL
2	B35	626	7340	42	586	1254	±	68	5426	±	233	<DCGL
3	B35	647	8170	63	1416	1881	±	69	13111	±	239	<DCGL
4	B35	489	5290	-95	-1464	-2836	±	64	-13556	±	215	<DCGL
5	B35	540	6250	-44	-504	-1313	±	66	-4667	±	224	<DCGL
6	B35	605	7070	21	316	627	±	68	2926	±	230	<DCGL
7	B35	612	6260	28	-494	836	±	68	-4574	±	224	<DCGL
8	B35	678	8210	94	1456	2806	±	70	13481	±	240	<DCGL
9	B35	661	8460	77	1706	2299	±	69	15796	±	242	<DCGL
10	B35	622	4390	38	-2364	1134	±	68	-21889	±	207	<DCGL
11	B35	544	6040	-40	-714	-1194	±	66	-6611	±	222	<DCGL
12	B35	576	6520	-8	-234	-239	±	67	-2167	±	226	<DCGL
13	B35	579	6310	-5	-444	-149	±	67	-4111	±	224	<DCGL
14	B35	551	6380	-33	-374	-985	±	66	-3463	±	225	<DCGL
15	B35	531	4890	-53	-1864	-1582	±	65	-17259	±	211	<DCGL
16	B35	552	6000	-32	-754	-955	±	66	-6981	±	221	<DCGL
17	B35	595	5660	11	-1094	328	±	67	-10130	±	218	<DCGL
18	B35	575	6000	-9	-754	-269	±	67	-6981	±	221	<DCGL
19	B35	547	5750	-37	-1004	-1104	±	66	-9296	±	219	<DCGL
20	B35	587	6010	3	-744	90	±	67	-6889	±	221	<DCGL

Survey Unit 36			Beta Background 356			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B36	344	n/a	-12	n/a	-667	±	52	n/a	±	n/a	<DCGL
2	B36	372	n/a	16	n/a	889	±	53	n/a	±	n/a	<DCGL
3	B36	310	n/a	-46	n/a	-2556	±	51	n/a	±	n/a	<DCGL
4	B36	378	n/a	22	n/a	1222	±	53	n/a	±	n/a	<DCGL
5	B36	350	n/a	-6	n/a	-333	±	52	n/a	±	n/a	<DCGL

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6	B36	284	n/a	-72	n/a	-4000	±	50	n/a	±	n/a	<DCGL
7	B36	352	n/a	-4	n/a	-222	±	52	n/a	±	n/a	<DCGL
8	B36	412	n/a	56	n/a	3111	±	54	n/a	±	n/a	<DCGL
9	B36	368	n/a	12	n/a	667	±	53	n/a	±	n/a	<DCGL
10	B36	306	n/a	-50	n/a	-2778	±	50	n/a	±	n/a	<DCGL
11	B36	338	n/a	-18	n/a	-1000	±	52	n/a	±	n/a	<DCGL
12	B36	356	n/a	0	n/a	0	±	52	n/a	±	n/a	<DCGL
13	B36	320	n/a	-36	n/a	-2000	±	51	n/a	±	n/a	<DCGL
14	B36	314	n/a	-42	n/a	-2333	±	51	n/a	±	n/a	<DCGL
15	B36	376	n/a	20	n/a	1111	±	53	n/a	±	n/a	<DCGL
16	B36	356	n/a	0	n/a	0	±	52	n/a	±	n/a	<DCGL
17	B36	342	n/a	-14	n/a	-778	±	52	n/a	±	n/a	<DCGL
18	B36	346	n/a	-10	n/a	-556	±	52	n/a	±	n/a	<DCGL
19	B36	316	n/a	-40	n/a	-2222	±	51	n/a	±	n/a	<DCGL
20	B36	374	n/a	18	n/a	1000	±	53	n/a	±	n/a	<DCGL
21	B36	348	n/a	-8	n/a	-444	±	52	n/a	±	n/a	<DCGL
22	B36	280	n/a	-76	n/a	-4222	±	49	n/a	±	n/a	<DCGL
23	B36	376	n/a	20	n/a	1111	±	53	n/a	±	n/a	<DCGL
24	B36	344	n/a	-12	n/a	-667	±	52	n/a	±	n/a	<DCGL
25	B36	302	n/a	-54	n/a	-3000	±	50	n/a	±	n/a	<DCGL
26	B36	286	n/a	-70	n/a	-3889	±	50	n/a	±	n/a	<DCGL
27	B36	288	n/a	-68	n/a	-3778	±	50	n/a	±	n/a	<DCGL
28	B36	318	n/a	-38	n/a	-2111	±	51	n/a	±	n/a	<DCGL
29	B36	296	n/a	-60	n/a	-3333	±	50	n/a	±	n/a	<DCGL
30	B36	318	n/a	-38	n/a	-2111	±	51	n/a	±	n/a	<DCGL

Survey Unit 37			Beta Background 356			Gamma Background n/a						
Sample	Type	Gross CPM Beta	Gross CPM Gamma	Net CPM Beta	Net CPM Gamma	DPM / 100 CM2 Beta	±	1.96 Sig Beta	DPM / 100 CM2 Gamma	±	1.96 Sig Gamma	
1	B37	382	n/a	26	n/a	1444	±	53	n/a	±	n/a	<DCGL
2	B37	286	n/a	-70	n/a	-3889	±	50	n/a	±	n/a	<DCGL
3	B37	344	n/a	-12	n/a	-667	±	52	n/a	±	n/a	<DCGL
4	B37	442	n/a	86	n/a	4778	±	55	n/a	±	n/a	<DCGL
5	B37	298	n/a	-58	n/a	-3222	±	50	n/a	±	n/a	<DCGL
6	B37	346	n/a	-10	n/a	-556	±	52	n/a	±	n/a	<DCGL
7	B37	336	n/a	-20	n/a	-1111	±	52	n/a	±	n/a	<DCGL
8	B37	318	n/a	-38	n/a	-2111	±	51	n/a	±	n/a	<DCGL
9	B37	374	n/a	18	n/a	1000	±	53	n/a	±	n/a	<DCGL
10	B37	370	n/a	14	n/a	778	±	53	n/a	±	n/a	<DCGL
11	B37	338	n/a	-18	n/a	-1000	±	52	n/a	±	n/a	<DCGL
12	B37	256	n/a	-100	n/a	-5556	±	48	n/a	±	n/a	<DCGL
13	B37	368	n/a	12	n/a	667	±	53	n/a	±	n/a	<DCGL
14	B37	402	n/a	46	n/a	2556	±	54	n/a	±	n/a	<DCGL
15	B37	306	n/a	-50	n/a	-2778	±	50	n/a	±	n/a	<DCGL
16	B37	294	n/a	-62	n/a	-3444	±	50	n/a	±	n/a	<DCGL
17	B37	244	n/a	-112	n/a	-6222	±	48	n/a	±	n/a	<DCGL
18	B37	324	n/a	-32	n/a	-1778	±	51	n/a	±	n/a	<DCGL
19	B37	306	n/a	-50	n/a	-2778	±	50	n/a	±	n/a	<DCGL
20	B37	340	n/a	-16	n/a	-889	±	52	n/a	±	n/a	<DCGL

APPENDIX H

Static Measurement Statistics

Static Statistics

Survey Unit #	Class	BKG Ref.	Backgrounds		Efficiency		Statistics									
			BP19DD CPM	GP13A CPM	Beta	Gamma	Mean Beta	Median Beta	Maximum Beta	Minimum Beta	Std Dev Beta	Mean Gamma	Median Gamma	Maximum Gamma	Minimum Gamma	Std Dev Gamma
1	2	B01	342	3140	1.80%	15.50%	2048	2056	6500	-722	1557.9	58	387	1548	-4000	1278.8
2	2	B02	393	2364	3.35%	10.80%	394	388	1582	-1284	729.6	4692	4315	11074	-1148	2973.6
3	2	B03	312	n/a	1.80%	15.50%	1288	1389	3778	-1000	1196.2	n/a	n/a	n/a	n/a	n/a
4	2	B04	314	n/a	1.80%	15.50%	1086	1278	3778	-833	1218.7	n/a	n/a	n/a	n/a	n/a
5	2	B05	378	n/a	3.35%	10.80%	330	597	1642	-1015	810.9	n/a	n/a	n/a	n/a	n/a
6	2	B06	331	2760	1.80%	15.50%	353	528	2500	-3056	1432.0	-1180	-419	3355	-6129	2552.4
7	2	B07	415	2746	3.35%	10.80%	80	119	2149	-2000	1043.6	-1671	222	9389	-13204	5978.0
8	2	B08	391	2290	3.35%	10.80%	341	478	2299	-2000	1180.0	2202	3704	5417	-3519	3119.1
9	2	B09	546	6406	1.80%	15.50%	-2385	-2167	3778	-10556	3041.7	-10295	-10394	2671	-19587	3785.6
10	2	B10	429	5306	3.35%	10.80%	740	269	4030	-1522	1419.6	-5420	-5519	7722	-21815	8434.1
11	2	B11	380	2926	3.35%	10.80%	-281	-85	3222	-5889	2184.2	-1926	-1287	6519	-23694	7020.7
12	3	B12	403	4938	1.80%	15.50%	400	722	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
13	2	B13	342	1970	1.80%	15.50%	-932	-944	3333	-4889	2264.3	1597	2471	4555	-7045	2930.0
14	3	B14	416	3280	1.80%	15.50%	-4681	-6056	3667	-9500	4036.7	462	-3935	25355	-6194	8260.4
15	3	B15	443	3758	3.35%	10.80%	-426	-537	2776	-3373	1430.4	-7392	-7759	7241	-16278	4998.2
16	3	B16	326	3058	1.80%	15.50%	144	1333	4778	-5000	2811.6	-2148	-1761	9884	-7600	4017.1
17	3	B17	416	n/a	3.35%	10.80%	-213	-119	1254	-1194	704.2	n/a	n/a	n/a	n/a	n/a
18	3	B18	403	n/a	3.35%	10.80%	-63	90	776	-1403	656.8	n/a	n/a	n/a	n/a	n/a
19	3	B19	392	4082	1.80%	15.50%	-684	-944	2889	-4333	2310.5	-3316	-4303	7148	-11045	5067.2
20	2	B20	342	3176	1.80%	15.50%	-377	-444	2389	-2278	1197.3	-847	-748	865	-3716	1120.6
21	2	B21	332	n/a	1.80%	15.50%	326	333	2667	-1889	1100.0	n/a	n/a	n/a	n/a	n/a
22	3	B22	402	2302	3.35%	10.80%	440	507	3254	-1433	1074.2	1824	1648	19241	-5481	6130.6
23	3	B23	408	2494	3.35%	10.80%	93	552	2119	-2448	1266.8	-1527	2833	13759	-2259	4193.5
24	3	B24	352	3090	1.80%	15.50%	-492	-333	5556	-5222	2967.1	-6	-1871	20129	-6387	6231.6
25	3	B25	454	5122	3.35%	10.80%	507	836	4716	-4657	2509.7	-731	-3167	22389	-14833	11033.9
26	3	B26	411	3980	1.80%	15.50%	-1928	-2083	1722	-5056	2161.2	-2223	-2419	5032	-8645	4112.2
27	3	B27	401	n/a	1.80%	15.50%	1000	972	5611	-3056	2217.2	n/a	n/a	n/a	n/a	n/a
28	3	B28	383	3450	1.80%	15.50%	306	194	5611	-3167	2022.7	442	258	10581	-10258	5734.5
29	3	B29	330	3146	1.80%	15.50%	-1032	-778	3889	-5667	2682.8	-2048	-2039	1961	-6619	2751.6
30	3	B30	348	n/a	1.80%	15.50%	-1733	-1889	1778	-5889	2135.0	n/a	n/a	n/a	n/a	n/a
31	3	B31	317	3696	3.35%	10.80%	-306	-746	1881	-2060	1088.3	-10719	-9500	1519	-26537	6315.1
32	3	B32	437	2944	3.35%	10.80%	22	164	2716	-2955	1384.1	671	657	13852	-7444	5216.1
33	3	B33	450	3302	3.35%	10.80%	167	-15	2448	-1642	1198.3	-912	-852	16648	-12796	8836.5
34	3	B34	631	n/a	3.35%	10.80%	-451	-896	3134	-9582	2683.0	n/a	n/a	n/a	n/a	n/a
35	3	B35	584	6754	3.35%	10.80%	76	-30	2806	-2836	1421.5	-3403	-4620	15796	-21889	9799.0
36	3	B36	356	n/a	1.80%	15.50%	-1130	-722	3111	-4222	1872.0	n/a	n/a	n/a	n/a	n/a
37	3	B37	356	n/a	1.80%	15.50%	-500	-1444	4889	-6222	2746.4	n/a	n/a	n/a	n/a	n/a
38	n/a	B38	456	6344	1.80%	15.50%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

APPENDIX I

Wipe Survey Data Sheets and DPM Calculations – Structures

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

Sample	CPM			Auto DPM		Net DPM / 100 cm2				
	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
Background Values						MDC Values				
	8	8	7	17	8	25	15	18	21	
Survey Unit 1 (B-36) RG-180										
Sample	CPM			Auto DPM		Net DPM / 100 cm2				
	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
1	13	8	8	30	7	13	-1	2	22	<DCGL
2	10	8	5	23	8	6	0	-3	10	<DCGL
3	18	3	10	45	0	28	-8	5	47	<DCGL
4	18	9	8	45	8	28	0	2	47	<DCGL
5	12	12	4	27	13	10	5	-4	17	<DCGL
6	18	8	11	44	7	27	-1	7	45	<DCGL
7	17	9	5	41	8	24	0	-3	40	<DCGL
8	17	12	1	41	12	24	4	-9	40	<DCGL
9	12	13	2	26	14	9	6	-7	15	<DCGL
10	22	5	11	59	2	42	-6	7	70	<DCGL
11	13	9	6	31	9	14	1	-1	23	<DCGL
12	22	10	9	52	8	35	0	4	58	<DCGL
13	13	10	8	29	10	12	2	2	20	<DCGL
14	20	8	11	49	6	32	-2	7	53	<DCGL
15	13	7	8	32	6	15	-2	2	25	<DCGL
16	13	12	4	33	13	16	5	-4	27	<DCGL
17	17	7	10	46	6	29	-2	5	48	<DCGL
18	15	9	8	41	8	24	0	2	40	<DCGL
19	14	10	5	34	10	17	2	-3	28	<DCGL
20	13	9	6	32	9	15	1	-1	25	<DCGL
21	19	7	10	46	5	29	-3	5	48	<DCGL
22	12	10	5	26	10	9	2	-3	15	<DCGL
23	10	10	3	20	10	3	2	-6	5	<DCGL
24	20	17	7	46	18	29	10	1	48	<DCGL
25	14	15	6	28	16	11	8	-1	18	<DCGL
26	10	6	10	22	5	5	-3	5	8	<DCGL
27	20	12	8	44	11	27	3	2	45	<DCGL
28	13	8	10	30	7	13	-1	5	22	<DCGL
29	14	8	11	30	7	13	-1	7	22	<DCGL
30	13	10	11	28	10	11	2	7	18	<DCGL
31	10	7	10	23	7	6	-1	5	10	<DCGL
Survey Unit 2 - (B31) RA-260, RA-262, RA-267, RA-269										
1	5	6	10	10	6	-7	-2	5	-12	<DCGL
2	8	8	8	17	8	0	0	2	0	<DCGL
3	6	8	5	12	9	-5	1	-3	-8	<DCGL
4	24	4	1	61	1	44	-7	-9	73	<DCGL
5	2	15	7	0	18	-17	10	1	-28	<DCGL
6	16	13	7	37	13	20	5	1	33	<DCGL
7	22	10	4	53	8	36	0	-4	60	<DCGL
8	11	9	11	25	9	8	1	7	13	<DCGL
9	5	10	7	9	11	-8	3	1	-13	<DCGL
10	12	9	5	28	9	11	1	-3	18	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
11	7	9	7	14	9	-3	1	1	-5	<DCGL
12	4	5	3	8	5	-9	-3	-6	-15	<DCGL
13	4	9	3	7	10	-10	2	-6	-17	<DCGL
14	9	8	6	20	8	3	0	-1	5	<DCGL
15	11	6	1	27	5	10	-3	-9	17	<DCGL
16	7	6	5	17	6	0	-2	-3	0	<DCGL
17	8	7	7	18	7	1	-1	1	2	<DCGL
18	6	12	8	12	14	-5	6	2	-8	<DCGL
19	13	11	6	30	11	13	3	-1	22	<DCGL
20	12	8	5	30	8	13	0	-3	22	<DCGL
21	4	8	5	7	9	-10	1	-3	-17	<DCGL
22	4	6	8	8	6	-9	-2	2	-15	<DCGL
23	4	9	11	7	10	-10	2	7	-17	<DCGL
24	4	9	10	7	10	-10	2	5	-17	<DCGL
25	8	9	11	18	10	1	2	7	2	<DCGL
26	7	5	6	17	5	0	-3	-1	0	<DCGL
27	6	4	7	14	4	-3	-4	1	-5	<DCGL
28	7	12	8	13	13	-4	5	2	-7	<DCGL
29	9	12	5	19	13	2	5	-3	3	<DCGL
30	11	6	7	25	5	8	-3	1	13	<DCGL
31	11	8	6	24	8	7	0	-1	12	<DCGL
32	9	8	3	21	8	4	0	-6	7	<DCGL
33	4	6	5	8	6	-9	-2	-3	-15	<DCGL
34	10	6	6	23	5	6	-3	-1	10	<DCGL
35	7	8	7	15	8	-2	0	1	-3	<DCGL
36	9	13	5	18	14	1	6	-3	2	<DCGL
37	2	11	7	1	13	-16	5	1	-27	<DCGL
Survey Unit 3 - (B31) RA-221										
1	20	8	10	46	6	29	-2	5	48	<DCGL
2	14	5	8	31	3	14	-5	2	23	<DCGL
3	25	9	4	57	6	40	-2	-4	67	<DCGL
4	16	8	11	35	7	18	-1	7	30	<DCGL
5	19	10	3	42	9	25	1	-6	42	<DCGL
6	10	18	9	19	20	2	12	4	3	<DCGL
7	17	7	9	39	5	22	-3	4	37	<DCGL
8	11	7	2	25	6	8	-2	-7	13	<DCGL
9	22	7	6	53	5	36	-3	-1	60	<DCGL
10	13	9	5	28	8	11	0	-3	18	<DCGL
11	17	8	6	39	7	22	-1	-1	37	<DCGL
12	10	12	14	21	13	4	5	12	7	<DCGL
13	11	8	16	24	8	7	0	15	12	<DCGL
14	18	8	6	42	6	25	-2	-1	42	<DCGL
15	10	9	5	21	9	4	1	-3	7	<DCGL
16	14	9	10	30	8	13	0	5	22	<DCGL
17	12	8	9	27	7	10	-1	4	17	<DCGL
18	17	10	7	39	9	22	1	1	37	<DCGL
19	10	3	10	24	2	7	-6	5	12	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
20	19	6	16	45	4	28	-4	15	47	<DCGL
21	45	36	8	101	37	84	29	2	140	<DCGL
22	27	20	7	59	20	42	12	1	70	<DCGL
23	13	15	7	27	16	10	8	1	17	<DCGL
24	23	14	6	53	13	36	5	-1	60	<DCGL
25	18	12	7	39	11	22	3	1	37	<DCGL
26	11	10	5	23	10	6	2	-3	10	<DCGL
27	18	5	11	43	3	26	-5	7	43	<DCGL
28	13	8	6	29	7	12	-1	-1	20	<DCGL
29	26	14	9	60	13	43	5	4	72	<DCGL
30	15	8	4	33	7	16	-1	-4	27	<DCGL
31	11	10	6	23	10	6	2	-1	10	<DCGL
32	21	7	6	48	5	31	-3	-1	52	<DCGL
Survey Unit 4 - (B31) RA-204, 204A, 204B, 209, 216										
1	8	8	7	18	8	1	0	1	2	<DCGL
2	4	8	9	7	9	-10	1	4	-17	<DCGL
3	5	12	2	8	14	-9	6	-7	-15	<DCGL
4	11	9	11	25	9	8	1	7	13	<DCGL
5	18	9	5	43	8	26	0	-3	43	<DCGL
6	6	5	2	14	5	-3	-3	-7	-5	<DCGL
7	6	13	8	11	5	-6	-3	2	-10	<DCGL
8	6	9	2	13	15	-4	7	-7	-7	<DCGL
9	7	13	9	13	10	-4	2	4	-7	<DCGL
10	6	8	8	13	15	-4	7	2	-7	<DCGL
11	8	13	7	18	9	1	1	1	2	<DCGL
12	12	15	9	27	15	10	7	4	17	<DCGL
13	14	8	7	33	17	16	9	1	27	<DCGL
14	8	12	10	20	7	3	-1	5	5	<DCGL
15	15	6	10	37	13	20	5	5	33	<DCGL
16	10	14	3	22	5	5	-3	-6	8	<DCGL
17	12	12	8	28	16	11	8	2	18	<DCGL
18	9	10	3	20	13	3	5	-6	5	<DCGL
19	7	9	5	14	11	-3	3	-3	-5	<DCGL
20	9	10	9	21	10	4	2	4	7	<DCGL
21	11	12	3	24	11	7	3	-6	12	<DCGL
22	13	13	12	30	13	13	5	8	22	<DCGL
23	8	10	8	17	14	0	6	2	0	<DCGL
24	6	9	1	12	11	-5	3	-9	-8	<DCGL
25	6	6	6	13	10	-4	2	-1	-7	<DCGL
26	9	16	12	16	6	-1	-2	8	-2	<DCGL
27	12	9	6	26	17	9	9	-1	15	<DCGL
28	4	14	5	5	9	-12	1	-3	-20	<DCGL
29	9	9	8	19	16	2	8	2	3	<DCGL
30	9	5	8	19	9	2	1	2	3	<DCGL
31	14	10	2	31	4	14	-4	-7	23	<DCGL
32	12	4	4	33	10	16	2	-4	27	<DCGL
33	13	13	5	28	3	11	-5	-3	18	<DCGL
34	13	12	7	27	14	10	6	1	17	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

Sample	CPM			Auto DPM		Net DPM / 100 cm2				
	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
Survey Unit 5 - (B31) RA-217, RA-219										
1	12	7	7	26	6	9	-2	1	15	<DCGL
2	11	7	4	25	6	8	-2	-4	13	<DCGL
3	3	11	7	3	13	-14	5	1	-23	<DCGL
4	4	9	12	6	10	-11	2	8	-18	<DCGL
5	13	11	7	27	11	10	3	1	17	<DCGL
6	6	7	3	12	7	-5	-1	-6	-8	<DCGL
7	5	11	7	8	12	-9	4	1	-15	<DCGL
8	11	10	9	24	10	7	2	4	12	<DCGL
9	9	6	6	20	5	3	-3	-1	5	<DCGL
10	7	9	8	14	9	-3	1	2	-5	<DCGL
11	5	10	9	9	11	-8	3	4	-13	<DCGL
12	8	7	9	17	7	0	-1	4	0	<DCGL
13	7	9	7	13	9	-4	1	1	-7	<DCGL
14	7	6	5	16	6	-1	-2	-3	-2	<DCGL
15	13	5	2	31	4	14	-4	-7	23	<DCGL
16	10	6	3	22	5	5	-3	-6	8	<DCGL
17	7	10	2	14	11	-3	3	-7	-5	<DCGL
18	8	13	6	15	14	-2	6	-1	-3	<DCGL
19	10	8	7	21	8	4	0	1	7	<DCGL
20	13	5	8	30	4	13	-4	2	22	<DCGL
21	9	17	12	16	19	-1	11	8	-2	<DCGL
22	13	6	6	32	5	15	-3	-1	25	<DCGL
23	5	6	6	10	6	-7	-2	-1	-12	<DCGL
24	7	2	3	16	1	-1	-7	-6	-2	<DCGL
25	6	7	7	12	7	-5	-1	1	-8	<DCGL
26	6	6	8	13	6	-4	-2	2	-7	<DCGL
27	6	12	7	11	14	-6	6	1	-10	<DCGL
28	3	10	4	3	11	-14	3	-4	-23	<DCGL
29	5	10	11	9	11	-8	3	7	-13	<DCGL
30	6	5	5	13	5	-4	-3	-3	-7	<DCGL
Survey Unit 6 - (B31) RA-210, RA-212, RA-212A										
1	31	6	7	69	2	52	-6	1	87	<DCGL
2	22	10	12	55	9	38	1	8	63	<DCGL
3	23	4	9	58	1	41	-7	4	68	<DCGL
4	33	9	9	81	5	64	-3	4	107	<DCGL
5	16	5	10	39	3	22	-5	5	37	<DCGL
6	22	10	5	53	8	36	0	-3	60	<DCGL
7	17	13	5	39	13	22	5	-3	37	<DCGL
8	20	8	9	48	6	31	-2	4	52	<DCGL
9	25	5	6	63	2	46	-6	-1	77	<DCGL
10	24	9	10	59	7	42	-1	5	70	<DCGL
11	26	11	12	61	9	44	1	8	73	<DCGL
12	17	9	6	42	8	25	0	-1	42	<DCGL
13	19	9	10	46	8	29	0	5	48	<DCGL
14	19	8	6	46	6	29	-2	-1	48	<DCGL
15	23	13	6	52	12	35	4	-1	58	<DCGL

Philotechnics Analytical Worksheet

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
16	22	6	10	53	3	36	-5	5	60	<DCGL
17	20	7	9	48	5	31	-3	4	52	<DCGL
18	15	6	6	39	5	22	-3	-1	37	<DCGL
19	20	11	7	49	10	32	2	1	53	<DCGL
20	16	10	6	39	10	22	2	-1	37	<DCGL
21	14	9	7	34	9	17	1	1	28	<DCGL
22	14	5	7	37	4	20	-4	1	33	<DCGL
23	12	8	7	29	8	12	0	1	20	<DCGL
24	8	5	9	19	5	2	-3	4	3	<DCGL
25	15	8	3	36	7	19	-1	-6	32	<DCGL
26	12	8	10	28	8	11	0	5	18	<DCGL
27	8	5	13	18	4	1	-4	10	2	<DCGL
28	9	6	5	21	6	4	-2	-3	7	<DCGL
29	24	7	11	57	4	40	-4	7	67	<DCGL
30	9	6	11	21	6	4	-2	7	7	<DCGL
31	13	7	8	29	6	12	-2	2	20	<DCGL
32	13	10	15	29	10	12	2	13	20	<DCGL
33	11	7	8	25	6	8	-2	2	13	<DCGL
34	18	16	9	40	16	23	8	4	38	<DCGL
35	12	8	9	26	7	9	-1	4	15	<DCGL
36	17	11	5	43	11	26	3	-3	43	<DCGL
37	15	11	9	34	11	17	3	4	28	<DCGL
38	15	13	9	34	13	17	5	4	28	<DCGL
Survey Unit 7 - (B31) RA-323										
1	7	8	9	15	8	-2	0	4	-3	<DCGL
2	8	9	5	17	9	0	1	-3	0	<DCGL
3	9	12	6	18	13	1	5	-1	2	<DCGL
4	9	11	6	18	12	1	4	-1	2	<DCGL
5	6	8	7	12	8	-5	0	1	-8	<DCGL
6	5	10	3	9	11	-8	3	-6	-13	<DCGL
7	12	10	8	27	10	10	2	2	17	<DCGL
8	8	7	6	17	7	0	-1	-1	0	<DCGL
9	11	12	12	24	13	7	5	8	12	<DCGL
10	11	10	9	25	10	8	2	4	13	<DCGL
11	10	11	6	22	12	5	4	-1	8	<DCGL
12	10	9	9	22	9	5	1	4	8	<DCGL
13	15	9	4	35	8	18	0	-4	30	<DCGL
14	8	9	3	18	10	1	2	-6	2	<DCGL
15	7	13	7	13	15	-4	7	1	-7	<DCGL
16	8	12	5	16	13	-1	5	-3	-2	<DCGL
17	7	5	5	16	5	-1	-3	-3	-2	<DCGL
18	9	3	8	22	2	5	-6	2	8	<DCGL
19	8	7	6	18	7	1	-1	-1	2	<DCGL
20	13	11	11	29	11	12	3	7	20	<DCGL
21	5	7	3	10	7	-7	-1	-6	-12	<DCGL
22	6	3	9	14	2	-3	-6	4	-5	<DCGL
23	5	5	3	11	5	-6	-3	-6	-10	<DCGL
24	10	6	5	24	5	7	-3	-3	12	<DCGL

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Bayer Pharmaceuticals
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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
25	7	4	5	17	3	0	-5	-3	0	<DCGL
26	9	6	6	22	6	5	-2	-1	8	<DCGL
27	12	6	3	29	5	12	-3	-6	20	<DCGL
28	14	9	7	32	8	15	0	1	25	<DCGL
29	5	4	5	11	4	-6	-4	-3	-10	<DCGL
30	7	9	4	15	10	-2	2	-4	-3	<DCGL
31	12	8	5	28	8	11	0	-3	18	<DCGL
32	8	7	9	18	7	1	-1	4	2	<DCGL
33	4	6	6	8	6	-9	-2	-1	-15	<DCGL
34	7	4	8	17	3	0	-5	2	0	<DCGL
35	1	10	2	0	12	-17	4	-7	-28	<DCGL
36	6	5	8	14	5	-3	-3	2	-5	<DCGL
37	16	11	8	38	11	21	3	2	35	<DCGL
Survey Unit 8 - (B31) RA-311, RA-313										
1	6	15	6	10	17	-7	9	-1	-12	<DCGL
2	13	9	6	30	9	13	1	-1	22	<DCGL
3	16	10	9	38	9	21	1	4	35	<DCGL
4	21	6	7	53	4	36	-4	1	60	<DCGL
5	11	9	7	25	9	8	1	1	13	<DCGL
6	18	5	5	45	3	28	-5	-3	47	<DCGL
7	12	9	6	27	9	10	1	-1	17	<DCGL
8	19	9	9	46	8	29	0	4	48	<DCGL
9	22	8	9	55	6	38	-2	4	63	<DCGL
10	15	10	8	36	10	19	2	2	32	<DCGL
11	15	3	7	39	1	22	-7	1	37	<DCGL
12	28	12	7	70	10	53	2	1	88	<DCGL
13	19	6	8	48	4	31	-4	2	52	<DCGL
14	11	7	5	26	7	9	-1	-3	15	<DCGL
15	23	9	7	58	7	41	-1	1	68	<DCGL
16	15	9	4	36	8	19	0	-4	32	<DCGL
17	16	7	5	40	6	23	-2	-3	38	<DCGL
18	14	10	7	32	10	15	2	1	25	<DCGL
19	18	4	5	48	2	31	-6	-3	52	<DCGL
20	19	8	8	47	7	30	-1	2	50	<DCGL
21	18	11	6	44	11	27	3	-1	45	<DCGL
22	28	9	4	73	6	56	-2	-4	93	<DCGL
23	14	11	6	33	11	16	3	-1	27	<DCGL
24	17	5	9	43	3	26	-5	4	43	<DCGL
25	21	7	6	53	5	36	-3	-1	60	<DCGL
26	18	7	8	46	6	29	-2	2	48	<DCGL
27	16	13	11	37	13	20	5	7	33	<DCGL
28	13	6	5	33	5	16	-3	-3	27	<DCGL
29	17	11	8	41	11	24	3	2	40	<DCGL
30	19	7	4	46	5	29	-3	-4	48	<DCGL
31	25	11	14	62	9	45	1	12	75	<DCGL
Survey Unit 9 - (B24) RB-020, RB-022, RB-024										
1	10	9	15	30	9	13	1	13	22	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
2	7	6	10	21	6	4	-2	5	7	<DCGL
3	13	6	9	46	5	29	-3	4	48	<DCGL
4	17	9	8	64	8	47	0	2	78	<DCGL
5	10	10	8	31	11	14	3	2	23	<DCGL
6	14	10	7	46	10	29	2	1	48	<DCGL
7	16	9	2	52	8	35	0	-7	58	<DCGL
8	17	6	7	62	4	45	-4	1	75	<DCGL
9	14	10	7	47	10	30	2	1	50	<DCGL
10	14	12	3	49	12	32	4	-6	53	<DCGL
11	19	5	4	71	2	54	-6	-4	90	<DCGL
12	20	12	6	71	11	54	3	-1	90	<DCGL
13	10	10	8	34	11	17	3	2	28	<DCGL
14	14	11	6	47	11	30	3	-1	50	<DCGL
15	11	8	13	38	8	21	0	10	35	<DCGL
16	16	7	5	55	6	38	-2	-3	63	<DCGL
17	18	8	5	66	7	49	-1	-3	82	<DCGL
18	10	7	9	36	7	19	-1	4	32	<DCGL
19	17	4	5	71	1	54	-7	-3	90	<DCGL
20	15	11	10	57	11	40	3	5	67	<DCGL
21	12	7	3	38	6	21	-2	-6	35	<DCGL
22	15	7	9	59	6	42	-2	4	70	<DCGL
23	11	10	3	41	10	24	2	-6	40	<DCGL
24	12	7	9	42	6	25	-2	4	42	<DCGL
25	12	8	5	41	8	24	0	-3	40	<DCGL
26	12	8	8	49	8	32	0	2	53	<DCGL
27	7	10	4	22	11	5	3	-4	8	<DCGL
28	11	7	9	29	7	12	-1	4	20	<DCGL
29	20	7	9	58	5	41	-3	4	68	<DCGL
30	15	8	10	40	7	23	-1	5	38	<DCGL
31	12	11	5	31	12	14	4	-3	23	<DCGL
32	14	12	10	36	12	19	4	5	32	<DCGL
33	14	8	8	38	7	21	-1	2	35	<DCGL
34	7	3	6	21	2	4	-6	-1	7	<DCGL
35	16	5	8	47	3	30	-5	2	50	<DCGL
36	9	6	7	25	6	8	-2	1	13	<DCGL
37	14	3	6	42	1	25	-7	-1	42	<DCGL
38	10	6	8	28	5	11	-3	2	18	<DCGL
39	12	4	4	35	3	18	-5	-4	30	<DCGL
40	17	8	3	47	7	30	-1	-6	50	<DCGL
41	8	16	4	17	18	0	10	-4	0	<DCGL
42	12	7	9	34	6	17	-2	4	28	<DCGL
43	9	8	9	24	8	7	0	4	12	<DCGL
44	11	6	7	30	5	13	-3	1	22	<DCGL
45	16	4	2	45	2	28	-6	-7	47	<DCGL
Survey Unit 10 - (B24) RB-008A, RB-010B, RB010D, RB012B										
1	12	14	13	28	15	11	7	10	18	<DCGL
2	28	16	8	66	15	49	7	2	82	<DCGL
3	29	10	9	73	7	56	-1	4	93	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
4	13	8	10	31	7	14	-1	5	23	<DCGL
5	16	15	8	37	16	20	8	2	33	<DCGL
6	15	10	8	36	10	19	2	2	32	<DCGL
7	15	8	3	35	7	18	-1	-6	30	<DCGL
8	31	41	7	68	46	51	38	1	85	<DCGL
9	27	25	16	67	27	50	19	15	83	<DCGL
10	19	11	8	53	10	36	2	2	60	<DCGL
11	20	23	10	47	25	30	17	5	50	<DCGL
12	18	15	6	44	16	27	8	-1	45	<DCGL
13	20	17	7	53	18	36	10	1	60	<DCGL
14	20	35	8	45	41	28	33	2	47	<DCGL
15	10	16	8	22	18	5	10	2	8	<DCGL
16	14	13	9	34	14	17	6	4	28	<DCGL
17	15	11	8	35	11	18	3	2	30	<DCGL
18	15	12	10	35	12	18	4	5	30	<DCGL
19	10	18	10	20	20	3	12	5	5	<DCGL
20	15	21	8	31	23	14	15	2	23	<DCGL
21	12	21	8	24	24	7	16	2	12	<DCGL
22	26	22	8	63	23	46	15	2	77	<DCGL
23	26	24	5	60	25	43	17	-3	72	<DCGL
24	47	27	7	108	25	91	17	1	152	<DCGL
25	18	12	5	48	12	31	4	-3	52	<DCGL
26	11	8	4	23	7	6	-1	-4	10	<DCGL
27	7	22	2	10	26	-7	18	-7	-12	<DCGL
28	20	29	6	45	33	28	25	-1	47	<DCGL
29	8	14	2	15	16	-2	8	-7	-3	<DCGL
30	8	7	15	18	7	1	-1	13	2	<DCGL
31	10	10	5	23	10	6	2	-3	10	<DCGL
32	10	10	6	27	11	10	3	-1	17	<DCGL
33	11	9	3	30	9	13	1	-6	22	<DCGL
34	17	15	8	43	16	26	8	2	43	<DCGL
35	5	13	5	8	15	-9	7	-3	-15	<DCGL
36	8	7	8	17	7	0	-1	2	0	<DCGL
37	24	64	5	40	75	23	67	-3	38	<DCGL
38	7	9	7	14	9	-3	1	1	-5	<DCGL
39	14	11	10	35	11	18	3	5	30	<DCGL
40	13	8	8	30	7	13	-1	2	22	<DCGL
41	8	9	5	16	9	-1	1	-3	-2	<DCGL
42	11	8	10	23	7	6	-1	5	10	<DCGL
43	3	9	12	4	10	-13	2	8	-22	<DCGL
44	9	9	3	18	9	1	1	-6	2	<DCGL
45	12	13	10	24	13	7	5	5	12	<DCGL
46	86	131	8	167	146	150	138	2	250	<DCGL
47	224	1339	12	117	1627	100	1619	8	167	<DCGL
48	23	105	7	22	125	5	117	1	8	<DCGL
49	20	50	9	32	57	15	49	4	25	<DCGL
50	13	6	6	32	5	15	-3	-1	25	<DCGL

Survey Unit 11 - (B24) RB010A, RB010C

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
1	13	11	9	33	11	16	3	4	27	<DCGL
2	13	15	7	31	16	14	8	1	23	<DCGL
3	14	6	9	36	5	19	-3	4	32	<DCGL
4	6	7	6	14	7	-3	-1	-1	-5	<DCGL
5	10	11	9	23	12	6	4	4	10	<DCGL
6	6	9	7	13	10	-4	2	1	-7	<DCGL
7	10	17	8	22	19	5	11	2	8	<DCGL
8	8	10	8	18	11	1	3	2	2	<DCGL
9	9	11	7	21	12	4	4	1	7	<DCGL
10	3	7	8	5	8	-12	0	2	-20	<DCGL
11	15	6	8	37	5	20	-3	2	33	<DCGL
12	6	4	9	14	4	-3	-4	4	-5	<DCGL
13	7	9	5	17	10	0	2	-3	0	<DCGL
14	32	50	6	72	58	55	50	-1	92	<DCGL
15	12	10	7	26	10	9	2	1	15	<DCGL
16	18	15	11	42	15	25	7	7	42	<DCGL
17	12	20	4	25	23	8	15	-4	13	<DCGL
18	12	16	4	26	18	9	10	-4	15	<DCGL
19	7	19	7	12	22	-5	14	1	-8	<DCGL
20	11	9	10	26	9	9	1	5	15	<DCGL
21	6	13	7	11	15	-6	7	1	-10	<DCGL
22	6	15	6	10	17	-7	9	-1	-12	<DCGL
23	5	10	3	9	11	-8	3	-6	-13	<DCGL
24	8	12	5	16	13	-1	5	-3	-2	<DCGL
25	8	8	14	17	8	0	0	12	0	<DCGL
26	10	10	7	20	10	3	2	1	5	<DCGL
27	15	10	5	32	9	15	1	-3	25	<DCGL
28	13	10	6	27	10	10	2	-1	17	<DCGL
29	7	5	6	15	4	-2	-4	-1	-3	<DCGL
30	9	13	6	17	14	0	6	-1	0	<DCGL
31	10	9	7	20	9	3	1	1	5	<DCGL
32	10	5	11	22	4	5	-4	7	8	<DCGL
33	11	7	3	24	6	7	-2	-6	12	<DCGL
34	10	12	7	20	13	3	5	1	5	<DCGL
Survey Unit 12 - (B24) RB013, RB015, RB015A, RB015B										
1	16	9	10	34	8	17	0	5	28	<DCGL
2	18	8	8	41	6	24	-2	2	40	<DCGL
3	24	7	8	53	4	36	-4	2	60	<DCGL
4	26	8	2	61	5	44	-3	-7	73	<DCGL
5	22	11	5	47	9	30	1	-3	50	<DCGL
6	15	7	6	32	5	15	-3	-1	25	<DCGL
7	25	10	4	59	8	42	0	-4	70	<DCGL
8	19	7	11	48	5	31	-3	7	52	<DCGL
9	31	6	9	76	2	59	-6	4	98	<DCGL
10	22	13	8	46	12	29	4	2	48	<DCGL
11	17	7	9	38	5	21	-3	4	35	<DCGL
12	15	9	9	31	8	14	0	4	23	<DCGL
13	25	8	15	54	5	37	-3	13	62	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
14	13	8	10	28	7	11	-1	5	18	<DCGL
15	19	10	13	40	8	23	0	10	38	<DCGL
16	21	6	12	49	3	32	-5	8	53	<DCGL
17	26	13	7	56	11	39	3	1	65	<DCGL
18	23	10	11	53	8	36	0	7	60	<DCGL
19	27	8	8	61	5	44	-3	2	73	<DCGL
20	22	14	8	59	14	42	6	2	70	<DCGL
Survey Unit 13 - (B24) RB213										
1	11	12	7	27	13	10	5	1	17	<DCGL
2	6	12	9	11	14	-6	6	4	-10	<DCGL
3	7	9	9	15	10	-2	2	4	-3	<DCGL
4	6	10	12	12	11	-5	3	8	-8	<DCGL
5	11	9	11	25	9	8	1	7	13	<DCGL
6	7	11	6	14	12	-3	4	-1	-5	<DCGL
7	6	4	8	14	4	-3	-4	2	-5	<DCGL
8	10	9	10	22	9	5	1	5	8	<DCGL
9	9	10	9	21	11	4	3	4	7	<DCGL
10	14	7	8	35	6	18	-2	2	30	<DCGL
11	8	8	5	18	8	1	0	-3	2	<DCGL
12	21	6	7	59	4	42	-4	1	70	<DCGL
13	6	8	10	13	9	-4	1	5	-7	<DCGL
14	6	8	11	12	9	-5	1	7	-8	<DCGL
15	7	8	5	15	8	-2	0	-3	-3	<DCGL
16	13	10	8	31	10	14	2	2	23	<DCGL
17	13	5	10	34	4	17	-4	5	28	<DCGL
18	5	9	4	10	10	-7	2	-4	-12	<DCGL
19	10	11	5	23	12	6	4	-3	10	<DCGL
20	7	10	12	15	11	-2	3	8	-3	<DCGL
21	3	7	11	5	8	-12	0	7	-20	<DCGL
22	7	4	10	17	3	0	-5	5	0	<DCGL
23	12	6	7	28	5	11	-3	1	18	<DCGL
24	11	5	5	24	4	7	-4	-3	12	<DCGL
25	5	7	7	12	8	-5	0	1	-8	<DCGL
26	7	6	9	17	6	0	-2	4	0	<DCGL
27	12	11	9	24	11	7	3	4	12	<DCGL
28	10	8	11	20	8	3	0	7	5	<DCGL
29	10	8	7	21	8	4	0	1	7	<DCGL
30	9	9	11	18	9	1	1	7	2	<DCGL
31	13	15	5	25	16	8	8	-3	13	<DCGL
32	9	7	6	19	7	2	-1	-1	3	<DCGL
33	11	9	9	26	9	9	1	4	15	<DCGL
34	8	9	9	18	10	1	2	4	2	<DCGL
35	11	8	20	24	7	7	-1	21	12	<DCGL
36	12	10	5	24	10	7	2	-3	12	<DCGL
Survey Unit 14 - (B36) Corridor outside survey unit 1										
1	10	9	8	23	9	6	1	2	10	<DCGL
2	7	9	10	14	9	-3	1	5	-5	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
3	9	5	12	21	4	4	-4	8	7	<DCGL
4	8	3	11	18	2	1	-6	7	2	<DCGL
5	14	10	8	33	10	16	2	2	27	<DCGL
6	13	10	7	28	10	11	2	1	18	<DCGL
7	11	10	5	23	10	6	2	-3	10	<DCGL
8	7	10	10	14	11	-3	3	5	-5	<DCGL
9	19	4	6	46	1	29	-7	-1	48	<DCGL
10	17	13	9	39	13	22	5	4	37	<DCGL
11	9	15	8	17	17	0	9	2	0	<DCGL
12	17	14	8	37	14	20	6	2	33	<DCGL
13	18	7	8	44	5	27	-3	2	45	<DCGL
14	7	10	3	14	11	-3	3	-6	-5	<DCGL
15	19	7	14	44	5	27	-3	12	45	<DCGL
16	13	10	5	28	10	11	2	-3	18	<DCGL
17	9	13	4	19	14	2	6	-4	3	<DCGL
18	20	9	8	46	7	29	-1	2	48	<DCGL
19	17	10	9	47	9	30	1	4	50	<DCGL
20	10	10	6	23	11	6	3	-1	10	<DCGL
Survey Unit 15 - (B31) Areas adjacent to survey unit 2										
1	4	11	8	6	13	-11	5	2	-18	<DCGL
2	7	16	4	13	19	-4	11	-4	-7	<DCGL
3	5	2	2	12	1	-5	-7	-7	-8	<DCGL
4	5	8	8	10	9	-7	1	2	-12	<DCGL
5	6	2	10	15	1	-2	-7	5	-3	<DCGL
6	10	7	8	25	7	8	-1	2	13	<DCGL
7	9	6	5	21	6	4	-2	-3	7	<DCGL
8	9	7	6	21	7	4	-1	-1	7	<DCGL
9	8	9	6	18	10	1	2	-1	2	<DCGL
10	2	10	5	1	12	-16	4	-3	-27	<DCGL
11	8	6	5	19	6	2	-2	-3	3	<DCGL
12	3	12	6	4	14	-13	6	-1	-22	<DCGL
13	3	6	10	7	7	-10	-1	5	-17	<DCGL
14	3	5	5	6	5	-11	-3	-3	-18	<DCGL
15	3	4	3	7	4	-10	-4	-6	-17	<DCGL
16	8	7	4	20	7	3	-1	-4	5	<DCGL
17	6	10	10	13	11	-4	3	5	-7	<DCGL
18	7	7	5	17	7	0	-1	-3	0	<DCGL
19	6	9	7	12	10	-5	2	1	-8	<DCGL
20	6	2	5	15	1	-2	-7	-3	-3	<DCGL
21	9	8	11	21	8	4	0	7	7	<DCGL
22	7	9	10	16	10	-1	2	5	-2	<DCGL
23	5	12	4	9	14	-8	6	-4	-13	<DCGL
24	7	10	3	15	11	-2	3	-6	-3	<DCGL
25	8	4	9	20	3	3	-5	4	5	<DCGL
26	4	6	8	8	6	-9	-2	2	-15	<DCGL
Survey Unit 16 - (B31) Areas adjacent to labs 204, 210, 217 and 221										
1	14	12	8	31	12	14	4	2	23	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
2	17	9	7	39	8	22	0	1	37	<DCGL
3	21	7	8	51	5	34	-3	2	57	<DCGL
4	22	7	9	51	4	34	-4	4	57	<DCGL
5	21	11	9	48	10	31	2	4	52	<DCGL
6	24	13	5	54	12	37	4	-3	62	<DCGL
7	17	10	8	46	9	29	1	2	48	<DCGL
8	14	8	11	36	7	19	-1	7	32	<DCGL
9	10	10	8	22	10	5	2	2	8	<DCGL
10	19	11	12	44	10	27	2	8	45	<DCGL
11	12	8	8	29	8	12	0	2	20	<DCGL
12	16	11	11	35	10	18	2	7	30	<DCGL
13	13	7	13	30	6	13	-2	10	22	<DCGL
14	13	8	11	30	7	13	-1	7	22	<DCGL
15	15	9	6	36	8	19	0	-1	32	<DCGL
16	19	11	1	44	10	27	2	-9	45	<DCGL
17	21	12	10	53	11	36	3	5	60	<DCGL
18	15	5	6	35	3	18	-5	-1	30	<DCGL
19	17	5	6	41	3	24	-5	-1	40	<DCGL
20	17	17	12	36	18	19	10	8	32	<DCGL
Survey Unit 17 - (B31) Areas adjacent to labs 209, 211TC and 213										
1	7	9	6	16	10	-1	2	-1	-2	<DCGL
2	9	8	7	21	8	4	0	1	7	<DCGL
3	5	10	5	10	11	-7	3	-3	-12	<DCGL
4	3	11	10	4	13	-13	5	5	-22	<DCGL
5	9	8	5	21	8	4	0	-3	7	<DCGL
6	9	12	5	19	13	2	5	-3	3	<DCGL
7	5	13	9	9	15	-8	7	4	-13	<DCGL
8	11	9	7	26	9	9	1	1	15	<DCGL
9	8	4	3	20	3	3	-5	-6	5	<DCGL
10	5	5	11	11	5	-6	-3	7	-10	<DCGL
11	6	4	6	15	4	-2	-4	-1	-3	<DCGL
12	9	4	9	23	3	6	-5	4	10	<DCGL
13	4	12	5	6	14	-11	6	-3	-18	<DCGL
14	12	9	9	30	9	13	1	4	22	<DCGL
15	8	8	10	19	8	2	0	5	3	<DCGL
16	8	6	7	18	6	1	-2	1	2	<DCGL
17	10	11	7	23	12	6	4	1	10	<DCGL
18	3	11	8	3	13	-14	5	2	-23	<DCGL
19	15	7	8	36	6	19	-2	2	32	<DCGL
20	1	9	11	0	11	-17	3	7	-28	<DCGL
Survey Unit 18 - (B31) RA-256, RA-258										
1	9	10	2	21	11	4	3	-7	7	<DCGL
2	7	13	7	14	15	-3	7	1	-5	<DCGL
3	12	7	4	28	6	11	-2	-4	18	<DCGL
4	7	11	11	13	12	-4	4	7	-7	<DCGL
5	9	16	4	18	18	1	10	-4	2	<DCGL
6	14	10	5	32	10	15	2	-3	25	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
7	10	11	9	21	12	4	4	4	7	<DCGL
8	9	6	3	21	6	4	-2	-6	7	<DCGL
Survey Unit 19 - (B31) Areas around and including labs 360, 357, 364 and 367										
1	16	6	7	37	4	20	-4	1	33	<DCGL
2	20	8	9	47	6	30	-2	4	50	<DCGL
3	16	12	14	35	12	18	4	12	30	<DCGL
4	13	5	6	31	4	14	-4	-1	23	<DCGL
5	26	6	8	62	3	45	-5	2	75	<DCGL
6	30	8	6	73	5	56	-3	-1	93	<DCGL
7	20	8	14	46	6	29	-2	12	48	<DCGL
8	25	9	4	61	7	44	-1	-4	73	<DCGL
9	21	12	7	48	11	31	3	1	52	<DCGL
10	28	3	7	69	0	52	-8	1	87	<DCGL
11	16	9	9	38	8	21	0	4	35	<DCGL
12	23	5	4	60	2	43	-6	-4	72	<DCGL
13	20	9	4	46	7	29	-1	-4	48	<DCGL
14	12	10	10	29	10	12	2	5	20	<DCGL
15	22	11	3	56	10	39	2	-6	65	<DCGL
16	14	10	10	32	10	15	2	5	25	<DCGL
17	19	9	8	45	8	28	0	2	47	<DCGL
18	20	6	6	47	4	30	-4	-1	50	<DCGL
19	24	9	15	56	7	39	-1	13	65	<DCGL
20	16	6	7	39	4	22	-4	1	37	<DCGL
Survey Unit 20 - (B31) RA-251										
1	14	10	6	34	10	17	2	-1	28	<DCGL
2	17	4	10	43	2	26	-6	5	43	<DCGL
3	9	13	6	20	15	3	7	-1	5	<DCGL
4	15	8	8	39	7	22	-1	2	37	<DCGL
5	18	9	9	46	8	29	0	4	48	<DCGL
6	11	10	8	31	10	14	2	2	23	<DCGL
7	21	13	10	51	13	34	5	5	57	<DCGL
8	17	9	13	41	8	24	0	10	40	<DCGL
9	34	5	5	88	0	71	-8	-3	118	<DCGL
10	17	10	8	46	9	29	1	2	48	<DCGL
11	20	5	6	55	3	38	-5	-1	63	<DCGL
12	17	13	14	41	13	24	5	12	40	<DCGL
13	17	9	8	44	8	27	0	2	45	<DCGL
14	17	8	7	43	7	26	-1	1	43	<DCGL
15	20	6	8	54	4	37	-4	2	62	<DCGL
16	14	11	8	35	11	18	3	2	30	<DCGL
17	27	4	10	68	0	51	-8	5	85	<DCGL
18	22	3	9	60	0	43	-8	4	72	<DCGL
19	16	8	3	41	7	24	-1	-6	40	<DCGL
20	15	21	4	34	24	17	16	-4	28	<DCGL
21	21	6	4	54	4	37	-4	-4	62	<DCGL
22	20	12	6	54	12	37	4	-1	62	<DCGL
23	20	16	6	50	17	33	9	-1	55	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
24	20	8	5	47	6	30	-2	-3	50	<DCGL
25	22	16	4	50	16	33	8	-4	55	<DCGL
26	24	7	10	58	4	41	-4	5	68	<DCGL
27	19	11	6	47	10	30	2	-1	50	<DCGL
28	31	3	7	82	0	65	-8	1	108	<DCGL
29	12	11	7	26	11	9	3	1	15	<DCGL
30	27	10	7	62	7	45	-1	1	75	<DCGL
31	24	10	9	57	8	40	0	4	67	<DCGL
32	24	10	8	56	8	39	0	2	65	<DCGL
33	39	5	10	111	0	94	-8	5	157	<DCGL
Survey Unit 21 - (B31) RA-211TC, RA-213										
1	17	6	7	42	4	25	-4	1	42	<DCGL
2	10	10	9	22	10	5	2	4	8	<DCGL
3	18	6	6	44	4	27	-4	-1	45	<DCGL
4	13	8	4	31	7	14	-1	-4	23	<DCGL
5	17	6	7	42	4	25	-4	1	42	<DCGL
6	15	11	6	35	11	18	3	-1	30	<DCGL
7	21	9	7	50	7	33	-1	1	55	<DCGL
8	20	9	4	47	7	30	-1	-4	50	<DCGL
9	18	6	6	43	4	26	-4	-1	43	<DCGL
10	27	7	6	67	4	50	-4	-1	83	<DCGL
11	21	10	7	51	9	34	1	1	57	<DCGL
12	19	8	9	48	7	31	-1	4	52	<DCGL
13	16	9	8	38	8	21	0	2	35	<DCGL
14	26	10	4	63	8	46	0	-4	77	<DCGL
15	22	9	7	52	7	35	-1	1	58	<DCGL
16	19	13	7	45	13	28	5	1	47	<DCGL
17	25	8	8	61	5	44	-3	2	73	<DCGL
18	19	4	8	48	1	31	-7	2	52	<DCGL
19	16	6	5	41	5	24	-3	-3	40	<DCGL
20	20	3	11	50	0	33	-8	7	55	<DCGL
21	11	12	7	24	13	7	5	1	12	<DCGL
22	15	6	4	36	5	19	-3	-4	32	<DCGL
23	16	11	12	37	11	20	3	8	33	<DCGL
24	10	7	7	23	7	6	-1	1	10	<DCGL
25	13	7	6	30	6	13	-2	-1	22	<DCGL
26	12	6	11	28	5	11	-3	7	18	<DCGL
27	22	9	8	51	7	34	-1	2	57	<DCGL
28	13	10	12	29	10	12	2	8	20	<DCGL
29	18	3	12	44	0	27	-8	8	45	<DCGL
30	22	6	4	54	3	37	-5	-4	62	<DCGL
31	21	11	8	48	10	31	2	2	52	<DCGL
32	15	8	5	35	7	18	-1	-3	30	<DCGL
33	12	5	5	28	4	11	-4	-3	18	<DCGL
34	18	8	6	42	6	25	-2	-1	42	<DCGL
Survey Unit 22 - (B31) Areas around Labs 306 and 307										
1	9	8	7	21	8	4	0	1	7	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
2	4	10	12	7	11	-10	3	8	-17	<DCGL
3	15	7	6	35	6	18	-2	-1	30	<DCGL
4	7	7	13	15	7	-2	-1	10	-3	<DCGL
5	12	8	8	29	8	12	0	2	20	<DCGL
6	10	9	9	24	9	7	1	4	12	<DCGL
7	11	9	7	25	9	8	1	1	13	<DCGL
8	11	8	5	26	8	9	0	-3	15	<DCGL
9	11	8	7	28	8	11	0	1	18	<DCGL
10	7	7	10	16	7	-1	-1	5	-2	<DCGL
11	9	4	4	30	3	13	-5	-4	22	<DCGL
12	12	10	6	29	10	12	2	-1	20	<DCGL
13	4	11	12	7	13	-10	5	8	-17	<DCGL
14	11	10	9	24	10	7	2	4	12	<DCGL
15	9	10	3	19	10	2	2	-6	3	<DCGL
16	10	6	6	23	5	6	-3	-1	10	<DCGL
17	5	9	9	9	10	-8	2	4	-13	<DCGL
18	10	12	6	23	13	6	5	-1	10	<DCGL
19	7	11	13	15	12	-2	4	10	-3	<DCGL
20	7	11	9	15	12	-2	4	4	-3	<DCGL
Survey Unit 23 - (B31) Areas around Labs 311 and 313										
1	4	9	6	6	10	-11	2	-1	-18	<DCGL
2	6	14	6	10	16	-7	8	-1	-12	<DCGL
3	15	7	7	33	6	16	-2	1	27	<DCGL
4	7	8	7	14	8	-3	0	1	-5	<DCGL
5	9	5	7	19	4	2	-4	1	3	<DCGL
6	9	8	8	19	8	2	0	2	3	<DCGL
7	3	5	7	5	5	-12	-3	1	-20	<DCGL
8	11	8	8	24	8	7	0	2	12	<DCGL
9	9	6	8	19	5	2	-3	2	3	<DCGL
10	8	7	6	16	7	-1	-1	-1	-2	<DCGL
11	6	11	11	11	12	-6	4	7	-10	<DCGL
12	11	9	5	24	9	7	1	-3	12	<DCGL
13	6	8	5	11	8	-6	0	-3	-10	<DCGL
14	10	7	9	22	7	5	-1	4	8	<DCGL
15	7	6	10	15	6	-2	-2	5	-3	<DCGL
16	7	12	10	12	13	-5	5	5	-8	<DCGL
17	16	8	6	35	7	18	-1	-1	30	<DCGL
18	13	7	6	30	6	13	-2	-1	22	<DCGL
19	8	5	11	18	4	1	-4	7	2	<DCGL
20	7	10	5	13	11	-4	3	-3	-7	<DCGL
Survey Unit 24 - (B31) Areas around Labs 323										
1	23	10	9	55	8	38	0	4	63	<DCGL
2	21	9	9	49	7	32	-1	4	53	<DCGL
3	22	9	12	52	7	35	-1	8	58	<DCGL
4	21	12	8	48	11	31	3	2	52	<DCGL
5	17	9	11	39	8	22	0	7	37	<DCGL
6	14	6	8	33	5	16	-3	2	27	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
7	13	9	8	29	9	12	1	2	20	<DCGL
8	17	9	10	39	8	22	0	5	37	<DCGL
9	18	5	5	43	3	26	-5	-3	43	<DCGL
10	20	5	7	48	2	31	-6	1	52	<DCGL
11	16	8	5	37	7	20	-1	-3	33	<DCGL
12	18	10	14	42	9	25	1	12	42	<DCGL
13	18	10	7	41	9	24	1	1	40	<DCGL
14	13	5	10	30	4	13	-4	5	22	<DCGL
15	15	8	6	34	7	17	-1	-1	28	<DCGL
16	14	10	11	31	10	14	2	7	23	<DCGL
17	20	3	12	48	0	31	-8	8	52	<DCGL
18	30	12	6	72	10	55	2	-1	92	<DCGL
19	12	10	9	27	10	10	2	4	17	<DCGL
20	18	11	11	41	10	24	2	7	40	<DCGL
Survey Unit 25 - (B24) Areas around Class 2 survey units in basement										
1	13	6	6	47	5	30	-3	-1	50	<DCGL
2	11	7	7	30	7	13	-1	1	22	<DCGL
3	14	9	4	39	9	22	1	-4	37	<DCGL
4	18	12	12	60	12	43	4	8	72	<DCGL
5	14	8	10	40	7	23	-1	5	38	<DCGL
6	11	7	5	36	7	19	-1	-3	32	<DCGL
7	13	11	7	34	11	17	3	1	28	<DCGL
8	15	7	4	57	6	40	-2	-4	67	<DCGL
9	10	9	5	27	9	10	1	-3	17	<DCGL
10	12	9	14	40	9	23	1	12	38	<DCGL
11	11	8	3	30	8	13	0	-6	22	<DCGL
12	18	11	6	50	11	33	3	-1	55	<DCGL
13	13	10	6	49	10	32	2	-1	53	<DCGL
14	13	4	4	38	2	21	-6	-4	35	<DCGL
15	10	12	8	37	13	20	5	2	33	<DCGL
16	15	10	3	56	10	39	2	-6	65	<DCGL
17	16	3	2	59	0	42	-8	-7	70	<DCGL
18	11	3	8	42	1	25	-7	2	42	<DCGL
19	14	4	6	6	2	-11	-6	-1	-18	<DCGL
20	12	9	13	50	9	33	1	10	55	<DCGL
Survey Unit 26 - (A21) A102, A103, A103A, A104 and A105										
1	15	8	8	35	7	18	-1	2	30	<DCGL
2	17	13	6	34	12	17	4	-1	28	<DCGL
3	20	9	14	44	7	27	-1	12	45	<DCGL
4	23	12	12	60	11	43	3	8	72	<DCGL
5	26	17	9	59	16	42	8	4	70	<DCGL
6	24	8	7	55	5	38	-3	1	63	<DCGL
7	31	9	6	75	6	58	-2	-1	97	<DCGL
8	28	10	4	60	7	43	-1	-4	72	<DCGL
9	37	8	7	87	3	70	-5	1	117	<DCGL
10	24	11	7	58	9	41	1	1	68	<DCGL
11	18	8	8	44	7	27	-1	2	45	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
12	27	8	7	69	5	52	-3	1	87	<DCGL
13	30	4	6	76	0	59	-8	-1	98	<DCGL
14	31	10	5	73	7	56	-1	-3	93	<DCGL
15	20	4	9	48	1	31	-7	4	52	<DCGL
16	16	10	11	36	9	19	1	7	32	<DCGL
17	27	4	4	64	0	47	-8	-4	78	<DCGL
18	24	12	5	55	10	38	2	-3	63	<DCGL
19	9	4	4	22	3	5	-5	-4	8	<DCGL
20	12	11	10	25	11	8	3	5	13	<DCGL
Survey Unit 27 - (A21) D101, D103, D232, D233, D234 and D234A										
1	17	12	7	39	12	22	4	1	37	<DCGL
2	22	14	10	48	13	31	5	5	52	<DCGL
3	14	8	4	32	7	15	-1	-4	25	<DCGL
4	15	8	6	44	7	27	-1	-1	45	<DCGL
5	19	12	8	44	11	27	3	2	45	<DCGL
6	10	5	10	23	4	6	-4	5	10	<DCGL
7	27	5	10	63	1	46	-7	5	77	<DCGL
8	27	9	4	62	6	45	-2	-4	75	<DCGL
9	32	15	7	45	14	28	6	1	47	<DCGL
10	25	8	12	79	4	62	-4	8	103	<DCGL
11	9	9	12	57	6	40	-2	8	67	<DCGL
12	14	9	8	22	9	5	1	2	8	<DCGL
13	24	3	9	31	1	14	-7	4	23	<DCGL
14	25	11	10	56	9	39	1	5	65	<DCGL
15	27	19	5	53	19	36	11	-3	60	<DCGL
16	28	4	7	65	0	48	-8	1	80	<DCGL
17	25	11	9	63	8	46	0	4	77	<DCGL
18	19	9	9	58	6	41	-2	4	68	<DCGL
19	25	11	7	41	10	24	2	1	40	<DCGL
20	19	8	8	56	5	39	-3	2	65	<DCGL
Survey Unit 28 - (A21) D121, D130 and D135										
1	18	8	9	42	6	25	-2	4	42	<DCGL
2	21	5	10	49	2	32	-6	5	53	<DCGL
3	11	10	8	25	10	8	2	2	13	<DCGL
4	37	13	11	84	9	67	1	7	112	<DCGL
5	31	10	12	75	7	58	-1	8	97	<DCGL
6	22	11	8	48	9	31	1	2	52	<DCGL
7	32	12	6	77	9	60	1	-1	100	<DCGL
8	29	9	2	69	6	52	-2	-7	87	<DCGL
9	29	10	12	67	7	50	-1	8	83	<DCGL
10	24	9	13	52	6	35	-2	10	58	<DCGL
11	18	9	9	43	8	26	0	4	43	<DCGL
12	27	11	8	63	9	46	1	2	77	<DCGL
13	20	9	10	49	8	32	0	5	53	<DCGL
14	22	9	4	50	7	33	-1	-4	55	<DCGL
15	17	7	11	38	5	21	-3	7	35	<DCGL
16	17	11	11	38	10	21	2	7	35	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**C-14/S-35**	**Gross Beta**	**I-125**	
17	31	3	8	74	0	57	-8	2	95	<DCGL
18	27	12	9	61	10	44	2	4	73	<DCGL
19	10	3	8	25	2	8	-6	2	13	<DCGL
20	22	11	4	48	9	31	1	-4	52	<DCGL
Survey Unit 29 - (B24) Lab 209 and adjacent hallway										
1	5	6	7	10	6	-7	-2	1	-12	<DCGL
2	15	9	4	34	8	17	0	-4	28	<DCGL
3	9	10	8	19	10	2	2	2	3	<DCGL
4	13	9	9	29	8	12	0	4	20	<DCGL
5	11	2	10	27	0	10	-8	5	17	<DCGL
6	7	4	6	17	3	0	-5	-1	0	<DCGL
7	12	6	8	28	5	11	-3	2	18	<DCGL
8	13	8	5	31	7	14	-1	-3	23	<DCGL
9	12	10	8	26	10	9	2	2	15	<DCGL
10	10	9	8	22	9	5	1	2	8	<DCGL
11	13	14	9	28	15	11	7	4	18	<DCGL
12	5	7	12	10	7	-7	-1	8	-12	<DCGL
13	12	9	16	27	9	10	1	15	17	<DCGL
14	9	10	6	19	10	2	2	-1	3	<DCGL
Survey Unit 30 - (B24) Lab 215, 216, 216A, 217, 218, 218A, 220C and hallways										
1	20	9	6	44	7	27	-1	-1	45	<DCGL
2	11	10	13	23	10	6	2	10	10	<DCGL
3	8	10	5	17	11	0	3	-3	0	<DCGL
4	18	6	6	40	4	23	-4	-1	38	<DCGL
5	20	2	2	48	0	31	-8	-7	52	<DCGL
6	13	9	10	29	8	12	0	5	20	<DCGL
7	19	12	4	41	11	24	3	-4	40	<DCGL
8	17	6	9	40	4	23	-4	4	38	<DCGL
9	15	8	5	34	7	17	-1	-3	28	<DCGL
10	11	7	7	23	6	6	-2	1	10	<DCGL
11	21	4	10	50	1	33	-7	5	55	<DCGL
12	28	3	7	66	0	49	-8	1	82	<DCGL
13	15	7	9	33	6	16	-2	4	27	<DCGL
14	11	7	11	25	6	8	-2	7	13	<DCGL
15	12	9	4	25	8	8	0	-4	13	<DCGL
16	12	8	13	26	7	9	-1	10	15	<DCGL
17	22	12	9	47	10	30	2	4	50	<DCGL
18	25	16	10	59	16	42	8	5	70	<DCGL
19	12	14	8	24	15	7	7	2	12	<DCGL
20	19	10	9	43	9	26	1	4	43	<DCGL
Survey Unit 31 - (B24) Hallways adjacent to Lab 231										
1	9	18	7	15	20	-2	12	1	-3	<DCGL
2	6	6	12	13	6	-4	-2	8	-7	<DCGL
3	9	11	11	17	11	0	3	7	0	<DCGL
4	7	5	12	15	5	-2	-3	8	-3	<DCGL
5	7	9	5	13	9	-4	1	-3	-7	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
6	7	12	7	14	13	-3	5	1	-5	<DCGL
7	12	7	12	26	6	9	-2	8	15	<DCGL
8	15	12	10	32	12	15	4	5	25	<DCGL
9	13	7	2	28	6	11	-2	-7	18	<DCGL
10	4	6	5	7	6	-10	-2	-3	-17	<DCGL
11	17	9	7	40	8	23	0	1	38	<DCGL
12	15	7	6	33	6	16	-2	-1	27	<DCGL
13	22	6	2	49	3	32	-5	-7	53	<DCGL
14	8	9	9	15	9	-2	1	4	-3	<DCGL
15	10	10	10	20	10	3	2	5	5	<DCGL
16	13	9	7	28	8	11	0	1	18	<DCGL
17	14	12	8	29	12	12	4	2	20	<DCGL
18	11	7	11	23	6	6	-2	7	10	<DCGL
19	13	11	3	26	11	9	3	-6	15	<DCGL
20	14	8	8	32	7	15	-1	2	25	<DCGL
21	14	13	6	28	13	11	5	-1	18	<DCGL
22	23	4	12	56	1	39	-7	8	65	<DCGL
23	18	10	7	39	9	22	1	1	37	<DCGL
24	35	11	8	79	7	62	-1	2	103	<DCGL
25	34	8	9	82	4	65	-4	4	108	<DCGL
Survey Unit 32 - (B31) Labs 111, 113, 113A, 113B and adjacent hallway										
1	5	12	9	8	14	-9	6	4	-15	<DCGL
2	6	3	7	13	2	-4	-6	1	-7	<DCGL
3	13	6	7	31	5	14	-3	1	23	<DCGL
4	11	11	19	24	11	7	3	19	12	<DCGL
5	5	11	7	9	12	-8	4	1	-13	<DCGL
6	8	7	7	17	7	0	-1	1	0	<DCGL
7	5	12	3	9	14	-8	6	-6	-13	<DCGL
8	5	4	7	11	4	-6	-4	1	-10	<DCGL
9	13	5	7	30	3	13	-5	1	22	<DCGL
10	7	8	11	15	8	-2	0	7	-3	<DCGL
11	8	11	8	15	12	-2	4	2	-3	<DCGL
12	9	10	6	19	10	2	2	-1	3	<DCGL
13	13	6	9	30	5	13	-3	4	22	<DCGL
14	4	11	5	6	12	-11	4	-3	-18	<DCGL
15	11	10	6	25	10	8	2	-1	13	<DCGL
16	12	7	8	27	6	10	-2	2	17	<DCGL
17	12	10	3	26	10	9	2	-6	15	<DCGL
18	8	6	7	17	6	0	-2	1	0	<DCGL
19	7	7	4	14	7	-3	-1	-4	-5	<DCGL
20	9	9	7	19	9	2	1	1	3	<DCGL
Survey Unit 33 - (B31) Labs 105, 105A, 105B and adjacent hallway										
1	13	11	11	30	11	13	3	7	22	<DCGL
2	6	7	9	13	7	-4	-1	4	-7	<DCGL
3	14	5	10	32	3	15	-5	5	25	<DCGL
4	13	8	3	29	7	12	-1	-6	20	<DCGL
5	12	11	5	25	11	8	3	-3	13	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
6	12	12	5	25	12	8	4	-3	13	<DCGL
7	6	10	9	11	11	-6	3	4	-10	<DCGL
8	8	10	8	16	10	-1	2	2	-2	<DCGL
9	5	11	14	8	12	-9	4	12	-15	<DCGL
10	14	10	11	30	9	13	1	7	22	<DCGL
11	12	5	12	28	4	11	-4	8	18	<DCGL
12	11	5	9	25	4	8	-4	4	13	<DCGL
13	16	7	8	37	6	20	-2	2	33	<DCGL
14	11	9	5	24	9	7	1	-3	12	<DCGL
15	8	10	9	16	11	-1	3	4	-2	<DCGL
16	13	10	6	28	10	11	2	-1	18	<DCGL
17	10	10	11	21	10	4	2	7	7	<DCGL
18	10	16	10	18	17	1	9	5	2	<DCGL
19	11	14	10	22	15	5	7	5	8	<DCGL
20	10	6	5	22	5	5	-3	-3	8	<DCGL
Survey Unit 34 - (B31) Labs 160, 160A, 160B, 160C and 160D										
1	9	11	18	17	11	0	3	18	0	<DCGL
2	8	9	1	16	9	-1	1	-9	-2	<DCGL
3	10	7	8	21	6	4	-2	2	7	<DCGL
4	8	7	15	17	7	0	-1	13	0	<DCGL
5	10	5	5	22	4	5	-4	-3	8	<DCGL
6	14	6	7	31	4	14	-4	1	23	<DCGL
7	16	12	10	35	12	18	4	5	30	<DCGL
8	8	8	5	16	8	-1	0	-3	-2	<DCGL
9	6	7	10	12	7	-5	-1	5	-8	<DCGL
10	6	11	10	10	12	-7	4	5	-12	<DCGL
11	11	11	12	22	11	5	3	8	8	<DCGL
12	11	6	6	24	5	7	-3	-1	12	<DCGL
13	11	9	13	23	9	6	1	10	10	<DCGL
14	13	7	8	28	6	11	-2	2	18	<DCGL
15	8	10	9	15	10	-2	2	4	-3	<DCGL
16	9	11	12	17	11	0	3	8	0	<DCGL
17	20	8	8	44	6	27	-2	2	45	<DCGL
18	15	9	12	32	8	15	0	8	25	<DCGL
19	8	11	11	16	12	-1	4	7	-2	<DCGL
20	10	5	7	23	4	6	-4	1	10	<DCGL
Survey Unit 35 - (B31) Labs 169B										
1	10	4	3	24	3	7	-5	-6	12	<DCGL
2	10	15	9	20	17	3	9	4	5	<DCGL
3	7	4	10	16	3	-1	-5	5	-2	<DCGL
4	5	10	13	9	11	-8	3	10	-13	<DCGL
5	10	8	7	22	8	5	0	1	8	<DCGL
6	6	8	8	12	8	-5	0	2	-8	<DCGL
7	7	6	10	16	6	-1	-2	5	-2	<DCGL
8	7	8	5	15	8	-2	0	-3	-3	<DCGL
9	10	5	12	24	4	7	-4	8	12	<DCGL
10	12	5	6	29	4	12	-4	-1	20	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
11	12	12	10	26	12	9	4	5	15	<DCGL
12	9	11	16	19	12	2	4	15	3	<DCGL
13	13	12	3	29	12	12	4	-6	20	<DCGL
14	12	8	4	28	8	11	0	-4	18	<DCGL
15	8	10	10	17	11	0	3	5	0	<DCGL
16	8	8	7	17	8	0	0	1	0	<DCGL
17	7	12	7	13	13	-4	5	1	-7	<DCGL
18	10	8	8	22	8	5	0	2	8	<DCGL
19	4	8	3	7	9	-10	1	-6	-17	<DCGL
20	7	12	3	13	13	-4	5	-6	-7	<DCGL
Survey Unit 36 - (B24) Hallway adjacent to RB107, RB109 and RB115										
1	8	13	9	14	14	-3	6	4	-5	<DCGL
2	12	8	8	25	7	8	-1	2	13	<DCGL
3	5	8	9	9	8	-8	0	4	-13	<DCGL
4	14	8	10	30	7	13	-1	5	22	<DCGL
5	13	11	10	26	11	9	3	5	15	<DCGL
6	6	10	11	11	11	-6	3	7	-10	<DCGL
7	6	13	9	10	14	-7	6	4	-12	<DCGL
8	6	10	5	10	11	-7	3	-3	-12	<DCGL
9	9	11	4	17	11	0	3	-4	0	<DCGL
10	13	7	10	28	6	11	-2	5	18	<DCGL
11	8	5	13	17	4	0	-4	10	0	<DCGL
12	8	7	7	16	7	-1	-1	1	-2	<DCGL
13	8	8	4	16	8	-1	0	-4	-2	<DCGL
14	4	14	7	5	16	-12	8	1	-20	<DCGL
15	9	9	4	18	9	1	1	-4	2	<DCGL
16	13	8	3	28	7	11	-1	-6	18	<DCGL
17	12	3	8	27	1	10	-7	2	17	<DCGL
18	11	10	8	22	10	5	2	2	8	<DCGL
19	10	11	6	20	11	3	3	-1	5	<DCGL
20	5	11	10	8	12	-9	4	5	-15	<DCGL
21	21	12	2	48	11	31	3	-7	52	<DCGL
22	17	8	12	36	6	19	-2	8	32	<DCGL
23	19	3	10	45	0	28	-8	5	47	<DCGL
24	11	13	7	22	14	5	6	1	8	<DCGL
25	8	5	4	17	4	0	-4	-4	0	<DCGL
26	14	8	10	30	7	13	-1	5	22	<DCGL
27	16	7	9	35	5	18	-3	4	30	<DCGL
28	19	6	6	43	4	26	-4	-1	43	<DCGL
29	17	8	8	39	7	22	-1	2	37	<DCGL
30	8	4	7	17	3	0	-5	1	0	<DCGL
Survey Unit 37 - (B24) Hallway adjacent to RB117 and RB121										
1	15	4	5	33	2	16	-6	-3	27	<DCGL
2	13	10	6	27	10	10	2	-1	17	<DCGL
3	6	11	9	10	12	-7	4	4	-12	<DCGL
4	15	10	9	31	9	14	1	4	23	<DCGL
5	7	7	12	14	7	-3	-1	8	-5	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto DPM		Net DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	C-14/S-35	Gross Beta	I-125	
6	9	8	11	18	8	1	0	7	2	<DCGL
7	10	8	7	20	8	3	0	1	5	<DCGL
8	6	6	8	12	6	-5	-2	2	-8	<DCGL
9	13	9	5	27	8	10	0	-3	17	<DCGL
10	7	6	7	13	6	-4	-2	1	-7	<DCGL
11	69	5	7	161	0	144	-8	1	240	<DCGL
12	12	11	9	24	11	7	3	4	12	<DCGL
13	9	8	12	18	8	1	0	8	2	<DCGL
14	8	6	9	17	6	0	-2	4	0	<DCGL
15	8	9	11	15	9	-2	1	7	-3	<DCGL
16	8	9	10	15	9	-2	1	5	-3	<DCGL
17	13	13	7	26	13	9	5	1	15	<DCGL
18	4	8	9	7	9	-10	1	4	-17	<DCGL
19	10	11	9	20	11	3	3	4	5	<DCGL
20	14	10	3	29	9	12	1	-6	20	<DCGL
21	12	11	5	24	11	7	3	-3	12	<DCGL
22	13	10	7	28	10	11	2	1	18	<DCGL
23	14	16	5	31	17	14	9	-3	23	<DCGL
24	8	9	4	15	9	-2	1	-4	-3	<DCGL
25	12	10	4	25	10	8	2	-4	13	<DCGL
26	18	6	6	40	4	23	-4	-1	38	<DCGL
27	22	6	12	49	3	32	-5	8	53	<DCGL
28	9	7	2	20	7	3	-1	-7	5	<DCGL
29	15	9	5	34	8	17	0	-3	28	<DCGL
30	13	9	11	27	8	10	0	7	17	<DCGL

APPENDIX J

Static Measurement Data Sheets and DPM Calculations – Systems

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals

400 Morgan Lane, West Haven, CT 06516

Static Measurements

Laboratory Areas		Bkg Values			
Unit #	BKG Type	Beta CPM	Gamma CPM	Eff - Beta	Eff - Gamma
1	A	281	1914	1.8%	10.8%
2	B	360	3494	1.8%	10.8%
3	C	400	2564	1.8%	10.8%
4	D	483	n/a	1.8%	10.8%

Systems (B-36) RG-180 Ventilation									
Sample	BKG Type	Gross CPM Beta	Gross CPM Gamma	Net Beta	Net Gamma	Beta DPM/ 100cm2	Gamma DPM/ 100cm2		
2	A	284	1870	3	-44	167	-407	<DCGL	1st Floor
4	A	262	2070	-19	156	-1056	1444	<DCGL	1st Floor
8	A	401	1830	120	-84	6667	-778	<DCGL	1st Floor
9	A	271	2300	-10	386	-556	3574	<DCGL	1st Floor
10	A	454	2090	173	176	9611	1630	<DCGL	1st Floor

Systems (B24) Ventilation									
Sample	BKG Type	Gross CPM Beta	Gross CPM Gamma	Net Beta	Net Gamma	Beta DPM/ 100cm2	Gamma DPM/ 100cm2		
1	B	363	3810	3	316	167	2926	<DCGL	Basement
2	B	360	2570	0	-924	0	-8556	<DCGL	Basement
3	B	369	3820	9	326	500	3019	<DCGL	Basement
4	B	370	4410	10	916	556	8481	<DCGL	Basement
5	B	437	4850	77	1356	4278	12556	<DCGL	Basement
6	B	369	3950	9	456	500	4222	<DCGL	Basement
1	B	403	1930	43	-1564	2389	-14481	<DCGL	1st Floor
2	B	353	2760	-7	-734	-389	-6796	<DCGL	1st Floor
3	B	272	1990	-88	-1504	-4889	-13926	<DCGL	1st Floor
4	B	354	2840	-6	-654	-333	-6056	<DCGL	1st Floor
1	B	280	1028	-80	-2466	-4444	-22833	<DCGL	2nd Floor
2	B	537	2100	177	-1394	9833	-12907	<DCGL	2nd Floor
3	B	640	1855	280	-1639	15556	-15176	<DCGL	2nd Floor
4	B	412	2837	52	-657	2889	-6083	<DCGL	2nd Floor
5	B	273	2010	-87	-1484	-4833	-13741	<DCGL	2nd Floor
6	B	337	2700	-23	-794	-1278	-7352	<DCGL	2nd Floor
7	B	266	1890	-94	-1604	-5222	-14852	<DCGL	2nd Floor
8	B	381	2680	21	-814	1167	-7537	<DCGL	2nd Floor

Philotechnics Analytical Worksheet

Systems - (B31) Ventilation									
Sample	BKG Type	Gross CPM Beta	Gross CPM Gamma	Net Beta	Net Gamma	Beta DPM/ 100cm2	Gamma DPM/ 100cm2		
1	C	461	3170	61	606	3389	5611	<DCGL	1st Floor
2	C	524	3020	124	456	6889	4222	<DCGL	1st Floor
3	C	451	2960	51	396	2833	3667	<DCGL	1st Floor
4	C	590	3040	190	476	10556	4407	<DCGL	1st Floor
1	C	382	1900	-18	-664	-1000	-6148	<DCGL	2nd Floor
2	C	419	2570	19	6	1056	56	<DCGL	2nd Floor
3	C	380	2070	-20	-494	-1111	-4574	<DCGL	2nd Floor
4	C	551	3260	151	696	8389	6444	<DCGL	2nd Floor
5	C	434	2119	34	-445	1889	-4120	<DCGL	2nd Floor
6	C	385	2210	-15	-354	-833	-3278	<DCGL	2nd Floor
7	C	414	2340	14	-224	778	-2074	<DCGL	2nd Floor
8	C	450	2420	50	-144	2778	-1333	<DCGL	2nd Floor
9	C	315	1660	-85	-904	-4722	-8370	<DCGL	2nd Floor
10	C	330	2100	-70	-464	-3889	-4296	<DCGL	2nd Floor
11	C	338	1930	-62	-634	-3444	-5870	<DCGL	2nd Floor
12	C	412	2570	12	6	667	56	<DCGL	2nd Floor
13	C	330	1790	-70	-774	-3889	-7167	<DCGL	2nd Floor
14	C	467	2610	67	46	3722	426	<DCGL	2nd Floor
15	C	427	2450	27	-114	1500	-1056	<DCGL	2nd Floor
16	C	361	2300	-39	-264	-2167	-2444	<DCGL	2nd Floor
17	C	376	2050	-24	-514	-1333	-4759	<DCGL	2nd Floor
18	C	470	2310	70	-254	3889	-2352	<DCGL	2nd Floor
19	C	413	2160	13	-404	722	-3741	<DCGL	2nd Floor
20	C	401	2110	1	-454	56	-4204	<DCGL	2nd Floor
21	C	507	2750	107	186	5944	1722	<DCGL	2nd Floor
22	C	420	2180	20	-384	1111	-3556	<DCGL	2nd Floor
23	C	423	2130	23	-434	1278	-4019	<DCGL	2nd Floor
24	C	494	2160	94	-404	5222	-3741	<DCGL	2nd Floor
1	C	399	1950	-1	-614	-56	-5685	<DCGL	3rd Floor
2	C	461	2290	61	-274	3389	-2537	<DCGL	3rd Floor
3	C	375	1860	-25	-704	-1389	-6519	<DCGL	3rd Floor
4	C	441	1800	41	-764	2278	-7074	<DCGL	3rd Floor
5	C	362	1750	-38	-814	-2111	-7537	<DCGL	3rd Floor
6	C	464	2180	64	-384	3556	-3556	<DCGL	3rd Floor
7	C	360	2050	-40	-514	-2222	-4759	<DCGL	3rd Floor
8	C	508	2370	108	-194	6000	-1796	<DCGL	3rd Floor
9	C	463	2600	63	36	3500	333	<DCGL	3rd Floor
10	C	365	2130	-35	-434	-1944	-4019	<DCGL	3rd Floor
11	C	498	2650	98	86	5444	796	<DCGL	3rd Floor
12	C	519	3620	119	1056	6611	9778	<DCGL	3rd Floor

Systems - (A21) Ventilation									
Sample	BKG Type	Gross CPM Beta	Gross CPM Gamma[1]	Net Beta	Net Gamma[1]	Beta DPM/ 100cm2	Gamma DPM/ 100cm2[1]		
1	D	392	n/a	-91	n/a	-5056	n/a	<DCGL	1st Floor
2	D	474	n/a	-9	n/a	-500	n/a	<DCGL	1st Floor
3	D	400	n/a	-83	n/a	-4611	n/a	<DCGL	1st Floor
4	D	566	n/a	83	n/a	4611	n/a	<DCGL	1st Floor
5	D	492	n/a	9	n/a	500	n/a	<DCGL	1st Floor
6	D	422	n/a	-61	n/a	-3389	n/a	<DCGL	1st Floor

[1] I-125 has not been used in Building A-21 in five years

APPENDIX K

Wipe Survey Data Sheets and DPM Calculations – Systems

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	S-35	Gross Beta	I-125	
	Background Values					MDC Values				DCGL
	8.2	7.6	6.6	17.0	7.8	24.63	15.04	18.39	21.47	
Systems (B-36)										
Drains & Traps	(Drain = 50 cm2, Trap = 20 cm2)				(Drains - Odd Numbered, Traps - Even Numbered)					
1	4	8	2	7	9	-3	10	-4	0	<DCGL
2	7	7	15	18	7	73	27	107	45	<DCGL
3	8	6	4	19	6	21	4	2	13	<DCGL
4	6	9	10	16	10	63	42	68	36	<DCGL
Vacuum (20 cm2)										
1	9	9	8	20	9	83	37	52	61	<DCGL
2	14	5	8	36	4	163	12	52	103	<DCGL
3	8	5	9	19	5	78	17	60	53	<DCGL
4	9	7	7	21	7	88	27	44	61	<DCGL
5	11	7	6	26	7	113	27	37	78	<DCGL
6	13	7	3	32	6	143	22	13	95	<DCGL
7	6	5	7	14	5	53	17	44	36	<DCGL
8	4	4	8	9	4	28	12	52	20	<DCGL
9	11	6	8	27	5	118	17	52	78	<DCGL
10	7	11	7	14	12	53	52	44	45	<DCGL
11	7	17	7	12	20	43	92	44	45	<DCGL
12	5	16	6	7	19	18	87	37	28	<DCGL
13	3	13	8	3	15	-2	67	52	11	<DCGL
14	6	12	7	11	14	38	62	44	36	<DCGL
15	5	5	4	11	5	38	17	21	28	<DCGL
16	7	10	11	15	11	58	47	76	45	<DCGL
17	10	5	4	25	4	108	12	21	70	<DCGL
18	9	9	2	21	9	88	37	5	61	<DCGL
19	11	9	6	26	9	113	37	37	78	<DCGL
20	8	10	5	17	11	68	47	29	53	<DCGL
21	2	25	8	0	31	-17	147	52	3	<DCGL
22	3	6	7	5	7	8	27	44	11	<DCGL
Ventilation (100 cm2)										
1	14	12	7	37	12	168	52	44	10	<DCGL
2	4	12	11	9	14	1	20	76	-7	<DCGL
3	10	5	7	28	4	39	0	44	3	<DCGL
4	14	18	7	40	20	183	92	44	10	<DCGL
5	14	10	10	42	10	67	12	68	10	<DCGL

Systems (B-24)										
Drains & Traps	(Drain = 50 cm2, Trap = 20 cm2)				(Drains - Odd Numbered, Traps - Even Numbered)					
1	9	14	6	23	16	29	24	8	16	<DCGL
2	68	14	8	218	6	1073	22	52	553	<DCGL
3	13	10	2	37	10	57	12	-4	30	<DCGL
4	7	8	5	18	9	73	37	29	45	<DCGL
5	11	12	5	27	13	37	18	5	23	<DCGL
6	11	8	5	33	8	148	32	29	78	<DCGL
7	82	172	7	193	204	369	400	12	260	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	S-35	Gross Beta	I-125	
8	14	11	7	47	11	218	47	44	103	<DCGL
9	12	7	7	29	6	41	4	12	26	<DCGL
10	12	6	8	35	5	158	17	52	86	<DCGL
11	15	6	7	36	5	55	2	12	36	<DCGL
12	4	11	6	9	13	28	57	37	20	<DCGL
13	5	7	6	12	8	7	8	8	3	<DCGL
14	18	4	6	56	2	263	2	37	136	<DCGL
15	11	7	8	27	7	37	6	15	23	<DCGL
16	16	4	3	53	2	248	2	13	120	<DCGL
17	8	4	6	20	3	23	-2	8	13	<DCGL
18	12	6	10	38	5	173	17	68	86	<DCGL
19	24	15	8	58	15	99	22	15	66	<DCGL
20	22	12	9	68	11	323	47	60	170	<DCGL
21	21	12	5	51	11	85	14	5	56	<DCGL
22	12	7	3	36	6	163	22	13	86	<DCGL
23	12	13	4	28	14	39	20	2	26	<DCGL
24	16	10	9	51	10	238	42	60	120	<DCGL
25	16	9	2	43	8	69	8	-4	40	<DCGL
26	13	8	5	38	8	173	32	29	95	<DCGL
27	148	27	3	417	10	817	12	-1	480	<DCGL
28	10	11	7	26	12	113	52	44	70	<DCGL
29	9	7	3	25	7	33	6	-1	16	<DCGL
30	17	3	9	52	1	243	-3	60	128	<DCGL
31	19	6	5	48	4	79	0	5	50	<DCGL
32	16	10	14	45	10	208	42	99	120	<DCGL
33	15	4	7	39	2	61	-4	12	36	<DCGL
34	12	11	6	28	12	123	52	37	86	<DCGL
35	13	8	6	40	7	63	6	8	30	<DCGL
36	9	7	4	28	7	123	27	21	61	<DCGL
37	13	6	7	33	5	49	2	12	30	<DCGL
38	4	7	9	10	8	33	32	60	20	<DCGL
39	16	3	6	43	1	69	-6	8	40	<DCGL
40	10	9	6	28	9	123	37	37	70	<DCGL
41	15	10	8	36	10	55	12	15	36	<DCGL
42	13	5	6	39	4	178	12	37	95	<DCGL
43	9	14	8	20	16	23	24	15	16	<DCGL
44	10	8	6	28	8	123	32	37	70	<DCGL
45	9	13	8	25	15	33	22	15	16	<DCGL
46	10	5	9	31	4	138	12	60	70	<DCGL
47	4	7	14	8	8	-1	8	33	0	<DCGL
48	6	8	7	17	9	68	37	44	36	<DCGL
49	13	9	3	32	9	47	10	-1	30	<DCGL
50	13	9	5	43	9	198	37	29	95	<DCGL
51	12	3	2	30	1	43	-6	-4	26	<DCGL
52	10	11	9	25	12	108	52	60	70	<DCGL
53	8	11	6	18	12	19	16	8	13	<DCGL
54	13	9	4	35	9	158	37	21	95	<DCGL
55	20	10	5	51	9	85	10	5	53	<DCGL

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Bayer Pharmaceuticals
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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
56	7	6	5	18	6	73	22	29	45	<DCGL
57	16	13	7	38	13	59	18	12	40	<DCGL
58	5	7	5	13	8	48	32	29	28	<DCGL
59	12	8	4	30	8	43	8	2	26	<DCGL
60	8	7	10	22	7	93	27	68	53	<DCGL
61	6	8	12	16	9	15	10	27	6	<DCGL
62	9	8	8	24	8	103	32	52	61	<DCGL
63	7	10	3	18	11	19	14	-1	10	<DCGL
64	12	12	5	32	13	143	57	29	86	<DCGL
65	14	5	9	36	4	55	0	18	33	<DCGL
66	10	12	6	25	13	108	57	37	70	<DCGL
67	8	9	8	18	10	19	12	15	13	<DCGL
68	13	7	9	35	6	158	22	60	95	<DCGL
69	16	8	5	39	7	61	6	5	40	<DCGL
70	11	7	7	30	7	133	27	44	78	<DCGL
71	11	3	5	26	1	35	-6	5	23	<DCGL
72	8	9	6	18	10	73	42	37	53	<DCGL
73	8	9	7	18	10	19	12	12	13	<DCGL
74	8	10	8	20	11	83	47	52	53	<DCGL
75	11	4	8	28	3	39	-2	15	23	<DCGL
76	13	9	7	40	9	183	37	44	95	<DCGL
77	10	7	4	24	7	31	6	2	20	<DCGL
78	8	7	6	21	7	88	27	37	53	<DCGL
79	10	8	4	23	8	29	8	2	20	<DCGL
80	13	9	9	34	9	153	37	60	95	<DCGL
81	321	788	10	671	946	1325	1884	21	1056	<DCGL
82	103	243	12	213	291	1048	1447	83	845	<DCGL
83	16	20	6	40	22	63	36	8	40	<DCGL
84	13	7	5	33	6	148	22	29	95	<DCGL
Vacuum (20 cm2)										
1	15	12	6	34	12	153	52	37	111	<DCGL
2	11	5	4	27	4	118	12	21	78	<DCGL
3	10	6	8	23	5	98	17	52	70	<DCGL
1	10	9	6	23	9	98	37	37	70	<DCGL
2	9	6	10	23	6	98	22	68	61	<DCGL
3	16	8	12	40	7	183	27	83	120	<DCGL
4	16	4	8	40	2	183	2	52	120	<DCGL
5	13	13	10	31	14	138	62	68	95	<DCGL
6	10	12	6	23	13	98	57	37	70	<DCGL
7	9	3	9	22	2	93	2	60	61	<DCGL
8	6	14	10	11	16	38	72	68	36	<DCGL
9	11	10	8	27	10	118	42	52	78	<DCGL
10	13	11	10	30	11	133	47	68	95	<DCGL
11	8	12	8	16	13	63	57	52	53	<DCGL
12	9	9	8	21	9	88	37	52	61	<DCGL
13	18	5	7	43	3	198	7	44	136	<DCGL
14	12	11	8	29	12	128	52	52	86	<DCGL
15	7	11	5	15	12	58	52	29	45	<DCGL

Philotechnics Analytical Worksheet

Appendix K

Bayer Pharmaceuticals
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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
16	18	14	12	43	14	198	62	83	136	<DCGL
1	5	11	8	9	13	28	57	52	28	<DCGL
2	11	12	6	28	13	123	57	37	78	<DCGL
3	6	10	9	12	11	43	47	60	36	<DCGL
4	13	6	6	32	5	143	17	37	95	<DCGL
5	13	8	10	30	7	133	27	68	95	<DCGL
6	9	10	9	19	11	78	47	60	61	<DCGL
7	15	5	7	37	3	168	7	44	111	<DCGL
8	12	9	5	31	9	138	37	29	86	<DCGL
9	12	9	9	28	9	123	37	60	86	<DCGL
10	15	6	8	38	5	173	17	52	111	<DCGL
11	8	11	6	17	12	68	52	37	53	<DCGL
12	16	8	15	43	7	198	27	107	120	<DCGL
13	7	5	2	16	5	63	17	5	45	<DCGL
14	13	12	0	30	13	133	57	-10	95	<DCGL
15	238	52	6	986	11	4913	47	37	1970	<DCGL
16	11	3	5	27	1	118	-3	29	78	<DCGL
17	13	3	10	32	1	143	-3	68	95	<DCGL
18	15	3	6	40	1	183	-3	37	111	<DCGL
19	13	7	3	32	6	143	22	13	95	<DCGL
20	41	166	9	49	200	228	992	60	328	<DCGL
21	8	14	8	16	16	63	72	52	53	<DCGL
22	9	12	10	20	13	83	57	68	61	<DCGL
23	5	9	6	12	10	43	42	37	28	<DCGL
24	9	9	9	21	9	88	37	60	61	<DCGL
25	306	47	8	1577	0	7868	-8	52	2536	<DCGL
26	12	5	14	29	4	128	12	99	86	<DCGL
27	11	15	10	25	17	108	77	68	78	<DCGL
28	12	9	5	28	9	123	37	29	86	<DCGL
29	14	10	11	36	10	163	42	76	103	<DCGL
30	16	7	9	40	6	183	22	60	120	<DCGL
31	71	13	6	188	5	923	17	37	578	<DCGL
32	10	11	9	23	12	98	52	60	70	<DCGL
33	10	7	9	24	7	103	27	60	70	<DCGL
34	25	30	13	56	33	263	157	91	195	<DCGL
35	6	10	3	12	11	43	47	13	36	<DCGL
36	11	3	5	28	2	123	2	29	78	<DCGL
37	163	655	10	201	795	988	3967	68	1345	<DCGL
38	10	10	10	24	11	103	47	68	70	<DCGL
39	9	5	6	22	4	93	12	37	61	<DCGL
40	18	11	8	44	10	203	42	52	136	<DCGL
41	11	8	9	26	8	113	32	60	78	<DCGL
42	27	60	4	50	71	233	347	21	211	<DCGL
43	11	13	4	25	14	108	62	21	78	<DCGL
Ventilation (100 cm2)										
1	17	15	7	39	16	22	8	1	15	<DCGL
2	33	21	6	79	21	62	13	-1	41	<DCGL
3	16	12	9	42	12	25	4	4	13	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
4	12	7	11	35	6	18	-2	7	6	<DCGL
5	7	11	11	21	12	4	4	7	-2	<DCGL
6	14	5	11	35	4	18	-4	7	10	<DCGL
7	13	43	6	20	52	3	44	-1	8	<DCGL
8	5	26	10	5	32	-12	24	5	-5	<DCGL
9	8	13	5	18	15	1	7	-3	0	<DCGL
10	5	17	8	8	20	-9	12	2	-5	<DCGL
11	4	13	6	7	15	-10	7	-1	-7	<DCGL
12	7	10	12	22	11	5	3	8	-2	<DCGL
13	4	13	10	7	15	-10	7	5	-7	<DCGL
14	8	10	5	22	11	5	3	-3	0	<DCGL
15	12	6	7	32	5	15	-3	1	6	<DCGL
16	8	8	12	22	8	5	0	8	0	<DCGL
17	7	8	10	16	9	-1	1	5	-2	<DCGL
18	7	11	7	16	12	-1	4	1	-2	<DCGL
Systems (B-31)										
Drains & Traps		**(Drain = 50 cm2, Trap = 20 cm2)**			**(Drains - Odd Numbered, Traps - Even Numbered)**					
1	7	6	6	16	6	15	4	8	10	<DCGL
2	11	11	7	26	12	113	52	44	78	<DCGL
3	10	8	10	26	8	35	8	21	20	<DCGL
4	16	9	5	42	8	193	32	29	120	<DCGL
5	8	7	7	23	7	29	6	12	13	<DCGL
6	4	4	9	10	4	33	12	60	20	<DCGL
7	12	6	11	32	5	47	2	24	26	<DCGL
8	12	6	9	36	5	163	17	60	86	<DCGL
9	13	6	8	33	5	49	2	15	30	<DCGL
10	18	7	7	48	6	223	22	44	136	<DCGL
11	15	4	12	42	2	67	-4	27	36	<DCGL
12	15	6	3	40	5	183	17	13	111	<DCGL
13	10	8	5	26	8	35	8	5	20	<DCGL
14	12	11	4	31	12	138	52	21	86	<DCGL
15	19	4	9	53	2	89	-4	18	50	<DCGL
16	12	7	9	31	6	138	22	60	86	<DCGL
17	17	9	7	44	8	71	8	12	43	<DCGL
18	19	8	7	53	7	248	27	44	145	<DCGL
19	21	6	7	58	4	99	0	12	56	<DCGL
20	3	7	6	6	8	13	32	37	11	<DCGL
21	6	6	7	15	6	13	4	12	6	<DCGL
22	10	9	5	29	9	128	37	29	70	<DCGL
23	7	7	8	22	7	27	6	15	10	<DCGL
24	7	11	12	17	12	68	52	83	45	<DCGL
25	9	8	8	24	8	31	8	15	16	<DCGL
26	10	14	6	27	16	118	72	37	70	<DCGL
27	4	12	4	6	14	-5	20	2	0	<DCGL
28	5	11	10	11	13	38	57	68	28	<DCGL

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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	S-35	Gross Beta	I-125	
29	3	5	9	8	5	-1	2	18	-4	<DCGL
30	9	3	10	29	2	128	2	68	61	<DCGL
31	9	8	13	23	8	29	8	30	16	<DCGL
32	7	11	9	18	12	73	52	60	45	<DCGL
33	10	10	8	24	11	31	14	15	20	<DCGL
34	7	7	6	19	7	78	27	37	45	<DCGL
35	7	7	7	21	7	25	6	12	10	<DCGL
36	7	5	14	20	5	83	17	99	45	<DCGL
37	8	11	5	18	12	19	16	5	13	<DCGL
38	3	9	9	6	10	13	42	60	11	<DCGL
39	11	11	5	27	12	37	16	5	23	<DCGL
40	7	7	12	22	7	93	27	83	45	<DCGL
41	7	11	10	16	12	15	16	21	10	<DCGL
42	9	9	12	26	9	113	37	83	61	<DCGL
43	6	6	7	14	6	11	4	12	6	<DCGL
44	4	9	8	9	10	28	42	52	20	<DCGL
45	10	7	5	25	7	33	6	5	20	<DCGL
46	4	9	7	9	10	28	42	44	20	<DCGL
47	5	13	13	9	15	1	22	30	3	<DCGL
48	2	11	7	1	13	-12	57	44	3	<DCGL
49	7	5	12	21	5	25	2	27	10	<DCGL
50	8	11	12	21	12	88	52	83	53	<DCGL
51	7	8	6	17	9	17	10	8	10	<DCGL
52	8	6	6	23	6	98	22	37	53	<DCGL
53	3	11	10	4	13	-9	18	21	-4	<DCGL
54	5	5	8	15	5	58	17	52	28	<DCGL
55	3	8	7	5	9	-7	10	12	-4	<DCGL
56	12	9	10	35	9	158	37	68	86	<DCGL
57	7	10	11	16	11	15	14	24	10	<DCGL
58	8	7	4	22	7	93	27	21	53	<DCGL
59	11	10	10	26	10	35	12	21	23	<DCGL
60	2	7	11	3	8	-2	32	76	3	<DCGL
61	11	11	7	27	12	37	16	12	23	<DCGL
62	4	9	6	9	10	28	42	37	20	<DCGL
63	5	9	8	11	10	5	12	15	3	<DCGL
64	11	6	12	35	5	158	17	83	78	<DCGL
65	9	8	10	24	8	31	8	21	16	<DCGL
66	11	7	5	33	7	148	27	29	78	<DCGL
67	9	6	7	24	6	31	4	12	16	<DCGL
68	13	11	8	33	11	148	47	52	95	<DCGL
69	16	7	11	45	6	73	4	24	40	<DCGL
70	22	10	4	59	9	278	37	21	170	<DCGL
71	6	12	7	12	14	7	20	12	6	<DCGL
72	7	4	5	19	3	78	7	29	45	<DCGL
73	8	7	8	19	7	21	6	15	13	<DCGL
74	8	6	9	20	6	83	22	60	53	<DCGL

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Appendix K

Bayer Pharmaceuticals
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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
75	18	14	7	43	14	69	20	12	46	<DCGL
76	17	10	5	45	9	208	37	29	128	<DCGL
77	11	9	8	27	9	37	10	15	23	<DCGL
78	7	8	7	18	9	73	37	44	45	<DCGL
79	10	11	13	23	12	29	16	30	20	<DCGL
80	25	17	9	68	17	323	77	60	195	<DCGL
81	9	9	2	21	9	25	10	-4	16	<DCGL
82	6	8	6	14	9	53	37	37	36	<DCGL
83	54	11	9	148	5	279	2	18	166	<DCGL
84	5	6	8	12	6	43	22	52	28	<DCGL
85	7	5	9	17	5	17	2	18	10	<DCGL
86	6	7	7	15	7	58	27	44	36	<DCGL
87	15	8	8	39	7	61	6	15	36	<DCGL
88	19	6	6	55	4	258	12	37	145	<DCGL
89	5	5	9	12	5	7	2	18	3	<DCGL
90	7	8	10	19	9	78	37	68	45	<DCGL
91	9	11	10	21	12	25	16	21	16	<DCGL
92	5	9	6	12	10	43	42	37	28	<DCGL
93	4	8	8	8	9	-1	10	15	0	<DCGL
94	9	10	7	23	11	98	47	44	61	<DCGL
95	11	12	10	27	13	37	18	21	23	<DCGL
96	8	9	5	22	10	93	42	29	53	<DCGL
97	5	4	3	12	4	7	0	-1	3	<DCGL
98	5	13	9	9	15	28	67	60	28	<DCGL
99	12	7	4	34	6	51	4	2	26	<DCGL
100	9	9	10	24	9	103	37	68	61	<DCGL
101	12	11	3	29	12	41	16	-1	26	<DCGL
102	12	8	7	34	8	153	32	44	86	<DCGL
103	7	12	5	18	14	19	20	5	10	<DCGL
104	14	8	6	41	7	188	27	37	103	<DCGL
105	10	9	10	24	9	31	10	21	20	<DCGL
106	9	13	1	23	15	98	67	-3	61	<DCGL
107	9	7	8	23	7	29	6	15	16	<DCGL
108	14	7	4	42	6	193	22	21	103	<DCGL
Vacuum (20 cm2)										
1	6	7	3	14	7	53	27	13	36	<DCGL
2	13	9	10	31	9	138	37	68	95	<DCGL
3	4	7	7	8	8	23	32	44	20	<DCGL
4	6	10	3	13	11	48	47	13	36	<DCGL
5	14	8	8	40	7	183	27	52	103	<DCGL
6	9	9	7	23	9	98	37	44	61	<DCGL
7	4	10	7	7	12	18	52	44	20	<DCGL
8	18	10	11	49	9	228	37	76	136	<DCGL
9	8	8	9	20	8	83	32	60	53	<DCGL
10	8	8	8	19	8	78	32	52	53	<DCGL
11	8	8	14	21	8	88	32	99	53	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	Chan A	Chan B	Chan C	Chan A	Chan B	H-3	S-35	Gross Beta	I-125	
12	13	9	6	32	9	143	37	37	95	<DCGL
13	11	10	9	26	10	113	42	60	78	<DCGL
14	9	7	7	22	7	93	27	44	61	<DCGL
15	14	9	5	38	9	173	37	29	103	<DCGL
16	10	11	11	23	12	98	52	76	70	<DCGL
17	11	9	12	27	9	118	37	83	78	<DCGL
18	21	7	6	55	5	258	17	37	161	<DCGL
19	6	6	8	14	6	53	22	52	36	<DCGL
20	8	4	9	21	3	88	7	60	53	<DCGL
21	12	4	13	33	3	148	7	91	86	<DCGL
22	9	11	4	21	12	88	52	21	61	<DCGL
23	17	26	7	38	30	173	142	44	128	<DCGL
24	12	9	10	30	9	133	37	68	86	<DCGL
25	12	7	9	30	6	133	22	60	86	<DCGL
26	11	12	4	26	13	113	57	21	78	<DCGL
27	9	12	4	21	13	88	57	21	61	<DCGL
28	10	9	8	23	9	98	37	52	70	<DCGL
29	14	14	8	33	15	148	67	52	103	<DCGL
30	4	5	8	9	5	28	17	52	20	<DCGL
31	6	10	7	12	11	43	47	44	36	<DCGL
32	5	8	12	11	9	38	37	83	28	<DCGL
33	7	11	9	15	12	58	52	60	45	<DCGL
34	11	8	7	29	8	128	32	44	78	<DCGL
35	11	11	6	27	12	118	52	37	78	<DCGL
36	9	7	10	22	7	93	27	68	61	<DCGL
37	11	13	5	26	14	113	62	29	78	<DCGL
38	11	6	8	29	5	128	17	52	78	<DCGL
39	7	7	7	17	7	68	27	44	45	<DCGL
40	17	9	6	45	8	208	32	37	128	<DCGL
41	9	8	10	22	8	93	32	68	61	<DCGL
42	10	6	7	25	6	108	22	44	70	<DCGL
43	12	7	7	32	6	143	22	44	86	<DCGL
44	6	9	10	13	10	48	42	68	36	<DCGL
45	8	10	4	19	11	78	47	21	53	<DCGL
46	13	9	4	33	9	148	37	21	95	<DCGL
47	6	7	7	14	7	53	27	44	36	<DCGL
48	39	12	9	103	9	498	37	60	311	<DCGL
49	17	6	8	44	4	203	12	52	128	<DCGL
50	18	2	7	50	0	233	-8	44	136	<DCGL
51	47	9	7	128	4	623	12	44	378	<DCGL
52	160	28	11	491	9	2438	37	76	1320	<DCGL
53	11	7	5	29	7	128	27	29	78	<DCGL
54	19	7	7	52	5	243	17	44	145	<DCGL
55	15	9	7	39	9	178	37	44	111	<DCGL
56	12	8	6	39	8	178	32	37	86	<DCGL
57	18	8	8	48	7	223	27	52	136	<DCGL
58	20	7	3	52	5	243	17	13	153	<DCGL
59	15	10	8	40	10	183	42	52	111	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
60	17	9	6	45	8	208	32	37	128	<DCGL
61	15	5	15	39	3	178	7	107	111	<DCGL
62	17	4	7	51	2	238	2	44	128	<DCGL
63	18	6	11	51	4	238	12	76	136	<DCGL
64	16	12	7	41	12	188	52	44	120	<DCGL
65	19	6	8	51	4	238	12	52	145	<DCGL
66	23	12	3	59	11	278	47	13	178	<DCGL
67	18	6	7	48	4	223	12	44	136	<DCGL
68	20	12	3	50	12	233	52	13	153	<DCGL
69	16	9	8	41	8	188	32	52	120	<DCGL
70	14	7	7	36	6	163	22	44	103	<DCGL
71	14	8	11	38	7	173	27	76	103	<DCGL
72	17	10	4	43	10	198	42	21	128	<DCGL
73	9	6	12	23	6	98	22	83	61	<DCGL
74	16	11	6	41	11	188	47	37	120	<DCGL
75	17	6	3	48	4	223	12	13	128	<DCGL
76	18	7	7	48	6	223	22	44	136	<DCGL
77	8	6	8	28	6	123	22	52	53	<DCGL
78	13	7	11	34	6	153	22	76	95	<DCGL
79	11	11	7	26	12	113	52	44	78	<DCGL
80	25	7	9	68	4	323	12	60	195	<DCGL
81	14	6	9	36	5	163	17	60	103	<DCGL
82	23	5	10	62	2	293	2	68	178	<DCGL
83	10	10	3	24	11	103	47	13	70	<DCGL
84	11	6	6	29	5	128	17	37	78	<DCGL
85	14	12	9	35	12	158	52	60	103	<DCGL
86	24	5	2	64	2	303	2	5	186	<DCGL
87	23	8	7	63	6	298	22	44	178	<DCGL
88	19	4	9	53	2	248	2	60	145	<DCGL
89	23	3	7	64	0	303	-8	44	178	<DCGL
Ventilation (100 cm2)										
1	34	11	11	105	8	88	0	7	43	<DCGL
2	24	24	5	79	26	62	18	-3	26	<DCGL
3	11	6	7	28	5	11	-3	1	5	<DCGL
4	7	7	8	15	7	-2	-1	2	-2	<DCGL
5	3	8	4	6	9	-11	1	-4	-9	<DCGL
6	8	5	8	22	5	5	-3	2	0	<DCGL
7	5	8	5	17	9	0	1	-3	-5	<DCGL
8	18	18	10	54	19	37	11	5	16	<DCGL
9	17	14	5	46	14	29	6	-3	15	<DCGL
10	14	4	2	34	2	17	-6	-7	10	<DCGL
11	13	9	7	34	9	17	1	1	8	<DCGL
12	10	14	6	28	16	11	8	-1	3	<DCGL
13	18	14	8	38	14	21	6	2	16	<DCGL
14	12	9	8	26	9	9	1	2	6	<DCGL
15	20	7	6	46	5	29	-3	-1	20	<DCGL
16	16	22	15	56	25	39	17	13	13	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
400 Morgan Lane, West Haven, CT 06516

Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
17	10	7	10	34	7	17	-1	5	3	<DCGL
18	11	13	9	34	14	17	6	4	5	<DCGL
19	12	6	5	35	5	18	-3	-3	6	<DCGL
20	7	9	18	18	10	1	2	18	-2	<DCGL
21	13	9	9	31	9	14	1	4	8	<DCGL
22	15	15	16	46	16	29	8	15	11	<DCGL
23	7	10	9	20	11	3	3	4	-2	<DCGL
24	7	13	7	20	15	3	7	1	-2	<DCGL
25	15	12	17	56	12	39	4	16	11	<DCGL
26	58	91	13	225	109	208	101	10	83	<DCGL
27	14	14	10	43	15	26	7	5	10	<DCGL
28	11	33	18	42	42	25	34	18	5	<DCGL
29	11	11	8	32	12	15	4	2	5	<DCGL
30	9	11	7	31	12	14	4	1	1	<DCGL
31	10	15	10	19	16	2	8	5	3	<DCGL
32	10	12	7	44	13	27	5	1	3	<DCGL
33	10	9	8	32	9	15	1	2	3	<DCGL
34	5	12	3	11	14	-6	6	-6	-5	<DCGL
35	8	12	11	27	14	10	6	7	0	<DCGL
36	4	10	7	8	12	-9	4	1	-7	<DCGL
37	12	12	9	44	13	27	5	4	6	<DCGL
38	4	12	9	8	14	-9	6	4	-7	<DCGL
39	5	15	7	10	18	-7	10	1	-5	<DCGL
40	4	14	8	7	17	-10	9	2	-7	<DCGL
Systems (A-21)										
Drains & Traps		**(Drain = 50 cm2, Trap = 20 cm2)**			**(Drains - Odd Numbered, Traps - Even Numbered)**					
1	2	6	6	3	7	-11	6	8	-7	<DCGL
2	8	13	5	17	15	68	67	29	53	<DCGL
3	9	8	5	20	8	23	8	5	16	<DCGL
4	6	9	9	12	10	43	42	60	36	<DCGL
5	6	9	5	12	10	7	12	5	6	<DCGL
6	7	7	5	16	7	63	27	29	45	<DCGL
Vacuum (20 cm2)										
1	8	10	9	18	11	73	47	60	53	<DCGL
2	10	11	6	22	12	93	52	37	70	<DCGL
3	4	10	8	7	11	18	47	52	20	<DCGL
4	6	6	9	13	6	48	22	60	36	<DCGL
5	4	4	12	9	4	28	12	83	20	<DCGL
Ventilation (100 cm2)										
1	10	8	6	24	8	7	0	-1	3	<DCGL
2	7	22	11	37	29	20	21	7	-2	<DCGL
3	4	18	7	4	22	-13	14	1	-7	<DCGL
4	9	11	3	30	12	13	4	-6	1	<DCGL
5	8	2	3	22	1	5	-7	-6	0	<DCGL
6	4	13	3	8	16	-9	8	-6	-7	<DCGL

Philotechnics Analytical Worksheet

Bayer Pharmaceuticals
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Scintillation Counter
Laboratory Areas

	CPM			Auto-DPM		DPM / 100 cm2				
Sample	**Chan A**	**Chan B**	**Chan C**	**Chan A**	**Chan B**	**H-3**	**S-35**	**Gross Beta**	**I-125**	
Systems										
Neutralization Tanks (100 cm2)										
1	56	18	8	160	13	143	5	2	80	<DCGL
2	38	39	8	101	43	84	35	2	50	<DCGL
3	9	12	9	22	13	5	5	4	1	<DCGL
Vacuum Pumps (100 cm2)										
1	57	16	6	154	11	137	3	-1	81	<DCGL
2	190	8	9	560	0	543	-8	4	303	<DCGL
3	11	6	7	23	5	6	-3	1	5	<DCGL
4	10	12	5	19	12	2	4	-3	3	<DCGL

140429

From: Origin ID: EFBA (203)812-2215
Kathryn Flyntz
Bayer Pharmaceuticals Corp.
400 Morgan Lane

West Haven, CT 06516

FedEx Express

CLS022307/21/23

Ship Date: 23APR07
ActWgt: 5 LB
System#: 9038835/INET2600
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Invoice #
PO #
Dept #

SHIP TO: (610)337-7015 **BILL SENDER**

Dennis Lawyer
U.S. Nuclear Regulatory Commission
Nuclear Materials Safety Branch #2
475 Allendale Road
King of Prussia, PA 19406

PRIORITY OVERNIGHT

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24APR07

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☑ TERM. 06-13053-04
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.

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Sincerely,
Licensing Assistance Team Leader