BGRR-016, Rev. 0

Brookhaven Graphite Research Reactor (BGRR) Decommissioning Project

ACTIVITY CLOSURE REPORT FOR
REMOVAL OF MUSEUM WALLS AND MATERIALS

December 30, 1999

BROOKHAVEN NATIONAL LABORATORY
BROOKHAVEN SCIENCE ASSOCIATES
Under Contract No. DE-AC02-98CH01886 with the
UNITED STATES DEPARTMENT OF ENERGY

TABLE OF CONTENTS

1.0 Introduction 1
1.1 Purpose 1
1.2 Removal Authority 1
2.0 Site Description and History 1
2.1 Brookhaven National Laboratory 1
2.2 Brookhaven Graphite Research Reactor 2
2.3 Museum Walls and Materials Usage 4
3.0 Removal Activity 4
3.1 Objectives 4
3.2 Removal Activity 4
3.3 Final Conditions 5
3.4 Activity Cost 5
4.0 Waste Management 5
5.0 Lessons Learned 6

List of Figures

BNL Location Map 2

BGRR Site Looking North 3

List of Attachments

Attachment 1 Environmental Evaluation Notification Form No. BNL-357 (NEPA, Categorical Exclusion)

Attachment 2 Letter, P.K. Jackson to S. Mallette, Dated March 31, 1999, Subject: BGRR Project Request for Authorization and Funds.

Attachment 3 Letter, G. Malosh to M. Schlender, Dated April 15, 1999, Subject: Authorization to Conduct Waste Water Disposal and Remove Museum Walls and Material from the Brookhaven Graphite Research Reactor

Attachment 4 Radiological Work Permit #990420-7 and Work Permit BGRR WP–0013 Copies of Radiological Surveys performed to support the activity.

1.0 INTRODUCTION

1.1 Purpose

This activity closure report provides a compilation of the information that was used to develop and execute the Contractor Work Breakdown Structure (CWBS) for the removal of the museum walls and miscellaneous materials from Building 701.

1.2 Removal Authority

Removal of the museum walls and miscellaneous materials from Building 701 was authorized by the approved National Environmental Policy Act (NEPA) Environmental Evaluation Notification Form, NEPA Categorical Exclusion, CH NEPA Tracking No. BNL-357 (Attachment 1)

2.0 SITE DESCRIPTION AND HISTORY

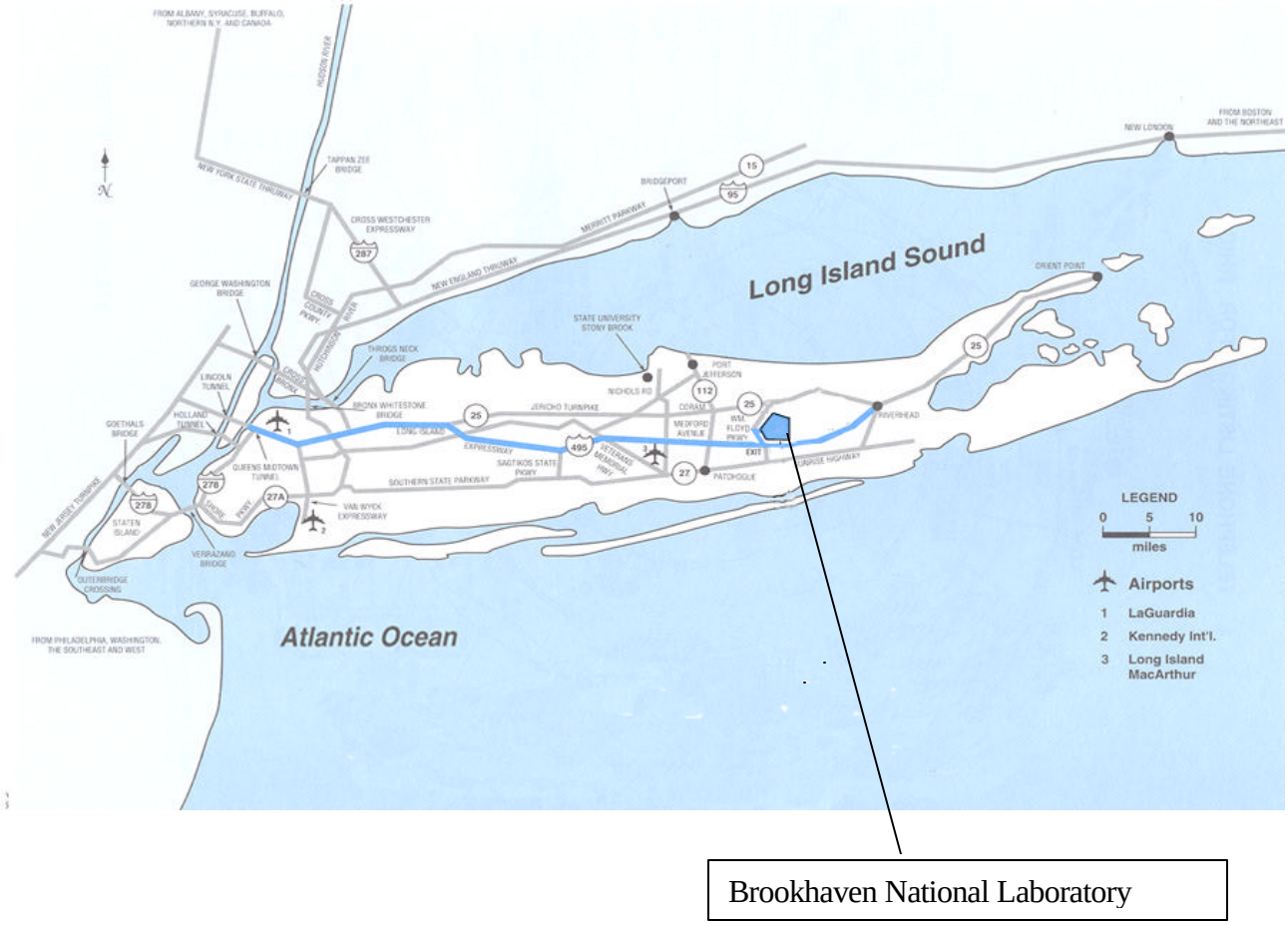
2.1 Brookhaven National Laboratory

Brookhaven National Laboratory (BNL) is located in Upton, Long Island, New York, near the geographic center of Suffolk County, approximately 60 miles east of New York City (Figure 1). Approximately 1.32 million people reside in Suffolk County and about 0.41 million people reside in Brookhaven Township, within which BNL is situated.

The BNL facility contains 5,265 acres (8.23 square miles). BNL terrain is gently rolling with elevations varying between 44 and 120 feet above mean sea level (amsl). The land lies on the western rim of the shallow Peconic River watershed, with a principal tributary of the river in the north and west sections of BNL.

BNL's principal facilities are located, with few exceptions, near the geographic center of the site. They are contained in an area of approximately 900 acres, of which about 500 acres were originally developed for U.S. Army uses. The remaining 400 acres are occupied, for the most part, by various large research facilities. Outlying facilities occupy about 550 acres and include apartment areas, biology research fields, a solid waste management area, closed landfills, a sewage treatment plant, and firebreaks. The balance of the site, approximately 75 percent of its total area, is largely wooded. The BNL site, formerly known as Camp Upton, was used by the U.S. Army during World Wars I and II and by the Civilian Conservation Corps Camp between the wars. In 1947, ownership was transferred to the Atomic Energy Commission for peaceful research on atomic energy and materials. The site was subsequently transferred to the Energy Research and Development Administration in 1975, and finally to the Department of Energy (DOE) in 1977. These later transfers were the result of agency name changes, not changes in ccupancy or function.

Figure 1. BNL Location Map



BNL carries out basic and applied research in the fields of high-energy nuclear and solid state physics; fundamental material and structure properties and the interactions of matter; nuclear medicine, biomedical and environmental sciences; and selected energy technologies.

2.2 Brookhaven Graphite Research Reactor

The Brookhaven Graphite Research Reactor (BGRR) at BNL was the first reactor built for the sole purpose of providing neutrons for research. During its years of operation, it was one of the principal research reactors in the United States. Construction on the BGRR was completed in August 1950, and initial criticality of the reactor was achieved the same month. The BGRR operated until June 10, 1968 when operation of the reactor was terminated and deactivation of the facility was initialed. In June of 1972 defueling and shipment of the fuel to the DOE

Savannah River Site was completed. The BGRR complex was described as being in a safe shutdown condition by the U.S. Atomic Energy Commission and became a Surplus Facility within the DOE complex. From 1977 until 1997, portions of the facility were used as the BNL Science Museum.

The BGRR was an air-cooled graphite moderated reactor. The Primary Air Cooling System utilized cooling fans that were located in a building (704) separate from the reactor building (701). Exhaust ducting constructed of reinforced concrete runs in two separate ducts below the ground from the reactor exhaust plenums to the system cooler and filters. Downstream of the filters the ducting rises above the ground and combines into one large duct, which is located on, and supported by, the Fan House (704). The individual cooling fans took suction through 48-inch diameter ducts, which penetrated the building roof and connected at the duct bottom. There is approximately 225 feet of above grade ducting. An aerial picture of the BGRR site is shown in Figure 2.

During reactor operations, filtered outside cooling air was drawn across the reactor pile through this ductwork by the fans where it was cooled, filtered and eventually exited through the 100-meter tall exhaust stack.

Figure 2. BGRR Site Looking North

2.3 Museum Walls and Materials Usage

The BGRR Building 701 floor areas at different elevations and the top of the pile were modified using architectural materials to become the museum building for BNL. Temporary walls and barriers were constructed to cover areas that would not be made accessible to the public. When the museum was closed and displays moved to the new museum location, several displays, walls, rooms, and barriers were abandoned in Building 701.

3.0 REMOVAL ACTIVITY

3.1 Objectives

3.1.1 Restore Building 701 to the near original pile configuration.
3.1.2 Reduce the amount of flammable materials thereby reducing the fire loading.
3.1.3 Uncover areas to allow for inspection and planning decommissioning work activities.

3.2 Removal Activity

The work was performed as described in the NEPA categorical exclusion submittal dated May 14, 1999 and authorized on May 25, 1999, CH NEPA Tracking No. BNL-357 (Attachment 1).

BNL Plant Engineering personnel performed the preparation for and removal of the museum walls and materials. Specifically, electricians were used to insure the power to the walls and materials to be removed was deenergized before removal work began. Carpenters and laborers were used to remove the walls and materials from the Building 701.

Health Physics technicians assigned to the BGRR Decommissioning Project surveyed walls and materials for radiological contamination. Approximately 2,800 cubic feet of materials were radiologically surveyed as clean and removed as construction debris from Building 701. Additionally, approximately 150 cubic feet of metals were radiologically surveyed as clean and removed as metal debris. There was less than 5 cubic feet of radioactive waste accumulated or generated as a result of the work performed. No separate radioactive waste shipping was required during the performance of this activity. The radiological wastes accumulated or generated during the performance of the removal activity were handled as routine radioactive waste and disposed of through the BNL Waste Management Division.

Initially, radiological surveys were performed on all accessible surfaces of the designated walls, ceilings, and barriers that were to be removed from the building. Following the radiological surveys, electrical power was isolated at the respective source panels and cables removed from the designated walls, ceilings, and barriers that were to be removed.

The physical work to remove the materials was started on May 28, 1999 and reported complete on June 29, 1999. During this time, there was health physics coverage during the wall removal process to ensure all surfaces, once exposed, were radiologically surveyed.

3.3 Final Conditions

Following the removal activities, the health physics technicians assigned to the BGRR Decommissioning Project performed a complete set of radiological routine surveys and adjusted radiological postings to document the as-left conditions of the building.

The areas made accessible by the removal of the materials were found to be radiologically clean or less contaminated than originally expected.

3.4 Activity Cost

The cost of the activity was $26,420. The cost includes planning, execution, waste disposal, and closure of the activity.

4.0 WASTE MANAGEMENT

Radiological surveys of the materials determined them not to be radiologically contaminated and therefore releasable as construction debris.

Approximately 2,800 cubic feet of materials were radiologically surveyed as clean and removed as construction debris from Building 701. Additionally, approximately 150 cubic feet of metals were radiologically surveyed as clean and removed as metal debris.

There was less than 5 cubic feet of radioactive waste accumulated or generated as a result of the work performed. No separate radioactive waste shipping was required during the performance of this activity. The radiological wastes accumulated or generated during the performance of the removal activity was handled as routine radioactive wastes and disposed of through the BNL Waste Management Division.

5.0 LESSONS LEARNED

- Communications was one of the lessons learned during the performance of this activity. Whenever, physical work is planned, it is necessary to communicate the work planned, its expected duration, and the increased traffic near the facility to the occupants of the attached Building 703.

- The second lesson learned was a safety issue. One of the workers was observed to be working on a mezzanine installing a safety railing without being tied off during the performance of the work. It is imperative to insure the workers have the proper safety equipment for the work they are to perform.

ATTACHMENT 1

ENVIRONMENTAL EVALUATION NOTIFICATION FORM

Grantee/Contractor Laboratory: BROOKHAVEN NATIONAL LABORATORY

Project/Activity Title: BGRR Stabilization and Maintenance Activities

CH NEPA Tracking No.: BNL-357 Type of Funding: OE

B&R Code: _____ Total Estimated Cost: $880,000

DOE Cognizant Secretarial Officer (CSO): M. Krebs, SC-1; J. Owendoff, EM-1

Contractor Project Manager: S. Pulsford Signature: [signature]

Date: 5/14/99

Contractor NEPA Reviewer: T. Sperry Signature: T. Sperry

Date: 5/14/99

I. **Description of Proposed Action:**

Proposed actions would conduct stabilization and maintenance activities on the Brookhaven Graphite Research Reactor and associated systems to maintain the facility in a safe shut down state pending final decisions regarding decommissioning anticipated in the next five years. Specific actions that would be accomplished include: 1) Routine decontamination of surfaces of equipment, rooms, and other interior surfaces of the building; 2) Removal of interior temporary walls/materials/debris previously erected to isolate a portion of the BGRR interior (Building 701) to house a science museum which was closed and relocated in 1998; 3) Removal of primary and secondary fans/equipment/waste from the Fan House, Building 704; and 4) Decontamination or fixation of radioactive contamination on interior surfaces of Building 704 and seal openings to isolate the decontaminated building against potential spread of radioactive contamination. In addition, contaminated intact equipment and other materials excluding spent nuclear fuel or special nuclear material would be removed for disposal. These actions are proposed to maintain the facility in a safe and monitored state. During a building by building facility review that was conducted by BNL in 1997, the BGRR Air Cooling Ducts associated with Building 704 were found to contain 60,000 gallons of radioactively contaminated water which entered as rainwater intrusion and was subsequently leaching to the environment causing localized ground water contamination. These actions would maintain a safe condition by isolating and decontaminating the Fan House, removing contaminated equipment, and removing barriers that impede proper characterization and monitoring of the facility. See attachments for additional information.

II. **Description of Affected Environment:**

All work would occur within the BGRR and associated support facilities. No impacts to environmentally sensitive areas would be anticipated. Potential sources of environmental contamination would be eliminated.

III. **Potential Environmental Effects:** (Attach explanation for each "yes" response, and "no" responses if additional information is available and could be significant in the decision making process.)

A. Sensitive Resources: Will the proposed action result in changes and/or disturbances to any of the following resources?

	Yes/No
1. Threatened/Endangered Species and/or Critical Habitats	N
2. Other Protected Species (e.g. Burros, Migratory Birds)	N
3. Wetlands	N
4. Archaeological/Historic Resources	Y
5. Prime, Unique or Important Farmland	N
6. Non-Attainment Areas	N
7. Class I Air Quality Control Region	N
8. Special Sources of Groundwater (e.g. Sole Source Aquifer)	Y
9. Navigable Air Space	N
10. Coastal Zones	N
11. Areas w/Special National Designation (e.g. National Forests, Parks, Trails)	Y
12. Floodplain	N

B. Regulated Substances/Activities: Will the proposed action involve any of the following regulated substances or activities?

	Yes/No
13. Clearing or Excavation (indicate if greater than 5 acres)	N
14. Dredge or Fill (under Clean Water Act section 404; indicate if greater than 10 acres)	N
15. Noise (in excess of regulations)	N
16. Asbestos Removal	Y
17. PCBs	Y
18. Import, Manufacture or Processing of Toxic Substances	N
19. Chemical Storage/Use	N
20. Pesticide Use	N
21. Hazardous, Toxic, or Criteria Pollutant Air Emissions	N
22. Liquid Effluent	N
23. Underground Injection	N
24. Hazardous Waste	Y
25. Underground Storage Tanks	N
26. Radioactive (AEA) Mixed Waste	Y
27. Radioactive Waste	Y
28. Radiation Exposures	Y

C. **Other Relevant Disclosures. Will the proposed action involve the following?**

	Yes/No
29. A threatened violation of ES&H regulations/permit requirements	N
30. Siting/Construction/Major Modification of Waste Recovery, or TSD Facilities	N
31. Disturbance of Pre-existing Contamination	Y
32. New or Modified Federal/State Permits	N
33. Public controversy (e.g. Environmental Justice Executive Order 12898 consideration and other related public issues.)	N
34. Action/involvement of Another Federal Agency (e.g. license, funding, approval)	Y
35. Action of a State Agency in a State with NEPA-type law. (Does the State Environmental Quality Review Act Apply?)	Y
36. Public Utilities/Services	N
37. Depletion of a Non-Renewable Resource	N

IV. **Section D Determination:** Is the project/activity appropriate for a determination by the Group Manager under Subpart D of the DOE NEPA Regulations for compliance with NEPA?

Yes

Indicate the recommendation and specific class of action from Appendix A-D to Subpart D (10 CFR 1021):

CX

B1.28 Minor activities to place a facility in an environmentally safe condition, no proposed uses

B6.1 Small scale, short term cleanup actions under RCRA, Atomic Energy Act, or other authorities

DOE Recommendation:

BHG NCO: Gerald Granzen Signature: [signature]

Date: 5/19/99

LGL-GL: Joan Shands Signature: [signature]

Date: 5/24/99

Group Manager Subpart D CX Determination and Approval:

The preceding pages are a record of documentation required under DOE Final NEPA Regulation, 10 CFR Part 1021.400, to establish that an action may be categorically excluded from further NEPA review. I have determined that the proposed action meets the requirements for the Categorical Exclusion referenced above. Therefore, by my signature below, I have determined that the proposed action may be categorically excluded from further NEPA review and documentation.

BHG Manager: George Malosh Signature: [signature]

Date: 5/25/99

Section V: **Additional Information**

A4, 11 Proposed actions would require interior modifications and equipment removal within the BGRR and support facilities. The BGRR was identified to BNL as potentially eligible for inclusion in the National Register of Historic Places by representatives of the New York State Historic Preservation Officer during a June 1990 site overview and tour. This recommendation was reaffirmed in an April 1991 correspondence. Although the Laboratory and DOE have not petitioned for inclusion of the BGRR on the National Register, a programmatic agreement with the Advisory Council on Historic Preservation is proposed. This agreement could result in the listing of BGRR and other Laboratory facilities on the National Register. The historic significance associated with the BGRR was its utilization as a scientific research tool for peaceful applications, one of the first nuclear reactors operated expressly for this purpose. The proposed action would not diminish those characteristics that lend historic significance to this facility. This opinion would be coordinated with the NYSHPO.

A8 The BGRR is located on central Long Island atop a deep recharge area for an EPA designated "Sole Source Aquifer". During a 1997 review of the facility it was found that sources of contamination from within the facility possessed pathways for releases of radioactive contaminants to the environment and possible exposure pathways that could impact the site workforce. Contamination of the underlying aquifer has been identified and investigations are ongoing to determine if BGRR air cooling ducts are the source that has resulted in localized Strontium-90 contamination. This proposal would provide for the stabilization and maintenance of the BGRR by identifying some of these contaminant sources and isolating or removing them to minimize potential impact to workers and the environment.

B16, 17, 24, 26 27, 28 The areas within the BGRR to be maintained/stabilized are known or suspected to contain asbestos and/or polychlorinated biphenyls. Many of these areas also involve radioactive contamination. Removal of equipment, isolation of radioactive contamination, and general surveillance and removal activities would have the potential to expose workers to hazardous and radiological materials as well as generate hazardous, radioactive, and mixed wastes. Work planning and advanced characterization would be utilized to minimize worker exposures.

All work involving possible radiation exposures would require a radiation work permit. Personnel activities would be monitored by health physics personnel to ensure controls are in place that would ensure work is conducted within the established requirements of the BNL Radiation Control Manual and the BNL ALARA program. Advanced monitoring information would aide in the establishment of appropriate work controls and personal protective equipment utilization.

It is not possible at this time to determine the quantities of each waste stream. Attempts would be made where possible to decontaminate surfaces to minimize the volume of waste in each waste stream and permit material disposal as construction debris or permit recycling when possible. All waste streams to be produced currently have available outlets with ample capacity with the exception of mixed waste involving PCBs. These items would be placed in storage at the Waste Management Facility pending the

availability of a TSD facility that would accept these wastes. Some of this waste stream currently exists at the Waste Management Facility and has been in storage for over five years in some cases.

C31, 34 35 The BGRR has been slated for decontamination and decommissioning. Radiological contamination is present within many areas of Buildings 701 and 704 as a result of past reactor operations. Much of this contamination/activation is fully contained within isolated facilities and systems and presents no threat to the environment. This contamination would require removal to permit unrestricted use of the buildings or demolition and disposal to eliminate potential worker exposure pathways.

The buildings also possess contamination with the potential to be released to the environment. Some proposed actions have been identified and are expected to be resolved utilizing the CERCLA process. Both time critical removal actions and non-time critical actions are proposed. These activities are expected to be evaluated utilizing the incorporation of NEPA values into the CERCLA documentation process. The actions proposed in this action neither facilitate, necessitate, nor obligate the other actions under consideration. Those activities would require coordination and acceptance of project documentation by the USEPA and NYSDEC. These actions are not considered connected actions and require no decision-making requirements beyond that prescribed by the DOE NEPA Implementing procedures.

ATTACHMENT 2

BROOKHAVEN NATIONAL LABORATORY
BROOKHAVEN SCIENCE ASSOCIATES

P.O. Box 5000
Upton, New York 11973-5000

TEL: (516) 344- 2394
FAX: (516) 344- 7630
E-MAIL: kjackson@bnl.gov

BROOKHAVEN GRAPHITE RESEARCH REACTOR (BGRR)
BUILDING 701

March 31, 1999

Mr. Scott Mallette
Senior Environmental Advisor
U.S. Department of Energy
Brookhaven Group, Building 464
Upton, NY 11973

Subject: BGRR Project Request for Authorization and Funds

Dear Mr. Mallette:

The purpose of this letter is to transmit a request for authorization and funding to proceed with Building 701 museum walls and materials removal. The attached activity authorization request document describes the scope of work and includes a proposed schedule and estimate.

As you know, when the museum was closed and displays moved to the new museum location, several displays, walls, rooms, and barriers were abandoned in Building 701. It is necessary to remove the walls and constructed displays from Building 701 and return the area to original site configuration in preparation for Building 701 Pile D&D end-point disposition.

The proposed work would begin on/around April 14, 1999 and will be finished by June 11, 1999. Estimated cost for the work is $79,386.

If you wish to discuss this request, you may contact me at (516) 344-2394. Thank you in advance for a timely response to this request.

Sincerely,

P. K. Jackson
BGRR Project Manager

Attachment
Cc: M. Cowell, BNL (w/attach.)
F. Crescenzo, DOE/BHG (w/attach.)
A. Harvey, DOE/CH (w/attach.)
J. Roberts, DOE/CH (w/attach.)
M. Schlender, BNL (w/attach.)
R. Warner, DOE/CH (w/attach.)
File A302

Brookhaven National Laboratory
Brookhaven Graphite Research Reactor (BGRR)
Decommissioning Project

Activity Authorization Request 99-03

Building 701 Museum Walls and Materials Removal

The BGRR Decommissioning Project Activity Authorization Request documents the information needed to evaluate and authorize funding for the removal of museum walls, materials and display items in building 701. This request contains four major sections; Scope of Work, Schedule, Cost, and Approval Signatures. The scope of work section is further divided into four sections; description of the work to be performed, list of the activities, assumptions, and a justification for performing the work activity. The schedule section provides a proposed schedule for the activity from initialization of the Activity Authorization Request to completion of the activity. The cost section contains an estimate of the major costs associated with the described work activity from engineering to waste disposal and any additional funds needed for continued monitoring. The Signature Approval Section provides the signatures and dates of the preparer, reviewer, and management approvals.

1.0 Scope of Work

1.1 Background

The BGRR Building 701 floor areas at different elevations and the top of the pile were modified using architectural materials to become the building museum for the Brookhaven National Laboratory. Temporary walls were installed to delineate the museum area. Walls and barriers were constructed to cover areas that would not be made accessible to the public. When the museum was closed and displays moved to the new museum location, several displays, walls, rooms, and barriers were abandoned in building 701. It is necessary to remove the walls and constructed displays from Building 701 and return the area to original site configuration.

1.2 Description

The materials to be removed are walls, displays and materials that were used to support the museum. The materials to be removed will be surveyed to free release criteria by health physics technicians and documented on standard survey forms. The work will be controlled using existing work permits, radiological permits and health physics coverage practices as necessary to complete the work activity in a controlled safe manner. The removal of the walls, displays and materials requires electricians to electrically deenergize outlets and lighting fixtures. Carpenters and laborers are needed to dismantle the temporary walls and displays, and remove all waste materials. Carpeted areas will not be removed.

Funding for this activity includes all the engineering, safety support, equipment, planning and scheduling, monitoring, sampling, construction materials, and disposal work necessary to complete all activities.

1.3 Activities

The following activities are required to remove the construction materials and display items.

1. Direct electricians to deenergize all lighting and electrical circuits in walls, and displays that are to be dismantled. (zero energy checks)

2. Using the overhead crane remove the beam guide display from the top of the pile shield blocks.

3. Stage waste disposal dumpsters for waste materials in the truck bay. Stage B25 boxes for low-level radioactive waste materials in the truck bay.

4. Begin on the top of the pile, remove temporary display walls and materials.

   4.1 DO NOT REMOVE THE CARPETING.
   4.2 Clean the area.

5. Move to the lower elevation levels of building 701 and remove display walls and materials.

   5.1 DO NOT REMOVE THE CARPETING.
   5.2 Clean the areas.

6. There will be Health Physics coverage for the removal of materials that have not been fully surveyed prior to removal.

2.0 Assumptions

2.1 Materials surveyed that meet release criteria will be placed into the waste dumpsters for clean work disposal.

2.2 Materials surveyed that are contaminated will be inventoried and placed into B25 boxes as required per BNL low-level radwaste disposal methods.

2.3 There will be Health Physics coverage for the removal of walls and surfaces that have not been previously accessible for survey.

2.4 The actual work portion of this activity will take approximately seven weeks.

2.5 It is estimated that not more than one-hundred cubic feet of low-level radwaste will be generated or removed.

2.6 It is estimated that not more than five dumpsters with a capacity of thirty cubic yards each will be needed to complete the material removal.

2.7 A contingency of twenty percent will be added to the subtotal of the estimate. The contingency cost estimate is to cover the decontamination of areas and the removal and disposal of any unexpected low-level radwaste or hazardous materials that may be uncovered during the material removal.

3.0 Justification

3.1 Allow near term removal work planning to proceed safely and efficiently by providing access to all areas covered and protected during museum operations.

3.2 Allow near term bio-shield sealing and equipment removal work to proceed safely and efficiently.

3.3 This activity is considered a maintenance/clean up function that will reduce unnecessary fire loading in the 701facility.

3.4.1 This activity does not impact the environment. It is contained within building 701.

4.0 Regulatory Authorization

4.1 Reference: Letter dated February 5, 1999 To Mr. Thomas Sheridan, Brookhaven Science Associates, LLC, from G. Malosh, Brookhaven Group Manager, Subject, Approval to Conduct Requested Brookhaven Graphite Research Reactor (BGRR) Project Activities Prior to Approval of the Basis of Interim Operation (BIO).

This authorized the removal of museum walls to gain access to areas to be characterized. It further requires that the activity may proceed with the appropriate work controls in place (a radiation work permit must be in place which includes hold points and work controls that will be used).

4.2 Reference: Letter dated February 23, 1999 To Dr. J. Marburger, Brookhaven Science Associates, LLC, from G. Malosh, Brookhaven Group Manager, Subject Postponement of activities for the Brookhaven Graphite Research Reactor (BGRR).

This letter postponed activities at the BGRR except those that are necessary to maintain the BGRR facility in a compliance and safe manner. Additionally, it permitted ten

specific activities to be conducted. None of the activities, specifically listed removal of the museum walls.

4.3 Based upon the re-directions of the Referenced letters and the changes in direction for the BGRR Decommissioning Project, this activity will be conducted under the letter dated February 23, 1999, directing maintaining the facility in a compliance and safe manner and under permitted activity number five, general maintenance, e.g., replace light bulbs, install electric door opener, general cleaning, perform preventative maintenance, install antifreeze in cooling coils to prevent freezing during the winter months.

5.0 Schedule

Item No.	Description	Estimated Duration in Weeks	Estimated Start Date	Estimated Completion Date
5.1	BGRR Activity Authorization Request Preparation	1	3/24/99	3/31/99
5.2	BGRR Project Activity Authorization Request Submitted to DOE	N/A	3/31/99	N/A
5.3	DOE CH Funding Approval	1	4/1/99	4/09/99
5.4	BGRR Authorize ILR for PE Support	N/A	4/12/99	N/A
5.5	Conduct Work Activity	7	4/19/99	6/04/99
5.6	Waste Disposal	1	6/07/99	6/11/99

6.0 Estimated Cost

Item No.	Description	Units	Unit Rate	Quantity	Totals
6.1	Dumpsters	ea	$400	5	$ 2,000
6.2	B25 Box	ea	$900	1	$ 900
6.3	Low-level radwaste disposal	Cu.ft.	$40	100	$ 4,000
6.4	Labor from estimate	lot	N/A	N/A	$30,168
6.5	HP Technician	hrs	$59	80	$ 4,720
6.6	HP Supervision	hrs	$65	40	$ 2,600
6.7	BGRR Field Supervisor	hrs	$65	60	$ 3,900
6.8	Subtotal				$48,288
6.9	Contingency	%	20	48,288	$ 9,658
6.10	Subtotal w/contingency				$57,946
6.11	Burden	%	37	57,946	$21,440
6.12	Total				**$79,386**

7.0 Signature Approvals

7.1 Prepared By: Clyde T. Newson Date: 3/31/99
Clyde T. Newson

7.2 Reviewed By: Stephen E. Fulford Date: 3/31/99
Project Engineer

7.3 Approved By: [illegible] Date: 3/31/99
Project Manager

7.4 Approval By: [illegible] Date: 4/5/99
DOE Project Manager

ILR MASTER RECORD WO 828106C

ILR Number 413018 Master ILR 413018 BROWSE ONLY? (Y/N)
Division EP Record Type M Job Type
Job Status IP Date Status 11/17/98
Project ID B-701 Expense Type R
Overtime: Author N Priority 50
Short Descript REMOVE TEMPORARY MATERIALS IN BLDG 701
Request Life # 12714 BECKMAN DEPT DO EXT 7525
Alternate Life # 12714 BECKMAN DEPT DO EXT 7525
Dept Contact MARIA BECKMAN Ext 7525
Building 701 Room Ext 7525
Safety Code SAF1
Safety Life # 12714
Date Due 12/31/98 Fiscal Year 99 WARN! DATE IS PRIOR TO TODAY!
Date Entered 10/07/98 Pinned 11/17/98
Date Estimated 12/31/98 FLAT RATE
Date Approved 11/17/98
Date Begun / / Closed / / EDIT OK. RECHECK AND ENTER.
Date Accepted / / Complete / /

	New	Request	Current	Actual	ILR BAL	%
Total Hours	.00	.00	473.00	0.00	473.00	.00
Total Cost	.00	.00	30167.15	0.00	30167.15	.

Project Log Categories Account Split Drawing List Account Log
ACCT # 08540 100.000%

ESTIMATE HISTORY INQUIRY BY CRAFT COST

ENTER NEXT TRANSACTION.

ILR-NUMBER:

11/98

211	ELECTRICIANS	83.00	0.00	0.00	0.00	0.00
311	PLUMBER	6.00	0.00	0.00	0.00	0.00
411	CARPENTER	320.00	0.00	0.00	0.00	0.00
561	RIGGER	64.00	0.00	0.00	0.00	0.00
	ILR TOTAL:	473.00	0.00	0.00	0.00	0.00

OBJECT CLASS	ORIG. EST.	CURR. EST.	EST. #	EST. #	EST. #
160	$28167.15	$0.00	$0.00	$0.00	$0.00
TOTAL	$28167.15	$0.00	$0.00	$0.00	$0.00

CURRENT STATUS SUMMARY

	MAN-HRS	LABOR	STOCK	PURCHASES	TOTAL-MAT	TOTAL $
ESTIMATE	473.00	$28167.15	$0.00	$2000.00	$2000.00	$30167.15
ACTUAL	0.00	$0.00	$0.00	$0.00	$0.00	$0.00
BALANCE	473.00	$28167.15	$0.00	$2000.00	$2000.00	$30167.15

ILR Number 413018
Job Status IP 11/17/98
Requestor BECKMAN DEPT DO EXT 7525
Short Descript REMOVE TEMPORARY MATERIALS IN BLDG 701

	New	*Request	Current	Actual	Balance	%
Labor Hrs	.00hr	.00hr	473.00hr	.00	473.00	.00
Labor Cost	.00	.00	28167.15	.00	28167.15	.00
Material Cost	.00	.00	2000.00	.00	2000.00	.00
Subcontract	.00	.00	.00	.00	.00	.00
Other	.00	.00	.00	.00	.00	.00
Total Cost	.00	.00	30167.15	.00	30167.15	.00

ISSUES	.00	.00	.00	.00
PURCHASES	.00	.00	2000.00	.00
LABOR C160 LC	.00	.00	28167.15	.00
LABOR H160 LH	.00hr	.00hr	473.00hr	.00

Department of Energy
Brookhaven Group
Building 464
P.O. Box 5000
Upton, New York 11973

APR 15 1999

Mr. Michael Schlender
Brookhaven Science Associates, LLC
Brookhaven National Laboratory
Upton, New York 11973

Dear Mr. Schlender:

SUBJECT: AUTHORIZATION TO CONDUCT WASTE WATER DISPOSAL AND REMOVE MUSEUM WALLS AND MATERIAL FROM THE BROOKHAVEN GRAPHITE RESEARCH REACTOR (BGRR)

As requested, we are authorizing $485,340 and $79,386 of BGRR Environmental Management (EM) funds for conducting waste water disposal and removing the museum walls and material from the BGRR. With regard to your third request for funding to remove the Pile Fan Sump (PFS), the Request for Authorization needs to be updated to include a regulatory strategy and updated schedule for development of CERCLA documentation (including soil cleanup goals) prior to our authorizing any funds for this activity. Excavation of contaminated soil associated with PFS is the responsibility of the BGRR Project and cannot stop at arbitrary depth limitations. In addition, please review the scope, schedule and costs to ensure that the appropriate planning documents (e.g. Work and Health & Safety Plans) are included.

The BGRR must also be included in the next EM-40 monthly report. Please provide a summary level cost plan and milestone log for EM funded activities that have been authorized to date with that report.

With regard to the overall FY99 budget for BGRR an additional $1.1 million of new funds from SC will be included in BNL's April Contract Modification under the following B&R Codes:

KA-02-02	$625,000
KB-02-01-03	$375,000
KC-02-01-01	$100,000
	$1,100,000

This new money together with the carryover from last year completes SC's FY 99 obligation for $1,784K. If you should have any questions, please contact Caroline Polanish at extension 5224.

Sincerely,

George J. Malosh
Brookhaven Group Manager

cc: J. Roberts, EPG, CH
A. Harvey, EPG, CH
J. Goodenough, EPG, CH
S. Mallette, BHG
G. Penny, BHG
K. Jackson, BNL
M. Cowell, BNL
M. S. Davis, BNL

APPROVED: _____ 4-15-99
Robert P. Gordon
Contracting Officer
Date

ATTACHMENT 4

Brookhaven National Laboratory
RADIOLOGICAL WORK PERMIT

RWP # 990420-7
X Special
☐ General

Start: 4-20-99
Expiration: 12-31-99

Shaded area to be completed by requestor

1. Requested By: Jesse West	2. Life #: 0241W	3. Phone: 2374	4. Bldg: 701

5. Job Locations: Building 701 All Elevations

COPY

6. Job Description (Attach sheets as needed): Remove Museum Walls

6a. Work Begins: 4-20-99	6b. Work Ends: 12-31-99

7. Conditions that will void RWP:
1. High Radiation Areas
2. High Contamination Areas
3. Airborne Radioactivity Areas

8. Historical/Other Concerns: The backside of walls maybe contaminated. See Special Instructions.

9. Job Review:	10. Estimated Dose:	11. Attachments:	12. Training Requirements:
☐ Pre-Job Review X Pre-Job Briefing ☐ ALARA Review X Summary/Closeout	☐ Per Job X Per Entry Highest Individual: 10 mRem Collective: 100 mRem	X Radiological Survey Form ☐ Technical Work Document X Other: See recent wall surveys.	X Radiation Worker I (RWT 002) ☐ High/Very High Radiation (RWT 400) X Contamination (RWT 300, 300A) Note 1 ☐ Benchtop/Dispersibles (RWT 500) ☐ Activation (RWT 200) X GERT ☐ Other:

13. Work Controls:	14. Protective Equipment: Note 3	15. Dosimetry:	16. Check Out Instructions:
X Facility Support Coverage ☐ Intermittent X Continuous Note 2 ☐ Hold Points (Identify in Section 17) ☐ Air Monitoring ☐ Shielding ☐ Other:	X Gloves X Shoe Covers X Coveralls ☐ Head Cover ☐ Red Trim Lab Coat ☐ Respirator X Other: Tape all openings.	X TLD X Self Reading Dosimeter Note 4 ☐ Alarming Dosimeter ☐ Finger Dosimetry	X Whole Body Count (Annual) ☐ Urine Sample for Bioassay X Contamination Check X Personnel X Equipment/Laboratory/Area ☐ PCM-1B ☐ Equipment Return ☐ Tools ☐ Post Job Survey

17. Special Instructions: (Including Facility Specific Training) See Attached for Notes 1-4

18. Approvals:	Signature	Department	Life Number	Date
Requestor	[signature]	FS	0241W	4-20-99
ESH Division Representative	R C Mattenberger	RCD	14088	4/20/99
Close-Out Signature				

Attachment to RWP # 990420-7

COPY

RWP Item 17. Special Instructions

Note 1. Training requirements – Contamination (RWT 300, 300A). This training is required for entry into contaminated areas.

Note 2. Continuous FS coverage required when a wall is being removed and the back side was inaccessible for a contamination survey to be performed.

In Addition: Prior to these walls being removed a contaminated area boundary with a Step-Off-Pad will be established around the potentially contaminated areas.

Note 3. Protective Equipment – A full set of protective clothing is required for the initial breakdown of walls that have not been surveyed on the backside by FS personnel.

Note 4. Dosimetry – A self reading dosimeter is required for work in radiation areas.

Final Note: Contaminated area boundaries and protective clothing requirements may be reduced by FS personnel after contamination surveys have been analyzed.

Engineering controls will be utilized in areas where the potential for airborne radioactivity exists.

RWP Sign-In Log

COPY

RWP Number: 990420 -7

Your signature on this form indicates that you have read, understood, and will comply with the requirements of the above numbered RWP.

Page 1 of 6

NAME (Print)	Signature	Life / Guest Number	Date
E. LILIMPAKIS	[illegible]	01801	6/1/99
J. MUNGO	[illegible]	21843	6/1/99
N. Besemer	[illegible]	18210	6/1/99
A. CORDERO	[illegible]	12677	6/2/99
R. Hoogsteden	[illegible]	18143	6/2/99
K LROPP	[illegible]	02361K	6/2/99
J. CASSIDY	[illegible]	21727	6/3/99
G. Meyer	[illegible]	21842	6/3/99
JOHN GUIDO	[illegible]	17814	6/9/99
PAUL HUMBERT	[illegible]	21088	6/7/99
John Schlichtcroll	[illegible]	19128	6/8/99
STEVE SPRINGSTEAD	[illegible]	21837	6/8/99
JOHN GUIDO	[illegible]	17814	6/8/99
JOHN GUIDO	[illegible]	17814	6/9/99
John Schlichtcroll	[illegible]	19128	6/9/99
JOHN GUIDO	[illegible]	17814	6/10/99
John Schlichtcroll	[illegible]	19128	6/10/99
Daniel Carnevato	[illegible]	18088	6/11/99
Richard Chylinski	[illegible]	C9904	6/10/99
Kevin Kobus	[illegible]	14475	6/11/99
JOHN GUIDO	[illegible]	17814	6/14/99
Mike Warry	[illegible]	20785	6-14-99
JOHN GUIDO	[illegible]	17814	6/15/99
JOHN GUIDO	[illegible]	17814	6/16/99

HP3120

WORK PERMIT # BGRRWP-0013

(ILR) Work Order # 413018 Construction Job # _____ Tracking # _____ Account # 07254

1. Work requester fills out this section **STANDING WORK PERMIT** ☐

Requester: M. LILIMPAKIS Date: 11-23-98 Ext. 7628 Dept/Div/Group: BGRR

Other Contact person (if different from requester): CLYDE NEWSON Ext. 2426

Start Date 11-30-98 (4/24/99) Estimated End Date ~~1-15-99~~ N/A 5-25-99

Description of Work / Problem: PERFORM ACTIVITIES LISTED ON ILR# 413018 FOR THE TEMPORARY MUSEUM & WALL REMOVAL AND ITEMS LEFT FROM THE MUSEUM.

Building 701 Room ALL LEVES Equipment TEMPORARY ITEMS

2. Work requester, work provider, and ES&H (as necessary) jointly fill out this section or attach analysis

Hazard Analysis

RADIATION CONCERNS [ ] NONE

[ ] Activation [ ] Airborne [✓] Contamination (POSSIBLE) [ ] Radiation [ ] OTHER _____

[ ] Special nuclear materials involved (ES&H 3.7.0), notify Group Leader, Isotope Special Materials Group (SSD)

[ ] Fissionable materials involved (ES&H 3.7.0), notify Laboratory Criticality Officer (DAT)

COPY

SAFETY CONCERNS [ ] NONE

[ ] Adding / Removing Walls or Roofs	[ ] Excavation (ES&H 1.18.0)	[ ] Noise
[ ] Asbestos	[ ] Flammable (ES&H 4.10.2)	[ ] Non-ionizing Radiation
[ ] Biohazard	[ ] Fumes/Mist/Dust	[ ] Oxygen Deficiency
[ ] Chemicals	[ ] Heat/Cold Stress (ES&H 2.5.0)	[ ] Penetrating Fire Wall
[ ] Confined Space (ES&H 2.2.4)	[ ] Hydraulic	[ ] Pressurized Systems (ES&H 1.4.1)
[ ] Corrosive	[ ] Lasers (ES&H 2.3.1)	[ ] Rigging/Critical Lift (ES&H 1.6.0)
[ ] Cryogenic (ES&H 5.1.0)	[ ] Lead	[ ] Toxic
[✓] Electrical (ES&H 1.5.0)	[ ] Magnetic Field	[ ] Vacuum
[ ] Elevated Work	[✓] Material Handling (ES&H 1.6.0)	[ ] OTHER _____

ENVIRONMENTAL CONCERNS [✓] NONE [ ] OTHER _____

[ ] Haz/rad materials will be released to the air via a new/modified ventilation system, hood, or stack (ES&H 6.1.4 and 6.1.5) Notify Project Engineer, E. P. O. (ES&H Services)

[ ] Acutely hazardous chemical

[ ] New haz/rad materials will be released via the liquid effluent system to the sewage system or an impoundment (ES&H 6.1.2 and 6.1.3). Notify Regulatory Compliance Engineer, E. P. O. (ES&H Services) for permit.

Waste Generated [ ] NONE [✓] Clean Waste [ ] PCB [ ] Hazardous Waste [✓] Radioactive Waste (POSSIBLE) [ ] Mixed Waste

Waste disposition by: WORKING CREW AS PER 6.2-2

Work Controls

WORK PRACTICES

[ ] NONE	[ ] Containment	[ ] HH Survey	[ ] Scaffolding - requires inspection
[ ] Back-up Person/Watch	[ ] Exhaust Ventilation	[✓] Lockout/Tagout (ES&H 1.5.1)	[ ] Time Limitation
[ ] Barricades	[✓] HP Coverage	[✓] Posting/Warning Signs	[✓] OTHER MATERIAL WILL BE ~~GREEN TAGGED~~ Surveyed BY H.P.

PROTECTIVE EQUIPMENT

[ ] NONE	[ ] Ear Plugs	[ ] Gloves	[ ] Lab Coat	[✓] Safety Glasses
[ ] Coveralls	[ ] Ear Muffs	[ ] Goggles	[ ] Respirator	[ ] Safety Harness
[ ] Disposable Clothing	[ ] Face Shield	[ ] Hard Hat	[ ] Shoe covers	[✓] Safety Shoes [✓] OTHER See RWP 990420-7

PERMITS REQUIRED *(Please attach)*

Initial next to box to show who has responsibility to generate the permit

[ ] NONE	[ ] Digging/Core Drilling(ES&H 1.18.0)	[ ] Impair Fire Protection Sys. (ES&H 4.2.0)
[ ] Confined Space Entry (ES&H 2.2.4)	[ ] Electrical Working Hot (ES&H 1.5.0)	[✓] Rad Work Permit (BNL RadCon Manual)
[ ] Cutting/Welding (ES&H 4.3.0)	[ ] Dept/Div Specific Permit BGRR # 990420-7	

DOSIMETRY/ MONITORING

[ ] NONE	[ ] O_2/Combustible Gas	[ ] Self-reading Dosimeter	
[ ] Heat Stress Monitor	[ ] Passive Vapor Monitor	[ ] Sorbent Tube/Filter Pump	
[ ] Noise Survey/Dosimeter	[ ] Real Time Monitor	[✓] TLD	[✓] OTHER See RWP 990420-7

Training Requirements (List below any location specific training requirements)

GERT, RWI, RWII FOR CONTAMINATION AREAS —

Based on analysis above, the Review Team determines the job hazard category:

JOB HAZARD CATEGORY: ___LOW ✓ MODERATE ___HIGH

___Work Coordination Only Job Safety Analysis (JSA) Required? ___Yes ___No

If job is low hazard and skill-of-the-craft, the back side of the permit does not need to be filled out. Sign for concurrence.

Work Control Coordinator [signature] *Life #* 01801 *Work Provider* *Life #*

FILE CODE:

3. *Both work requester and work [illegible] coordinate on work plan (use attachments for detailed plans)*

Work Plan (procedures, timing, personnel, etc.): 1. PERFORM ELECTRICAL ISOLATION FOR WALL SECTIONS TO BE REMOVED
2. REMOVE MATERIAL AND PLACE IN CONTAINERS AS DIRECTED.
3. CLEAN-UP WORK AREA FROM ALL DEBRIS —

COPY

Special Working Conditions Required:

Operational Limits Imposed:
Post Work Testing Required:
Configuration Control Review Required Yes No Walkdown performed ✓ Yes No

Reviewed By: **Note: Primary facility reviewer will dictate the other required signatures. The level of review shall be determined by the details of the work plan, hazards, and work controls necessary to perform the activity. Review done: ☐ in series ☐ team*

Title	Name (print)	Signature	Life #	Date
[✓] Primary Reviewer	[signature]	E-LILIMPAKIS	0180L	11-23-98
[✓] ES&H Services	J. C. West III	[signature]	0241W	4-22-99
[ ] Requester/Contact	[signature]			
[ ] Others *				

4. *Job site personnel fills out this section*

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements

Job Site Supervisor [signature] Contractor Supervisor [signature] 21448

Workers: James Munzo Life # 21843 Workers: Life #
Norman Bekeman 18210

5. *Work Requester or designee fills out this section*

Conditions are Appropriate to Start Work: (Work permit has been reviewed, work controls are in place, and site is ready for job.)
Name E-LILIMPAKIS Signature [signature] Life # 0180L Date 6/1/99

6. *Work Requester determines if Post Job Review is required* *Yes* *No (Fill in names of reviewers)*

Post Job Review:
Name: Signature Life #: Date:
Name: Signature Life #: Date:
Name: Signature Life #: Date:
Close-out signature (as necessary): Signature Life #: Date:

7. *Worker provides feedback*

Worker Feedback:
Is worker feedback required on this job? ____YES ____NO (attach feedback form)
Worker: Any feedback on safety concerns or on ways to improve the job? YES NO (ask for form if not attached)

COPY

BGRRWP- 0013

PRE-JOB BRIEFING. (ELECTRICAL)

NAME	L.#.	SIGNATURE	DATE.
E. LILIMPAKIS	01801		6/1/99
Norman Besemer	18210		6/1/99
Jim MUNGO	21843		6/1/99
Thomas J. Baldwin	21448		6/1/99
Maria Dikeakos	D6267		6/1/99
Ken KROPP	0236K		6/1/99

COPY

Attachment to BGRRWP-0013 Removal of Museum partitions and left over experiments.

WORK ACTIVITY ORDER

1. Electrical isolations.
   Electrical isolations will be performed for the partitions the require removal.
   The work will be performed by elevation.
   a. Disconnect of electrical components on top of PILE. (Lights and experiment power outlets)
   b. Disconnect of electrical components related to wall / partitions at the West mezzanine.
   c. Disconnect of electrical components related to wall / partitions at the East mezzanine.
   d. Disconnect of electrical components related to wall / partitions at the 110' elevation, West side of the PILE.
   e. Disconnect of electrical components related to wall / partitions at the 110'

elevation, East Side of the PILE, including the all ceiling Material.

COPY

Note: For this area some overhead lights will be reconnected for area lighting.

f. Disconnect any electrical power related to the wall at the south west section.

g. Disconnect any electrical power related to the wall at the south east section.

RWP Sign-In Log COPY

RWP Number: 990420-7

Your signature on this form indicates that you have read, understood, and will comply with the requirements of the above numbered RWP.

Page 1 of 6

NAME (Print)	Signature	Life / Guest Number	Date
John Schlichtcroll	John Schlichtcroll	19128	6/17/99
JOHN GUIDO	John Guido	17814	6/17/99
JOHN GUIDO	John Guido	17814	6/18/99
John Schlichtcroll	John Schlichtcroll	19128	6/18/99
FRANK ZAMBRISKI	Frank Zambriski	15919	6/18/99
Charles Gillett	Charles Gillett	8624	6/18/99
Keith DETMER	Keith Detmer	14103	6/18/99

HP 3120

RWP Sign-In Log

RWP Number: 990420-7

Your signature on this form indicates that you have read, understood, and will comply with the requirements of the above numbered RWP.

Page 2 of

NAME (Print)	Signature	Life / Guest Number	Date

COPY

HP 3120

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY # 99-37

BLDG #: 701 LOCATION: 110' Southeast wall DATE/TIME: 3-23-99 @ 0800 ☑ ROUTINE ☐ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: Lud 3 # 50545 CD 2-8-00, Tenn. # 092886 CD 2-19-00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA		N/A	→	

LEGEND: ○ SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

Page 1 of 2

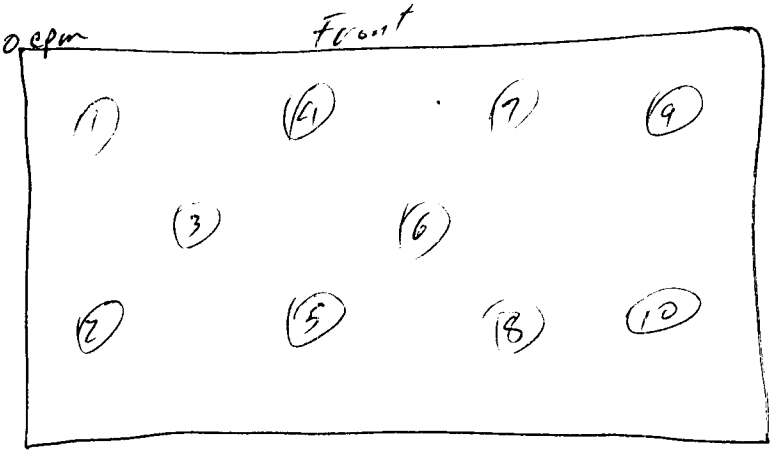
Page 1 of 2

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H ~~B-γ~~ α See tennelec printout for results				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

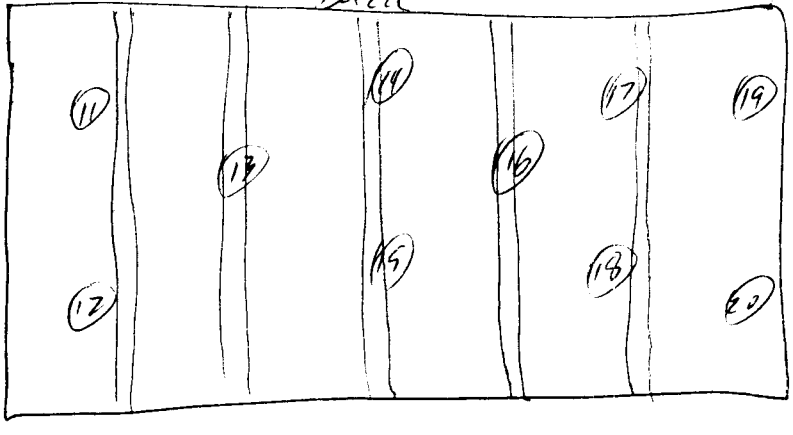
N/A

Direct Frisk 100% of Front + Back
Results ≈ Bkg ≈ 40-60 cpm

Front



Back



SURVEYED BY: [signature] 3-29-99 Signature/date

REVIEWED BY: R.C. Mitchell 6/28/99 KL 6-29-99 Signature/date

LB5100-W Low Background Counting System -- Smear Analysis

#092286 00 2119100 #99-37

Date: 3/23/99
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B020.XLD
Batch Ended: 3/23/99 09:28
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Batch ID: 701-110' SE WALL

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.132
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.918
Beta Correction Factor: 1.000

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
26	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:03
27	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:05
28	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:06
29	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 09:07
30	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/23/99 09:08
31	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/23/99 09:10
32	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:11
33	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:12
34	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:14
35	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:15
36	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:16
37	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:17
38	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:19
39	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:20
40	4.268	4.99	<AL	19.77	-3.81	3.44	<MDA	25.72	1.10	0.777	-1.01	3/23/99 09:21
41	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:22
42	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:24
43	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:25
44	4.268	4.99	<AL	19.77	-0.38	4.86	<MDA	25.72	1.10	0.777	-0.10	3/23/99 09:26
45	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:28

#1-20

REVIEWED: 3/23/99
3-23-99
6/28/99
KR 6-29-99

Page 2 of 2

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: 110' west DATE/TIME: 6/8/99 @ 0800 RWP #: 99-0410-7

INSTRUMENTS, MODEL / SERIAL #: Lud-177 # 138320 C/D 3/6/00 Lud-M-3 # 70067 C/D 2/17/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA	↓	N/A	→	→

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

99-116

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α

1.	N	8.		15.		22.							
2.		9.		16.		23.							
3.		10.		17.		24.							
4.	A	11.		18.		25.							
5.		12.		19.		26.							
6.		13.		20.		27.							
7.		14.		21.		28.							

MASSLINN SURVEY RESULTS (DPM/LAS)

1.		8.	
2.		9.	
3.	N	10.	
4.		11.	A
5.		12.	
6.		13.	
7.		14.	

In Coming waste dumpsters (4)
For Museum Wall Removal

All dumpsters Gross Mazzilinned <1000 dpm/100 cm²
& direct Frisked <100 cpm

COPY

SURVEYED BY: [signature] 6/8/99 Signature/date REVIEWED BY: [signature] 6/18/99 Signature/date

Form FS-1000.1 FS-SOP-1000, rev 1, attch 8.2, page 11 File Code: HP51

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: 110' NE over head DATE/TIME: 6/4/99 @ 1030 RWP #: 99-111

INSTRUMENTS. MODEL / SERIAL #: Lud-177-61 # 138320 c/o 3/16/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION	O MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	nCi/cc	% DAC	XXX Y ZZZ	XXX = CONTACT READING ZZZ = READING @ 30 C= Y = RADIATION TYPE
GENERAL AREA	N/ →					#99-111

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) α				MASSLINN SURVEY RESULTS (DPM/LAS)	
1. < 1000 — wood	8. < 1000 - Ceiling tile	15. 1200 - Steel Beam	22. 1000 - Steel Beam N/S	1.	8.
2. < 1000 — Ceiling tile	9. < 1000 - wood	16. 1000 - P.P.ing	23. 1000 - Steel Beam E/W	2.	9.
3. < 1000 - Light Fixture	10. < 1000 - Ceiling tile	17. 1000 - Steel Beam	24. < 1000 - Ceiling tile	3. Al	10.
4. 1200 — Steel beam	11. 2200 - Steel Beam	18. 1000 - Inner Steel Beam	25. < 1000 - wood	4.	11.
5. < 1000 — Light Fixture	12. < 1000 - top of ceiling	19. < 1000 - Ceiling tile	26. < 1000 - Top of ceiling	5.	12. A
6. < 1000 - Ceiling tile	13. < 1000 - Ceiling tile	20. < 1000 - Light Fixture	27. 1500 - Steel Beam E/W	6.	13.
7. 2500 Steel Beam	14. < 1000 - Light Fixture	21. < 1000 - top of ceiling	28. < 1000 - Light Fixture.	7.	14.

Survey Conducted for. electricians removal of electrical components in overhead For Museum structures removal - Bldg 701 NE 110' Drop ceiling

COPY

SURVEYED BY: Kenneth Krupp 6/4/99 Signature/date

REVIEWED BY: [signature] 6-7-99 Signature/date RM 6/9/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: 110' NE overhead DATE/TIME: 6/4/99 @ 1030 RWP #: 99-111

INSTRUMENTS, MODEL / SERIAL #: Lud 177-61 # 133320

CONTAMINATION CONTINUATION SHEET

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B–γ α

29.	<1000 top of celing	52.	N/A	75.	N/A
30.	<1000 top of wood beam	53.		76.	
31.	N/A	54.		77.	
32.		55.		78.	
33.		56.		79.	
34.		57.		80.	
35.		58.		81.	
36.		59.		82.	
37.		60.		83.	
38.		61.		84.	
39.		62.		85.	
40.		63.		86.	
41.		64.		87.	
42.		65.		88.	
43.		66.		89.	
44.		67.		90.	
45.		68.		91.	
46.		69.		92.	
47.		70.		93.	
48.		71.		94.	
49.		72.		95.	
50.		73.		96.	
51.		74.		97.	

Copy

SURVEYED BY: [signature] 6/4/99 Signature/date

REVIEWED BY: [signature] 6-7-99 Signature/date

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: Museum electrical Components DATE/TIME: 6/2/99 @ 0930 RWP #: 990420-7

INSTRUMENTS, MODEL / SERIAL #: Tennelec # ~~[illegible]~~ # 42212 CD 10/14/99

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	nCi/cc	%DAC
GENERAL AREA	↓	N/A →	→	→

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

99-107

Page 1 of 2

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ α) Please See Results Attached

1.		8.		15.		22.	
2.		9.		16.		23.	
3.	N	10.		17.		24.	
4.		11.		18.		25.	
5.	A	12.		19.		26.	
6.		13.		20.		27.	
7.		14.		21.		28.	

MASSLINN SURVEY RESULTS (DPM/LAS)

1.	N/A	8.	N/A
2.		9.	
3.		10.	
4.		11.	
5.		12.	
6.		13.	
7.		14.	

Smears of Electrical Components & Fixtures taken from Museum walls on Elevations 143', 133, 127', 118 & 114'

Direct frisk of all above components; Results ≃ Bkg ≃ 40-60 cpm

COPY

SURVEYED BY: [signature] 6/2/99 Signature/date REVIEWED BY: [signature] 6-7-99 [signature] 6/9/99 Signature/date

Bag

LB5100-W Low Background Counting System – Smear Analysis #99-107

#42212 00 10/16/99

Date: 6/2/99
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME00110.XLD
Batch Ended: 6/2/99 9:31
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 200.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1327.5

Application Revision: 2.1.4
Application Version: Standard

Alpha efficiency log file: PU239AB
Alpha Efficiency: 18.94%
Alpha to Beta Crosstalk: 6.46%
Alpha Background (CPM): 0.039
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 26.99%
Beta into Alpha Crosstalk: 0.20%
Beta Background (CPM): 1.43
Beta Correction Factor: 1.000

Batch ID: 701-ELECTRICAL COMP.-MUSEUM

Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	DPM	1σ	flags	MDA	DPM	1σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	5.074	5.28	<AL	17.72	-1.59	3.71	<MDA	24.61	1.00	0.961	-0.43	6/2/99 9:21
2	5.074	5.28	<AL	17.72	-1.59	3.71	<MDA	24.61	1.00	0.961	-0.43	6/2/99 9:22
3	-0.206	5.28	<MDA	17.72	-5.30	3.71	<MDA	24.61	1.00	-0.039	-1.43	6/2/99 9:23
4	-0.206	5.28	<MDA	17.72	-1.59	3.71	<MDA	24.61	1.00	-0.039	-0.43	6/2/99 9:24
5	-0.206	5.28	<MDA	17.72	-1.59	3.71	<MDA	24.61	1.00	-0.039	-0.43	6/2/99 9:26
6	5.074	5.28	<AL	17.72	5.82	6.42	<MDA	24.61	1.00	0.961	1.57	6/2/99 9:27
7	-0.206	5.28	<MDA	17.72	13.23	8.29	<AL	24.61	1.00	-0.039	3.57	6/2/99 9:28
8	-0.206	5.28	<MDA	17.72	13.23	8.29	<AL	24.61	1.00	-0.039	3.57	6/2/99 9:29
9	-0.206	5.28	<MDA	17.72	-1.59	3.71	<MDA	24.61	1.00	-0.039	-0.43	6/2/99 9:30
10	-0.206	5.28	<MDA	17.72	2.11	5.24	<MDA	24.61	1.00	-0.039	0.57	6/2/99 9:31

Reviewed 6/2/99

COPY

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: 110' E.S. de Rm 5A Closet Wall DATE/TIME: 4/28/99 @ 0920 RWP #: N/A

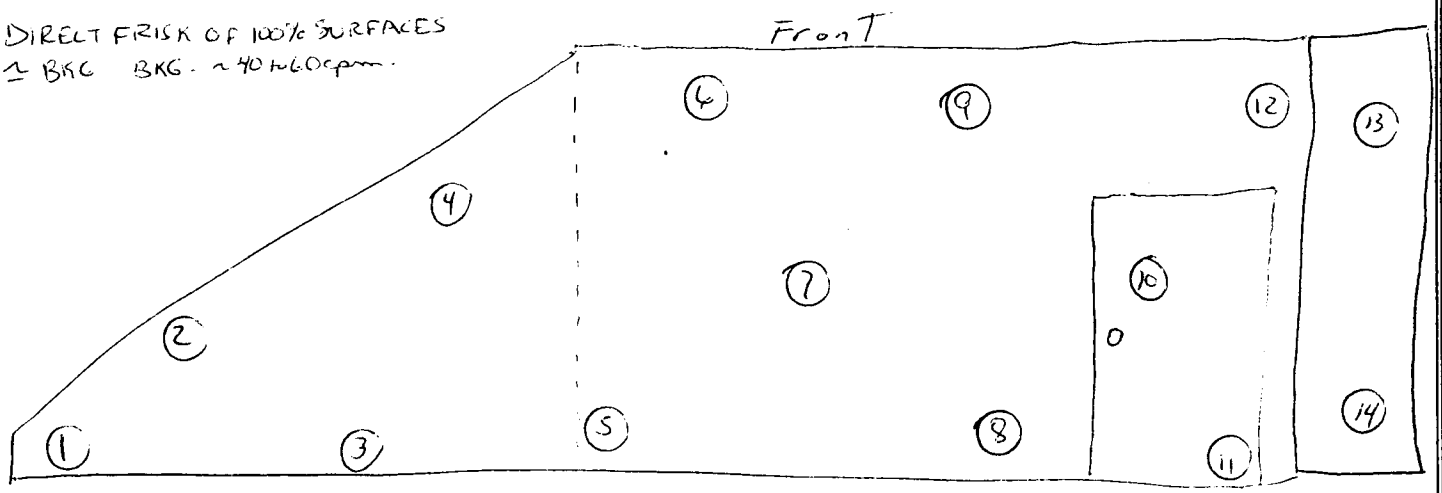
INSTRUMENTS, MODEL / SERIAL #: LUD 3 50545 CO 2/8/00 TENNELEC

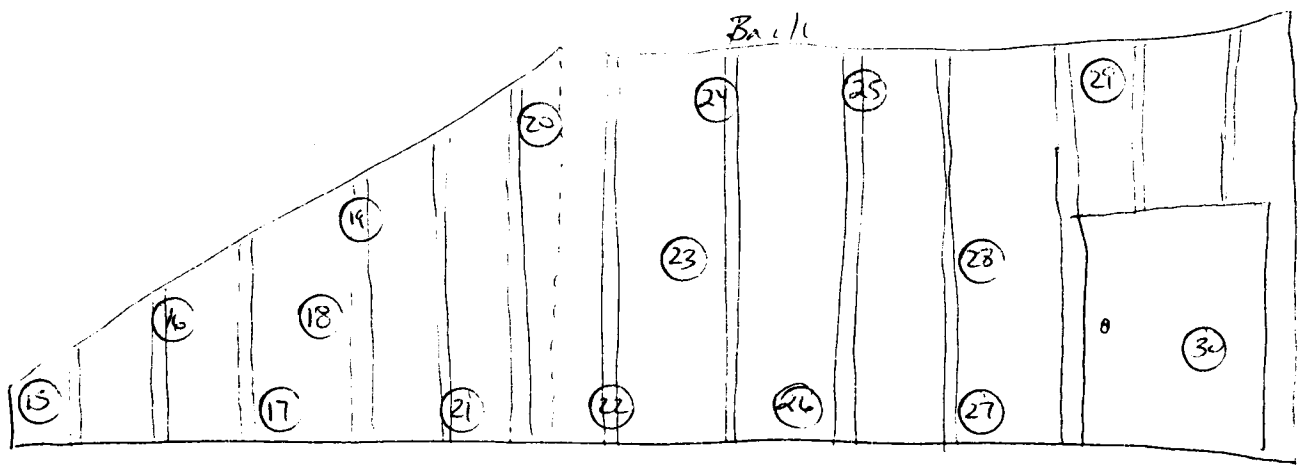
DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: ○ SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA		N/A			#99-79

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ α) SEE ATTACHED PRINTOUT FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

N/A

NOTE: DIRECT FRISK OF 100% SURFACES
≥ BKG BKG. ~ 40 to 60 cpm.





COPY

SURVEYED BY: [signature] 4/28/99 Signature/date REVIEWED BY: [signature] 5/7/99 Signature/date

LB5100-W Low Background Counting System -- Smear Analysis #99-79

#092286 ca 2119105

Date: 5/3/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B000.XLD
Batch Ended: 5/3/1999 11:04
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-110'EAST RMSA CLOSET

E1-326

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.741	4.99	<MDA	19.84	15.11	8.43	<AL	23.59	1.10	-0.135	4.00	5/3/1999 10:27
28	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 10:29
29	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:30
30	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 10:31
31	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 10:33
32	-0.741	4.99	<MDA	19.84	18.55	9.10	<AL	23.59	1.10	-0.135	4.91	5/3/1999 10:34
33	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 10:35
34	4.251	4.99	<AL	19.84	-5.49	3.44	<MDA	23.59	1.10	0.774	-1.45	5/3/1999 10:36
35	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:38
36	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 10:39
37	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:40
38	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:41
39	-0.741	4.99	<MDA	19.84	15.11	8.43	<AL	23.59	1.10	-0.135	4.00	5/3/1999 10:43
40	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 10:44
41	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:45
42	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:47
43	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	5/3/1999 10:48
44	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 10:49
45	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 10:50
46	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 10:52
47	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 10:53
48	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 10:54
49	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 10:55
50	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	5/3/1999 10:57
51	-0.741	4.99	<MDA	19.84	18.55	9.10	<AL	23.59	1.10	-0.135	4.91	5/3/1999 10:58
52	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	5/3/1999 10:59

COPY

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-79

#092286 CD 2/19/00

Date: 5/3/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B000.XLD
Batch Ended: 5/3/1999 11:04
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Batch ID: 701-110'EAST RMSA CLOSET

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

27-30
26

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
52	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 11:00
54	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	5/3/1999 11:02
55	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 11:03
56	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 11:04

Reviewed: [signature] 5/3/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

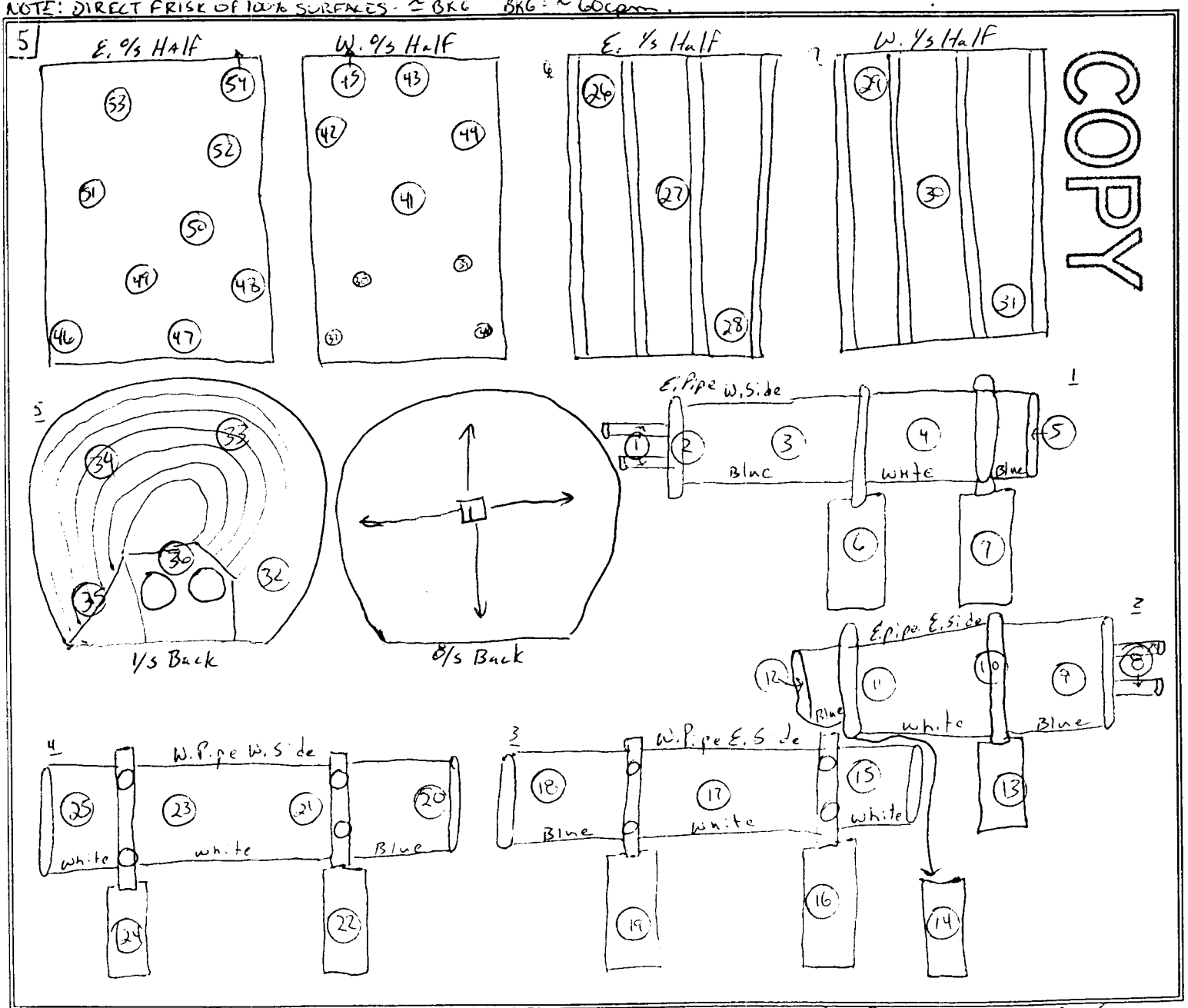
BLDG #: 701 LOCATION: 143' Accelerator Display DATE/TIME: 4/28/99 0830 RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD.3 # 50545 CO 2/8/00 TENNELEC #

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION	☐ MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	uCi/cc	%DAC	XXX Y ZZZ	XXX = CONTACT READING ZZZ = READING @ 30 Cm Y = RADIATION TYPE
GENERAL AREA		N/A				#99-78

SMEAR SURVEY RESULTS (DPM/100 cm²)				MASSLINN SURVEY RESULTS (DPM/LAS)	
^{3}H (B-γ) α SEE ATTACHED PRINTOUT FOR RESULTS					
1. N/A	8.	15.	22.	1. <1K	8.
2.	9.	16.	23.	2.	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

NOTE: DIRECT FRISK OF 100% SURFACES - ≈ BKG BKG: ~ 60cpm.



SURVEYED BY: [signature] 4/28/99 Signature/date REVIEWED BY: [signature] 5/7/99 Signature/date

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-78

#092286 cp 2/19/00

Date: 5/3/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A001.XLD

Batch Ended: 5/3/1999 13:26

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-143' ACCELERATOR DISP.

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:19
2	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	5/3/1999 12:20
3	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	5/3/1999 12:21
4	-0.741	4.99	<MDA	19.84	18.55	9.10	<AL	23.59	1.10	-0.135	4.91	5/3/1999 12:22
5	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:24
6	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:25
7	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 12:26
8	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	5/3/1999 12:27
9	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:29
10	9.244	7.07	At AL	19.84	11.68	7.69	<AL	23.59	1.10	1.683	3.09	5/3/1999 12:30
11	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:31
12	4.251	4.99	<AL	19.84	15.11	8.43	<AL	23.59	1.10	0.774	4.00	5/3/1999 12:32
13	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:34
14	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:35
95	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:36
16	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	5/3/1999 12:38
17	-0.741	4.99	<MDA	19.84	18.55	9.10	<AL	23.59	1.10	-0.135	4.91	5/3/1999 12:39
18	9.244	7.07	At AL	19.84	18.55	9.10	<AL	23.59	1.10	1.683	4.91	5/3/1999 12:40
19	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:41
20	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:43
21	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	5/3/1999 12:44
22	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 12:45
23	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 12:46
24	4.251	4.99	<AL	19.84	-5.49	3.44	<MDA	23.59	1.10	0.774	-1.45	5/3/1999 12:48
25	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:49
26	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:50

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-78

E092280 CO 5/19/00

Date: 5/3/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A001.XLD
Batch Ended: 5/3/1999 13:26
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-143' ACCELERATOR DISP.

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:51
28	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 12:53
29	-0.741	4.99	<MDA	19.84	18.55	9.10	<AL	23.59	1.10	-0.135	4.91	5/3/1999 12:54
30	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 12:55
31	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	5/3/1999 12:57
32	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	5/3/1999 12:58
33	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 12:59
34	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 13:00
35	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 13:02
36	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	5/3/1999 13:03
37	4.251	4.99	<AL	19.84	42.59	12.91	<AL	23.59	1.10	0.774	11.27	5/3/1999 13:04
38	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	5/3/1999 13:05
39	4.251	4.99	<AL	19.84	39.15	12.43	<AL	23.59	1.10	0.774	10.36	5/3/1999 13:07
40	4.251	4.99	<AL	19.84	25.42	10.33	<AL	23.59	1.10	0.774	6.73	5/3/1999 13:08
41	4.251	4.99	<AL	19.84	11.68	7.69	<AL	23.59	1.10	0.774	3.09	5/3/1999 13:09
42	-0.741	4.99	<MDA	19.84	21.98	9.74	<AL	23.59	1.10	-0.135	5.82	5/3/1999 13:11
43	-0.741	4.99	<MDA	19.84	21.98	9.74	<AL	23.59	1.10	-0.135	5.82	5/3/1999 13:12
44	-0.741	4.99	<MDA	19.84	32.29	11.43	<AL	23.59	1.10	-0.135	8.55	5/3/1999 13:13
45	9.244	7.07	At AL	19.84	49.46	13.81	<AL	23.59	1.10	1.683	13.09	5/3/1999 13:14
46	9.244	7.07	At AL	19.84	32.29	11.43	<AL	23.59	1.10	1.683	8.55	5/3/1999 13:16
47	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 13:17
48	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	5/3/1999 13:18
49	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	5/3/1999 13:19
50	-0.741	4.99	<MDA	19.84	21.98	9.74	<AL	23.59	1.10	-0.135	5.82	5/3/1999 13:21
51	9.244	7.07	At AL	19.84	32.29	11.43	<AL	23.59	1.10	1.683	8.55	5/3/1999 13:22
52	9.244	7.07	At AL	19.84	28.85	10.89	<AL	23.59	1.10	1.683	7.64	5/3/1999 13:23
53	4.251	4.99	<AL	19.84	21.98	9.74	<AL	23.59	1.10	0.774	5.82	5/3/1999 13:25
54	-0.741	4.99	<MDA	19.84	35.72	11.94	<AL	23.59	1.10	-0.135	9.46	5/3/1999 13:26

Reviewed: BHU 5/3/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: 143' MISC. PIECES DATE/TIME: 4/20/99 @ 1100 RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LWD 3 # 70067 CD 2/17/00 TENNELEC # 092286 CD 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA		N/A	→	

LEGEND: O SMEAR SURVEY LOCATION O MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

99-71

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H β-γ α SEE ATTACHED FOR RESULTS

1.	8.	15.	22.
2.	9.	16.	23.
3. N/A	10. N/A	17. N/A	24. N/A
4.	11.	18.	25.
5.	12.	19.	26.
6.	13.	20.	27.
7.	14.	21.	28.

MASSLINN SURVEY RESULTS (DPM/LAS)

1.	8.
2.	9.
3. N/A	10.
4.	11.
5.	12.
6.	13.
7.	14.

6

↓SMEARS↓

5 Pieces of Wood # 1-10

1 Small Box # 11-12.

DIRECT FRISK OF 100% SURFACES ≃ BKG BKG: ~6cpm

5 pieces of Sheet Rock # 13-17

4 pieces of METAL FRAMING # 18-20

COPY

1 Picture of Particles # 21-25
3x6 PARTITION

SURVEYED BY: [signature] 4/20/99 Signature/date REVIEWED BY: [signature] 4/23/99 Signature/date

Form FS-1000.1 FS-SOP-1000, rev 1, attch 8.2, page 11 File Code: HP3120

COPY

LB5100-W Low Background Counting System -- Smear Analysis # 99-71

092286 CO 2/19/00

Date: 4/21/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1D001.XLD

Batch Ended: ############

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-143' MISC. PCS.

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
#1-25	29	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:43
	30	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 08:45
	31	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 08:46
	32	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:47
	33	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:48
	34	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/21/1999 08:50
	35	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/21/1999 08:51
	36	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:52
	37	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 08:53
#10	38	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:55
	39	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:56
	40	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/21/1999 08:57
	41	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 08:59
	42	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 09:00
	43	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 09:01
	44	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/21/1999 09:02
	45	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/21/1999 09:04
	46	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 09:05
	47	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 09:06
#20	48	4.251	4.99	<AL	19.84	-5.49	3.44	<MDA	23.59	1.10	0.774	-1.45	4/21/1999 09:07
	49	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	4/21/1999 09:09
	50	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 09:10
	51	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 09:11
	52	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 09:13
#25	53	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 09:14

Reviewed: SHU 4/21/99

RMM 4/23/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY: ☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: Stairwell Wall 110' N.E by WWII Display DATE/TIME: 4/20/99 @ 1000 RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD3 # 70067 CO 2/17/00 TENNELEC # 092286 CO 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA		N/A	→	→

LEGEND: O SMEAR SURVEY LOCATION ▫ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

#99-72

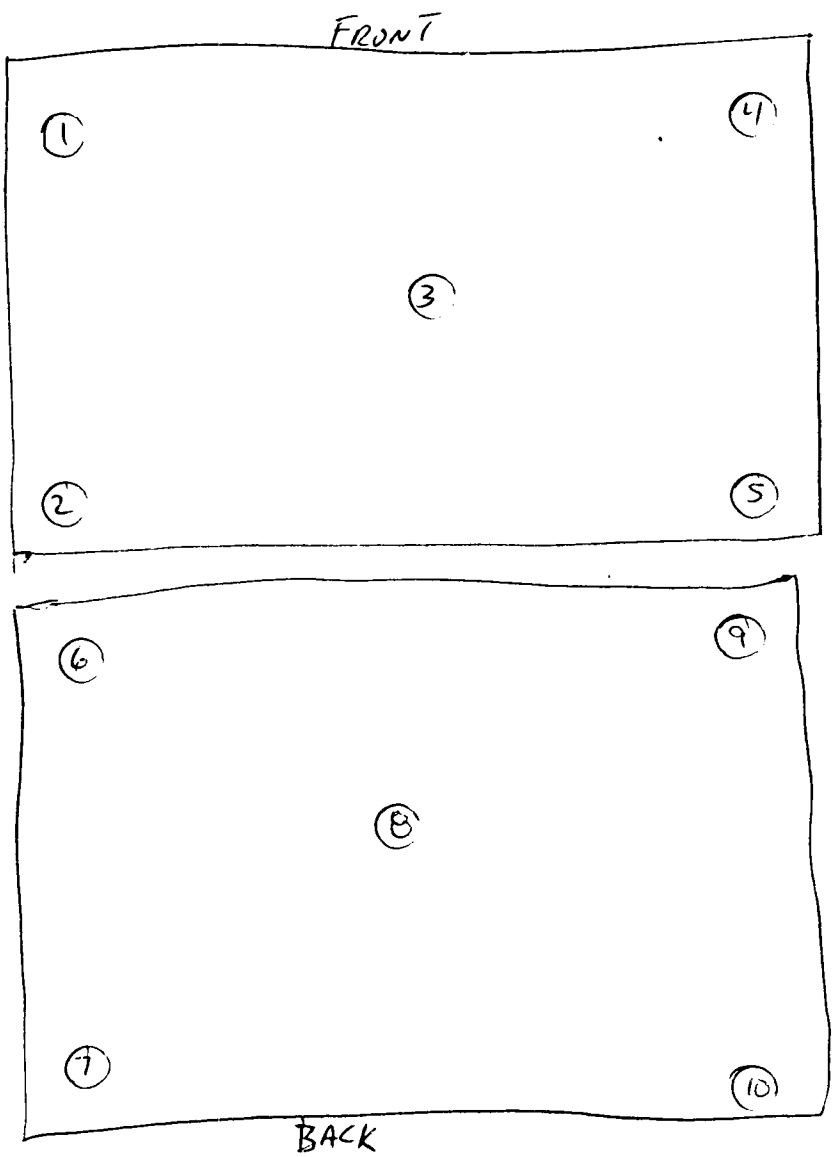
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ α) SEE ATTACHED FOR RESULTS

1.	8.	15.	22.
2.	9.	16.	23.
3. N/A	10. N/A	17. N/A	24. N/A
4.	11.	18.	25.
5.	12.	19.	26.
6.	13.	20.	27.
7.	14.	21.	28.

MASSLINN SURVEY RESULTS (DPM/LAS)

1.	8.
2. N/A	9.
3.	10.
4.	11.
5.	12.
6.	13.
7.	14.

3



DIRECT FRISK OF 100% SURFACE ≃ BKG · BKG = 50 cpm

COPY

SURVEYED BY: [signature] 4/20/99 Signature/date

REVIEWED BY: [signature] 4/23/99 Signature/date

Form FS-1000.1 FS-SOP-1000, rev 1, attch 8.2, page 11 File Code: HP3120

LB5100-W Low Background Counting System -- Smear Analysis #99-72

#092286 CD 2/19/00

Date: 4/21/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1B017.XLD

Batch Ended: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-110'NW WALL BY WWII DISP

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
#1-10	11	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:20
	12	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:21
	13	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:23
	14	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:24
#5	95	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/21/1999 08:25
	16	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:27
	17	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:28
	18	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/21/1999 08:29
	19	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:30
#10	20	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:32

Reviewed - BHW 4/21/99

BMH 4/23/99

COPY

BLDG #: 701 LOCATION: (10' ELEV, NW END DATE/TIME: 4/13/99 @ 0900 ☐ ROUTINE ☑ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUDS #50545 CO 2/18/00 TENNELEC #092286 CO 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	% DAC
GENERAL AREA		N/A	→	→

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

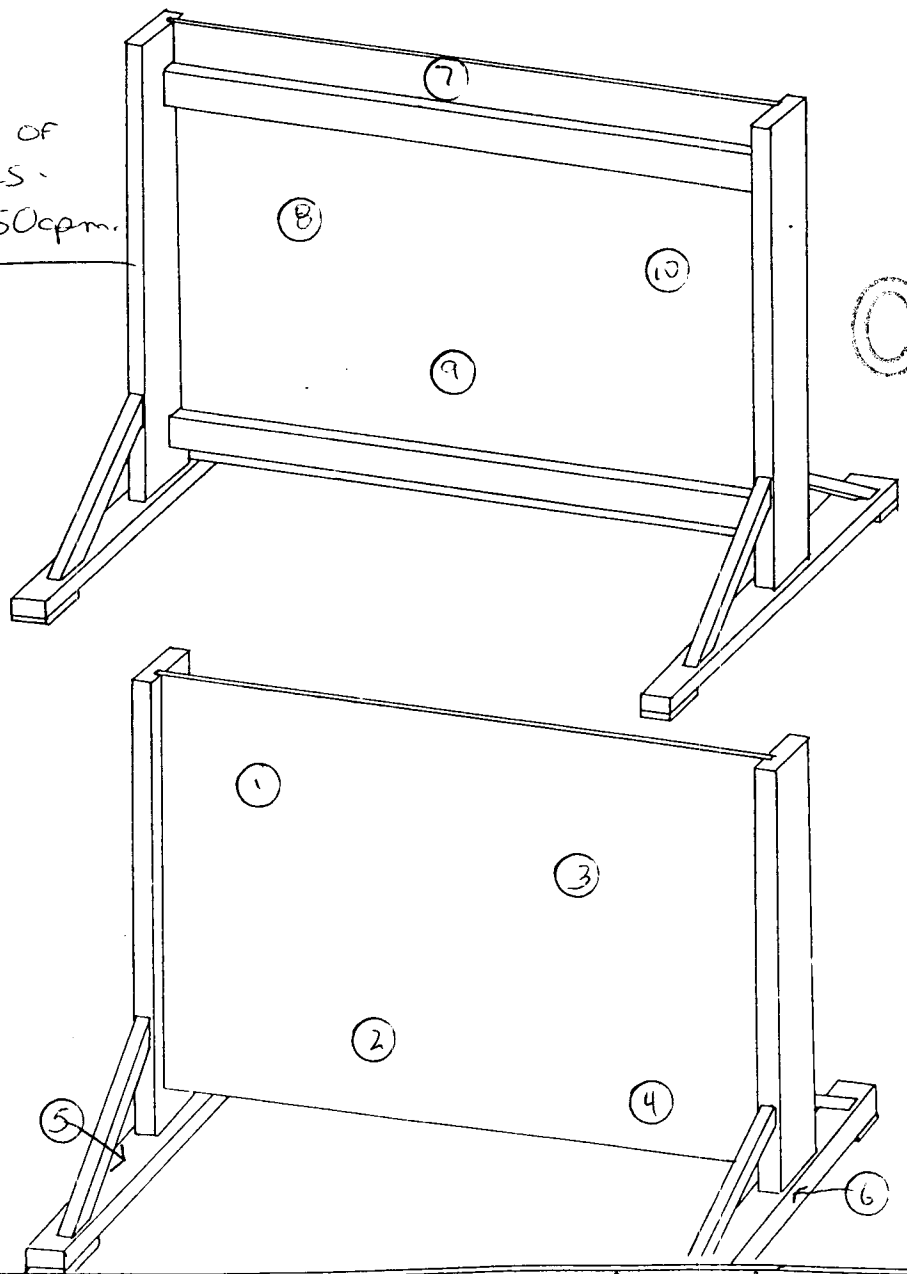
XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

#99-66 Page 1 of 2

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3. N/A	10. N/A	17. N/A	24. N/A	3. N/A	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

"C"

DIRECT FRISK OF 100% SURFACES. ≈ BKG - BKG = 50cpm.



COPY

SURVEYED BY: [signature] 4/13/99 Signature/date REVIEWED BY: [signature] 4/19/99 Signature/date

BLDG #: 701 LOCATION: 110' ELEV. NW END DATE/TIME: 4/13/99 @ 0900 ☐ ROUTINE ☑ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 #50545 CD 2/8/00 TENNELEC #092286 CD 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA		N/A	→	

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

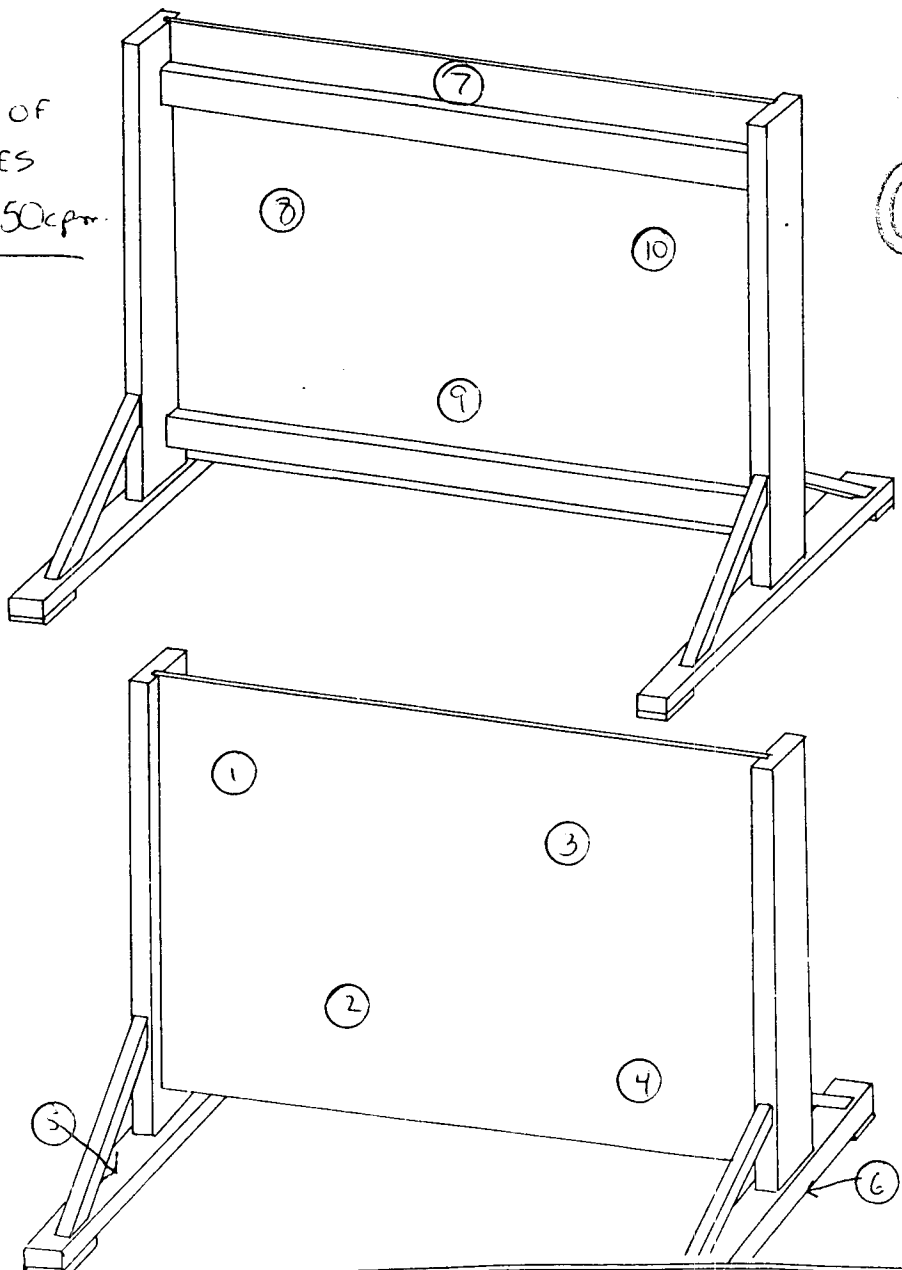
#99-66

Page #2 of 2

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) α SEE PRINTOUT FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2. N/A	9. N/A
3. N/A	10. N/A	17. N/A	24. N/A	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

"D"

DIRECT FRISK OF 100% SURFACES ≃ BKG - BKG = 50cpm



COPY

SURVEYED BY: [signature] 4/13/99 Signature/date REVIEWED BY: RP Maltenberg 4/19/99 Signature/date

COPY

LB5100-W Low Background Counting System -- Smear Analysis #97-66
#092286 002119(00)

Date: 4/13/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A014.XLD
Batch Ended: ############
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5
Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-110' NW-PARTITION 'C'

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	4.251	4.99	<AL	19.84	-2.06	3.44	<MDA	23.59	1.10	0.774	-0.54	4/13/1999 12:52
2	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/13/1999 12:54
3	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/13/1999 12:55
4	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 12:56
5	4.251	4.99	<AL	19.84	18.55	9.10	<AL	23.59	1.10	0.774	4.91	4/13/1999 12:58
6	4.251	4.99	<AL	19.84	4.81	5.95	<MDA	23.59	1.10	0.774	1.27	4/13/1999 12:59
7	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/13/1999 13:00
8	4.251	4.99	<AL	19.84	28.85	10.89	<AL	23.59	1.10	0.774	7.64	4/13/1999 13:01
9	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 13:03
10	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	4/13/1999 13:04

Reviewed: BTH 4/13/99

RJM 4/19/99

COPY

#99-61

LB5100-W Low Background Counting System -- Smear Analysis

#092286 00 2/19/00

Date: 4/13/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1SME1B009 XLD

Batch Ended: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-11D NW-PARTITION 'D'

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
#1-10	11	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/13/1999 13:05
	12	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 13:06
	13	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/13/1999 13:08
	14	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 13:09
	95	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/13/1999 13:10
	16	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	4/13/1999 13:12
	17	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 13:13
	18	4.251	4.99	<AL	19.84	18.55	9.10	<AL	23.59	1.10	0.774	4.91	4/13/1999 13:14
	19	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/13/1999 13:15
	20	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 13:17

Reviewed RHM 4/13/99

RAM 4/19/99

REASON FOR SURVEY

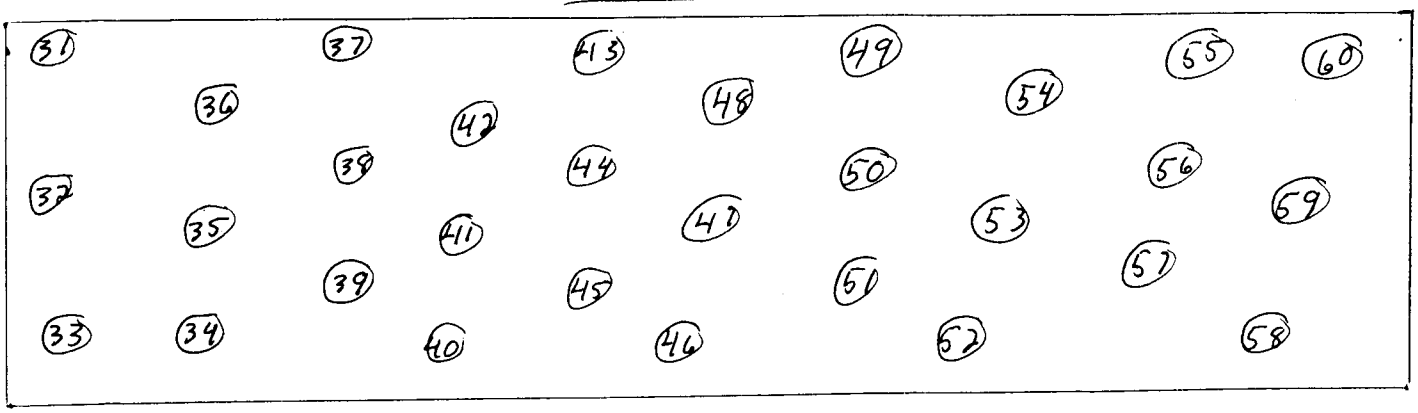
BLDG #: 701 LOCATION: 110' WEST SIDE BAY WINDOW DATE/TIME: 4/6/99@ 1100 ROUTINE ☐ SPECIAL ☑ RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LUD 3 #50545 CO 218100 DISPLAY TENNELEC # 092436 CO 9/12/99 PAGE 1 of 1

~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ DIRECT FRISK		TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE — #99-63
GENERAL AREA	N/A	N/A	N/A	N/A	

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2. N/A	9. N/A	16. N/A	23. N/A	2. N/A	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

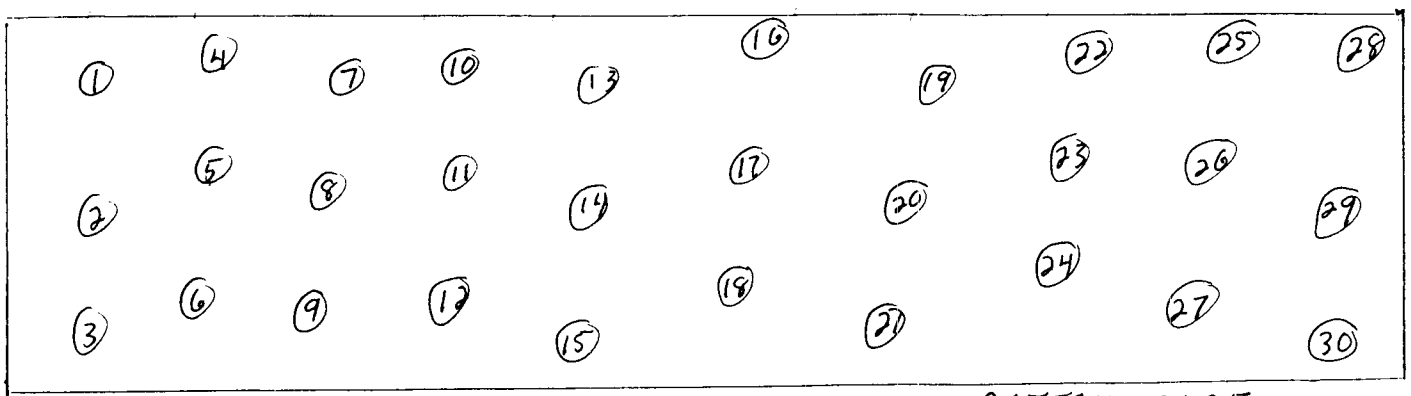
TOP SIDE



DIRECT FRISK OF 100% SURFACES: ≈ BKG - BKG: 60cpm

W S N E

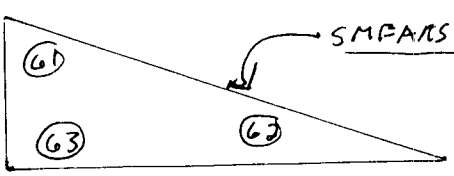
COPY



BOTTOM SIDE

W S N E

END PIECE →



SMEARS 64, 65 + 66 ON BACK

SURVEYED BY: [signature] 4/5/99 Signature/date REVIEWED BY: [signature] 4/12/99 Signature/date

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-63

#092436 09/12/99

Date: 4/6/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SMEAR0096.XLD
Batch Ended: 4/6/1999 15:14
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1402.5

Application Revision: 8
Application Version: Standard

Alpha efficiency log file: bu239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.23%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ab
Beta Efficiency: 26.00%
Beta air to Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701 W.BAY WINDOW DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	4/6/1999 12:53
2	2.606	2.77	<A_	3.74	2.10	3.33	<MDA	13.96	2.00	0.470	0.55	4/6/1999 12:55
3	-0.166	2.77	<MDA	3.74	19.64	5.78	<A_	13.96	2.00	-0.030	3.55	4/6/1999 12:57
4	-0.166	2.77	<MDA	3.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	4/6/1999 12:59
5	-0.166	2.77	<MDA	3.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	4/6/1999 13:02
6	-0.166	2.77	<MDA	3.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	4/6/1999 13:04
7	-0.166	2.77	<MDA	3.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	4/6/1999 13:06
8	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 13:09
9	-0.166	2.77	<MDA	3.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	4/6/1999 13:10
10	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 13:13
11	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 13:15
12	-0.166	2.77	<MDA	3.74	9.79	5.09	<A_	13.96	2.00	-0.030	3.55	4/6/1999 13:17
13	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	4/6/1999 13:19
14	-0.166	2.77	<MDA	3.74	9.79	5.09	<A_	13.96	2.00	-0.030	2.55	4/6/1999 13:21
15	-0.166	2.77	<MDA	3.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	4/6/1999 13:23
16	-0.166	2.77	<MDA	3.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	4/6/1999 13:25
17	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 13:28
18	2.606	2.77	<A_	3.74	2.10	3.33	<MDA	13.96	2.00	0.470	0.55	4/6/1999 13:30
19	-0.166	2.77	<MDA	3.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	4/6/1999 13:32
20	2.606	2.77	<A_	3.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	4/6/1999 13:34
21	2.606	2.77	<A_	3.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	4/6/1999 13:36
22	2.606	2.77	<A_	3.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	4/6/1999 13:38
23	2.606	2.77	<A_	3.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	4/6/1999 13:41
24	-0.166	2.77	<MDA	3.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	4/6/1999 13:43
25	2.606	2.77	<A_	3.74	5.94	4.30	<A_	13.96	2.00	0.470	1.55	4/6/1999 13:45
26	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 13:47

COPY #99-63

LB5100-W Low Background Counting System -- Smear Analysis
#092436 cp 9/12/99

Date: 4/6/1999
Counting Unit: 1
Data file name: C:\LBXL\UNIT1\SME1D093.XLD
Batch Ended: 4/6/1999 15:14
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1402.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: bu239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.23%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: c99ab
Beta Efficiency: 26.00%
Beta into Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701 W BAY WINDOW DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	4/6/1999 13:49
28	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	4/6/1999 13:51
29	2.606	2.77	<AL	9.74	13.64	5.73	<AL	13.96	2.00	0.470	3.55	4/6/1999 13:54
30	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 13:56
31	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	4/6/1999 13:58
32	2.606	2.77	<AL	9.74	13.64	5.73	<AL	13.96	2.00	0.470	3.55	4/6/1999 14:00
33	2.606	2.77	<AL	9.74	25.18	7.46	<AL	13.96	2.00	0.470	6.55	4/6/1999 14:02
34	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	4/6/1999 14:05
35	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	4/6/1999 14:07
36	2.606	2.77	<AL	9.74	11.71	5.44	<AL	13.96	2.00	0.470	3.05	4/6/1999 14:09
37	5.378	3.92	AL/AL	9.74	7.87	4.71	<AL	13.96	2.00	0.970	2.05	4/6/1999 14:11
38	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	4/6/1999 14:13
39	8.150	4.90	AL/AL	9.74	4.02	3.85	<MDA	13.96	2.00	1.470	1.05	4/6/1999 14:15
40	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	4/6/1999 14:17
41	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	4/6/1999 14:20
42	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	4/6/1999 14:22
43	2.606	2.77	<AL	9.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	4/6/1999 14:24
44	2.606	2.77	<AL	9.74	19.41	6.67	<AL	13.96	2.00	0.470	5.05	4/6/1999 14:26
45	-0.166	2.77	<MDA	9.74	23.25	7.21	<AL	13.96	2.00	-0.030	6.05	4/6/1999 14:28
46	-0.166	2.77	<MDA	9.74	15.56	6.09	<AL	13.96	2.00	-0.030	4.05	4/6/1999 14:30
47	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	4/6/1999 14:33
48	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	4/6/1999 14:35
49	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	4/6/1999 14:37
50	5.378	3.92	AL/AL	9.74	19.41	6.67	<AL	13.96	2.00	0.970	5.05	4/6/1999 14:39
51	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	4/6/1999 14:41
52	-0.166	2.77	<MDA	9.74	17.48	6.39	<AL	13.96	2.00	-0.030	4.55	4/6/1999 14:44
53	2.606	2.77	<AL	9.74	15.56	6.09	<AL	13.96	2.00	0.470	4.05	4/6/1999 14:46
54	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	4/6/1999 14:48

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-63
#092436 co 9/12/99

Date: 4/6/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SMEAR0098.XLD
Batch Ended: 4/6/1999 15:14
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flag: 95.00%
High Voltage Setting: 1402.5

Application Revision: 8
Application Version: Standard

Alpha efficiency log file: bu83ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.23%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: be93al
Beta Efficiency: 26.00%
Beta to Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701 W.BAY WINDOW DISPLAY

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
55	-0.1663	2.77	<MDA	9.74	13.64	5.73	<A_	13.96	2.00	-0.030	3.55	4/6/1999 14:54
56	-0.1663	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	4/6/1999 14:55
57	-0.1663	2.77	<MDA	9.74	15.56	6.09	<A_	13.96	2.00	-0.030	4.05	4/6/1999 14:56
58	-0.1663	2.77	<MDA	9.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	4/6/1999 14:56
59	-0.1663	2.77	<MDA	9.74	9.79	5.03	<A_	13.96	2.00	-0.030	2.55	4/6/1999 14:57
60	-0.1663	2.77	<MDA	9.74	13.64	5.73	<A_	13.96	2.00	-0.030	3.55	4/6/1999 15:01
61	-0.1663	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	4/6/1999 15:02
62	-0.1663	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	4/6/1999 15:03
63	-0.1663	2.77	<MDA	9.74	-3.67	1.93	<MDA	13.96	2.00	-0.030	-0.95	4/6/1999 15:07
64	-0.1663	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	4/6/1999 15:08
65	2.5066	2.77	<A_	9.74	-1.75	1.93	<MDA	13.96	2.00	0.470	-0.45	4/6/1999 15:12
66	2.5066	2.77	<A_	9.74	-1.75	1.93	<MDA	13.96	2.00	0.470	-0.45	4/6/1999 15:14

Reviewed: PW 4/6/99

RPM 4/12/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY

BLDG #: 701 LOCATION: 110' WEST STAIRS TO BAY WINDOW DATE/TIME: 4/6/99 0800 ROUTINE ☐ SPECIAL ☑ RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 # 50545 CO 2/8/00 TENNELEC # 092286 CO 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA		N/A		

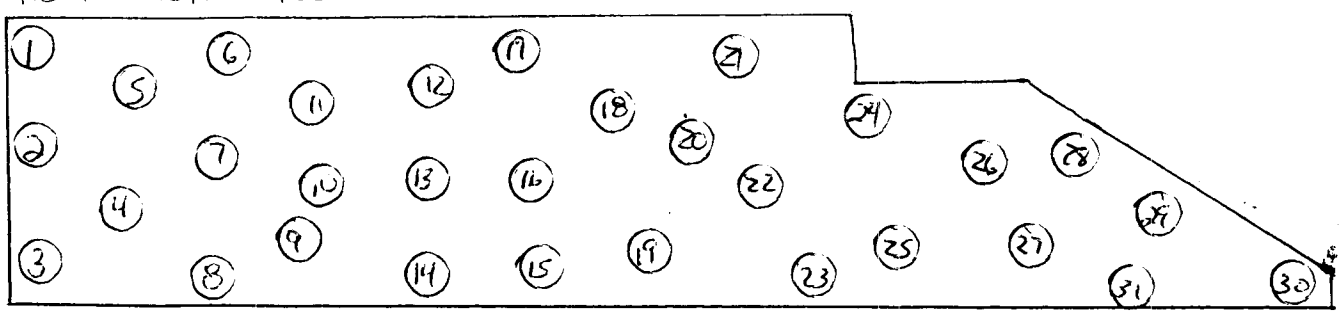
LEGEND: ○ SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

#99-62

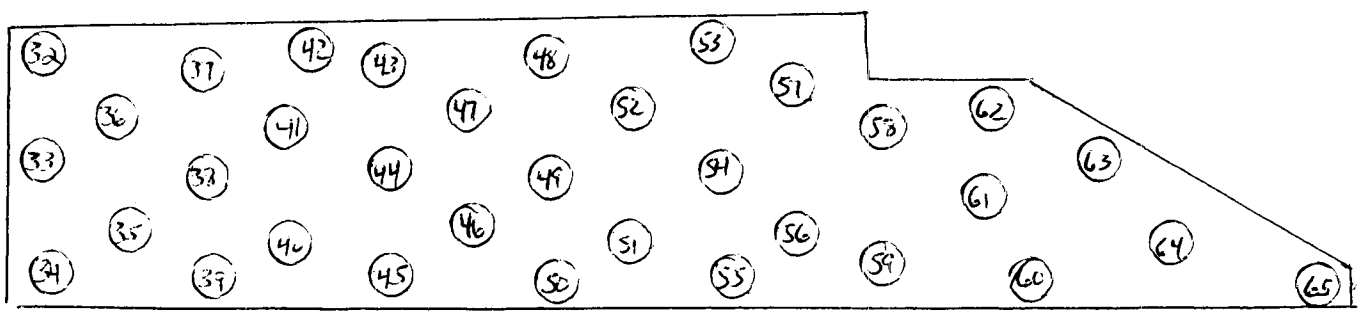
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) α SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2. N/A	9. N/A	16. N/A	23. N/A	2. N/A	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

DIRECT FRISK OF 100% SURFACE: ≃ BKG BKG = 60-70 cpm



Front

COPY



Back Side

SURVEYED BY: [signature] 4/6/99 Signature/date REVIEWED BY: [signature] 4/12/99 Signature/date

COPY

LB5100-W Low Background Counting System -- Smear Analysis # 99-62
092236 co 2/19/00

Date: 4/6/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A002.XLD
Batch Ended: 4/6/1999 13:47
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-WEST STAIRS TO BAY WINDOW

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/6/1999 12:25
2	4.251	4.99	<AL	19.84	-2.06	3.44	<MDA	23.59	1.10	0.774	-0.54	4/6/1999 12:27
3	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 12:28
4	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/6/1999 12:29
5	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/6/1999 12:30
6	9.244	7.07	At AL	19.84	-5.49	3.44	<MDA	23.59	1.10	1.683	-1.45	4/6/1999 12:32
7	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 12:33
8	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/6/1999 12:34
9	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 12:36
10	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 12:37
11	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/6/1999 12:38
12	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:39
13	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:41
14	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 12:42
95	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:43
16	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 12:44
17	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:46
18	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 12:47
19	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/6/1999 12:48
20	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 12:50
21	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:51
22	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 12:52
23	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:53
24	4.251	4.99	<AL	19.84	4.81	5.95	<MDA	23.59	1.10	0.774	1.27	4/6/1999 12:55
25	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 12:56
26	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 12:57

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-62

#092286 CO 2199100

Date: 4/6/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A002.XLD

Batch Ended: 4/6/1999 13:47

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-WEST STAIRS TO BAY WINDOW

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 12:58
28	4.251	4.99	<AL	19.84	4.81	5.95	<MDA	23.59	1.10	0.774	1.27	4/6/1999 13:00
29	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 13:01
30	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:02
31	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:04
32	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:05
33	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:06
34	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:07
35	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:09
36	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 13:10
37	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:11
38	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:13
39	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/6/1999 13:14
40	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:15
41	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 13:16
42	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:18
43	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 13:19
44	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 13:20
45	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:21
46	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/6/1999 13:23
47	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:24
48	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:25
49	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:26
50	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 13:28
51	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/6/1999 13:29
52	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:30
53	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:32
54	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 13:33

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-62

#092286 CD 2/19/00

Date: 4/6/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A002.XLD
Batch Ended: 4/6/1999 13:47
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Batch ID: 701-WEST STAIRS TO BAY WINDOW

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
55	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:34
56	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:35
57	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:37
58	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:38
59	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 13:39
60	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:40
61	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/6/1999 13:42
62	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:43
63	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/6/1999 13:44
64	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/6/1999 13:45
65	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/6/1999 13:47

Reviewed: JHU 4/6/99

RCM 4/12/99

REASON FOR SURVEY

BLDG #: 701 LOCATION: ~~127~~ 118' display North DATE/TIME: 4/5/99 1100 ☐ ROUTINE ☑ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 #50545 CO 2/18/00 TENNELEC #092286 CO 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA		N/A		

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

#99-60

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ α) SEE ATTACHED FOR RESULTS

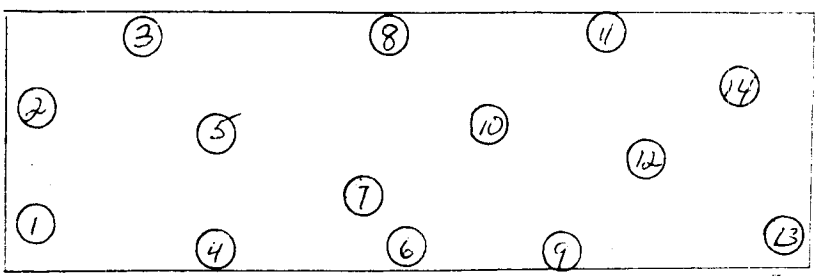
1.	8.	15.	22.
2.	9.	16.	23.
3. N	10. N	17. N	24. N
4.	11.	18.	25.
5. A	12. A	19. A	26. A
6.	13.	20.	27.
7.	14.	21.	28.

MASSLINN SURVEY RESULTS (DPM/LAS)

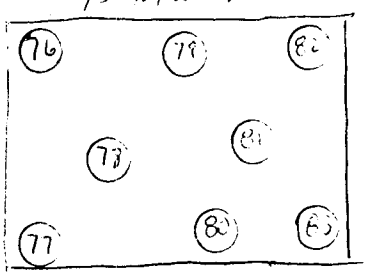
1.	8.
2.	9.
3. N	10.
4.	11.
5.	12. A
6.	13.
7.	14.

DIRECT FRISK OF 100% SURFACES - ≈ BKG = 60 cpm.

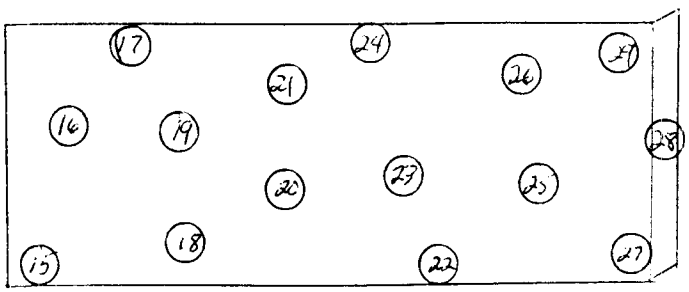
North WALL



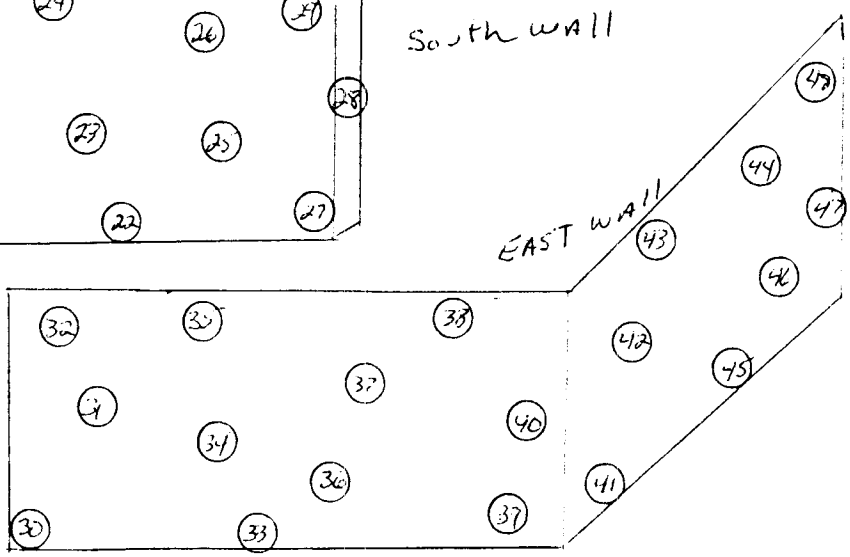
O/S N. Wall 4/20/99 SHW



South WALL

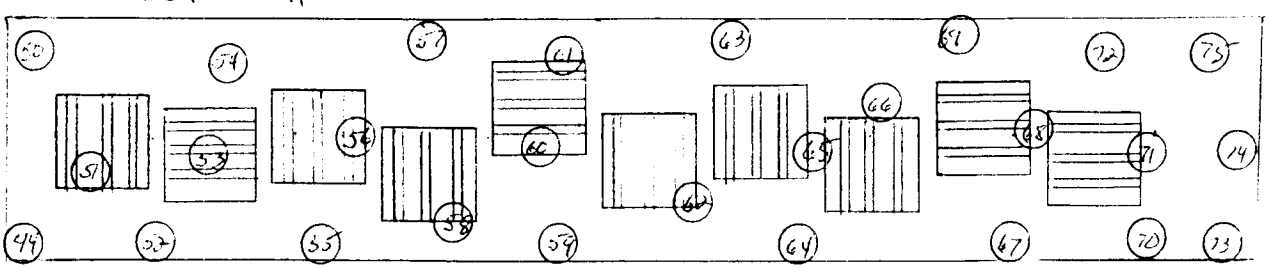


EAST WALL



COPY

WEST WALL



SURVEYED BY: [signature] 4/5/99 Signature/Date REVIEWED BY: [signature] 4/12/99 Signature/Date

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-160

#092286 CO 2119100

Date: 4/5/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A000.XLD

Batch Ended: 4/4/1999 14:25

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-~~127~~ 118 NORTH DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 12:44
2	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 12:45
3	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 12:46
4	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 12:48
5	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 12:49
6	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 12:50
7	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 12:51
8	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 12:53
9	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 12:54
10	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 12:55
11	-0.741	4.99	<MDA	19.84	25.42	10.33	<AL	23.59	1.10	-0.135	6.73	4/4/1999 12:57
12	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 12:58
13	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 12:59
14	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:00
95	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 13:02
16	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 13:03
17	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:04
18	9.244	7.07	At AL	19.84	1.38	4.86	<MDA	23.59	1.10	1.683	0.36	4/4/1999 13:06
19	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 13:07
20	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 13:08
21	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:09
22	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:11
23	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 13:12
25	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:21
26	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:22
27	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:24

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-60
#092286 CO 3/19/00

Date: 4/5/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A000.XLD
Batch Ended: 4/4/1999 14:25
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-~~127~~ 118 NORTH DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
28	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 13:25
29	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 13:26
30	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:27
31	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/4/1999 13:29
32	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:30
33	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:31
34	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:33
35	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 13:34
36	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:35
37	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:36
38	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:38
39	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:39
40	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:40
41	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:41
42	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:43
43	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:44
44	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:45
45	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:47
46	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:48
47	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 13:49
48	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:50
49	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/4/1999 13:52
50	-0.741	4.99	<MDA	19.84	15.11	8.43	<AL	23.59	1.10	-0.135	4.00	4/4/1999 13:53
51	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 13:54
52	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 13:55
53	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 13:57
54	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 13:58
55	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 13:59

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-60

#092286 CD 2119100

Date: 4/5/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A000.XLD

Batch Ended: 4/4/1999 14:25

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-~~127~~ 118' NORTH DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
56	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 14:00
57	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/4/1999 14:02
58	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:03
59	4.251	4.99	<AL	19.84	-2.06	3.44	<MDA	23.59	1.10	0.774	-0.54	4/4/1999 14:04
60	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 14:06
61	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:07
62	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:08
63	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:09
64	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:11
65	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:12
66	9.244	7.07	At AL	19.84	1.38	4.86	<MDA	23.59	1.10	1.683	0.36	4/4/1999 14:13
67	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:14
68	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:16
69	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 14:17
70	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:18
71	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:19
72	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:21
73	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:22
74	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:23
75	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 14:25

Reviewed: [illegible] 4/5/99

[illegible] 4/12/99

COPY

LB5100-W Low Background Counting System -- Smear Analysis #9960

#092286 20 2119100

Date: 4/21/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1C004.XLD

Batch Ended: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-118' O/S NORTH WALL

	Carrier	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Alpha Activity MDA	Beta Activity DPM	Beta Activity σ	Beta Activity flags	Beta Activity MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
#76-83	21	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:33
	22	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 08:34
	23	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	4/21/1999 08:36
	24	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:37
#80	25	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 08:38
	26	4.251	4.99	<AL	19.84	11.68	7.69	<AL	23.59	1.10	0.774	3.09	4/21/1999 08:39
	27	9.244	7.07	At AL	19.84	-2.06	3.44	<MDA	23.59	1.10	1.683	-0.54	4/21/1999 08:41
#83	28	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:42

Reviewed: [illegible] 4/21/99

[illegible] 4/23/99

BLDG #: 701 LOCATION: 110' North WWII Display DATE/TIME: 3-31-99 / 0930 ROUTINE SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: Ind 3 # 50545 C.D. 2-8-00, Tennelec # 092286 C.D. 2-19-00

~~DOSE RATES (HIGHEST)~~ Direct Frisk Results		AIRBORNE CONTAMINATION		
CONTACT	≈ Bkg ≈ 60 cpm	TIME	uCi/cc	%DAC
GENERAL AREA	N/A	N/A	→	→

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

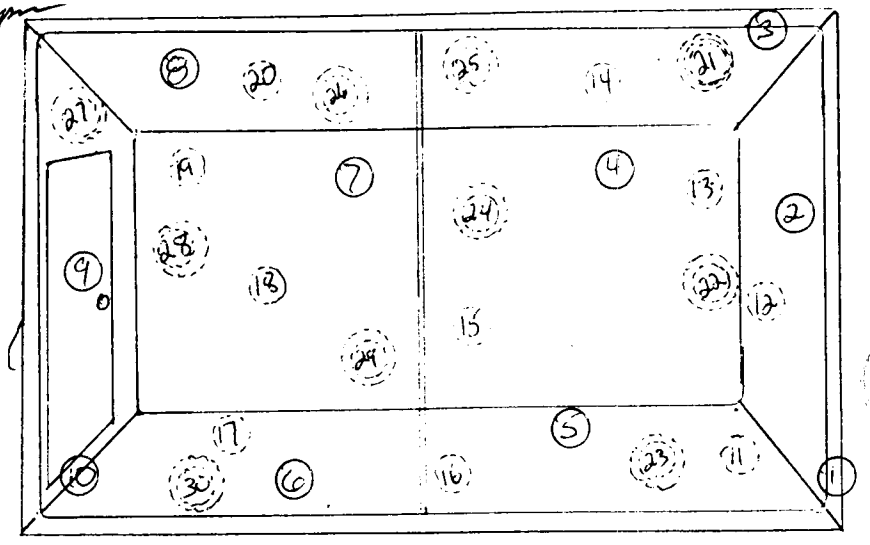
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) (α) See Attached Printout for Results

1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

N/A N/A N/A N/A N/A N/A

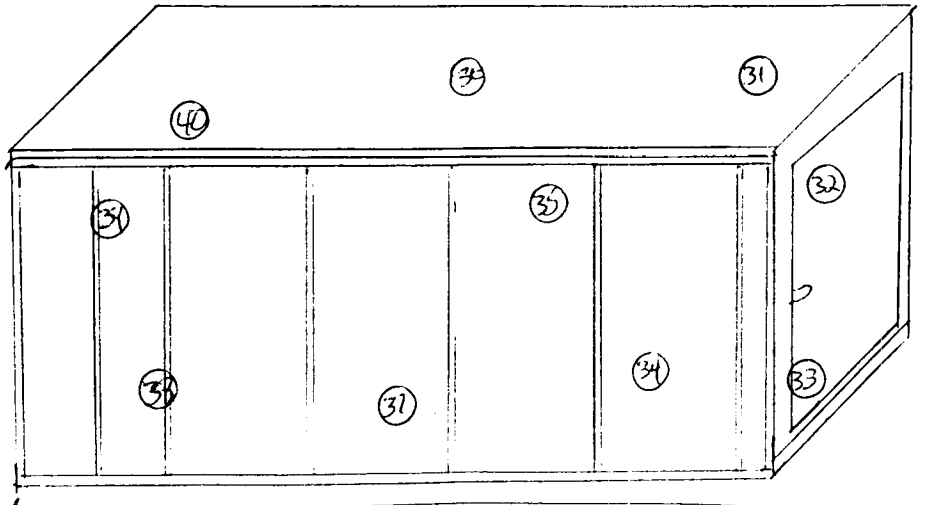
Direct Frisk of 100% of the surfaces
Results ≈ Bkg ≈ 60 cpm

Front



COPY

Back



SURVEYED BY [signature] 3-31-99 Signature/date REVIEWED BY R P Mittenberger Signature/date

LB5100-W Low Background Counting System -- Smear Analysis
092286 C.D. 2-19-00

Date: 3/31/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A081.XLD
Batch Ended: ##########
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.132
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.918
Beta Correction Factor: 1.000

Batch ID: 701-110' N WWII DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/31/1999 08:41
2	4.268	4.99	<AL	19.77	3.06	5.95	<MDA	25.72	1.10	0.777	0.81	3/31/1999 08:42
3	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 08:43
4	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 08:45
5	4.268	4.99	<AL	19.77	6.49	6.87	<MDA	25.72	1.10	0.777	1.72	3/31/1999 08:46
6	4.268	4.99	<AL	19.77	3.06	5.95	<MDA	25.72	1.10	0.777	0.81	3/31/1999 08:47
7	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/31/1999 08:48
8	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 08:50
9	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/31/1999 08:51
10	4.268	4.99	<AL	19.77	-3.81	3.44	<MDA	25.72	1.10	0.777	-1.01	3/31/1999 08:52
11	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 08:53
12	4.268	4.99	<AL	19.77	-3.81	3.44	<MDA	25.72	1.10	0.777	-1.01	3/31/1999 08:55
13	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/31/1999 08:56
14	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/31/1999 08:57
95	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/31/1999 08:59
16	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/31/1999 09:00
17	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:01
18	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/31/1999 09:02
19	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:04
20	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 09:05
21	-0.725	4.99	<MDA	19.77	13.36	8.42	<AL	25.72	1.10	-0.132	3.54	3/31/1999 09:06
22	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/31/1999 09:07
23	4.268	4.99	<AL	19.77	-3.81	3.44	<MDA	25.72	1.10	0.777	-1.01	3/31/1999 09:09
24	4.268	4.99	<AL	19.77	-3.81	3.44	<MDA	25.72	1.10	0.777	-1.01	3/31/1999 09:10
25	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 09:11
26	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:12

OPY

LB5100-W Low Background Counting System -- Smear Analysis

092236 C.D. 2-19-00

Date: 3/31/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A081.XLD

Batch Ended: ############

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.132

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.918

Beta Correction Factor: 1.000

Batch ID: 701-110' N WWII DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	4.268	4.99	<AL	19.77	-7.25	3.44	<MDA	25.72	1.10	0.777	-1.92	3/31/1999 09:14
28	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/31/1999 09:15
29	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:16
30	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/31/1999 09:18
31	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/31/1999 09:19
32	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:20
33	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/31/1999 09:21
34	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 09:23
35	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 09:24
36	-0.725	4.99	<MDA	19.77	33.97	11.94	<AL	25.72	1.10	-0.132	8.99	3/31/1999 09:25
37	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:27
38	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/31/1999 09:28
39	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/31/1999 09:29
40	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/31/1999 09:30

COPY

Reviewed 3-31-99 @ 1000

RPM 3/31/99

REASON FOR SURVEY

BLDG #: 701 LOCATION: 123' ELEV. EAST SIDE DATE/TIME: 3/31/99 0900 ☐ ROUTINE ☑ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LD 3 / 50545 CD 2/8/00 PAGE 1 of 3
TENNELEC #092436 CD 9/12/99

~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ DIRECT FRISK	≈ BKG 60cpm	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA N/A					#99-54

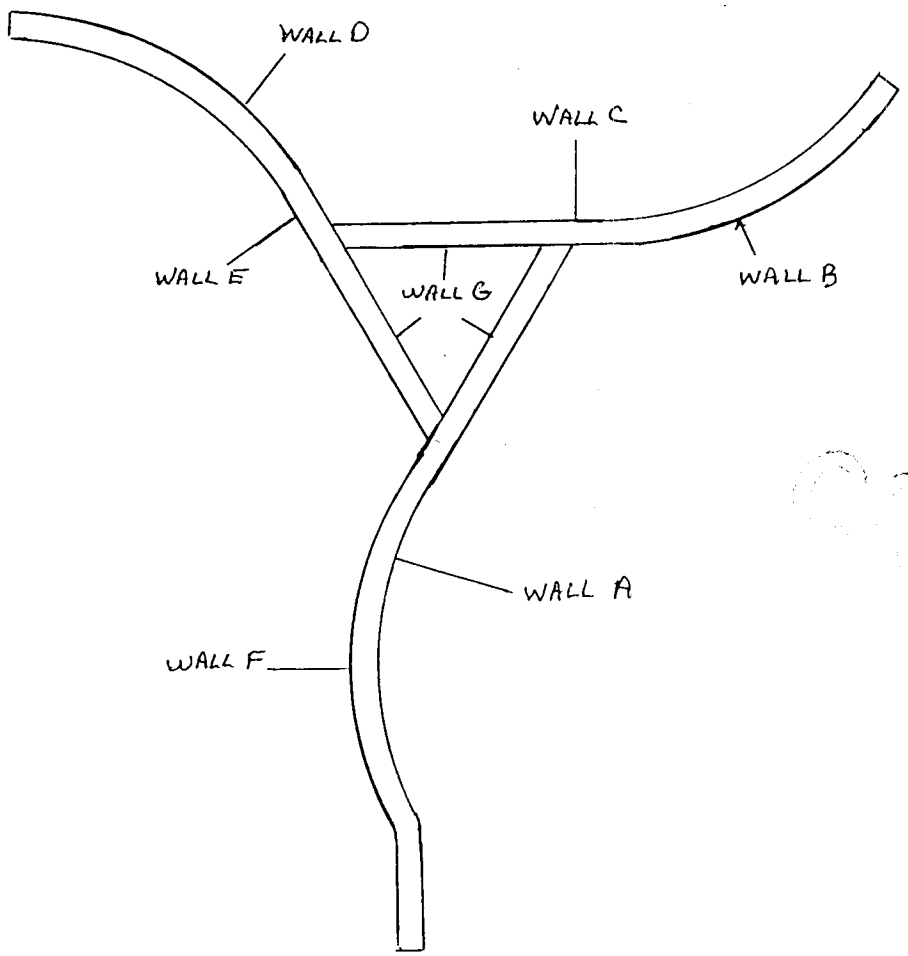
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) α SEE ATTACHED FOR RESULTS

1.		8.		15.		22.	
2.	N/A	9.	N/A	16.	N/A	23.	N/A
3.		10.		17.		24.	
4.		11.		18.		25.	
5.		12.		19.		26.	
6.		13.		20.		27.	
7.		14.		21.		28.	

MASSLINN SURVEY RESULTS (DPM/LAS)

1.		8.	
2.	N/A	9.	N/A
3.		10.	
4.		11.	
5.		12.	
6.		13.	
7.		14.	

-SEE NEXT 2 MAPS FOR SMEAR LOCATIONS-



FRISKED ALL SURFACES - 100% BKG = ≈60cpm RESULTS ≈ 60 cpm

SURVEYED BY: [signature] 3/31/99 Signature/date REVIEWED BY: [signature] Signature/date

REASON FOR SURVEY

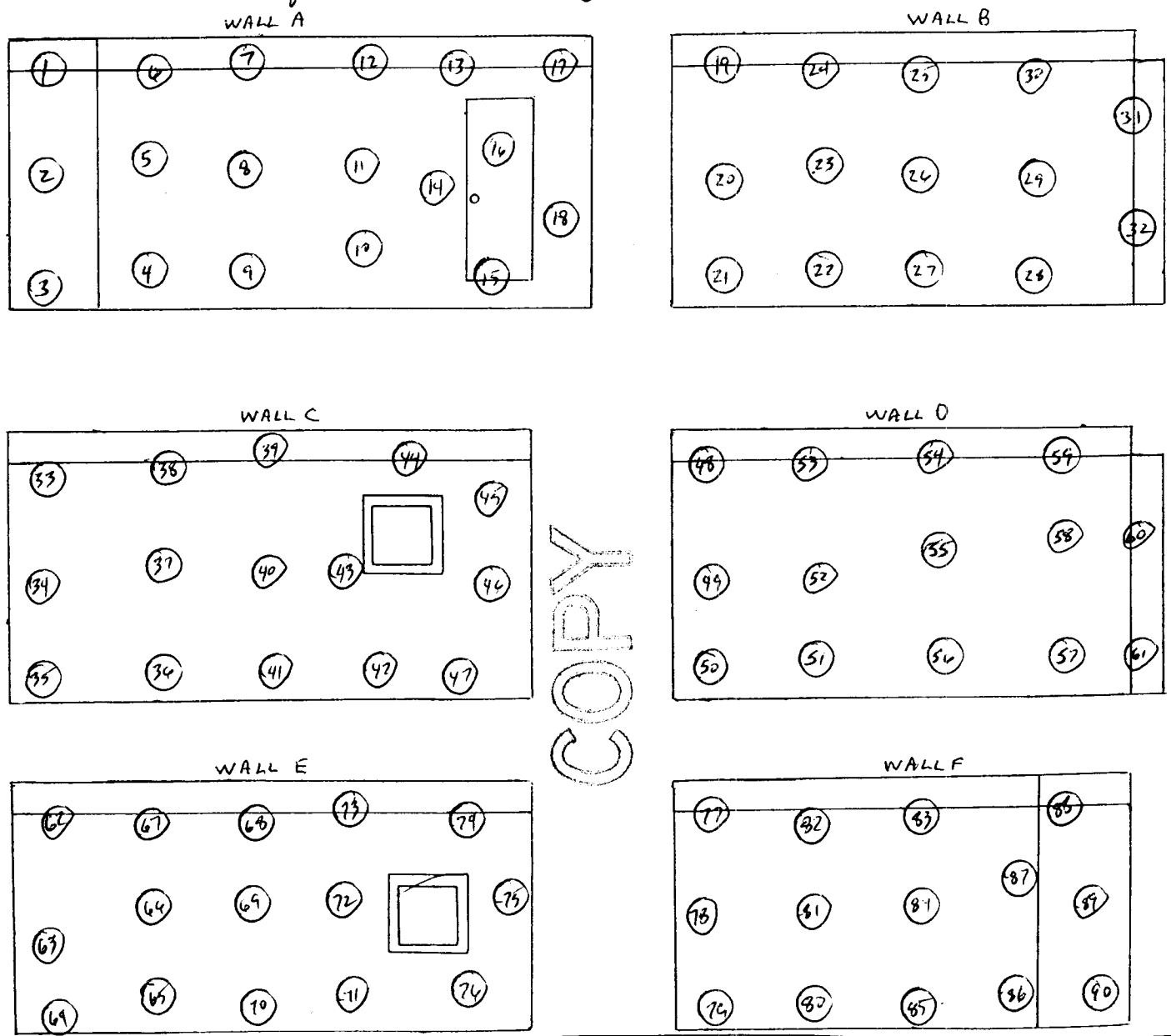
BLDG #: 701 LOCATION: 123' ELEV. EAST SIDE DATE/TIME: 3/31/99 @ 0900 ROUTINE ☐ SPECIAL ☑ RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 #50545 CO 2/8/00 TENNELEC #092436 CO 9/12/99 Page 2 of 3

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION	O MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	uCi/cc	%DAC	XXX Y / ZZZ	XXX = CONTACT READING ZZZ = READING @ 30 Cm Y = RADIATION TYPE
GENERAL AREA		N/A				#99-54

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3. N/A	10. N/A	17. N/A	24. N/A	3. N/A	10. N/A
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

Direct Frisk 100% of Surface Results ≈ Bkg ≈ 60 cpm



COPY

SURVEYED BY: [signature] 3/31/99 Signature/date REVIEWED BY: R P Mittenberg 4/12/99 Signature/date

REASON FOR SURVEY

BLDG #: 701 LOCATION: 123' ELEV. EAST SIDE DATE/TIME: 3/31/99 @ 0900 ROUTINE ☐ SPECIAL ☑ RWP #: N/A

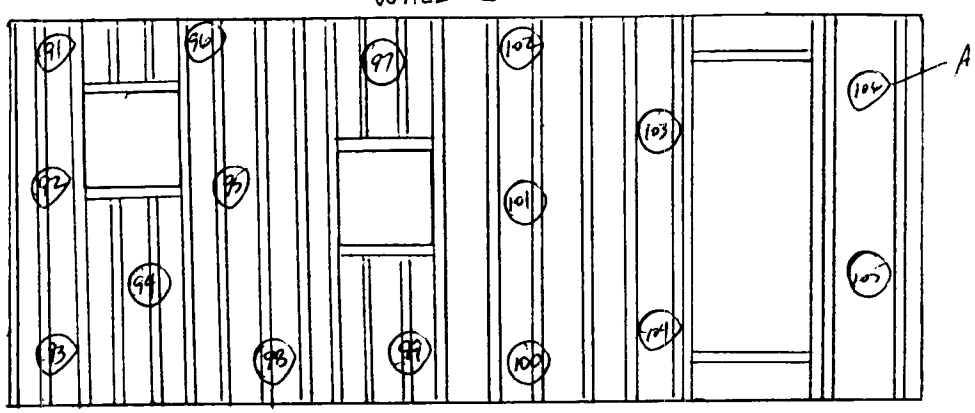
INSTRUMENTS, MODEL / SERIAL #: LUD3 # 50545 CD 2/8/00 TENNELEC # 092436 CD 9/12/99 Page 3 of 3

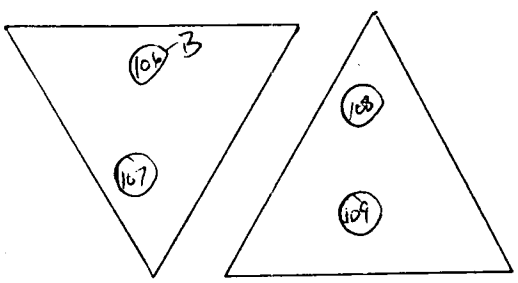
DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA		N/A			# 99-54

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H ~~B-γ~~ α SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3. N/A	10. N/A	17. N/A	24. N/A	3. N/A	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

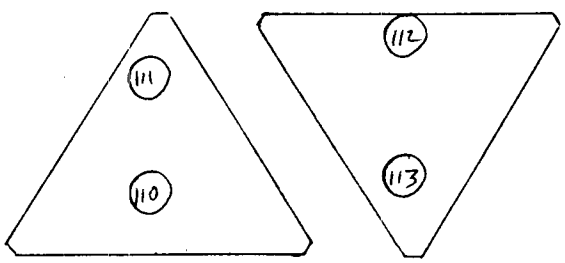
Direct Frisk 100% of Surface Results ≈ Bkg ≈ 60 cpm

WALL G





TOP PIECE



SHELF

SURVEYED BY: [signature] 3/31/99 Signature/date REVIEWED BY: [signature] 4/12/99 Signature/date

COPY

LB5100-Wallac Low Background Counting System -- Smear Analysis #99-54

#0-12436 09/12/99

Date: 3/31/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SMEAR085.XLD

Batch Encoded: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 0

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.29%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: sr90at

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701-123 ~~WWH~~ EAST DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 10:53
2	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 10:55
3	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 10:57
4	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 10:59
5	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 11:01
6	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 11:03
7	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 11:05
8	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	0.030	2.55	3/31/1999 11:03
9	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	0.030	1.05	3/31/1999 11:10
10	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 11:12
11	2.506	2.77	<AL	9.74	5.94	4.30	<AL	13.96	2.00	0.470	1.55	3/31/1999 11:14
12	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/31/1999 11:16
13	2.506	2.77	<AL	9.74	15.56	6.09	<AL	13.96	2.00	0.470	4.05	3/31/1999 11:18
14	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 11:21
15	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 11:23
16	2.506	2.77	<AL	9.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	3/31/1999 11:25
17	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	3/31/1999 11:27
18	2.506	2.77	<AL	9.74	7.87	4.71	<AL	13.96	2.00	0.470	2.05	3/31/1999 11:29
19	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 11:32
20	2.506	2.77	<AL	9.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	3/31/1999 11:34
21	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 11:36
22	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 11:38
23	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 11:40
24	2.506	2.77	<AL	9.74	9.79	5.09	<AL	13.96	2.00	0.470	2.55	3/31/1999 11:42
25	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/31/1999 11:45
26	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 11:47

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-5

#092436 CD 9/12/99

Date: 3/31/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SMEAR085.XLD

Batch Encoded: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 8

Application Version: Standard

Alpha efficiency log file: bu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.23%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: cs99ab

Beta Efficiency: 26.00%

Beta to Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701-123 ~~WAFFLE~~ EAST DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 11:49
28	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 11:51
29	-0.166	2.77	<MDA	9.74	9.79	5.09	<ALL	13.96	2.00	-0.030	0.55	3/31/1999 11:53
30	-0.166	2.77	<MDA	9.74	7.87	4.71	<ALL	13.96	2.00	-0.030	2.05	3/31/1999 11:55
31	-0.166	2.77	<MDA	9.74	7.87	4.71	<ALL	13.96	2.00	-0.030	2.05	3/31/1999 11:57
32	2.606	2.77	<ALL	9.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	3/31/1999 12:00
33	-0.166	2.77	<MDA	9.74	5.94	4.30	<ALL	13.96	2.00	-0.030	1.55	3/31/1999 12:02
34	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 12:04
35	-0.166	2.77	<MDA	9.74	11.71	5.44	<ALL	13.96	2.00	-0.030	3.05	3/31/1999 12:06
36	-0.166	2.77	<MDA	9.74	7.87	4.71	<ALL	13.96	2.00	-0.030	2.05	3/31/1999 12:09
37	-0.166	2.77	<MDA	9.74	11.71	5.44	<ALL	13.96	2.00	-0.030	3.05	3/31/1999 12:11
38	2.606	2.77	<ALL	9.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	3/31/1999 12:13
39	-0.166	2.77	<MDA	9.74	7.87	4.71	<ALL	13.96	2.00	-0.030	2.05	3/31/1999 12:15
40	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 12:17
41	2.606	2.77	<ALL	9.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	3/31/1999 12:19
42	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 12:21
43	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 12:24
44	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 12:26
45	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/31/1999 12:28
46	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 12:30
47	-0.166	2.77	<MDA	9.74	18.64	5.78	<ALL	13.96	2.00	-0.030	3.55	3/31/1999 12:32
48	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 12:34
49	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 12:37
50	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 12:39
51	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 12:41
52	2.606	2.77	<ALL	9.74	2.10	3.33	<MDA	13.96	2.00	0.470	0.55	3/31/1999 12:43
53	2.606	2.77	<ALL	9.74	2.10	3.33	<MDA	13.96	2.00	0.470	0.55	3/31/1999 12:45
54	-0.166	2.77	<MDA	9.74	9.79	5.09	<ALL	13.96	2.00	-0.030	2.55	3/31/1999 12:47

COPY

LB5100-Low Background Counting System -- Smear Analysis #99-54
#092436 CD 9/12/99

Date: 3/31/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SMEAR\D085.XLD
Batch Encoded: ##########
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1402.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: bu239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.23%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: sr90at
Beta Efficiency: 26.00%
Beta into Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701-123' ~~WAM~~ EAST DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
55	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 12:50
56	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/31/1999 12:52
57	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 12:54
58	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 12:56
59	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 12:58
60	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 13:00
61	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/31/1999 13:03
62	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 13:05
63	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 13:07
64	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 13:09
65	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 13:11
66	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/31/1999 13:13
67	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 13:15
68	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 13:18
69	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 13:20
70	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 13:22
71	2.606	2.77	<AL	9.74	5.94	4.30	<AL	13.96	2.00	0.470	1.55	3/31/1999 13:24
72	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	3/31/1999 13:26
73	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	3/31/1999 13:29
74	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/31/1999 13:31
75	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 13:33
76	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/31/1999 13:35
77	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 13:37
78	-0.166	2.77	<MDA	9.74	-3.67	1.93	<MDA	13.96	2.00	-0.030	-0.95	3/31/1999 13:39
79	2.606	2.77	<AL	9.74	4.02	3.85	<MDA	13.96	2.00	0.470	1.05	3/31/1999 13:42
80	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 13:44
81	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 13:46
82	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 13:48

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-54
#092436 09/12/99

Date: 3/31/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SMEAR\D085.XLD
Batch Encoded: ##########
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 100.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1402.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: ou239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.29%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: c93at
Beta Efficiency: 26.00%
Beta to Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701-123 EAST ~~WWII~~ DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
33	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 13:50
34	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 13:52
35	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 13:55
36	-0.166	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	3/31/1999 13:57
37	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 13:59
38	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 14:01
39	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 14:03
40	2.306	2.77	<A_	9.74	2.10	3.33	<MDA	13.96	2.00	0.470	0.55	3/31/1999 14:05
41	-0.166	2.77	<MDA	9.74	17.48	5.33	<A_	13.96	2.00	-0.030	4.55	3/31/1999 14:08
42	-0.166	2.77	<MDA	9.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	3/31/1999 14:10
43	5.378	3.92	ALAL	9.74	40.56	9.24	<A_	13.96	2.00	0.970	10.55	3/31/1999 14:12
44	5.378	3.92	ALAL	9.74	2.10	3.33	<MDA	13.96	2.00	0.970	0.55	3/31/1999 14:14
45	-0.166	2.77	<MDA	9.74	13.64	5.73	<A_	13.96	2.00	-0.030	3.55	3/31/1999 14:16
46	-0.166	2.77	<MDA	9.74	9.79	5.03	<A_	13.96	2.00	-0.030	2.55	3/31/1999 14:19
47	-0.166	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	3/31/1999 14:21

Reviewed: OW 3/31/99

RM 4/12/99

COPY

LB5100-W Low Background Counting System -- Smear Analysis # 99-54

092436 C09/12/99

Date: 3/31/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1D086.XLD

Batch Ended: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 3

Application Version: Standard

Batch ID: 701-123'EASTDISPLAY

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.23%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: fc99ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 14:46
2	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/31/1999 14:48
3	2.606	2.77	<AL	9.74	5.94	4.30	<AL	13.96	2.00	0.470	1.55	3/31/1999 14:50
4	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/31/1999 14:52
5	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 14:54
6	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 14:56
7	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 14:59
8	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 15:01
9	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 15:03
10	-0.166	2.77	<MDA	9.74	-3.67	1.93	<MDA	13.96	2.00	-0.030	-0.96	3/31/1999 15:05
11	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/31/1999 15:07
12	2.606	2.77	<AL	9.74	17.48	6.39	<AL	13.96	2.00	0.470	4.55	3/31/1999 15:09
13	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/31/1999 15:11
14	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/31/1999 15:14
15	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/31/1999 15:16
16	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/31/1999 15:18
17	2.606	2.77	<AL	9.74	9.79	5.09	<AL	13.96	2.00	0.470	2.55	3/31/1999 15:20

Reviewed:
PHH 3/31/99
RCM 4/12/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY ☐ ROUTINE ☒ SPECIAL Survey #99-48

BLDG #: 761 LOCATION: 143' Display Wall (TOP, A+B) DATE/TIME: 3-29-99 0900 RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: Lud 3 #50545 Cal Due 2/8/00 Tennelec #092436 Cal Due: 9-12-99

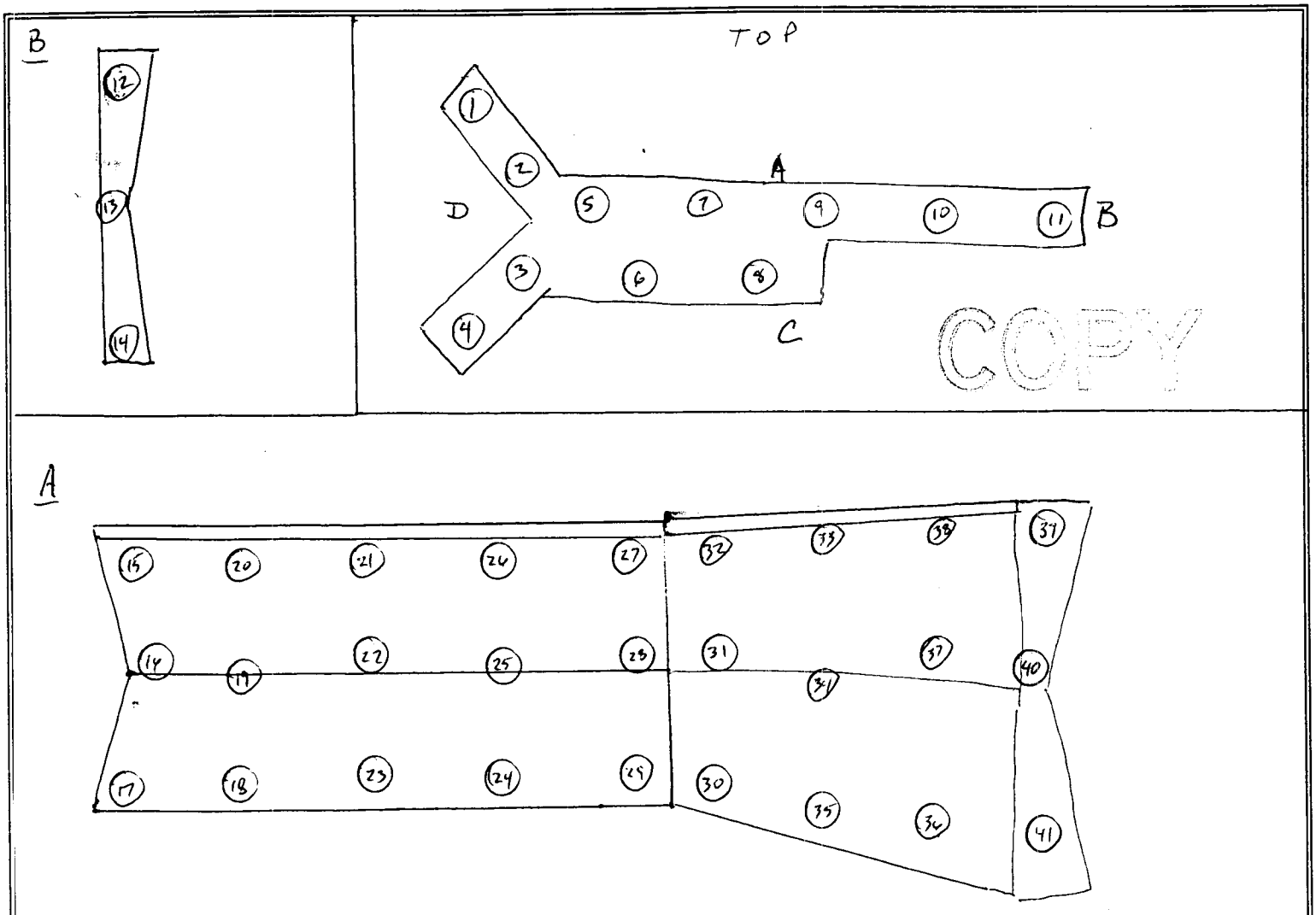
DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: ○ SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm
GENERAL AREA		N/A			Y = RADIATION TYPE

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-) (α) See Attached Tennelec Printout

1.		8.		15.		22.	
2.		9.		16.		23.	
3.		10.		17.		24.	
4.	N/A	11.	N/A	18.	N/A	25.	N/A
5.		12.		19.		26.	
6.		13.		20.		27.	
7.		14.		21.		28.	

MASSLINN SURVEY RESULTS (DPM/LAS)

1.		8.	
2.		9.	
3.		10.	
4.	N/A	11.	N/A
5.		12.	
6.		13.	
7.		14.	



Results ≈ Bkg ≈ 60cpm

NOTE: Direct Frisk 100% of surfaces for all 3 maps on this page

SURVEYED BY: [signature] 3/29/99 Signature/date

REVIEWED BY: [signature] 3/31/99 Signature/date

LB5100-Low Background Counting System -- Smear Analysis #99-48

#092436 oo 9/12/99

Date: 3/30/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1D081.XLD

Batch Ended: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.29%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: to99ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 710143 DISPLAY WALL A&B

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.166	2.77	<MDA	9.74	15.56	6.09	<AL	13.96	2.00	-0.030	5.05	3/30/1999 9:59
2	2.606	2.77	<AL	9.74	21.33	6.94	<AL	13.96	2.00	0.470	5.55	3/30/1999 10:00
3	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:02
4	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:04
5	-0.166	2.77	<MDA	9.74	10.64	5.73	<AL	13.96	2.00	-0.030	1.55	3/30/1999 10:06
6	-0.166	2.77	<MDA	9.74	38.64	9.01	<AL	13.96	2.00	-0.030	10.05	3/30/1999 10:08
7	5.376	3.92	AtAL	9.74	69.41	11.90	<AL	13.96	2.00	0.970	18.05	3/30/1999 10:11
8	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:13
9	2.606	2.77	<AL	9.74	15.56	6.09	<AL	13.96	2.00	0.470	5.05	3/30/1999 10:15
10	-0.166	2.77	<MDA	9.74	34.79	8.62	<AL	13.96	2.00	-0.030	3.05	3/30/1999 10:17
11	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:19
12	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 10:21
13	2.606	2.77	<AL	9.74	19.41	6.67	<AL	13.96	2.00	0.470	5.05	3/30/1999 10:24
14	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:26
15	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 10:28
16	2.606	2.77	<AL	9.74	-1.75	1.93	<MDA	13.96	2.00	0.470	-0.46	3/30/1999 10:30
17	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 10:32
18	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 10:34
19	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 10:37
20	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:39
21	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 10:41
22	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	0.030	1.05	3/30/1999 10:43
23	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 10:45
24	5.376	3.92	AtAL	9.74	5.94	4.30	<AL	13.96	2.00	0.970	1.55	3/30/1999 10:48
25	5.376	3.92	AtAL	9.74	-1.75	1.93	<MDA	13.96	2.00	0.970	-0.46	3/30/1999 10:50
26	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	0.030	2.05	3/30/1999 10:52

COPY

#99-48

LB5100-W Low Background Counting System -- Smear Analysis

#092436 CD 9/12/99

Date: 3/30/1999

Counting Unit id: 1

Data file name: C:\LB3XL\UNIT1\SMEAR081.XLD

Batch Encoder: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.23%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 710 143' DISPLAY WALL A&B

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
27	2.606	2.77	<AL	9.74	5.94	4.30	<AL	13.96	2.00	0.470	1.55	3/30/1999 10:54
28	-0.166	2.77	<MDA	9.74	17.48	6.33	<AL	13.96	2.00	-0.030	4.55	3/30/1999 10:56
29	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 10:58
30	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 11:00
31	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 11:03
32	-0.166	2.77	<MDA	9.74	13.64	5.73	<AL	13.96	2.00	-0.030	3.55	3/30/1999 11:05
33	2.606	2.77	<AL	9.74	-3.67	1.93	<MDA	13.96	2.00	0.470	-0.95	3/30/1999 11:07
34	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 11:09
35	2.606	2.77	<AL	9.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	3/30/1999 11:11
36	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:13
37	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/30/1999 11:15
38	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 11:18
39	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 11:20
40	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 11:22
41	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 11:24

Reviewed: JTU 3/30/99

RDM 3/31/99

REASON FOR SURVEY

BLDG #: 701 LOCATION: 110' Northeast wall DATE/TIME: 3/29/99 0090 ROUTINE ☐ SPECIAL ☑ RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 # 50545 CD 2/3/00 TENNELEC # ~~092436 CD 9/12/99~~ 3-31-99
092286 CD 2/19/00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	dCi/cc	%DAC
GENERAL AREA		N/A		

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

#99-50

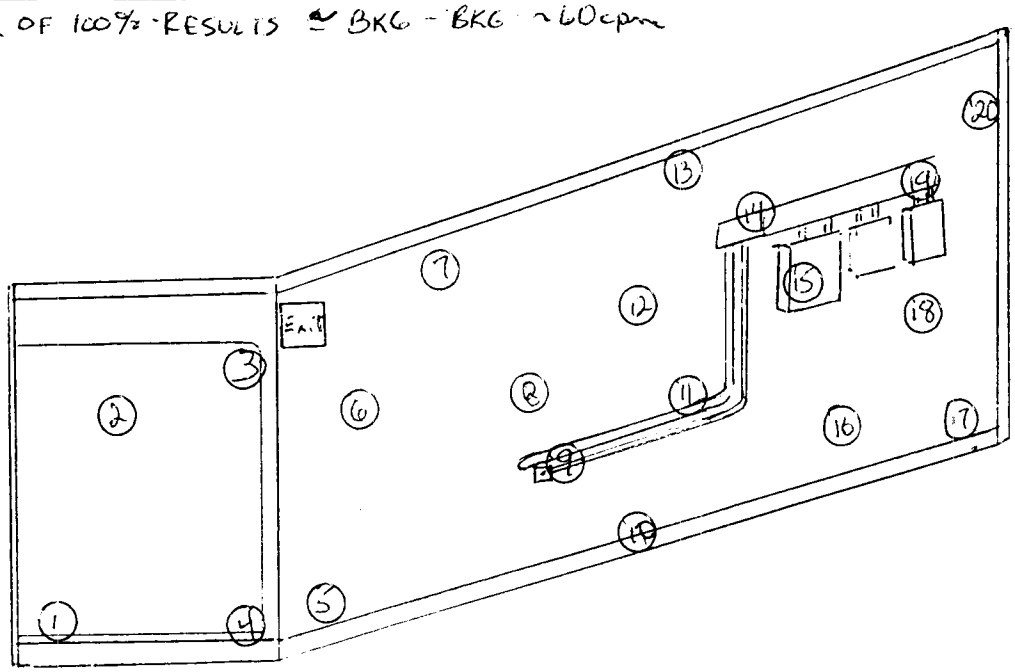
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α SEE ATTACHED FOR RESULTS

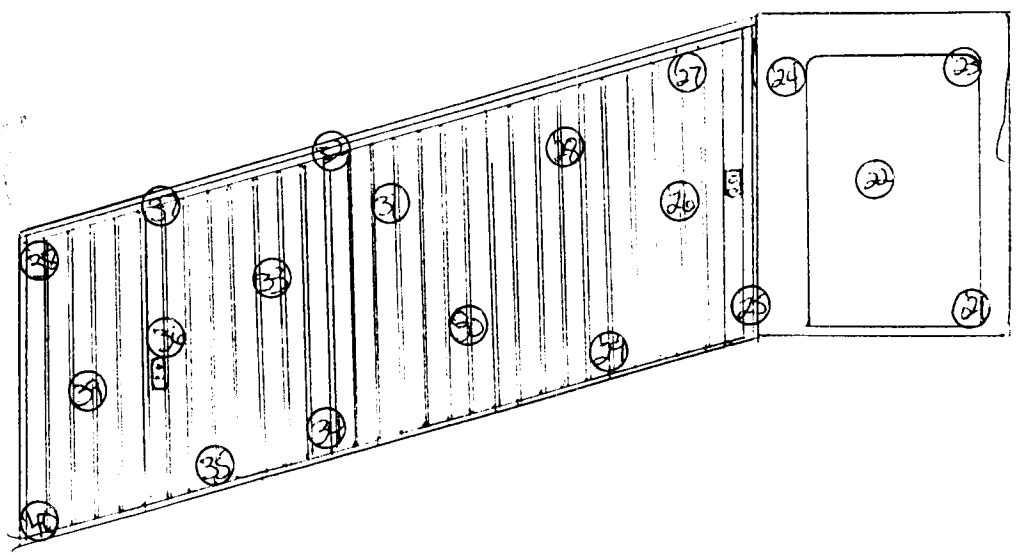
1.	8.	15.	22.
2.	9.	16.	23.
3. N/A	10. N/A	17. N/A	24. N/A
4.	11.	18.	25.
5.	12.	19.	26.
6.	13.	20.	27.
7.	14.	21.	28.

MASSLINN SURVEY RESULTS (DPM/LAS)

1.	8.
2.	9.
3. N/A	10.
4.	11.
5.	12.
6.	13.
7.	14.

DIRECT FRISK OF 100% RESULTS ≈ BKG - BKG ~60cpm





COPY

SURVEYED BY: [signature] 3/29/99 Signature/date REVIEWED BY: [signature] 4/12/99 Signature/date

Form FS-1000-1 FS-SOP-1000, rev 1, attch 8.2, page 11 File Code: HP3120

092286 C.D. 2-19-00

LB5100-W Low Background Counting System -- Smear Analysis #9950

~~# 092436 C 09/12/99~~ 5-31-99

Date: 3/30/99

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A079.XLD

Batch Ended: 3/30/99 13:49

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.132

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.918

Beta Correction Factor: 1.000

Batch ID: 701-110' NE WALL

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:00
2	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/30/99 13:01
3	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:02
4	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:04
5	4.268	4.99	<AL	19.77	3.06	5.95	<MDA	25.72	1.10	0.777	0.81	3/30/99 13:05
6	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 13:06
7	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:07
8	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:09
9	4.268	4.99	<AL	19.77	13.36	8.42	<AL	25.72	1.10	0.777	3.54	3/30/99 13:10
10	4.268	4.99	<AL	19.77	6.49	6.87	<MDA	25.72	1.10	0.777	1.72	3/30/99 13:11
11	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:12
12	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:14
13	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:15
14	-0.725	4.99	<MDA	19.77	20.23	9.73	<AL	25.72	1.10	-0.132	5.35	3/30/99 13:16
95	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:18
16	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:19
17	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:20
18	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:21
19	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:23
20	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 13:24
21	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 13:25
22	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/30/99 13:26
23	4.268	4.99	<AL	19.77	13.36	8.42	<AL	25.72	1.10	0.777	3.54	3/30/99 13:28
24	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/30/99 13:29
25	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 13:30
26	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 13:32

#092286 C.D. 2-19-00

LB5100-W Low Background Counting System -- Smear Analysis #99-50

~~#092436 CD 9/12/99~~ JM

Date: 3/30/99

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A079.XLD

Batch Ended: 3/30/99 13:49

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.132

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.918

Beta Correction Factor: 1.000

Batch ID: 701-110' NE WALL

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	4.268	4.99	<AL	19.77	-3.81	3.44	<MDA	25.72	1.10	0.777	-1.01	3/30/99 13:33
28	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:34
29	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:35
30	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 13:37
31	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:38
32	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 13:39
33	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 13:40
34	4.268	4.99	<AL	19.77	6.49	6.87	<MDA	25.72	1.10	0.777	1.72	3/30/99 13:42
35	-0.725	4.99	<MDA	19.77	30.53	11.43	<AL	25.72	1.10	-0.132	8.08	3/30/99 13:43
36	-0.725	4.99	<MDA	19.77	23.66	10.33	<AL	25.72	1.10	-0.132	6.26	3/30/99 13:44
37	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/30/99 13:45
38	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 13:47
39	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/30/99 13:48
40	-0.725	4.99	<MDA	19.77	23.66	10.33	<AL	25.72	1.10	-0.132	6.26	3/30/99 13:49

COPY

Reviewed: GHU 3/30/99

RPM 3/31/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY 99-019

☐ ROUTINE ☑ SPECIAL

BLDG #: 701 LOCATION: 143' DISPLAY WALL (C + D) DATE/TIME: 3/29/99 @ 0800 RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 # 50545 CO 2/8/00 TENNELEC # 092436 CO 9/12/99

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA	N/A	N/A		

LEGEND: ○ SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

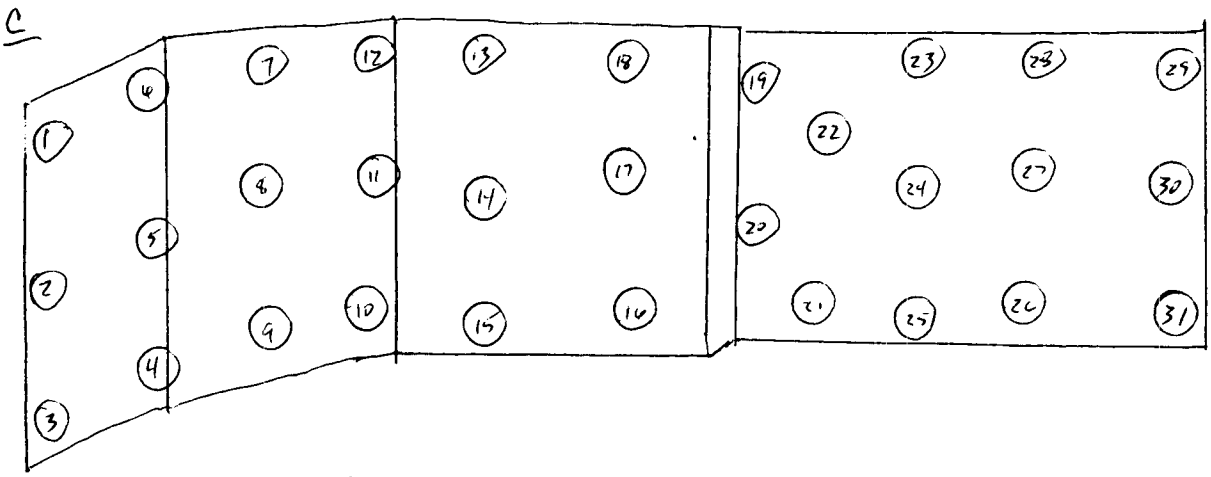
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) SEE ATTACHED FOR RESULTS

1.	8.	15.	22.
2. N/A	9. N/A	16. N/A	23. N/A
3.	10.	17.	24.
4.	11.	18.	25.
5. N/A	12. N/A	19. N/A	26. N/A
6.	13.	20.	27.
7.	14.	21.	28.

MASSLINN SURVEY RESULTS (DPM/LAS)

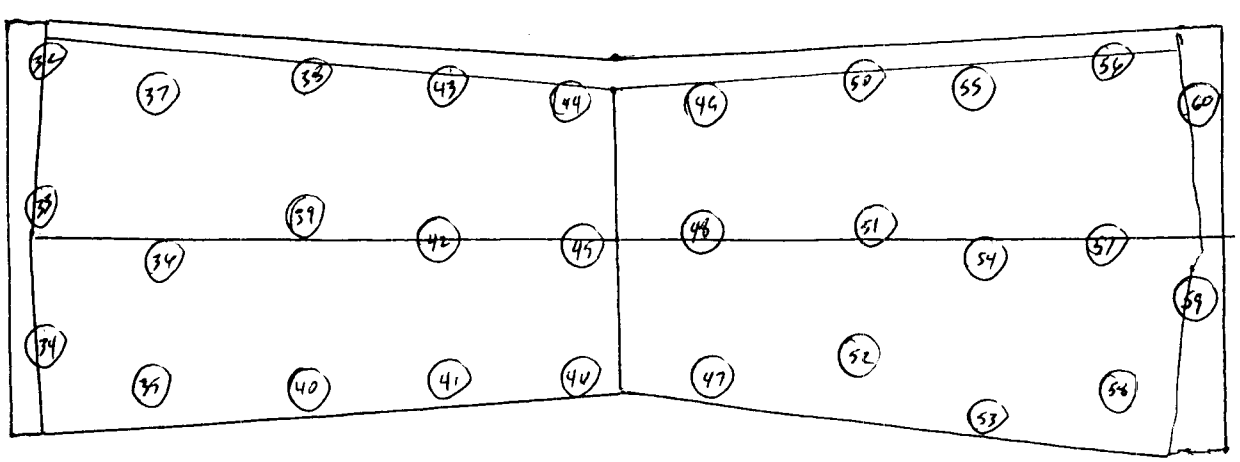
1.	8.
2. N/A	9. N/A
3.	10.
4.	11.
5. N/A	12. N/A
6.	13.
7.	14.

C



Direct Frisk of All 100% of Surfaces Results ≃ Bkg ≃ 60cpm

D



Direct Frisk of 100% of Surface Results ≃ Bkg ≃ 60cpm

SURVEYED BY: [signature] 3/30/99 Signature/date

REVIEWED BY: R P Mattlinger Signature/date

COPY

LB5100-W Low Background Counting System -- Smear Analysis

#99-49

#092436 CD 9/12/99

Date: 3/30/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SMIE1E059.XLD
Batch Ended: ##########
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1402.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: bu239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.29%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: to99ab
Beta Efficiency: 26.00%
Beta into Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701 143 DISPLAY WALL C&D

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
#1-26 42	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 11:27
43	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 11:29
44	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:31
45	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:33
46	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:35
47	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:37
48	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 11:39
49	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 11:42
50	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 11:44
#10- 51	2.906	2.77	<AL	9.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	3/30/1999 11:46
52	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 11:48
53	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 11:50
54	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:52
55	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 11:55
56	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 11:57
57	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 11:59
58	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 12:01
59	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 12:03
60	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 12:05
#20- 61	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 12:08
62	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 12:10
63	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 12:12
64	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 12:14
65	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 12:16
66	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 12:19
67	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 12:21

CH 3/31/99

COPY

LB5100-W Low Background Counting System -- Smear Analysis

#99-49

#092136 CD 9/12/99

Date: 3/30/1999

Counting Unit(s): 1

Data file name: C:\LBXL\UNIT1 SME E069.XLD

Batch Encled: ##-#####-#

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 8

Application Version: Standard

Alpha efficiency log file: bu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.23%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: c99ab

Beta Efficiency: 26.30%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701143 DISPLAY WALL C&D

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
#27-54 68	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 12:23
69	-0.166	2.77	<MDA	9.74	19.64	5.73	<AL	13.96	2.00	-0.030	3.55	3/30/1999 12:25
70	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 12:27
71	5.378	3.92	AL/AL	9.74	7.87	4.71	<AL	13.96	2.00	0.970	2.05	3/30/1999 12:29
72	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 12:32
73	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 12:34
74	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	3/30/1999 12:36
75	-0.166	2.77	<MDA	9.74	19.64	5.73	<AL	13.96	2.00	-0.030	3.55	3/30/1999 12:38
#35 76	-0.166	2.77	<MDA	9.74	19.64	5.73	<AL	13.96	2.00	-0.030	3.55	3/30/1999 12:40
77	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 12:42
78	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 12:45
79	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/30/1999 12:47
80	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 12:49
81	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 12:51
82	2.606	2.77	<AL	9.74	-1.75	1.93	<MDA	13.96	2.00	0.470	-0.45	3/30/1999 12:53
83	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 12:55
84	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 12:58
85	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 13:00
#45 86	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 13:02
87	-0.166	2.77	<MDA	9.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 13:04
88	5.378	3.92	AL/AL	9.74	9.79	5.09	<AL	13.96	2.00	0.970	2.55	3/30/1999 13:06
89	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 13:08
90	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 13:11
91	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 13:13
92	2.606	2.77	<AL	9.74	9.79	5.09	<AL	13.96	2.00	0.470	2.55	3/30/1999 13:15
93	-0.166	2.77	<MDA	9.74	19.64	5.73	<AL	13.96	2.00	-0.030	3.55	3/30/1999 13:17
94	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 13:19
95	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 13:21

CHV 3/30/99

LB5100-W Low Background Counting System -- Smear Analysis #99-49

#092436 CD 9/12/99

Date: 3/30/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1E059.XLD

Batch Ended: ###########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.23%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: c99ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701 143 DISPLAY WALL C&D

#55-60

Carrier	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Alpha Activity MDA	Beta Activity DPM	Beta Activity σ	Beta Activity flags	Beta Activity MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
36	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 13:24
37	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 13:26
1	-0.166	2.77	<MDA	9.74	9.79	5.03	<AL	13.96	2.00	-0.030	2.55	3/30/1999 13:28
2	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 13:30
3	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 13:32
4	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 13:35

JHN 3/30/99

Reviewed: JHN 3/30/99

RPM 3/31/99

REASON FOR SURVEY ☐ ☑ #99-51

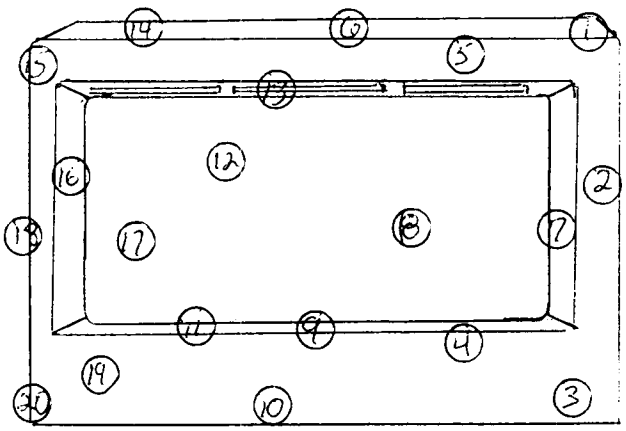
BLDG #: 701 LOCATION: West 110' Camp Upton Display Case DATE/TIME: 3/25/99 @ 0950 ROUTINE SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LUD 3 # 50545 CD 2/8/00 TENNELEC ~~# 092436 CD 9/12/99~~ 3-31-99 # 092286 CD 2/19/00

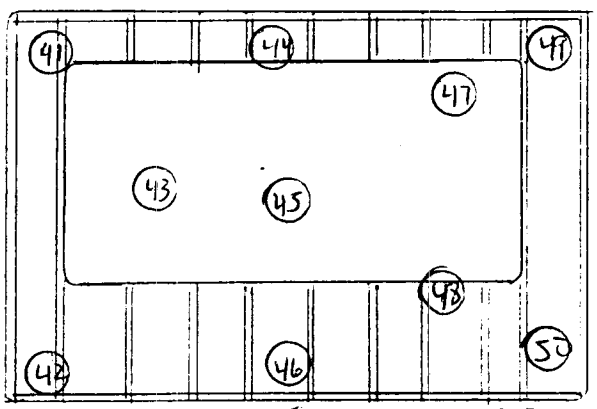
DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
CONTACT	N/A	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm
GENERAL AREA		N/A			Y = RADIATION TYPE

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2. N/A	9. N/A	16. N/A	23. N/A	2. N/A	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

DIRECT FRISK 100% RESULTS ≈ BKG - BKG ≈ 60cpm.



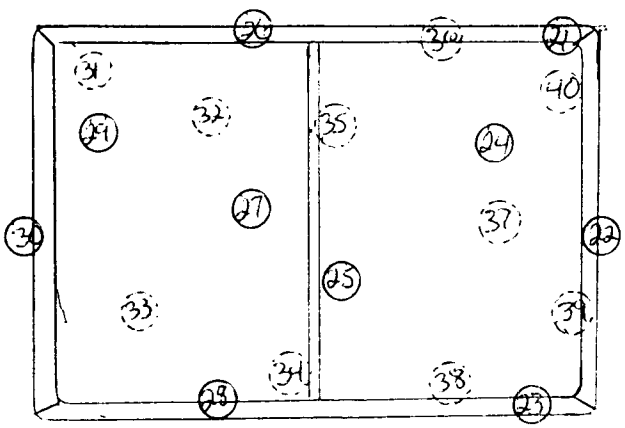
Front



BACK

~~SOLID CARPETED BACKING~~ (4/20/99 [illegible])

COPY



Display window

SURVEYED BY: [signature] 3/25/99 Signature/date REVIEWED BY: RP Mittenberger 3/31/99 Signature/date

COPY

092286 CD 2-19-00

LB5100-W Low Background Counting System -- Smear Analysis #99-51

~~# 012436 CD 9/12/99~~ 5-31-99

Date: 3/30/99

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A078.XLD

Batch Ended: 3/30/99 12:26

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.132

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.918

Beta Correction Factor: 1.000

Batch ID: 701-110' WEST DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/30/99 11:36
2	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 11:38
3	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 11:39
4	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 11:40
5	4.268	4.99	<AL	19.77	-0.38	4.86	<MDA	25.72	1.10	0.777	-0.10	3/30/99 11:41
6	-0.725	4.99	<MDA	19.77	13.36	8.42	<AL	25.72	1.10	-0.132	3.54	3/30/99 11:43
7	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 11:44
8	4.268	4.99	<AL	19.77	3.06	5.95	<MDA	25.72	1.10	0.777	0.81	3/30/99 11:45
9	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/30/99 11:47
10	4.268	4.99	<AL	19.77	-7.25	3.44	<MDA	25.72	1.10	0.777	-1.92	3/30/99 11:48
11	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 11:49
12	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 11:50
13	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 11:52
14	4.268	4.99	<AL	19.77	16.79	9.10	<AL	25.72	1.10	0.777	4.45	3/30/99 11:53
95	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 11:54
16	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 11:55
17	4.268	4.99	<AL	19.77	-0.38	4.86	<MDA	25.72	1.10	0.777	-0.10	3/30/99 11:57
18	4.268	4.99	<AL	19.77	3.06	5.95	<MDA	25.72	1.10	0.777	0.81	3/30/99 11:58
19	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/30/99 11:59
20	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:01
21	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 12:02
22	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:03
23	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 12:04
24	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 12:06
25	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 12:07
26	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:08

COPY

#092286 C.O. 2-19-00

LB5100-W Low Background Counting System -- Smear Analysis #99-51

~~#092436 C.O. 9/12/99~~ 3-31-99

Date: 3/30/99

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A078.XLD

Batch Ended: 3/30/99 12:26

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.132

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.918

Beta Correction Factor: 1.000

Batch ID: 701-110' WEST DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:09
28	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 12:11
29	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 12:12
30	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 12:13
31	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 12:14
32	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:16
33	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 12:17
34	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 12:18
35	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 12:20
36	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:21
37	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/30/99 12:22
38	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/30/99 12:23
39	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/30/99 12:25
40	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/30/99 12:26

Reviewed: RL 3/30/99

RPM 3/31/99

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-51

#092286 CD 3/19/00

Date: 4/21/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A022.XLD

Batch Ended: ############

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-110' E. WALL @ CAMP UPTON DIS

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
#41-50 1	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 08:07
2	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:09
3	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/21/1999 08:10
4	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/21/1999 08:11
#45 5	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	4/21/1999 08:13
6	-0.741	4.99	<MDA	19.84	15.11	8.43	<AL	23.59	1.10	-0.135	4.00	4/21/1999 08:14
7	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/21/1999 08:15
8	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 08:16
9	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/21/1999 08:18
#50 10	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/21/1999 08:19

Reviewed - [illegible] 4/21/99

RM 4/23/99

BNL RADIOLOGICAL SURVEY FORM

REASON FOR SURVEY 99-38

BLDG #: 701 LOCATION: 110' Southwest Wall DATE/TIME: 3-23-99 @ 0840 ☑ ROUTINE ☐ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: Lnd 3 #50545 CD 2-8-00, Tenn. #092286 CD 2-19-00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA	N/A	N/A	→	→

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

Page 1 of 2

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α See Attached Printout-Tennelec

1.	8.	15.	22.
2.	9.	16.	23.
3.	10.	17.	24.
4.	11.	18.	25.
5.	12.	19.	26.
6.	13.	20.	27.
7.	14.	21.	28.

N/A N/A N/A N/A

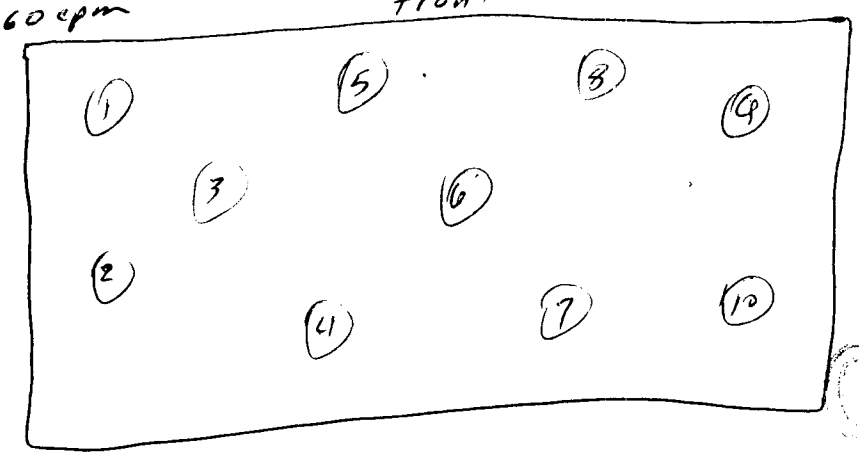
MASSLINN SURVEY RESULTS (DPM/LAS)

1.	8.
2.	9.
3.	10.
4.	11.
5.	12.
6.	13.
7.	14.

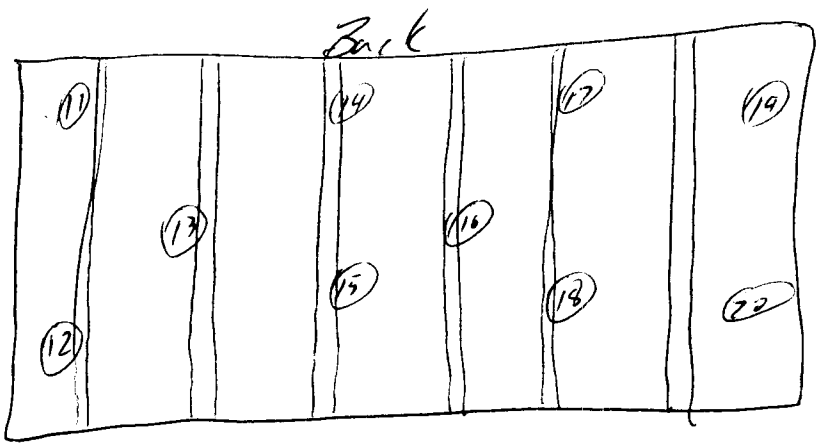
N/A N/A

Direct frisk 100% of Front + Back
Results ≈ Bkg ≈ 40-60 cpm

Front



Back



SURVEYED BY: [signature] 3-23-99 Signature/date

REVIEWED BY: [signature] 5/28/99 Signature/date KJZ 6-29-99

Form ES-1000.1 ES-SOP-1000 rev 1, attch 8.2, page 11 File Code: HP3120

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-38

#092286 CD 2119100

Date: 3/23/99
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1C007.XLD
Batch Ended: 3/23/99 09:53
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.132
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.918
Beta Correction Factor: 1.000

Batch ID: 701-110' SW WALL

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
46	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:29
47	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:30
48	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:31
49	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 09:33
50	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/23/99 09:34
51	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 09:35
52	-0.725	4.99	<MDA	19.77	270.94	31.83	<AL	25.72	1.10	-0.132	71.72	3/23/99 09:37
53	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:38
54	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:39
55	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:40
56	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:42
57	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 09:43
58	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:44
59	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:45
60	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:47
61	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:48
62	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 09:49
63	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 09:50
64	4.268	4.99	<AL	19.77	3.06	5.95	<MDA	25.72	1.10	0.777	0.81	3/23/99 09:52
65	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:53

BMU 3/23/99

REVIEWED: BMU 3/23/99
3-23-99
BMU 6/21/99
KJL 6-29-99

REASON FOR SURVEY ☑ ROUTINE ☐ SPECIAL #99-39

BLDG #: 701 LOCATION: 110' Northeast inner Wall DATE/TIME: 3-23-99 0730 RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: Lnd 3 #50545 CD 2-8-00 Tennelec #092286 CD 2-19-00

DOSE RATES (HIGHEST)		AIRBORNE CONTAMINATION		
CONTACT	N/A	TIME	uCi/cc	%DAC
GENERAL AREA	N/A	N/A		

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

Page 1 of 2

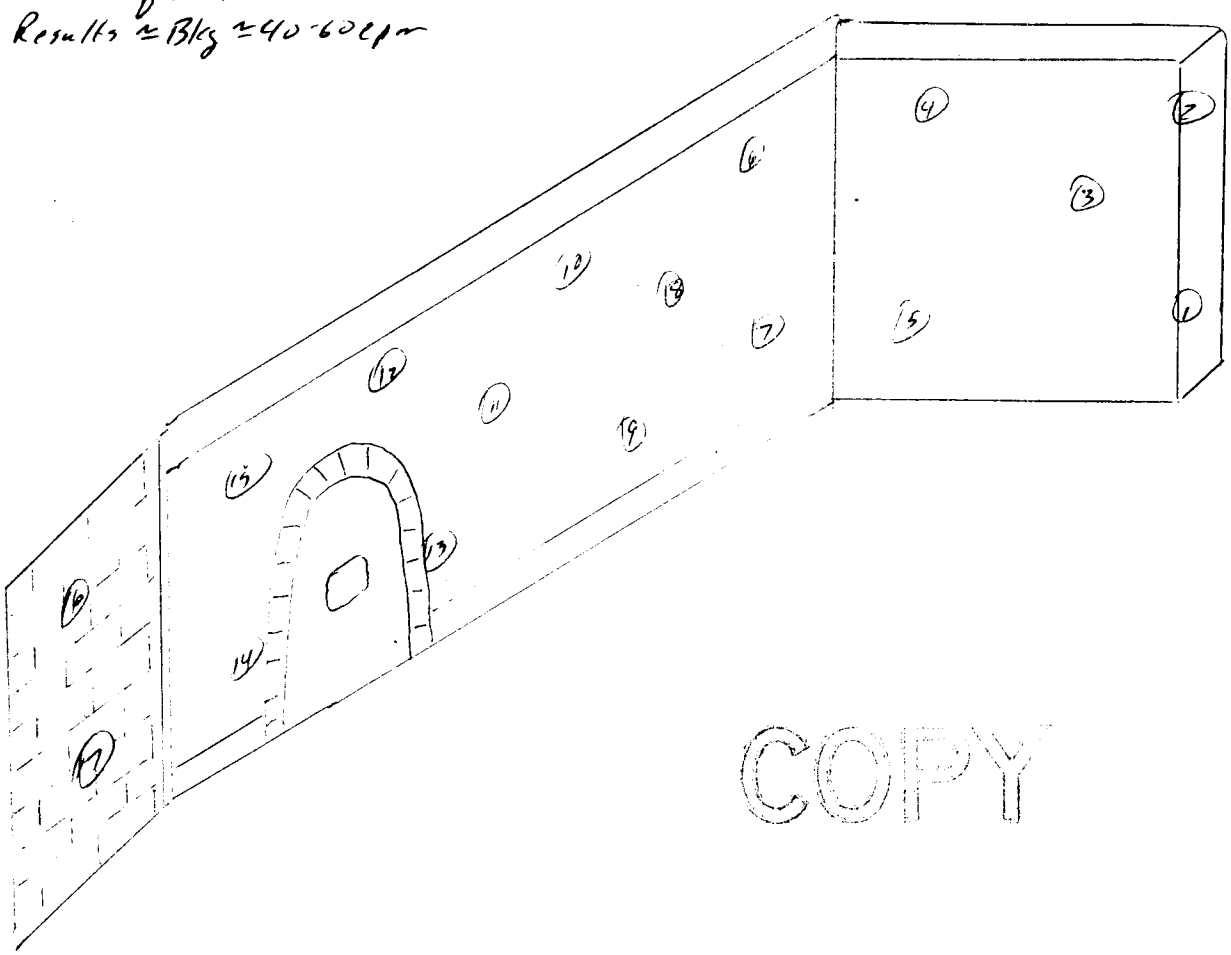
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (β-γ) α See Attached Tenn. Printout for Results

1.		8.		15.		22.	
2.		9.		16.		23.	
3.	N/A	10.	N/A	17.	N/A	24.	N/A
4.		11.		18.		25.	
5.		12.		19.		26.	
6.		13.		20.		27.	
7.		14.		21.		28.	

MASSLINN SURVEY RESULTS (DPM/LAS)

1.		8.	
2.		9.	
3.	N/A	10.	N/A
4.		11.	
5.		12.	
6.		13.	
7.		14.	

1 Direct Frisk of 100% Front & Back. Results ≈ Bkg ≈ 40-60 cpm



COPY

Smears 18-25 taken on backside

SURVEYED BY: [signature] 3-23-99 Signature/date

REVIEWED BY: [signature] 5/28/99 Signature/date KR 6-25-99

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-39

#092286 CO 2/19/00

Date: 3/23/99

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1A056.XLD

Batch Ended: 3/23/99 09:02

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.132

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.918

Beta Correction Factor: 1.000

Batch ID: 701-110' NE INNER WALL

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:32
2	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 08:33
3	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 08:34
4	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 08:35
5	4.268	4.99	<AL	19.77	-0.38	4.86	<MDA	25.72	1.10	0.777	-0.10	3/23/99 08:37
6	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:38
7	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/23/99 08:39
8	4.268	4.99	<AL	19.77	-0.38	4.86	<MDA	25.72	1.10	0.777	-0.10	3/23/99 08:41
9	-0.725	4.99	<MDA	19.77	-7.25	3.44	<MDA	25.72	1.10	-0.132	-1.92	3/23/99 08:42
10	-0.725	4.99	<MDA	19.77	6.49	6.87	<MDA	25.72	1.10	-0.132	1.72	3/23/99 08:43
11	9.261	7.07	At AL	19.77	3.06	5.95	<MDA	25.72	1.10	1.686	0.81	3/23/99 08:44
12	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:46
13	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:47
14	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:48
95	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:49
16	4.268	4.99	<AL	19.77	-0.38	4.86	<MDA	25.72	1.10	0.777	-0.10	3/23/99 08:51
17	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:52
18	-0.725	4.99	<MDA	19.77	13.36	8.42	<AL	25.72	1.10	-0.132	3.54	3/23/99 08:53
19	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 08:54
20	-0.725	4.99	<MDA	19.77	3.06	5.95	<MDA	25.72	1.10	-0.132	0.81	3/23/99 08:56
21	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 08:57
22	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 08:58
23	-0.725	4.99	<MDA	19.77	-0.38	4.86	<MDA	25.72	1.10	-0.132	-0.10	3/23/99 09:00
24	-0.725	4.99	<MDA	19.77	-3.81	3.44	<MDA	25.72	1.10	-0.132	-1.01	3/23/99 09:01
25	-0.725	4.99	<MDA	19.77	9.93	7.69	<AL	25.72	1.10	-0.132	2.63	3/23/99 09:02

REVIEWED: SWL 3/23/99 KR 6-29-99

3-23-99 DMM 6/29/99

REASON FOR SURVEY #47-52

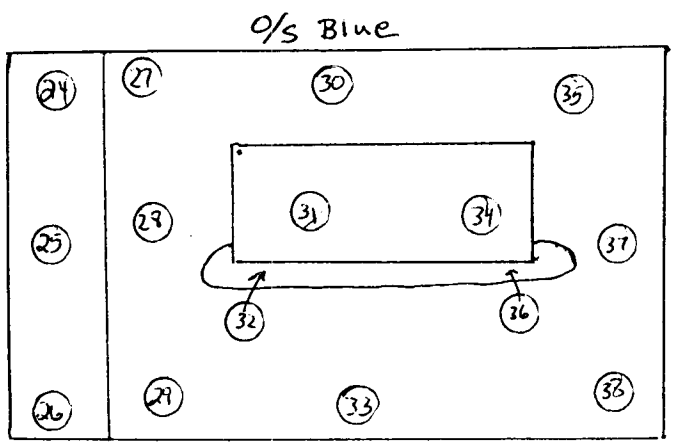
BLDG #: 701 LOCATION: 110' N.E. Souviner Shop DATE/TIME: 2/3/99 0 1400 ROUTINE SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LD3/50545 CD 2/8/00 TENNELEC 092436 CD 9/12/99 PAGE 1 of 2

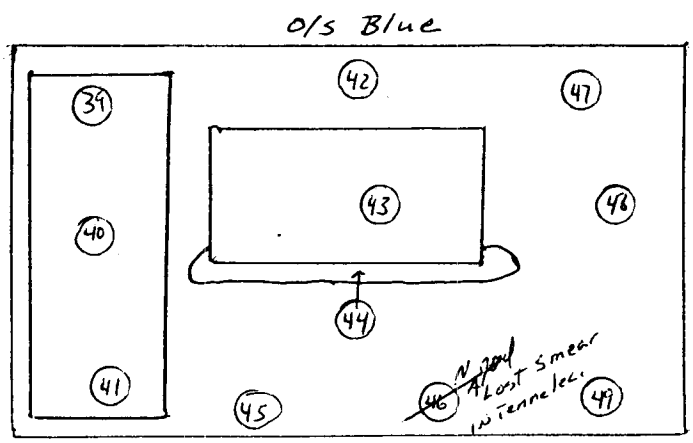
~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ DIRECT FRISK	50-70cpm = BKG	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA N/A					

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ) SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2. N/A	9. N/A	16. N/A	23. N/A	2. N/A	9. N/A
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

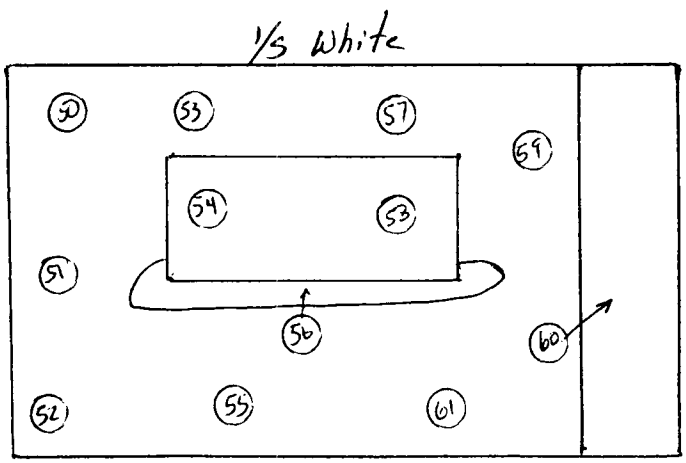
O/S Blue



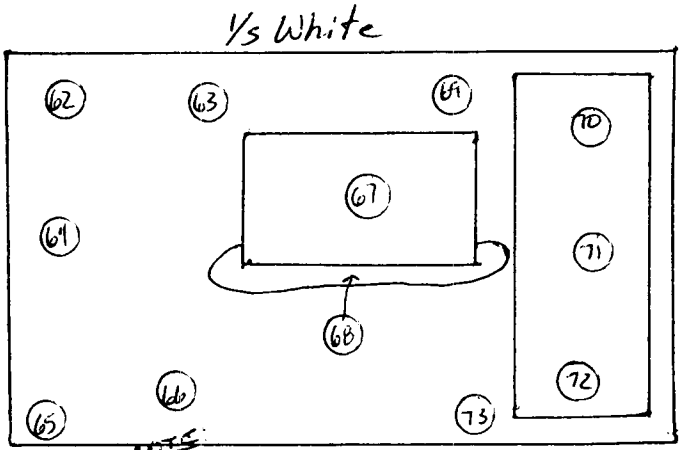
O/S Blue



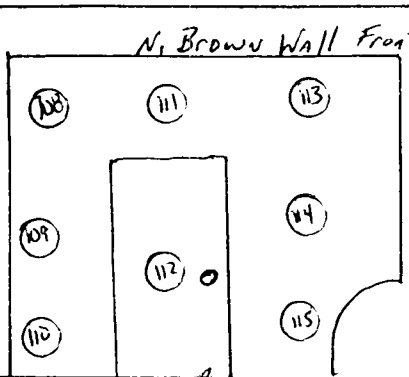
1/S White



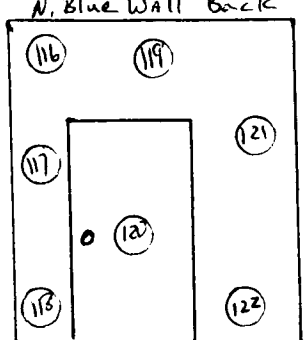
1/S White



N. Brown Wall Front



N. Blue Wall Back



NOTE: PAGES 1+2
DIRECT FRISKED ALL SURFACES - 100%
BKG = ≃ 50-70cpm RESULTS = ≃ 50-70cpm

COPY

SURVEYED BY: [signature] 3-31-99 Signature/date REVIEWED BY: R P Mittenberger 3/31/99 Signature/date

REASON FOR SURVEY #44-92

BLDG #: 701 LOCATION: 110' NE Sourviner Shop DATE/TIME: 2/3/99 @ 1400 ☐ ROUTINE ☑ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LR 3 / 50545 C.D. 2-8-00, Tennelec #092434 C.D. 9-12-99 PAGE 2 of 2

~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION		
~~CONTACT~~ DIRECT FRISK	≈ Bkg ≈ 50-70 cpm	TIME	uCi/cc	%DAC
GENERAL AREA N/A				

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

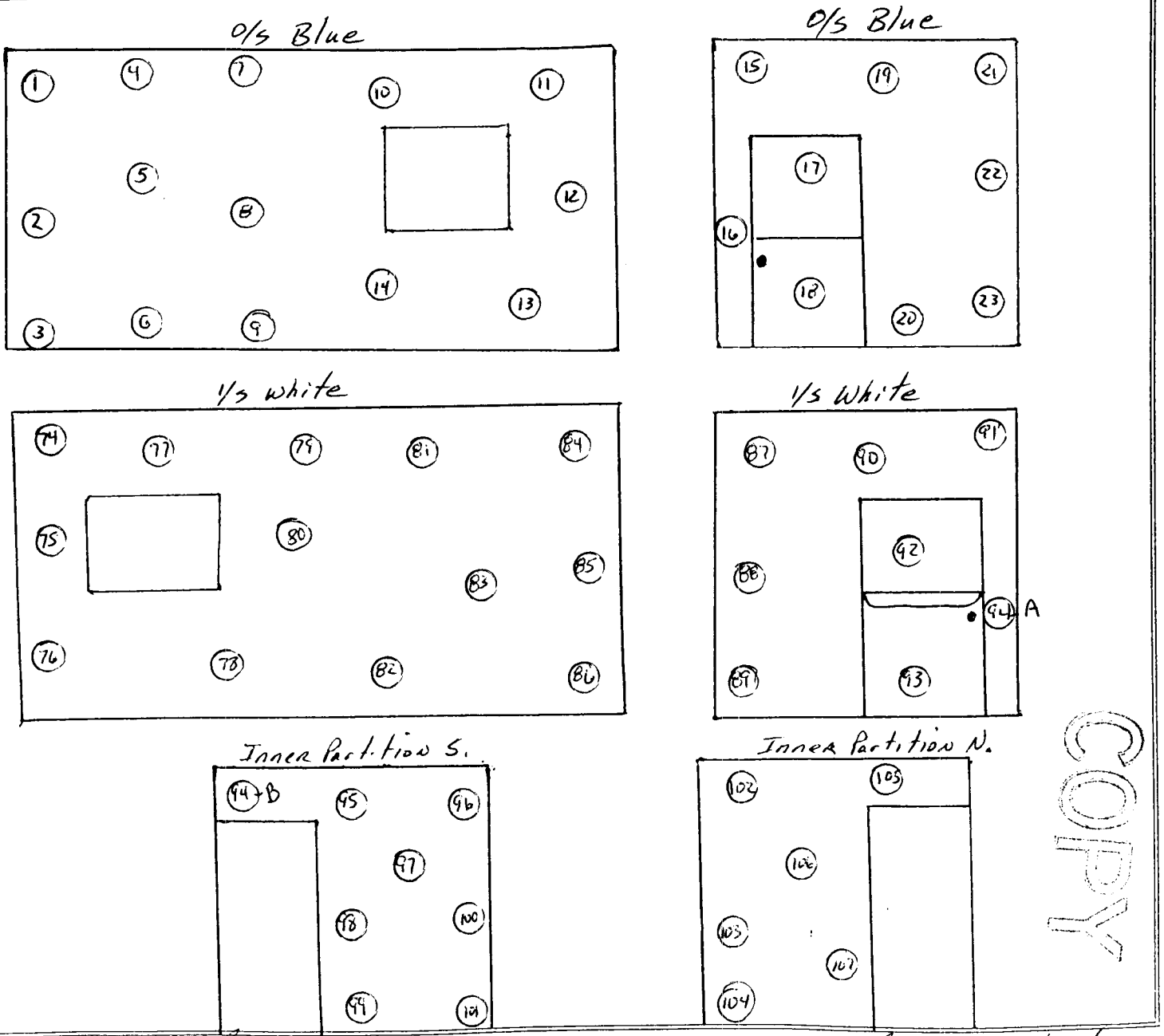
XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B→a) See Attached for Results

1. N/A	8. N/A	15. N/A	22. N/A
2.	9.	16.	23.
3.	10.	17.	24.
4.	11.	18.	25.
5.	12.	19.	26.
6.	13.	20.	27.
7.	14.	21.	28.

MASSLINN SURVEY RESULTS (DPM/LAS)

1. N/A	8. N/A
2.	9.
3.	10.
4.	11.
5.	12.
6.	13.
7.	14.



SURVEYED BY: [signature] 3-31-99 Signature/date REVIEWED BY: [signature] 3/31/99 Signature/Date

COPY

LB5100-W Low Background Counting System -- Smear Analysis

#99-52

#092436 CO 9/12/99

Date: 3/30/1999
Counting Unit: 1
Data file name: C:\LBXL\UNIT1\SME\D082.XLD
Batch Encoded: ##########
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00
High Voltage Setting: 1402.5

Application Revision: 0
Application Version: Standard

Alpha efficiency log file: ou239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.29%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: o93ab
Beta Efficiency: 26.00%
Beta into Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701 SCUVINIER SHOP

#1-26

Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
6	-0.166	2.77	<MDA	9.74	11.71	5.44	<AL	13.96	2.00	0.030	3.05	3/30/1999 13:49
6	2.500	2.77	<AL	9.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	3/30/1999 13:51
7	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 13:53
8	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 13:55
9	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 13:53
10	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 14:00
11	-0.166	2.77	<MDA	9.74	7.37	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 14:02
12	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 14:04
13	2.500	2.77	<AL	9.74	5.94	4.30	<AL	13.96	2.00	0.470	1.55	3/30/1999 14:06
14	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/30/1999 14:08
15	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 14:11
16	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 14:13
17	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 14:15
18	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 14:17
19	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 14:19
20	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 14:21
21	-0.166	2.77	<MDA	9.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 14:24
22	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 14:26
23	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 14:28
24	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 14:30
25	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 14:32
26	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 14:34
27	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 14:37
28	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 14:39
29	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 14:41
30	-0.166	2.77	<MDA	9.74	-3.67	1.93	<MDA	13.96	2.00	-0.030	-0.95	3/30/1999 14:43

#10

#20

SHW 3/3/99

LB5100-W Low Background Counting System -- Smear Analysis #99-52

E092436 CD 9/12/99

Date: 3/30/1999

Counting Unit id: 1

Data file name: C:\LB5\LUNLT1\SMEAR0082.XLD

Batch Encod: ##:##/####:#

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.29%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: sr90ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701 SCUMINERS SHOP

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	0.030	0.05	3/30/1999 14:45
2	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	0.030	1.05	3/30/1999 14:47
3	-0.166	2.77	<MDA	3.74	7.87	4.71	<AL	13.96	2.00	0.030	2.05	3/30/1999 14:50
4	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	0.030	2.55	3/30/1999 14:52
5	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	0.030	0.55	3/30/1999 14:54

#27-31

RHU 3/31/99

Reviewed: RHU 3/31/99

RPM 3/31/99

COPY

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-52

#092436 C 3/12/99

Date: 3/31/1999
Counting Unit: 1
Data file name: C:\LB3XL\UNIT1\SME1D083.XLD
Batch Ended: ##:##:##:#
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1402.5

Application Revision: 8
Application Version: Standard

Alpha efficiency log file: bu239ab
Alpha Efficiency: 18.04%
Alpha to Beta Crosstalk: 7.29%
Alpha Background (CPM): 0.03
Alpha Correction Factor: 1.000

Beta efficiency log file: ro99at
Beta Efficiency: 26.00%
Beta into Alpha Crosstalk: 0.11%
Beta Background (CPM): 0.955
Beta Correction Factor: 1.000

Batch ID: 701-110 SOUV SHOP

	Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
32	1	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 15:35
33	2	2.606	2.77	<AL	3.74	0.17	2.72	<MDA	13.96	2.00	0.470	0.05	3/30/1999 15:37
34	3	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 15:39
35	4	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 15:41
36	5	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 15:44
37	6	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 15:45
38	7	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 15:48
39	8	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 15:50
40	9	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 15:52
41	10	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 15:54
42	11	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 15:57
43	12	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 15:59
44	13	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 16:01
#46 lost ← 45	14	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 16:03
47	15	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 16:05
	16	-0.166	2.77	<MDA	3.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 16:07
	17	-0.166	2.77	<MDA	3.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 16:09
	18	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 16:12
	19	-0.166	2.77	<MDA	3.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.45	3/30/1999 16:14
	20	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 16:16
	21	-0.166	2.77	<MDA	3.74	21.33	6.94	<AL	13.96	2.00	-0.030	5.55	3/30/1999 16:18
	22	-0.166	2.77	<MDA	3.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 16:20
	23	-0.166	2.77	<MDA	3.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 16:23
	24	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 16:25
	25	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 16:27
58	26	-0.166	2.77	<MDA	3.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 16:29

3/31/99

COPY

#99-52

LB5100-W Low Background Counting System -- Smear Analysis

092436 CD 9/12/99

Date: 3/31/1999

Counting Unit: 1

Data file name: C:\LBXL\UNIT1\SMEAR0083.XLD

Batch Encoded: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 8

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.29%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: sr90ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701-110 SOUV SHCP

59-86

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.166	2.77	<MDA	9.74	7.87	4.71	<A_	13.96	2.00	-0.030	2.05	3/30/1999 16:31
28	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 16:33
29	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	0.030	0.05	3/30/1999 16:35
30	-0.166	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	3/30/1999 16:33
31	-0.166	2.77	<MDA	9.74	11.71	5.41	<A_	13.96	2.00	-0.030	3.05	3/30/1999 16:40
32	2.500	2.77	<A_	9.74	19.64	6.73	<A_	13.96	2.00	0.470	3.55	3/30/1999 16:42
33	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 16:44
34	2.500	2.77	<A_	9.74	9.79	5.09	<A_	13.96	2.00	0.470	2.55	3/30/1999 16:46
35	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 16:48
36	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 16:51
37	-0.166	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	3/30/1999 16:53
38	-0.166	2.77	<MDA	9.74	19.64	6.73	<A_	13.96	2.00	-0.030	3.55	3/30/1999 16:55
39	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 16:57
40	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 16:59
41	-0.166	2.77	<MDA	9.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 17:01
42	-0.166	2.77	<MDA	9.74	-3.67	1.93	<MDA	13.96	2.00	-0.030	-0.96	3/30/1999 17:04
43	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 17:06
44	-0.166	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	3/30/1999 17:08
45	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 17:10
46	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 17:12
47	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:15
48	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 17:17
49	-0.166	2.77	<MDA	9.74	5.94	4.30	<A_	13.96	2.00	-0.030	1.55	3/30/1999 17:19
50	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:21
51	2.500	2.77	<A_	9.74	7.87	4.71	<A_	13.96	2.00	0.470	2.05	3/30/1999 17:23
52	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:25
53	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 17:23
54	-0.166	2.77	<MDA	9.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 17:30

CHH 3/31/99

LB5100-Low Background Counting System -- Smear Analysis #99-52

#092436 CD 9/12/99

Date: 3/31/1999

Counting Unit: 1

Data file name: C:\LBXL\UNIT1\SMEAR0083.XLD

Batch Encoder: ##########

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 8

Application Version: Standard

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.23%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: sr90ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

Batch ID: 701-110 SOUV SHCP

	Carrier	Alpha Activity DPM	σ	flags	MDA	Beta Activity DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
87	85	-0.166	2.77	<MDA	3.74	-1.75	1.93	<MDA	13.96	2.00	-0.030	-0.46	3/30/1999 17:32
88	86	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:34
89	87	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:36
90	88	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:38
91	89	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 17:41
92	90	-0.166	2.77	<MDA	3.74	7.87	4.71	<AL	13.96	2.00	-0.030	2.05	3/30/1999 17:43
93	91	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 17:45
94A	92	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:47
94B	93	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 17:49
95-113	94	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 17:51
	95	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 17:54
	96	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 17:56
	97	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 17:58
	98	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:00
	99	-0.166	2.77	<MDA	3.74	13.64	5.73	<AL	13.96	2.00	-0.030	3.55	3/30/1999 18:02
	70	-0.166	2.77	<MDA	3.74	11.71	5.44	<AL	13.96	2.00	-0.030	3.05	3/30/1999 18:04
	71	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 18:07
	72	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 18:09
	73	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:11
#85 -	74	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 18:13
	75	2.908	2.77	<AL	3.74	9.79	5.09	<AL	13.96	2.00	0.470	2.55	3/30/1999 18:15
	76	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 18:17
	77	-0.166	2.77	<MDA	3.74	9.79	5.09	<AL	13.96	2.00	-0.030	2.55	3/30/1999 18:20
	78	5.378	3.92	AL	3.74	2.10	3.33	<MDA	13.96	2.00	0.970	0.55	3/30/1999 18:22
	79	-0.166	2.77	<MDA	3.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:24
	80	-0.166	2.77	<MDA	3.74	0.17	2.72	<MDA	13.96	2.00	-0.030	0.05	3/30/1999 18:26
	81	-0.166	2.77	<MDA	3.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 18:28
	82	-0.166	2.77	<MDA	3.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 18:30

BHN 3/31/99

LBS100-W Low Background Counting System -- Smear Analysis #99-52

#092436 CD 9/12/99

Date: 3/31/1999

Counting Unit: 1

Data file name: C:\LBXL\UNIT1\SME1D083.XLD

Batch Ended: ###/#/####/#

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00

Beta activity action level (DPM): 500.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1402.5

Application Revision: 3

Application Version: Standard

Batch ID: 701-110 SOUV SHOP

Alpha efficiency log file: pu239ab

Alpha Efficiency: 18.04%

Alpha to Beta Crosstalk: 7.29%

Alpha Background (CPM): 0.03

Alpha Correction Factor: 1.000

Beta efficiency log file: to99ab

Beta Efficiency: 26.00%

Beta into Alpha Crosstalk: 0.11%

Beta Background (CPM): 0.955

Beta Correction Factor: 1.000

114-122

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
33	-0.166	2.77	<MDA	9.74	-3.67	1.93	<MDA	13.96	2.00	-0.030	-0.96	3/30/1999 18:33
34	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:35
35	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 18:37
36	-0.166	2.77	<MDA	9.74	2.10	3.33	<MDA	13.96	2.00	-0.030	0.55	3/30/1999 18:39
37	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:41
38	-0.166	2.77	<MDA	9.74	5.94	4.30	<AL	13.96	2.00	-0.030	1.55	3/30/1999 18:43
39	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:46
40	-0.166	2.77	<MDA	9.74	4.02	3.85	<MDA	13.96	2.00	-0.030	1.05	3/30/1999 18:48
41	-0.166	2.77	<MDA	9.74	15.56	6.09	<AL	13.96	2.00	-0.030	4.05	3/30/1999 18:50

JHU 3/31/99

Reviewed JHU 3/31/99

RPM 3/31/99

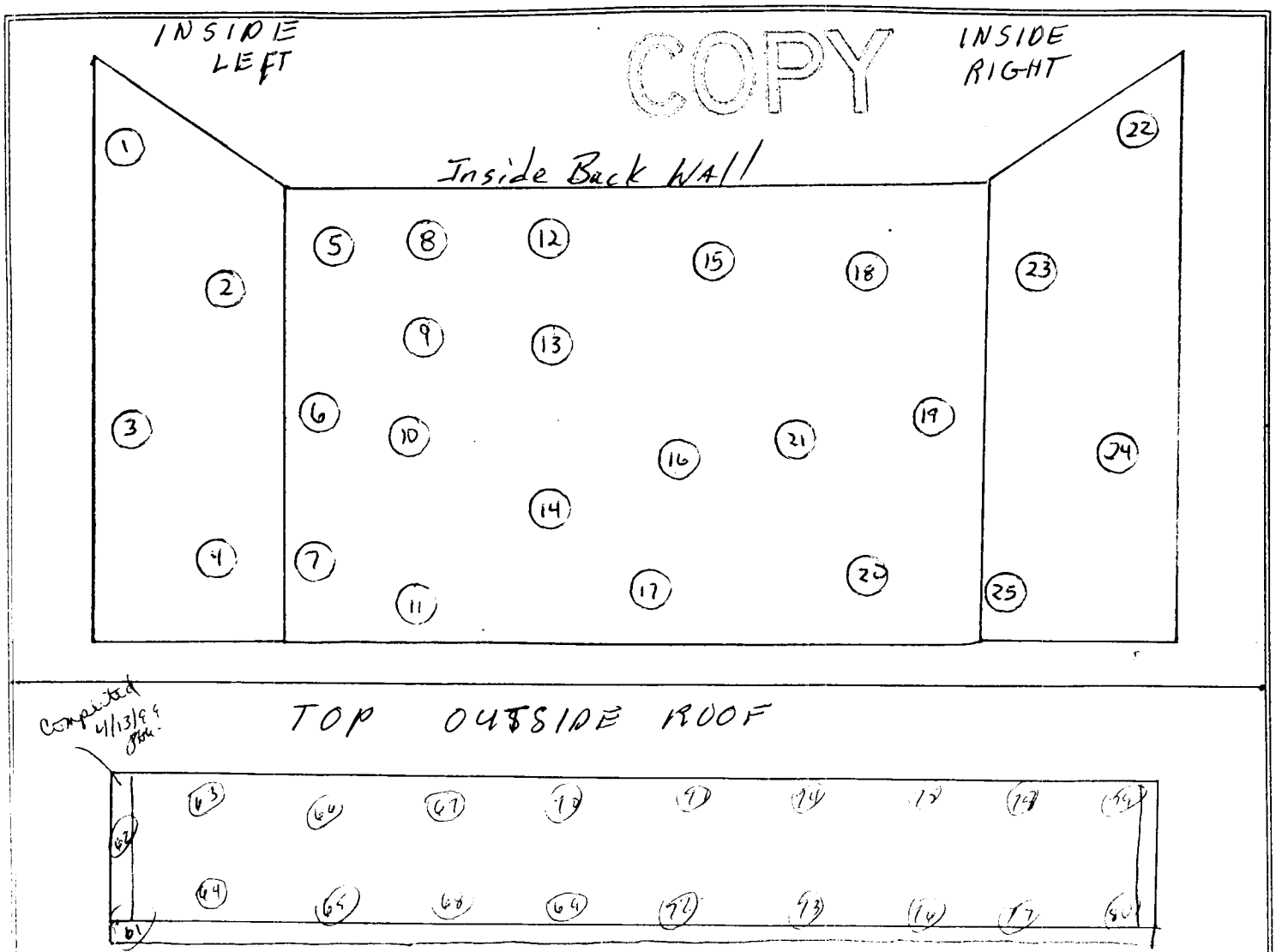
COPY

BLDG #: 701 LOCATION: 110' WEST DISPLAY DATE/TIME: 2/2/99 0800 ROUTINE ☐ SPECIAL ☑ RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LD-3/50545 CASE cd 2/8/00 TENNELEC #092286 cd 2/19/00 PAGE 1 of 3

~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION	☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ DIRECT FRISK	≈ BKG BKG - 50 cpm	TIME	uCi/cc	%DAC	XXX Y / ZZZ	XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE
GENERAL AREA	N/A	N/A	N/A	N/A		#99-61

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H (B-γ α) SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2. N/A	9. N/A	16. N/A	23. N/A	2. N/A	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.



100% of Surfaces Direct Frisk - Results ≈ BKG ≈ 40-60 cpm

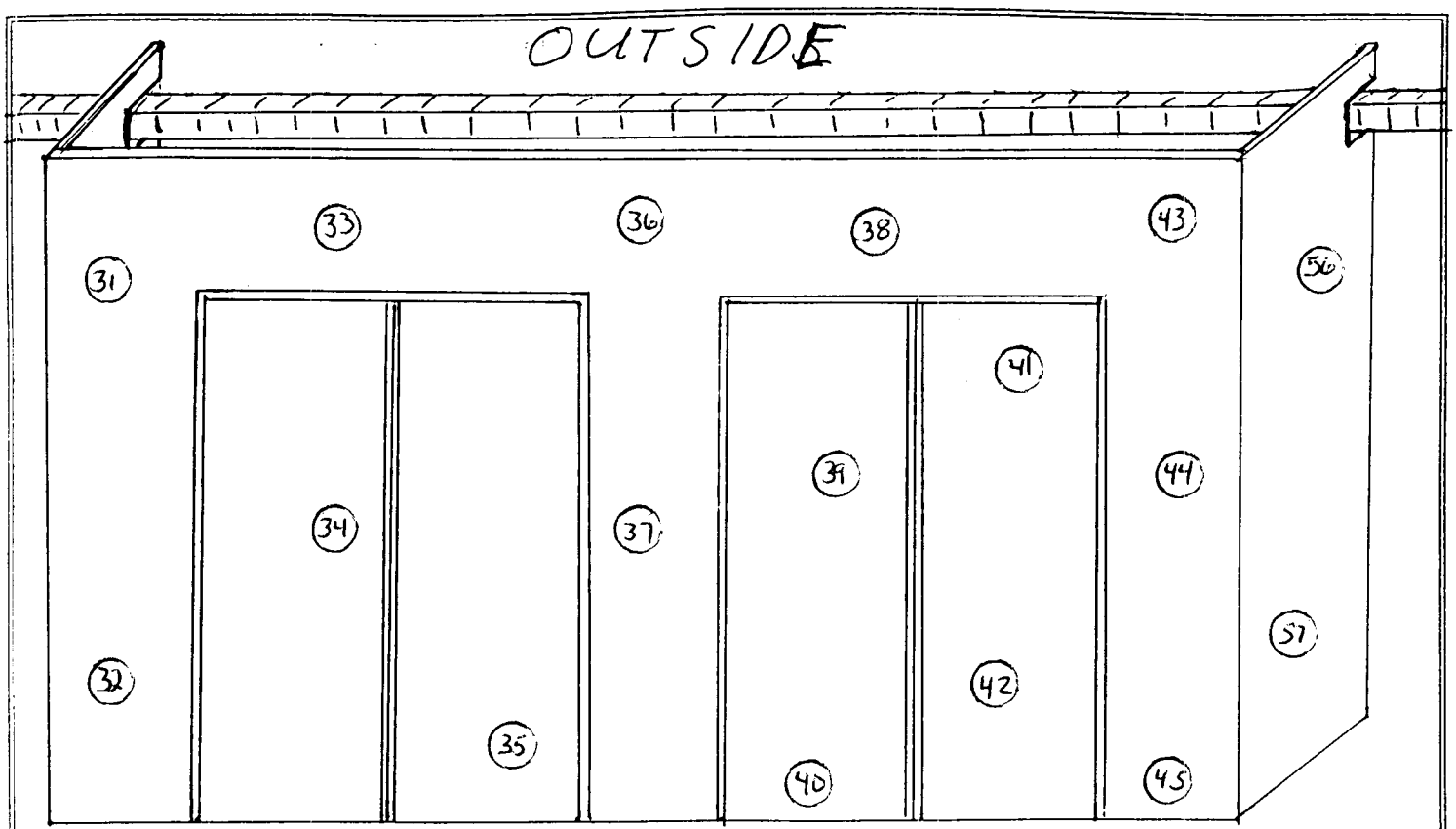
SURVEYED BY: [signature] 2/2/99 4/13/99 Signature/date REVIEWED BY: R P Miltenberger 4/19/99 Signature/date

ELDG #: 101 LOCATION: WEST SIDE DISPLAY CASE DATE/TIME: 2/2/99 0800 ROUTINE ☐ SPECIAL ☐ RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LD-3/505 45 TENNELEC CR2238(CD) 2/19/00 PAGE 2 of 3

~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION	O MASSLINN SURVEY LOCATION
CONTACT DIRECT FRISKING	≈ BKG ≈ BKG - 50 cpm	TIME	uCi/cc	%DAC	XXX Y / ZZZ	XXX = CONTACT READING ZZZ = READING @ 30 Cm Y = RADIATION TYPE
GENERAL AREA	N/A	N/A	N/A	N/A		

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α See Attached for Results				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3. N/A	10. N/A	17. N/A	24. N/A	3. N/A	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.



100% Direct frisk of Surfaces. Results ≈ Bkg ≈ 40-60 cpm

→ Gross masslin of these areas - Results < 1K dpm/swipe β/γ
Direct frisk of 100% Surface ≈ Bkg ≈ 40-60 cpm

~~LEFT SIDE & BACK NOT ACCESSABLE UNTIL REMOVED~~ 6-9-99

SURVEYED BY: [signature] 2/2/99 Signature/date REVIEWED BY: [signature] 4/19/99 Signature/date

REASON FOR SURVEY

BLDG #: 701 LOCATION: 110' WEST DISPLAY CASE DATE/TIME: 2/2/99 0800 ROUTINE ☐ SPECIAL ☐ RWP #: NA

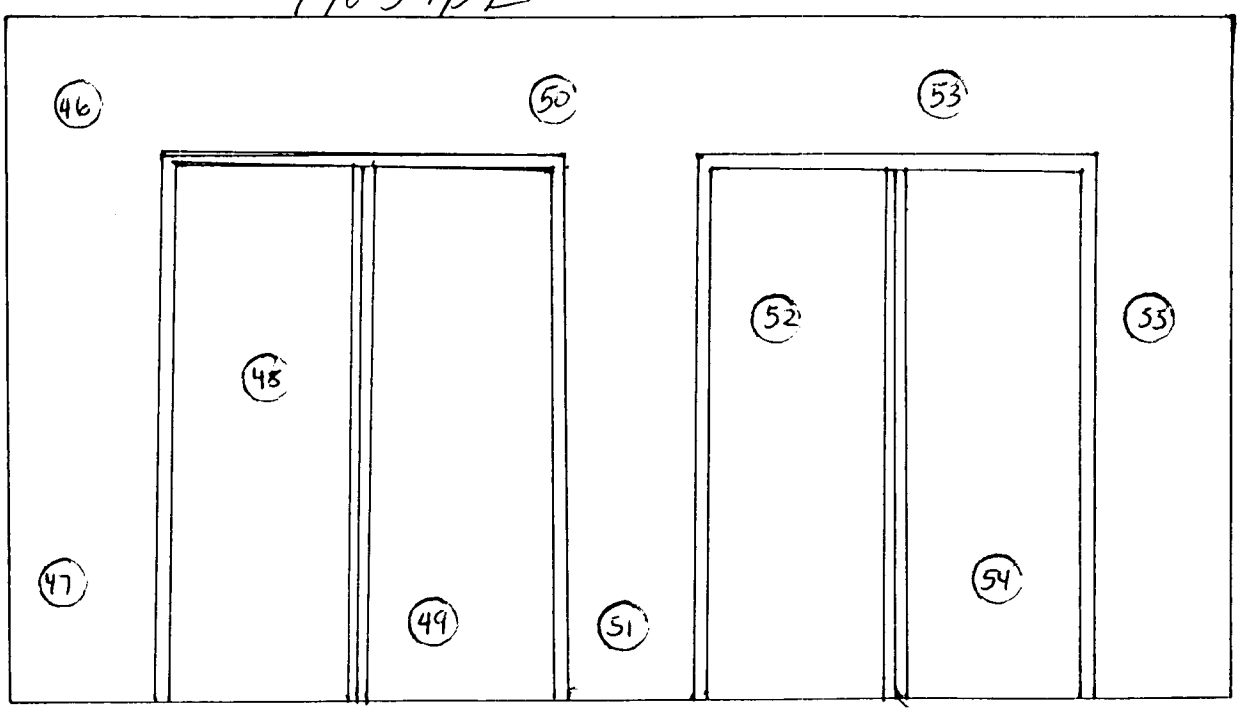
INSTRUMENTS, MODEL / SERIAL #: LD-3-50545 TENNELEC #092286 PAGE 3 of 3

CD 2/8/00 CD 2/19/00

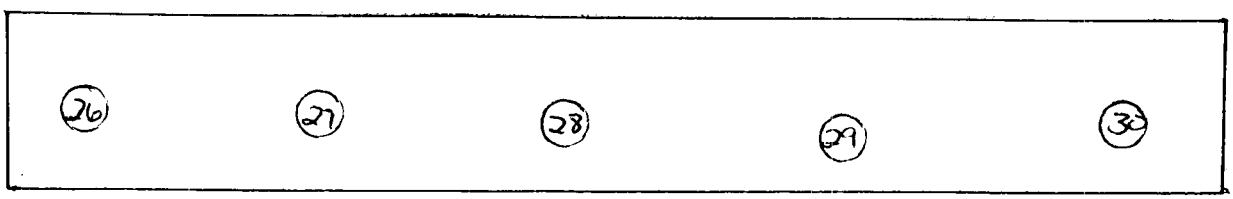
~~DOSE RATES (HIGHEST)~~ FRISKING		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ DIRECT FRISKING	≃ BKG BKG - 50 cpm	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA	N/A	N/A	N/A	N/A	#99-61

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α SEE ATTACHED FOR RESULTS				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3. N/A	10. N/A	17. N/A	24. N/A	3. N/A	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

INSIDE



TOP INSIDE ROOF



COPY

INSIDE
2 LIGHT FIXTURES - SMEARS #58, 59, 60

Direct frisk of 100% of these surfaces. Results ≃ Bkg ≃ 40-60 cpm

SURVEYED BY: [signature] 2/2/99 Signature/date REVIEWED BY: RP Mattenberger 4/19/99 Signature/date

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-61

#C-2238 CO 211916

Date: 4/5/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B000.XLD
Batch Ended: 4/4/1999 15:41
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-110' WEST DISPLAY

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 14:26
2	4.251	4.99	<AL	19.84	4.81	5.95	<MDA	23.59	1.10	0.774	1.27	4/4/1999 14:27
3	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:28
4	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:30
5	4.251	4.99	<AL	19.84	4.81	5.95	<MDA	23.59	1.10	0.774	1.27	4/4/1999 14:31
6	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:32
7	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:34
8	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:35
9	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:36
10	4.251	4.99	<AL	19.84	-2.06	3.44	<MDA	23.59	1.10	0.774	-0.54	4/4/1999 14:37
11	4.251	4.99	<AL	19.84	1.38	4.86	<MDA	23.59	1.10	0.774	0.36	4/4/1999 14:39
12	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 14:40
13	-0.741	4.99	<MDA	19.84	-5.49	3.44	<MDA	23.59	1.10	-0.135	-1.45	4/4/1999 14:41
14	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:42
95	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:44
16	4.251	4.99	<AL	19.84	-5.49	3.44	<MDA	23.59	1.10	0.774	-1.45	4/4/1999 14:45
17	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 14:46
18	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/4/1999 14:48
19	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:49
20	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:50
21	9.244	7.07	At AL	19.84	15.11	8.43	<AL	23.59	1.10	1.683	4.00	4/4/1999 14:51
22	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 14:53
23	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 14:54
24	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 14:55
25	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 14:56
26	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 14:58

COPY

LB5100-W Low Background Counting System -- Smear Analysis #99-61

#092280 CD 2/19/00

Date: 4/5/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1B000.XLD

Batch Ended: 4/4/1999 15:41

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-110' WEST DISPLAY

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 14:59
28	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:00
29	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/4/1999 15:02
30	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:03
31	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:04
32	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 15:05
33	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:07
34	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:08
35	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:09
36	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:10
37	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:12
38	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:13
39	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:14
40	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:15
41	4.251	4.99	<AL	19.84	15.11	8.43	<AL	23.59	1.10	0.774	4.00	4/4/1999 15:17
42	4.251	4.99	<AL	19.84	4.81	5.95	<MDA	23.59	1.10	0.774	1.27	4/4/1999 15:18
43	4.251	4.99	<AL	19.84	-2.06	3.44	<MDA	23.59	1.10	0.774	-0.54	4/4/1999 15:19
44	4.251	4.99	<AL	19.84	11.68	7.69	<AL	23.59	1.10	0.774	3.09	4/4/1999 15:21
45	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:22
46	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:23
47	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:24
48	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:26
49	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:27
50	4.251	4.99	<AL	19.84	-2.06	3.44	<MDA	23.59	1.10	0.774	-0.54	4/4/1999 15:28
51	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:29
52	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:31
53	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/4/1999 15:32
54	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/4/1999 15:33

LB5100-W Low Background Counting System -- Smear Analysis #99-61

#C12236 CD 2/19/00

Date: 4/5/1999
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B000.XLD
Batch Ended: 4/4/1999 15:41
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00
Beta activity action level (DPM): 1000.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1357.5

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: pu239ic
Alpha Efficiency: 18.21%
Alpha to Beta Crosstalk: 6.80%
Alpha Background (CPM): 0.135
Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic
Beta Efficiency: 26.47%
Beta into Alpha Crosstalk: 0.10%
Beta Background (CPM): 1.454
Beta Correction Factor: 1.000

Batch ID: 701-110' WEST DISPLAY

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
55	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/4/1999 15:35
56	-0.741	4.99	<MDA	19.84	-2.06	3.44	<MDA	23.59	1.10	-0.135	-0.54	4/4/1999 15:36
57	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:37
58	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:38
59	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/4/1999 15:40
60	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/4/1999 15:41

Reviewed: [illegible] 4/5/99

RPM 4/19/99

COPY

COPY

LB5100-W Low Background Counting System -- Smear Analysis

#99-61

#092286 0021 19 100

Date: 4/13/1999

Counting Unit id: 1

Data file name: C:\LBXL\UNIT1\SME1C002.XLD

Batch Ended: ############

Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 20.00

Beta activity action level (DPM): 1000.00

Certainty level for MDA and flags: 95.00%

High Voltage Setting: 1357.5

Application Revision: 3

Application Version: Standard

Alpha efficiency log file: pu239ic

Alpha Efficiency: 18.21%

Alpha to Beta Crosstalk: 6.80%

Alpha Background (CPM): 0.135

Alpha Correction Factor: 1.000

Beta efficiency log file: tc99ic

Beta Efficiency: 26.47%

Beta into Alpha Crosstalk: 0.10%

Beta Background (CPM): 1.454

Beta Correction Factor: 1.000

Batch ID: 701-110' WEST DISPLAY-ROOF TOP

		Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
F 61-80	21	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/13/1999 13:18
	22	14.237	8.66	At AL	19.84	8.24	6.87	<AL	23.59	1.10	2.592	2.18	4/13/1999 13:19
	23	9.244	7.07	At AL	19.84	15.11	8.43	<AL	23.59	1.10	1.683	4.00	4/13/1999 13:20
	24	4.251	4.99	<AL	19.84	8.24	6.87	<AL	23.59	1.10	0.774	2.18	4/13/1999 13:22
65	25	4.251	4.99	<AL	19.84	21.98	9.74	<AL	23.59	1.10	0.774	5.82	4/13/1999 13:23
	26	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/13/1999 13:24
	27	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/13/1999 13:26
	28	-0.741	4.99	<MDA	19.84	21.98	9.74	<AL	23.59	1.10	-0.135	5.82	4/13/1999 13:27
	29	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/13/1999 13:28
70	30	4.251	4.99	<AL	19.84	21.98	9.74	<AL	23.59	1.10	0.774	5.82	4/13/1999 13:29
	31	9.244	7.07	At AL	19.84	1.38	4.86	<MDA	23.59	1.10	1.683	0.36	4/13/1999 13:31
	32	-0.741	4.99	<MDA	19.84	4.81	5.95	<MDA	23.59	1.10	-0.135	1.27	4/13/1999 13:32
	33	9.244	7.07	At AL	19.84	4.81	5.95	<MDA	23.59	1.10	1.683	1.27	4/13/1999 13:33
	34	-0.741	4.99	<MDA	19.84	15.11	8.43	<AL	23.59	1.10	-0.135	4.00	4/13/1999 13:34
75	35	-0.741	4.99	<MDA	19.84	15.11	8.43	<AL	23.59	1.10	-0.135	4.00	4/13/1999 13:36
	36	-0.741	4.99	<MDA	19.84	1.38	4.86	<MDA	23.59	1.10	-0.135	0.36	4/13/1999 13:37
	37	-0.741	4.99	<MDA	19.84	11.68	7.69	<AL	23.59	1.10	-0.135	3.09	4/13/1999 13:38
	38	4.251	4.99	<AL	19.84	18.55	9.10	<AL	23.59	1.10	0.774	4.91	4/13/1999 13:40
	39	4.251	4.99	<AL	19.84	52.89	14.24	<AL	23.59	1.10	0.774	14.00	4/13/1999 13:41
80	40	-0.741	4.99	<MDA	19.84	8.24	6.87	<AL	23.59	1.10	-0.135	2.18	4/13/1999 13:42

OHM

Reviewed: JHV 4/13/99

RBM 4/19/99

REASON FOR SURVEY

BLDG #: 701 LOCATION: VIDEO SHACK 110' WEST DATE/TIME: 12-9-98/0900 ROUTINE SPECIAL RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LD-3/50545

~~DOSE RATES (HIGHEST)~~ DIRECT FRISK		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION	□ MASSLINN SURVEY LOCATION
~~CONTACT~~ BKG = 60 CPM	60 CPM	TIME	uCi/cc	%DAC	XXX Y / ZZZ	XXX = CONTACT READING ZZZ = READING @ 30 Cm Y = RADIATION TYPE
GENERAL AREA	N/A	N/A	N/A	N/A		Page 1 of 2

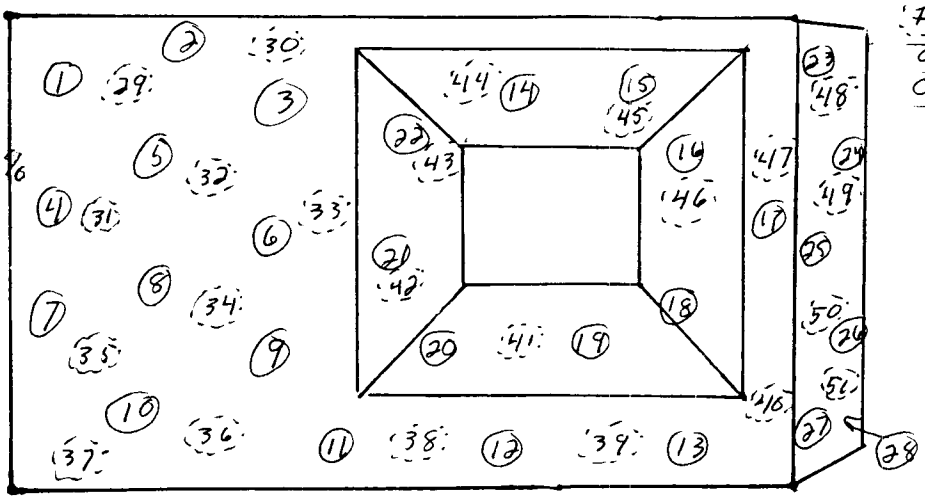
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1.	8.
2.	9.	16.	23.	2.	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

SEE ATTACHED

N/A N/A

FRONT

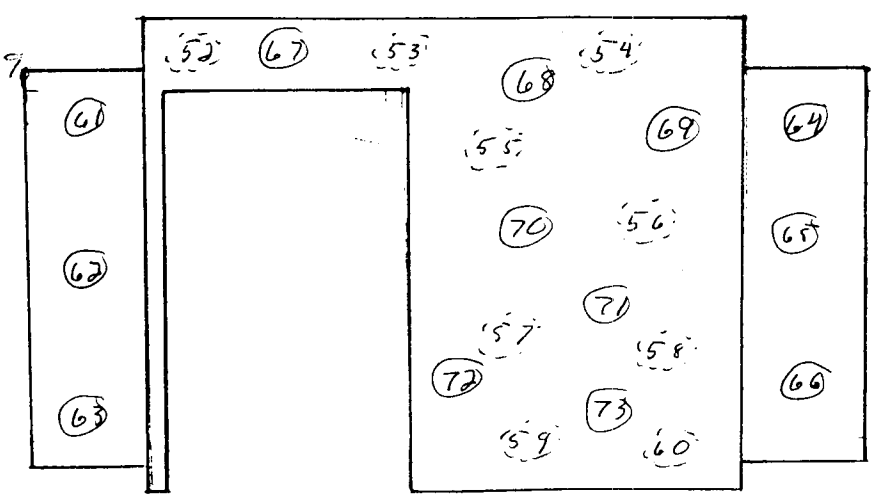
DIRECT FRISKED
ALL SURFACES 100%
ALL ≤ BKG
BKG = 60 cpm



(#) = SMEAR ON INSIDE OF WALL

BACK

DIRECT FRISKED
ALL SUFACES 100%
ALL ≤ BKG
BKG = 60 cpm



(#) = SMEAR ON INSIDE OF WALL

SURVEYED BY: Robert A Clark / 12-9-98 Signature/date REVIEWED BY: R P Mattenberger 4/12/99 Signature/date

REASON FOR SURVEY

BLDG #: 70-1 LOCATION: VIDEO SHACK 100' WEST DATE/TIME: 12-9-98/0900 ROUTINE ☐ SPECIAL ☐ RWP #: NA

INSTRUMENTS, MODEL / SERIAL #:

~~DOSE RATES (HIGHEST)~~ DIRECT FRISK		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ BKG = 60 cpm	60 CPM	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA	N/A	N/A	N/A	N/A	Page 2 of 2

SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α

1.	8.	15.	22.				
2.	9.	16.	23.				
3.	10.	17.	24.				
4.	11.	18.	25.				
5.	12.	19.	26.				
6.	13.	20.	27.				
7.	14.	21.	28.				

SEE ATTACHED

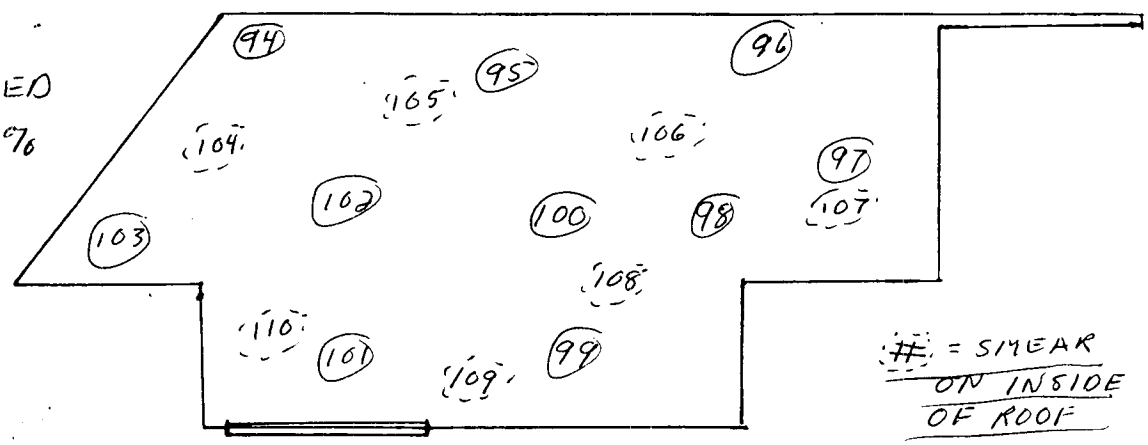
MASSLINN SURVEY RESULTS (DPM/LAS)

1.	8.		
2.	9.		
3.	10.		
4.	11.		
5.	12.		
6.	13.		
7.	14.		

N/A N/A

TOP

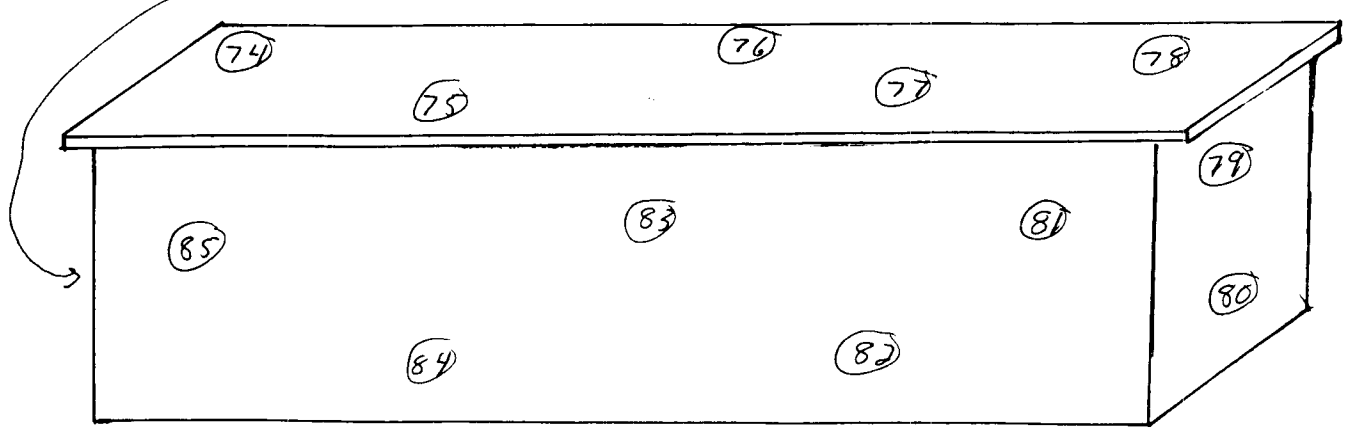
DIRECT FRISKED SURFACES 100%
ALL ≤ BKG
BKG = 60 cpm



= SMEAR ON INSIDE OF ROOF

BENCH INSIDE OF SHACK

SMEARS #S 86 & 87 ON LEFT SIDE
SMEARS #S 88 - 93 ON BACK SIDE



DIRECT FRISKED SURFACES 100% ALL ≤ BKG BKG = 60 cpm

SURVEYED BY: Robert A. Clark / 12-9-98 Signature/date REVIEWED BY: R D Mittenberg 4/12/99 Signature/date

COPY

LB5100-Low Background Counting System -- Smear Analysis

Date: 12/11/98
Counting Unit: 1
Data file name: C:\LBX\UNIT1\SMEAR\D2111X.D
Batch Ended: 12/11/98 11:37
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.0
Beta activity action level (DPM): 100.00
Certainty level for MDA and flags: 95.00
High Voltage Setting: 440

Application Revision:

Application Version Validation:

Alpha efficiency (counts/disintegration): 0.38
Alpha Efficiency (%): 17.74
Alpha to Beta Crosstalk: 5.89
Alpha Background (CPM): 0.52
Alpha Correction Factor: 1.00
Beta efficiency (counts/disintegration): 0.28
Beta Efficiency (%): 24.50
Beta to Alpha Crosstalk: 3.74
Beta Background (CPM): 1.53
Beta Correction Factor: 1.00

Batch ID: bgnvilleolstacks110

	Alpha Activity				Beta Activity							
Counter	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	Alpha CPM	Beta CPM	Collection Date - Time
1	-0.293	2.32	<MDA	10.62	5.51	4.51	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:33
2	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:37
3	-0.293	2.32	<MDA	10.62	7.56	4.94	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:37
4	-0.293	2.32	<MDA	10.62	-2.55	2.02	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:4[illegible]
5	-0.293	2.32	<MDA	10.62	-0.54	2.83	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:4[illegible]
6	2.525	2.32	<MDA	10.62	-0.55	2.02	<MDA	15.45	2.0	[illegible]	[illegible]	12/11/98 11:4[illegible]
7	2.525	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.0	0.49	[illegible]	12/11/98 11:4[illegible]
8	-0.293	2.32	<MDA	10.62	-2.55	2.02	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:5[illegible]
9	-0.293	2.32	<MDA	10.62	7.56	4.94	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:5[illegible]
10	-0.293	2.32	<MDA	10.62	-0.54	2.83	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:5[illegible]
11	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:5[illegible]
12	-0.293	2.32	<MDA	10.62	9.54	5.64	<MDA	15.45	2.0	0.55	[illegible]	[illegible]
13	-0.293	2.32	<MDA	10.62	11.58	6.71	<MDA	15.45	2.0	0.55	[illegible]	[illegible]
14	-0.293	2.32	<MDA	10.62	5.51	4.51	<MDA	15.45	2.0	0.55	[illegible]	[illegible]
15	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:0[illegible]
16	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:0[illegible]
17	-0.293	2.32	<MDA	10.62	-0.54	2.83	<MDA	15.45	2.0	0.55	[illegible]	[illegible]
18	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 [illegible]
19	2.525	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.0	0.49	[illegible]	12/11/98 [illegible]
20	2.525	2.32	<MDA	10.62	7.56	4.94	<MDA	15.45	2.0	0.49	[illegible]	12/11/98 [illegible]
21	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.0	0.55	[illegible]	12/11/9[illegible]
22	2.525	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.0	0.49	[illegible]	12/11/98 1[illegible]2
23	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:2[illegible]
24	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:2[illegible]
25	-0.293	2.32	<MDA	10.62	7.56	4.94	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:2
26	-0.293	2.32	<MDA	10.62	5.51	4.51	<MDA	15.45	2.0	0.55	[illegible]	12/11/98 11:2[illegible]

COPY

LB5100-W Low Background Counting System - Smear Analysis

Date: 12/11/98
Counting Unit: 1
Data file name: C:\LBXL\UNIT1\SME_E122.XLD
Batch Ended: 12/11/98 12:21
Crosstalk Correction: Not Applied

Alpha activity action level: DPM [illegible]
Beta activity action level: DPM [illegible]
Certainty level for MDA and flags: 95.00
High Voltage Setting: 440

Application Review

Alpha efficiency for [illegible]
Alpha Efficiency: 17.74
Alpha to Beta Crosstalk: [illegible]
Alpha background (CPM): [illegible]
Alpha Correction Factor: [illegible]

Beta efficiency for [illegible]
Beta Efficiency: [illegible]
Beta into Alpha Crosstalk: [illegible]
Beta background (CPM): [illegible]
Beta Correction Factor: [illegible]

Batch ID: Eg-river shack

	Alpha Activity				Beta Activity				Count	Alpha	[illegible]	[illegible]	[illegible]
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	[illegible]	[illegible]	[illegible]
31	10.979	5.84	<AL	10.62	[illegible]	[illegible]	<AL	15.45	2.00	1.48	[illegible]	[illegible]	[illegible]
32	2.525	2.82	<AL	10.62	7.53	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
33	5.84	3.99	<AL	10.62	3.50	4.04	<MDA	15.45	2.00	0.48	[illegible]	[illegible]	[illegible]
34	-0.293	2.82	<MDA	10.62	5.51	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
35	-0.293	2.82	<MDA	10.62	-0.54	[illegible]	<MDA	15.45	2.00	0.52	[illegible]	[illegible]	[illegible]
36	-0.293	2.82	<MDA	10.62	-2.55	[illegible]	<MDA	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
37	-0.293	2.82	<MDA	10.62	7.53	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
38	-0.293	2.82	<MDA	10.62	7.53	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
39	-0.293	2.82	<MDA	10.62	5.51	[illegible]	<AL	15.45	2.00	0.52	[illegible]	[illegible]	[illegible]
40	-0.293	2.82	<MDA	10.62	5.51	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
41	-0.293	2.82	<MDA	10.62	5.51	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
42	-0.293	2.82	<MDA	10.62	1.48	[illegible]	<MDA	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
43	-0.293	2.82	<MDA	10.62	-0.54	[illegible]	<MDA	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
44	2.525	2.82	<AL	10.62	15.51	[illegible]	<AL	15.45	2.00	0.48	[illegible]	[illegible]	[illegible]
45	2.525	2.82	<AL	10.62	5.51	[illegible]	<AL	15.45	2.00	0.48	[illegible]	[illegible]	[illegible]
46	-0.293	2.82	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
47	-0.293	2.82	<MDA	10.62	5.51	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
48	-0.293	2.82	<MDA	10.62	5.51	[illegible]	<AL	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
49	-0.293	2.82	<MDA	10.62	1.48	[illegible]	<MDA	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]
50	-0.293	2.82	<MDA	10.62	[illegible]	[illegible]	<MDA	15.45	2.00	[illegible]	[illegible]	[illegible]	[illegible]

Reviewed: [illegible] 4/1/99
[illegible]
4/12/99

2066

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/11/98
Counting Unit: 1
Data file name: C:\LBXL\UNIT1\SME1F050.XLD
Batch Ended: 12/11/98 13:07
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 0.00
Beta activity action level (DPM): 0.00
Certainty level for MDA and flags: 5.00
High Voltage Setting: 440

Application Revision: [illegible]

Application Version: Standard

Alpha efficiency for filter: 0.239 ab
Alpha Efficiency: 17.74 %
Alpha to Beta Crosstalk: 3.33%
Alpha Background (CPM): 0.052
Alpha Correction Factor: 1.000

Beta efficiency for filter: 0.99 ab
Beta Efficiency: 24.40
Beta into Alpha Crosstalk: [illegible]
Beta Background (CPM): 1.133
Beta Correction Factor: 1.000

Batch ID: video snack BGRP

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	Flags	MDA	DPM	σ	Flags	MDA	Time (min)	DPM	CPM	Date - Time
51	-0.29	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.00	0.45	-0.13	12/11/98 12:2
52	-0.29	2.32	<MDA	10.62	7.53	4.94	<A_	15.45	2.00	0.53	[illegible]	12/11/98 12:2
53	-0.29	2.32	<MDA	10.62	1.48	3.49	<MDA	15.45	2.00	0.53	[illegible]	12/11/98 12:2
54	5.34	3.99	<A_L	10.62	7.53	4.94	<A_	15.45	2.00	0.48	[illegible]	12/11/98 12:[illegible]
55	-0.29	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.00	0.53	-0.13	12/11/98 12:[illegible]
56	-0.29	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	0.53	[illegible]	12/11/98 12:[illegible]
57	-0.29	2.32	<MDA	10.62	5.51	4.51	<A_	15.45	2.00	0.53	[illegible]	12/11/98 12:[illegible]
58	-0.29	2.32	<MDA	10.62	5.51	4.51	<A_	15.45	2.00	0.53	[illegible]	12/11/98 12:[illegible]
59	-0.29	2.32	<MDA	10.62	1.48	3.49	<MDA	15.45	2.00	0.53	[illegible]	12/11/98 12:4
60	-0.29	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.00	0.53	-0.13	12/11/98 12:4
61	2.525	2.32	<A_	10.62	1.48	3.49	<MDA	15.45	2.00	0.48	[illegible]	12/11/98 12:4
62	-0.29	2.32	<MDA	10.62	1.48	3.49	<MDA	15.45	2.00	0.53	[illegible]	12/11/98 12:4
63	-0.29	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	0.53	[illegible]	12/11/98 12:4
64	-0.29	2.32	<MDA	10.62	-2.55	2.02	<MDA	15.45	2.00	0.53	-0.63	12/11/98 12:5
65	-0.29	2.32	<MDA	10.62	1.48	3.49	<MDA	15.45	2.00	0.53	[illegible]	12/11/98 12:5
66	-0.29	2.32	<MDA	10.62	-2.55	2.02	<MDA	15.45	2.00	0.53	-0.63	12/11/98 12:56
67	-0.29	2.32	<MDA	10.62	5.51	4.51	<A_	15.45	2.00	0.53	[illegible]	12/11/98 12:5
68	-0.29	2.32	<MDA	10.62	-2.55	2.02	<MDA	15.45	2.00	0.53	-0.63	12/11/98 13:00
69	-0.29	2.32	<MDA	10.62	-2.55	2.02	<MDA	15.45	2.00	0.53	-0.63	12/11/98 13:02
70	-0.29	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.00	0.53	-0.13	12/11/98 13:04
71	2.525	2.32	<A_	10.62	5.51	4.51	<A_	15.45	2.00	0.48	[illegible]	12/11/98 13:0[illegible]

Reviewed: [illegible] 4/1/99
[illegible] 4/12/99

3066

LB5100-IV Low Background Counting System -- Linear Analysis

Date: 12/11/98
Counting Unit: 1
Data file name: C:\LB5100-IV\NEW\SNEG\2[illegible]
Batch Ended: 12/11/98 13:[illegible]
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.0
Beta activity action level (DPM): 500.0
Certainty level for MDA and flag: 5.00
High Voltage Setting: 440

Application Revision:

Application Version: Standard

Alpha efficiency calibration date: [illegible]
Alpha Efficiency: 17.74 %
Alpha to Beta Crosstalk: 0.[illegible]
Alpha Background (CPM): 0.052
Alpha Correction Factor: 0.30

Beta efficiency calibration date: [illegible]
Beta Efficiency: 24.30 %
Beta to Alpha Crosstalk: [illegible]
Beta Background (CPM): [illegible]
Beta Correction Factor: 0.00

Batch ID: [illegible]

Carrier	Alpha Activity DPM	[illegible]	[illegible]	MDA	Beta Activity DPM	[illegible]	[illegible]	MDA	[illegible] (mg/cm²)	Alpha CPM	Beta CPM	Completion Date - Time
72	2.92	2.32	<A_	10.62	19.6	1.01	<A_	15.45	2.0	0.43	.81	12/11/98 [illegible]
73	-0.293	2.32	<MDA	10.62	1.48	[illegible]	<MDA	15.45	2.0	[illegible]	[illegible]	12/11/98 [illegible]
74	-0.293	2.32	<MDA	10.62	7.58	1.94	<A_	15.45	2.0	0.45	.81	12/11/98 [illegible]
75	2.92	2.32	<A_	10.62	-0.54	2.85	<MDA	15.45	2.0	[illegible]	-0.13	12/11/98 [illegible]
76	-0.293	2.32	<MDA	10.62	19.6	1.01	<A_	15.45	2.0	0.51	.81	12/11/98 [illegible]
77	-0.293	2.32	<MDA	10.62	7.58	1.94	<A_	15.45	2.0	0.45	.81	12/11/98 [illegible]
78	-0.293	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.0	-0.052	-0.13	12/11/98 19:27
79	-0.293	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.0	-0.052	-0.13	12/11/98 19:24
80	-0.293	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.0	-0.052	-0.13	12/11/98 19:29
81	-0.293	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.0	-0.052	-0.13	12/11/98 19:28
82	-0.293	2.32	<MDA	10.62	-0.54	2.85	<MDA	15.45	2.0	-0.052	-0.13	12/11/98 19:31
83	-0.293	2.32	<MDA	10.62	19.57	3.03	<A_	15.45	2.0	-0.052	.81	12/11/98 19:33
84	-0.293	2.32	<MDA	10.62	7.58	1.94	<A_	15.45	2.0	-0.052	.81	12/11/98 19:36

Reviewed: [illegible] 4/1/99
RM
4/12/99

LB5200-W Low Background Counting System -- Linear Analysis

Date: 12/11/98
Counting Unit Id: 1
Data file name: C:\LB3XL\UNIT1\SMEAR\D211.XLD
Batch Entered: 12/11/98 11:37:
Crystal Correction: Not Applied

Alpha activity action level: DPM: 10.00
Beta activity action level: DPM: 100.00
Certainty level for MDA and flags: 5.00
High Voltage Setting: 1440

Application Revision:

Application Version: Data.std

Alpha efficiency log file: [illegible]
Alpha Efficiency: 17.74
Alpha Beta Cross talk: 0.000
Alpha Background (CPM): 0.052
Alpha Correction Factor: 1.000

Beta efficiency log file: [illegible]
Beta Efficiency: 24.30 %
Beta to Alpha Cross talk: [illegible]
Beta Background (CPM): 1.133
Beta Correction Factor: 1.000

Batch ID: bgrr vicec shack 110'

85-110

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
Carrier	DPM	σ	Flags	MDA	DPM	σ	Flags	MDA	time (min)	CPM	CPM	Date - Time
1	-0.293	2.32	<MDA	10.62	5.51	4.51	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 10:3[illegible]
2	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 10:3[illegible]
3	-0.293	2.32	<MDA	10.62	7.58	4.94	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 10:3[illegible]
4	-0.293	2.32	<MDA	10.62	-2.55	3.02	<MDA	15.45	2.00	-0.052	-0.63	12/11/98 10:4[illegible]
5	-0.293	2.32	<MDA	10.62	-0.54	2.93	<MDA	15.45	2.00	-0.052	-0.13	12/11/98 10:4[illegible]
6	2.525	2.32	<A_	10.62	-2.55	3.02	<MDA	15.45	2.00	-0.048	0.63	12/11/98 10:4[illegible]
7	2.525	2.32	<A_	10.62	3.50	4.04	<MDA	15.45	2.00	-0.048	[illegible]	12/11/98 10:4[illegible]
8	-0.293	2.32	<MDA	10.62	-2.55	3.02	<MDA	15.45	2.00	-0.052	-0.63	12/11/98 10:5[illegible]
9	-0.293	2.32	<MDA	10.62	7.58	4.94	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 10:5[illegible]
10	-0.293	2.32	<MDA	10.62	-0.54	2.93	<MDA	15.45	2.00	-0.052	-0.13	12/11/98 10:5[illegible]
11	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 10:5[illegible]
12	-0.293	2.32	<MDA	10.62	9.54	5.34	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 10:5[illegible]
13	-0.293	2.32	<MDA	10.62	11.59	5.71	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 11:0[illegible]
14	-0.293	2.32	<MDA	10.62	5.51	4.51	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 11:0[illegible]
15	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 11:0[illegible]
16	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	-0.052	0.87	12/11/98 11:0[illegible]
17	-0.293	2.32	<MDA	10.62	-0.54	2.93	<MDA	15.45	2.00	-0.052	-0.13	12/11/98 11:0[illegible]
18	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 11:1[illegible]
19	2.525	2.32	<A_	10.62	1.46	3.49	<MDA	15.45	2.00	-0.048	[illegible]	12/11/98 11:1[illegible]
20	2.525	2.32	<A_	10.62	7.58	4.94	<A_	15.45	2.00	-0.048	[illegible]	12/11/98 11:1[illegible]
21	-0.293	2.32	<MDA	10.62	3.50	4.04	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 11:1[illegible]
22	2.525	2.32	<A_	10.62	3.50	4.04	<MDA	15.45	2.00	-0.048	[illegible]	12/11/98 11:2[illegible]
23	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 11:2[illegible]
24	-0.293	2.32	<MDA	10.62	1.46	3.49	<MDA	15.45	2.00	-0.052	[illegible]	12/11/98 11:2[illegible]
25	-0.293	2.32	<MDA	10.62	7.58	4.94	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 11:2[illegible]
26	-0.293	2.32	<MDA	10.62	5.51	4.51	<A_	15.45	2.00	-0.052	[illegible]	12/11/98 11:2[illegible]

Reviewed: [illegible] 4/1/99
DM 4/12/99

COPY

LB5100-W Low Background Counting System -- Smear Analysis

Date 12/11/98
Counting Unit id 1
Data file name C:\LBXL\UNIT1\SME_D211.XLD
Batch Ended 12/11/98 11:07
Crosstalk Correction Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 500.00
Certainty level for MDA and flags: 5.00
High Voltage Setting: 440

Application Revision: 1

Application Version: Standard

Alpha efficiency (cu/file): [illegible]
Alpha Efficiency: 17.74 %
Alpha to Beta Crosstalk: 3.35%
Alpha Background (CPM): 0.052
Alpha Correction Factor: 1.000

Beta efficiency (cu/file): [illegible]
Beta Efficiency: 24.30 %
Beta into Alpha Crosstalk: [illegible]
Beta Background (CPM): [illegible]
Beta Correction Factor: [illegible]

Batch ID bgrrivice-shade 110

	Alpha Activity				Beta Activity				Count	Alpha	Beta	Computation
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	(time-min)	CPM	CPM	Date Time
27	-0.29[illegible]	2.82	<MDA	10.[illegible]2	-2.55	2.02	<MDA	15.45	2.00	0.[illegible]52	[illegible].63	12/11/98 [illegible]
28	-0.29[illegible]	2.82	<MDA	10.[illegible]2	3.50	4.04	<MDA	15.45	2.00	0.[illegible]52	[illegible].8[illegible]	12/11/98 [illegible]
29	-0.29[illegible]	2.82	<MDA	10.[illegible]2	3.50	4.04	<MDA	15.45	2.00	0.[illegible]52	[illegible].8[illegible]	12/11/98 [illegible]
30	2.525	2.82	<A[illegible]	[illegible].[illegible]2	-2.55	2.02	<MDA	15.45	2.00	0.[illegible]48	[illegible].63	12/11/98 [illegible]

Reviewed: [illegible] 4/1/99
RM
4/12/99

6066

DISPLAY BOARD "B"

BLDG #: 701 LOCATION: 110' ELEV. NW END DATE/TIME: 12-7-98/1630 REASON FOR SURVEY ☐ ROUTINE ☐ SPECIAL RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LD-3 / 50545

~~DOSE RATES (HIGHEST)~~ DIRECT FRISK		AIRBORNE CONTAMINATION			LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION
~~CONTACT~~ BKG = 60cpm	≤ BKG	TIME	uCi/cc	%DAC	XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE
GENERAL AREA	N/A	N/A	N/A	N/A	

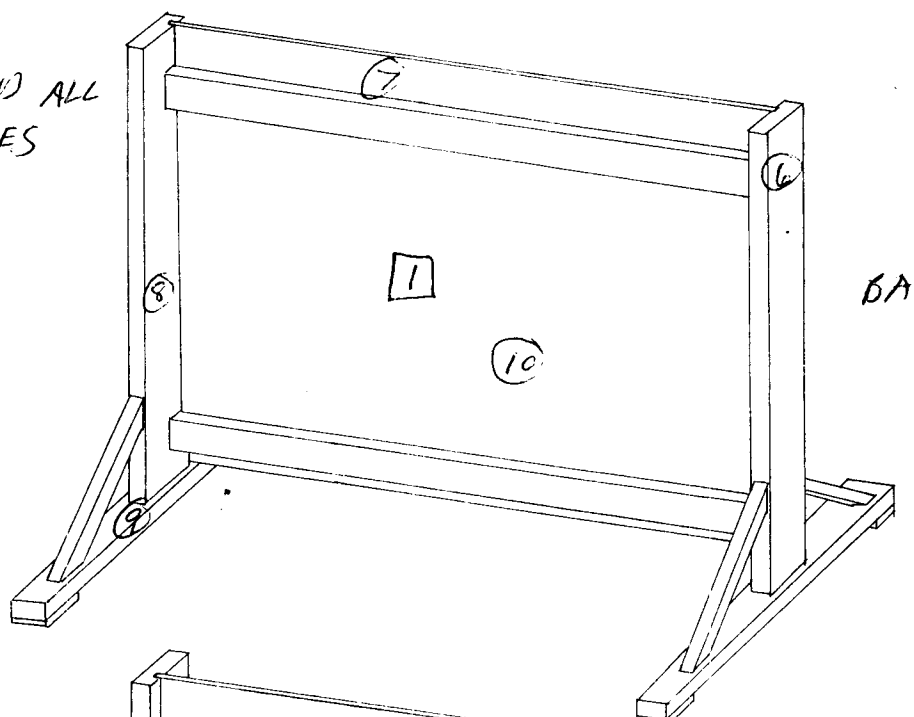
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1. ≤ BKG	8.
2.	9.	16.	23.	2. ↓	9.
3.	10.	17.	24.	3.	10.
4.	11.	18.	25.	4. N	11. N
5.	12.	19.	26.	5.	12.
6.	13.	20.	27.	6. A	13. A
7.	14.	21.	28.	7.	14.

SEE ATTACHED N/A

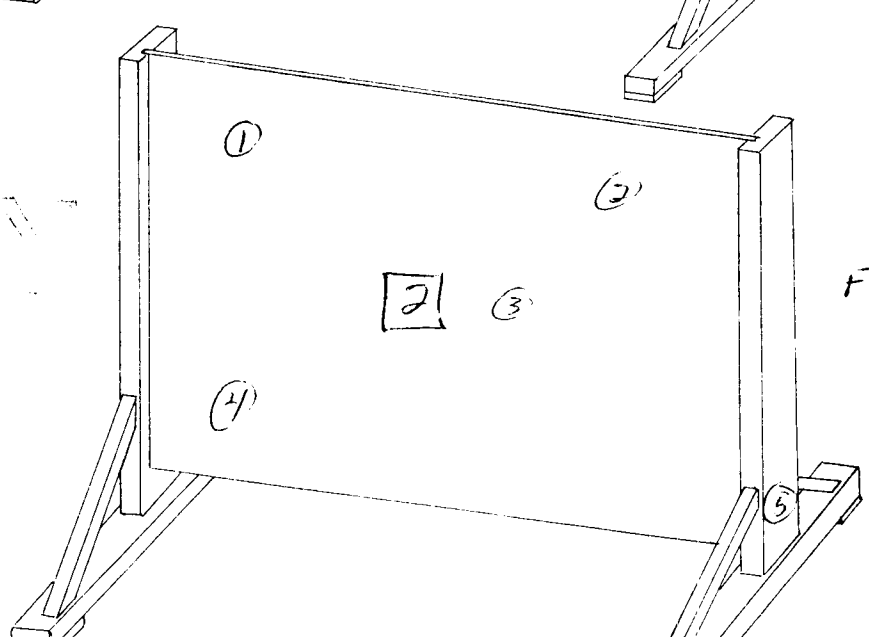
BKG = 40 cpm

FRISKED ALL SURFACES 100%

"B"



BACK



FRONT

SURVEYED BY: Robert A. Clark / 12-7-98 Signature/date REVIEWED BY: Jay Allen ~~12/29~~ 12/29/98 Signature/date

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/28/98
Counting Unit Id: 1
Data file name: C:\LBXL\UNIT1\SME1B008.XLD
Batch Ended: 12/26/98 15:55
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 20.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1350

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: AM241AB
Alpha Efficiency: 11.29%
Alpha to Beta Crosstalk: 21.22%
Alpha Background (CPM): 0.3
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 20.63%
Beta into Alpha Crosstalk: 0.00%
Beta Background (CPM): 1.4
Beta Correction Factor: 1.000

Batch ID: DISPLAY BOARD B

		Alpha Activity				Beta Activity							
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	[redacted]	0.623	3.62	<MDA	19.82	-4.99	2.55	<MDA	17.80	2.70	0.070	-1.03	12/26/98 15:00
2	[redacted]	-2.657	3.62	<MDA	19.82	-4.99	2.55	<MDA	17.80	2.70	-0.300	-1.03	12/26/98 15:03
3	[redacted]	-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 15:06
4	[redacted]	-2.657	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	-0.300	-0.29	12/26/98 15:09
5	[redacted]	-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 15:12
6	[redacted]	0.623	3.62	<MDA	19.82	5.78	5.09	<MDA	17.80	2.70	0.070	1.19	12/26/98 15:14
7	[redacted]	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 15:17
8	[redacted]	-2.657	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	-0.300	1.56	12/26/98 15:20
9	[redacted]	0.623	3.62	<MDA	19.82	-6.79	2.55	<MDA	17.80	2.70	0.070	-1.40	12/26/98 15:23
10	[redacted]	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 15:26
11	[redacted]	0.623	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	0.070	0.82	12/26/98 15:29
12	[redacted]	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 15:32
13	[redacted]	3.903	4.89	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	0.441	0.82	12/26/98 15:35
14	[redacted]	-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 15:38
15	[redacted]	-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 15:40
16	[redacted]	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 15:43
17	[redacted]	-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 15:46
18	[redacted]	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 15:49
19	[redacted]	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 15:52
20	[redacted]	0.623	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	0.070	-0.66	12/26/98 15:55

DISPLAY BOARD "A"

BLDG #: 701 LOCATION: 110' ELEV, NO END DATE/TIME: 12-7-98/1630 REASON FOR SURVEY ☐ ROUTINE ☐ SPECIAL RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LD-3/505-45

~~DOSE RATES (HIGHEST)~~ DIRECT	FRISK	AIRBORNE CONTAMINATION		
~~CONTACT~~ BKG = 60 cpm	≤ BKG	TIME	µCi/cc	% DAC
GENERAL AREA	N/A	N/A	N/A	N/A

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

XXX Y / ZZZ — XXX = CONTACT READING, ZZZ = READING @ 30 Cm, Y = RADIATION TYPE

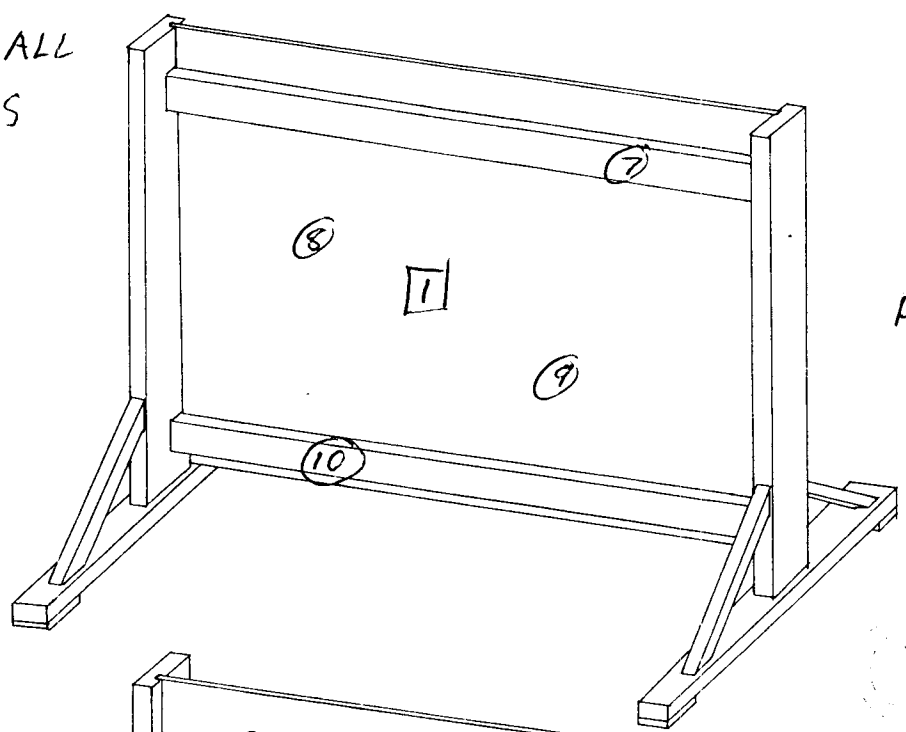
SMEAR SURVEY RESULTS (DPM/100 cm²) ³H B-γ α				MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1. ≤ BKG	8.
2.	9.	16.	23.	2. ↓	9.
3.	10.	17.	24.	3.	10.
4.	11.		25.	4. N	11. N
5.	12.		26.	5.	12.
6.	13.	20.	27.	6. A	13. A
7.	14.	21.	28.	7.	14.

SEE ATTACHED N/A

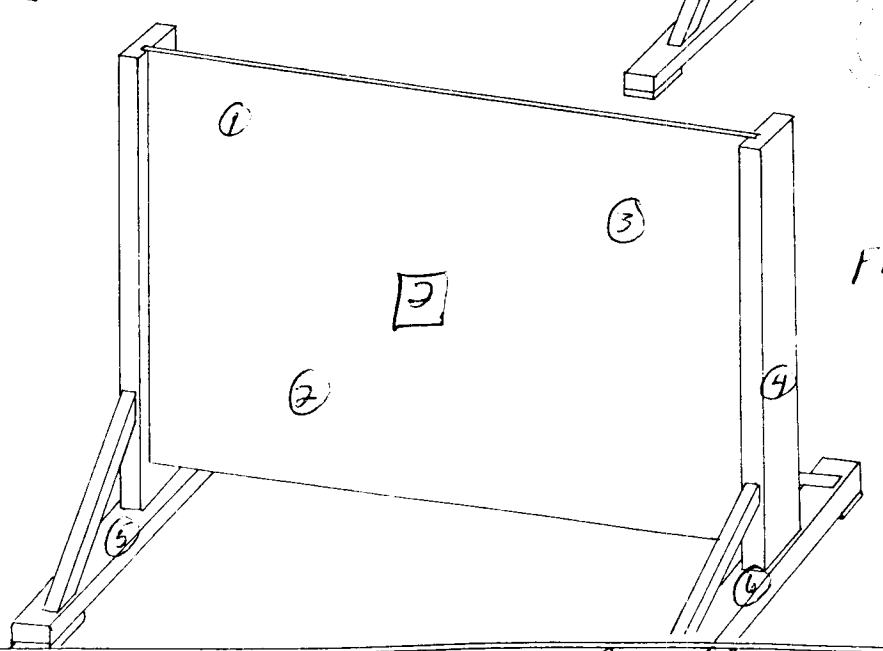
BKG = 40 cpm

FRISKED ALL SURFACES 100%

"A"



BACK



FRONT

SURVEYED BY: Robert A. Clark / 12-7-98 (Signature/date) REVIEWED BY: Jay Allen 12/24/98 (Signature/date)

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/28/98
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A012.XLD
Batch Ended: 12/26/98 14:57
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 20.00
Certainly level for MDA and flags: 95.00%
High Voltage Setting: 1350

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: AM241AB
Alpha Efficiency: 11.29%
Alpha to Beta Crosstalk: 21.22%
Alpha Background (CPM): 0.3
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 20.63%
Beta into Alpha Crosstalk: 0.00%
Beta Background (CPM): 1.4
Beta Correction Factor: 1.000

Batch ID: DISPLAY BOARD A

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	0.623	3.62	<MDA	19.82	11.17	5.97	At AL	17.80	2.70	0.070	2.30	12/26/98 14:02
2	0.623	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	0.070	0.82	12/26/98 14:05
3	-2.657	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	-0.300	1.56	12/26/98 14:08
4	-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 14:11
5	-2.657	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	-0.300	-0.29	12/26/98 14:14
6	-2.657	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	-0.300	1.93	12/26/98 14:17
7	0.623	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	0.070	1.93	12/26/98 14:20
8	-2.657	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	-0.300	1.93	12/26/98 14:23
9	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 14:25
10	0.623	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	0.070	1.56	12/26/98 14:28
11	0.623	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	0.070	1.56	12/26/98 14:31
12	0.623	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	0.070	1.93	12/26/98 14:34
13	-2.657	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	-0.300	1.93	12/26/98 14:37
14	-2.657	3.62	<MDA	19.82	12.96	6.23	At AL	17.80	2.70	-0.300	2.67	12/26/98 14:40
95	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 14:43
16	0.623	3.62	<MDA	19.82	5.78	5.09	<MDA	17.80	2.70	0.070	1.19	12/26/98 14:46
17	7.183	5.89	At AL	19.82	2.19	4.41	<MDA	17.80	2.70	0.811	0.45	12/26/98 14:48
18	-2.657	3.62	<MDA	19.82	-4.99	2.55	<MDA	17.80	2.70	-0.300	-1.03	12/26/98 14:51
19	0.623	3.62	<MDA	19.82	14.76	6.49	At AL	17.80	2.70	0.070	3.04	12/26/98 14:54
20	-2.657	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	-0.300	1.93	12/26/98 14:57

BLDG #: 701 LOCATION: 123' ELEV. EAST SIDE DATE/TIME: 12-7-98/1400 ☐ ROUTINE ☐ SPECIAL RWP #: NA

INSTRUMENTS, MODEL / SERIAL #: LD-3/50545

~~DOSE RATES (HIGHEST)~~ DIRECT	FRISK	AIRBORNE CONTAMINATION		
~~CONTACT~~ BKG = 80 CPM	≤ BKG	TIME	uCi/cc	% DAC
~~GENERAL AREA~~	N/A	N/A	N/A	N/A

LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

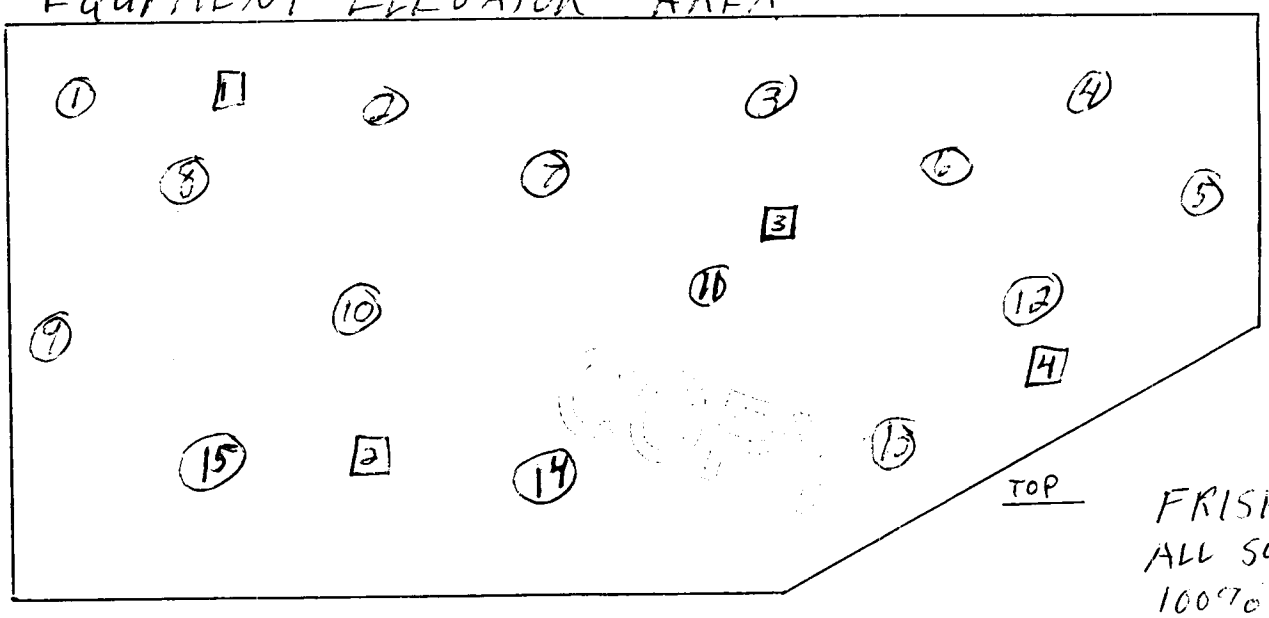
XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

SMEAR SURVEY RESULTS (DPM/100 cm²)	³H	B–γ	α	MASSLINN SURVEY RESULTS (DPM/LAS)	
1.	8.	15.	22.	1. ≤ BKG	8. ≤ BKG
2.	9.	16.	23.	2.	9.
3.	10.	17.	24.	3.	10. N
4.	11.	18.	25.	4.	11.
5.	12.	19.	26.	5.	12. A
6.	13.	20.	27.	6.	13.
7.	14.	21.	28.	7.	14.

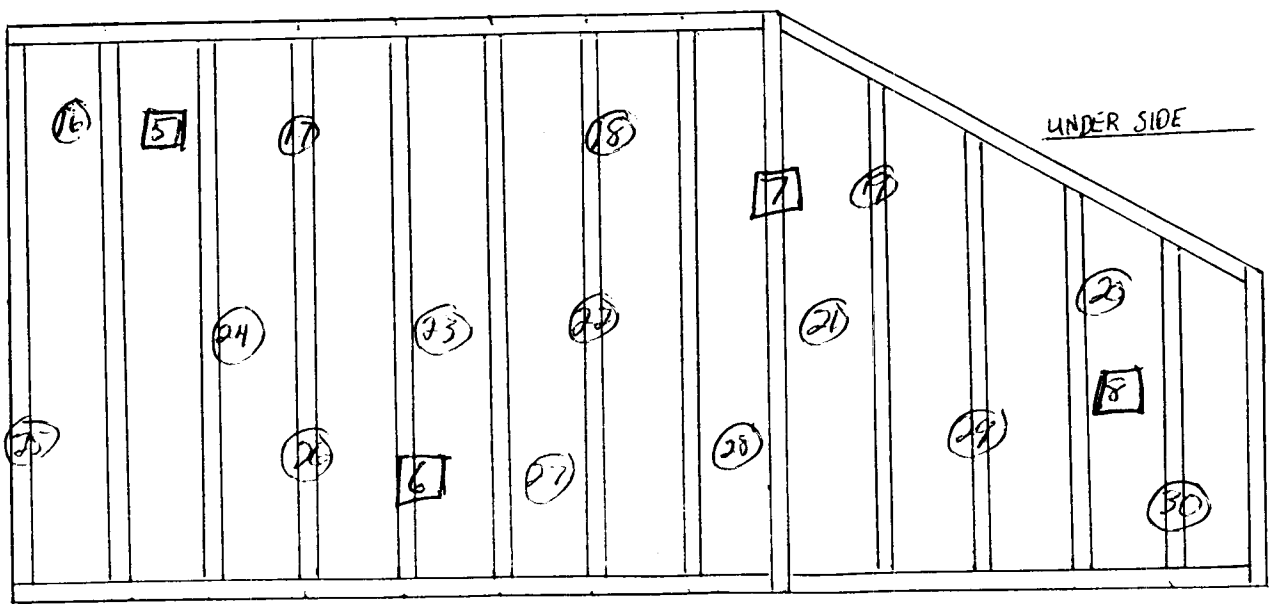
SEE ATTACHED N/A

BKG = 600 CPM

EQUIPMENT ELEVATOR AREA



FRISKED ALL SURFACES 100%



SURVEYED BY: Robert A. Clark / 12-7-98 Signature/date REVIEWED BY: Jay Allen 12/09/98 Signature/date

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/28/98
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A011.XLD
Batch Ended: 12/28/98 11:55
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 20.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1350

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: AM241AB
Alpha Efficiency: 11.29%
Alpha to Beta Crosstalk: 21.22%
Alpha Background (CPM): 0.3
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 20.63%
Beta into Alpha Crosstalk: 0.00%
Beta Background (CPM): 1.4
Beta Correction Factor: 1.000

Batch ID: EQUIP ELEV. ROOF AREA 701

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	0.623	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	0.070	1.93	12/26/98 10:31
2	-2.657	3.62	<MDA	19.82	5.78	5.09	<MDA	17.80	2.70	-0.300	1.19	12/26/98 10:34
3	0.623	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	0.070	0.08	12/26/98 10:37
4	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 10:40
5	0.623	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	0.070	0.08	12/26/98 10:42
6	0.623	3.62	<MDA	19.82	5.78	5.09	<MDA	17.80	2.70	0.070	1.19	12/26/98 10:45
7	0.623	3.62	<MDA	19.82	9.37	5.69	<AL	17.80	2.70	0.070	1.93	12/26/98 10:48
8	0.623	3.62	<MDA	19.82	11.17	5.97	At AL	17.80	2.70	0.070	2.30	12/26/98 10:51
9	0.623	3.62	<MDA	19.82	12.96	6.23	At AL	17.80	2.70	0.070	2.67	12/26/98 10:54
10	0.623	3.62	<MDA	19.82	16.55	6.73	At AL	17.80	2.70	0.070	3.41	12/26/98 10:57
11	-2.657	3.62	<MDA	19.82	5.78	5.09	<MDA	17.80	2.70	-0.300	1.19	12/26/98 11:00
12	-2.657	3.62	<MDA	19.82	11.17	5.97	At AL	17.80	2.70	-0.300	2.30	12/26/98 11:03
13	3.903	4.89	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	0.441	1.56	12/26/98 11:06
14	-2.657	3.62	<MDA	19.82	20.15	7.20	At AL	17.80	2.70	-0.300	4.16	12/26/98 11:08
95	-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 11:11
16	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 11:14
17	7.183	5.89	At AL	19.82	0.40	4.02	<MDA	17.80	2.70	0.811	0.08	12/26/98 11:17
18	-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 11:20
19	-2.657	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	-0.300	1.56	12/26/98 11:23
20	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 11:26
21	0.623	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	0.070	-0.66	12/26/98 11:29
22	0.623	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	0.070	0.08	12/26/98 11:32
23	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 11:34
24	0.623	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	0.070	-0.66	12/26/98 11:37
25	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 11:40
26	-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 11:43

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/29/98
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1A011.XLD
Batch Ended: 12/26/98 11:55
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 20.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1350

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: AM241AB
Alpha Efficiency: 11.29%
Alpha to Beta Crosstalk: 21.22%
Alpha Background (CPM): 0.3
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 20.63%
Beta into Alpha Crosstalk: 0.00%
Beta Background (CPM): 1.4
Beta Correction Factor: 1.000

Batch ID: EQUIP ELEV. ROOF AREA 701

	Alpha Activity				Beta Activity							
Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
27	-2.657	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	-0.300	-0.29	12/26/98 11:46
28	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 11:49
29	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 11:52
30	-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 11:55

EQUIP WALLS

REASON FOR SURVEY

BLDG #: 701 LOCATION: 123' ELEV. EAST SIDE DATE/TIME: 12-7-98/1400 ☐ ROUTINE ☐ SPECIAL RWP #: N/A

INSTRUMENTS, MODEL / SERIAL #: LD-3 / 50545

~~DOSE RATES (HIGHEST)~~ DIRECT FRISK		AIRBORNE CONTAMINATION		
~~CONTACT~~ BKG = 80 CPM	≤ BKG	TIME	nCi/cc	% DAC
~~GENERAL AREA~~	N/A	N/A	N/A	N/A

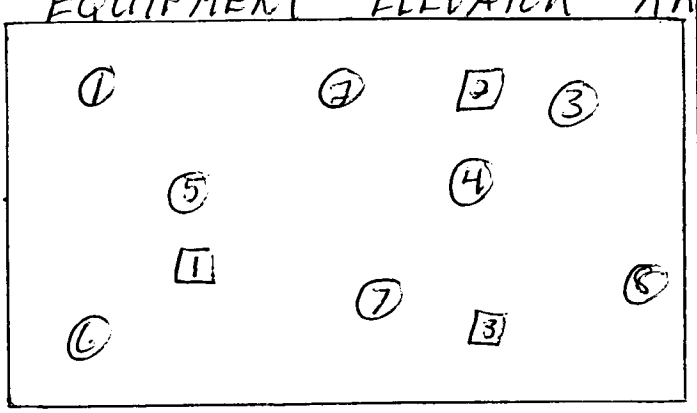
LEGEND: O SMEAR SURVEY LOCATION ☐ MASSLINN SURVEY LOCATION

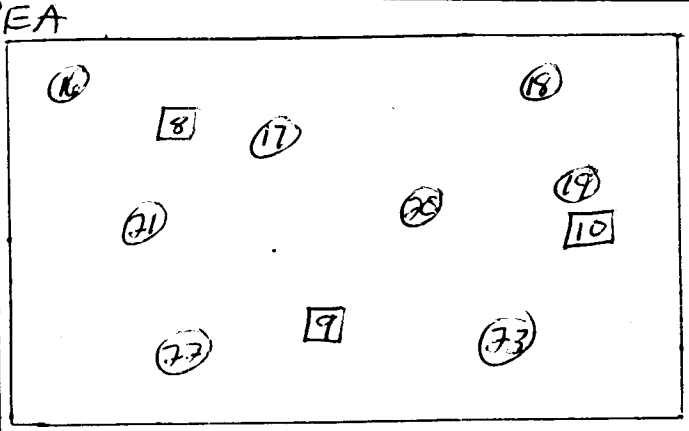
XXX Y / ZZZ — XXX = CONTACT READING; ZZZ = READING @ 30 Cm; Y = RADIATION TYPE

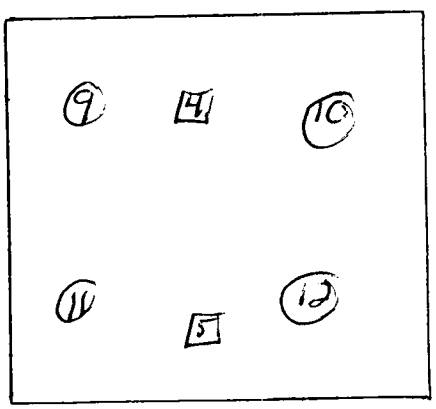
SMEAR SURVEY RESULTS (DPM/100 cm²)	³H	B-γ	α	MASSLINN SURVEY RESULTS (DPM/LAS)	BKG = 60 CPM
1.				1. ≤ BKG	8. ≤ BKG
2.				2.	9.
3.				3.	10.
4.				4.	11.
5.				5.	12.
6.				6.	13.
7.				7.	14.
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					

SEE ATTACHED N/A

EQUIPMENT ELEVATOR AREA

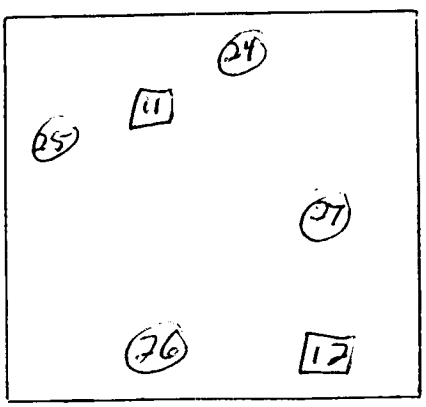


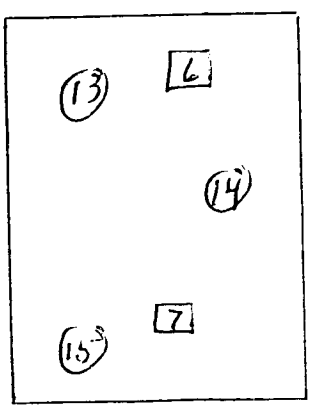




INSIDE WALLS

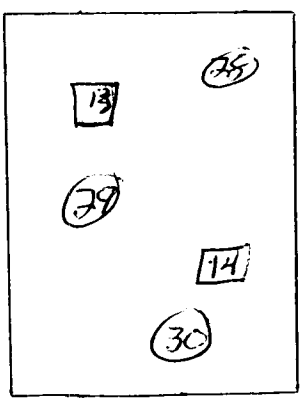
OUTSIDE WALLS





FRISKED ALL SURFACES 100%

FRISKED ALL SURFACES 100%



SURVEYED BY: Robert A. Clark / 12-7-98 Signature/date REVIEWED BY: Jay Allen 12/24/98 Signature/date

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/28/98
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B007.XLD
Batch Ended: 12/28/98 13:21
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 20.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1350

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: AM241AB
Alpha Efficiency: 11.28%
Alpha to Beta Crosstalk: 21.22%
Alpha Background (CPM): 0.3
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 20.63%
Beta into Alpha Crosstalk: 0.00%
Beta Background (CPM): 1.4
Beta Correction Factor: 1.000

Batch ID: 701 EQUIP ELEV. AREA WALLS

		Alpha Activity				Beta Activity							
	Carrier	DPM	σ	flags	MDA	DPM	σ	flags	MDA	Count time (min)	Alpha CPM	Beta CPM	Completion Date - Time
1	[redacted]	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 11:58
2		-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 12:01
3		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 12:03
4		-2.657	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	-0.300	-0.29	12/26/98 12:06
5		-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 12:09
6		0.623	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	0.070	0.08	12/26/98 12:12
7		-2.657	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	-0.300	-0.29	12/26/98 12:15
8		0.623	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	0.070	0.08	12/26/98 12:18
9		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 12:21
10		0.623	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	0.070	-0.29	12/26/98 12:24
11		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 12:26
12		-2.657	3.62	<MDA	19.82	-1.40	3.60	<MDA	17.80	2.70	-0.300	-0.29	12/26/98 12:29
13		-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 12:32
14		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 12:35
15		-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 12:38
16		0.623	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	0.070	-0.66	12/26/98 12:41
17		-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 12:44
18		-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 12:47
19		-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 12:49
20		-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 12:52
21		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 12:55
22		-2.657	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	-0.300	1.56	12/26/98 12:58
23		-2.657	3.62	<MDA	19.82	0.40	4.02	<MDA	17.80	2.70	-0.300	0.08	12/26/98 13:01
24		-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 13:04
25		-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 13:07
26		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 13:10

LB5100-W Low Background Counting System -- Smear Analysis

Date: 12/28/98
Counting Unit id: 1
Data file name: C:\LBXL\UNIT1\SME1B007.XLD
Batch Ended: 12/26/98 13:21
Crosstalk Correction: Not Applied

Alpha activity action level (DPM): 10.00
Beta activity action level (DPM): 20.00
Certainty level for MDA and flags: 95.00%
High Voltage Setting: 1350

Application Revision: 3
Application Version: Standard

Alpha efficiency log file: AM241AB
Alpha Efficiency: 11.28%
Alpha to Beta Crosstalk: 21.22%
Alpha Background (CPM): 0.3
Alpha Correction Factor: 1.000

Beta efficiency log file: TC99AB
Beta Efficiency: 20.63%
Beta into Alpha Crosstalk: 0.00%
Beta Background (CPM): 1.4
Beta Correction Factor: 1.000

Batch ID: 701 EQUIP ELEV. AREA WALLS

	Carrier	Alpha Activity				Beta Activity				Count	Alpha	Beta	Completion
		DPM	σ	flags	MDA	DPM	σ	flags	MDA	time (min)	CPM	CPM	Date - Time
27	[redacted]	-2.657	3.62	<MDA	19.82	3.99	4.76	<MDA	17.80	2.70	-0.300	0.82	12/26/98 13:13
28		-2.657	3.62	<MDA	19.82	7.58	5.40	<AL	17.80	2.70	-0.300	1.56	12/26/98 13:15
29		-2.657	3.62	<MDA	19.82	-3.20	3.12	<MDA	17.80	2.70	-0.300	-0.66	12/26/98 13:18
30		-2.657	3.62	<MDA	19.82	2.19	4.41	<MDA	17.80	2.70	-0.300	0.45	12/26/98 13:21