

DL-030498\_04

# ARCTECH inc.

March 4, 1998  
Ms. Diana Heim  
NRC  
61 Forsyth Street Suite 23T85  
Atlanta, GA 30303

**VIA CERTIFIED MAIL**

**SUBJECT: Termination of NRC License Number 45-25116-01**

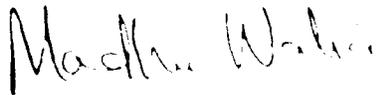
Dear Ms. Heim:

We are hereby, again requesting for the termination of the above referenced NRC License. Originally, request was made to Mr. Earl Wright around March 20, 1997 and he advised us to continue the decommissioning process and to submit to him a written request only upon completion of the decommissioning process. On September 12, 1997, RSO (Radionuclear waste disposal company from Laurel, MD) personnel collected the Radionuclear waste and also conducted tests to ensure that no nuclear material was left on ARCTECH premises. The report (copy enclosed) they submitted indicated that the ARCTECH facility was free of any residual nuclear materials.

As both Dr. Srivastava and I have discussed with you in our telephone conversations during the week of February 18, 1998, I would appreciate further instructions from you so that we can accomplish the discontinuation of the subject NRC license. ARCTECH, Inc. is a small business company and would appreciate if you could waive the \$1,700.00 fee for the FY 1998, since the process was initiated in March 1997. Thank you so much for your cooperation.

For any further assistance please call me or Dr. K. C. Srivastava at (703)222-0280.

Sincerely,  
ARCTECH, Inc.



Madhu B. Walia  
Director of Administration

cc: R. Messier



Prepared By

RSO, Inc.  
Laurel, Maryland

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# *Final Radiological Survey*

## Report

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Prepared For

**ARCTECH, Inc.**

14100 Park Avenue

Suite 210

Chantilly, Virginia 20151

October 1997

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# Final Radiological Survey Report ARCTECH Laboratory

This final report describes the results of the surveys conducted on the radioisotope use laboratory and surrounding work areas along with those areas either adjacent to or directly connected to the use laboratory.

## Background and Scope of Work

ARCTECH, Inc. (ARCTECH) performs research/analytical analysis and occasionally used low activity levels of  $^{14}\text{C}$ ,  $^{35}\text{S}$  and  $^3\text{H}$  radionuclides in the rear of one laboratory under the provisions of a specific license (License Number 45-25116-01) (Docket Number 030-31885) issued by the Nuclear Regulatory Commission (NRC). All work was performed in the rear of the laboratory at Chantilly, VA. ARCTECH does not plan to use radioactive material at this facility in the future and ARCTECH does plan on terminating its NRC specific license.

All radioactive materials have been removed from the ARCTECH Laboratory before the final survey was conducted, including any original source vials and radioactive waste. There were no reported spills, releases or unusual events. The radioactive material used by ARCTECH at this facility was in low activity concentrations.

## Surveys

RSO, Inc. (RSO) performed surveys on the following surfaces in the radioactive use area of the laboratory and adjacent unaffected areas;

1. Floor surfaces
2. Bench tops
3. Bench drawers and interior surfaces
4. Sinks
5. Unaffected areas either adjacent to or having direct access to the affected areas.

## Isotope and Project Release Limits

Isotope used in the lab was  $^{14}\text{C}$ ,  $^{35}\text{S}$  and  $^3\text{H}$ . The action and release limits used were;

- Action level 200 dpm/100  $\text{cm}^2$  loose/fixed contamination
- Release limit 1,000 dpm/100  $\text{cm}^2$  loose contamination
- Release limit 5,000 dpm/100  $\text{cm}^2$  fixed contamination.

## Survey Description

Surveys conducted were performed as follows;

- Floor surfaces: The surface was scanned using a survey instrument connected to a 15  $\text{cm}^2$  pan GM detector, wipes were collected for loose contamination.
- Laboratory bench tops: The bench top surface was scanned using a survey instrument connected to a 15  $\text{cm}^2$  pan GM detector, bench top wipes were collected for loose contamination.
- Laboratory bench drawers: Inner surfaces were scanned using a survey instrument connected to a 15  $\text{cm}^2$  pan GM detector.

## Final Radiological Survey Report ARCTECH Laboratory

- **Sinks:** Sink surfaces were scanned using a survey instrument connected to a 15 cm<sup>2</sup> pan GM detector, swabs were collected from the drain for loose contamination.
- **Unaffected area:** The area consisted of the rest of the laboratory. Floor surfaces were scanned using a survey instrument connected to a 15 cm<sup>2</sup> pan GM detector at wipe locations. Wipes were collected randomly from bench tops and floor surfaces.

### Summary

RSO performed the Final Survey activities on 12-Sept-97. Results of the survey are shown in Appendix A. The final survey found activity above the action level of 200 dpm/100 cm<sup>2</sup> but not above the release limit of 1,000 dpm/100 cm<sup>2</sup> for loose contamination. Facility personnel performed the decontamination activities. Decontamination was conducted as follows, the affected area was washed with a mild soap then rinsed with water. A sample of the decon water was collected and analyzed for activity, no activity was detected, the water was disposed of through the sanitary sewer system. After the area was dry wipes were collected and sent to RSO's laboratory for analysis. The analysis has shown that the area of concern is below the action and release limits set for this final survey. In conclusion it appears that this facility is now eligible for free release.

**Attachments:** Appendixes include data and corresponding drawings and instrument information.

#### Appendix A

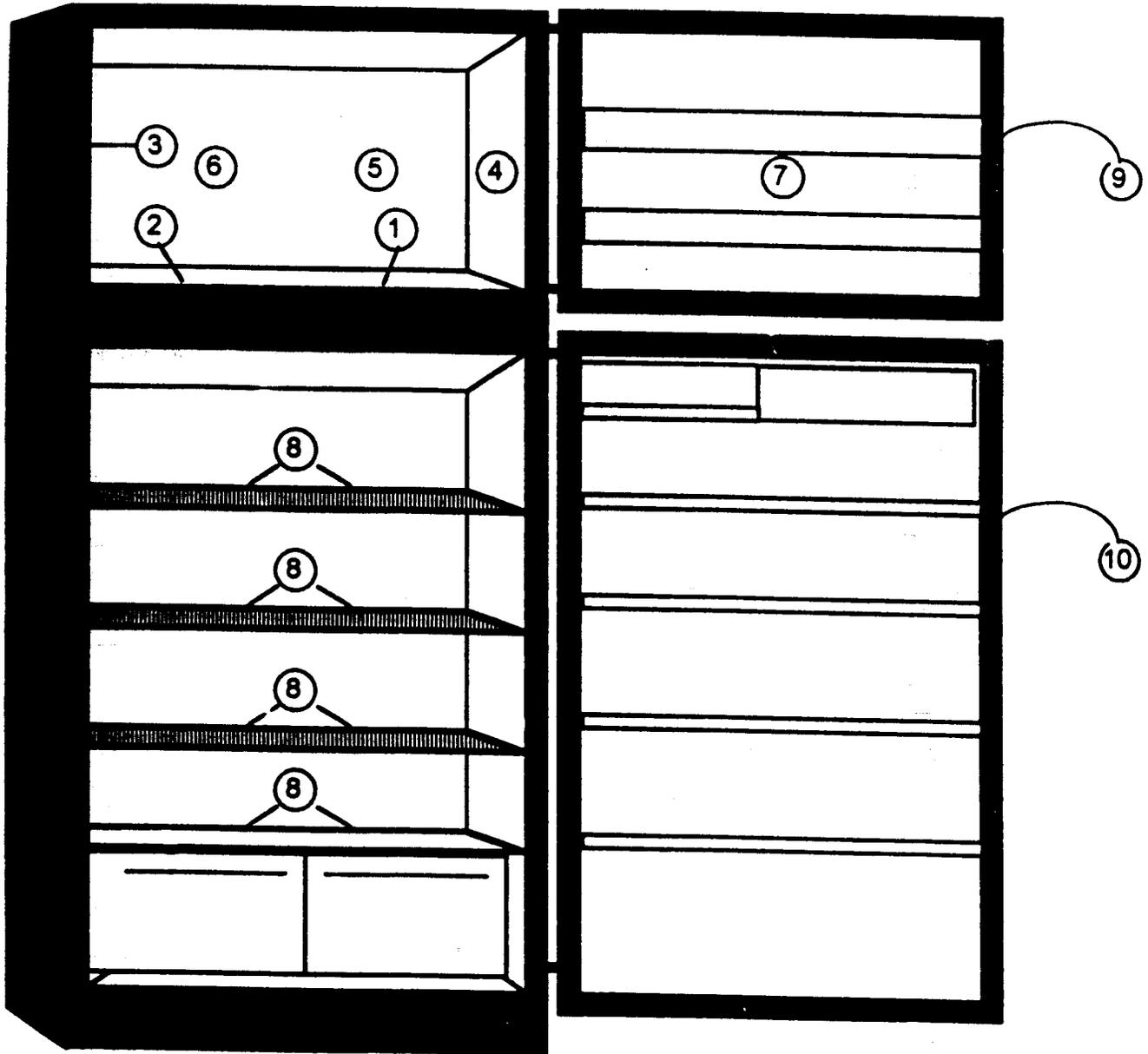
Floor and bench tops.

#### Appendix B

Instrument information.

**Final Radiological Survey Report  
ARCTECH Laboratory**

# Appendix A



**Storage Refrigerator for Radioactive Materials**

**ARCTECH, Inc.**

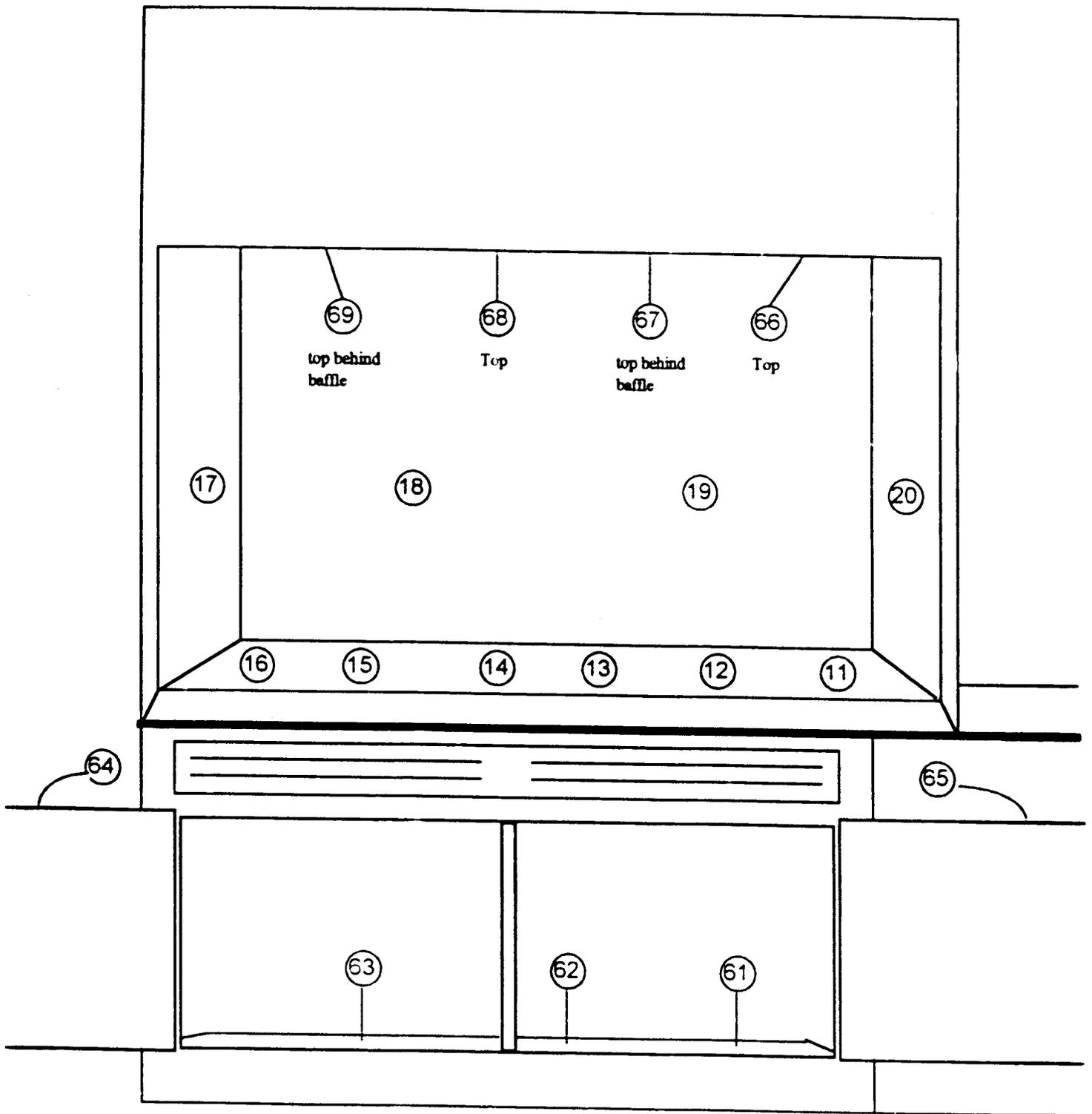
# FINAL RADIOLOGICAL RESULTS

Site - ARCTECH, Inc  
Refrigerator  
 Location - Laboratory

Instruments - See Instrument List  
 Date - 12-Aug-97  
 Surveyor - J. Dean, D. Frazier

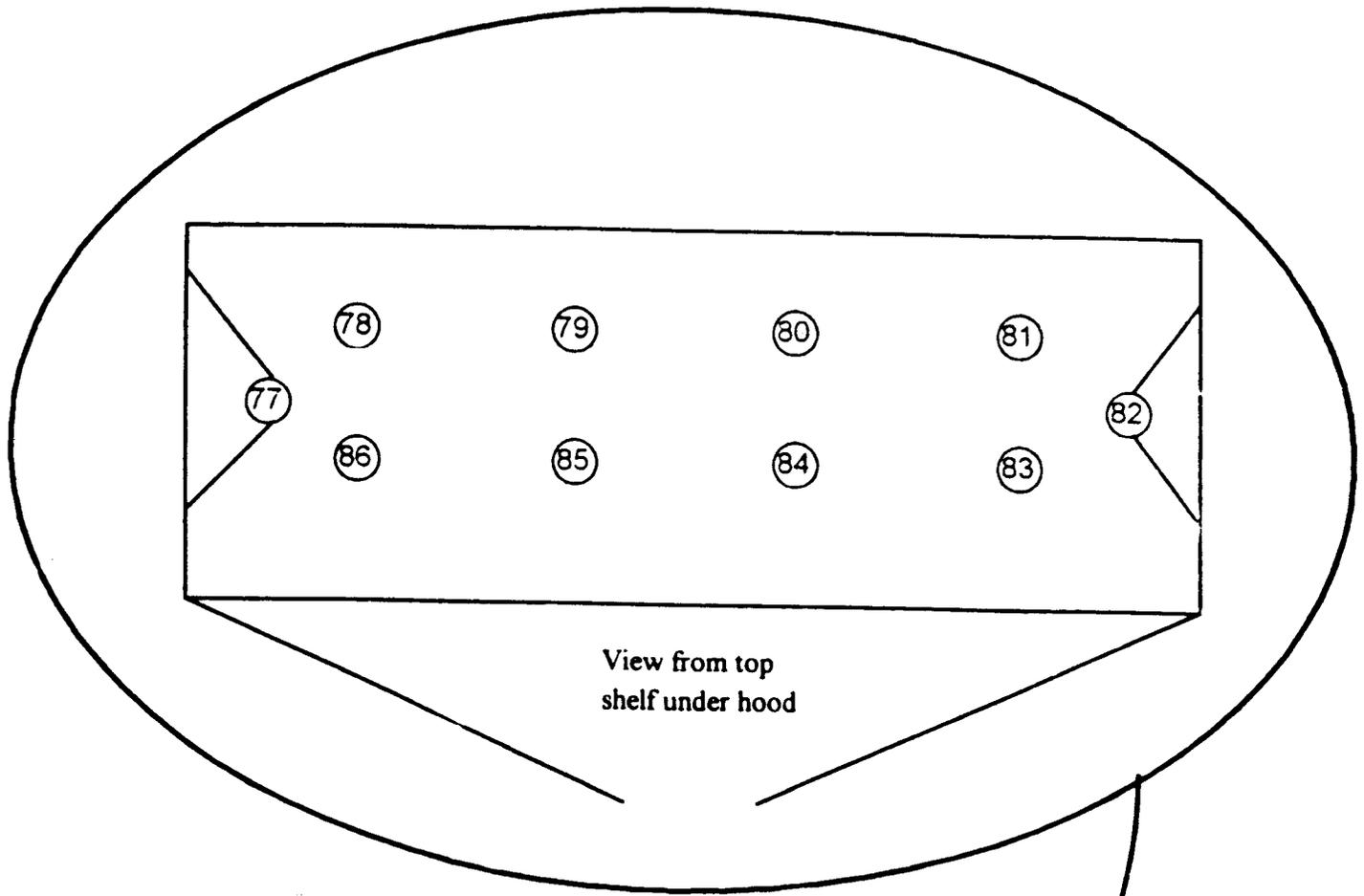
Background Information																	
#1 Pan GM 1" cm			#2 Pan GM 1" cm			Exposure rate -			Gamma NaI			N/A					
40 cpm			40 cpm			10.0			N/A								
Scale MDA 92.48 dpm 100 cm			Direct MDA 3500 dpm 100 cm			#1 (uR/h)											
Unit No	Contamination	Wgt (g)	Wipe Results (dpm 100 cm <sup>2</sup> )			Beta (100 cm <sup>2</sup> )			Beta Direct Mean (100 cm <sup>2</sup> )			Net Exposure		Gamma	Disposition	Class	
			3H	14C	32P	cpm	#1	#2	#1	#2	Correct	Uncorr	Direct	Pass/Fail	N		
			dpm	dpm	dpm	cpm	dpm	dpm	cpm	cpm	cpm	cpm	cpm	cpm			
N/A	Freezer	1	19	11	5	40	0	0									
N/A	Freezer	2	5	7	6										Pass	N	
N/A	Freezer	3	-13	0	2										Pass	N	
N/A	Freezer	4	32	7	-1										Pass	N	
N/A	Freezer	5	-1	-3	-2										Pass	N	
N/A	Freezer	6	2	-2	2										Pass	N	
N/A	Freezer	7	3	-3	0										Pass	N	
N/A	Refrigerator	8	22	0	2	45	5	556							Pass	N	
N/A	Freezer Door	9	-6	6	4	40	0	0							Pass	N	
N/A	Refrigerator Door	10	-8	5	2	35	-5	-556							Pass	N	



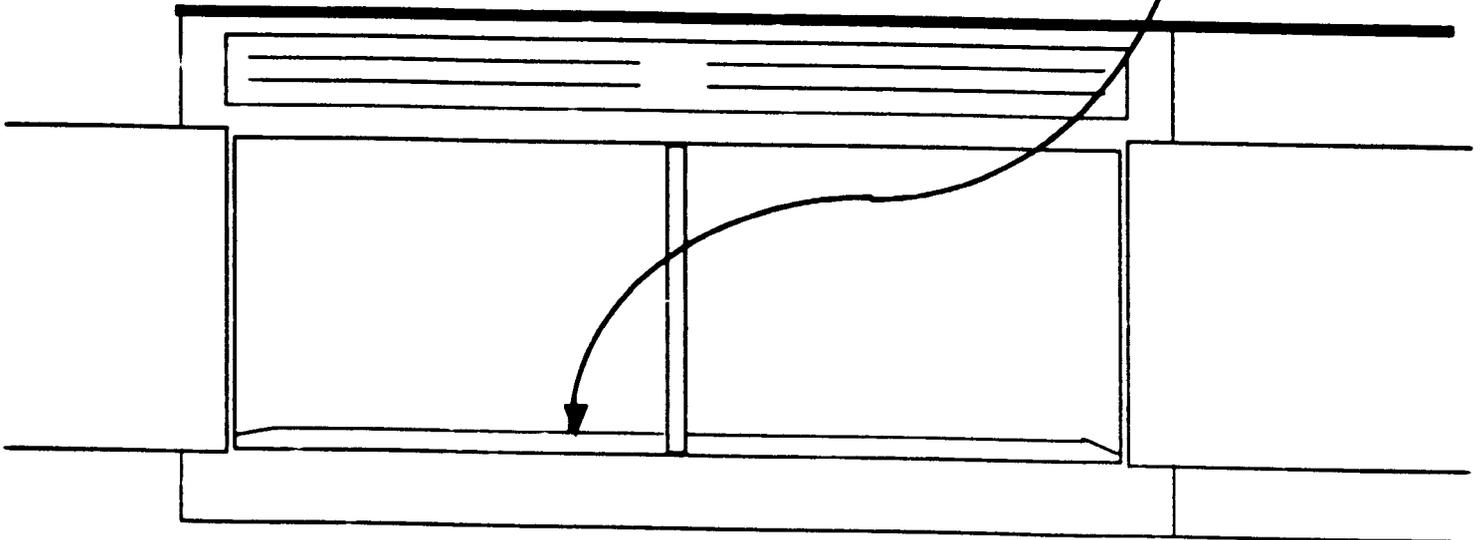


Rad Use Fume Hood

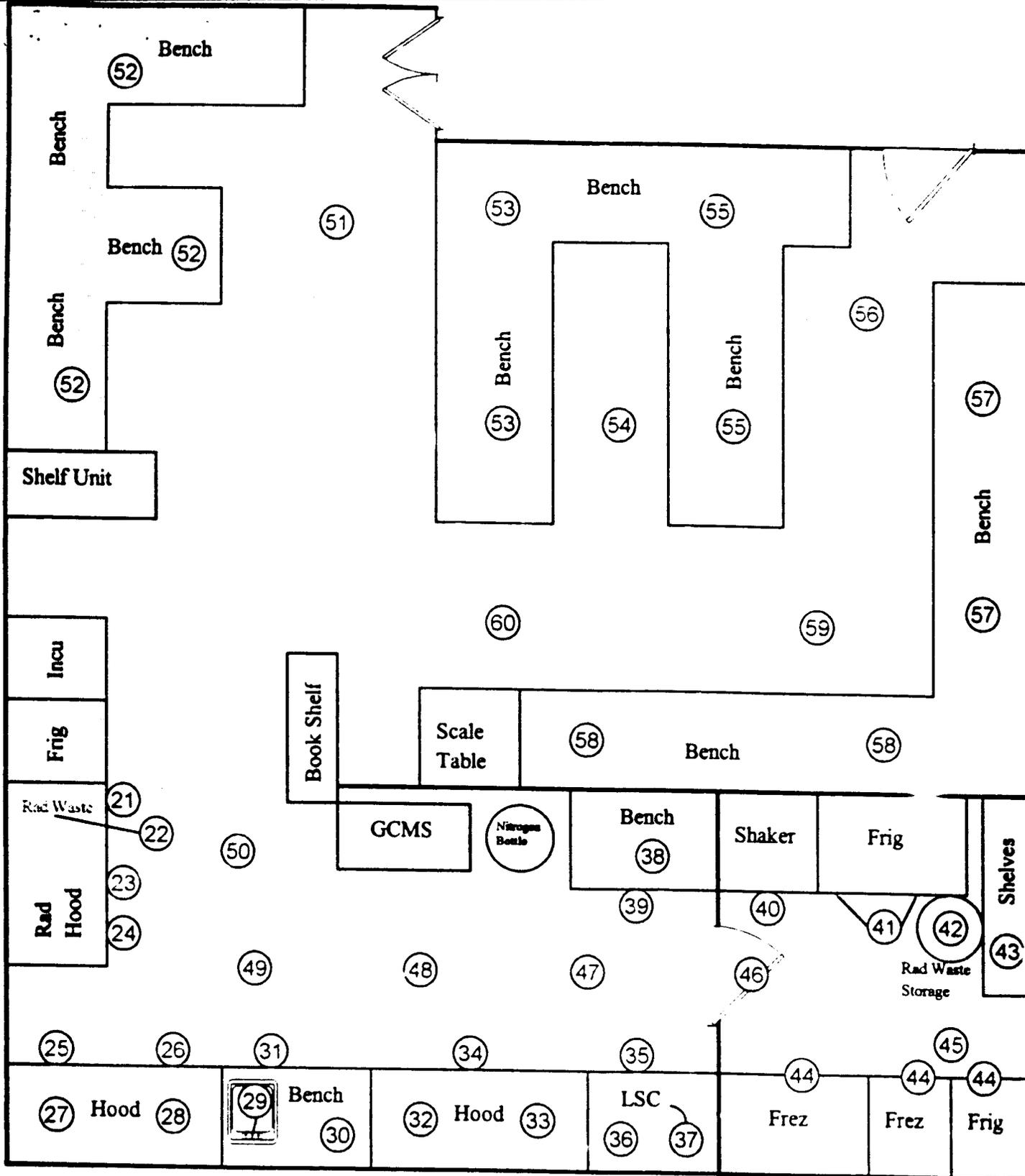
**ARCTECH, Inc.**



View from top  
shelf under hood



Rad Use Fume Hood  
Post Decontamination Survey  
**ARCTECH, Inc.**



- ⑩ Floor Wipe
- ⑩ Non-floor Wipe

**Laboratory Survey**  
**ARCTECH, Inc.**



# FINAL RADIOLOGICAL RESULTS

Site - ARCTECH Inc.

Unaffected Laboratory Area

Location - Laboratory

Instruments - See Instrument List

Date - 12-Aug-97

Surveyor - J. Dean D. Frazer

## Background Information

#1 Pan GM 15 cm 40 cpm

#2 Pan GM 15 cm 40 cpm

Exposure rate - 10.0 # uR/h

Gamma NaI N.A. (cpm)

Scan MDA - 9248 dpm 10/100 cm

Direct MDA 3569 dpm 10/100 cm

Grid No.	Coordinate	Wipe No.	Wipe Results (dpm 100 cm)			Beta Scan (10 cm)			Beta Direct Meas. (100 cm)			Exposure		Gamma	Disposition	Status
			3H	3M	32P	cpm	Bq	dpm	cpm	Bq	dpm	Direct	Indirect			
			dpm	dpm	dpm	cpm	Bq	dpm	cpm	Bq	dpm	uR/h	uR/h	cpm	Pass/Fail	N/A
N/A	Floor	51	-10	1	1	40	0	0							Pass	N
N/A	Beach	52	3	-1	-6	35	-5	-556							Pass	N
N/A	Beach	53	-2	-2	-2										Pass	N
N/A	Floor	54	6	-3	2	40	0	0							Pass	N
N/A	Beach	55	-8	1	-7	35	-5	-556							Pass	N
N/A	Floor	56	4	-2	4	40	0	0							Pass	N
N/A	Beach	57	-15	-1	5	35	-5	-556							Pass	N
N/A	Beach	58	-13	1	-6										Pass	N
N/A	Floor	59	7	1	4	40	0	0							Pass	N
N/A	Floor	60	2	-2	4										Pass	N

**Final Radiological Survey Report  
ARCTECH Laboratory**

# Appendix B

Table 1

Instrument Information With Facility Background

Type of Measurement	ID	Instrumentation Detector	Meter	Site Bkg	Efficiency	Collected From
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Surface Scan Beta & Direct Meas Beta	1	15 cm <sup>2</sup> Pan GM Model RS1-P	Countrate Face Ludlum Model 3	40	5%	Non Rad Use Office Area
Serial Number:		N/A	49827			

*Count rate 11.3 and 14.0  
 Beckman 6500 LSC used to count  
 smears (H3 and C14).  
 Calibration on 10/31/81, do not go back to reference  
 Count and report result in all three channels  
 (H3, C14, P32).*

*J. H. ...  
 3/25/82*





Amendment \_\_\_\_\_  
Renewal \_\_\_\_\_  
License \_\_\_\_\_

3. OTHER \_\_\_\_\_  
\_\_\_\_\_

Signed \_\_\_\_\_  
Date \_\_\_\_\_