NMRC Historical Site Assessment (HSA)

June 1999

VOLUME II of II

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Preparation Date:
15 June 1999

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- NMRC Laboratory Lay-out Diagrams (Survey Maps) (1995-1999) Annex, Nicholson Building, 17, 18, 21, 53 and 139)

- Quarterly Survey and Wipe Testing Summary Reports (1995-1999)

6470
6 Apr 99

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FIRST QUARTER 1999

Ref: (a) NMRCINST 6470.1 (Series)

Encl: (1) Radiation Survey/Wipe Test Results, Locations and Survey Maps

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in March 1999 for all of NMRC's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/27/98
Percent Efficiency: H3 - 60.42%; C14 - 96.3%
Background reading (CPM):11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 132929
Calibration date- 9/17/98; Recalibration Date- 9/17/99
Percent Efficiency and/or other data:
C14 - 7%; P32 - 23%; S-35 - 7%; Cr51 - 1%; I-125 - 20%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** No radioactive contamination was found during the conduction of this quarter's radiation surveys and wipe tests.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 118 (LSC in hallway), 124, 126, 127, 128, 201, 213, 213B, 218, 219, 220, 221, hot locker, and Loading Dock room.

Buildings 17 at NMRC: 1, 10, 12, 129, 131, 149, 200, 203/217, 204, 210, 212, 218, 230, 234, 239, 242, 307, 311, 316/316A, 341, S-6/14

Building 18 at NMRC: 135/137, 223, 231

Building 21 at NMRC: 301, freezer, hot locker, 233 (freezer)

Building 53: 12, 118, 121, 122

NMRC Nicholson (leased) Building: 337, 424

6. **RADIATION SAFETY CONCERNS.** None.

S. L. GAITER
LCDR, MSC, USN

March 1999 Swipe Sample Evaluation Information

Sample Number	NMRC Location (bldg-room)	Sample Number	NMRC Location (bldg-room)
1-10	N-337	216-223	17-242
11-14	N-424	224-227	17-234
15-19	A-110	228-233	17-230
20-26	A-111	234-247	17-218
27-38	A-115	248-253	17-212
39-41	A-124	254-256	17-210
42-52	A-126	257-264	17-204
53-59	A-127	265-277	17-200
60-71	A-128	278-280	17-1
72-81	A-113	281-286	17-10
82-83	A-118	287-293	17-S-6/14
84-89	A-HOT LOCKER	294-298	17-12
90-96	A-LOADING DOCK	299-306	18-231
97-100	A-201	307-312	18-223
101-107	A-218	313-324	18-135
108-120	A-219	325-327	21-233
121-133	A-220	328-332	21-301 HOT SINK
134-138	A-221	333-334	21-FREEZER
139-142	A-213	335-339	21-HOT LOCKER
143-145	A-213B	340-346	53-122
146-151	17-341	347-357	53-121
152-162	17-311	358-359	53-118
163-165	17-307	360-371	53-12
166-176	17-316		
177-188	17-203		
189-192	17-239		
193-199	17-129		
200-205	17-131		
206-215	17-149		

Note: RAM NOT YET USED IN BIOSAFETY-LEVEL 3 LABS (17-301 AND 306)

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ptocol #:10 H-3, C-14 dpm User :

: 1.00

Mode: Dual DPM Nuclides: 3H-14C Quench Sets

Low Energy: 3H

ground Subtract: None High Energy: 14C

	LL	UL	LCR	25%	BKG
.n A:	0.0 -	12.0	0	0.0	0.00
.n B:	12.0 -	156	0	0.0	0.00
.n C:	0.0 -	0.0	0	0.0	0.00

:ch Indicator: tSIE/AEC

.t Std Terminator: Count

S#	TIME	CPMA	CPMB	DPM1	DPM2	SIS	tSIE	FLAG
1	1.00	4.00	5.00	7.82	5.54	49.844	469.71	
2	1.00	2.00	7.00	2.28	8.24	54.124	331.39	
3	1.00	8.00	6.00	16.70	6.18	37.144	480.72	
4	1.00	3.00	8.00	4.50	9.35	43.992	470.21	
5	1.00	1.00	6.00	0.43	7.20	73.320	466.13	
6	1.00	8.00	12.00	14.20	13.81	61.391	514.82	
7	1.00	4.00	13.00	5.21	15.32	79.825	474.96	
8	1.00	8.00	9.00	14.41	9.86	44.893	556.09	
9	1.00	3.00	8.00	4.50	9.35	51.141	469.79	
10	1.00	6.00	11.00	9.68	12.55	65.097	545.73	
11	1.00	7.00	4.00	14.85	3.89	36.938	489.47	
12	1.00	3.00	9.00	3.93	10.54	64.601	518.92	
13	1.00	4.00	7.00	6.87	7.97	79.031	804.98	
14	1.00	4.00	6.00	7.42	6.76	38.039	478.54	
15	1.00	3.00	12.00	2.71	15.41	90.081	516.90	
16	1.00	1.00	2.00	6.86	2.00	41.569	424.54	
17	1.00	4.00	6.00	7.23	6.76	79.769	499.60	
[illegible]	[illegible]	11.00	11.00	21.74	11.87	37.426	493.63	
19	[illegible]	2.00	10.00	1.82	11.95	74.632	463.05	
20	[illegible]	3.00	6.00	5.98	5.63	39.122	413.41	
21	[illegible]	7.00	10.00	[illegible]	11.18	35.780	345.21	
22	[illegible]	2.00	[illegible]	[illegible]	10.77	53.763	[illegible]	

Nicholson N-337 ✓

Nicholson N-424 ✓

Annex 110 ✓

Annex 111 ✓

[illegible]	1.00	[illegible]	[illegible]	[illegible]	6.14	[illegible]	[illegible]	Annex 111 ✓
36	1.00	11.00	6.00	22.75	5.79	48.141	513.8	
37	1.00	4.00	10.00	6.06	11.64	70.849	489.50	
38	1.00	1.00	10.00	0.00	12.34	43.992	304.90	
39	1.00	32.00	14.00	81.31	12.09	24.005	386.60	
30	1.00	5.00	9.00	8.41	10.27	43.335	515.29	
31	1.00	4.00	10.00	6.22	11.65	50.901	469.56	
32	.00	8.00	9.00	15.57	9.85	53.201	490.05	Annex 115 ✓
33	1.00	7.00	6.00	16.05	6.28	34.631	408.13	
34	1.00	5.00	7.00	9.45	7.84	42.800	476.54	
35	1.00	6.00	6.00	11.84	6.47	31.833	493.17	
36	1.00	3.00	8.00	4.98	9.37	64.419	410.66	
37	1.00	3.00	5.00	5.81	5.68	24.476	428.06	
38	1.00	6.00	5.00	12.14	5.25	35.967	493.58	
39	1.00	0.00	5.00	0.00	6.14	91.325	425.69	
40	1.00	4.00	10.00	6.13	11.64	62.366	480.92	Annex 124 ✓
41	1.00	4.00	4.00	8.45	4.31	40.727	440.31	
42	1.00	4.00	6.00	8.13	6.76	35.310	416.23	Annex 126 ✓

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otocol #:10 H-3, C-14 dpm User :

3H	TIME	CPMA	CPMB	DPM1	DPM2	SIS	tSIE	FLAG
42	1.00	4.00	8.00	7.04	9.21	41.195	448.99	
44	1.00	4.00	8.00	6.68	9.20	73.830	491.30	
45	1.00	3.00	8.00	4.39	9.34	54.643	490.24	
46	1.00	1.00	10.00	0.00	12.20	61.301	348.33	Annex 126 ✓
47	.00	5.00	8.00	9.24	9.06	58.706	467.70	
48	1.00	5.00	8.00	9.10	9.06	60.434	479.80	
49	1.00	3.00	7.00	9.99	7.63	54.169	435.12	
50	1.00	3.00	8.00	4.40	9.34	60.917	488.10	
51	1.00	4.00	5.00	7.56	5.54	47.882	497.91	
52	1.00	7.00	10.00	13.40	11.22	56.853	462.87	
53	1.00	3.00	11.00	3.44	13.00	97.210	491.80	
54	1.00	5.00	6.00	10.82	6.60	38.593	410.45	
55	1.00	8.00	9.00	18.22	9.85	40.644	605.62	
56	1.00	5.00	12.00	7.87	13.93	70.667	473.21	Annex 127 ✓
57	1.00	6.00	12.00	13.04	13.52	50.076	467.64	
58	1.00	5.00	2.00	13.98	1.62	20.063	344.23	
59	1.00	6.00	12.00	10.53	13.82	71.868	447.68	
60	1.00	3.00	13.00	2.98	13.49	63.905	546.50	
61	1.00	4.00	9.00	6.66	10.43	44.261	455.41	
62	1.00	5.00	8.00	10.01	9.06	52.533	416.70	
63	1.00	6.00	8.00	11.93	8.91	35.195	445.65	
64	1.00	7.00	10.00	12.96	11.21	41.966	489.83	Annex 128 ✓
65	1.00	2.00	14.00	0.56	16.98	65.805	351.70	
66	1.00	8.00	7.00	17.32	7.38	35.042	437.34	
67	1.00	6.00	8.00	12.87	8.90	39.781	404.13	
68	1.00	5.00	9.00	8.86	10.27	68.720	501.09	
69	1.00	4.00	6.00	7.12	6.75	59.383	511.83	
70	1.00	2.00	6.00	2.70	7.04	90.883	493.74	
[illegible]	1.00	7.00	3.00	14.23	2.48	23.272	504.73	
[illegible]	.00	9.00	8.00	22.20	8.39	46.470	369.13	
[illegible]	1.00	8.00	10.00	10.53	11.52	48.845	359.66	
[illegible]	1.00	2.00	5.00	0.00	6.13	47.069	408.41	
[illegible]	1.00	4.00	5.00	7.97	5.53	63.003	464.79	
[illegible]	1.00	1.00	9.00	0.00	10.37	69.476	441.59	Annex 113 ✓
[illegible]	1.00	4.00	5.00	7.92	5.54	34.686	501.63	
[illegible]	1.00	1.00	10.00	0.00	12.13	73.319	427.36	

2	1.00	7.00	9.00	13.91	9.99	47.047	437.9[illegible]	
3	1.00	7.00	6.00	13.14	6.31	44.014	439.2[illegible]	Annex 118 Hallway ✓
4	1.00	2.00	5.00	4.19	5.87	51.245	327.12	
5	1.00	5.00	6.00	11.54	6.59	63.252	376.36	
6	1.00	3.00	12.00	4.35	14.36	62.007	339.15	
7	1.00	4.00	16.00	4.99	19.07	56.576	395.08	Annex Hot Locker ✓
8	.00	1.00	7.00	0.17	8.46	96.501	406.03	
9	1.00	3.00	8.00	4.46	9.35	63.981	476.72	
0	1.00	3.00	8.00	7.33	9.53	28.461	266.60	
1	1.00	3.00	12.00	6.16	14.74	54.303	237.85	
2	1.00	12.00	9.00	24.96	9.28	41.310	483.13	
3	1.00	27.00	12.00	57.84	10.84	21.750	496.86	Annex Loading Dock ✓
4	1.00	17.00	8.00	35.89	7.38	29.500	505.96	
5	1.00	10.00	9.00	19.47	9.58	58.414	519.74	
6	1.00	2.00	10.00	3.79	12.31	44.940	256.16	
7	1.00	4.00	5.00	9.75	5.50	37.539	349.87	
8	1.00	4.00	7.00	6.97	7.98	68.796	493.68	A-201 ✓

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otocol #:10 H-3, C-14 dpm User :

SE	TIME	DPMA	DPMB	DPM1	DPM2	SIG	EFF	FLAG
99	1.00	6.00	5.00	13.30	5.22	89.332	427.79	
00	1.00	2.00	10.00	1.52	14.75	106.06	455.17	A-201 ✓
01	1.00	3.00	4.00	5.65	4.46	40.698	485.89	
02	1.00	4.00	8.00	3.43	9.22	60.970	359.27	
03	.00	2.00	8.00	2.80	9.56	46.384	351.39	
04	1.00	1.00	7.00	0.16	8.45	50.537	414.89	
05	1.00	5.00	10.00	9.19	11.52	50.022	401.02	A-218 ✓
06	1.00	3.00	4.00	6.32	4.45	27.400	412.12	
07	1.00	6.00	5.00	13.80	5.21	44.429	408.58	
08	1.00	3.00	10.00	4.00	11.82	63.274	446.03	
09	1.00	8.00	7.00	16.25	7.41	44.673	487.76	
10	1.00	4.00	5.00	7.54	5.54	39.679	499.60	
11	1.00	4.00	7.00	6.95	7.98	83.533	495.69	
12	1.00	3.00	8.00	4.46	9.35	35.091	477.57	
13	1.00	5.00	7.00	9.67	7.84	64.601	436.72	
14	1.00	6.00	5.00	12.78	5.24	64.565	434.07	A-219 ✓
15	1.00	3.00	8.00	4.41	9.34	86.159	436.17	
16	1.00	1.00	11.00	0.00	13.26	57.513	50[illegible].88	
17	1.00	5.00	5.00	10.34	5.39	65.003	437.48	
18	1.00	3.00	7.00	4.71	8.12	31.037	482.21	
19	1.00	3.00	6.00	4.92	6.89	113.44	504.77	
20	1.00	6.00	7.00	11.70	7.69	45.628	482.59	
21	1.00	2.00	9.00	1.97	10.75	51.725	428.03	
22	1.00	2.00	10.00	1.85	12.01	34.773	383.79	
23	1.00	5.00	6.00	11.16	6.59	72.734	395.02	
24	1.00	5.00	14.00	3.42	14.43	63.807	391.92	
25	1.00	2.00	2.00	2.67	7.03	94.093	502.44	
26	1.00	4.00	8.00	7.26	7.21	51.474	446.63	
27	1.00	3.00	7.00	4.85	8.13	84.321	462.13	A-220 ✓
28	.00	1.00	6.00	0.40	7.16	77.512	521.[illegible]	
[illegible]	1.00	5.00	8.00	8.87	9.05	60.589	500.[illegible]	
[illegible]	1.00	7.00	9.00	4.07	10.56	74.331	490.45	
[illegible]	1.00	6.00	8.00	11.41	8.91	49.296	481.[illegible]	
[illegible]	1.00	4.00	12.00	6.62	14.15	32.402	380.33	
[illegible]	1.00	6.00	7.00	4.90	8.11	80.574	357.66	
[illegible]	1.00	3.00	8.00	4.65	9.36	68.732	414.43	

7	1.00	5.00	7.00	13.14	8.90	55.631	392.96	A-221 ✓
8	1.00	1.00	12.00	0.00	14.56	63.089	430.2	
9	1.00	1.00	11.00	0.00	13.43	63.397	359.9	
0	1.00	2.00	7.00	3.73	8.41	49.487	294.94	
1	1.00	8.00	8.00	15.89	8.63	51.862	489.44	A-213 ✓
2	1.00	4.00	12.00	5.41	14.03	77.342	493.42	
3	1.00	3.00	9.00	4.83	10.61	42.666	392.35	
4	00	1.00	4.00	0.96	7.47	33.304	242.00	A-213 B ✓
5	1.00	5.00	3.00	12.70	2.88	37.717	375.25	
6	1.00	6.00	10.00	12.55	11.36	50.658	389.64	
7	1.00	4.00	9.00	4.22	10.44	42.533	437.86	
8	1.00	7.00	6.00	14.30	6.33	44.261	485.05	
9	1.00	5.00	7.00	11.59	7.81	55.774	361.62	17-341 ✓
0	1.00	2.00	7.00	2.52	8.28	32.724	452.97	
1	1.00	1.00	8.00	0.00	9.72	71.244	367.12	
2	1.00	5.00	9.00	8.90	10.28	32.444	469.2	
3	1.00	3.00	10.00	3.68	11.77	50.929	506.42	17-311 ✓
4	1.00	3.00	6.00	7.70	6.97	28.087	389.11	

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otocol #:10 H-3, C-14 dpm User :

	TIME	CPM0	CPM8	DPM1	DPM2	SIG	SEIE	FLAG	
54	1.00	5.00	9.00	8.59	10.27	62.720	497.99		
55	1.00	3.00	4.00	5.36	4.45	31.245	297.63		
56	1.00	4.00	6.00	11.26	6.78	29.211	385.39		
57	1.00	3.00	8.00	6.83	9.40	63.397	388.21		
58	1.00	3.00	6.00	4.86	6.69	63.876	516.62	17/311 ✓	
59	.00	3.00	2.00	28.29	1.12	14.044	204.97		
60	1.00	6.00	11.00	17.86	13.16	38.279	461.40		
61	1.00	9.00	4.00	6.13	4.60	41.286	242.10		
62	1.00	2.00	5.00	4.95	5.92	60.878	272.17		
63	1.00	0.00	9.00	0.00	11.31	56.979	277.67	17/307 ✓	
4	1.00	2.00	10.00	2.67	12.25	44.408	270.17		
65	1.00	8.00	7.00	16.09	7.41	47.060	495.33		
66	1.00	5.00	6.00	8.87	9.05	72.040	300.19		
67	1.00	3.00	4.00	5.81	4.46	37.781	456.35		
68	1.00	3.00	2.00	6.24	2.02	45.100	493.62		
69	1.00	2.00	7.00	3.40	8.36	61.772	326.96	17/316 ✓	
70	1.00	3.00	6.00	5.37	6.91	74.911	356.05		
71	1.00	6.00	7.00	16.17	7.69	32.49-	313.37		
72	1.00	5.00	5.00	9.97	5.39	40.129	486.11		
73	1.00	1.00	14.00	0.00	16.91	81.801	510.47		
74	1.00	1.00	7.00	0.24	8.48	27.084	270.64		
75	1.00	4.00	7.00	7.54	7.99	39.3[illegible]	432.54		
76	1.00	5.00	5.00	11.45	5.36	85.868	297.67		
77	1.00	7.00	1.00	14.99	1.48	32.173	421.94		
78	1.00	4.00	10.00	5.96	11.63	45.741	508.21		
79	1.00	3.00	7.00	3.56	8.15	75.114	587.84		
80	1.00	5.00	11.00	5.40	12.78	38.7[illegible]	394.99		
81	1.00	4.00	3.00	7.87	5.84	72.[illegible]	435.63	17/203 ✓	
82	1.00	3.00	15.00	3.32	18.13	49.2[illegible]	116.01		
83	1.00	9.00	10.00	7.81	13.45	5[illegible]	472.95		
84	1.00	3.00	13.00	2.65	11.80	71.[illegible]	470.03		
85	1.00	3.00	5.00	4.41	9.34	74.5[illegible]	484.78		
86	1.00	6.00	3.00	13.06	3.63	56.4[illegible]	[illegible]		
87	1.00	1.00	[illegible]	[illegible]	14.[illegible]	[illegible]	[illegible]		
88	1.00	6.00	5.00	14.69	1.41	20.7[illegible]	344.84		
89	1.00	4.00	13.00	5.34	15.32	50.[illegible]	4[illegible].13	17/129 ✓	

[illegible]	1.00	4.00	7.00	7.63	7.99	65.388	427.64	
4	1.00	4.00	6.00	7.45	6.76	27.767	475.4	
5	1.00	5.00	13.00	8.47	15.21	55.373	406.96	
6	1.00	3.00	12.00	3.14	14.22	69.390	488.05	17/129 ✓
7	1.00	4.00	9.00	7.65	10.45	76.352	382.54	
8	1.00	6.00	13.00	11.30	15.06	42.978	397.06	
9	1.00	5.00	8.00	8.78	9.05	49.940	509.40	
0	1.00	2.00	6.00	2.89	7.06	47.347	442.21	
1	1.00	6.00	6.00	12.96	6.45	34.507	427.98	
2	1.00	2.00	5.00	4.94	5.92	54.914	272.66	
3	1.00	7.00	10.00	13.02	11.21	92.382	485.89	17/131 ✓
4	1.00	4.00	8.00	6.89	9.21	52.029	465.55	
5	1.00	4.00	11.00	6.45	12.91	67.892	401.39	
6	1.00	5.00	8.00	9.00	9.06	47.471	488.79	
7	1.00	4.00	14.00	6.94	16.74	56.532	319.67	
8	1.00	1.00	7.00	0.34	3.59	60.188	299.46	17/149 ✓
9	1.00	5.00	7.00	10.93	7.82	35.444	389.35	
0	1.00	4.00	10.00	7.37	11.69	66.264	377.85	

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Protocol #:10 H-3, C-14 dpm User :

[illegible]	TIME	CPMA	CPMB	DPM1	DPM2	[illegible]	[illegible]	
11	1.00	6.00	8.00	[illegible]	8.91	41.906	425.79	
12	1.00	2.00	[illegible]	[illegible]	3.74	34.[illegible]	[illegible]	
13	1.00	4.00	[illegible]	10.79	5.[illegible]	57.[illegible]	[illegible]	17/149 ✓
14	[illegible]	[illegible]	[illegible]	11.47	4.03	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.56	[illegible]	[illegible]	
[illegible]	[illegible]	8.00	[illegible]	14.80	1.07	47.042	454.60	
[illegible]	[illegible]	3.00	[illegible]	[illegible]	10.52	50.291	371.50	
18	[illegible]	[illegible]	[illegible]	[illegible]	12.57	68.496	[illegible]	
[illegible]	[illegible]	[illegible]	4.00	11.27	4.19	62.306	471.41	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34.33	17/242 ✓
[illegible]	[illegible]	2.00	[illegible]	[illegible]	3.41	11.264	[illegible]	
23	1.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	475.47	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.05	55.576	418.52	
24	[illegible]	2.00	[illegible]	[illegible]	4.92	37.764	450.76	
25	[illegible]	[illegible]	[illegible]	0.00	13.26	122.11	507.78	
26	[illegible]	2.00	12.00	1.28	14.50	72.798	356.08	17/234 ✓
27	1.00	2.00	11.00	[illegible]	13.12	101.42	310.28	
28	1.00	2.00	7.00	3.22	8.32	51.627	346.40	
29	1.00	5.00	5.00	9.93	5.39	59.867	489.79	
30	1.00	3.00	5.00	10.35	5.76	26.081	228.40	17/230 ✓
31	1.00	6.00	10.00	10.39	11.35	65.905	511.01	
32	1.00	4.00	8.00	8.65	9.22	43.603	348.71	
33	1.00	6.00	9.00	11.32	10.14	60.188	464.93	
34	1.00	4.00	11.00	5.46	12.91	43.068	415.10	
35	1.00	3.00	6.00	5.07	6.90	59.118	480.35	
36	1.00	5.00	14.00	7.94	16.48	82.826	417.82	
37	1.00	4.00	14.00	4.70	16.30	62.149	506.80	
38	1.00	4.00	10.00	6.15	11.65	73.257	477.54	
[illegible]	1.00	8.00	6.00	19.18	6.11	39.666	393.28	17/218 ✓
[illegible]	[illegible]	3.00	8.00	15.80	8.63	36.514	494.[illegible]	
[illegible]	[illegible]	5.00	[illegible]	9.69	6.61	73.319	403.[illegible]	
[illegible]	[illegible]	9.00	9.00	19.48	9.55	54.035	426.97	
[illegible]	[illegible]	4.00	10.00	6.60	11.67	72.798	429.[illegible]	
[illegible]	[illegible]	[illegible]	11.00	1.13	13.14	87.313	497.[illegible]	
[illegible]	[illegible]	[illegible]	4.00	[illegible]	10.43	46.928	469.[illegible]	
[illegible]	[illegible]	4.[illegible]	[illegible]	7.10	[illegible]	39.[illegible]	509.07	

9	1.00	3.00	8.00	5.61	4.46	46.660	494.07	
0	1.00	2.00	11.00	1.35	13.22	41.174	413.2	
1	1.00	5.00	7.00	9.12	7.83	81.855	505.94	17/212 ✓
2	1.00	5.00	10.00	8.15	11.49	64.254	510.40	
3	1.00	7.00	12.00	21.91	13.63	36.957	248.18	
4	1.00	8.00	10.00	17.55	11.05	43.157	399.57	
5	1.00	2.00	10.00	1.63	11.98	72.493	425.76	17/210 ✓
6	.00	2.00	6.00	2.92	7.04	83.861	435.39	
7	1.00	4.00	10.00	8.11	11.71	42.189	339.18	
8	1.00	4.00	15.00	4.52	17.75	63.144	484.87	
9	1.00	3.00	6.00	5.79	6.91	37.539	399.98	
0	1.00	3.00	8.00	4.55	9.35	94.330	461.66	
1	1.00	5.00	3.00	15.71	2.82	24.878	293.62	17/204 ✓
2	1.00	21.00	3.00	46.63	0.72	17.989	502.74	
3	1.00	4.00	10.00	6.51	11.67	59.614	435.55	
4	1.00	6.00	5.00	12.66	5.24	30.568	447.93	
5	1.00	3.00	7.00	5.14	8.14	103.52	427.46	
6	1.00	4.00	7.00	7.17	7.98	57.337	476.93	17/200 ✓

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otocol #:10 H-3, C-14 dpm User :

#	TIME	DPM	CPM1	DPM1	CPM2	SIG	EFF	FLAG
7	1.00	148.00	21.00	393.38	2.04	10.993	373.67	
8	1.00	4.00	5.00	7.49	3.54	37.361	904.63	
9	1.00	62.00	16.00	198.86	9.01	16.029	373.13	
70	1.00	3.00	4.00	6.16	4.45	46.430	426.50	
71	.00	7.00	7.00	17.79	7.46	27.289	348.25	
72	1.00	1.00	10.00	0.00	12.15	59.896	402.27	17/200 ✓
73	1.00	6.00	9.00	10.66	10.13	47.454	513.36	
74	1.00	5.00	14.00	6.93	16.36	68.550	509.36	
75	1.00	14.00	7.00	36.34	5.33	25.107	371.53	
76	1.00	30.00	11.00	70.82	8.94	18.927	450.63	
77	1.00	57.00	23.00	152.74	16.00	21.774	331.04	
78	1.00	3.00	12.00	3.59	14.29	60.829	412.04	
79	1.00	2.00	6.00	1.03	9.47	54.750	512.33	17/ 1 ✓
80	1.00	2.30	10.00	2.30	15.11	58.181	310.91	
81	1.00	5.00	3.00	7.57	3.20	33.903	350.93	
82	1.00	3.00	14.00	4.59	17.16	48.103	260.37	
83	1.00	4.00	7.00	7.46	7.99	58.940	440.15	
84	1.00	4.00	3.00	7.50	9.12	33.320	389.41	17/10 ✓
85	1.00	7.00	6.00	13.57	6.34	50.311	310.37	
86	1.00	3.00	13.00	3.68	14.30	54.014	403.04	
87	1.00	5.00	4.00	10.29	4.17	40.188	454.13	
88	1.00	1.00	5.00	0.71	5.95	34.262	589.12	
89	1.00	9.00	6.00	19.21	6.03	40.928	473.09	
90	1.00	3.00	8.00	4.31	9.33	55.316	503.14	17/5-6 ✓
91	1.00	2.00	7.00	2.40	8.26	48.311	491.77	
92	1.00	7.00	5.10	14.47	5.11	42.323	493.44	
93	1.00	1.00	5.00	0.00	5.37	62.149	503.70	
94	1.00	10.00	11.00	1.60	17.16	37.101	264.73	
95	1.00	7.00	1.00	13.38	8.77	25.198	331.79	
96	.00	3.00	10.00	3.75	11.46	71.509	470.36	17/12 ✓
97	1.00	5.10	6.00	11.74	6.91	57.123	370.53	
98	1.00	2.00	11.00	2.73	13.19	32.866	[illegible]	
99	.00	1.00	6.00	13.89	6.44	59.513	118.92	
100	1.00	5.00	7.00	11.45	7.54	37.371	301.07	
101	1.00	1.00	4.00	18.31	2.77	7.511	73.1[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	18/[illegible] ✓

2	1.00	2.00	1.00	7.27	1.60	41.798	307.1[illegible]	18/231 ✓
6	1.00	2.00	3.00	[illegible].36	2.94	53.366	466.2	
7	1.00	7.00	7.00	16.94	7.49	51.151	770.5[illegible]	
8	1.00	4.00	7.00	6.24	10.41	37.964	507.75	
9	1.00	4.00	6.00	6.52	9.19	66.340	510.93	
0	1.00	4.00	3.00	7.96	9.23	45.341	298.72	18/223 ✓
1	1.00	16.00	8.00	33.88	7.51	37.204	499.83	
2	1.00	8.00	10.00	18.38	11.03	44.5[illegible]	377.0[illegible]	
3	1.00	4.00	6.00	7.77	6.76	39.483	642.3[illegible]	
4	1.00	2.00	11.00	1.12	13.12	64.385	509.18	
5	1.00	9.00	11.00	21.54	12.08	42.934	359.67	
6	1.00	3.00	6.00	5.01	6.70	55.908	491.53	
7	1.00	36.00	17.00	98.72	14.87	21.122	347.05	18/135-137 ✓
8	1.00	2.00	13.00	0.79	15.71	63.076	383.05	
9	1.00	5.00	8.00	8.89	9.05	59.076	198.48	
0	1.00	1.00	9.00	0.00	10.92	87.473	814.68	
1	1.00	5.00	11.00	8.27	12.73	79.247	467.51	
2	1.00	5.00	10.00	8.69	11.5[illegible]	6[illegible].985	458.94	

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Protocol #:10 H-3, C-14 dpm User :

	TIME	CPMA	CPMB	DPM1	[illegible]	[illegible]	[illegible]	FLAG	
1	1.00	5.00	12.00	7.46	13.93	64.340	[illegible]		18/135-[illegible] ✓
4	1.00	1.00	9.00	2.07	10.74	33.325	[illegible]		
5	1.00	2.00	3.00	13.00	3.68	33.544	[illegible]		
6	1.00	6.00	12.00	10.57	12.58	57.646	[illegible]		21/233 ✓
7	1.00	3.00	9.00	4.00	[illegible]	65.4[illegible]	[illegible]		
8	1.00	3.00	15.00	3.32	15.82	84.6[illegible]	[illegible].67		
9	1.00	3.00	10.00	2.74	11.79	108.21	[illegible]		
0	1.00	9.00	11.00	20.77	11.10	33.792	[illegible]		21/301 ✓
1	1.00	6.00	7.00	13.64	7.66	61.299	[illegible]		
2	1.00	73.00	20.00	169.[illegible]	17.15	22.668	[illegible]		
3	1.00	4.00	9.00	8.50	10.49	58.[illegible]	[illegible]		21/Freezer. ✓
4	1.00	2.00	6.00	3.46	7.08	83.989	[illegible]		
5	1.00	2.00	11.00	1.96	13.25	90.4[illegible]	[illegible]		
6	1.00	22.00	45.00	62.71	52.66	25.309	[illegible]		
7	1.00	24.00	45.00	69.97	51.23	32.8[illegible]	[illegible]		21 Hot Locker. ✓
8	1.00	42.00	17.00	131.52	11.54	22.984	270.83		
9	1.00	17.00	19.00	[illegible]	21.37	73.35[illegible]	[illegible]		
0	1.00	7.00	[illegible]	11.49	17.32	36.607	[illegible]		
1	1.00	3.00	10.00	4.66	11.83	69.324	[illegible]		
2	1.00	4.00	4.00	7.82	4.70	33.3[illegible]	[illegible]		53/122 ✓
3	1.00	4.00	[illegible]	6.31	[illegible]	[illegible]	[illegible]		
4	1.00	5.00	16.00	9.97	[illegible]	77.[illegible]	[illegible]		
5	1.00	4.00	9.00	[illegible]	[illegible]	[illegible]	[illegible]		
6	1.00	10.00	7.00	17.93	[illegible]	71.9[illegible]	[illegible]		
47	1.00	5.00	17.00	6.12	[illegible]	72.[illegible]	[illegible]		
[illegible]	1.00	8.00	4.00	19.82	[illegible]	[illegible]	[illegible]		
[illegible]	1.00	4.00	6.00	[illegible]	[illegible]	74.976	[illegible]		
	1.00	2.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	1.00	8.00	3.00	[illegible]	1.48	75.[illegible]	[illegible]		53/121 ✓
	[illegible]	2.[illegible]	7.[illegible]	17.00	7.03	14.030	[illegible]		
	[illegible]	[illegible]	9.[illegible]	6.37	10.42	84.135	[illegible]		
	[illegible]	[illegible]	3.[illegible]	6.64	9.20	46.378	[illegible]		
	1.00	5.00	11.00	7.28	12.71	63.297	510.28		
	[illegible]	8.00	9.[illegible]	19.26	9.78	32.234	162.86		
	[illegible]	[illegible]	18.00	[illegible]	13.16	70.[illegible]	[illegible]		
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		

1	1.00	2.00	5.00	1.40	5.84	66.766	4[illegible]	
2	1.00	4.00	3.00	5.77	9.20	51.494	430.[illegible]	
3	1.00	2.00	7.00	2.56	8.29	67.689	[illegible]	
4	1.00	2.00	8.00	2.20	9.51	79.927	449.43	
5	1.00	4.00	6.00	6.66	9.20	55.373	490.95	53/12
6	1.00	6.00	13.00	10.67	11.36	73.830	487.41	
7	.00	5.00	9.00	8.55	10.27	74.633	[illegible]	
8	.00	4.00	13.00	5.12	15.38	53.201	389.[illegible]	
12	1.00	3.00	10.00	11.95	11.20	38.190	[illegible]	
13	1.00	2.00	8.00	2.06	9.47	79.620	[illegible]	
11	1.00	4.00	15.00	4.43	7.77	47.40[illegible]	[illegible]	

MISSING TUBE(S)

29	1.00	16042.0	113343	0.00	136429	157.27	915.41	^{14}C
30	1.00	103962	17564.0	179284	1477.19	19.221	934.11	^{3}H
31	1.00	13.00	5.00	20.55	4.62	41.730	975.73	BKG.

TAL ERROR:

INT PIN JAM FWD

6470
1 Apr 98

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FIRST QUARTER 1998

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in March 1998 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/28/97
Percent Efficiency: H3 - 61.79%; C14 - 96.27%
Background reading (CPM): 11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 132946
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - %; P32 - 26%; S35 - 6%; CR51 - 1%; I125 - 24%
Background reading (CPM): < 200; readings were @ bkgd

Meter 3: Model - LUDLUM Model 3
Serial number - 121727
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - 8%; P32 - 33%; S35 - 8%; Ca45 - 8%; P33 - 14%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** None.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 118 (LSC in hallway), 124, 126, 127, 128, 201, 213, 213B, 218, 219, 220, 221, and Loading Dock room.

Buildings 17 at NMRI: 1, 10, 12, 14, 115, 131, 149, 149A, 200, 203/217, 204, 205/215, 210, 212, 218, 225/229, 230, 234, 242, 251, 307, 311, 316/316A, S-6/14

Building 18 at NMRI: 135/137, 223, 231

Building 21 at NMRI: 301, freezer, hot locker, 233 (freezer)

Building 53: 118, 119, 121, 122

6. **RADIATION SAFETY CONCERNS**. None noted. No contamination was detected.

S. L. GAITER
LCDR, MSC, USN

6470
2 Jul 98

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE SECOND QUARTER 1998

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in June 1998 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/27/98
Percent Efficiency: H3 - 60.42%; C14 - 96.3%
Background reading (CPM): 11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 132946
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - %; P32 - 26%; S35 - 6%; CR51 - 1%; I125 - 24%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** None.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 118 (LSC in hallway), 124, 126, 127, 128, 201, 213, 213B, 218, 219, 220, 221, and Loading Dock room.

Buildings 17 at NMRI: 1, 10, 12, 14, 115, 131, 149, 149A, 200, 203/217, 204, 205/215, 210, 212, 218, 225/229, 230, 234, 242, 251, 307, 311, 316/316A, S-6/14

Building 18 at NMRI: 135/137, 223, 231

Building 21 at NMRI: 301, freezer, hot locker, 233

(freezer)

Building 53: 118, 119, 121, 122

NMRI Nicholson Building: 337, 424

6. **RADIATION SAFETY CONCERNS.** None noted. No contamination was detected.

S. L. GAITER
LCDR, MSC, USN

6470
5 Oct 98

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE THIRD QUARTER 1998

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in September 1998 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/27/98
Percent Efficiency: H3 - 60.42%; C14 - 96.3%
Background reading (CPM): 11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 114929
Calibration date- 8/11/98; Recalibration Date- 8/11/99
Percent Efficiency and/or other data:
C14 - 8%; P32 - 31%; S35 - 8%; CR51 - 2%; I125 - 24%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** None.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 118 (LSC in hallway), 124, 126, 127, 128, 201, 213, 213B, 218, 219, 220, 221, hot locker, and Loading Dock room.

Buildings 17 at NMRI: 1, 10, 12, 56, 115, 131, 149, 149A, 200, 203/217, 204, 205/215, 210, 212, 218, 230, 234, 239, 242, 251, 307, 311, 316/316A, 341, S-6/14

Building 18 at NMRI: 135/137, 223, 231

Building 21 at NMRI: 301, freezer, hot locker, 233

(freezer)

Building 53: 118, 119, 121, 122

NMRI Nicholson Building: 337, 424

6. **RADIATION SAFETY CONCERNS.** None noted. No contamination was detected.

S. L. GAITER
LCDR, MSC, USN

6470
4 Feb 99

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FOURTH QUARTER 1998

Ref: (a) NMRCINST 6470.1 (Series)

Encl: (1) Radiation Survey/Wipe Test Results, Locations and Survey Maps

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in December 1998 for all of NMRC's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION:**

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/27/98
Percent Efficiency: H3 - 60.42%; C14 - 96.3%
Background reading (CPM):11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 133057
Calibration date- 9/17/98; Recalibration Date- 9/17/99
Percent Efficiency and/or other data:
C14 - 6%; P32 - 27%; S35 - 6%; Cr51 - 1%; I125 - 21%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** Radioactive contamination was found in only one location during the conduction of this quarter's radiation surveys and wipe tests. Radioactive materials (RAM) are stored in a small refrigerator in a room at the loading dock at the Rockville Annex. Tritium (H-3) contamination was found on the inside of the door of that small refrigerator. Several iterations of contamination efforts and subsequent wipe tests revealed that residual H-3 contamination was still present. The interim solution will be to cover the contaminated area and fully decontaminate the refrigerator at a later time. The interim solution prevents the spread of removal contamination and does not endanger persons who use the refrigerator.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 118 (LSC in hallway), 124, 126, 127, 128, 201, 213, 213B, 218, 219, 220, 221, hot locker, and Loading Dock room.

Buildings 17 at NMRC: 1, 10, 12, 56, 115, 131, 149, 149A, 200, 203/217, 204, 205/215, 210, 212, 218, 230, 234, 239, 241, 242, 307, 311, 316/316A, 341, S-6/14

Building 18 at NMRC: 135/137, 223, 231

Building 21 at NMRC: 301, freezer, hot locker, 233 (freezer)

Building 53: 118, 121, 122

NMRC Nicholson Building: 337, 424

6. **RADIATION SAFETY CONCERNS.** Several decontamination efforts were unsuccessful in removing the H-3 contamination from the inside of the door of the refrigerator at the NMRC Rockville Annex loading dock room. The area, in which the residual, removable contamination was located, was covered paper/plastic liner to prevent the accidental spread or removal. The edges of the liner were taped. The liner will remain in place until the unit is decommissioned in September/October 1999. Wipe tests taken after the liner was in place revealed no removable contamination.

S. L. GAITER
LCDR, MSC, USN

Swipe #	Sample Identification/ Location
01	L/D, counter top
02	Outside refrigerator, door handle
03	Inside refrigerator, door at right bottom
04	Inside refrigerator, door at left bottom
05	Inside refrigerator at bottom left
06	Inside refrigerator at bottom right
07	Inside refrigerator, door right side
08	Inside refrigerator door, left side
09	Inside refrigerator, upper at right
10	Inside refrigerator, upper at left
11	Inside refrigerator, lead box
12	Inside refrigerator, lock box, outside
13	Inside refrigerator, lock box, inside
14	Inside refrigerator, lead box, inside
15	Inside refrigerator door, top shelf
16	Vial active account # 93A109
17	Vial active account # 98A078
18	Vial active account # 98A065
19	Vial active account # 94A091
20	Vial active account # 98A074
21	Post wrap, inside refrigerator at door top
22	Post wrap counter top
23	Post wrap, inside refrigerator at door, bottom
24	Lab 115, H-3 work station, bottom, vacated
25	Lab 115, H-3 workstation, top shelf, vacated

Radiation survey/Wipe Tests Results

Location: Refrigerator, Loading Dock, NMRC Rockville Annex loading dock room

Actions: The above wipe test results show that residual, removable H-3 contamination still exists on the inside of the door of the refrigerator at the loading dock (NMRC Rockville Annex). An interim soultion has been implemented. Plastic/paper liners have been taped to cover the inside shelves and surfaces of the inner surfaces of the refrigerator door. This effort prevents the inadvertent spread of contamination. Personnel using this refrigerator are not exposed to any hazards because of this action. Complete decontamination efforts will be performed in October/November 1999 when the refrigerator is no longer required.

NMRC RSO
LCDR S. L. Gaiter, MSC, USN
2/4/99

tocol #:10 H-3, C-14 dpm User :

e: 1.00
a Mc : Dual DPM Nuclides: 3H-14C Quench Sets
Low Energy: 3H
kground Subtract: None High Energy: 14C

	LL	UL	LCR	2S%	BKG
ion A:	0.0 -	12.0	0	0.0	0.00
ion B:	12.0 -	156	0	0.0	0.00
ion C:	0.0 -	0.0	0	0.0	0.00

nch Indicator: tSIE/AEC
Ext Std Terminator: Count

S#	TIME	CPMA	CPMB	DPM1	DPM2	SIS	tSIE	FLAG
1	1.00	37.00	19.00	120.38	16.76	22.441	288.24	
2	1.00	12.00	11.00	23.76	11.73	47.347	503.16	
3	1.00	4430.00	562.00	9454.50	88.34	13.118	536.72	
4	1.00	44851.0	4907.00	97861.8	0.00	12.274	521.61	
5	1.00	809.00	90.00	1753.67	0.00	12.707	527.03	
6	1.00	517.00	76.00	1134.03	21.13	13.529	512.57	
7	1.00	165.00	25.00	366.23	7.30	12.832	497.38	
8	1.00	124.00	28.00	263.78	14.83	13.585	531.41	
9	1.00	41.00	15.00	88.43	12.55	25.594	500.21	
10	1.00	133.00	32.00	285.73	20.71	13.000	519.12	
11	1.00	33.00	17.00	79.86	15.73	37.780	406.17	
12	.00	185.00	37.00	416.89	18.77	14.199	463.82	
13	1.00	77.00	36.00	180.82	32.42	22.292	426.00	
14	1.00	23.00	15.00	60.45	14.66	27.032	355.10	
15	1.00	27.00	7.00	58.79	4.77	19.354	505.46	
16	1.00	145.00	123.00	293.05	129.62	45.239	494.94	
17	1.00	57.00	11.00	126.58	5.40	16.758	498.75	
18	1.00	10.00	14.00	13.34	15.67	51.694	501.39	
19	1.00	10.00	11.00	19.19	12.01	51.627	505.09	
20	1.00	12.00	7.00	26.06	8.32	28.003	469.09	
21	1.00	8.00	5.00	17.36	4.95	49.446	464.60	
22	1.00	77.00	18.00	200.72	9.76	16.667	387.91	
23	1.00	13.00	12.00	24.67	12.83	32.967	538.46	
24	1.00	20.00	7.00	59.66	5.13	22.321	322.98	
25	1.00	4.00	11.00	6.67	12.91	47.241	400.06	
MISSING TUBE(S)								
37	1.00	16030.0	114454	0.00	135358	156.73	966.08	
38	1.00	105345	10861.0	178252	1775.57	19.215	924.99	
39	1.00	11.00	10.00	16.00	10.81	104.52	999.33	

NAVAL MEDICAL RESEARCH CENTER

Memo

To: LCDR. S. L. GAITER, RSO

From: HM3 S. AHMAD, ARSO

Date: 01/11/99

Re: NMRC's Radiation Survey at Rockville Annex for 12/1998

Detection of Removable Radioactive Contamination

Upon completion of our quarterly swipes here at the Naval Medical Research Center's authorized spaces, removable radioactive contamination was detected on the inside part of a lower shelf of a refrigerator. This unit is located on the Rockvile's loading dock. This equipment is used for the storage of Malaria Program active accounts. Attempts to decontaminate this unit took place twice. New swipes were taken and the results continue to be positive for contamination. Further action will be taken by our Radiation Safety Office to isolate this minimal contamination.

Thank you

HM3 S. Ahmad

S. Ahmad

6470
31 Mar 97

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FIRST QUARTER 1997

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in March 1997 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/96
Percent Efficiency: H3 - 63%; C14 - 96%
Background reading (CPM): 12 - 16

Meter 2: Model - LUDLUM Model 3
Serial number - 132946
Calibration date- 10/22/96; Recalibration Date-10/22/97
Percent Efficiency and/or other data:
C14 - 6%; P32 - 26%; S35 - 6%; CR51 - 1%; I125 - 24%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex room 115; building 18 room 223.

These areas were decontaminated using detergent, paper towels, and water. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 126, 128, 213B, 218, 220, 213, 218, 219, 221

Buildings 17 at NMRI: 1, 14, 19, 212, 218, 230, 234, 301, 311, 316/316A, 314, 347, 353, 203, 205, 215, 217, 239, 251, 12, 115, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted.

S. L. GAITER
LCDR, MSC, USN

6470
30 Jun 97

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE SECOND QUARTER 1997

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in June 1997 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/28/97
Percent Efficiency: H3 - 61.79%; C14 - 96.27%
Background reading (CPM): 11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 115444
Calibration date- 8/27/96; Recalibration Date-8/27/97
Percent Efficiency and/or other data:
C14 - 7%; P32 - 36%; S35 - 7%; CR51 - 2%; I125 - 24%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex room 115 (floor at sink); building 17 room 204; building 53 room 121..

These areas were decontaminated using detergent, paper towels, and water. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 118 (LSC in hallway), 124, 126, 128, 213B, 218, 220, 213, 218, 219, 221

Buildings 17 at NMRI: 1, 14, 19, 212, 218, 230, 234, 301, 311, 316/316A, 314, 347, 353, 203, 205, 215, 217, 239, 251, 12, 115, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker, 233 (freezer)

Building 53: 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS**. None noted.

S. L. GAITER
LCDR, MSC, USN

6470
15 Oct 97

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE THIRD QUARTER 1997

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in September 1997 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/28/97
Percent Efficiency: H3 - 61.79%; C14 - 96.27%
Background reading (CPM): 11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 132946
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - %; P32 - 26%; S35 - 6%; CR51 - 1%; I125 - 24%
Background reading (CPM): < 200; readings were @ bkgd

Meter 3: Model - LUDLUM Model 3
Serial number - 121727
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - 8%; P32 - 33%; S35 - 8%; Ca45 - 8%; P33 - 14%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex room 115 (hot sink, right bowl of double sink) and Annex roon 220 sink. An investigation was conducted concerning the contamination detected in room 220; none of the Supervised Users working in the lab admitted to contaminating the sink. Radiation Safety personnel stressed that the sink in room 220 was not to be used for disposal of or use of radioactive materials.

The contaminated areas were decontaminated-- three iterations of cleaning and monitoring. Subsequent monitoring measurements revealed no residual contamination in these areas. All contamination had been removed.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 124, 126, 128, 213, 213B, 218, 220, 218, 219, 221, and Loading Dock room.

Buildings 17 at NMRI: 1, 10, 12, 14, 115, 131, 149, 149A, 200, 203/215, 204, 205/215, 210, 212, 218, 225/229, 230, 234, 242, 251, 307, 311, 316/316A, S-6/14

Building 18 at NMRI: 135/137, 223, 231

Building 21 at NMRI: 301, freezer, hot locker, 233 (freezer)

Building 53: 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** The two contaminated areas were investigated and decontaminated. No other concerns noted.

S. L. GAITER
LCDR, MSC, USN

6470
6 Jan 98

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FOURTH QUARTER 1997

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in December 1997 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 4/28/97
Percent Efficiency: H3 - 61.79%; C14 - 96.27%
Background reading (CPM): 11 - 25

Meter 2: Model - LUDLUM Model 3
Serial number - 132946
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - %; P32 - 26%; S35 - 6%; CR51 - 1%; I125 - 24%
Background reading (CPM): < 200; readings were @ bkgd

Meter 3: Model - LUDLUM Model 3
Serial number - 121727
Calibration date- 9/24/97; Recalibration Date- 9/24/98
Percent Efficiency and/or other data:
C14 - 8%; P32 - 33%; S35 - 8%; Ca45 - 8%; P33 - 14%
Background reading (CPM): < 200; readings were @ bkgd

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex room 115; building 21's hot locker and freezer and a few other locations that are indicated on the computer printout of swipe results for December 1997.

These areas were remonitored. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 113, 115, 118 (LSC in hallway), 124, 126, 127, 128, 201, 213B, 218, 220, 213, 218, 219, 221, and Loading Dock room.

Buildings 17 at NMRI: 1, 14, 19, 200, 204, 210, 212, 218, 230, 234, 242, 301, 311, 316/316A, 203, 205, 215, 217, 251, 12, 115, 131, 149, 149A, S-6/14, 10, 225/229, 19, 14

Building 18 at NMRI: 135/137, 223, 231

Building 21 at NMRI: 301, freezer; hot locker, 233 (freezer)

Building 53: 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted. No contamination was detected.

S. L. GAITER
LCDR, MSC, USN

6470
31 Mar 96

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FIRST QUARTER 1996

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in March 1996 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/95
Percent Efficiency and/or other data: 64%
Background reading (CPM): 5 - 20

Meter 2: Model - IM-203/PDR-27R
Serial number - A1605
Calibration date- 6/2/95; Recalibration Date- 6/2/96
Percent Efficiency and/or other data:
Exposure rate (Cs-137)
Background reading: < 0.1 mR/h

Meter 3: Model - LUDLUM Model 3
Serial number - 115343
Calibration date- 10/31/95; Recalibration Date-10/31/96
Percent Efficiency and/or other data:
C14 - 7%; P32 - 37%; S35 - 7%; CR51 - 1%; I125 - 31%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex 115 (refrigerator and hot sink)

These areas were decontaminated using detergent, paper towels, and water. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 128, 213B, 218, 220, 213, 218, 219, 221

Building 1 at NNMC (Tissue Bank): S. MOAT, N. MOAT, 39, 43, 45, 145, 149, 157, 159F, 161

Buildings 17 at NMRI: 301, 307, 311, 316/316A, 320, 314, 347, ~~353~~, 15, 203, 205, 215, 217, 239, 251, 12, 115, 129, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted.

S. L. GAITER
LCDR, MSC, USN

6470
30 Jun 96

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE SECOND QUARTER 1996

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in June 1996 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/96
Percent Efficiency: H3 - 63%; C14 - 96%
Background reading (CPM): 5 - 20

Meter 2: Model - LUDLUM Model 3
Serial number - 115348
Calibration date- 10/31/95; Recalibration Date-10/31/96
Percent Efficiency and/or other data:
C14 - 7%; P32 - 37%; S35 - 7%; CR51 - 1%; I125 - 31%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION**. In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex at rooms-- hot locker, 110, 115 (hood and hot sink); Building 1 at rooms-- 39, 149; Building 17 at rooms-- 320.

These areas were decontaminated using detergent, paper towels, and water. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS**. All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS**. The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 128, 213B, 218, 220,

213, 218, 219, 221

Building 1 at NNMC (Tissue Bank): S. MOAT, N. MOAT, 39, 43, 45, 145, 149, 157, 159F, 161

Buildings 17 at NMRI: 14, 19, 218, 230, 234, 301, 307, 311, 316/316A, 320, 314, 347, ~~353~~, 15, 203, 205, 215, 217, 239, 251, 12, 115, 129, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted.

S. L. GAITER
LCDR, MSC, USN

6470
30 Sep 96

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE THIRD QUARTER 1996

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in September 1996 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/96
Percent Efficiency: H3 - 63%; C14 - 96%
Background reading (CPM): 5 - 20

Meter 2: Model - LUDLUM Model 3
Serial number - 115348
Calibration date- 10/31/95; Recalibration Date-10/31/96
Percent Efficiency and/or other data:
C14 - 7%; P32 - 37%; S35 - 7%; CR51 - 1%; I125 - 31%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex rooms 115 (inside RAM lockbox), 124 (at microfuge); building 17 rooms 115 (at workbench); building 21 hot locker.

These areas were decontaminated using detergent, paper towels, and water. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 128, 213B, 218, 220, 213, 218, 219, 221

THESE ROOMS WERE VACATED IN AUGUST/SEPTEMBER 1996. CLOSE-OUT SURVEYS/SWIPES WERE CONDUCTED BY NMRI RSO. Portable radiacs, gamma counters, and liquid scintillation counters were used to evaluate the close-out survey samples. RAM signs were removed; all RAM wastes were properly disposed; equipment and materials were transported to NMRI buildings 17 and 18 for continued use. AREAS AFFECTED-- Building 17 room 15 and Building 1 spaces at the NNMC (Tissue Bank): S. MOAT, N. MOAT, 39, 43, 45, 145, 149, 157, 159F, 161

Buildings 17 at NMRI: 14, 19, 212, 218, 230, 234, 301, 311, 316/316A, 314, 347, 353, 203, 205, 215, 217, 239, 251, 12, 115, 129, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted.

S. L. GAITER
LCDR, MSC, USN

6470
30 Dec 96

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE FOURTH QUARTER 1996

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in December 1996 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/96
Percent Efficiency: H3 - 63%; C14 - 96%
Background reading (CPM): 5 - 20

Meter 2: Model - LUDLUM Model 3
Serial number - 115348
Calibration date- 10/22/96; Recalibration Date-10/22/97
Percent Efficiency and/or other data:
C14 - 6%; P32 - 26%; S35 - 6%; CR51 - 1%; I125 - 25%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: Annex hot locker (floor), 128.

These areas were decontaminated using detergent, paper towels, and water. Subsequent monitoring measurements revealed no residual contamination in these areas.

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 128, 213B, 218, 220, 213, 218, 219, 221

Buildings 17 at NMRI: 1, 14, 19, 212, 218, 230, 234, 301, 311, 316/316A, 314, 347, 353, 203, 205, 215, 217, 239, 251, 12, 115, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted.

S. L. GAITER
LCDR, MSC, USN

6470
29 Jun 95

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE SECOND QUARTER 1995

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes are surveys were conducted in June 1995 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/95
Percent Efficiency and/or other data: 64%
Background reading (CPM): 5 - 20

Meter 2: Model - LUDLUM Model 3
Serial number - 114858
Calibration date- 9/28/94; Recalibration Date- 9/28/94
Percent Efficiency and/or other data:
C14 - 14%; P32 - 37%; S35 - 14%; CR51 - 7%; I125 - 24%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION**. In the following rooms, trace amounts of contaminants were detected at levels above the action level: None

4. **MARKING RAM AREAS**. All areas where radioactive materials (RAM) are used or stored were not clearly marked. These items were immediately corrected.

5. **RADIATION SURVEY AREAS**. The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 128, 213B, 218, 220, 213, 215, 218, 219, 221

Building 1 at NNMC (Tissue Bank): S. MOAT, N. MOAT, 39, 43, 45, 145, 149, 157, 159F, 161

Buildings 17 at NMRI: 325, 109, 126, 301, 307, 311, 316/316A, 320, 314, 347, 353, 15, 203, 205, 215, 217, 239, 249, 251, 12, 115, 127, 129, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 112, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** A summary of radiation safety items addressed were:

Building	Room	Comment
Annex	110	no bench area designated for RAM material/waste
	111	not on list of Authorized User
	111	vial with RAM label in standing freezer, NMRI #06879, with no RAM sticker on door
	111	Liquid Scintillation Counter (LSC), Wallac, Model 1205, S/N 427, Steve Chong-- company representative; Packard Tri-Carb 4000 Series LSC, S/N 36730, looks unused.
	215	No label on door; no RAM in use
	215	Automatic Gamma Counter, Wallac Inc., Steve Chong-- company rep. @ (800) 638-6692, Model 1272, S/N 2721353.

Building	Room	Comment
1		
17	115	too many partially used RAM containers; no RAM sign or notices on door
	127	RAM sign needed on outside door; post notices
	131	
	225	TM Analytic Gamma Trac 1193, gamma/beta counter
	239	Beckman LS 3801 LSC, Tritech Field Engineering, Annapolis, MD 21401, Glenn D. Simons (410) 266-1522, (800) 886-7004, Model LS 3801, S/N 7014928; only the LSC has RAM labels
	231	office only; no RAM in use
	241	no RAM; no signs
	249	no RAM sign on door; no areas within room designated as RAM area; no evidence of RAM use
	336	no RAM sign or RAM or labels indicating RAM use
	347	office spaces only; no RAM
	353	no sign on door; no indication of RAM use

S. L. GAITER
LCDR, MSC, USN

6470
25 Sep 95

MEMORANDUM FOR THE RECORD

From: Radiation Safety Officer

Subj: SWIPE REPORT FOR THE THIRD QUARTER 1995

Ref: (a) NMRIINST 6470.1 (Series)

1. Per reference (a), chapter 4, subject swipes and/or surveys were conducted in August and September 1995 for all of NMRI's designated radiation work areas. Survey Maps for the areas designated for using radioactive materials are retained in Radiation Safety files. These maps are periodically updated. Swipes for tritium and carbon-14 monitoring were run on a Packard Liquid Scintillation Counter, Model TR-2500, Serial Number 403848. The Action level for contamination in restricted areas is 900 DPM.

2. **RADIATION DETECTION INSTRUMENT INFORMATION**:

Meter 1: Model - Packard TriCarb Liquid Scintillation Counter
Serial number - 403848
Calibration date - 5/24/95
Percent Efficiency and/or other data: 64%
Background reading (CPM): 5 - 20

Meter 2: Model - LUDLUM Model 3
Serial number - 114858
Calibration date- 9/28/94; Recalibration Date- 9/28/94
Percent Efficiency and/or other data:
C14 - 14%; P32 - 37%; S35 - 14%; CR51 - 7%; I125 - 24%
Background reading (CPM): < 200

3. **FINDINGS OF CONTAMINATION.** In the following rooms, trace amounts of contaminants were detected at levels above the action level: None

4. **MARKING RAM AREAS.** All areas where radioactive materials (RAM) are used or stored were clearly marked.

5. **RADIATION SURVEY AREAS.** The rooms surveyed and/or swiped during this monitoring period were:

Annex: hot locker, 110, 111, 115, 124, 128, 213B, 218, 220, 213, 218, 219, 221

Building 1 at NNMC (Tissue Bank): S. MOAT, N. MOAT, 39, 43, 45, 145, 149, 157, 159F, 161

Buildings 17 at NMRI: 301, 307, 311, 316/316A, 320, 314, 347, 353, 15, 203, 205, 215, 217, 239, 249, 251, 12, 115, 129, 131, 149, 149A, S-6/14, 10, 225/229, 19

Building 18 at NMRI: 135/137, 223

Building 21 at NMRI: 301, freezer, hot locker

Building 53: 111, 118, 119, 121, 122

Building 139: 105, 106

6. **RADIATION SAFETY CONCERNS.** None noted.

S. L. GAITER
LCDR, MSC, USN

- 1998 Quarterly Survey and Wipe Testing Data

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 110

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	10	71	15	15			
2	14	42	20	7			
3	5	33	18	3			
4	2	50	10	11			
5	9	46	20	16			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 111

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	0	51	10	9			
2	3	51	17	8			
3	13	62	29	18			
4	7	54	22	2			
5	12	43	21	25			
6	4	44	23	8			
7	16	32	13	7			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 113

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	18	50	46	11			
2	10	51	19	13			
3	12	25	13	3			
4	22	37	23	12			
5	13	34	26	10			
6	10	58	33	7			
7	45	41	23	17			
8	0	32	35	5			
9	16	29	25	12			
10	13	39	35	15			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 115

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	11	46	26	16			
2	14	133	24	13			
3	14	190	20	57			
4	27	48	39	15			
5	106	23	24	3			
6	12	74	38	17			
7	4	30	17	18			
8	16	9	21	3			
9	2	34	18	15			
10	12	46	29	0			
11	15	432	20	12			
12	5	70	30	52			
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 118 (AT LSC OUTSIDE ROOM 118)

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	16	73	14	12			
2	18	41	23	14			
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 124

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	15	29	25	15			
2	25	28	7	5			
3	7	38	29	9			
4	7						
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 126

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	0	31	22	17			
2	42	29	18	14			
3	156	19	31	20			
4	138	37	14	1			
5	28	38	15	2			
6	9	32	46	6			
7	0	37	13	6			
8	34	30	11	12			
9	11	25	14	5			
10	16	37	22	2			
11	0	29	34	7			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 127

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	20	41	18	8			
2	11	19	19	8			
3	16	37	10	2			
4	9	14	36	6			
5	14	9	19	2			
6	4	27	21	3			
7	0	20	34	0			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 128

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	16	27	10	0			
2	27	43	0	6			
3	1	24	12	11			
4	0	36	39	8			
5	2	57	8	16			
6	8	38	13	13			
7	0	39	9	12			
8	2	22	17	5			
9	15	347	10	9			
10	14	28	9	8			
11	5	50	1	9			
12	29	45	10	13			
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 201

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	5	41	2	22			
2	140	27	6	21			
3	19	13	16	22			
4	451	42	11	9			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD -	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 213

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	18	45	15	15			
2	16	28	0	2			
3	49	50	9	6			
4	8	21	4	32			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 213B

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	16	44	7	0			
2	15	18	8	15			
3	15	49	10	10			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 218

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	23	28	3	13			
2	8	18	7	12			
3	9	26	12	0			
4	13	26	11	0			
5	12	36	6	8			
6	0	45	8	9			
7	0	16	12	2			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 219

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/26/98	9/30/98	12/16/98			
1	0	25	9	10			
2	3	11	7	2			
3	0	43	8	10			
4	22	44	5	15			
5	9	38	10	7			
6	0	35	9	15			
7	9	33	17	5			
8	0	19	16	12			
9	6	25	17	21			
10	12	41	5	18			
11	4	40	4	9			
12	3	37	5	11			
13	11	28	2	1			
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 220

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	0	45	2	5			
2	0	36	17	6			
3	0	28	8	3			
4	4	37	16	8			
5	6	44	19	7			
6	16	46	0	11			
7	4	23	2	4			
8	10	21	5	3			
9	1	28	13	16			
10	8	39	0	5			
11	3	29	15	30			
12	14	40	10	1			
13	16	33	7	15			
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 221

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	18	41	16	7			
2	14	56	9	1			
3	34	21	11	4			
4	18	22	10	20			
5	0	24	23	16			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX HOT LOCKER

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	22	104	12	24			
2	6	69	9	17			
3	1	60	17	3			
4	11	85	12	15			
5	3	129	12	5			
6	12	64	0	0			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX LOADING DOCK

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	1	33	15	2			
2	6	45	12	12			
3	0	91	78	5989/9012	SEE ATTACHED		
4	12	58	30	702	MEMO		
5	7	60	19	76			
6	11	101	16	6			
7	9	31	6				
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: NICHELSON 337

AUTHORIZED USER: CARL

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	18	16	15			
2	IN	10	14	5			
3	O	26	38	1			
4	P	26	17	5			
5	E	22	35	14			
6	R	12	12	13			
7	A	28	24	0			
8	T	25	15	8			
9	I	29	15	8			
10	O	29	34	8			
11	N						
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: NICHELSON 424

AUTHORIZED USER: CARL

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	17	19	0			
2	IN	20	17	12			
3	O	14	14	6			
4	P	24	29	5			
5	E						
6	R						
7	A						
8	T						
9	I						
10	O						
11	N						
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-S6

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	4	13	2	0			
2	11	5	7	8			
3	9	7	7	2			
4	2	7	68	14			
5	23	5	13	6			
6	2	11	15	7			
7	16	9	6	2			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-1

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	4	11	14	4			
2	5	5	13	11			
3	0	13	23	7			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-10

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	14	10	14	19			
2	0	8	12	15			
3	18	12	11	0			
4	7	13	10	17			
5	12	13	7	5			
6	29	11	4	15			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/12

AUTHORIZED USER: QUESADA

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	5	14	14	1			
2	8	23	2	7			
3	7	14	10	14			
4	13	7	3	11			
5	3	10	9	7			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-14

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	8	16	NOT	NOT			
2	7	8	IN	IN			
3	55	21	USE	USE			
4			ANYMORE	ANYMORE			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/115

AUTHORIZED USER: BOURGEOIS

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	32	123	368	NOT			
2	16	16	12	IN			
3	10	59	5	USE			
4	325	36	15	ANYMORE			
5	38	402	11				
6	14	4	3				
7	19	28	8				
8	NOT						
9	IN						
10	USE						
11	ANYMORE						
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD				

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-129

AUTHORIZED USER: McCARRON

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	NOT	NOT	3			
2	IN	IN	IN	3			
3	O	O	O	11			
4	P	P	P	6			
5	E	E	E	6			
6	R	R	R	6			
7	A	A	A	8			
8	T	T	T				
9	I	I	I				
10	O	O	O				
11	N	N	N				
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/131

AUTHORIZED USER: McCARRON

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	5	12	11	1			
2	3	16	18	0			
3	17	5	37	10			
4	11	12	12	5			
5	6	11	10	13			
6	4	10	16	12			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/149

AUTHORIZED USER: McCARRON

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	11	3	17	15			
2	6	14	12	14			
3	24	8	9	9			
4	0	13	8	0			
5	3	0	15	7			
6	14	2	13	3			
7	7	12	15	0			
8	13	15	14	0			
9	69	13	22	8			
10	8	10	14	1			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-200

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	4	15	24	29			
2	13	18	11	0			
3	10	17	8	11			
4	4	17	16	19			
5	23	38	5	10			
6	2	28	26	7			
7	6	27	9	13			
8	0	17	28	13			
9	17	8	77	7			
10	8	18	12	12			
11	14	11	15	127			
12	10	86	17	14			
13	19	22	15	16			
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-203/215

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	11	17	14	14			
2	1	10	11	17			
3	24	14	11	19			
4	9	15	8	2			
5	4	15	17	13			
6	9	12	7	7			
7	12	9	0	3			
8	7	26	12	9			
9	14	5	8	6			
10	10	10	26	12			
11	8	23	11	3			
12	6	19	5	3			
13	1	21					
14	19	9					
15	NOT						
16	USED						
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-204

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	8	14	15	10			
2	9	14	10	9			
3	20	22	14	11			
4	17	56	10	4			
5	6	14	8	19			
6	33	28	17	7			
7	13	23	7	14			
8	6	27	2	12			
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-210

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	19	12	8	7			
2	15	11	0	12			
3	17	14	7	7			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-212

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	8	15	11	11			
2	12	12	9	8			
3	9	19	4	7			
4	1	20	0	21			
5	6	11	20	4			
6	3	15	12	6			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-205/217

AUTHORIZED USER:

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	53	6	3	NOT			
2	29	8	8	USED			
3	40	13	9				
4	5	12	15				
5	14	6	9				
6	3	13	11				
7	16	7	13				
8	8	13	6				
9	18	15	12				
10	11	13	9				
11	NOT	NOT	NOT				
12	USED	USED	USED				
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD				

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-218

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	8	13	32	1			
2	25	15	21	4			
3	8	2	1	10			
4	10	15	18	9			
5	1	35	8	12			
6	83	37	4	3			
7	35	28	9	13			
8	11	41	7	9			
9	13	15	12	8			
10	16	16	9	10			
11	13	16	8	5			
12	12	13	11	17			
13	23	9	16	0			
14	12	36	9	8			
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-230

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	0	8	20	8			
2	14	47	8	2			
3	18	46	9	12			
4	28	39	0	18			
5	8	16	6	10			
6	7	12	8	13			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-234

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	10	7	9	2			
2	9	15	10	10			
3	7	5	11	19			
4	10	20	11	3			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/225

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	16	10	NOT	NOT			
2	7	9	USED	USED			
3	6	29					
4	13	8					
5	NOT						
6	USED						
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/239

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	7	20	7	0			
2	9	16	4	12			
3	14	9	0	3			
4	6	13	2	1			
5	NOT		NOT				
6	USED		USED				
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-242

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	3	21	5	5			
2	7	12	9	14			
3	13	3	11	3			
4	4	13	6	4			
5	11	4	25	17			
6	6	19	14	7			
7	14	10	8	4			
8	9	12	8	2			
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/251

AUTHORIZED USER:

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	0	17	1	NOT			
2	5	9	8	USED			
3	6	2	12				
4	7	9	6				
5	14	10	10				
6	NOT		NOT				
7	USED		USED				
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD				

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/307

AUTHORIZED USER: DASCH

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	17	6	5	16			
2	20	6	2	0			
3	16	21	12	2			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/311

AUTHORIZED USER: DASCH

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	11	29	6	2			
2	8	13	11	15			
3	8	19	18	4			
4	11	4	13	0			
5	19	19	12	0			
6	17	26	15	3			
7	0	29	4	7			
8	1	28	25	13			
9	11	68	2	8			
10	0	17	7	13			
11	0	8	4	11			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/316/316A

AUTHORIZED USER: DASCH

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	6	13	21	11			
2	13	23	19	6			
3	16	9	0	9			
4	14	23	12	9			
5	7	31	3	10			
6	11	13	13	5			
7	4	20	5	9			
8	13	22	4	8			
9	13	23	12	7			
10	2	16	0	5			
11	0	27	1	16			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-341

AUTHORIZED USER: BOURGEOIS

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	NOT	11	19			
2	IN	IN	16	11			
3	O	O	7	31			
4	P	P	0	3			
5	E	E	8	29			
6	R	R	9	14			
7	A	A					
8	T	T					
9	I	I					
10	O	O					
11	N	N					
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-353/353A

AUTHORIZED USER:

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	NOT	NOT	NOT			
2	USED	USED	USED	USED			
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 18-135/137

AUTHORIZED USER: BOURGEOIS

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	20	17	9	11			
2	39	20	5	11			
3	35	30	18	20			
4	65	25	13	8			
5	15	305	10	1			
6	8	23	19	19			
7	14	35	19	4			
8	17	7	3	3			
9	8	20	8	11			
10	15	30	3	3			
11	22	33	11	12			
12	2	32	17	2			
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 18-223

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	7	36	10	13			
2	14	24	12	14			
3	5	41	27	21			
4	208	45	370	127			
5	63	258	21	4			
6	15	33	13	9			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 18-231

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	19	29	9	4			
2	14	17	5	12			
3	21	14	7	1			
4	3	17	11	10			
5	21	12	6	5			
6	18	18	7	0			
7	6	25	6	6			
8	4	7	16	15			
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21-FREEZER

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	18	28	15	2			
2	13	20	9	2			
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21-HOT LOCKER

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	60	19	35	13			
2	18	57	63	21			
3	42	76	6	19			
4	10	26	7	46			
5	9	20	21	13			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21/233 (ONE OF MANY FREEZERS IN FREEZER ROOM)

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	12	17	11	8			
2	13	23	17	7			
3	15	34	5	8			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21-301 (HOT SINK)

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	14	28	5	10			
2	324	15	131	12			
3	8	123	12	15			
4	68	28	221	234			
5	7	68	10	0			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-111

AUTHORIZED USER:

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	NOT	NOT	NOT			
2	IN	IN	IN	IN			
3	USE	USE	USE	USE			
4	ANYMORE	ANYMORE	ANYMORE	ANYMORE			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-118

AUTHORIZED USER: NADI

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	6	19	8	13			
2	9	27	4	13			
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-119

AUTHORIZED USER: NADI

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	8	17	23	NOT			
2	4	12	8	USED			
3	23	7	9				
4	5	22	11				
5	6	28	12				
6	18	26	2				
7	0	14	23				
8	21	27	9				
9	10	20	3				
10	13	28	5				
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD				

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-121

AUTHORIZED USER: NADI

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	10	25	9	14			
2	1	21	15	4			
3	2	22	7	6			
4	15	30	12	3			
5	18	5	13	25			
6	19	38	3	6			
7	7	21	0	5			
8	0	9	9	17			
9	19	11	6	13			
10	5	19	9	11			
11	4	15	8	12			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-122

AUTHORIZED USER: NADI

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	3	21	7	12			
2	7	23	6	11			
3	8	21	13	16			
4	10	10	1	16			
5	9	29	15	6			
6	11	32	3	3			
7	37	21	39	15			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD	BKGD	BKGD			

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 139-105

AUTHORIZED USER: QUESADA

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	NOT	NOT	NOT			
2	IN	IN	IN	IN			
3	USE	USE	USE	USE			
4	ANYMORE	ANYMORE	ANYMORE	ANYMORE			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 139-106

AUTHORIZED USER: QUESADA

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/23/98	6/29/98	9/30/98	12/16/98			
1	NOT	NOT	NOT	NOT			
2	IN	IN	IN	IN			
3	USE	USE	USE	USE			
4	ANYMORE	ANYMORE	ANYMORE	ANYMORE			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

- 1997 Quarterly Survey and Wipe Testing Data

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 110

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	5	42	14	8			
2	6	39	18	13			
3	13	36	12	87			
4	12	61	17	17			
5	11	46	20	27			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 111

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	17	26	23	32			
2	13	25	11	19			
3	12	9	5	23			
4	20	24	17	7			
5	19	29	24	0			
6	17	19	6	37			
7	9	11	23	8			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 113

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1				8			
2				14			
3				8			
4				1			
5				10			
6				16			
7				9			
8				10			
9				7			
10				0			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 115

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	83	42	206	9			
2	52	55	8	11			
3	14	19	17	21			
4	6	49	21	10			
5	104	29	67	3			
6	10	30	21	21			
7	743	175	3080/157	15			
8	18	85	27	923/29			
9	14	54	13	14			
10	17	129	48	16			
11	15	32	8	10			
12	181	121	19	13			
13		142	9				
14		91	16				
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 118 (AT LSC OUTSIDE ROOM 118)

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	6/30/97	9/26/97	12/30/97				
1	45	32	6				
2	41	33	13				
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD						

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 124

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	13	16	19	16			
2	23	34	0	9			
3	6	30	12	16			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 126

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	2	42	14	0			
2	24	29	5	13			
3	15	29	14	3			
4	13	29	13	2			
5	9	28	33	7			
6	3	22	17	11			
7	11	16	45	15			
8	17	17	11	20			
9	14	30	15	3			
10		24	20	7			
11		39	18	11			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 127

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	SPACE	SPACE	SPACE	12/30/97			
1	NOT	NOT	NOT	6			
2	AUTHOR-	AUTHOR-	AUTHOR-	5			
3	IZED	IZED	IZED	6			
4				14			
5				11			
6				17			
7				14			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD						

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 128

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	17	29	17	9			
2	13	25	14	10			
3	0	5	20	10			
4	5	17	22	19			
5	8	32	9	7			
6	34	16	15	12			
7	6	21	8	18			
8	15	41	12	47			
9	162	18	96	4			
10	15	26	30	12			
11	16	27	30	86			
12	9	17	19	27			
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 201

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	SPACE,	SPACE	SPACE	12/30/97			
1	NOT	NOT	NOT	3			
2	AUTHOR-	AUTHOR-	AUTHOR-	18			
3	IZED	IZED	IZED	. 0			
4				12			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD						

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 213

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	25	32	14	13			
2	12	37	11	8			
3	9	12	6	12			
4	23	16	2	6			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 213B

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	11	2	17	13			
2	22	10	22	1			
3	20	26	18	15			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 218

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	3	35	9	8			
2	18	19	13	3			
3	3	14	11	14			
4	18	21	2	6			
5	40	22	18	12			
6	4	30	12	17			
7	5	25	16	17			
8	3						
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 219

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	12	17	5	9			
2	9	19	10	14			
3	1	24	11	5			
4	9	40	4	10			
5	0	110	7	23			
6	8	195	19	1			
7	8	30	12	1			
8	15	32	13	9			
9	19	19	18	7			
10	11	16	4	12			
11	12	33	17	0			
12	13	27	14	6			
13	9	28	9	8			
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 220

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	14	25	9	21			
2	11	22	15	7			
3	3	26	12	8			
4	18	16	13	5			
5	11	29	7	13			
6	5	25	6	13			
7	12	25	12	1			
8	7	16	8	1			
9	11	7	9	13			
10			7	0			
11			2392/219	7			
12			11	8			
13			32	7			
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX 221

AUTHORIZED USER: GUERRY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	8	20	9	6			
2	2	20	7	0			
3	18	20	4	9			
4	4	20	21	16			
5	10	24	17	13			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX HOT LOCKER

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	27	48	1	0			
2	17	402	18	14			
3	40	130	4	0			
4	411	383	13	6			
5	32	250	13	23			
6	13	44	17	115			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: ANNEX LOADING DOCK

AUTHORIZED USER: HOFFMAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1				88			
2				41			
3				6			
4				4			
5				13			
6				24			
7				4			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-S6

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/29/97	6/30/97	9/26/97	12/30/97			
1	10	36	5	11			
2	26	54	7	452			
3	23	27	24	2			
4	7	26	8	13			
5	11	52	11	21			
6	19	27	6	9			
7	24	32	40	9			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-1

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	22	21	19	14			
2	19	28	0	10			
3	13	15	54	0			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-10

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	11	23	7	30			
2	4	37	12	15			
3	14	14	14	8			
4	11	28	18	5			
5	9	48	30	6			
6	17	36	10	15			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/12

AUTHORIZED USER: QUESADA

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	20	22	10	4			
2	16	39	15	11			
3	7	22	26	-10			
4	22	31	18	15			
5	15	26	10	17			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-14

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	13		4	34			
2	7		10	9			
3	12		14	9			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD						

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/115

AUTHORIZED USER: ROLLWAGEN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	38	43	20	11			
2	24	27	22	47			
3	19	39	30	- 38			
4	54	46	1	7			
5	15	86	337	17			
6	16	28	36	47			
7		44	13	45			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/131

AUTHORIZED USER: ROLLWAGEN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	34	40	11	46			
2	53	24	18	6			
3	5	17	10	17			
4	8	40	8	20			
5	25	25	13	66			
6	27	24	13	11			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/149

AUTHORIZED USER: ROLLWAGEN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	48	22	9	3			
2	14	24	12	21			
3	14	17	3	11			
4	35	40	21	7			
5	6	32	10	0			
6	24	33	18	1			
7	15	39	12	1			
8	10	30	25	18			
9	14	27	15	6			
10	15	19	14	8			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-200

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	31	45	22	4			
2	3	59	21	26			
3	5	109	348	15			
4	17	63	25	44			
5	44	77	54	39			
6	23	30	18	46			
7	136	64	33	28			
8	36	138	46	27			
9	24	35	29	12			
10	6	46	68	19			
11	107	90	38	196			
12	23	25	34	35			
13		120	49	592/99			
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-204

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	24	26	20	273			
2	6	16	16	6			
3	31	26	31	77			
4	17	35	23	20			
5	27	30	43	35			
6		24	24	5			
7		27	18	8			
8				16			
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-210

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	11	32	14	37			
2	3	9	8	7			
3	24	20	6	16			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-212

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	4	17	22	10			
2	7	35	24	15			
3	34	64	6	16			
4	15	39	6	14			
5	15	98	3	9			
6	24	105	18	11			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-203/215

AUTHORIZED USER: FALK

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	21	37	81	14			
2	22	22	25	9			
3	20	14	5	9			
4	458	50	20	1			
5	35	4	4	52			
6	28	15	23	14			
7	9	20	6	9			
8	4	19	6	11			
9	0	38	8	4			
10	12	28	21	16			
11	36	28	15	15			
12	22	29	24	4			
13	20	23	12	11			
14				8			
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-205/217

AUTHORIZED USER: FALK

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	24	24	19	15			
2	18	28	20	18			
3	10	20	22	10			
4	0	24	14	12			
5	7	26	24	21			
6	19	178	11	7			
7	12	43	7	9			
8	3	30	19	4			
9	8	17	17	5			
10	13	24	12	13			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-218

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	25	63	3	5			
2	20	42	7	15			
3	18	91	8	2			
4	12	13	14	24			
5	24	42	29	13			
6	27	64	27	18			
7	11	19	2	8			
8	8	19	14	19			
9	27	57	5	11			
10	10	58	10	0			
11	18	33	19	16			
12	19	32	24	13			
13				3			
14				24			
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/225

AUTHORIZED USER: FALK

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	25	21	5	9			
2	25	25	19	9			
3	15	22	8	7			
4	18	19	2	1			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-230

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	26	31	6	22			
2	13	26	13	22			
3	72	25	19	68			
4	36	18	18	2			
5	51	34	4	2			
6	22	34	11	19			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-234

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	30	18	19	11			
2	11	37	13	7			
3	64	33	6	1			
4	7	21	12	5			
5			7				
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/239

AUTHORIZED USER: FALK

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	13	25	5	9			
2	15	38	1	11			
3	6	27	12	5			
4	29	23	12	7			
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-242

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	24	28	12	22			
2	14	42	27	14			
3	81	31	29	6			
4	4	26	14	14			
5	10	16	17	22			
6	7	39	5	13			
7	6	12	12	11			
8	24	30	2	7			
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/251

AUTHORIZED USER: FALK

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	19	22	25	18			
2	22	40	4	7			
3	22	28	10	16			
4	22	21	21	21			
5	10	20	13	15			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/307

AUTHORIZED USER: DASCH

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	24	36	8	19			
2	42	47	1	39			
3	21	60	27	8			
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/311

AUTHORIZED USER: DASCH

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	23	31	13	16			
2	7	11	21	14			
3	5	63	41	19			
4	27	21	9	10			
5	100	68	12	13			
6	47	75	8	23			
7	3	73	7	22			
8	14	33	6	12			
9	17	62	24	22			
10				30			
11				28			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17/316/316A

AUTHORIZED USER: DASCH

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	141	31	6	21			
2	8	31	16	5			
3	12	43	2	18			
4	6	35	8	10			
5	10	32	6	84			
6	27	19	13	16			
7	13	58	9	9			
8	15	42	16	3			
9	20	114	4	10			
10	41	50	14	4			
11		15	11	8			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 17-353/353A

AUTHORIZED USER: FALK

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	NOT USED	NOT USED			
1	4	26					
2	11	37					
3	10	20					
4	22	28					
5	18	14					
6	14	34					
7	15	25					
8	14	23					
9	53	28					
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 18-135/137

AUTHORIZED USER: BOURGEOIS

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	14	25	5	16			
2	20	22	19	21			
3	13	21	17	24			
4	18	32	16	14			
5	71	18	21	527/57			
6	22	34	10	89			
7	26	29	6	24			
8	35	12	12	18			
9	32	26	7	12			
10	14	29	20	17			
11	20	16	2	12			
12	36	39	8	36			
13	38						
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 18-223

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	28	30	27	19			
2	42	24	31	11			
3	191	27	5	2			
4	1107/160	7	23	21			
5	2223/200	20	495	16			
6	68	25	30	9			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 18-231

AUTHORIZED USER: HARLAN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	42	24	14	798			
2	42	34	17	17			
3	27	18	14	11			
4	92	24	14	12			
5	32	23	12	6			
6	26	41	17	14			
7	24	34	15	16			
8	21	21	5	33			
9	36	201	11				
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21-HOT LOCKER

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	15	43	8	4			
2	100	42	101	11			
3	116	149	106	- 3			
4	66	165	14	265/43			
5	235	31	6	83			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD						

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21-FREEZER

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	23	259	29	175/44			
2	10	10	13	14			
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21/233 (ONE OF MANY FREEZERS IN FREEZER ROOM)

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	6/30/97	9/26/97	12/30/97				
1	18	10	10				
2	25	26	18				
3	11	10	7				
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 21-301 (HOT SINK)

AUTHORIZED USER: GAITER

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	28	26	13	23			
2	21	25	9	17			
3	548	506	124	- 7			
4	24	19	16	19			
5	514	617	251	191			
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-111

AUTHORIZED USER: HARABIN

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	NOT USED	NOT USED			
1	18	30					
2	8	22					
3	17	16					
4	31	31					
5	15	27					
6	17	18					
7	9	50					
8	20	17					
9	18	16					
10	10	25					
11	29	30					
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-118

AUTHORIZED USER: AXLEY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	13	34	22	18			
2	37	27	12	13			
3	7	30	16				
4		23	14				
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-119

AUTHORIZED USER: AXLEY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	15	18	13	13			
2	23	41	13	8			
3	28	20	22	7			
4	15	26	13	11			
5	9	19	15	17			
6	18	31	11	9			
7	17	34	11	3			
8	17	12	13	4			
9		26	26	4			
10		32	19	10			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 139-105

AUTHORIZED USER: QUESADA

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	14	8	18	0			
2	29	24	14	3			
3	20	25	9	12			
4	17	27	10	8			
5	12	34	6	0			
6	7	25	13	28			
7	17	20	10	1			
8	14	35	14	8			
9	14	42	21	35			
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 139-106

AUTHORIZED USER: QUESADA

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	14	32	9	22			
2	15	41	0	9			
3	10	9	235	24			
4	17	24	7	39			
5	13	21	7	24			
6	19	14	21	16			
7	4	30	7	70			
8	17	17	5	13			
9	18	12	22	14			
10	22	17	15	17			
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-121

AUTHORIZED USER: AXLEY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	78	28	15	27			
2	34	31	45	0			
3	26	20	9	12			
4	26	36	6	8			
5	13	47	14	14			
6	14	11	16	7			
7	10	54	13	15			
8	20	39	9	16			
9	27	51	17	4			
10	16	334	33	20			
11	13	11	12	7			
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

NMRI RADIATION SWIPES AND SURVEYS

BUILDING/ROOM NUMBER: 53-122

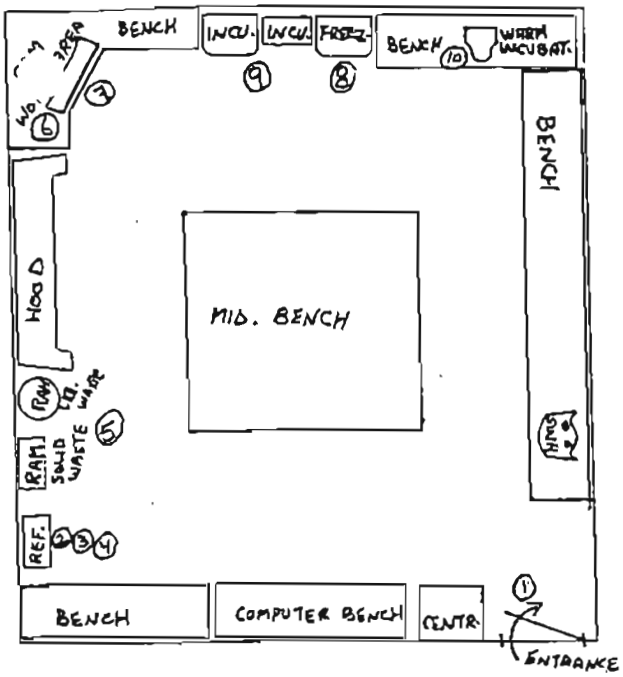
AUTHORIZED USER: AXLEY

SAMPLE NUMBER	H-3 SWIPE COUNTS IN DPM AND/OR EXPOSURE RATE, mR/h						
	3/28/97	6/30/97	9/26/97	12/30/97			
1	25	15	4	3			
2	16	33	23	2			
3	13	44	5	0			
4	22	23	11	60			
5	12	32	11	18			
6	25	28	17	12			
7			12	19			
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
MAXIMUM RADIAC READING	BKGD	BKGD					

- NMRC Laboratory Lay-out Diagrams (Survey Maps) (1995-1999)

NMRI R' IATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

N
337



SWIPE/SURVEY LOCATIONS

1. FLOOR AT ENTRANCE.
2. REFRIGERATOR DOOR.
3. UNIT INSIDE REFRIGERATOR.
4. FLOOR AT RFRIGERATOR.
5. FLOOR AT RAM SOLID/LIQ WASTE
6. RAM WORKING AREA (BENCH)
7. FLOOR AT RAM WORKING AREA.
8. FREEZER DOOR & RAM BOX.
9. FLOOR AT FREEZER.
10. WARM INCUBATOR & BENCH.

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab N/337 Authorized User CARL

Radioisotope Account Number _____

Inst ment Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

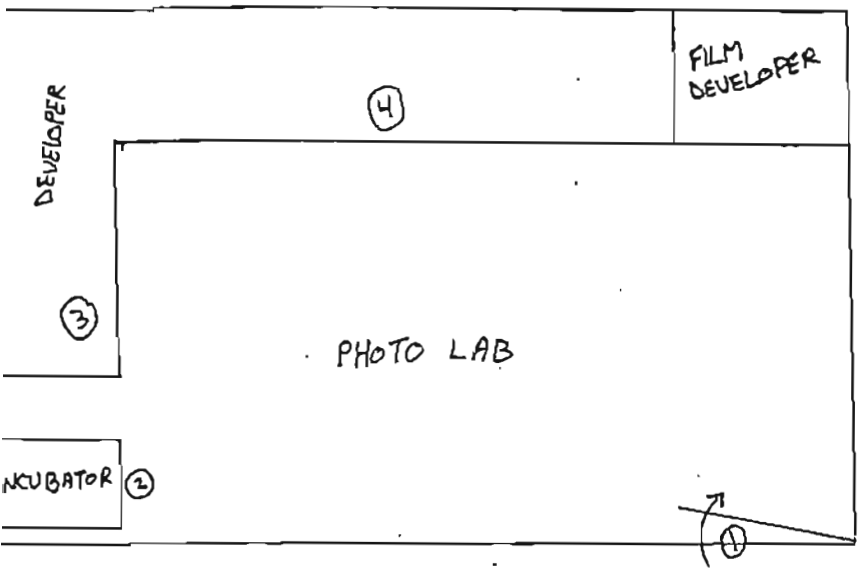
Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm^2.

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. ENTRANCE
2. INCUBATOR
3. DEVELOPER
4. BENCH
5. _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab N-424 Authorized User CAPT CARL
Radioisotope Account Number _____
Instrument Used: MGFR: _____ MODEL: _____ S/N: _____
Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm^2.

MF R SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTO. USAGE LOG/LABORATORY JRVEY

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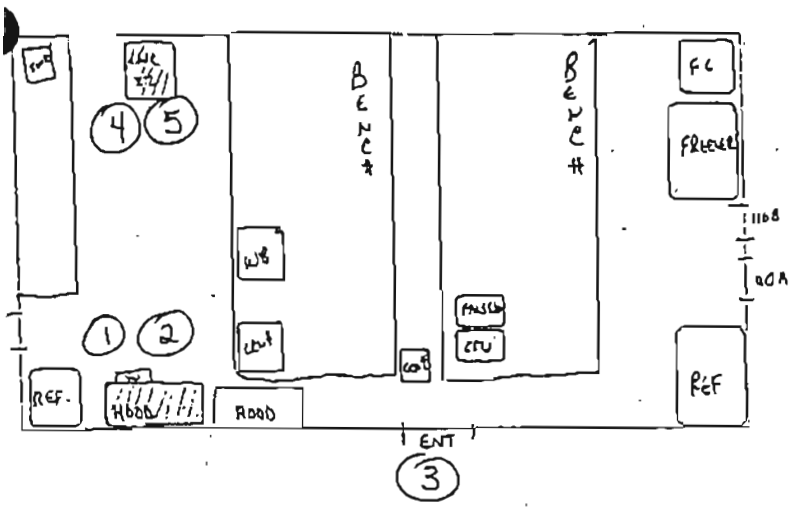
A/110



SWIPE/SURVEY LOCATIONS

1 hood
2 floor @ hood
3 floor @ entrance
4 incubator
5 floor @ incubator
6
7
8
9
10
11
12

Auth. Isotopes: H^3, C^{14}, Cr^{51}

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-110 Authorized User HOFFMAN

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

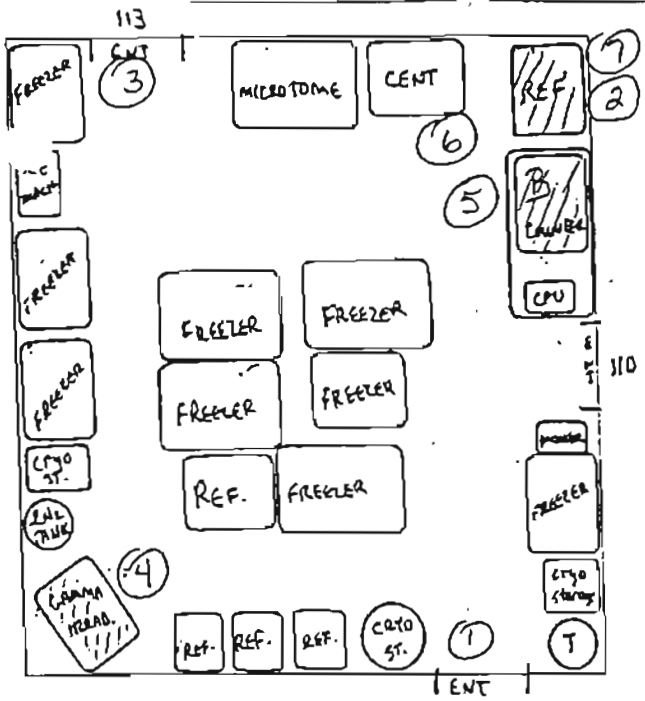
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPI JSAGE LOG/LABORATORY S RVEY

44
A/111



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ refrigerator
3 floor @ entrance
4 floor @ gamma irradiator
5 beta counter
6 floor @ counter
7 refrigerator
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-111 Authorized User HOFFMAN

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

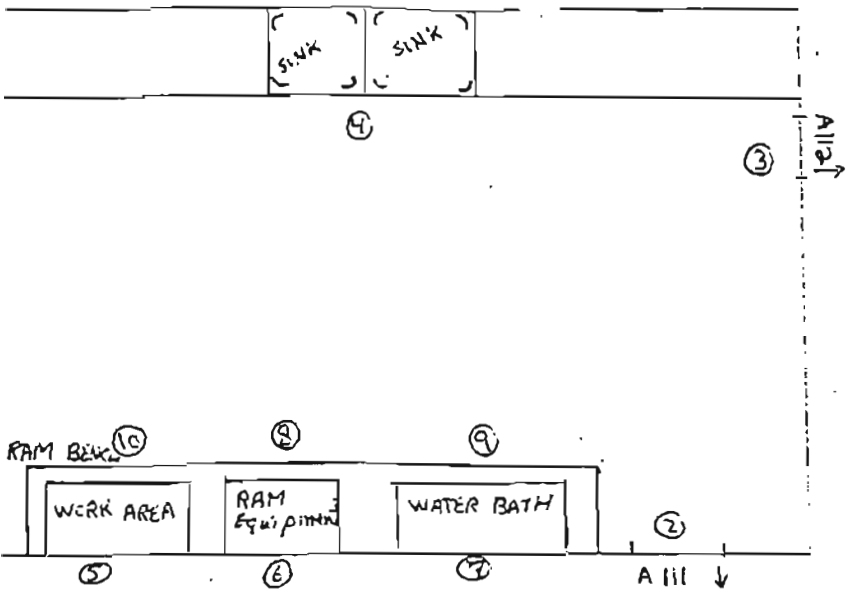
DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. Floor @ entrance
2. Floor @ entrance
3. Floor @ entrance
4. Two sinks
5. Work bench area
6. RAM equipment Hybridiser
7. Water Bath.
8. Floor at bench.
9. Floor @ Liquid waste
10. Incubator.

AGE LOG/METER SURVEY OF AREA

dg/Lab A/113 Authorized User Dr. HOFFMAN
dioisotope Account Number _____
strument Used: MGFR: _____ MODEL: _____ S/N: _____
libration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

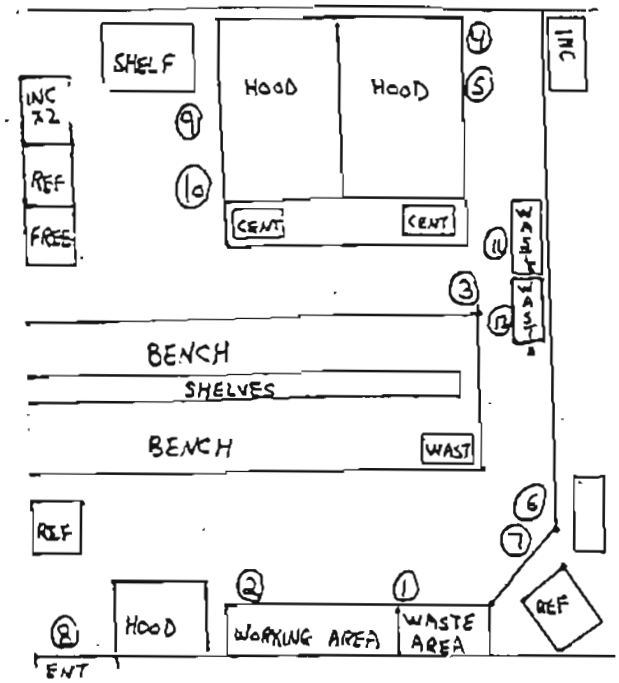
ETER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

WIP SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

A/115



SWIPE/SURVEY LOCATIONS

1. BENCH
2. FLOOR AT BENCH
3. FLOOR AT SOLID RAM WASTE
4. HOOD
5. FLOOR AT HOOD
6. HOT SINK
7. FLOOR AT SINK
8. FLOOR AT ENTRANCE
9. HOOD
10. FLOOR AT HOOD
11. FLOOR AT SOLID WASTE
12. FLOOR AT SOLID WASTE

th. Isotopes: _____

AGE LOG/METER SURVEY OF AREA

dg/Lab A-115 Authorized User HOFFMAN

dioisotope Account Number _____

strument Used: MGFR: _____ MODEL: _____ S/N: _____

lib. tion Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS 1	2	3	4	5	SIGNATURE

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

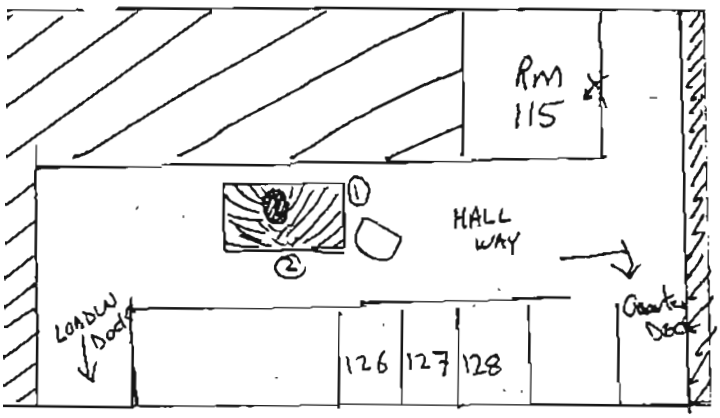
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI R^^IATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

Rm 118 COUNTER

SWIPE/SURVEY LOCATIONS



1. LIQUID SCINTILLATOR
2. FLOOR @ SCINTILLATOR
3. _____
4. _____
5. _____

Auth. Isotopes: ^{3}H ^{14}C

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab ANNEX/118 Authorized User HARLAN

Radi^^sotope Account Number _____

Inst ^ment Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

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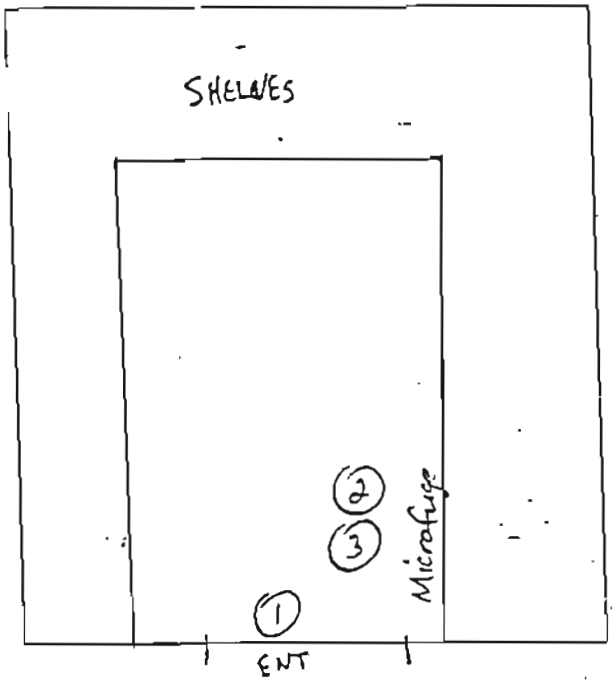
A/124



SWIPE/SURVEY LOCATIONS
1 floor @ entrance
2 microfuge
3 floor & microfuge
4
5
6
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-124 Authorized User HOFFMAN (FREEZER)

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

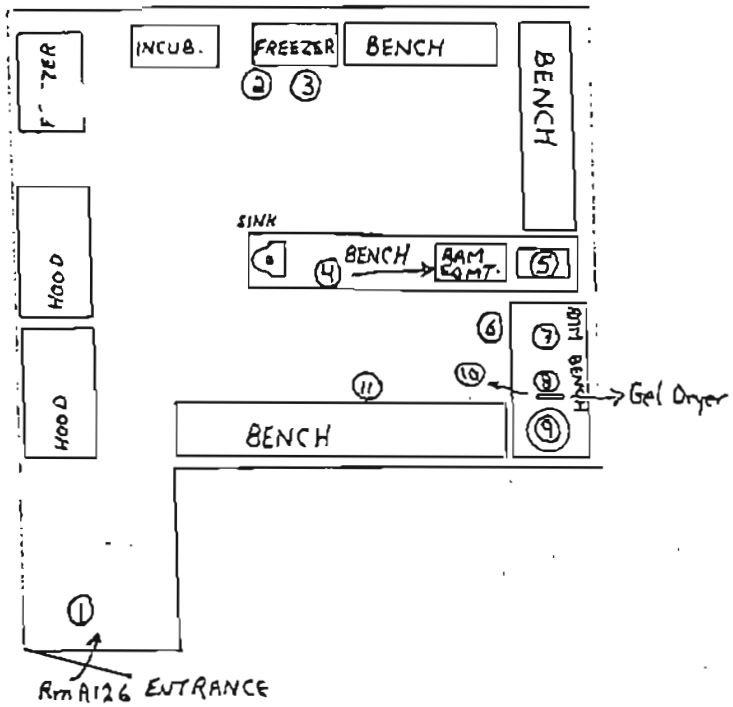
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

A-126



SWIPE/SURVEY LOCATIONS

1. FLOOR AT ENTRANCE
2. FLOOR AT FREEZER
3. FREEZER
4. RAM ROTATER EQMT.
5. RAM LIQ. WASTE.
6. FLOOR AT BENCH
7. BENCH.
8. WATER BATH AT BENCH.
9. CENTRIFUGE.
10. GEL DRYER
11. UNDER BENCH RAM LIQ. WORK AT FLOOR

ith. Isotopes: _____

SAGE LOG/METER SURVEY OF AREA

ldg/Lab A-126 Authorized User _____

adioisotope Account Number _____

nstrument Used: MGFR: _____ MODEL: _____ S/N: _____

alib tion Date: _____

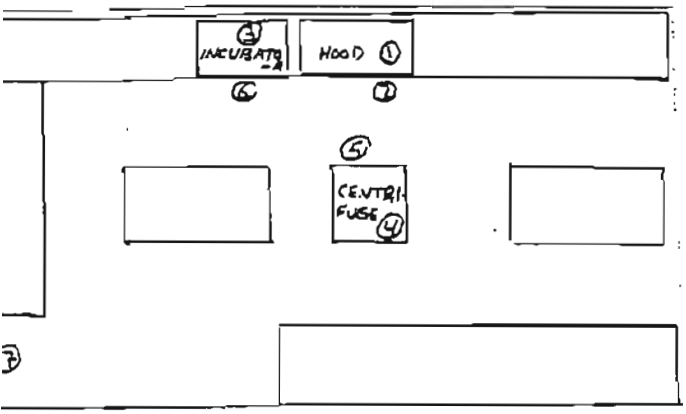
DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RA~~~ATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. HOOD
2. FLOOR UNDER HOOD
3. INCUBATOR
4. CENTRIFUGE
5. CENTRIFUGE'S FLOOR
6. INCUBATOR'S FLOOR
7. ENTRNCE.

.th. Isotopes: ^{51}Cr

SAGE LOG/METER SURVEY OF AREA

.dg/Lab A/127 Authorized User HOFFMAN

.dio' otope Account Number

.str..ent Used: MGFR: / MODEL: S/N:

.libration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

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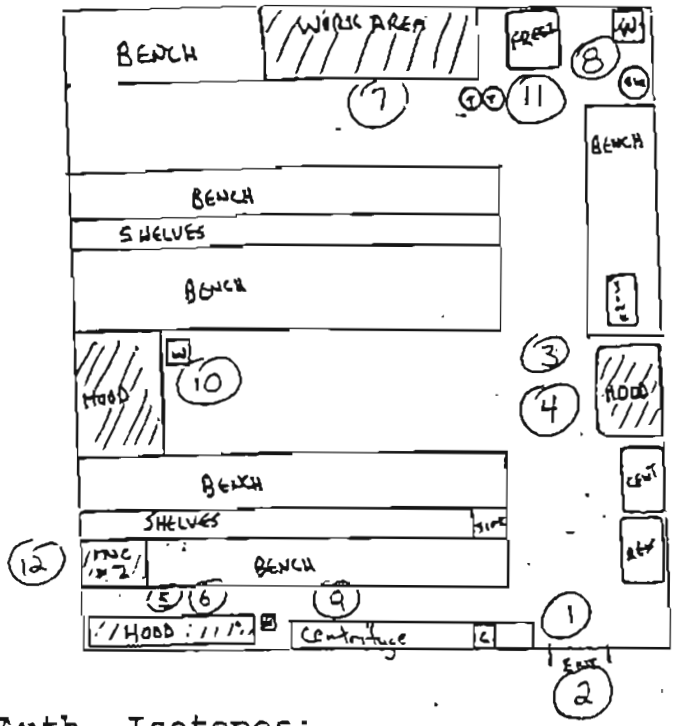
NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1 floor @ inside entrance
2 floor @ outside entrance
3 front hood
4 floor @ hood
5 left hood
6 floor @ hood
7 work area
8 floor @ RAM waste
9 centrifuge
10 hood/work area
11 freezer
12 incubator

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab Annex-128 Authorized User Hoffman

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

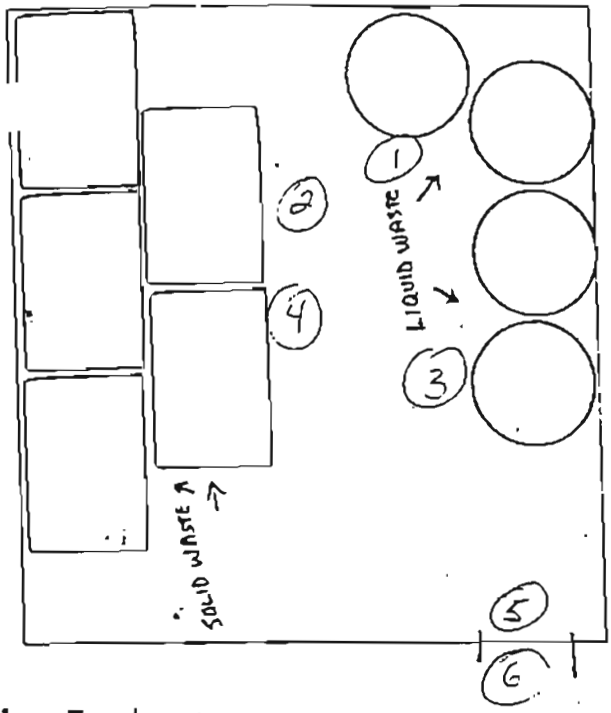
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

57
A/HL



SWIPE/SURVEY LOCATIONS

1 floor @ RAM waste
2 floor @ RAM waste
3 floor @ RAM waste
4 floor @ RAM waste
5 floor @ entrance
6 door knob
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab ANNEX-HL Authorized User RSO

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

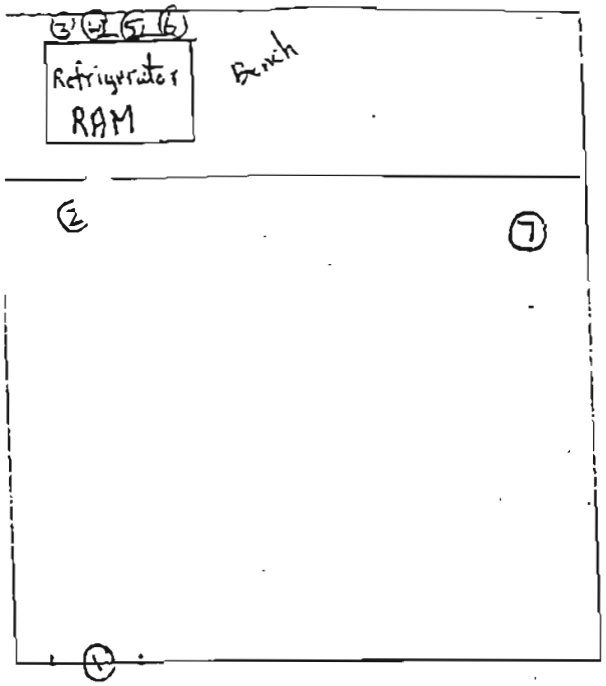
Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002



SWIPE/SU EY LOCATIONS

1. Floor @ entrance
2. Floor @ bench/refrigerator
3. Refrigerator (outside)
4. Refrigerator (inside)
5. Lockbox in refrigerator (outside)
6. Lead box in refrigerator.
7. FLOOR.

1. Isotopes: ^{3}H, ^{14}C, ^{32}P, ^{35}S, ^{51}Cr

GE LOG/METER SURVEY OF AREA

g/Lab A/LD Authorized User Dr. HOFFMAN

loisotope Account Number _____

trument Used: MGFR: _____ MODEL: _____ S/N: _____

ibration Date: _____

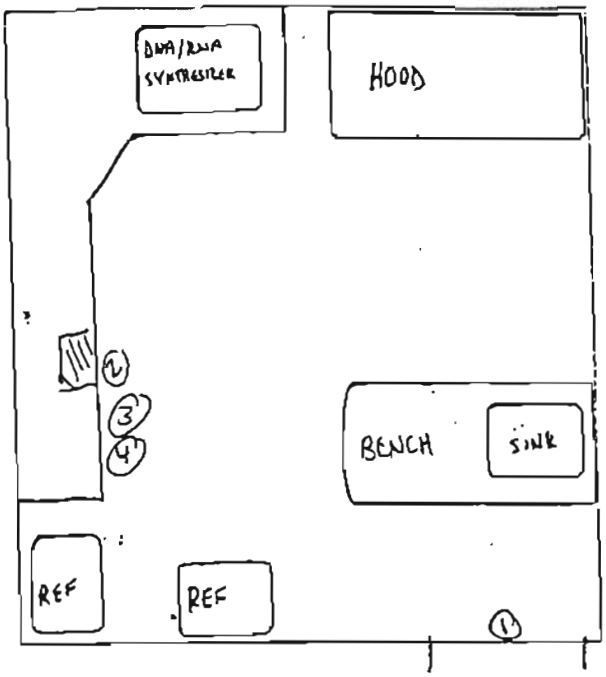
TE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

WIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. FLOOR @ ENTRANC
2. GELL DRYER
3. FLOOR @ GELL DRYER.
4. BENCH
5. _____

Auth. Isotopes: P32, S35

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-201 Authorized User GUERRY

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Cal. :ation Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm².

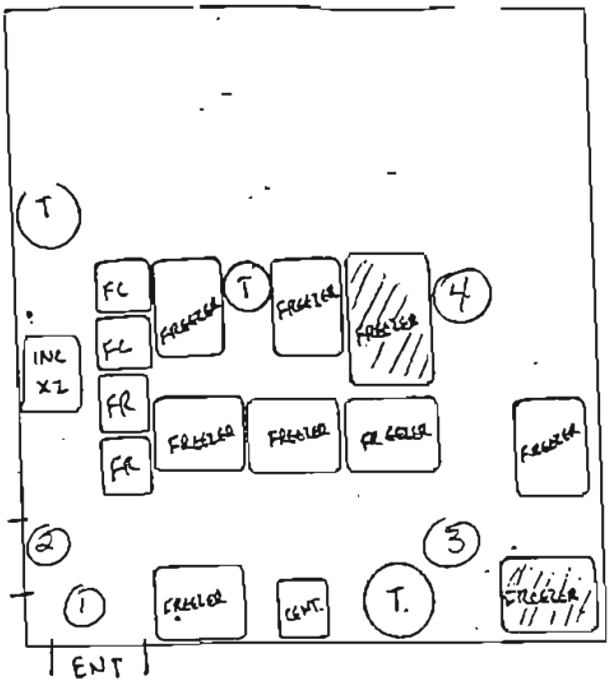
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

A/213



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ entrance
3 freezer
4 freezer
5
6
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-213 Authorized User GUERRY

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DA	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

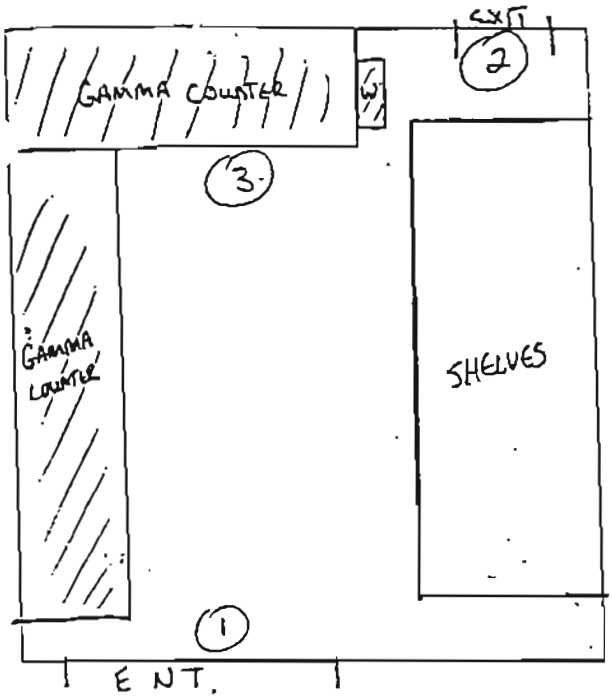
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

49
A/2135



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ entrance
3 gamma counter
4
5
6
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-2138 Authorized User HOFFMAN

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

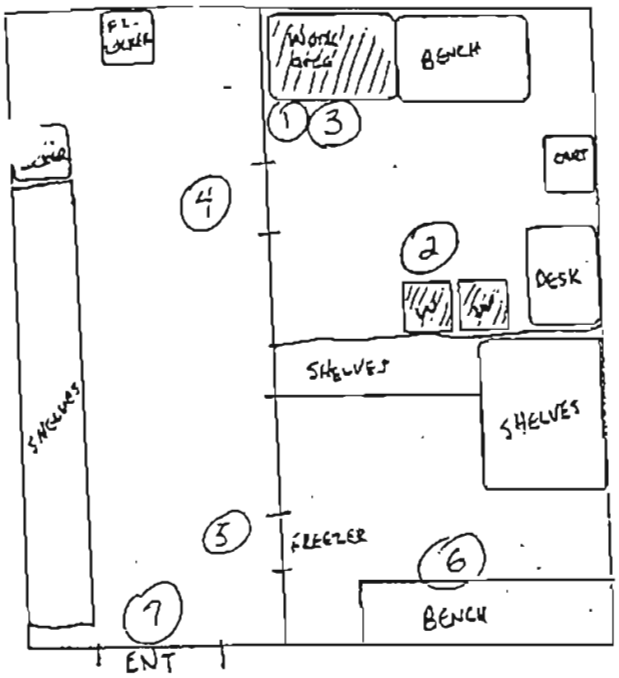
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

50
A/218



SWIPE/SURVEY LOCATIONS

1 bench
2 floor @ RAM waste
3 floor @ bench
4 floor @ entrance
5 floor @ entrance
6 floor @ bench
7 floor @ entrance
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab A-218 Authorized User _____

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

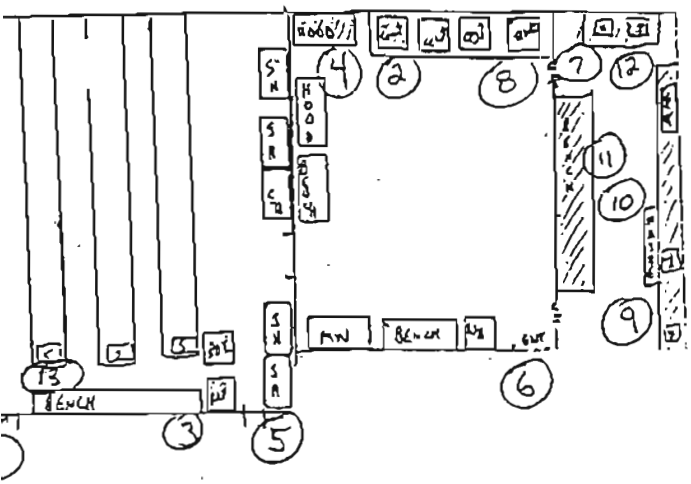
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

A/219



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 bench/centrifuge
3 refrigerator
4 bench/hood
5 floor @ entrance
6 floor @ entrance
7 floor @ RAM waste
8 sink
9 bench
10 floor @ RAM waste
11 bench
12 bench/microfuge
13 refrigerator

ath. Isotopes: H^3, C^{14}, P^{32}, S^{35}

SAGE LOG/METER SURVEY OF AREA

ldg/Lab A-219 Authorized User GUERRY

adioisotope Account Number _____

nstrument Used: MGFR: _____ MODEL: _____ S/N: _____

elib tion Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

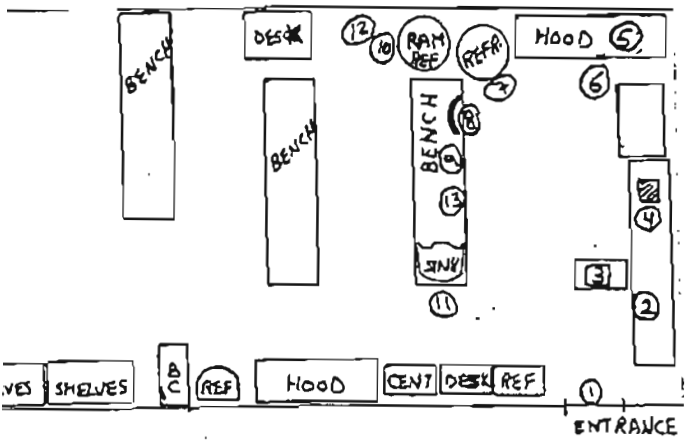
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact MGRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

51
A-220



SWIPE/SURVEY LOCATIONS

1. FLOOR AT ENTRANCE
2. FLOOR RAM WASTE
3. CENTRIFUGE
4. WATER BATH
5. HOOD (INSIDE)
6. HOOD FLOOR
7. REFRIGARATOR & DECK.
8. INCUBATOR.
9. WORK BENCH & MICROSCOPE
10. RAM STORAGE REFR.
11. SINK.
12. FLOOR AT RAM STORAGE REFRIG.
13. WORK BENCH.

ith. Isotopes: ^{51}Cr

SAGE LOG/METER SURVEY OF AREA

dg/Lab A-220 Authorized User HOFFMAN

dioisotope Account Number _____

strument Used: MGFR: _____ MODEL: _____ S/N: _____

alibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

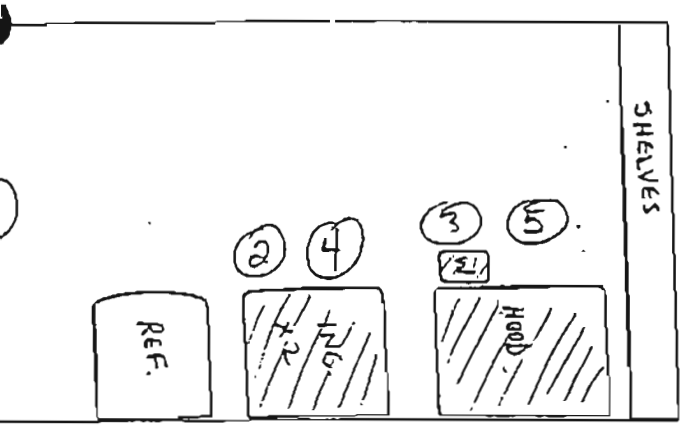
If unable to decontaminate contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

28

A/221



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 incubator
3 hood
4 floor @ incubator
5 floor @ hood
6
7
8
9
10
11
12

th. Isotopes: _____

SAGE LOG/METER SURVEY OF AREA

dg/Lab A-221 Authorized User GUERRY

dioisotope Account Number _____

strument Used: MGFR: _____ MODEL: _____ S/N: _____

ib. tion Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

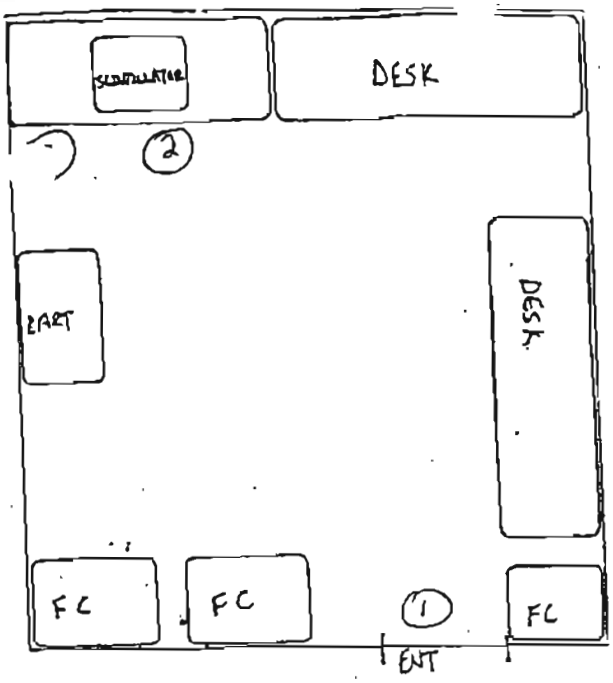
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/S-6



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 beta counter
3 work bench
4 refrigerator
5 floor @ refrigerator
6 floor @ entrance
7 inside refrigerator
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/S-6 (RSO) Authorized User _____

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

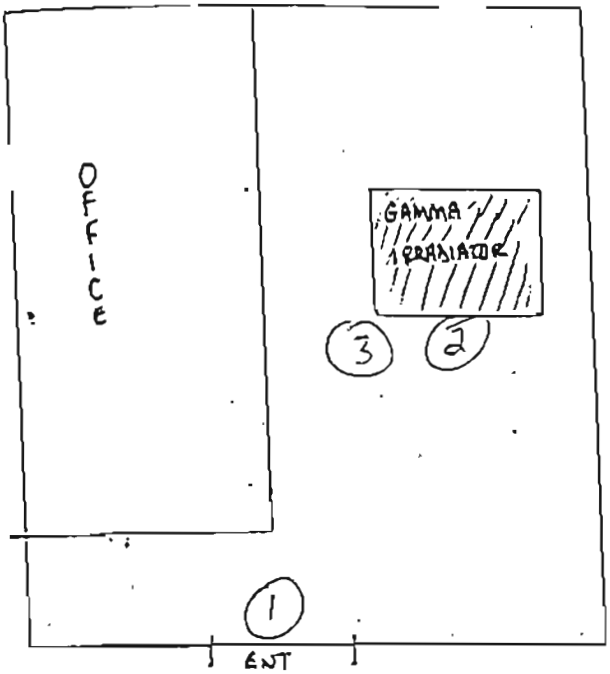
ER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/1



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 gamma irradiator
3 floor @ gamma irradiator
4
5
6
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/1 Authorized User _____

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

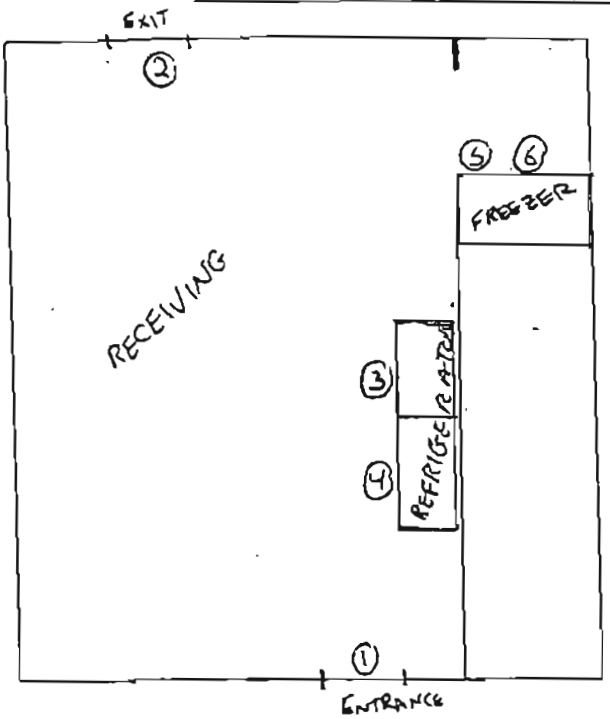
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

17/10

NMRI RAD ATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. Floor @ Entrance
2. Floor @ Entrance
3. Refrigerator.
4. Floor @ Refrigerator.
5. Freezer
6. Floor @ Freezer.

th. Isotopes: ALL (RECEIVING)

AGE LOG/METER SURVEY OF AREA

dg/Lab 17/10 Authorized User RSO

dioisotope Account Number

str ent Used: MGFR: MODEL: S/N:

lib tion Date: /

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

ETER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

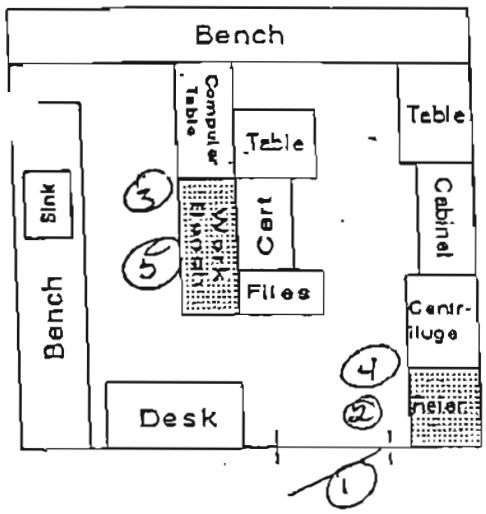
WIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

11/12

I-125



Bldg. 17
Room 12
Quesada
ext. 5-0554

= Radiation Workspace

SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 refrigerator
3 bench
4 floor @ refrigerator
5 floor @ work bench
6
7
8
9
10
11
12

AREA SURVEY

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____
PROBE: MGFR: _____ MODEL: _____ S/N: _____
Calibration Date: _____ Background Reading: _____ mR/hr

LOCATION	1	2	3	4	5	6	7	8	9	10
RESULT mR/hr										

SWIPE SURVEYS

LOCATION	1	2	3	4	5	6	7	8	9	10
RESULT DPM/100 cm. sq.										

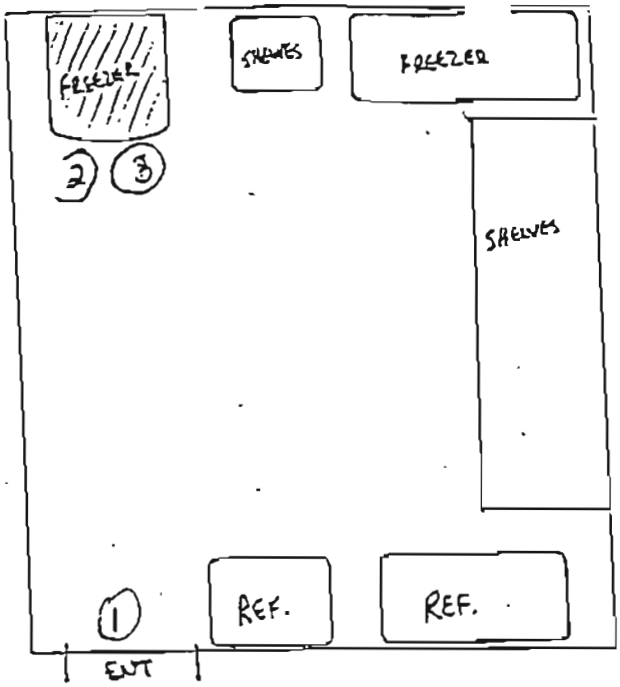
Report all findings of counts greater than 300 dpm to the NMRI RSO.

Person Performing Survey: Date: _____

Reviewed by: Date: _____

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/14



SWIPE/SURVEY LOCATIONS

1 floor @ entrance.
2 Light Switch -
3 Door Handle -
4
5
6
7
8
9
10
11
12

RAM WAS NOT USED IN THIS SPACE THIS QUARTER.

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/14 Authorized User FALK/SIECKMANN

Radioisotope Account Number _____

Instrument Used: METER: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

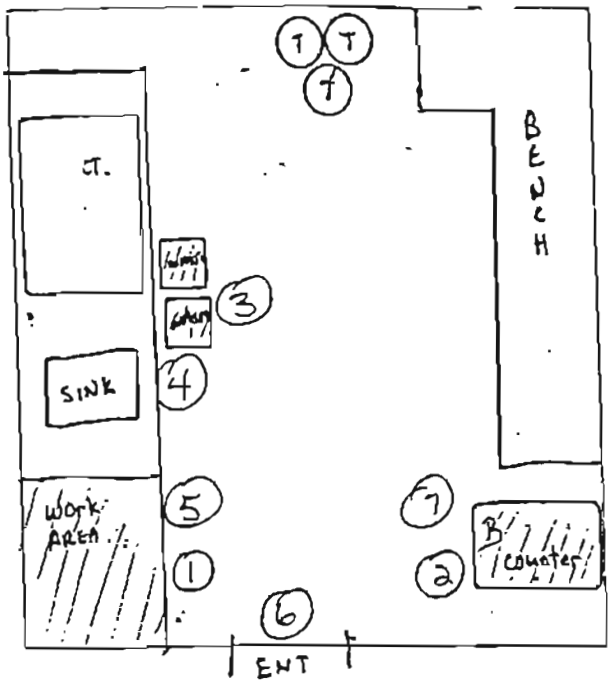
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/115



SWIPE/SURVEY LOCATIONS

1 Workbench
2 floor @ liquid RAM waste
3 floor @ solid RAM waste
4 sink
5 floor @ bench
6 floor @ entrance
7 beta counter
8
9
10
11
12

RAM Not used this quarter.

uth. Isotopes: H3

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17-115 Authorized User ROLLWAGEN

adioisotope Account Number _____

nstrument Used: MGFR: _____ MODEL: _____ S/N: _____

alibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

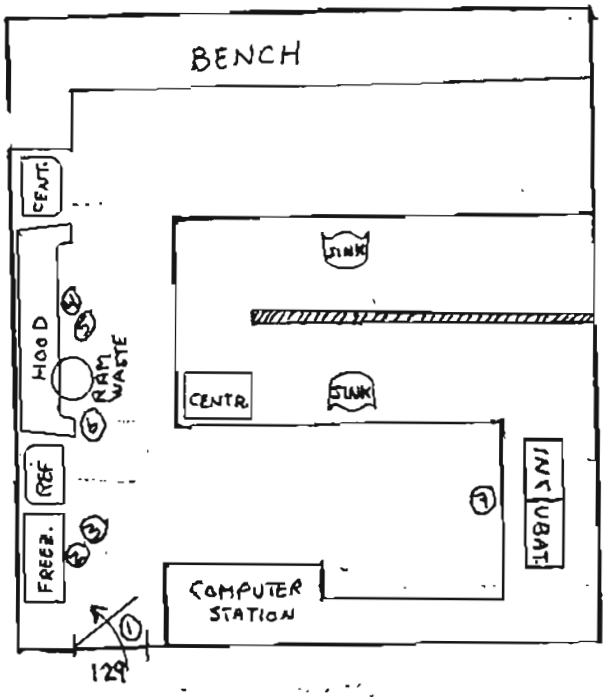
'T SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. ENTRANCE (INSIDE)
2. REFRIGERATOR (FLOOR)
3. REFRIGERATOR (INSIDE)
4. HOOD
5. FLOOR @ HOOD
6. FLOOR @ SOLID RAM WASTE
7. INCUBATOR

Auth. Isotopes: H3

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17-129 Authorized User McCarron

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm^2.

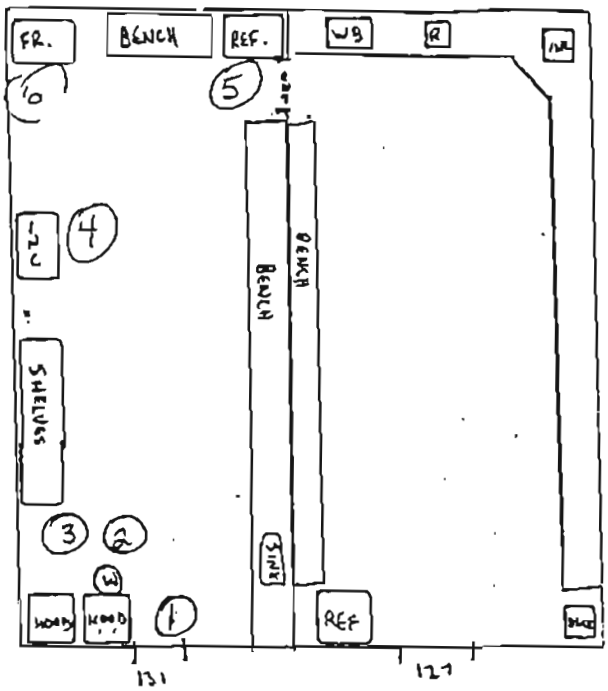
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

25
17/131



SWIPE/SURVEY LOCATIONS
1 floor @ entrance
2 hood
3 floor @ hood
4 incubator
5 floor @ entrance
6 floor @ entrance
7
8
9
10
11
12

ath. Isotopes: 127- P^{32}, S^{35} 131- H^3

USAGE LOG/METER SURVEY OF AREA

ldg/Lab M-127/131 Authorized User ROLLWAGEN

adioisotope Account Number

nstrument Used: MGFR: MODEL: S/N:

alibration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

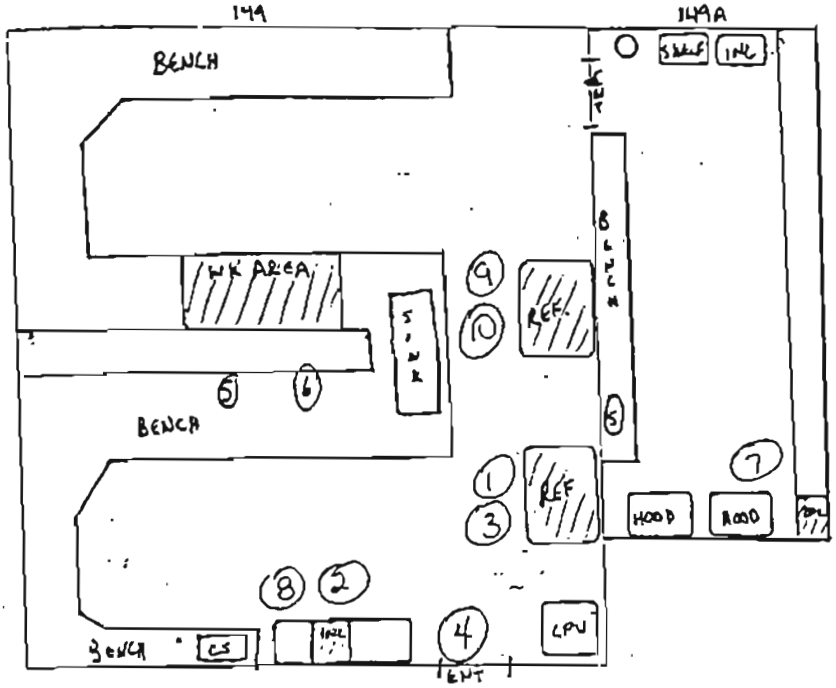
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/149



SWIPE/SURVEY LOCATIONS

1 freezer
2 incubator
3 floor @ refrigerator/freezer
4 floor @ entrance
5 floor @ work area
6 work area
7 incubator
8 floor @ centrifuge
9 refrigerator
10 floor @ refrigerator
11
12

Auth. Isotopes: H^3, Cr^{51}, I^{125}

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab p-149/149A Authorized User ROLLWAGEN

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

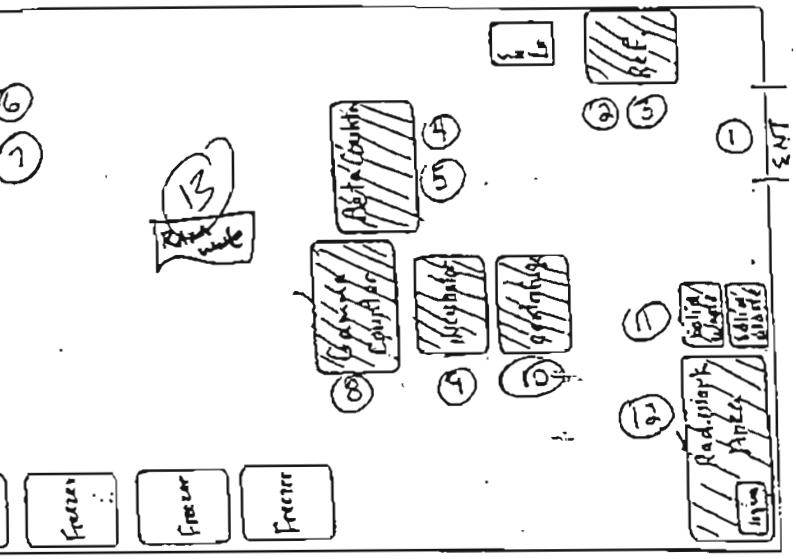
GM SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

33
17/200

NMRI RAD' 'TION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 refrigerator
3 floor @ refrigerator
4 beta counter
5 floor @ counter
6 LS Counter
7 floor @ LSC
8 gamma counter
9 incubator
10 centrifuge
11 floor @ waste
12 bench
13 floor @ RAM waste

Isotopes Cr^{51}, H^3

GE LOG/METER SURVEY OF AREA

g/Lab 17/200 Authorized User Harlan/Tokushima
ioisotope Account Number _____
rument Used: METER: _____ MODEL: _____ S/N: _____
ibration Date: _____

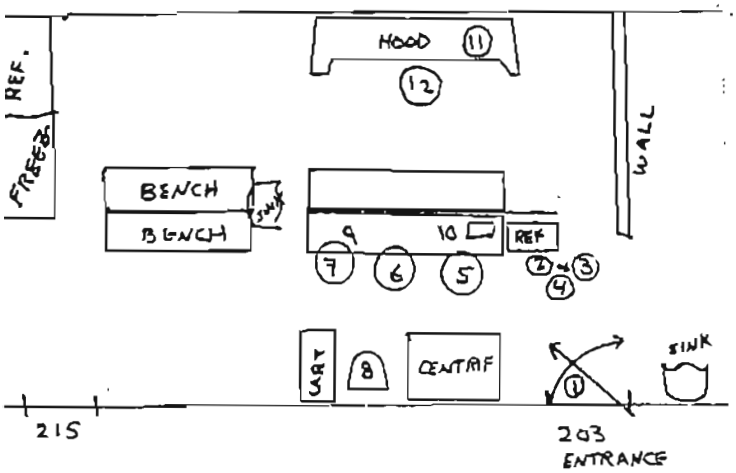
TE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.
IPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/203



SWIPE/SURVEY LOCATIONS

1. ENTRANCE (INSIDE)
2. REFR
3. FREEZER
4. FLOOR AT FREEZER
5. LIQUID WASTE (RAM) FLOOR
6. LIQUID WASTE (RAM) BOX
7. SOLID (RAM) WASTE
8. GELL MACHINE.
9. BENCH AT WORKING AREA (LT)
10. BENCH AT WORKING AREA (RT)
11. HOOD
12. FLOOR AT HOOD.

Auth. Isotopes: ^{32}P, ^{3}H, ^{125}I, ^{33}P, ^{35}S, ^{14}C

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/203/215 Authorized User CAPT HARLAN

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm².

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

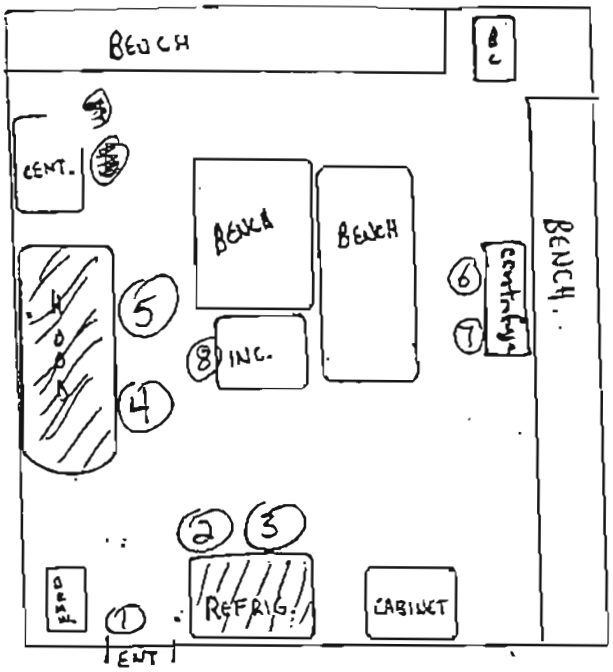
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/204



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 refrigerator
3 floor @ refrigerator
4 hood
5 floor @ hood
6 centrifuge
7 floor @ centrifuge
8 Incubator
9
10
11
12

ith. Isotopes: H^3

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17/204 Authorized User HARLAN

adioisotope Account Number

nstrument Used: MGFR: MODEL: S/N:

alibration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

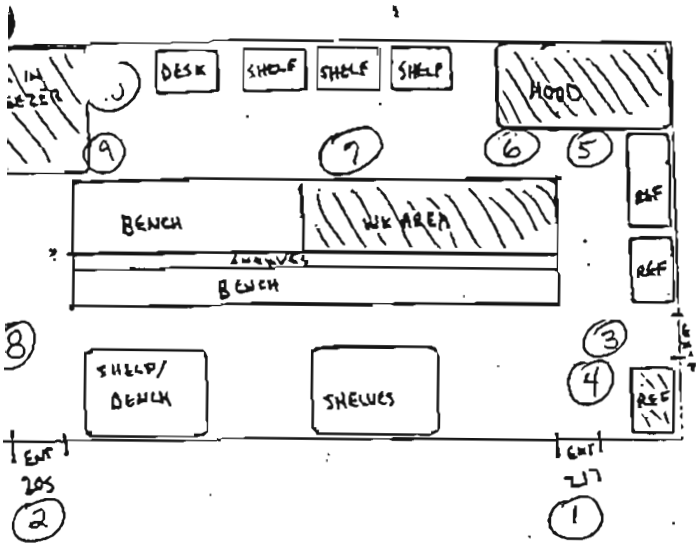
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/205



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ entrance
3 refrigerator
4 floor @ refrigerator
5 hood
6 floor @ hood
7 bench
8 floor @ RAM waste
9 freezer
10 floor @ freezer
11
12

RAM Not Used This Quarter

.th. Isotopes: H^3, P^{32}, I-125

SAGE LOG/METER SURVEY OF AREA

.dg/Lab 17-205/217 Authorized User FALK

adioisotope Account Number _____

trument Used: MGFR: _____ MODEL: _____ S/N: _____

lib tion Date: _____ / _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

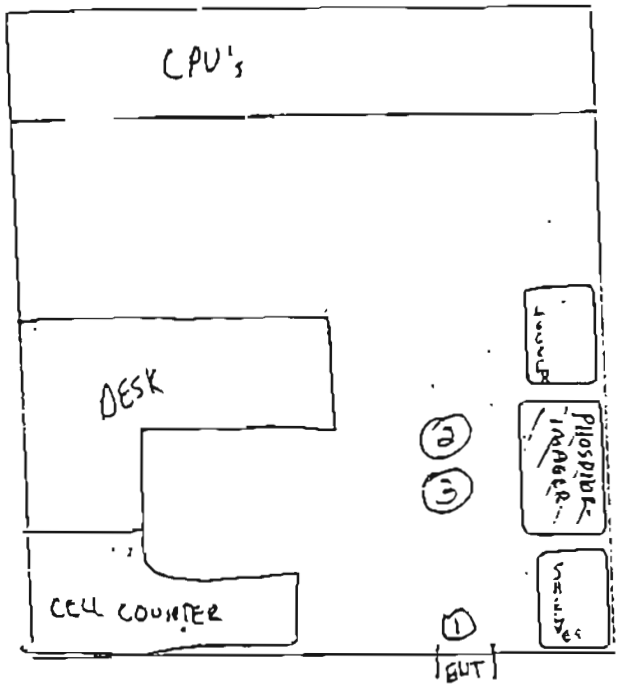
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE U AGE LOG/LABORATORY SUR Y

35
17/210



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 imager
3 floor @ imager
4
5
6
7
8
9
10
11
12

th. Isotopes: P32 (pending)

AGE LOG/METER SURVEY OF AREA

dg/Lab 17/210 Authorized User HARLAN

dioisotope Account Number

strument Used: MGFR: MODEL: S/N:

lib ion Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

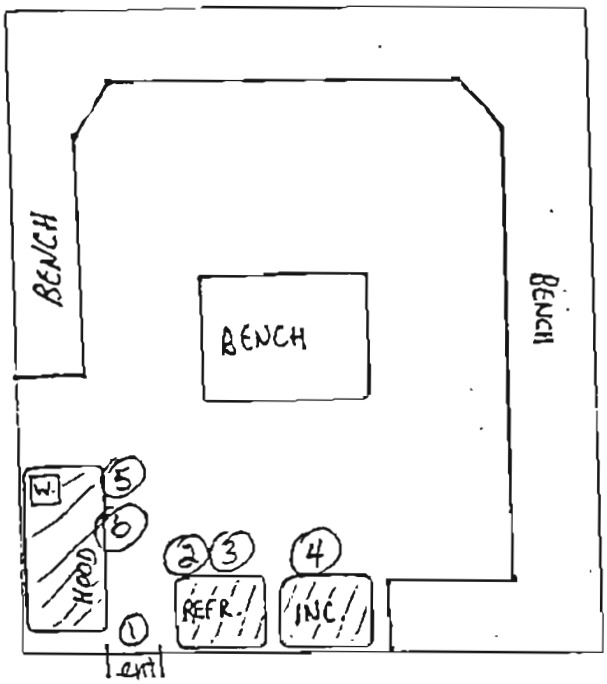
TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

36
17/212

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS
1 floor @ entrance
2 refrigerator
3 floor @ refrigerator
4 incubator
5 hood
6 floor @ hood
7
8
9
10
11
12

ith. Isotopes: H^3

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17/212 Authorized User HARLAN

adioisotope Account Number

nstrument Used: MGFR: MODEL: S/N:

ib tion Date: /

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

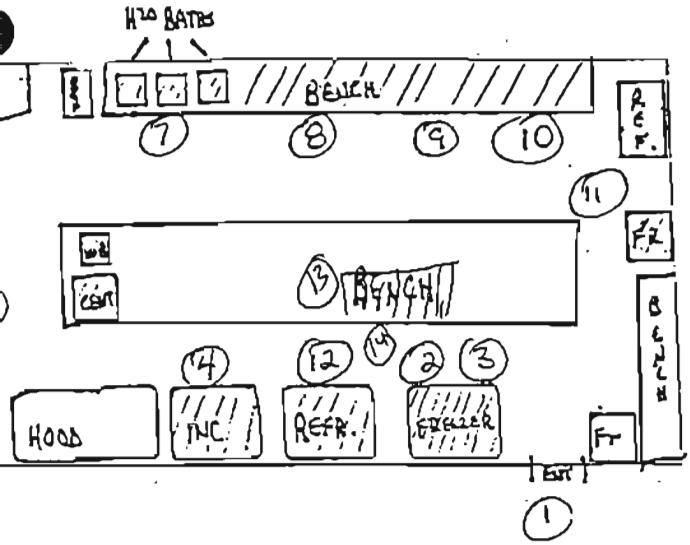
ER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

37
17/218

NMRI RA ATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 refrigerator
3 floor @ refrigerator
4 incubator
5 hood
6 floor @ hood
7 water baths
8 bench
9 floor @ bench
10 bench
11 refrigerator
12 freezer
13 Bench working Area
14 Floor @ Bench

uth. Isotopes: H^3, P^{32}, S^{35}

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17/218 Authorized User HARLAN

dic otope Account Number _____

trument Used: MGFR: _____ MODEL: _____ S/N: _____

alibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

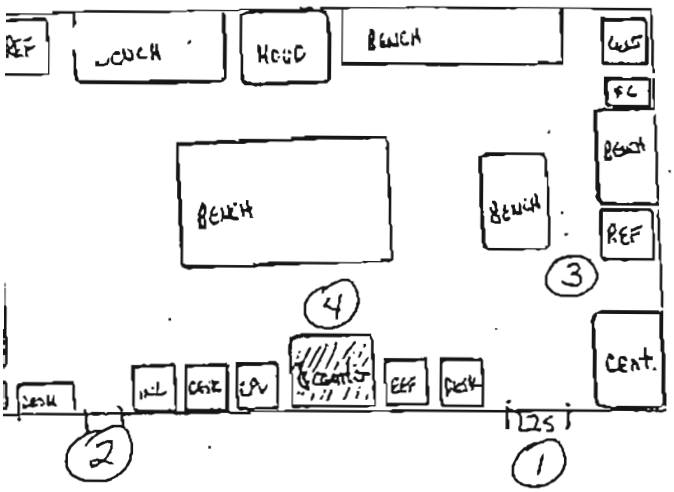
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

NNRI RADIATION SAFETY OFFICE

RADIOISOTOPE U GE LOG/LABORATORY SUR Y

17/225



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ entrance
3 refrigerator (NO RAM)
4 Floor @ Previous & Counter location
5
6
7
8
9
10
11
12

RAM NOT Used This quarter

ch. Isotopes: G51

AGE LOG/METER SURVEY OF AREA

dg/Lab 17/225 Authorized User FALK

dioisotope Account Number

stru nt Used: MGFR: MODEL: S/N:

ibration Date: /

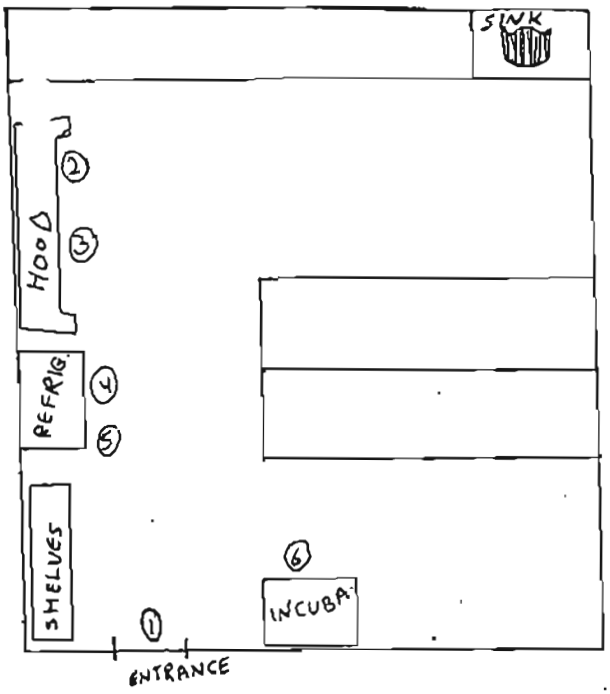
DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. FLOOR @ ENTRANCE
2. HOOD
3. FLOOR @ HOOD
4. REFRIGERATOR
5. FLOOR @ REFRIGERATOR
6. INCUBATOR.

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17 | 230 Authorized User HARLAN

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm^2.

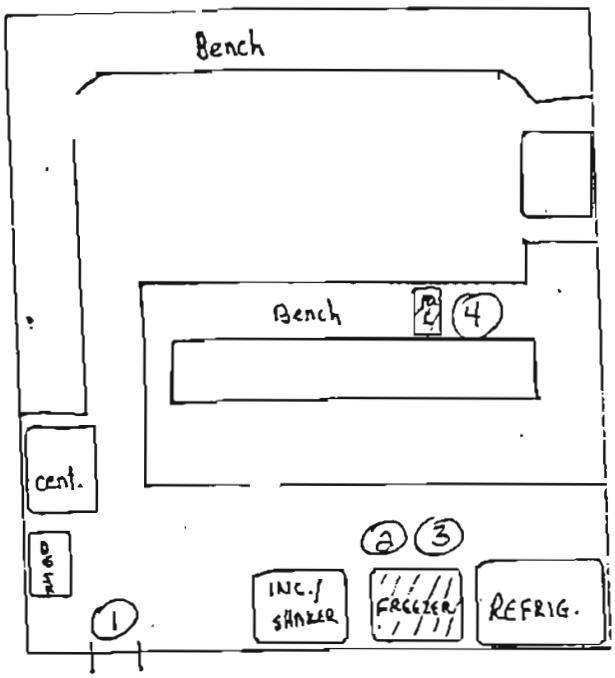
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

34
17/234



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 freezer
3 floor @ freezer
4 equipment
5
6
7
8
9
10
11
12

ith. Isotopes: _____

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17/234 Authorized User _____

edioisotope Account Number _____

nstrument Used: MGFR: _____ MODEL: _____ S/N: _____

.lib tion Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

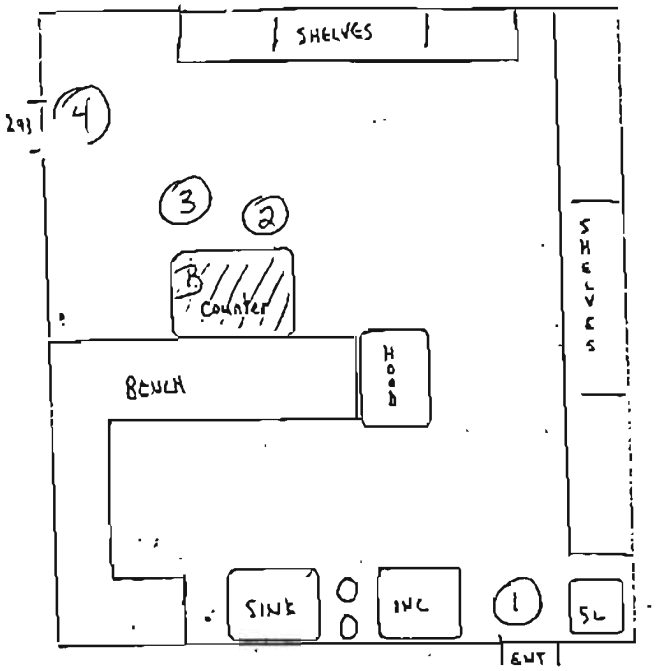
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NNRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/239



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 beta counter
3 floor @ counter
4 floor @ entrance
5
6
7
8
9
10
11
12

Auth. Isotopes: B counter, I-125

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/239 Authorized User FALK

Radioisotope Account Number _____

Instrument Used: MGER: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

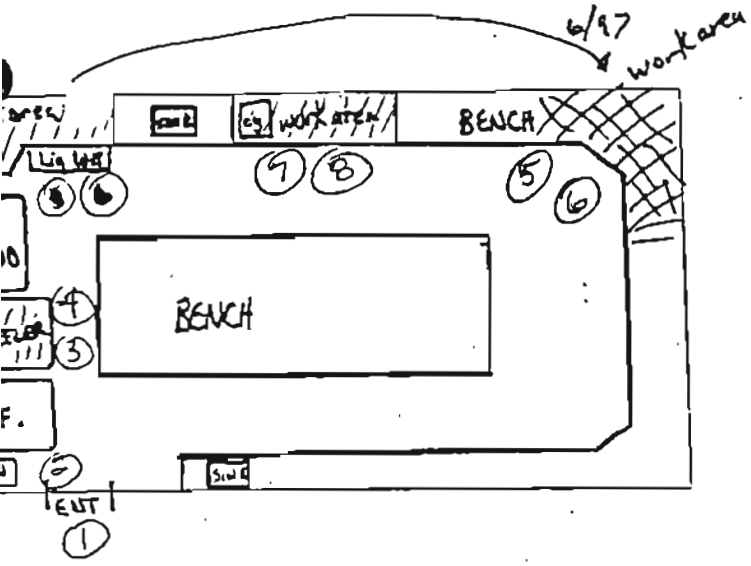
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

40 / 17/242



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ solid RAM waste
3 freezer
4 floor @ freezer
5 work area
6 floor @ work area
7 work area
8 floor @ work area
9
10
11
12

uth. Isotopes: P32

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17/242 Authorized User HARLAN/CARROLL

adioisotope Account Number

st ment Used: MGFR: MODEL: S/N:

libration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

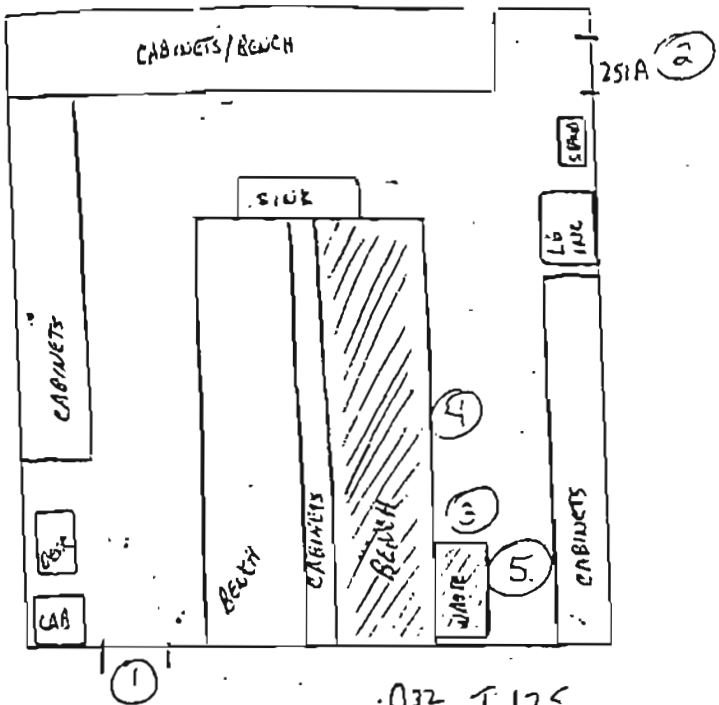
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/251



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ entrance
3 floor @ bench
4 bench
5 floor @ RAM waste
6
7
8
9
10
11
12

RAM NOT USED This quarter

Auth. Isotopes: P^{32}, I-125

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/251 Authorized User FALK

Radioisotope Account Number

Instrument Used: MGFR: MODEL: S/N:

Calibration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

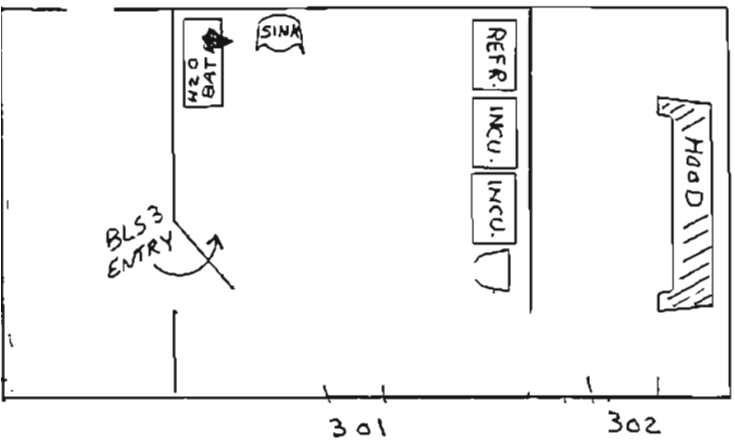
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

BLS 3
BLDG 17
Rm 301-302

SWIPE/SURVEY LOCATIONS



1. _____
2. _____
3. _____
4. _____
5. _____

Auth. Isotopes: ^{14}C, ^{3}H

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17-301-302 Authorized User DASCH

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm^2.

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

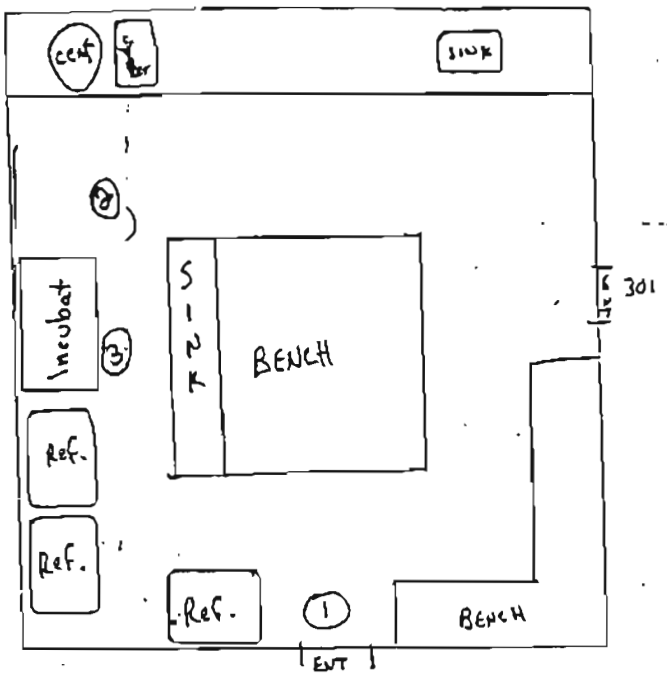
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

17/307



SWIPE/SURVEY LOCATIONS

1 floor to entrance
2 Floor at Previous Counter location
3 Incubator ← moved to Room 316A
4
5
6
7
8
9
10
11
12

th. Isotopes: Cr^{51}

SAGE LOG/METER SURVEY OF AREA

dg/Lab 17/307 Authorized User DASCH

dioisotope Account Number

strument Used: MGFR: MODEL: S/N:

ibration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

TE. SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

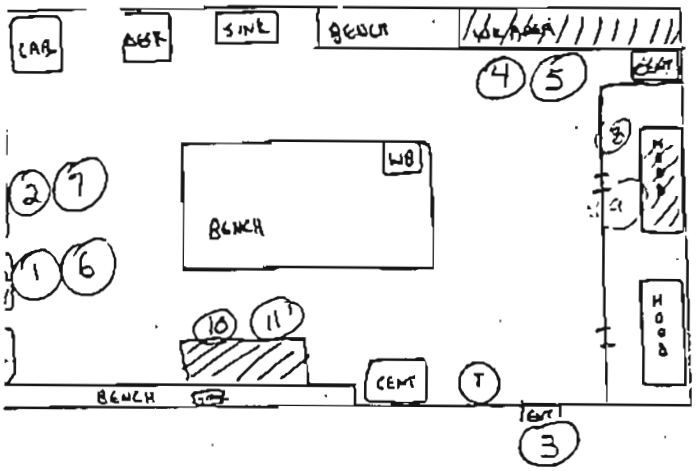
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE ' AGE LOG/LABORATORY SU' EY

17/311



SWIPE/SURVEY LOCATIONS

1 refrigerator
2 refrigerator
3 floor @ entrance
4 floor @ RAM waste
5 workbench area
6 floor @ refrigerator
7 floor @ refrigerator
8 hood
9 floor @ hood
10 Gamma Counter
11 floor @ Gamma Counter
12

ith. Isotopes: Cr^{51}

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17-311 Authorized User Dasch

dioisotope Account Number

tr ent Used: MGFR: MODEL: S/N:

elibration Date: /

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

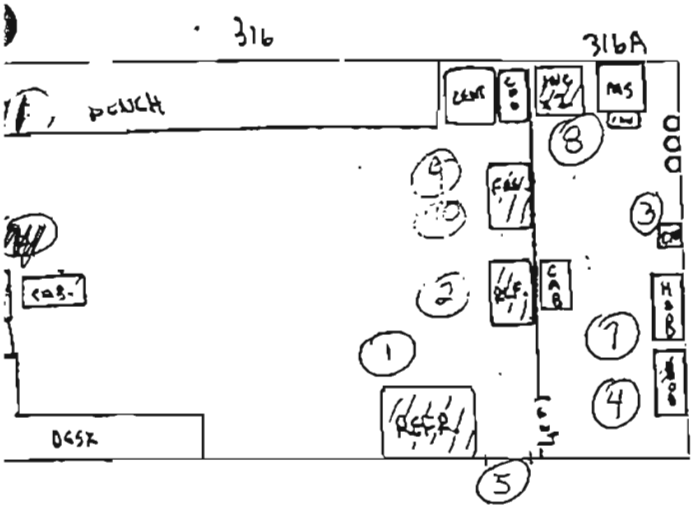
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

8
17/316



SWIPE/SURVEY LOCATIONS

1 refrigerator
2 refrigerator
3 bench/waterbath
4 hood
5 floor @ entrance
6 floor @ entrance
7 floor @ hood
8 incubator
9 freezer
10 floor @ freezer
11 bench
12

ith. Isotopes: P32, S35, I-125

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 17/316/316A Authorized User DASCH

adioisotope Account Number

trument Used: MGFR: MODEL: S/N:

alibration Date:

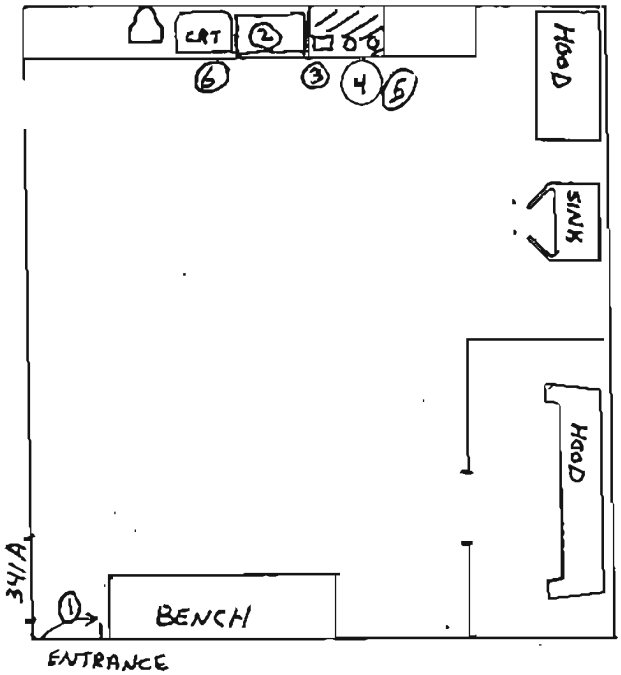
DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. ENTRANCE (INSIDE FLOOR)
2. BETA COUNTER
3. CELL HARVESTER
4. LIQUID WAST (FLOOR)
5. WORKING BENCH
6. FLOOR @ SOLID WASTE (RAM)

Auth. Isotopes: ^{3}H

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 17/341 Authorized User BOURGEOIS

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

Contact the NMRI Radiation Safety Office at 295-0002 whenever radioactive contamination is found. The action or trigger level for radioactive contamination is 2,000 dpm per 100 cm^2.

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

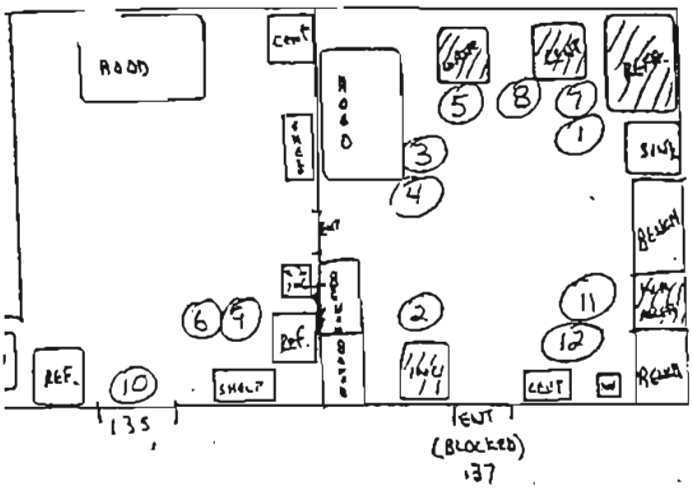
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE AGE LOG/LABORATORY SU EY

18/135



SWIPE/SURVEY LOCATIONS

1 floor @ refrigerator
2 incubator
3 floor @ hood
4 hood
5 floor @ RAM waste
6 floor @ freezer
7 refrigerator
8 centrifuge
9 freezer
10 floor @ entrance
11 bench
12 floor @ bench

ıth. Isotopes: H3, Cr51

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 18/135/137 Authorized User ROURGEOIS

ıioisotope Account Number _____

ıstrument Used: MGFR: _____ MODEL: _____ S/N: _____

ılibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

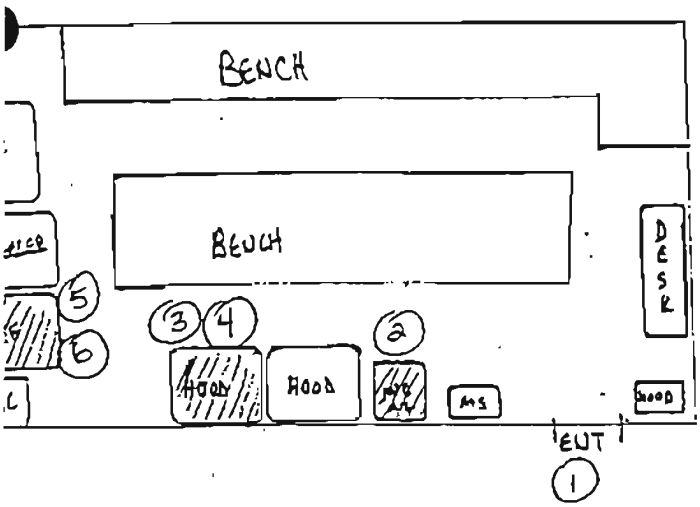
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RADIATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

71
18/223



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 incubator
3 hood
4 floor @ hood
5 refrigerator
6 floor @ refrigerator
7
8
9
10
11
12

uth. Isotopes: ^3H

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 18/223 Authorized User HARLAN

adioisotope Account Number _____

nstrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: ____/____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

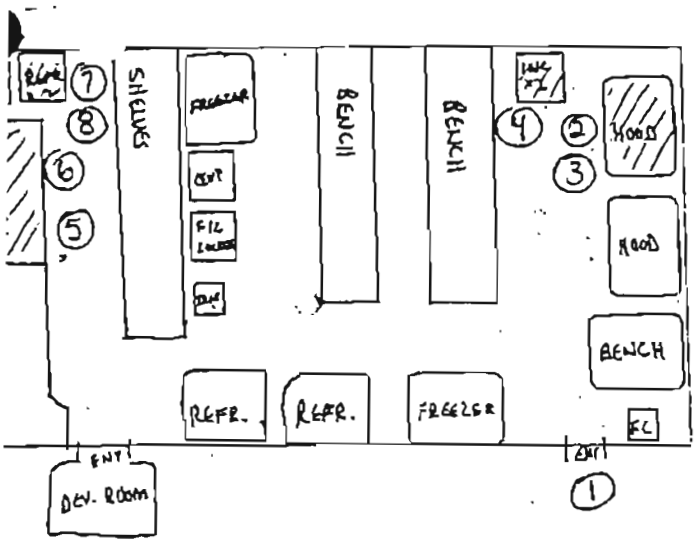
SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

NMRI RAD ATION SAFETY OFFICE

RADIOISOTOPE USAGE LOG/LABORATORY SUR.EY

42
18/231



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 hood
3 floor @ hood
4 incubator
5 work area
6 floor @ work area
7 refrigerator
8 floor @ refrigerator
9
10
11
12

ıth. Isotopes: H^3, I-125, C-14, S^{35}

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 18/231 Authorized User HARLAN

adio'sotope Account Number

ti ent Used: MGFR: MODEL: S/N:

ibration Date:

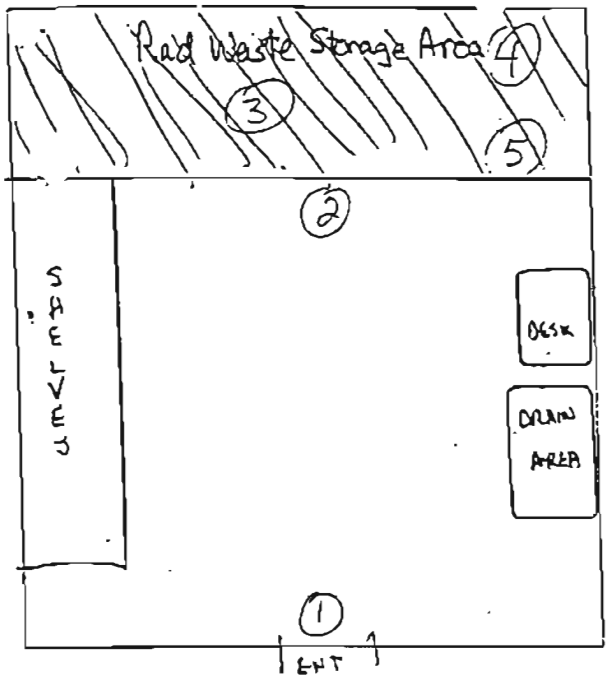
DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

21/Hot Locker



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ solid RAD waste
3 floor @ RAD waste
4 floor @ RAD waste
5 floor @ RAD waste
6
7
8
9
10
11
12

uth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

ldg/Lab UMRI HL Authorized User _____

adioisotope Account Number _____

nstrument Used: MGFR: _____ MODEL: _____ S/N: _____

alibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

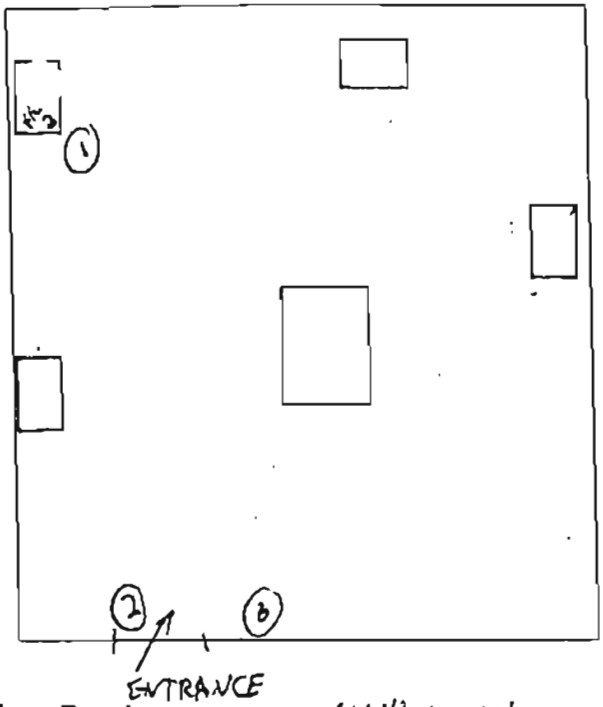
T SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact UMRI Radiation Safety at ext. 5-0002

21/233

NMRI R DIATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1. FREEZER #2
2. ENTRANCE
3. TELEPHONE
4.
5.

Auth. Isotopes: UNKNOWN

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 21/233 Authorized User _____

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Cali ation Date: ____/____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

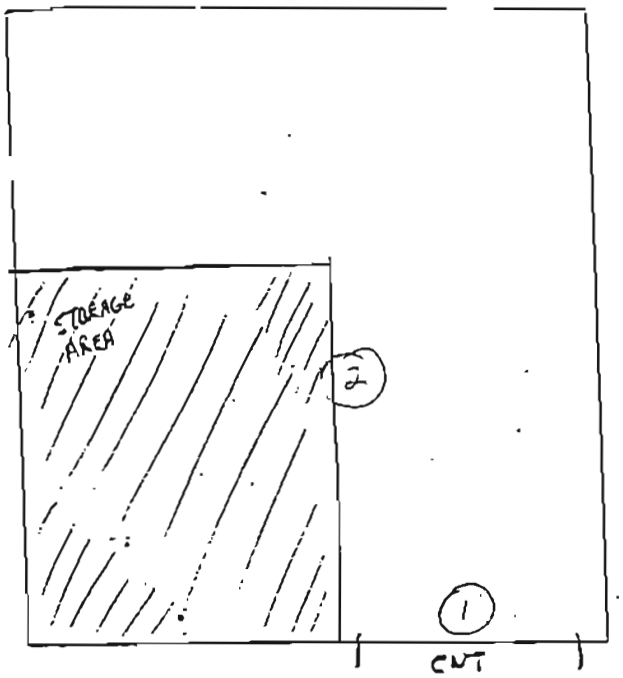
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

21/FREEZER



SWIPE/SURVEY LOCATIONS

1 Floor @ entrance
2 -- near @ storage area
3
4
5
6
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 21/FREEZER Authorized User RSO

Radioisotope Account Number _____

Instrument Used: MGTR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

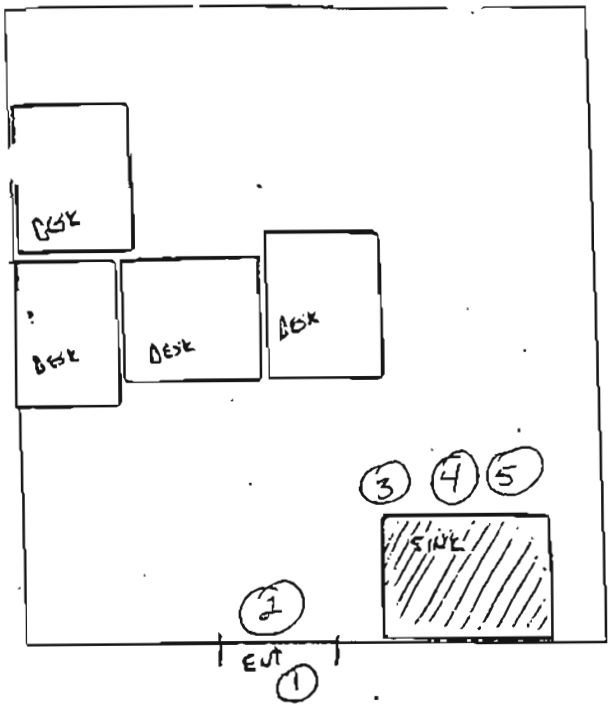
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

21/301



SWIPE/SURVEY LOCATIONS

1 floor @ outer entrance
2 floor @ inner entrance
3 sink counter
4 floor @ sink
5 sink
6
7
8
9
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 21/Hot sink Authorized User RSO

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DA	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

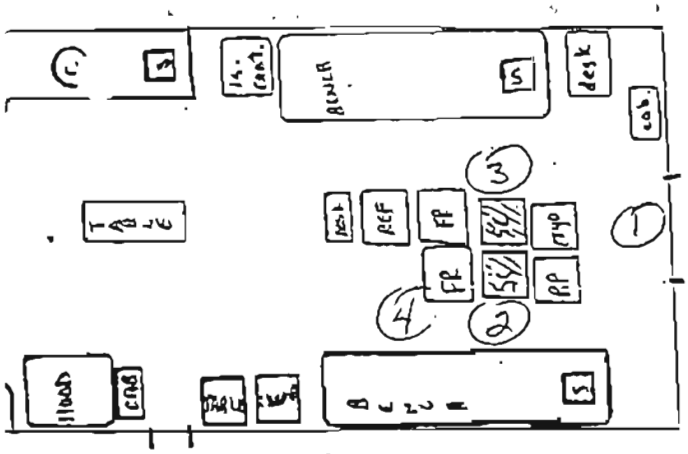
NOTE: R SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

RADIOISOTOPE USAGE LOG/LABORATORY SURVEY

53/118



SWIPE/SURVEY LOCATIONS

1 FLOOR @ ENTRANCE
2 LIQUID SCINTILLATOR
3
4
5
6
7
8
9
10
11
12

th. Isotopes: H3, C14

SAGE LOG/METER SURVEY OF AREA

dg/Lab 53/118 Authorized User AXLEY

dioisotope Account Number

strument Used: MGTR: MODEL: S/N:

alib ion Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

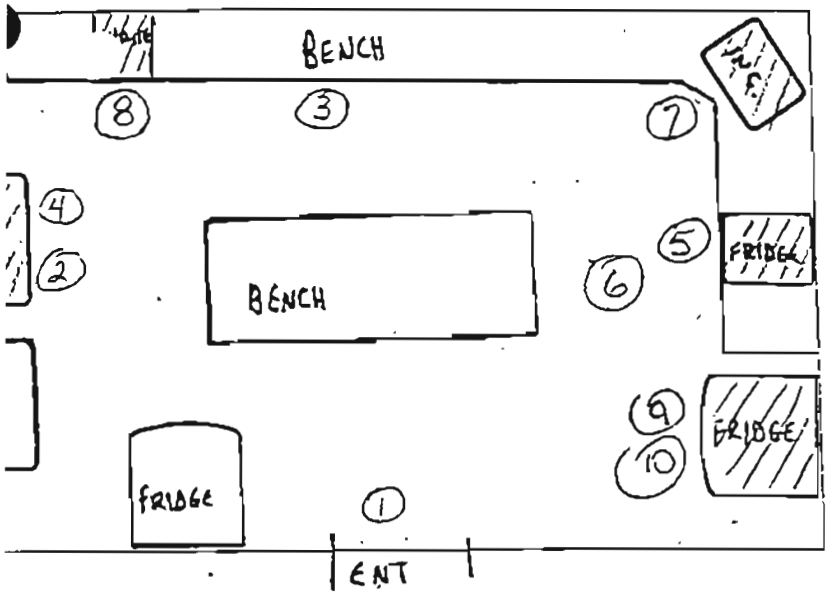
METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

2
53/119

NMRI RA ATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS
1 floor @ entrance
2 hood
3 bench area
4 floor @ hood
5 refrigerator
6 floor @ refrigerator
7 incubator
8 floor @ waste
9 refrigerator
10 floor refrigerator
11
12

RAM Not USED This quarter

SAGE LOG/METER SURVEY OF AREA

ldg/Lab 53/119 Authorized User AXLEY/HARABIN
adioisotope Account Number
nstrument Used: MGFR: MODEL: S/N:
alibration Date:

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

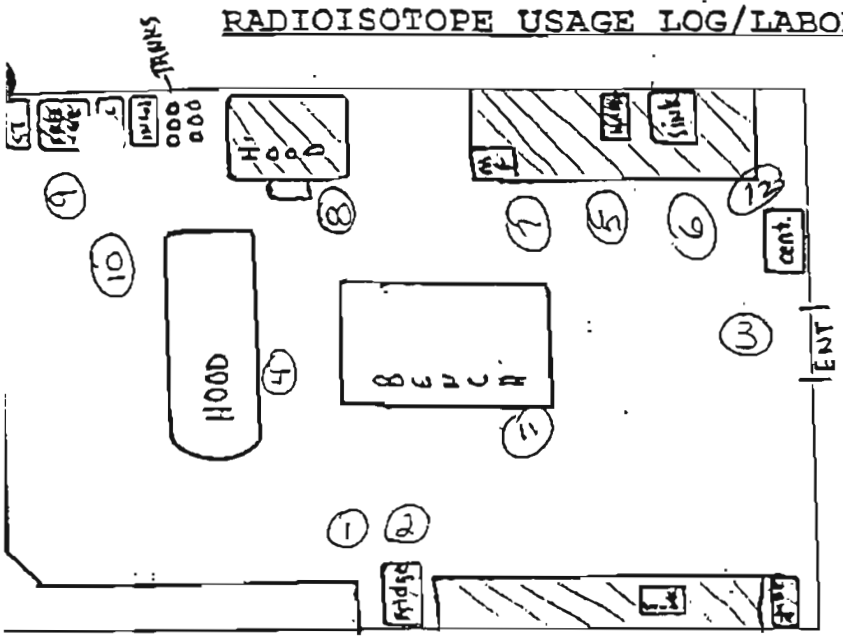
ER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

3
53/121

NMRI RA ATION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1 refrigerator
2 floor @ refrigerator
3 floor @ entrance
4 hood
5 bench
6 floor @ bench
7 bench
8 hood
9 refrigerator
10 floor @ refrigerator
11 floor @ RAM waste
12 [redacted]

SAGE LOG/METER SURVEY OF AREA

dg/Lab 53/121 Authorized User AXLEY/HARABIN
idioisotope Account Number _____
strument Used: MGFR: _____ MODEL: _____ S/N: _____
ibration Date: _____

DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

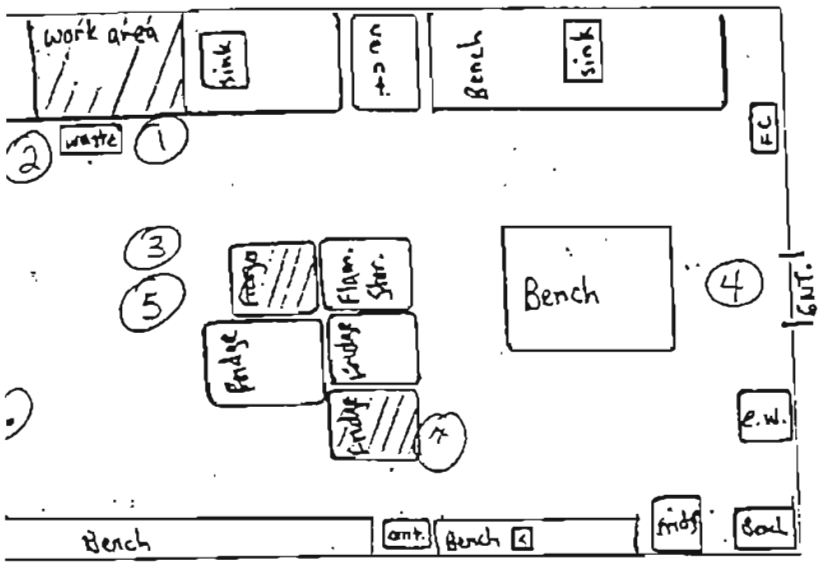
TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

4
53/122

NMRI RAD TION SAFETY OFFICE
RADIOISOTOPE USAGE LOG/LABORATORY SURVEY



SWIPE/SURVEY LOCATIONS

1 bench
2 floor @ RAM waste
3 refrigerator
4 floor @ entrance
5 floor @ refrigerator
6 hood
7 Refrigerator
8
9
10
11
12

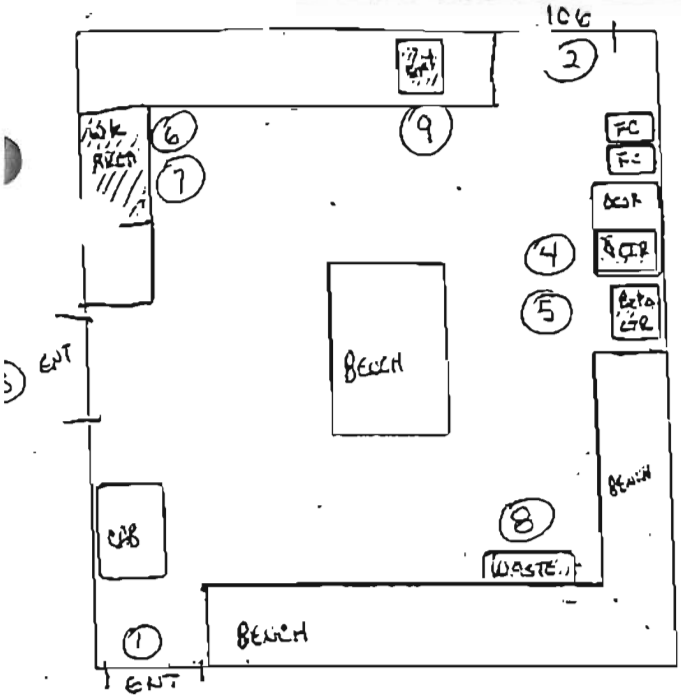
GE LOG/METER SURVEY OF AREA

ig/Lab 53/122 Authorized User HARABIN
ioisotope Account Number _____
trument Used: MGFR: _____ MODEL: _____ S/N: _____
ibr ion Date: _____

ATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

TER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.
WIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002



SWIPE/SURVEY LOCATIONS

1 floor @ entrance
2 floor @ entrance
3 floor @ entrance
4 gamma counter
5 beta counter
6 bench @ RAM work area
7 floor @ RAM waste
8 floor @ RAM waste
9 centrifuge
10
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 139/105 Authorized User QUESADA

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

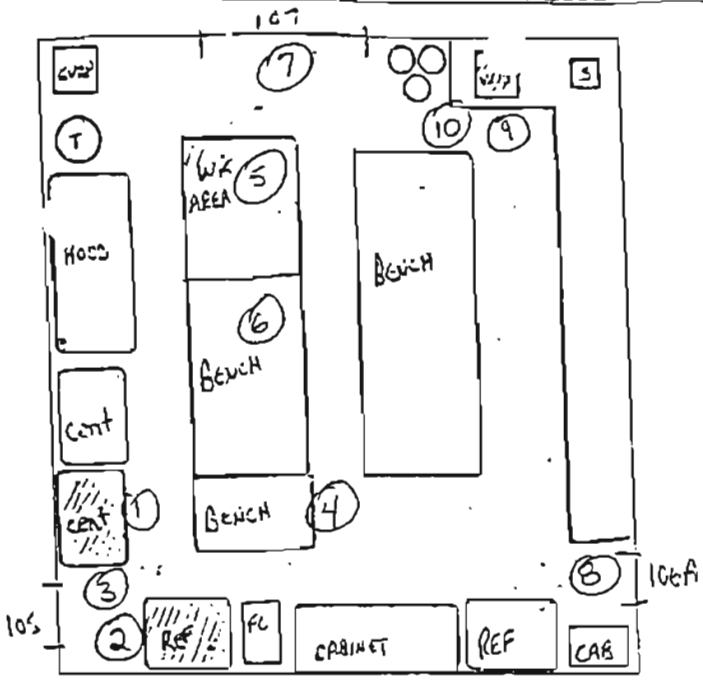
DATE	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NNRI Radiation Safety at ext. 5-0002

139/106



SWIPE/SURVEY LOCATIONS

1 centrifuge
2 refrigerator handle
3 floor @ refrigerator
4 bench
5 bench
6 bench
7 floor @ entrance
8 floor @ entrance
9 floor @ RAM waste & @ bench
10 floor @ RAM waste
11
12

Auth. Isotopes: _____

USAGE LOG/METER SURVEY OF AREA

Bldg/Lab 139/106 Authorized User QUESADA

Radioisotope Account Number _____

Instrument Used: MGFR: _____ MODEL: _____ S/N: _____

Calibration Date: _____

DA	AMOUNT USED mCi/ml	AMOUNT REMAIN mCi/ml	BACK-GROUND (CPM)	SWIPE/SURVEY RESULTS					SIGNATURE
				1	2	3	4	5	

METER SURVEY - Required for P-32, P-33, S-35, Ca-45, C-14, Cr-51, and I-125. Decontaminate area to background readings.

SWIPE SURVEY - Required for H-3. Decontaminate area to less than 300 DPM/100cm. sq.

If unable to decontaminate, contact NMRI Radiation Safety at ext. 5-0002

D-35 NMRC Calibration Certificates for Radiation Monitoring and Detection Equipment and Instruments

- Gamma counter calibration (1999)
- Liquid Scintillation Counter calibration (1994-1999)
- Portable meters and Area monitors calibrations (1998-1999)

Wallac Inc. AN E G & G COMPANY
9238 Gaither Roa aithersburg, Maryland 20877 (800) 638-6710

SERVICE REPORT

For Warranty Instruments Only

Q.			ATA		
PACKING			AGE - MONTHS		
CODE	ACCESS	DOC	NEW	0-3	

REPAIR DATE MO DAY YR	JOB NUMBER	EMPLOYEE NO.
8 28 98		9681

No. 33478

INSTRUMENT LOCATION

USER: MR. AHMMAD — TELEPHONE: (301) 2950002

ORGANIZATION: NAVAL MED RESEA INST.

DEPARTMENT: BLDG # 17 RM #10

STREET: 8901 WISCONSIN AVE

CITY: BETHESDA — STATE: MD — ZIP: 20889

PROBLEM

- REINSTALLATION

ACTION TAKEN

- INSTALLED
- THE COUNTER OPERATION IS OK
- I129 EFFICIENCY IS 64.6 %
  BACKGROUND 51 CPM.

SOFTWARE VERSION: _____

MODEL #	SERIAL #	DIAGNOSTIC TIME	TOTAL REPAIR TIME	TOTAL ON SITE TIME	TRAVEL TIME	BILLING CODE	SERVICE CODE
1282	324	0 5	1 5	2 0	1 0	05	01

☒ PURCHASE ORDER ☐ CONTRACT ☐ RENTAL — NUMBER: N64-223-98-M-0256

☒ COMPLETE ☐ INCOMPLETE — IF INCOMPLETE GIVE REASON

BILLING CODES
01 Full Warranty
02 Parts Warranty
03 Labor Warranty
04 Contract
05 None
06 Sales
07 Rental
08 Rent. Reagent

SERVICE CODES
01 Repair
02 Call Back
03 Installation
04 Contract Service
05 Contract PM
06 Sales Support
07 Pre-contract Inspection
09 Customer Training
10 Refurbishment
11 Administrative
12 Other
13 Shop Repair

PARTS USED

QUAN.	DESCRIPTION	PART NUMBER	UNIT PRICE	TOTAL PRICE

TOTAL PARTS $

LABOR HOURS 2 @ $ 175 — TOTAL LABOR $ 350 —

OTHER CHARGES (Description) _____ $

TRAVEL ZONE 1 — CHARGE $ 175 —

TOTAL CHARGE ▶ $ 525 —

ALL WORK HAS BEEN DONE TO MY SATISFACTION AND THE EQUIPMENT IS IN ACCEPTABLE WORKING CONDITION UNLESS CALL IS MARKED INCOMPLETE.

Saifuddin Ahmad — CUSTOMER SIGNATURE — Acoll Safety

8/28/98 — DATE

ENGINEER INITIALS

I/O DEVICES AND BETA PLATE ACCESSORIES

PART NUMBER	S/N
1 Bm	USER
PACKARD PRINTER	USER

Packard
A Packard BioScience Company

CUSTOMER NAME: S. Ahmad

CUSTOMER TEL: 301 295-0002

RECEIPT FOR SERVICE

BILL TO:

DIST	TERR	ZONE	PAYEE NO.	CUSTOMER NUMBER	SERVICE ORDER #
433	3	1	06436		6 405442

DEPARTMENT: Receipts Control Section Bldg. 17 Room S-20

PACKARD SYSTEM SERIAL NUMBER: B2500 - 40848

INSTITUTION'S NAME: Naval Medical Research Center

RIC SYSTEM SERIAL NUMBER: - - - - - 9

ADDRESS: 8901 Wisconsin Avenue

CALL NUMBER: 82933

CITY: Bethesda, STATE: MD, COUNTRY: , ZIP: 20889-5607

COPY TO:

DATE OF SERVICE MO	DAY	YEAR	SERVICE HOURS	TRAVEL HOURS
4	5	99	1 0	2 5
TOTALS			1 0	2 5

ITEM #	PART NUMBER OF REPLACED ITEM	PART DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
1	165507-5	Printer ribbon cartridge	1	27 00	27 00
2					
3					
4					
5					
6					
7					
8					
9					
10					

PARTS TRANSFER ITEM _____ PAYEE # _____ TOTAL MATERIAL 27 00

SUMMARY OF CHARGES TO CUSTOMER

ITEM	HOURS	RATES	CHARGES
ZONE 1 MIN.	1 0	350.00	350 00
LABOR			
SUB TOTAL			350 00
MATERIAL			27 00
SHIPPING CHARGES			
VENDOR CHARGES			
SUB TOTAL			27 00
TRAVEL			
TAX			
MISC.			
TOTAL			377 00

CUSTOMER'S P.O. (IF MISSING EXPLAIN) N3239899RC77019

CUSTOMER SIGNATURE: Saifuddin Ahmad

TSE SIGNATURE: Robert Palmer

EXPLANATION: Instrument Calibration and preventative maintenance. Normalize/Calibrated. Cleaned and lubricated printer, replaced ribbon. Cleaned fan filter, checked cooling fans. Blew dust from keyboard & detector & static controller. Cleaned sample changer deck & monitor face. Adjusted drag plate tension detector and to improve sample changer operation. Inspected and lubricated external std. Checked and reset error log; Approx. 3,319 elevator cycles since 27 Apr 98.

^{3}H EFF. 62.6% BKG. 7 CPM

^{14}C EFF. 96.4% BKG. 23 CPM

^{125}I EFF. _____ BKG. _____

REASON FOR SERVICE

PRIMARY	SECONDARY
0 OPERATOR ERROR	0 INCORRECT OPERATION
1 POWER SUPPLY	1 OUTSIDE SYSTEM SPECS
2 MECHANICAL/ ELECTROMECHANCIAL	2 ADJUST
3 ANALOG	3 REPAIR
4 DIGITAL	4 REPLACE
5 SOFTWARE & FIRMWARE	5 MECHANICAL
6 UPDATE	6 ANALOG
7 NO PROBLEM FOUND	7 DIGITAL
	8 SOFT & FIRMWARE
	9 OTHER (PLEASE EXPLAIN)
7	9

TYPE OF SERVICE

44 LOAN
50 WARRANTY
51 ENG. CHANGES
52 TRAINING / APPLICATION SUPPORT
55 INSTALLATION
63 SALES ASSIST / DEMO / SHOW
6C COMPREHENSIVE AGREEMENT (1)
64 COMPREHENSIVE AGREEMENT (2)
6D DEPOT REPAIR
6L LIMITED USE AGREEMENT
6P PM ONLY AGREEMENT
68 BILLABLE SERVICE
69 PREVENTIVE MAINTENANCE
71 SALE

6 8

CUSTOMER COPY

PACKARD
A Canberra Company

CUSTOMER NAME: LT. CMDR. GAITER

CUSTOMER TEL:

RECEIPT FOR SERVICE

BILL TO:	DIST	TERR	ZONE	PAYEE NO.	CUSTOMER NUMBER	SERVICE ORDER #
NAVAL MEDICAL RESEARCH INST	431	36	1	05C20		6 398121

DEPARTMENT: RADIATION SAFETY

PACKARD SYSTEM SERIAL NUMBER: 2500 - 4038 48

INSTITUTION'S NAME: NAVAL MEDICAL RESEARCH INST

RIC SYSTEM SERIAL NUMBER: - - - - - 9

ADDRESS: BLDG 17 ROOM 10

CALL NUMBER: 732194

CITY: BETHESDA STATE: MD COUNTRY: ZIP: 20889

COPY TO:

DATE OF SERVICE MO	DAY	YEAR	SERVICE HOURS	TRAVEL HOURS
4	27	98	2.0	2.0
TOTALS			2.0	2.0

ITEM #	PART NUMBER OF REPLACED ITEM	PART DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

PARTS TRANSFER ITEM _____ PAYEE # _____ TOTAL MATERIAL

SUMMARY OF CHARGES TO CUSTOMER

ITEM	HOURS	RATES	CHARGES
ZONE 1 MIN.	1.0	330	330.00
LABOR	1.0	165	165.00
SUB TOTAL			495.00
MATERIAL			
SHIPPING CHARGES			
VENDOR CHARGES			
SUB TOTAL			
TRAVEL			
TAX			
MISC.			
TOTAL			495.00

EXPLANATION: Checked mechanical operation
Checked operator operation
Checked fans & cleaned filters
Ran calibration
Ran IPA SET. Checked cycle log reset 3324
Checked external standards
Set up programs

CUSTOMER'S PO. (IF MISSING EXPLAIN) N 642398-M-0383

CUSTOMER SIGNATURE Saleem Ahmad, HMS

TSE SIGNATURE [illegible]

REASON FOR SERVICE PRIMARY	SECONDARY	TYPE OF SERVICE
0 OPERATOR ERROR 1 POWER SUPPLY 2 MECHANICAL/ ELECTROMECHANICAL 3 ANALOG 4 DIGITAL 5 SOFTWARE & FIRMWARE 6 UPDATE 7 NO PROBLEM FOUND	0 INCORRECT OPERATION 1 OUTSIDE SYSTEM SPECS 2 ADJUST 3 REPAIR 4 REPLACE 5 MECHANICAL 6 ANALOG 7 DIGITAL 8 SOFT & FIRMWARE 9 OTHER (PLEASE EXPLAIN)	44 LOAN 50 WARRANTY 51 ENG. CHANGES 52 TRAINING / APPLICATION SUPPORT 55 INSTALLATION 63 SALES ASSIST / DEMO / SHOW 6C COMPREHENSIVE AGREEMENT (1) 64 COMPREHENSIVE AGREEMENT (2) 6D DEPOT REPAIR 6L LIMITED USE AGREEMENT 6P PM ONLY AGREEMENT 68 BILLABLE SERVICE 69 PREVENTIVE MAINTENANCE 71 SALE
		6 8

^{3}H EFF. 60.42 BKG. 11.4

^{14}C EFF. 96.30 BKG. 16.57

^{125}I EFF. _____ BKG. _____

CUSTOMER COPY

PACKARD
A Canberra Company

CUSTOMER NAME:

CUSTOMER TEL:

RECEIPT FOR SERVICE

BILL TO:

DIST	TERR	ZONE	PAYEE NO.	CUSTOMER NUMBER	SERVICE ORDER #
4311	316	1	056220		6 384877

DEPARTMENT

PACKARD SYSTEM SERIAL NUMBER: 825000 - 403848

INSTITUTION'S NAME: Naval Medical Research Inst

RIC SYSTEM SERIAL NUMBER: - - - - - 9

ADDRESS

CALL NUMBER

CITY STATE COUNTRY ZIP

COPY TO:

DATE OF SERVICE MO	DAY	YEAR	SERVICE HOURS	TRAVEL HOURS
4	24	97	1 0	2 0
4	25	97	1 5	2 0
4	28	97	1 0	2 0
TOTALS				

ITEM #	PART NUMBER OF REPLACED ITEM	PART DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
1	4800111	TRIAKS	2	5 00	10 00
2	1302008	IC	2	5 00	10 00
3	010M15C	SENSOR	1	35 00	35 00
4					
5					
6					
7					
8					
9					
10					

PARTS TRANSFER ITEM_____ PAYEE #_____ TOTAL MATERIAL 55 00

SUMMARY OF CHARGES TO CUSTOMER			
ITEM	HOURS	RATES	CHARGES
ZONE 1 MIN.	1 0	330	330 00
LABOR	2 5	165	412 50
SUB TOTAL			742 50
MATERIAL			55 00
SHIPPING CHARGES			
VENDOR CHARGES			
SUB TOTAL			55 00
TRAVEL			
TAX			
MISC.			
TOTAL			797 50

CUSTOMER'S P.O. (IF MISSING EXPLAIN) N64223971RC72060

CUSTOMER SIGNATURE LCDR, USN

TBE SIGNATURE

EXPLANATION: The rear cassette drive motor, keeps turning. Replaced forward and reverse triacs and IC's. Installed instrument software ver 5.01 6.22. Calibrated and checked efficiencies. Operating properly.

REASON FOR SERVICE

PRIMARY	SECONDARY	TYPE OF SERVICE
0 OPERATOR ERROR 1 POWER SUPPLY 2 MECHANICAL ELECTROMECHANCIAL 3 ANALOG 4 DIGITAL 5 SOFTWARE & FIRMWARE 6 UPDATE 7 NO PROBLEM FOUND	0 INCORRECT OPERATION 1 OUTSIDE SYSTEM SPECS 2 ADJUST 3 REPAIR 4 REPLACE 5 MECHANICAL 6 ANALOG 7 DIGITAL 8 SOFT & FIRMWARE 9 OTHER (PLEASE EXPLAIN)	44 LOAN 47 SHOW 48 LEASE 50 WARRANTY 51 ENG CHANGES 55 INSTALLATION 56 CUST ACCOMMODATIONS 63 SALES ASSIST 64 COMPREHENSIVE CONTRACT 66 LIMITED CONTRACT 68 BILLABLE SERVICE 69 PREVENTATIVE MAINTENANCE 70 CALL BACK 71 SALE

3H EFF. 61.79 BKG. 11

14C EFF. 96.27 BKG. 23

I125 EFF. _____ BKG. _____

68

PACKARD
A Canberra Company

RECEIPT FOR SERVICE

CUSTOMER NAME: Hm2 Holly Celeste
CUSTOMER TEL: 301-295-0002

BILL TO: Bld 17 Room 10

DIST	TERR	ZONE	PAYEE NO.
431	32	1	9390

CUSTOMER NUMBER:

SERVICE ORDER #: 6 360641

DEPARTMENT: Radiation Safety Office

PACKARD SYSTEM SERIAL NUMBER: A2500 - 403848

INSTITUTION'S NAME: Naval Medical Research Institute

RIC SYSTEM SERIAL NUMBER: - - - - - 9

ADDRESS: 8901 Wisconsin Ave

CALL NUMBER:

CITY: Bethesda STATE: MD COUNTRY: ZIP: 20889

COPY TO:

DATE OF SERVICE MO	DAY	YEAR	SERVICE HOURS	TRAVEL HOURS
05	24	96	1 5	1 0
TOTALS				

ITEM #	PART NUMBER OF REPLACED ITEM	PART DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
1		Light seal	1	2 00	2 00
2					
3					
4					
5					
6					
7					
8					
9					
10					

PARTS TRANSFER ITEM_____ PAYEE #_____ TOTAL MATERIAL

SUMMARY OF CHARGES TO CUSTOMER

ITEM	HOURS	RATES	CHARGES
ZONE 1 MIN.	1 0	330	330 00
LABOR	5	165	82 50
SUB TOTAL			412 50
MATERIAL			2 00
SHIPPING CHARGES			
VENDOR CHARGES			
SUB TOTAL			2 00
TRAVEL			
TAX			
MISC.			
TOTAL			414 50

CUSTOMER'S P.O. (IF MISSING EXPLAIN)

CUSTOMER SIGNATURE: Holly Celeste

TSE SIGNATURE: Pat Leon

EXPLANATION:

Routine preventative maintenance
Remove deck - Clean counting chamber
Replace light seal
Lube front and rear pin drives

Check & reset error log 2000 samples counted
Hard drive maintenance
Calibration

^{3}H EFF. 63% BKG. 12 Check efficiency + background
^{14}C EFF. 96% BKG. 16
^{125}I EFF.____ BKG.____

REASON FOR SERVICE

PRIMARY	SECONDARY
0 OPERATOR ERROR	0 INCORRECT OPERATION
1 POWER SUPPLY	1 OUTSIDE SYSTEM SPECS
2 MECHANICAL	2 ADJUST
3 ELECTROMECHANICAL	3 REPAIR
4 ANALOG	4 REPLACE
4 DIGITAL	5 MECHANICAL
5 SOFTWARE & FIRMWARE	6 ANALOG
6 UPDATE	7 DIGITAL
7 NO PROBLEM FOUND	8 SOFT & FIRMWARE
	9 OTHER (PLEASE EXPLAIN)
	P.M. Visit
7	9

TYPE OF SERVICE

44 LOAN
47 SHOW
49 LEASE
50 WARRANTY
51 ENG. CHANGES
55 INSTALLATION
56 CUST. ACCOMMODATIONS
63 SALES ASSIST
64 MAIN CONTRACT
68 BILLABLE SERVICE
69 PREVENTATIVE MAINTENANCE
70 CALL BACK
71 SALE

68

PACKARD
A Canberra Company

CUSTOMER NAME: L. Holland

CUSTOMER:

RECEIPT FOR SERVICE

BILL TO:	DIST	TERR	ZONE	PAYEE NO.	CUSTOMER NUMBER	SERVICE ORDER #
	4311	32	1	93910		6 252551

DEPARTMENT

PACKARD SYSTEM SERIAL NUMBER: B2500 - 40384 8

INSTITUTION'S NAME: N.N.R.I

RIC SYSTEM SERIAL NUMBER: - - - - - 9

ADDRESS

CALL NUMBER

CITY STATE COUNTRY ZIP

COPY TO:

DATE OF SERVICE MO	DAY	YEAR	SERVICE HOURS	TRAVEL HOURS
07	12	94	10	10
TOTALS				

ITEM #	PART NUMBER OF REPLACED ITEM	PART DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL PRICE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
			TOTAL MATERIAL		

SUMMARY OF CHARGES TO CUSTOMER

ITEM	HOURS	RATES	CHARGES
ZONE_____ MIN.			
LABOR			
SUB TOTAL			
MATERIAL			
SHIPPING CHARGES			
VENDOR CHARGES			
SUB TOTAL			
TRAVEL			
TAX			
MISC.			
TOTAL			N/C

PARTS TRANSFER ITEM_____ PAYEE #_____

CUSTOMER'S PO. (IF MISSING-EXPLAIN): Warranty

TSE SIGNATURE: Pat Deon

CUSTOMER SIGNATURE

EXPLANATION:

Check + reset error log
Review mem. expansion
Check instrument eff + background
Fax Proposal for Contract 2952720

REASON FOR SERVICE PRIMARY	SECONDARY	TYPE OF SERVICE
0 OPERATOR ERROR 1 POWER SUPPLY 2 MECHANICAL/ ELECTROMECHANCIAL 3 ANALOG 4 DIGITAL 5 SOFTWARE & FIRMWARE 6 UPDATE 7 NO PROBLEM FOUND	0 INCORRECT OPERATION 1 OUTSIDE SYSTEM SPECS. 2 ADJUST 3 REPAIR 4 REPLACE 5 MECHANICAL 6 ANALOG 7 DIGITAL 8 SOFT & FIRMWARE 9 OTHER (PLEASE EXPLAIN)	44 LOAN 47 SHOW 48 LEASE 50 WARRANTY 51 ENG CHANGES 55 INSTALLATION 56 CUST. ACCOMMODATIONS 63 SALES. ASSIST 64 MAIN. CONTRACT 65 SPECIAL 68 BILLABLE SERVICE 69 PREVENTATIVE MAINTENANCE 70 CALL BACK 71 SALE
7	9	69

^{125}I EFF._____ BKG._____ ^{3}H EFF. 64 BKG. 11 ^{14}C EFF. 96 BKG. 16

CUSTOMER COPY

CSOF 2-18 REV A 9/82

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696
P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20
Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607
Contact: HM3 AHMAD Phone: (301) 295-0002

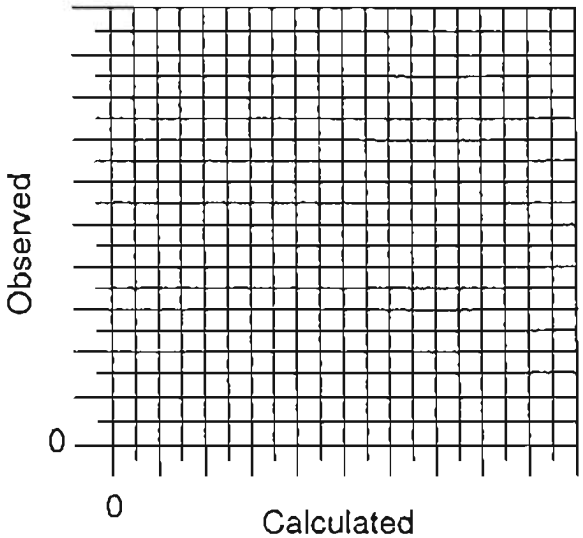
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 115343

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	119439	900	*32P,**35S	27%,5%
2.						**45Ca	5%
3.						***33P	12%
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated(cpm)	Observed(cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.
*** Simulated using 99Tc with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean Jr. Reviewed By: Date: 3/16/99
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696
P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20
Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607
Contact: HM3 AHMAD Phone: (301) 295-0002

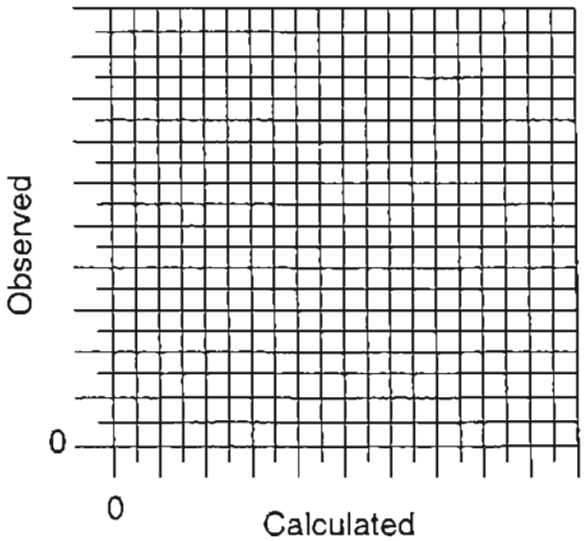
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 114934

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	116239	900	*32P,**35S	28%,6%
2.						**45Ca	6%
3.						***33P	11%
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
	Average correction Factor:		1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.
*** Simulated using 99Tc with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean Jr. Reviewed By: Date: 3/16/99
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

Certificate of Calibration

RSO Order No. 1151

ISSUED TO: Naval Medical Research
8901 Wisconsin Ave.
Bethesda, MD 20889-5607
CONTACT: HM3 AHMAD
PHONE: (301) 295-0002

PO NO:

INSTRUMENT: LUDLUM
MODEL: 3
TYPE: RATEMETER
SN: 115030

RSO, Inc. certifies that on 05/14/1999 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulse for the linearity.
The results are tabulated below. Calibration is traceable to NIST.

Calibration Data

	RANGE	EXPECTED	OBSERVED		C.F.
X	0.10	100.00	100.000	cpm	1.000
		400.00	400.000	cpm	1.000
X	1.00	1000.00	1000.000	cpm	1.000
		4000.00	4000.000	cpm	1.000
X	10.00	10000.00	10000.000	cpm	1.000
		40000.00	40000.000	cpm	1.000
X	100.00	100000.00	100000.000	cpm	1.000
		400000.00	400000.000	cpm	1.000
				C.F. AVERAGE	1.000

Type(s)	Probe1:	Probe2:	Probe3:
1 mR/hr	PANCAKE NA ( )		

MODEL	SER#	ISOTOPE 1	ISOTOPE 2	ISOTOPE 3	ISOTOPE 4	EFFICIENCY (%)	WINDOW	GEOMETRY	VOLTAGE
44-9	119403	32P *	33P **	45Ca ***	35S ***	34 14 7 7	OPEN	CONTACT	900

* Simulated using 90Sr with source at contact with probe.
** Simulated using 99Tc with source at contact with probe.
*** Simulated using 14C with source at contact with probe.
*** Simulated using 14C with source at contact with probe.

INSTRUMENT CHECKS

BATTERY CHECK: BATT
CHECK SOURCE 1: NA READING:
CHECK SOURCE 2: READING:

ENVIRONMENTAL

TEMP: 26°C
PRESS: 765 mmHg
HUMID: 65 %

THE SUGGESTED RECALIBRATION DATE FOR THIS INSTRUMENT IS 05/14/2000

Calibrated By: Dennny Austin

Reviewed By:

Cal Date: 05/14/1999

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

Certificate of Calibration

RSO Order No. 1151

ISSUED TO: Naval Medical Research
8901 Wisconsin Ave.
Bethesda, MD 20889-5607
CONTACT: HM3 AHMAD
PHONE: (301) 295-0001

PO NO:

INSTRUMENT: LUDLUM
MODEL: 3
TYPE: RATEMETER
SN: 113889

RSO, Inc. certifies that on 05/14/1999 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulse for the linearity.

The results are tabulated below. Calibration is traceable to NIST.

Calibration Data

	RANGE	EXPECTED	OBSERVED		C.F.
X	0.10	100.00	100.000	cpm	1.000
		400.00	400.000	cpm	1.000
X	1.00	1000.00	1000.000	cpm	1.000
		4000.00	4000.000	cpm	1.000
X	10.00	10000.00	10000.000	cpm	1.000
		40000.00	40000.000	cpm	1.000
X	100.00	100000.00	100000.000	cpm	1.000
		400000.00	400000.000	cpm	1.000
				C.F. AVERAGE	1.000

Type(s) Probe1: SCINTILATOR Probe2: Probe3:
1 mR/hr NA ( )

MODEL	SER#	ISOTOPE 1	ISOTOPE 2	ISOTOPE 3	ISOTOPE 4	EFFICIENCY (%)	WINDOW	GEOMETRY	VOLTAGE
44-21		32P *	125I **	51Cr ***		20 16 5	OPEN	CONTACT	700

* Simulated using 90Sr with source at contact with probe.
** Simulated using 129I with source at contact with probe.
*** Simulated using 133Ba with source at contact with probe.

INSTRUMENT CHECKS

BATTERY CHECK: BATT
CHECK SOURCE 1: NA READING:
CHECK SOURCE 2: READING:

ENVIRONMENTAL

TEMP: 26°C
PRESS: 765 mmHg
HUMID: 65 %

THE SUGGESTED RECALIBRATION DATE FOR THIS INSTRUMENT IS 05/14/2000

Calibrated By: Dorsey Austin Reviewed By: Cal Date: 05/14/1999

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

Certificate of Calibration

RSO Order No. 1151

ISSUED TO: Naval Medical Research
8901 Wisconsin Ave.
Bethesda, MD 20889-5607
CONTACT: HMS AHMAD
PHONE: (301) 295-0001

PO NO:

INSTRUMENT: TECHNICAL ASSOCIATES
MODEL: PUG-1AB
TYPE: RATEMETER
SN: 19145

RSO, Inc. certifies that on 05/14/1999 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulse for the linearity.

The results are tabulated below. Calibration is traceable to NIST.

Calibration Data

	RANGE	EXPECTED	OBSERVED		C.F.
X	1.00	100.00	100.000	cpm	1.000
		400.00	400.000	cpm	1.000
X	10.00	1000.00	1000.000	cpm	1.000
		4000.00	4000.000	cpm	1.000
X	100.00	10000.00	10000.000	cpm	1.000
		40000.00	40000.000	cpm	1.000
				C.F. AVERAGE	1.000

Type(s)	Probe1:	GM	Probe2:	Probe3:
1 mR/hr	NA	( )		

MODEL	SER#	ISOTOPE 1	ISOTOPE 2	ISOTOPE 3	ISOTOPE 4	EFFICIENCY (%)	WINDOW	GEOMETRY	VOLTAGE
P11B	59111	32P *	35S **	14C		46 11 11	OPEN	CONTACT	900

* Simulated using 90Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.

INSTRUMENT CHECKS

BATTERY CHECK: BATT
CHECK SOURCE 1: NA READING:
CHECK SOURCE 2: READING:

ENVIRONMENTAL

TEMP: 26°C
PRESS: 765 mmHg
HUMID: 65 %

THE SUGGESTED RECALIBRATION DATE FOR THIS INSTRUMENT IS 05/14/2000

Calibrated By: Darcy Austin Reviewed By: Cal Date: 05/14/1999

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696
P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20
Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607
Contact: HM3 AHMAD Phone: (301) 295-0002

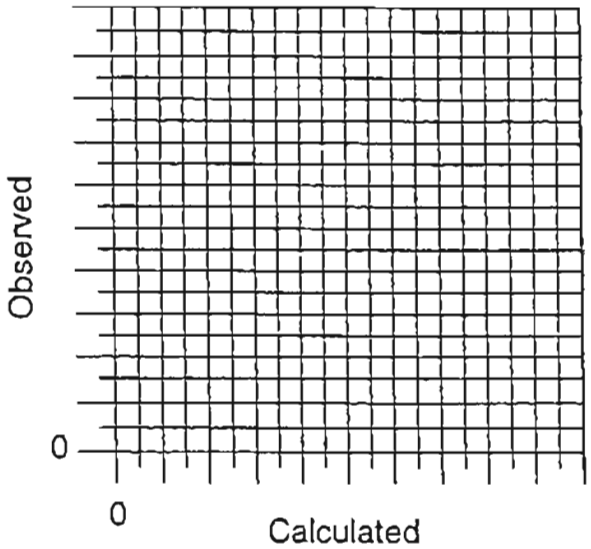
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 115343

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	119439	900	*32P, **35S	27%,5%
2.						**45Ca	5%
3.						***33P	12%
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated(cpm)	Observed(cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.
*** Simulated using 99Tc with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean jr.
Reviewed By:
Date: 3/16/99
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696

P.O. No.

Certificate of Calibration

Issued To

Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: HM3 AHMAD Phone: (301) 295-0002

Instrument

Make: Ludlum

Type: Ratemeter

Model: 3

Serial # : 114934

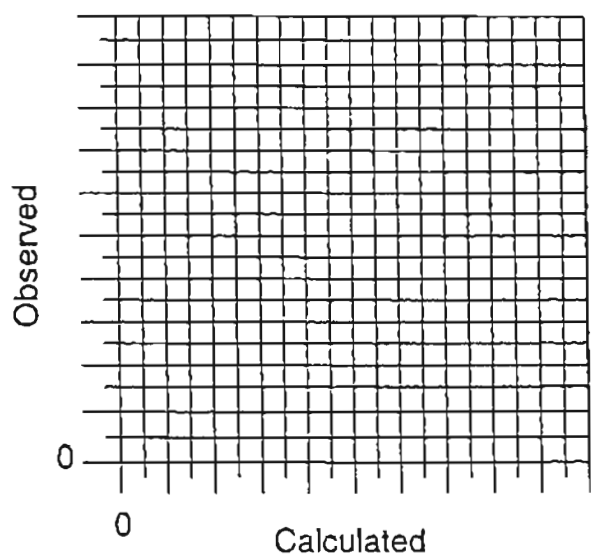
Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	116239	900	*32P,**35S	28%,6%
2.						**45Ca	6%
3.						***33P	11%
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00

Average correction Factor: 1.00



Calibration Geometry

Orientation To Radiation Beam

Front Back Parallel Perpendicular

PROBE WINDOW

OPEN CLOSED FIXED

INSTRUMENT CHECKS

CHECK SOURCE: NA

BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS

Temperature: 26 C

Pressure: 765 mmHg

Humidity: 65 %

COMMENTS

* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.
*** Simulated using 99Tc with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean jr.

Reviewed By:

Date: 3/16/99

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696
P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20
Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607
Contact: HM3 AHMAD Phone: (301) 295-0002

Instrument
Make: Ludlum
Type: Alarm Meter
Model: 300
Serial # : 70617

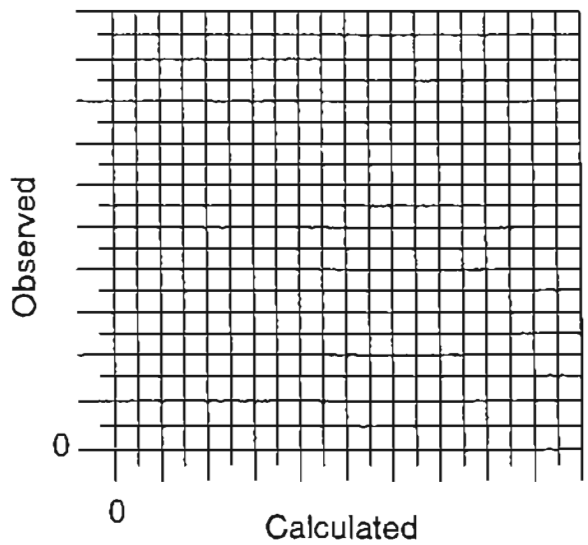
Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	GM	300/4	072558			
2.							
3.							
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated in a known radiation field using a 137Cs (662 keV) beam calibrator (J.L. Shepherd Model 28-6A, S/N 10056). The results are tabulated below. Calibration is traceable to NIST.

Scale or Range	Calculated(mR/h)	Observed(mR/h)	C.F.
Log	1.000	1.000	1.00
	10.000	10.000	1.00
Scale	100.000	100.000	1.00

Average correction Factor: 1.00



COMMENTS

Calibration Geometry
Orientation To Radiation Beam
Front X Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED X
INSTRUMENT CHECKS
CHECK SOURCE: NA
BATTERY CHECK: AC
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean jr.
Reviewed By:
Date: 3/16/99
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,168
P.O. No. 98V44351366

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Amad Phone: (301) 295-0001

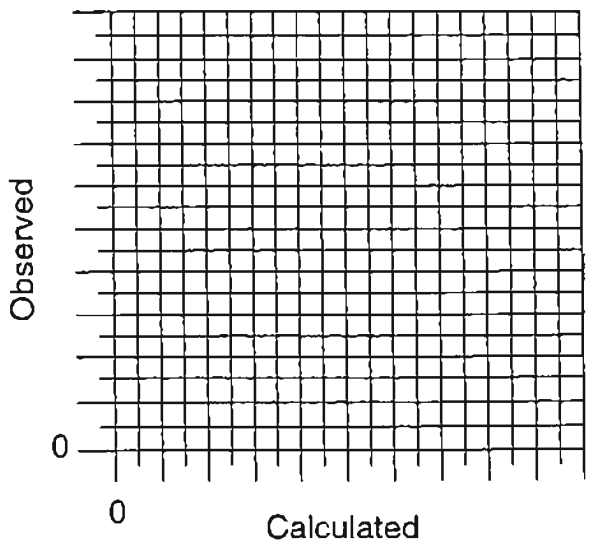
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 88395

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	081230	900	*32P, **35S	24%,6%
2.						**45Ca	6%
3.						***33P	16%
4.							

RSO, Inc. certifies that on 7/29/98 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: 137Cs : 8000 cpm
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe .
*** Simulated using 99Tc with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 7/29/99

Calibrated By: Dorsey Austin Reviewed By: Date: 7/29/98
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,168
P.O. No. 98V44351366

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Amad Phone: (301) 295-0001

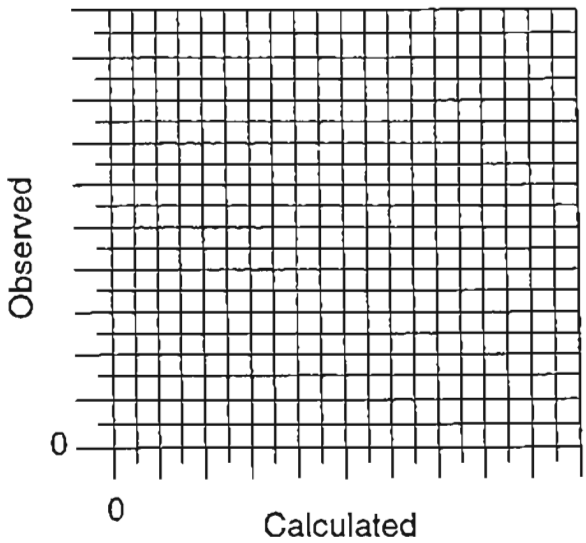
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 114886

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Scint.	44-21	132842	900	*51Cr,**125I	1%,23%
2.							
3.							
4.							

RSO, Inc. certifies that on 7/29/98 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA :
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 1338a with source at contact with probe.
** Simulated using 1291 with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 7/29/99

Calibrated By: Dorsey Austin Reviewed By: Date: 7/29/98
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,304

P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Holly Celeste Phone: (301) 295-0001

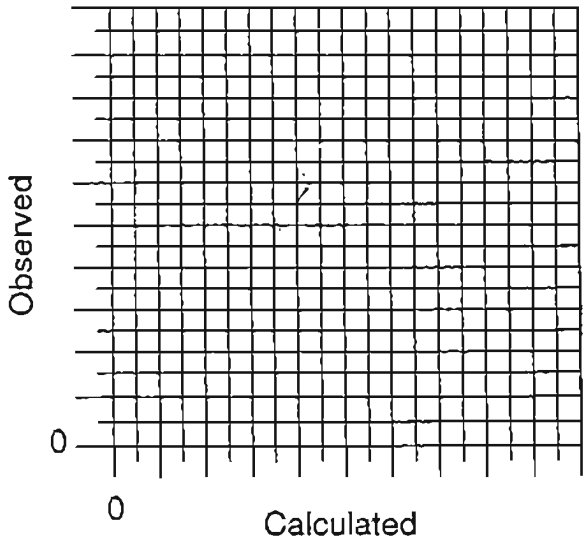
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 115044

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	116243	900	*32P,**35S	28%,7%
2.						14C,**45Ca	7%,7%
3.						***33P	12%
4.							

RSO, Inc. certifies that on 9/17/98 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA :
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.
***Simulated using 99Tc with source at contact with probe.

Instrument Should Be Returned For Recalibration No Later Than 9/17/99

Calibrated By: Dorsey Austin Reviewed By: Date: 9/17/98
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,304

P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Holly Celeste Phone: (301) 295-0001

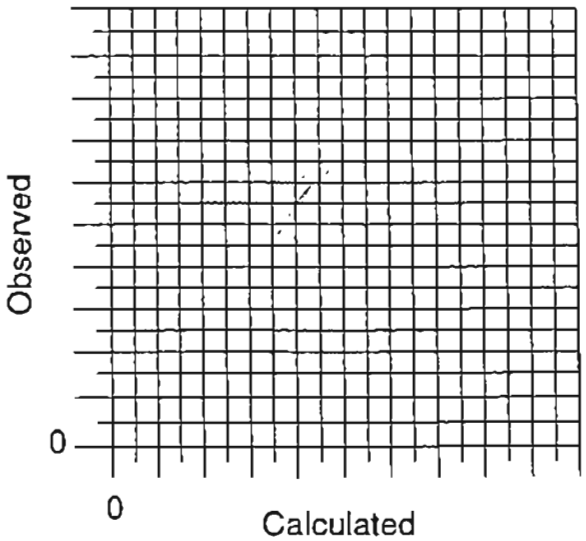
Instrument
Make: Ludlum
Type: Ratemeter
Model: 3
Serial # : 114858

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	11940	900	*32P,**35S	28%,7%
2.						14C,**45Ca	7%,7%
3.						***33P	14%
4.							

RSO, Inc. certifies that on 9/17/98 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100,000	100,000	1.00
	400,000	400,000	1.00
X1	1,000,000	1,000,000	1.00
	4,000,000	4,000,000	1.00
X10	10,000,000	10,000,000	1.00
	40,000,000	40,000,000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular
PROBE WINDOW
OPEN CLOSED FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA :
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.
*** Simulated using 99Tc with source at contact with probe.

1 **Instrument Should Be Returned For Recalibration No Later Than** 9/17/99

Calibrated By: Dorsey Austin Reviewed By: Date: 9/17/98
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,304
P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10
Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607
Contact: Holly Celeste Phone: (301) 295-0001

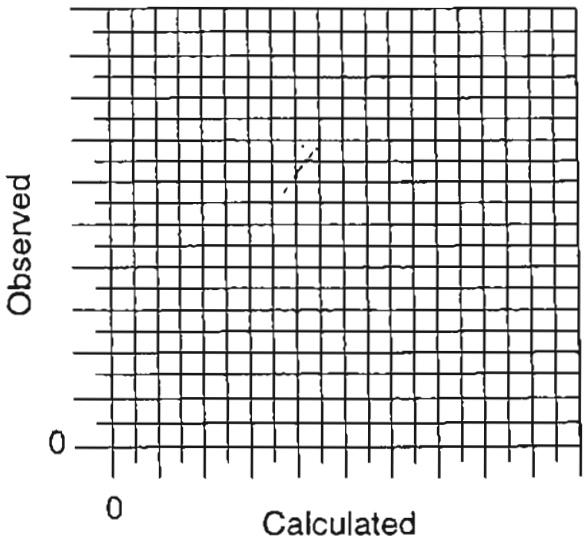
Instrument
Make: Nuclear Research Corp
Type: Ratemeter
Model: IM-238/PDR-27s
Serial # : 61423

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	NRC	GM	DT-613				
2.							
3.							
4.							

RSO, Inc. certifies that on 9/21/98 the above described instrument was calibrated in a known radiation field using a 137Cs (662 keV) beam calibrator (J.L. Shepherd Model 28-6A, S/N 10056). The results are tabulated below. Calibration is traceable to NIST.

Scale or Range	Calculated (Mr/hr)	Observed (Mr/hr)	C.F.
.5	0.100	0.100 *	1.00
	0.400	0.400 *	1.00
5	1.000	1.000	1.00
	4.000	4.000	1.00
50	10.000	10.000	1.00
	40.000	40.000	1.00
500	100.00	100.00	1.00
	400.00	400.00	1.00
		Average correction Factor:	1.00



Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular x

PROBE WINDOW
OPEN CLOSED x FIXED

INSTRUMENT CHECKS
CHECK SOURCE:
BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS: Electronically pulsed.

This Instrument Should Be Returned For Recalibration No Later Than 9/21/99

Calibrated By: Dorsey Austin Reviewed By: Date: 9/21/98
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,304

P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Holly Celeste Phone: (301) 295-0001

Instrument
Make: Nuclear Research Corp

Type: Ratemeter

Model: IM-238/PDR-27s

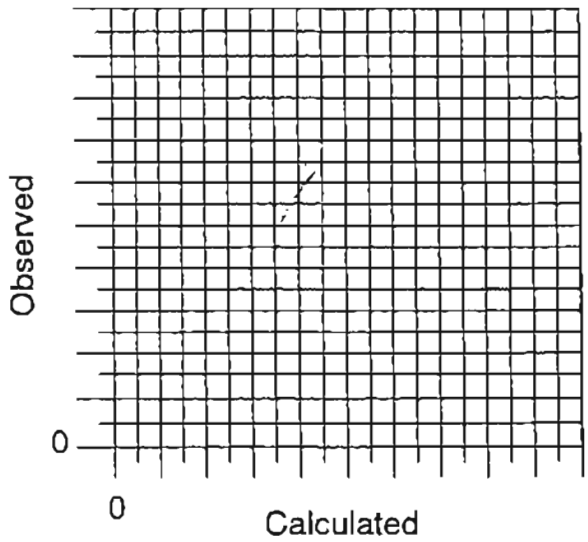
Serial # : A1605

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	NRC	GM	DT-613				
2.							
3.							
4.							

RSO, Inc. certifies that on 9/21/98 the above described instrument was calibrated in a known radiation field using a 137Cs (662 keV) beam calibrator (J.L. Shepherd Model 28-6A, S/N 10056). The results are tabulated below. Calibration is traceable to NIST.

Scale or Range	Calculated (Mr/hr)	Observed (Mr/hr)		C.F.
.5	0.100	0.100	*	1.00
	0.400	0.400	*	1.00
5	1.000	1.000		1.00
	4.000	4.000		1.00
50	10.000	10.000		1.00
	40.000	40.000		1.00
500	100.00	100.00		1.00
	400.00	400.00		1.00
		Average correction Factor:		1.00



Calibration Geometry

Orientation To Radiation Beam

Front Back Parallel Perpendicular x

PROBE WINDOW

OPEN CLOSED x FIXED

INSTRUMENT CHECKS

CHECK SOURCE: NA :
BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS

Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

COMMENTS: Electronically pulsed.

This Instrument Should Be Returned For Recalibration No Later Than 9/21/99

Calibrated By: Dorsey Austin Reviewed By: Date: 9/21/98

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,304

P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Holly Celeste Phone: (301) 295-0001

Instrument
Make: Ludlum

Type: Ratemeter

Model: 3

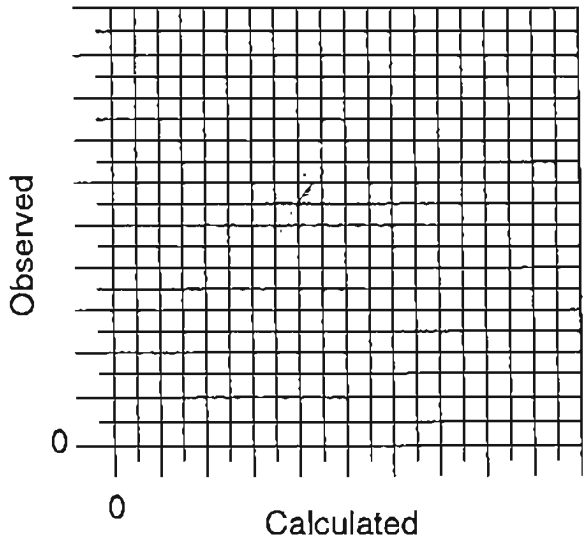
Serial # : 114910

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Pancake	44-9	116207	900	*32P,**35S	38%,7%
2.						14C,**45Ca	7%,7%
3.							
4.							

RSO, Inc. certifies that on 9/17/98 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry

Orientation To Radiation Beam

Front Back Parallel Perpendicular

PROBE WINDOW

OPEN CLOSED FIXED

INSTRUMENT CHECKS

CHECK SOURCE: NA :

BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS

Temperature: 26 °C

Pressure: 765 mmHg

Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 14C with source at contact with probe.

Instrument Should Be Returned For Recalibration No Later Than 9/17/99

Calibrated By: Dorsey Austin Reviewed By: Date: 9/17/98

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,304

P.O. No.

Certificate of Calibration

Issued To

Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM 10

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: Holly Celeste Phone: (301) 295-0001

Instrument

Make: Ludlum

Type: Ratemeter

Model: 3

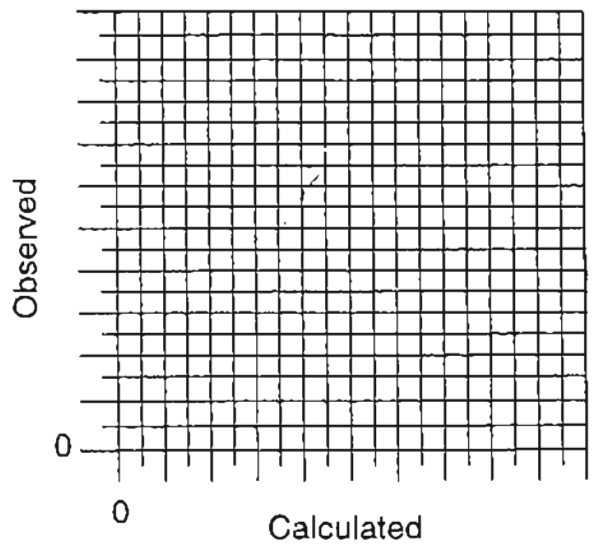
Serial # : 133057

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.	Ludlum	Scint.	44-21	135668	850	*32P,**125I	27%,21%
2.						14C,***35S	6%,6%
3.						****51Cr	1%
4.							

RSO, Inc. certifies that on 9/17/98 the above described instrument was calibrated using a radioactive source to determine the efficiency for a specific radionuclide(s) and using electronically generated pulses for the linearity. The efficiency is shown above with the linearity data tabulated below. Calibration equipment and sources used are traceable to NIST.

Scale or Range	Calculated (cpm)	Observed (cpm)	C.F.
X.1	100.000	100.000	1.00
	400.000	400.000	1.00
X1	1,000.000	1,000.000	1.00
	4,000.000	4,000.000	1.00
X10	10,000.000	10,000.000	1.00
	40,000.000	40,000.000	1.00
X100	100,000.00	100,000.00	1.00
	400,000.00	400,000.00	1.00
		Average correction Factor:	1.00



Calibration Geometry

Orientation To Radiation Beam

Front Back Parallel Perpendicular

PROBE WINDOW

OPEN CLOSED FIXED

INSTRUMENT CHECKS

CHECK SOURCE:

BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS

Temperature: 26 °C

Pressure: 765 mmHg

Humidity: 65 %

COMMENTS
* Simulated using 90 Sr with source at contact with probe.
** Simulated using 129 I with source at contact with probe.
*** Simulated using 14C with source at contact with probe.
**** Simulated using 133Ba with source at contact with probe.

This Instrument Should Be Returned For Recalibration No Later Than 9/17/99

Calibrated By: DWA Dorsey Austin Reviewed By: Date: 9/17/98

Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696

P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20

Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607

Contact: HM3 AHMAD Phone: (301) 295-0002

Instrument
Make: Nuclear Research Corp.

Type: Ratemeter

Model: PDR-27R

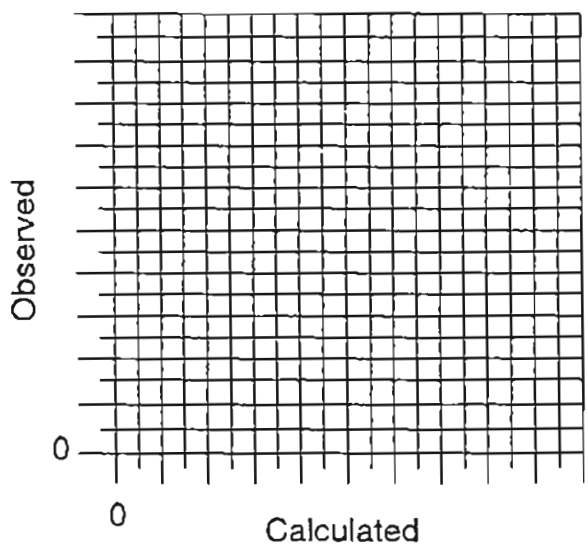
Serial # : A338

Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.		GM					
2.							
3.							
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated in a known radiation field using a 137Cs (662 keV) beam calibrator (J.L. Shepherd Model 28-6A, S/N 10056). The results are tabulated below. Calibration is traceable to NIST.

Scale or Range	Calculated (mR/h)	Observed (mR/h)	C.F.
.5	0.100	0.100 *	1.00
	0.400	0.400 *	1.00
5	1.000	1.000	1.00
	4.000	4.000	1.00
50	10.000	10.000	1.00
	40.000	40.000	1.00
500	100.00	100.00	1.00
	400.00	400.00	1.00
		Average correction Factor:	1.00



COMMENTS
*Electronically pulsed.

Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular X

PROBE WINDOW
OPEN CLOSED X FIXED

INSTRUMENT CHECKS
CHECK SOURCE: NA
BATTERY CHECK: BATT

ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean jr. Reviewed By: Date: 3/16/99
Maryland License MD-33-021-01

RSO, Inc.
P.O. Box 1526
Laurel, MD 20725
(301) 953-2482

RSO Order No. 15,696
P.O. No.

Certificate of Calibration

Issued To
Customer: NAVAL MEDICAL RESEARCH INSTITUTE
BUILDING 17, ROOM S-20
Address: 8901 WISCONSIN AVENUE
City: BETHESDA State: MD Zip: 20889-5607
Contact: HM3 AHMAD Phone: (301) 295-0002

Instrument
Make: Nuclear Research Corp.
Type: Ratemeter
Model: PDR-27R
Serial # : A1528

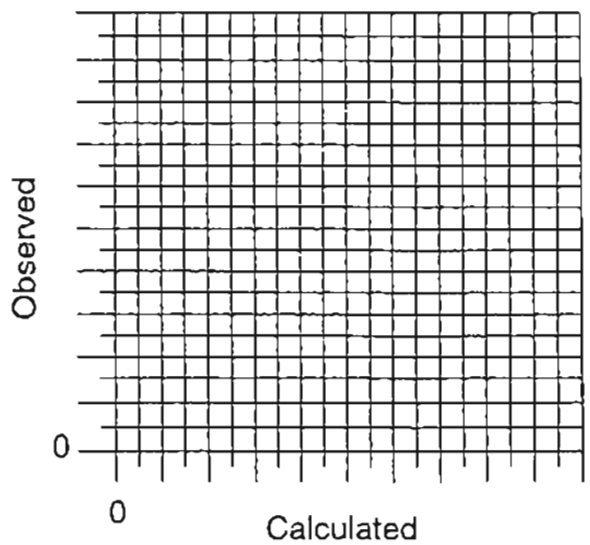
Detectors

	Make	Type	Model	Serial Number	Voltage (v)	Radionuclide	Efficiency
1.		GM					
2.							
3.							
4.							

RSO, Inc. certifies that on 3/16/99 the above described instrument was calibrated in a known radiation field using a 137Cs (662 keV) beam calibrator (J.L. Shepherd Model 28-6A, S/N 10056). The results are tabulated below. Calibration is traceable to NIST.

Scale or Range	Calculated (mR/h)	Observed (mR/h)	C.F.
.5	0.100	0.100 *	1.00
	0.400	0.400 *	1.00
5	1.000	1.000	1.00
	4.000	4.000	1.00
50	10.000	10.000	1.00
	40.000	40.000	1.00
500	100.00	100.00	1.00
	400.00	400.00	1.00

Average correction Factor: 1.00



COMMENTS
*Electronically pulsed.

Calibration Geometry
Orientation To Radiation Beam
Front Back Parallel Perpendicular X
PROBE WINDOW
OPEN CLOSED X FIXED
INSTRUMENT CHECKS
CHECK SOURCE: NA
BATTERY CHECK: BATT
ENVIRONMENTAL CONDITIONS
Temperature: 26 °C
Pressure: 765 mmHg
Humidity: 65 %

This Instrument Should Be Returned For Recalibration No Later Than 3/15/2000

Calibrated By: Jim Dean jr.
Reviewed By:
Date: 3/16/99
Maryland License MD-33-021-01

D-36 NRC Document SECY-98-242 - Screening table for Building Surface Contamination, as Guidance Support of the Final Rule on Radiological Criteria for License Termination

SECY-98-242

October 21, 1998

FOR: The Commissioners

FROM: William D. Travers /s/
Executive Director for Operations

SUBJECT: SCREENING TABLE FOR BUILDING-SURFACE CONTAMINATION, AS GUIDANCE IN SUPPORT OF THE FINAL RULE ON RADIOLOGICAL CRITERIA FOR LICENSE TERMINATION

PURPOSE:

To inform the Commission of recent and planned staff actions related to implementing the "Final Rule on Radiological Criteria for License Termination" [(License Termination Rule (LTR), 62 FR 39058, July 21, 1997)] in accordance with the Commission's Staff Requirements Memorandum (SRM) dated July 8, 1998 [(SECY-98-051), Attachment 1], especially development of a screening table for building-surface contamination.

BACKGROUND:

On July 8, 1998, the Commission approved publication of "Guidance In Support of Final Rule on Radiological Criteria for License Termination" for interim use over a period of 2 years. The Commission directed staff to: (1) develop a more user-friendly format for the guidance; (2) maintain a dialogue with the public during the interim period; (3) address areas of excessive conservatism, particularly in the DandD screening code; and (4) develop a standard review plan (SRP) for decommissioning, and provide the Commission with the schedule for the SRP.

In response to Commission direction, the staff has taken prompt actions and made initial progress on each of the following areas:

CONTACT: Boby Abu Eid, NMSS/DWM
(301) 415-5811

- Staff has developed a screening table of unrestricted release values for building-surface contamination. (Attachment 2) The table would expedite the process of using the draft guidance in a more user-friendly format, during the interim period. The staff coordinated the screening values in the table with other Federal agencies, through the Interagency Steering Committee on Radiation Standards (ISCORS), on September 9, 1998.

- Staff conducted a public meeting on August 14, 1998, to discuss the format and content of future public workshops on the implementation of the draft guidance for the LTR. The meeting was attended by representatives of the Nuclear Energy Institute; Fuel Cycle Facilities Forum; Electric Power Research Institute; Department of Energy; State of New Jersey; Environmental Protection Agency; and other interested organizations. The staff will conduct a second public meeting on October 22, 1998, and an expanded workshop on December 1-2, 1998. Staff will continue to conduct such meetings and workshops to receive public input.

- A project plan and workgroup have been established (including Office of Nuclear Material Safety and Safeguards, Office of Nuclear Regulatory Research, Office of State Programs, and Regional staff) to develop the SRP. The staff transmitted the project plan for the SRP to the Commission on September 29, 1998. The workgroup is currently addressing the issue of excessive conservatism in the DandD code and developing guidance to be contained in the

SRP.

- The staff briefed the Advisory Committee on Nuclear Waste on the subject of the SRP and the screening table.

DISCUSSION:

The staff plans to issue a Federal Register notice (FRN), to be published by October 30, 1998, announcing the end of the "grandfathering period," in 10 CFR 20.1401(b), and the release of the DandD screening code, Version 1. The FRN will also announce: (1) a default screening table of unrestricted release values for building-surface contamination, for the interim use of the guidance; (2) a strategy for future interactions with industry and interested parties, including a combination of workshops, telephone conferences, and release of documents on the U.S. Nuclear Regulatory Commission's (NRC's) web site; and (3) a plan for developing the SRP for decommissioning within the 2-year comment period. The FRN will also address the status of old decommissioning guidance documents during NRC's transition from the Site Decommissioning Management Plan (SDMP) Action Plan to the LTR.

The screening table for surface contamination of common radionuclides will permit licensees to demonstrate compliance with the LTR as simply as possible, and is consistent with the Commission's direction to develop a more user-friendly format for the guidance. Sites with surface contamination of walls and floors would be acceptable for release for unrestricted use in accordance with 10 CFR 20.1402. The screening values were derived from the DandD screening code, Version 1, using default physical parameters that were selected at the 90th percentile of the dose distribution (Attachment 2).

While site-specific analyses would generally be based on the mean of the dose distribution, the 90th percentile was selected for the default values in DandD to provide high confidence that the actual dose at a site will not exceed the standard. Simple screening models, like DandD, that require a minimal amount of site-specific information are easy and inexpensive to use, but will not provide the level of realism and accuracy that is provided by more complex models that require detailed and often more costly site-specific information. The methodology in the draft NUREG-1549 (Using Decision Methods for Dose Assessment to Comply With Radiological Criteria for License Termination) provides licensees with the flexibility to perform their own evaluation of which approach is most reasonable for their specific situation. They can use the simpler screening approach with minimal requirements for site-specific information, and accept a higher level of conservatism which could result in more extensive cleanup. Alternatively, they can use modeling approaches that use site-specific information, and which support a more realistic estimate of dose.

This differs from current NRC guidance and common staff practices that use the mean of the dose as the dose value for demonstrating compliance. For example, the "Branch Technical Position for Low-Level Waste Performance Assessment," (PA), (SECY-96-103), uses the mean of the dose distribution for compliance assessment, provided that the 95th percentile of the distribution is less than 1 mSv (100 mrem). As another example, the staff uses, as the performance objective for postclosure, in the draft proposed 10 CFR Part 63, "Disposal of High-Level Radioactive Wastes In a Proposed Geological Repository at Yucca Mountain, Nevada," the mean dose (expected annual dose) to be less than 0.25 mSv/yr (25 mrem/yr) (SECY-98-225). The Commission's Final Policy Statement on the use of probabilistic risk assessment (PRA) methods in nuclear regulatory activities (60 FR 42622) required that PRA evaluations in support of regulatory decisions be as realistic as practicable. In addition, the "Final General Regulatory Guide and Standard Review Plan for Risk-Informed Regulation of Power Reactors" (SECY-98-015) contemplates use of best-estimate or mean-risk values.

For the interim period, the staff intends to use the default screening values which result in doses at the 90th percentile because:

- In screening analyses, little information is typically available about an individual site. As such, the degree of uncertainty may not be as well known as in site-specific analyses where a great deal of information is known. Therefore, as stated in the National Council on Radiation Protection and Measurements' Report Number 123, "Screening Models for Releases of Radionuclides to Atmosphere, Surface Water, and Ground," screening models are designed to ensure that there is high confidence that the dose would not be underestimated.
- The default screening levels are consistent with the current default values in the DandD code. Version 1, which already has been released on NRC's web site.

- The DandD screening values at the 90th percentile are only slightly more conservative (within a factor of 2 to 3) of the mean screening values.

The staff intends to use the 90th percentile screening values table for building-surface contamination during the interim period, while developing the SRP and testing DandD. The table will be a useful tool for routine decommissioning cases and will facilitate a smooth transition for simple cases. During the interim period, staff will continue to analyze the pros and cons of selecting the mean versus other confidence levels (e.g., the 90th percentile) in the screening analyses, and will use the mean for demonstrating compliance with the dose criterion for site-specific analyses. The staff plans to develop a new probabilistic version of the DandD code that would enable calculation of the dose based on the mean or other percentile values. If the final SRP and LTR guidance recommend using a decision point for screening or site-specific analyses, based on a percentile value other than the mean, staff will inform the Commission in advance.

The screening values for beta- and gamma-emitters, in Attachment 2, are much higher than the SDMP Action Plan Criteria that staff has been using to make decisions on license terminations. For alpha-emitters, the surface screening values are generally much lower. This is because the new limit in the LTR is dose-based whereas the Action Plan Criteria are not in all cases explicitly related to dose. For radionuclides that emit beta/gamma radiation, where the new values are much higher, application of the "as low as is reasonably achievable" requirements in 10 CFR 20.1402 may result in contamination levels much lower than the screening values specified in the table. For radionuclides that emit alpha radiation, where the new values are much lower, the calculated screening values are so low that demonstrating compliance would be complex, very resource-intensive, and not practical. In such cases, refined screening, site-specific data collection, consideration of restricted release, the application of area factors, and other refinements will be employed to implement the license termination rule. The staff will continue to pursue developing more practical guidance for alpha emitters.

The staff will announce the availability of the table of screening values, showing only the 90th percentile values for beta- and gamma-emitters in an FRN. (Since the alpha values are too restrictive to be useful they will not be included.) Before release of the table to the public, the staff will inform the Organization of Agreement States.

As recognized in the June 30, 1998, SRM, the staff will be refining the regulatory guidance over the next 2 years, so the screening values may change. In the interim, if licensees meet the screening values, they would be deemed to comply with the 25 mrem dose criterion in the LTR without performing dose calculations, using DandD or some other codes.

The staff will continue to provide updates to the Commission on the progress of developing the SRP and implementing the LTR.

original /s/ by

William D. Travers
Executive Director for Operations

Attachments: 1. Staff Requirements Memorandum SECY-98-051, Guidance in Support of Final Rule on Radiological Criteria for License Termination
2. Screening Values of Common Radionuclides for Building-Surface Contamination Levels

ATTACHMENT 2

SCREENING VALUES OF COMMON RADIONUCLIDES FOR BUILDING-SURFACE CONTAMINATION LEVELS

Radionuclide	Emission α =Alpha β =Beta γ =Gamma	D&D Screening Values(1)		Action Plan Values(2)	Common Use(3)
		90th Percentile of the output dose distribution	Mean of the output dose distribution		
H-3	β	1.2E+08	1.9E+08	5E+03	R, B
C-14	β	3.7E+06	5.6E+06	5E+03	B
Na-22	β	9.5E+04	9.6E+04	5E+03	B
S-35	β	1.3E+07	2.4E+07	5E+03	B
Cl-36	β	5.0E+05	9.8E+05	5E+03	B
Mn-54	β	3.2E+04	3.2E+04	5E+03	R
Fe-55	β	1.0E+04	5.8E+03	5E+03	R
Co-60	$\beta\ \gamma$	7.1E+03	7.5E+03	5E+03	R, B
Ni-63	β	1.8E+06	3.8E+06	5E+03	R, B
Sr-90	β	8.7E+03	1.7E+04	1E+03	R, B
Tc-99	β	1.3E+06	2.6E+06	5E+03	B, FC
I-129	$\beta\ \gamma$	3.5E+04	4.8E+04	1E+02	B
Cs-137	$\beta\ \gamma$	2.8E+04	2.9E+04	5E+03	R
Ir-192	$\beta\ \gamma$	7.4E+04	7.6E+04	5E+03	B
	β				

Ac-227	α β γ	1.8E+00	4.0E+00	1E+02	FC
Th-228	α γ	4.1E+01	9.0E+01	1E+02	FC
Th-232	α γ	7.3E+00	1.6E+01	1E+03	FC
Pa-231	α γ	8.6E+00	1.9E+01	1E+02	FC
U-235	α γ	9.7E+01	2.1E+02	5E+03	FC
U-238	α γ	1.0E+02	2.2E+02	5E+03	FC
Pu-239	α γ	2.8E+01	6.0E+01	na	FC, DOE
Am-241	α γ	5.8E+01	2.7E+01	na	B

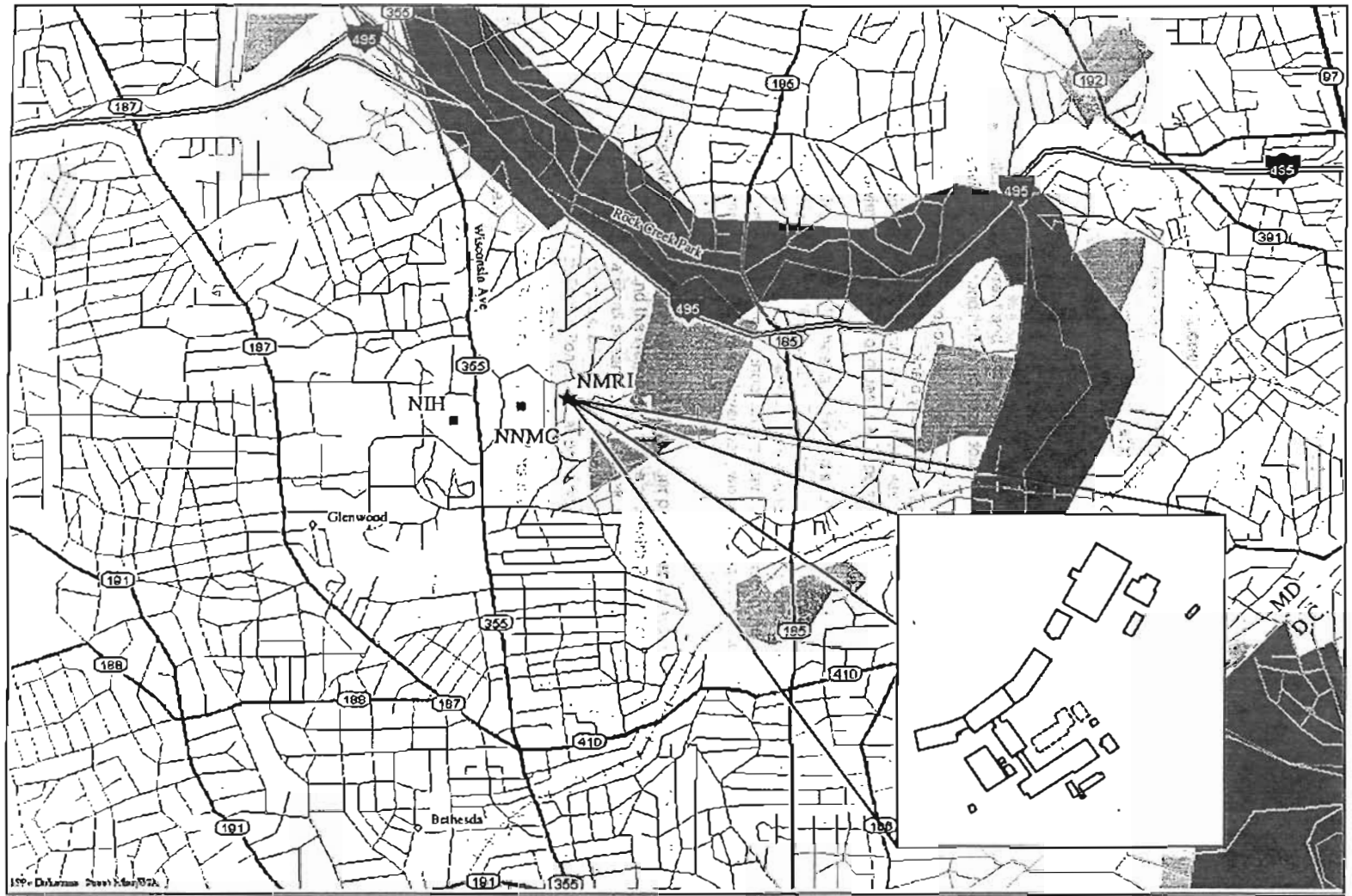
1. Screening values (dpm/100 cm^2) equivalent to 25 mrem/y. Behavioral parameters are set at the mean of the distribution of the assumed critical group. The Metabolic parameters are set at Standard Man or at the mean of the distribution for an average man. The physical parameters were derived as a set to result in a point dose estimate that would be at the percentile indicated of the output dose distribution, and would not exceed 100 mrem at 95%confidence.

2. Reg. Guide 1.86 limits (dpm/100 cm^2); these limits are not explicitly dose-based.

3. R: Reactor; B: Broad-Scope; FC: Fuel Cycle

F-01 Site Location Map

PV119 AVERY



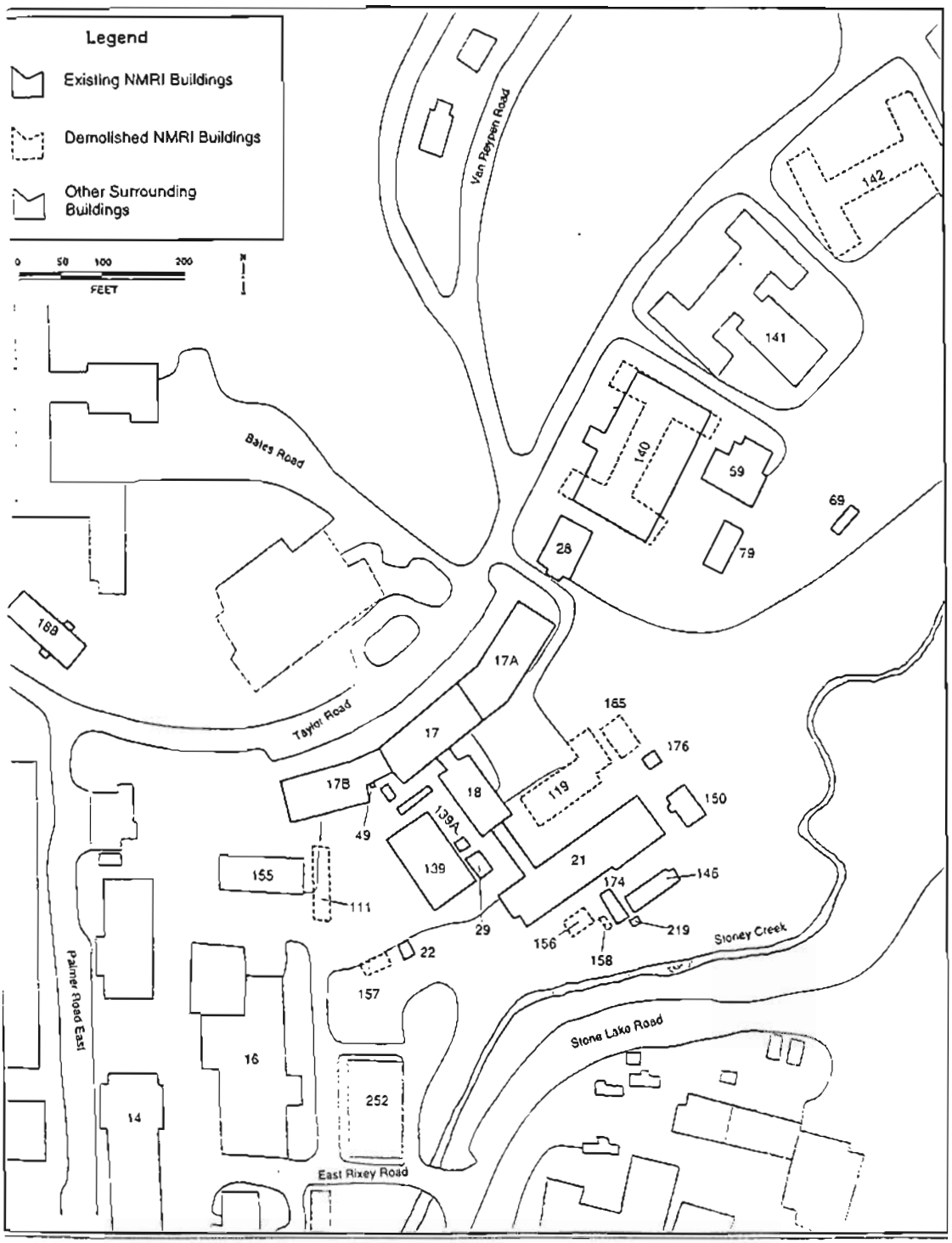
The Environmental Company, Inc.

Figure 1-1 – Site Location Map

N

Date: December 1997
Project Manager: S. Neese
Prepared By: D. Bedard
Project No. P-1257

F-02 Site Resource Map



The Environmental Company, Inc

Figure 4-2 -- Site Layout Map

Date: December 1997
Project Manager: S. Neese
Prepared By: D. Bedard
Project No: P-1257

PV119 AVERY

F-03 NMRC Conceptual Model (June 1999)

NMRC Historical Site Assessment (HSA)

June 1999

Figure F-03. NMRC CONCEPTUAL MODEL (June 1999)

NMRC D&D Phase I (8/1999-2/2000)
Main NMRC Bethesda building numbers: 17,18,21,22,29,49,139, 146,174,219

Contaminants of concern:
H-3, C-14, P-32, P-33, S-35, Ca-45, Cr-51, I-125

BUILDING SURFACE CLASSIFICATIONS

	Number Of Survey Units	Total Area (SF)
Non-impacted	283	60,274
Impacted Class 3	103	27,592

NMRC D&D Phase II (8/1999-11/1999)
NMRC Rockville Annex location (1 building)

Contaminants of concern:
H-3, C-14, P-32, S-35, Cr-51

BUILDING SURFACE CLASSIFICATIONS

	Number Of Survey Units	Total Area (SF)
Non-impacted	31	4,115
Impacted Class 3	25	6,602

NMRC D&D Phase III (8/1999-2/2000)
NMRC Building 150 and Grounds

Contaminant: Co-60

SURVEY AREA CLASSIFICATIONS

	Number Of Survey Units	Total Area (SF)
Soil:		
Impacted Class 3	1	1,500
Building Surfaces:		
Impacted Class 2	1	880

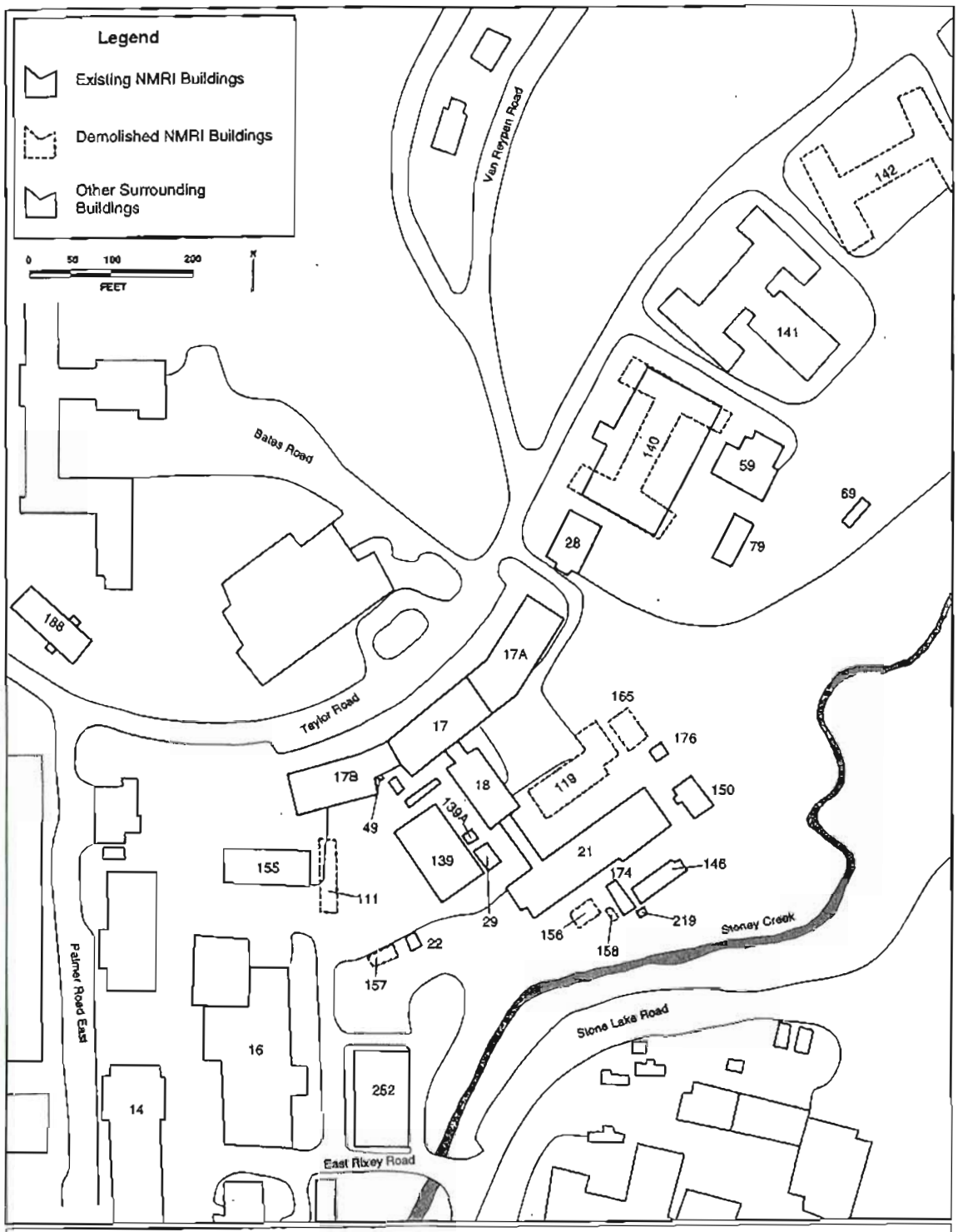
NMRC D&D Phase IV (9/1999-2/2000)
NMRC Bethesda building numbers: 28,53,59,69

Contaminants of concern:
H-3, C-14, P-32, P-33, Ca-45

BUILDING SURFACE CLASSIFICATIONS

	Number Of Survey Units	Total Area (SF)
Non-impacted	71	20,941
Impacted Class 3	12	7,673

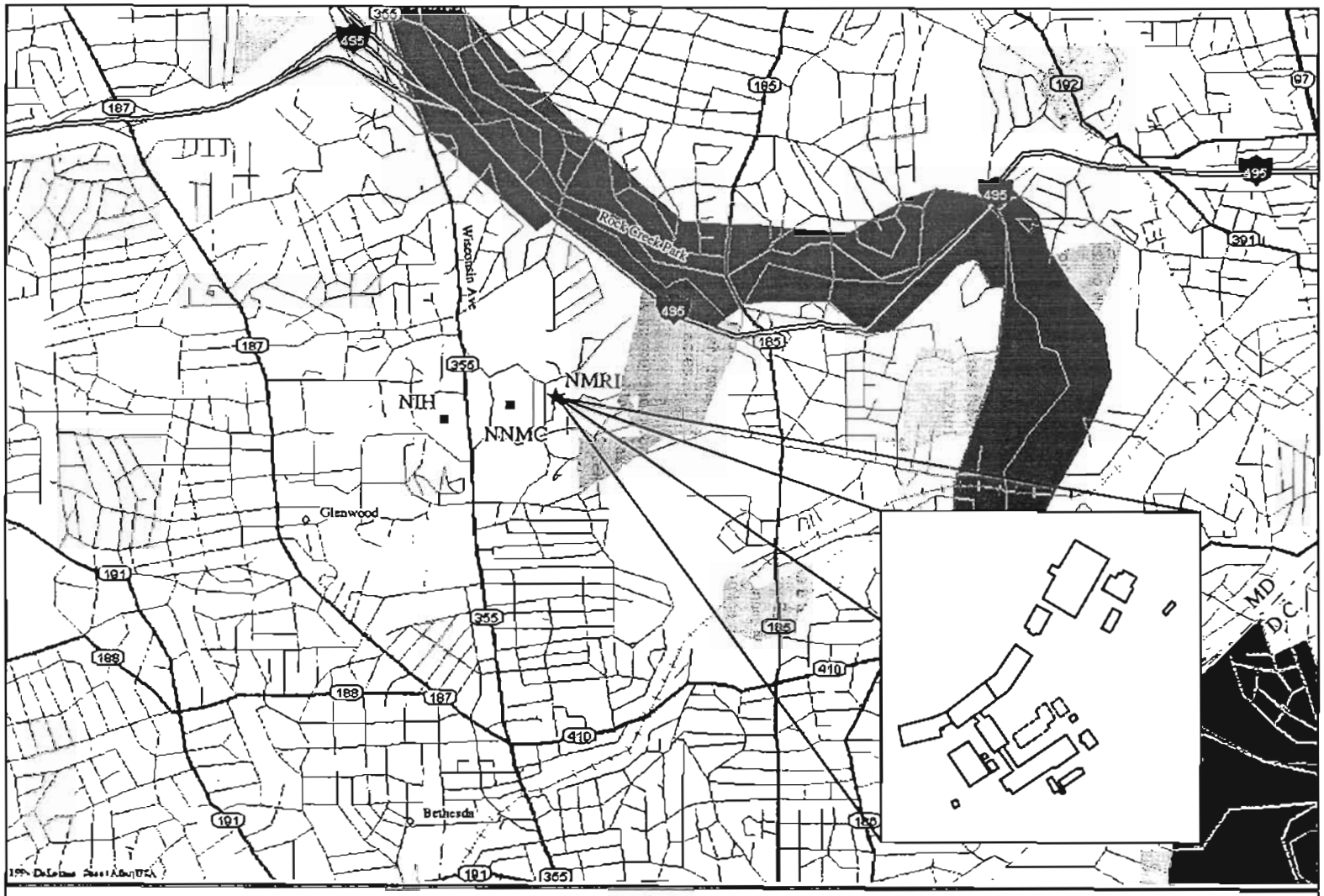
FD-01 NMRC Bethesda Footprint



The Environmental Company, Inc.

Figure 4-2 – Site Layout Map

Date: December 1997
Project Manager: S. Neese
Prepared By: D. Bedard
Project No: P-1257

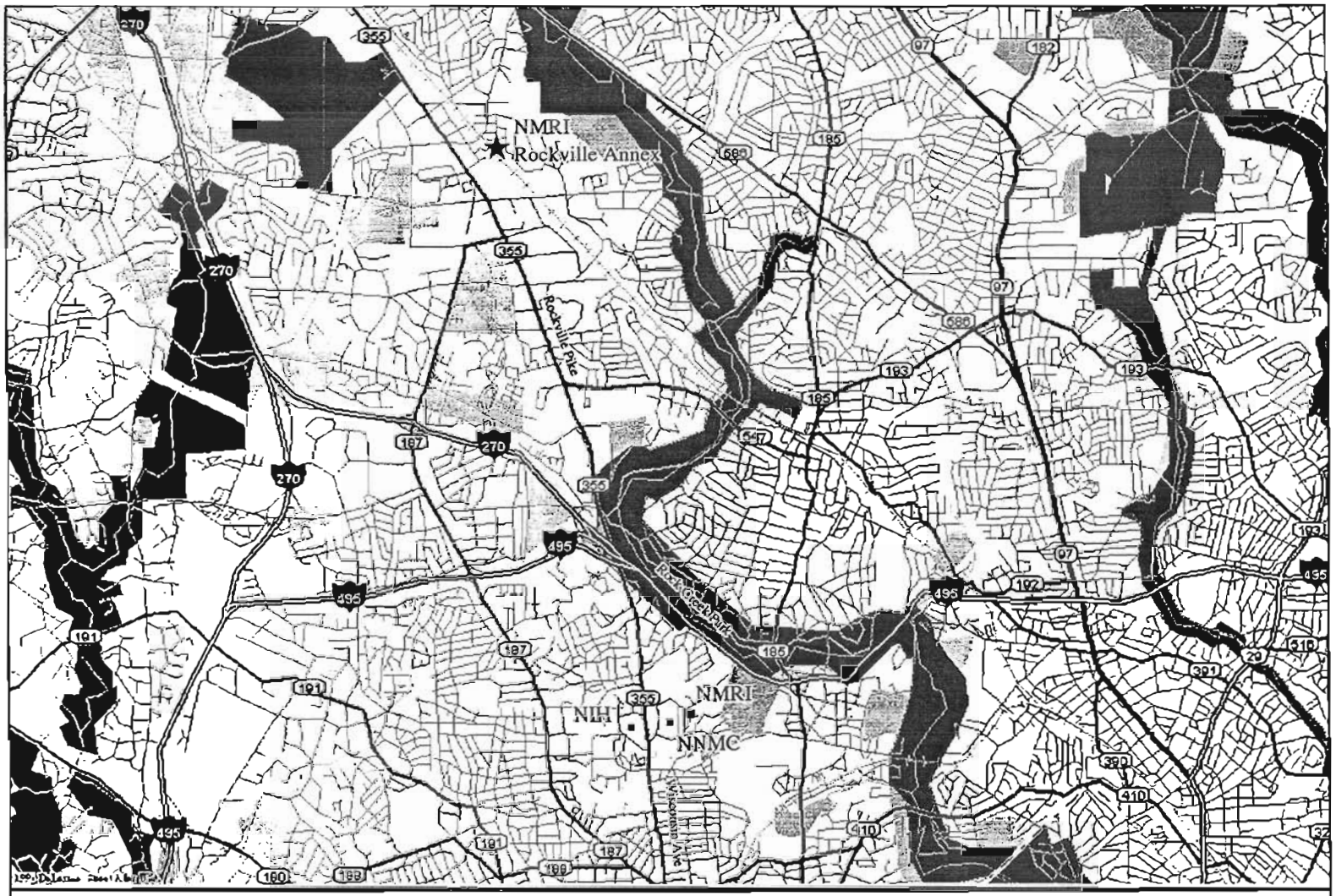


The Environmental Company, Inc.

Figure 1-1 – Site Location Map

N

Date: December 1997
Project Manager: S. Neese
Prepared By: D. Bedard
Project No: P-1257

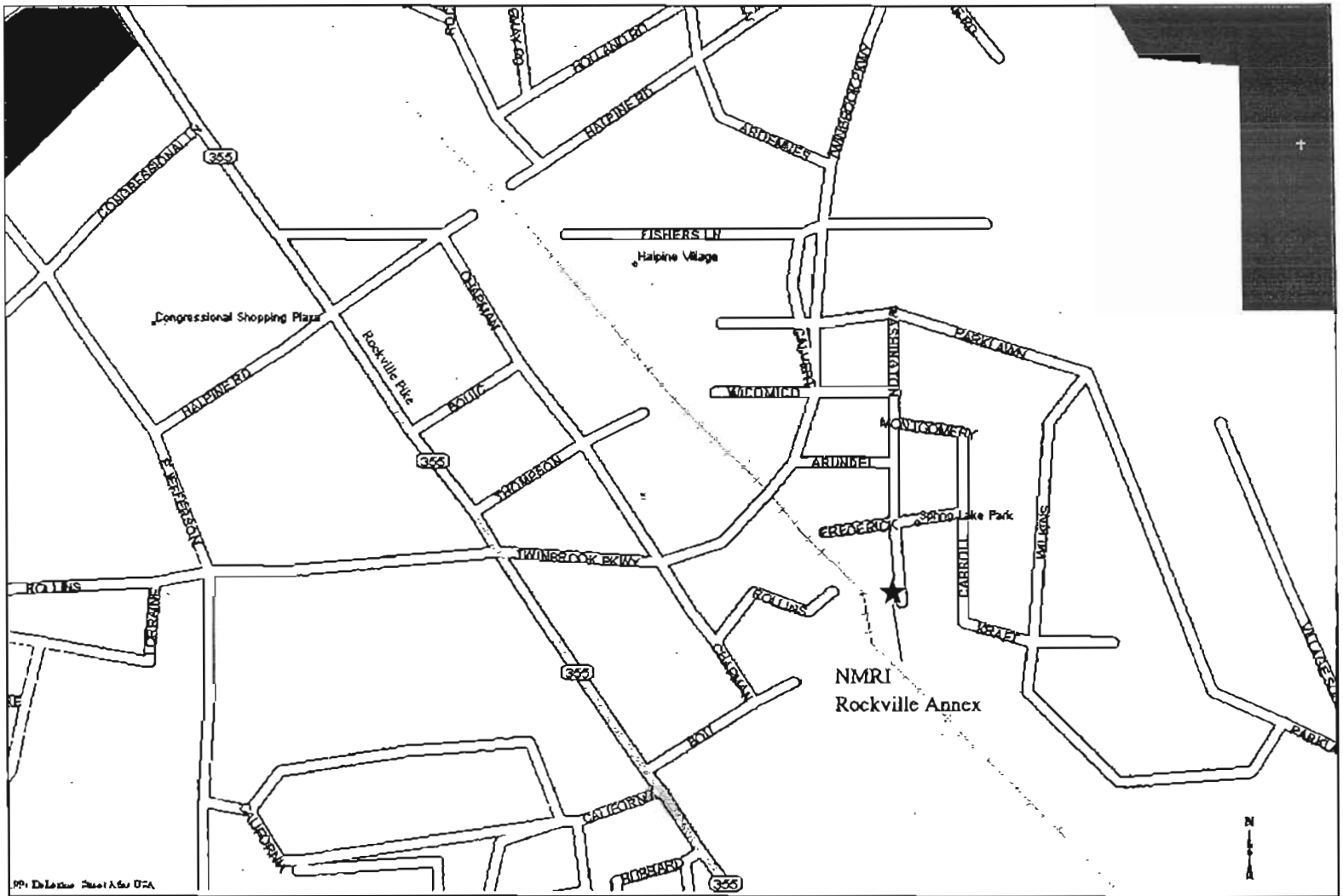


The Environmental Company, Inc.

Figure A1-1 -- Site Location Map

N

Date: December 1997
Project Manager: S. Neese
Prepared By: D. Bedarf
Project No: P-1257



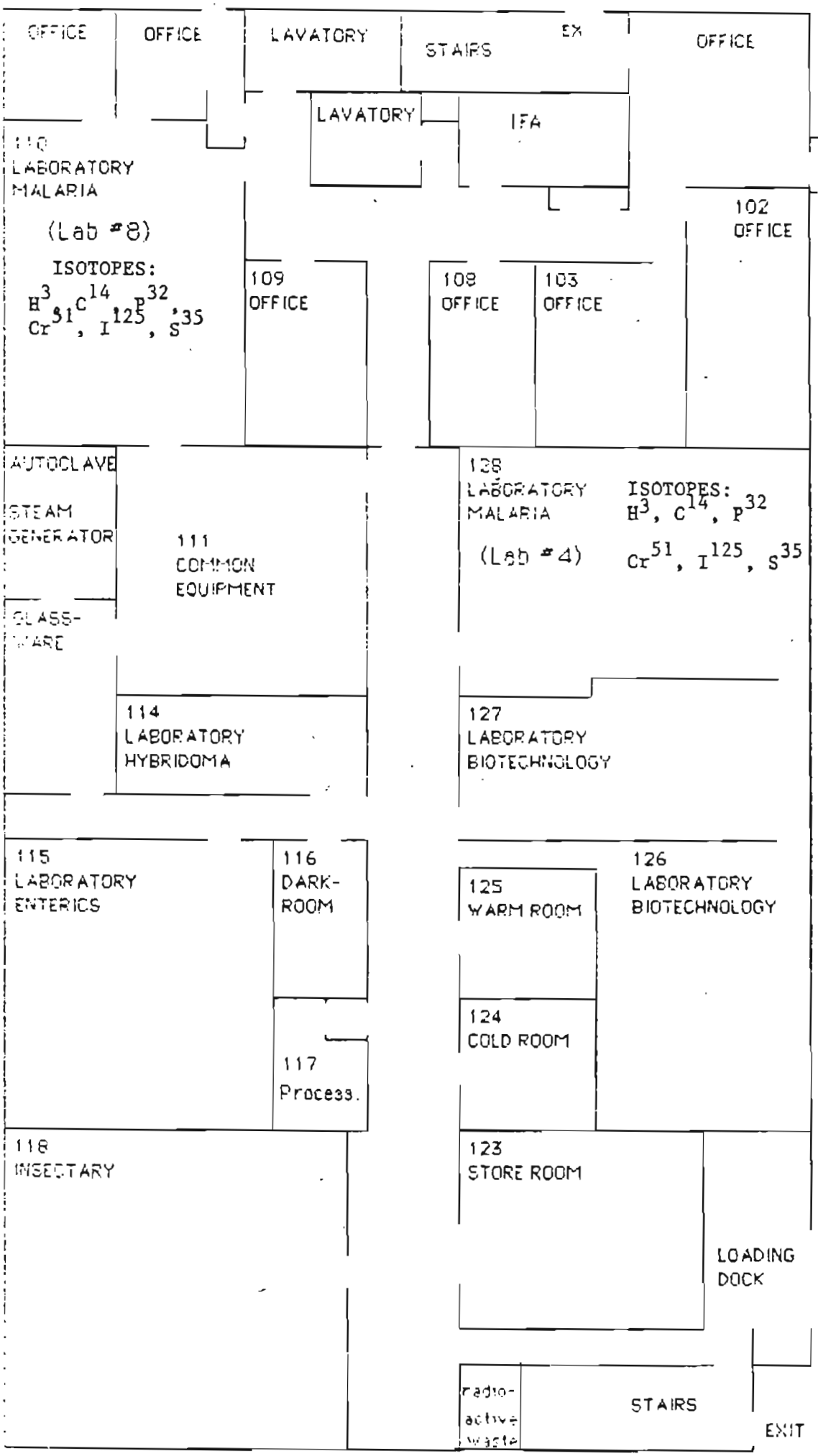
The Environmental Company, Inc.

Figure A1-2 -- Site Location Map Close-up

Date: December 1997
Project Manager: S. Neese
Prepared By: D. Bedard
Project No: P-1257

FD-02 NMRC Rockville Annex - First Floor

st Floor



NMRC
Rockville
Annex

first floor

Enclosure (3)

FD-03 NMRC Rockville Annex - Second Floor

! Floor

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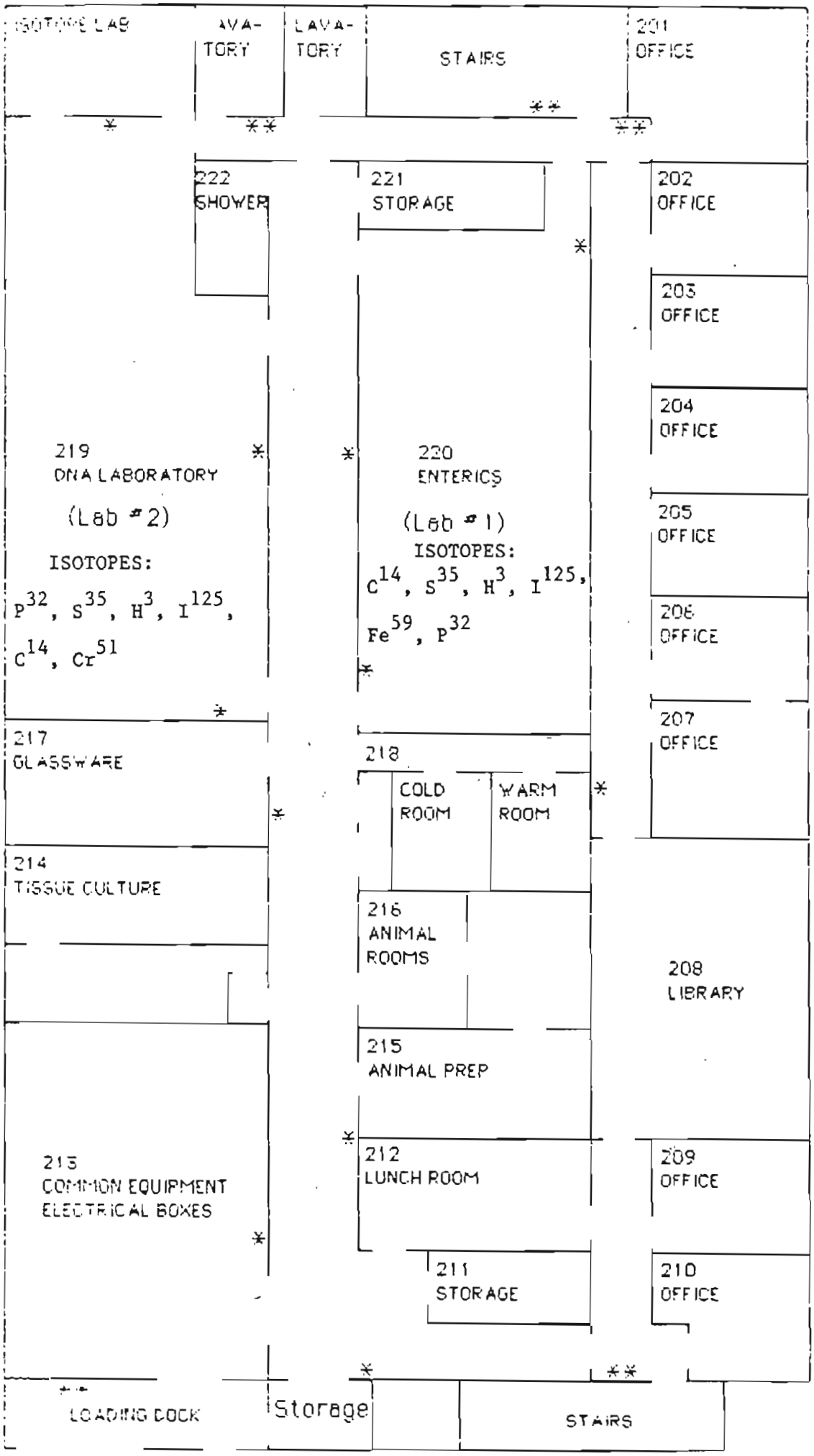
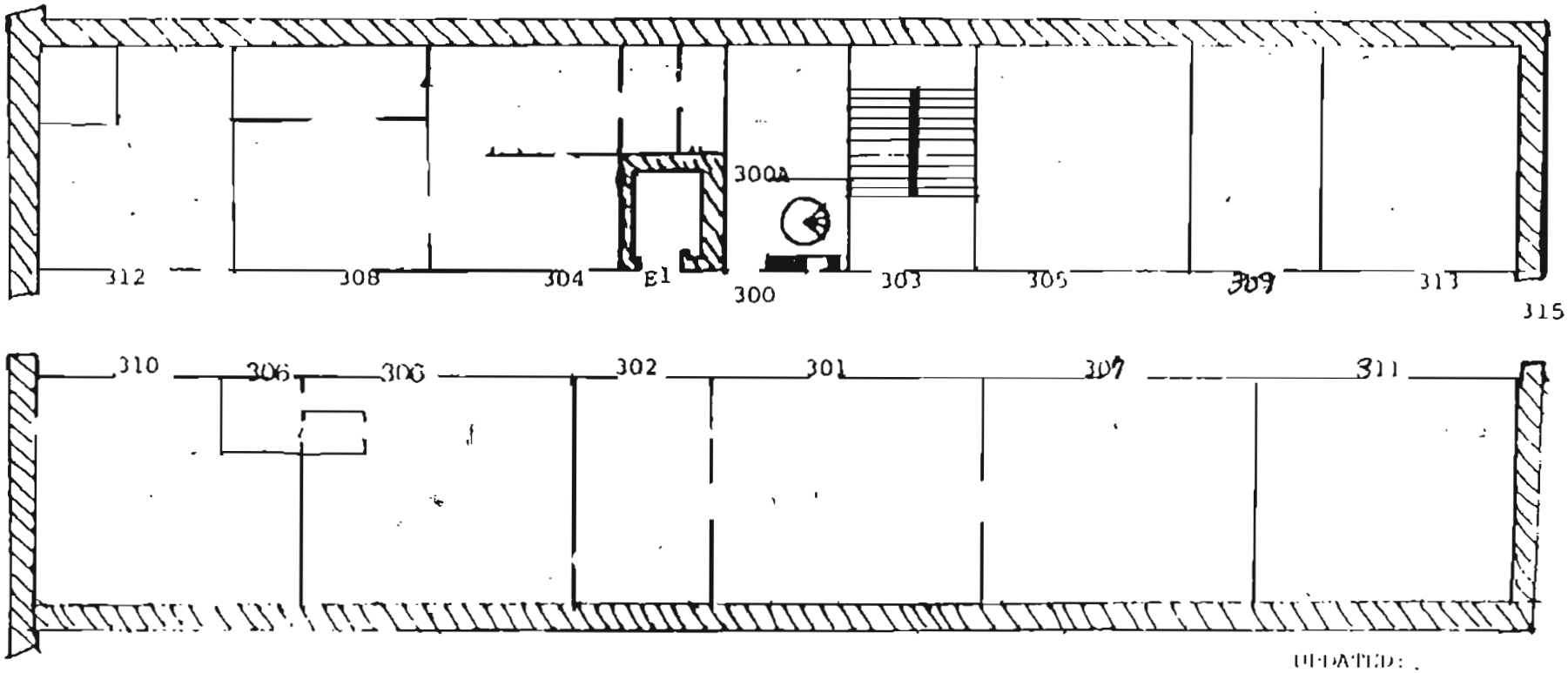
ghting
nit



NMRC
Rockville
Annex

second floor

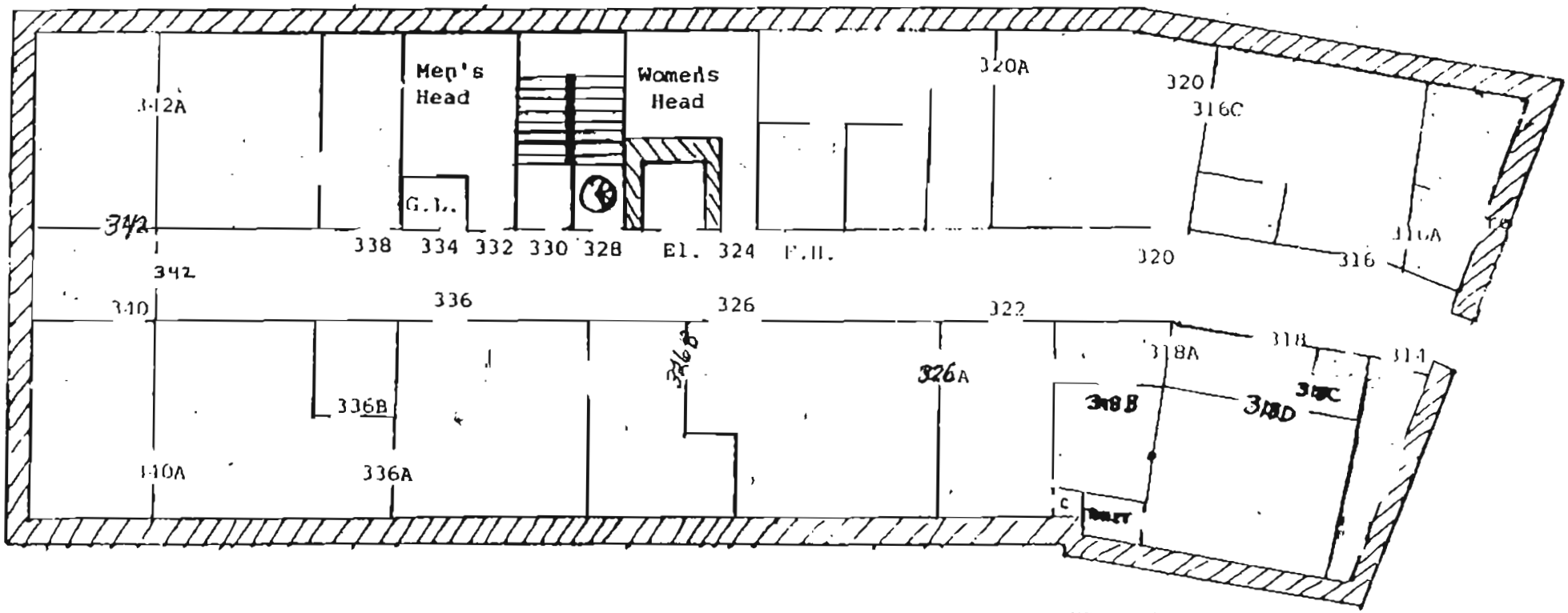
FD-04 NMRC Building 17 - Third Floor



UPDATED:
Elevator - E1

THIRD DECK
BUILDING 17

FD-05 NMRC Building 17A - Third Floor

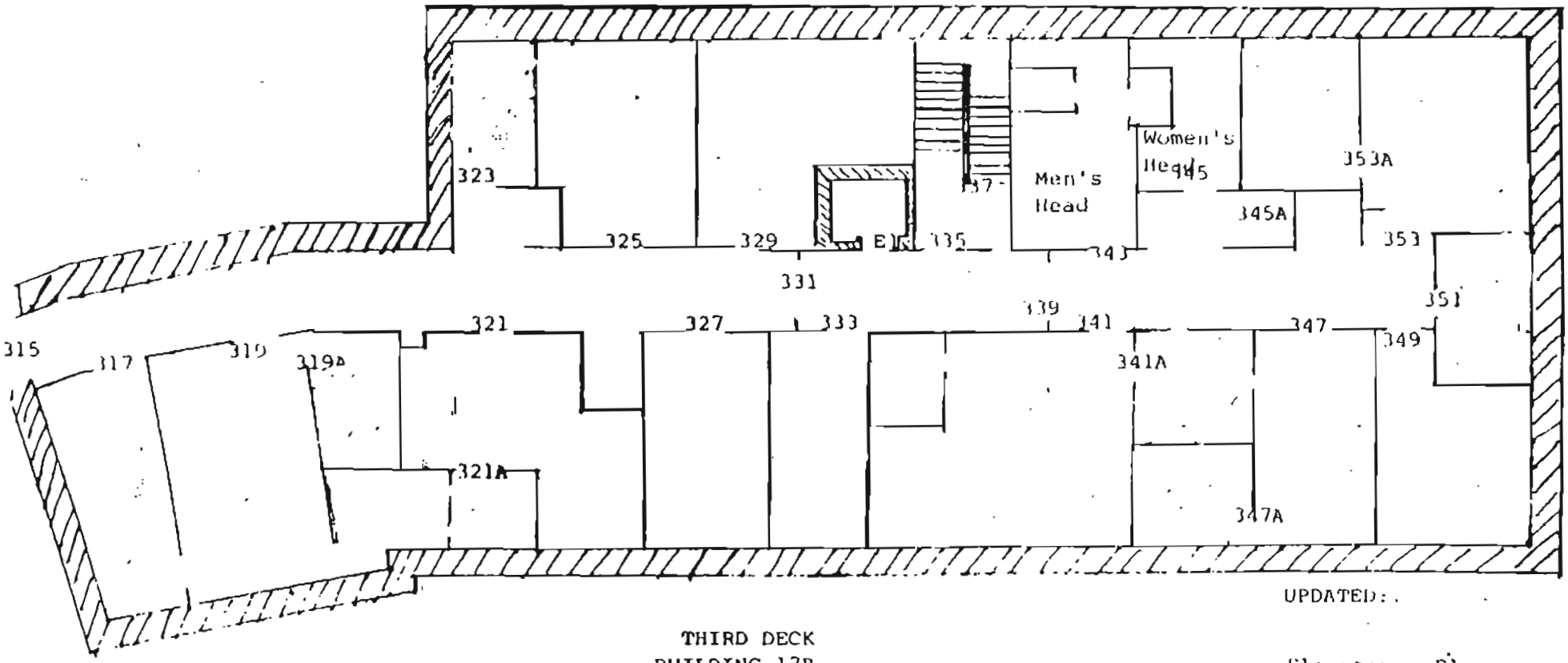


THIRD DECK
BUILDING 17A

UPDATED:

Elevator - El
Gear Locker - G.L.
Fire Hydrant - F.H.

FD-06 NMRC Building 17B - Third Floor

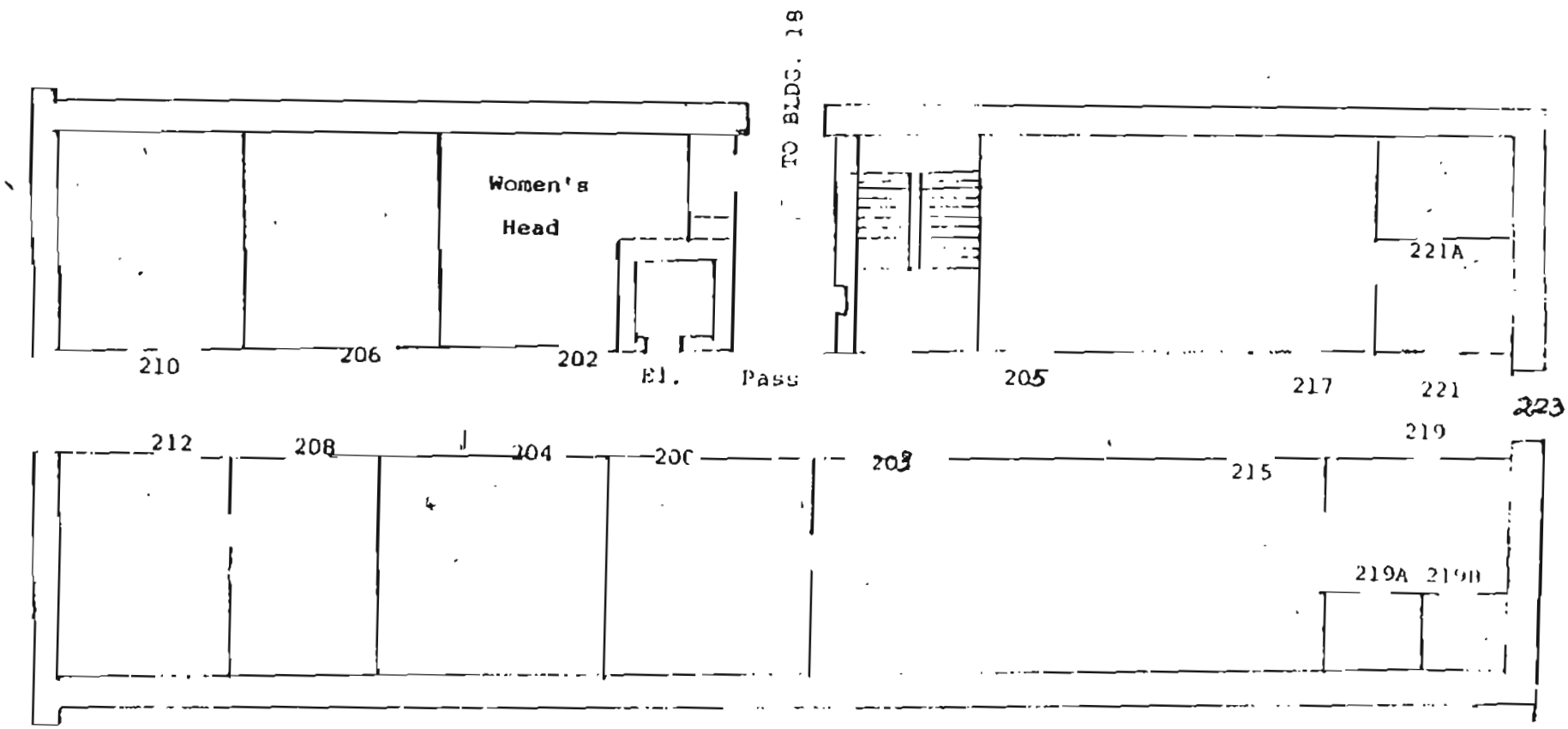


UPDATED:

THIRD DECK
BUILDING 17B

Elevator - El

FD-07 NMRC Building 17 - Second Floor



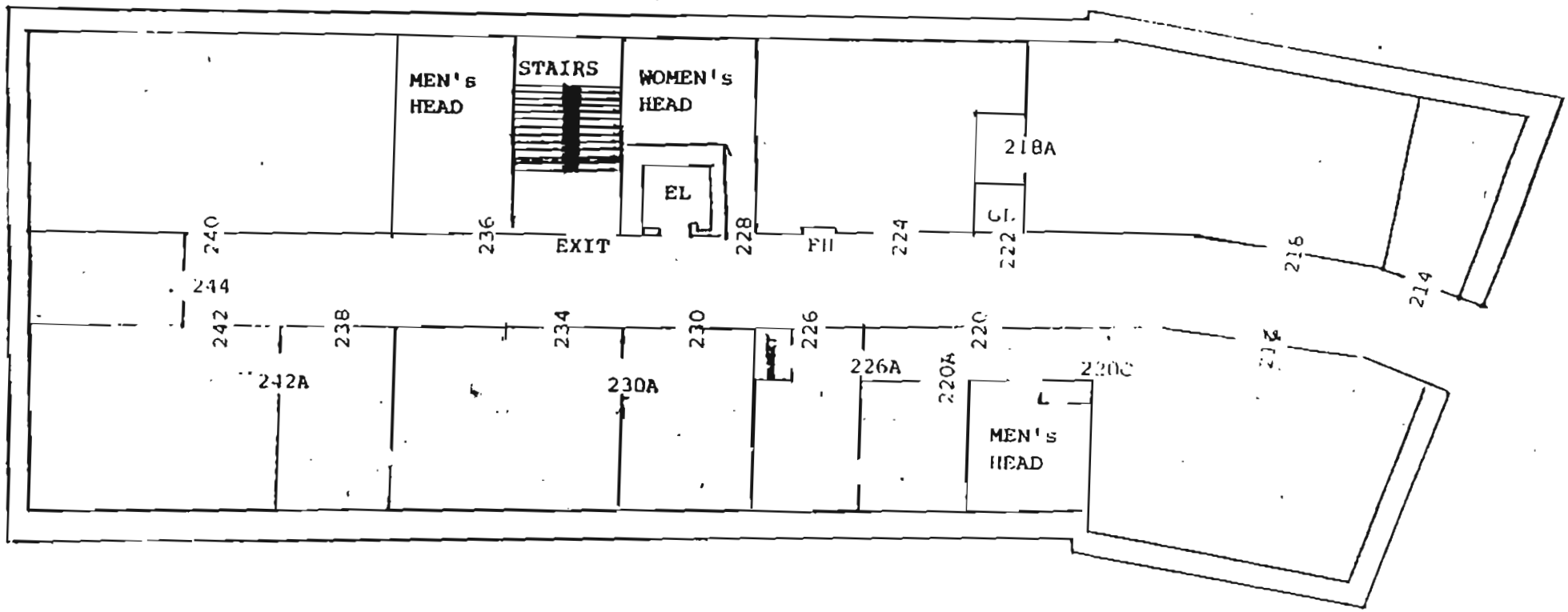
UPDATED:

Elevator: El

SECOND DECK
BUILDING 17

FD-08 NMRC Building 17A - Second Floor

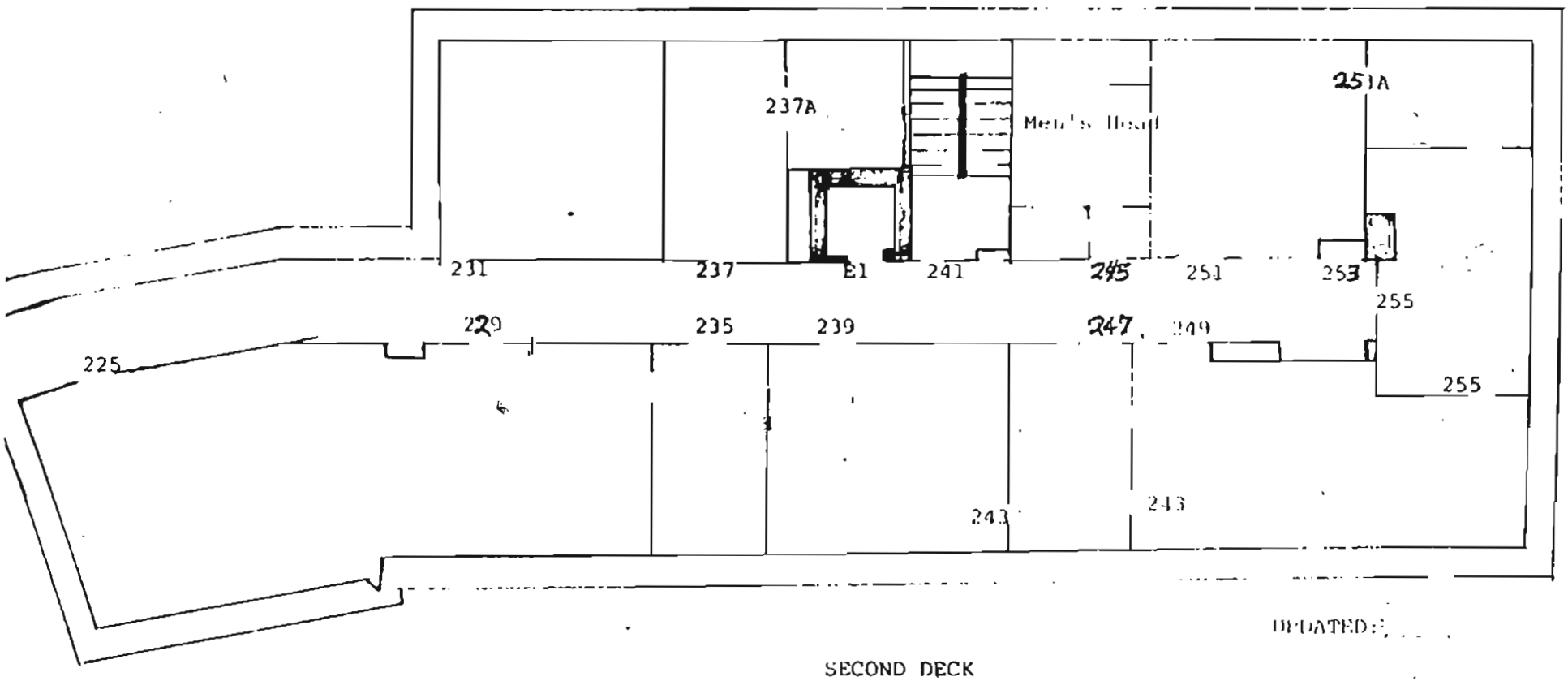
UPDATED:



SECOND DECK BUILDING 17A

EL - ELEVATOR
FH- FIRE HYDRANT

FD-09 NMRC Building 17B - Second Floor

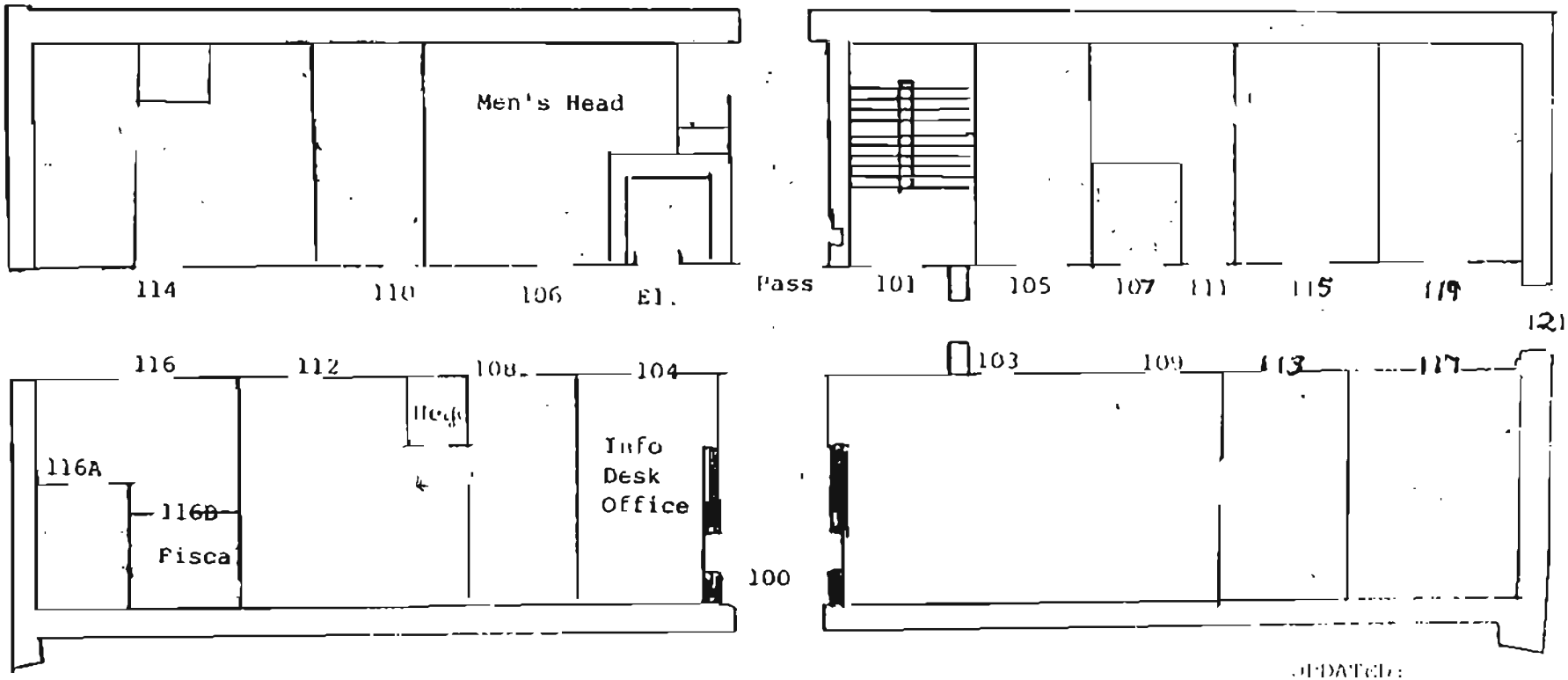


UPDATED:

SECOND DECK
BUILDING 17B

Elevator - E1

FD-10 NMRC Building 17 - First Floor

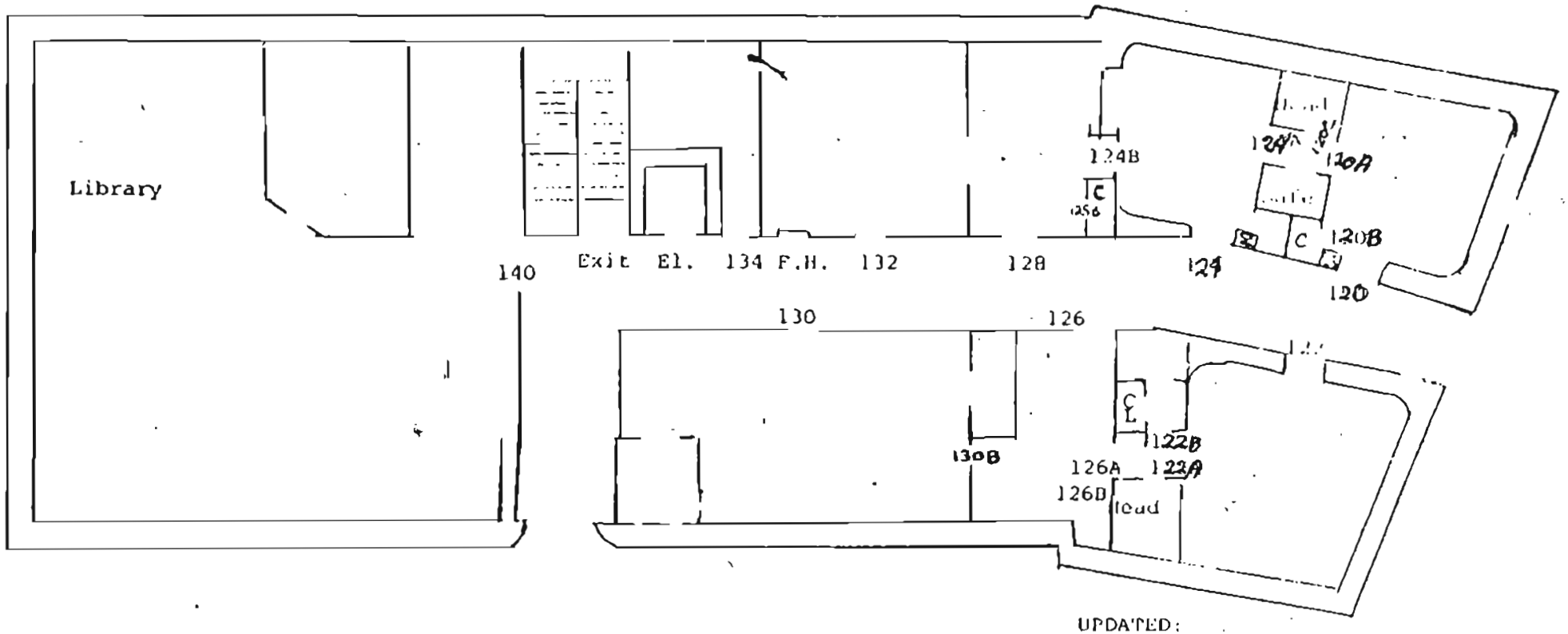


FIRST DECK
BUILDING 17

UPDATED:

Elevator - 121
Passageway - Pass

FD-11 NMRC Building 17A - First Floor

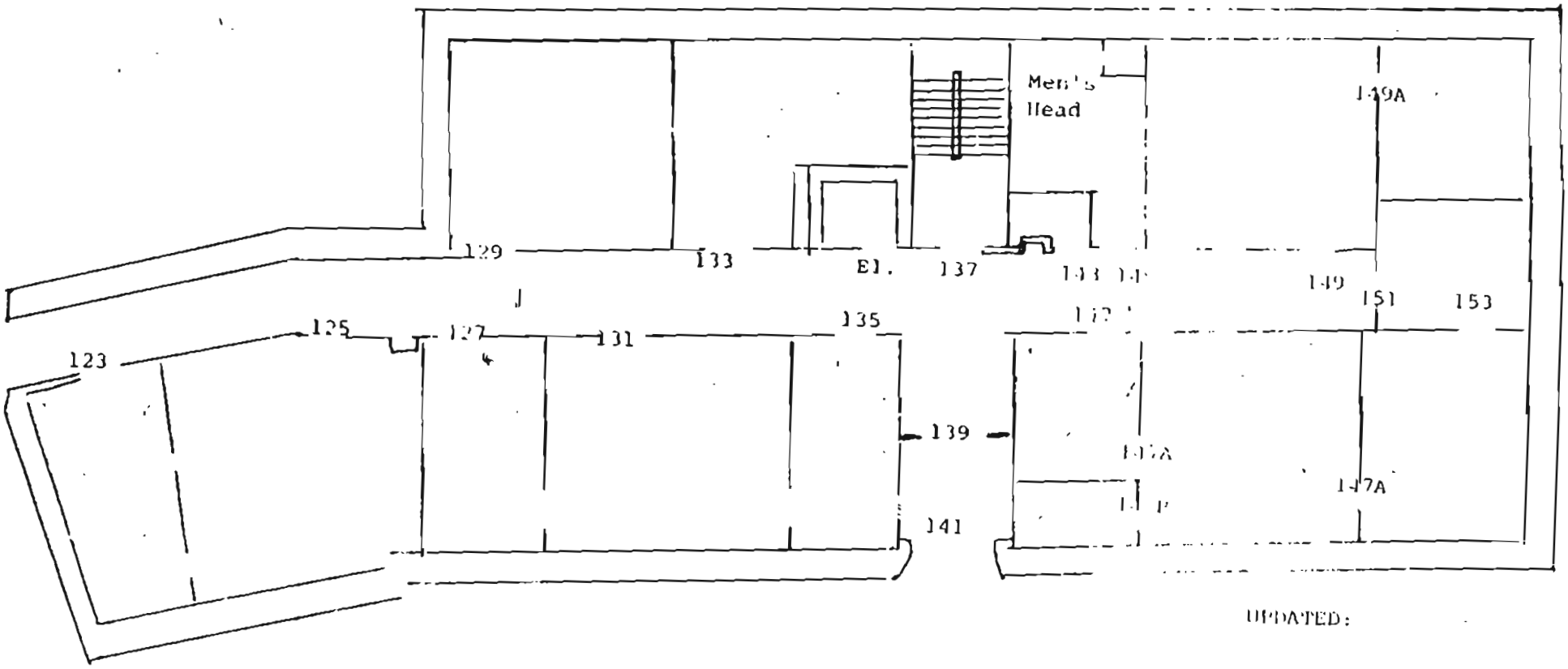


UPDATED:

FIRST DECK
BUILDING 17A

Elevator - El
Fire Hydrant - F.H.

FD-12 NMRC Building 17B - First Floor

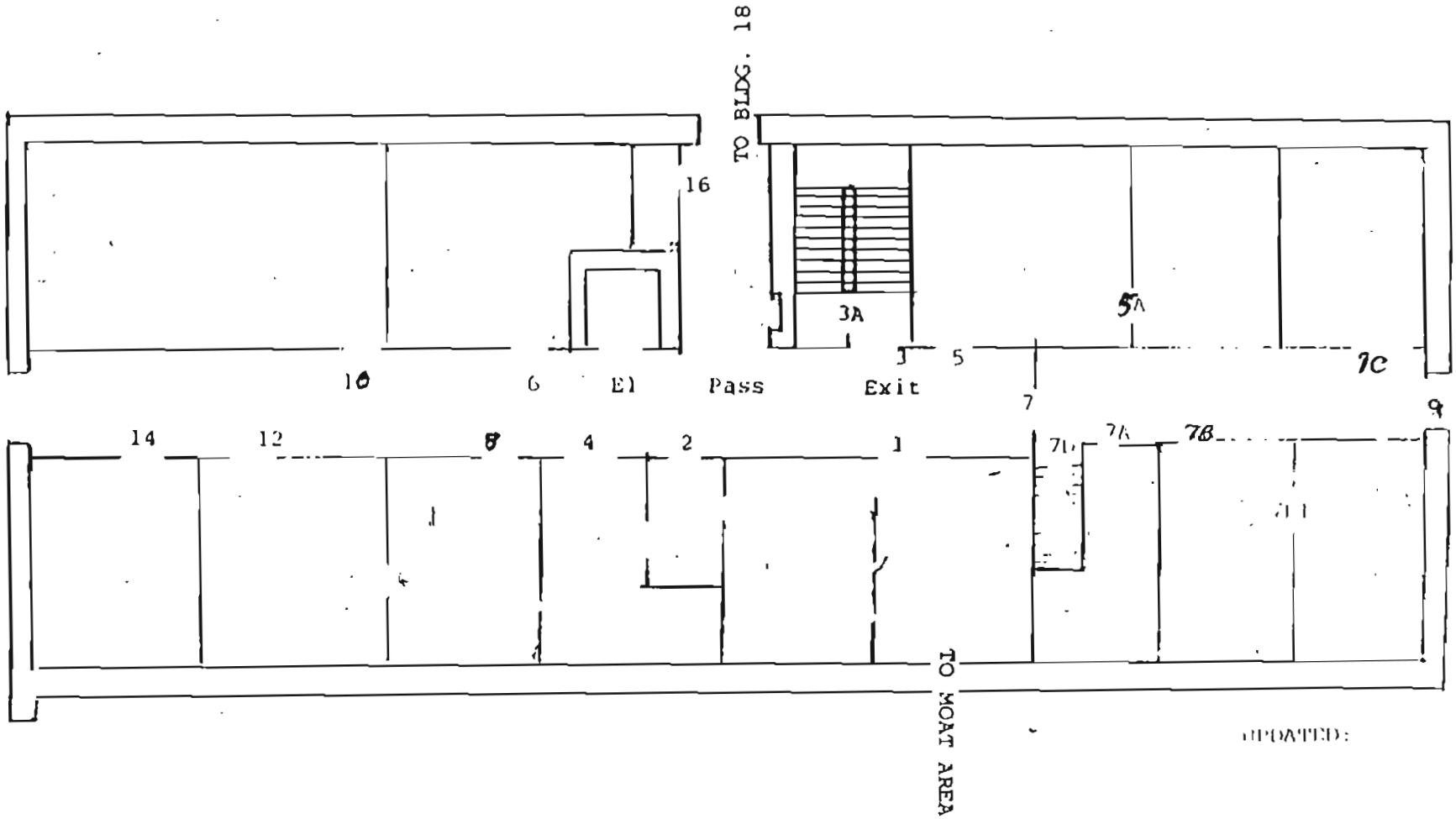


UPDATED:

FIRST DECK
BUILDING 17B

Elevator - El

FD-13 NMRC Building 17 - Basement Floor



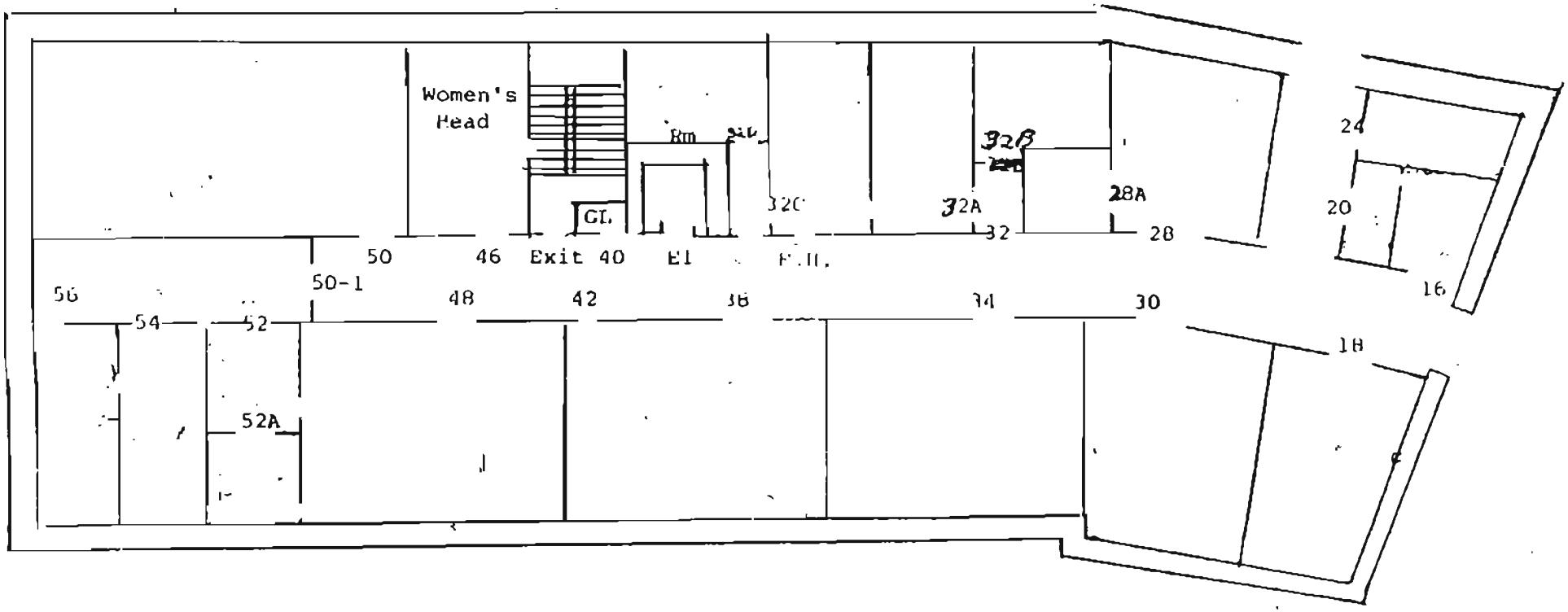
UPDATED:

BASEMENT
BUILDING 17

Elevator - El

2

FD-14 NMRC Building 17A - Basement Floor

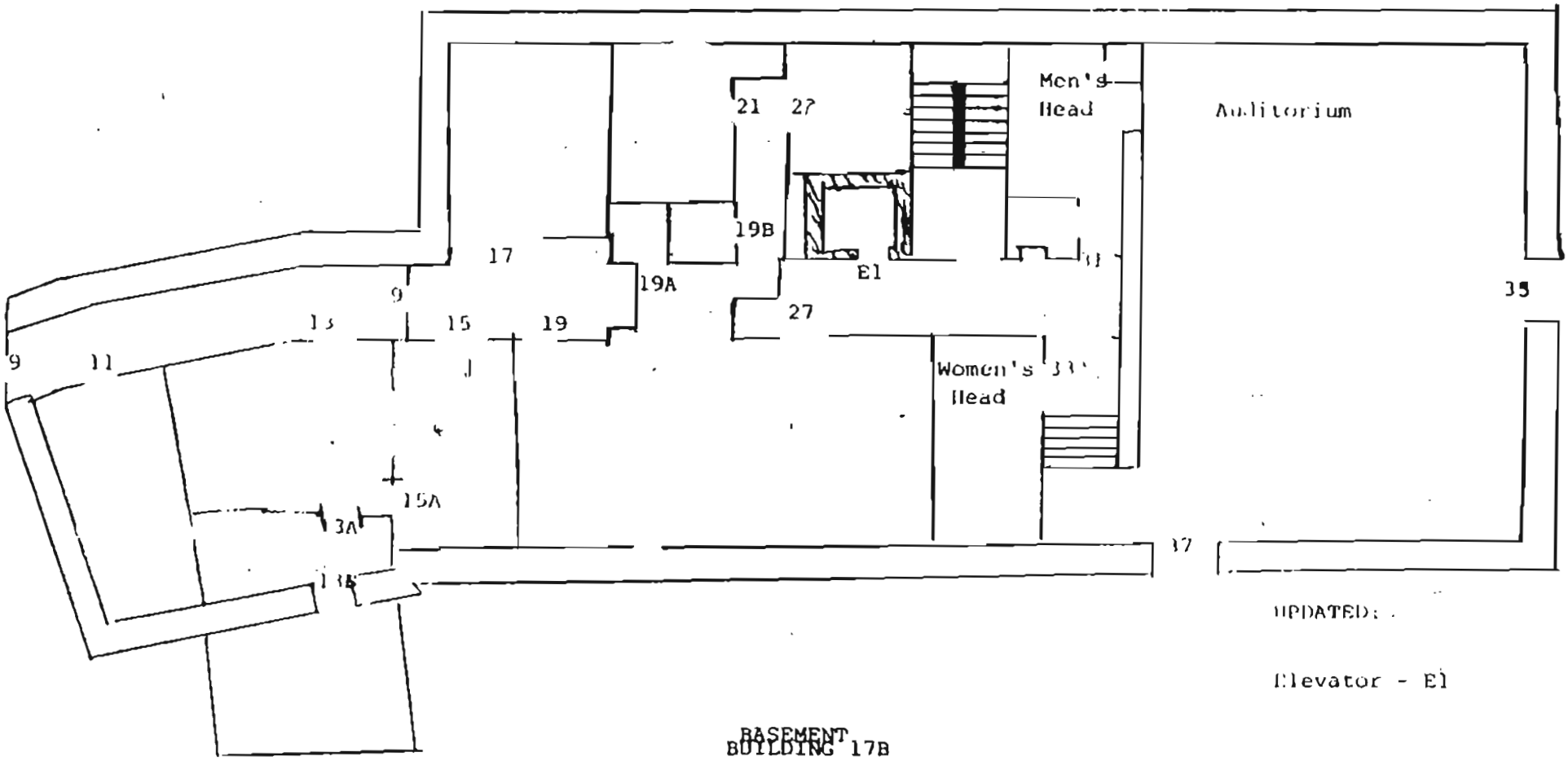


UPDATED:

Elevator - El
Fire Hydrant - F.H.

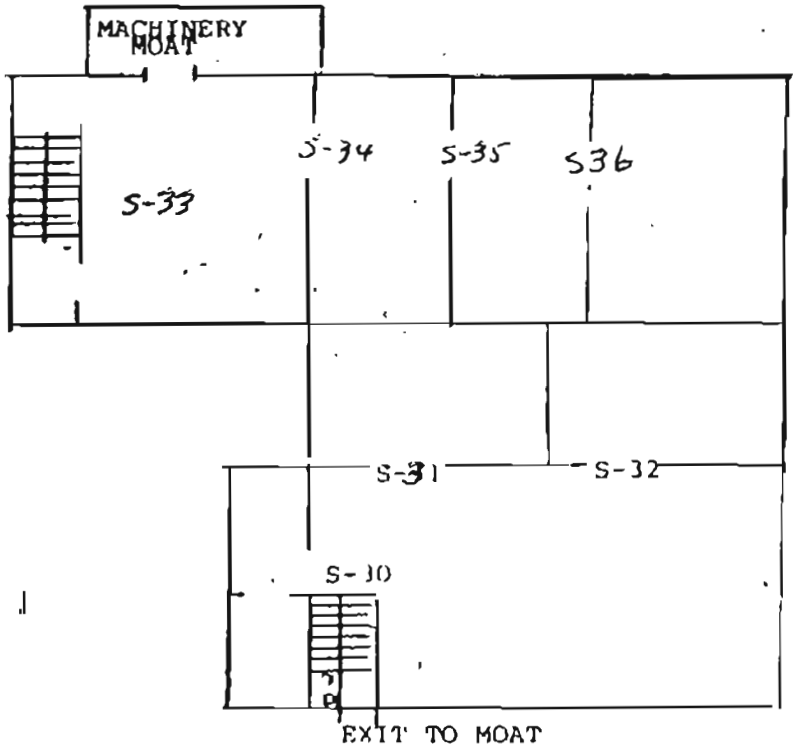
BASEMENT
BUILDING 175

FD-15 NMRC Building 17B - Basement Floor



BASEMENT
BUILDING 17B

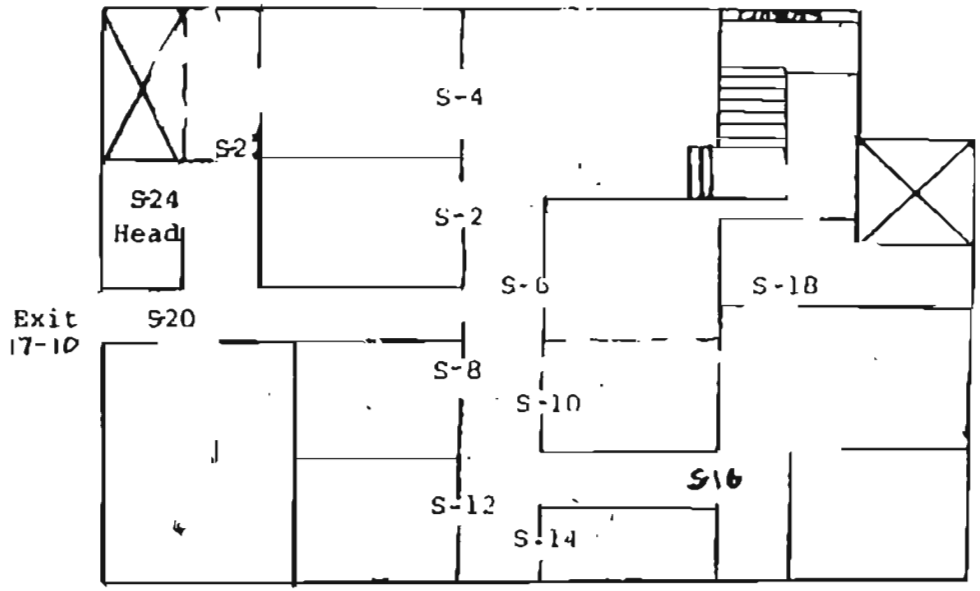
FD-16 NMRC Building 17 - Sub-Basement Floor



UPDATED:

SUB-BASEMENT
BUILDING NO. 17

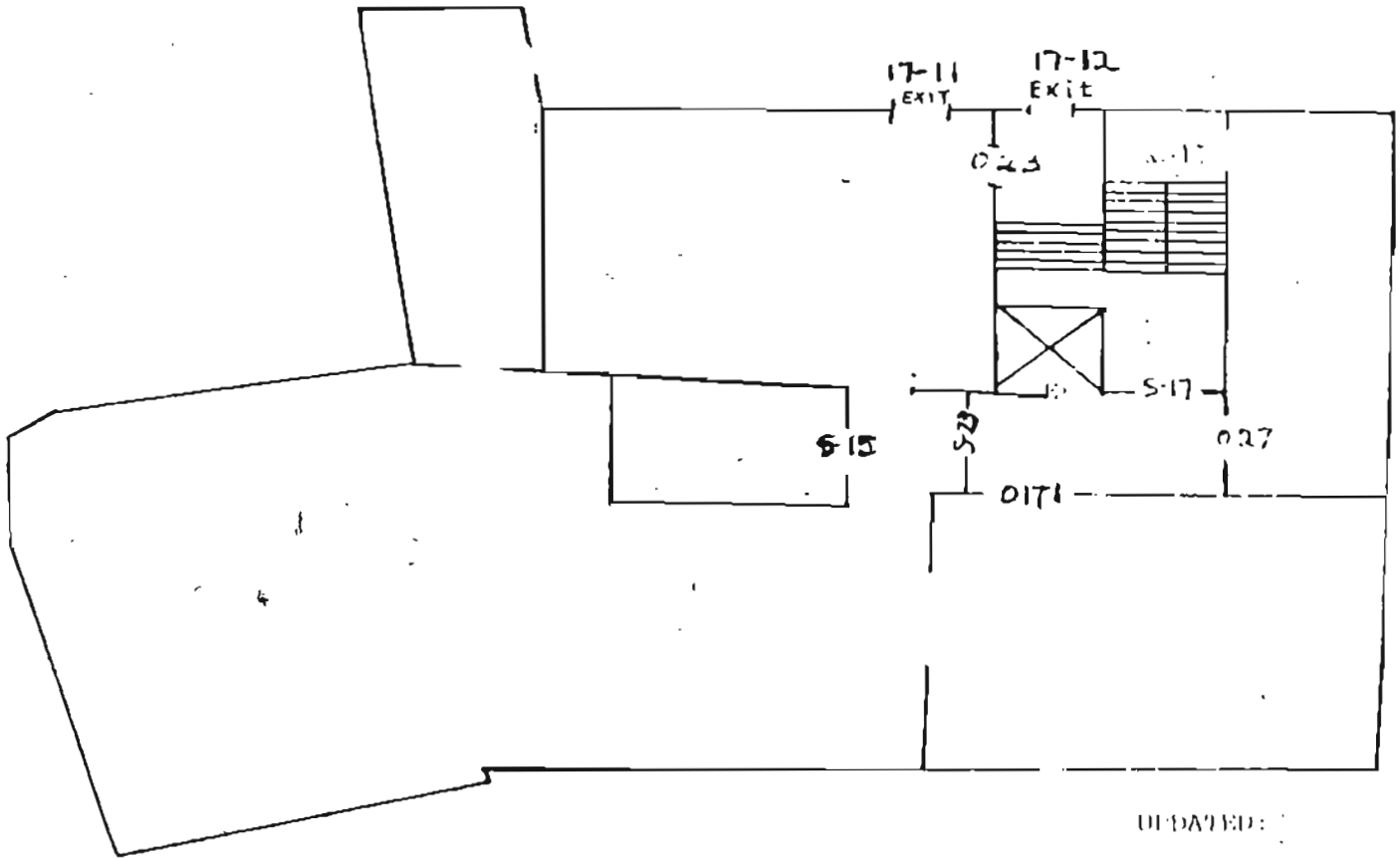
FD-17 NMRC Building 17A - Sub-basement Floor



UPDATED:

SUB-BASEMENT
BUILDING NO. 17A

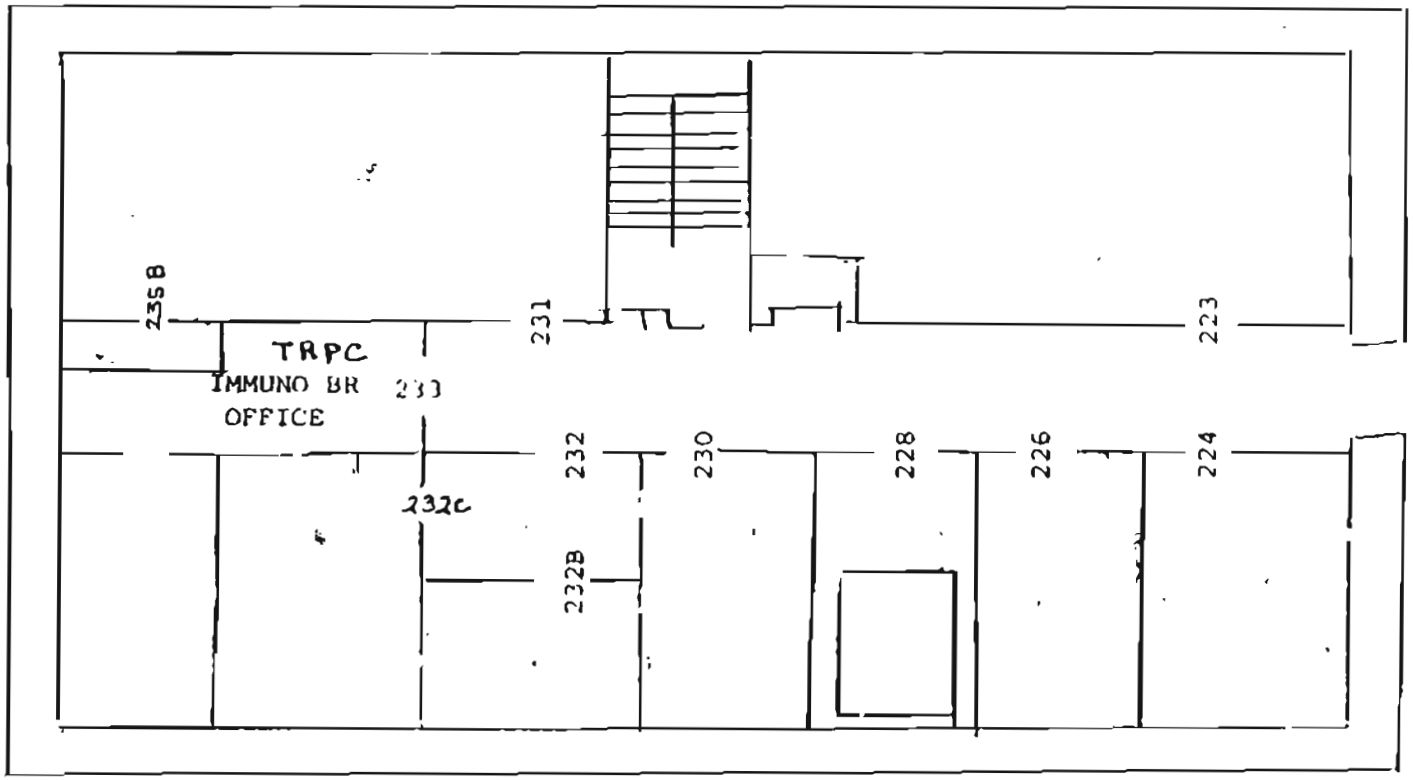
FD-18 NMRC Building 17B - Sub-Basement Floor



UPDATED:

SUB-BASEMENT
BUILDING NO. 17B

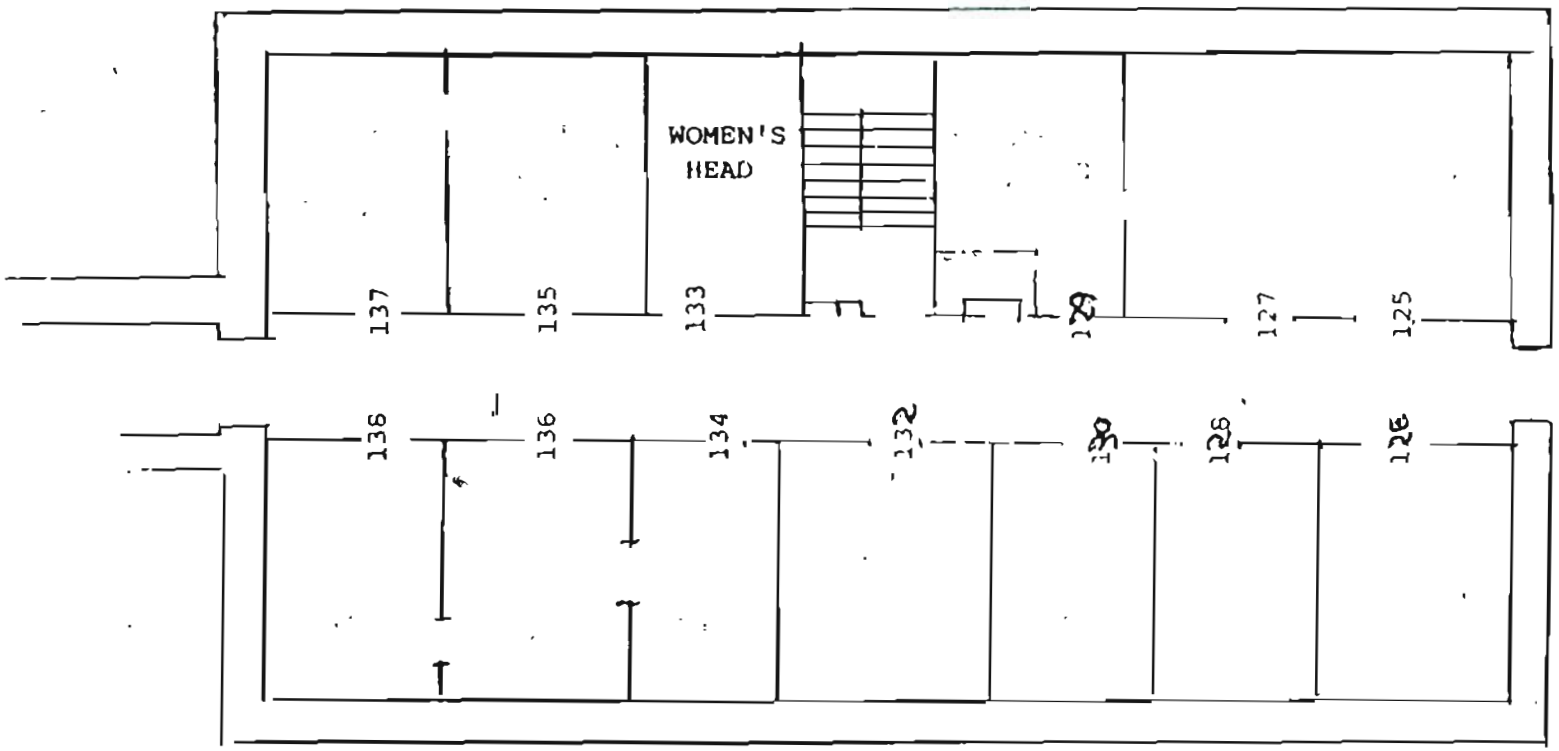
FD-19 NMRC Building 18 - Second Floor



UPDATED:

SECOND DECK
BUILDING 18

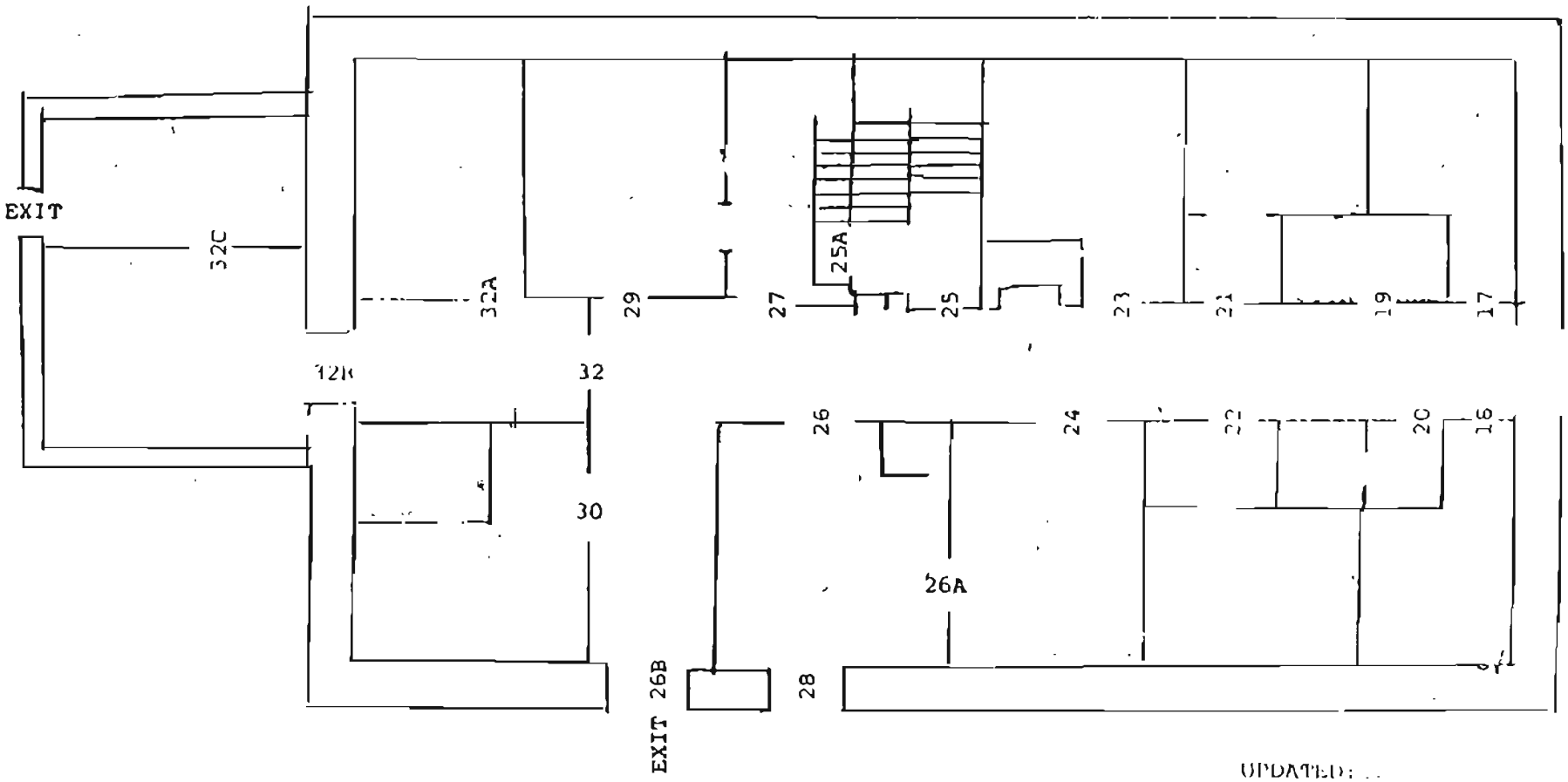
FD-20 NMRC Building 18 - First Floor



UPDATED:

FIRST DECK
BUILDING 18

FD-21 NMRC Building 18 - Basement Floor

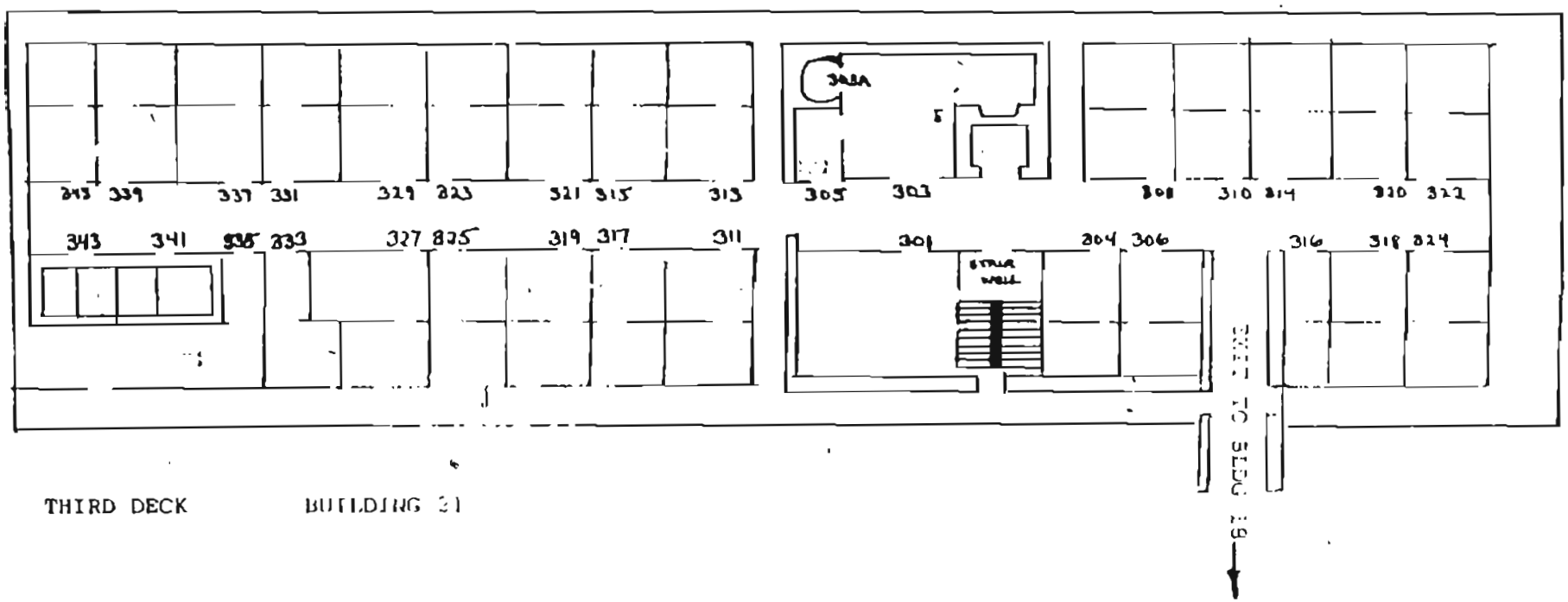


UPDATED: ..

BASEMENT BUILDING 18

FD-22 NMRC Building 21 - Third Floor

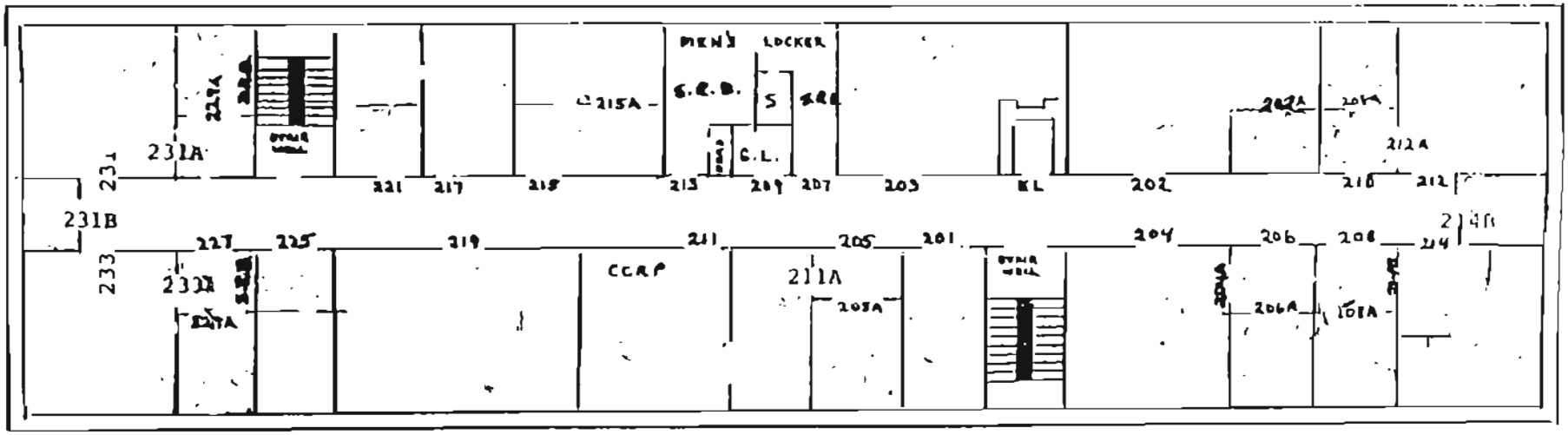
UPDATED:



THIRD DECK BUILDING 21

FD-23 NMRC Building 21 - Second Floor

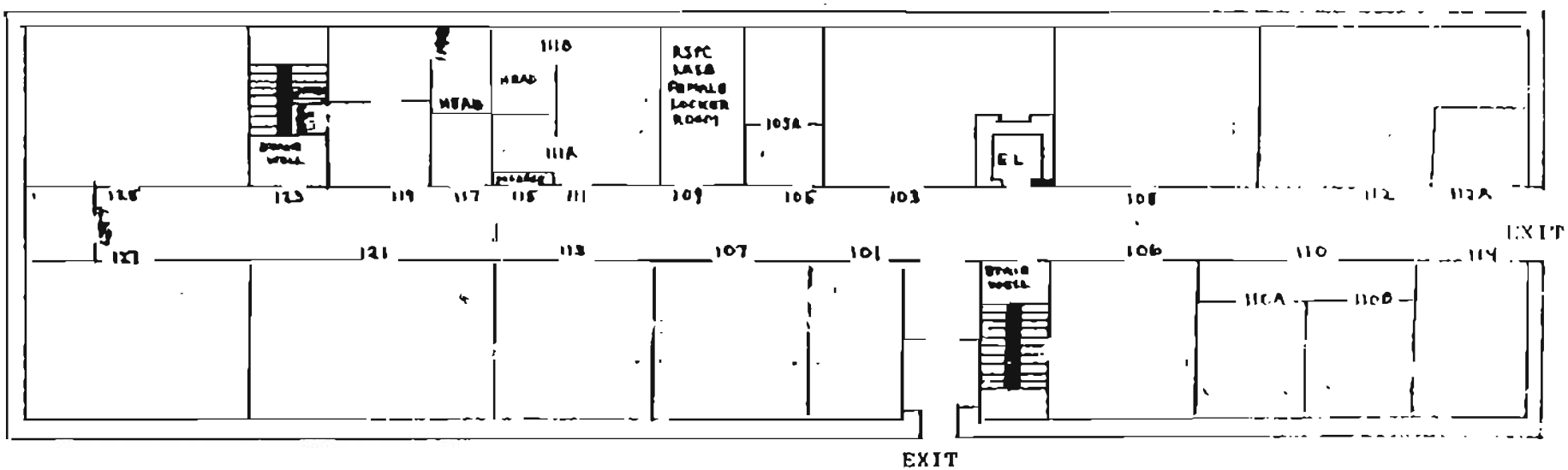
UPDATED:



SECOND DECK BUILDING 21

FD-24 NMRC Building 21 - First Floor

UPDATED:

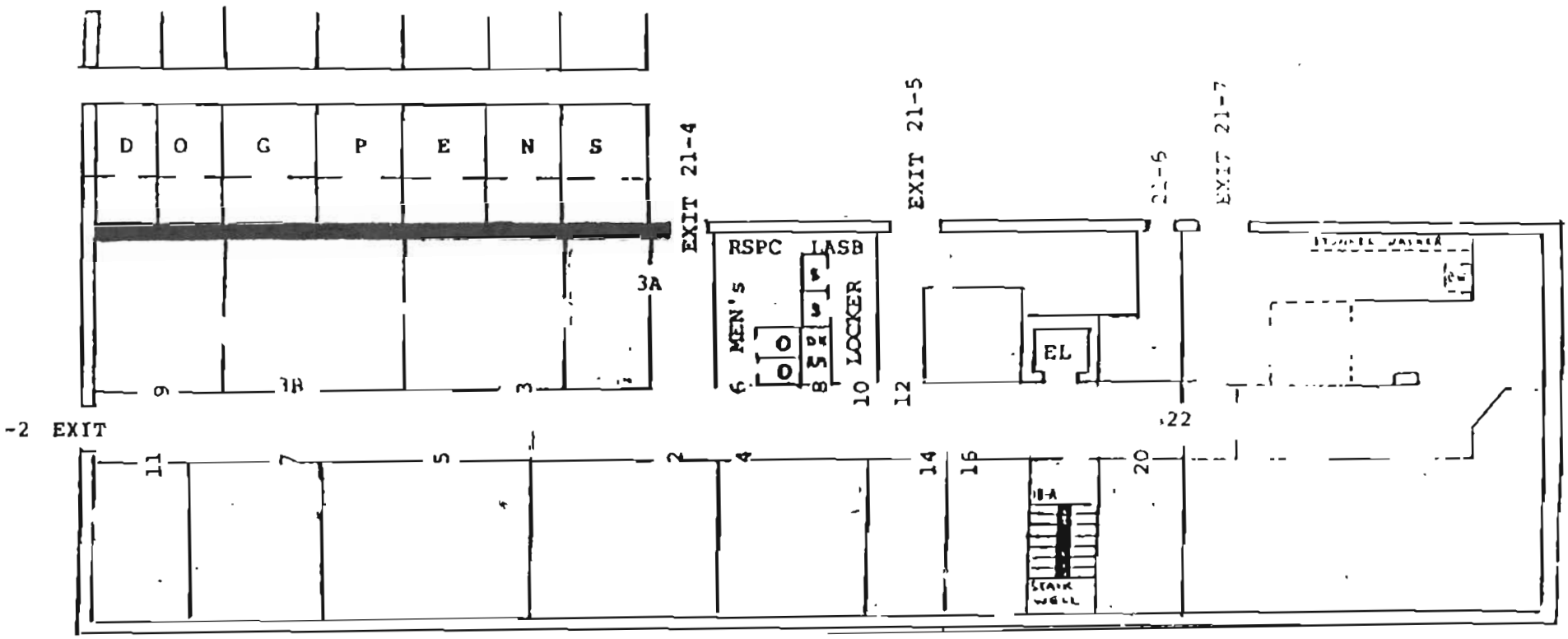


FIRST DECK

BUILDING 21

FD-25 NMRC Building 21 - Basement Floor

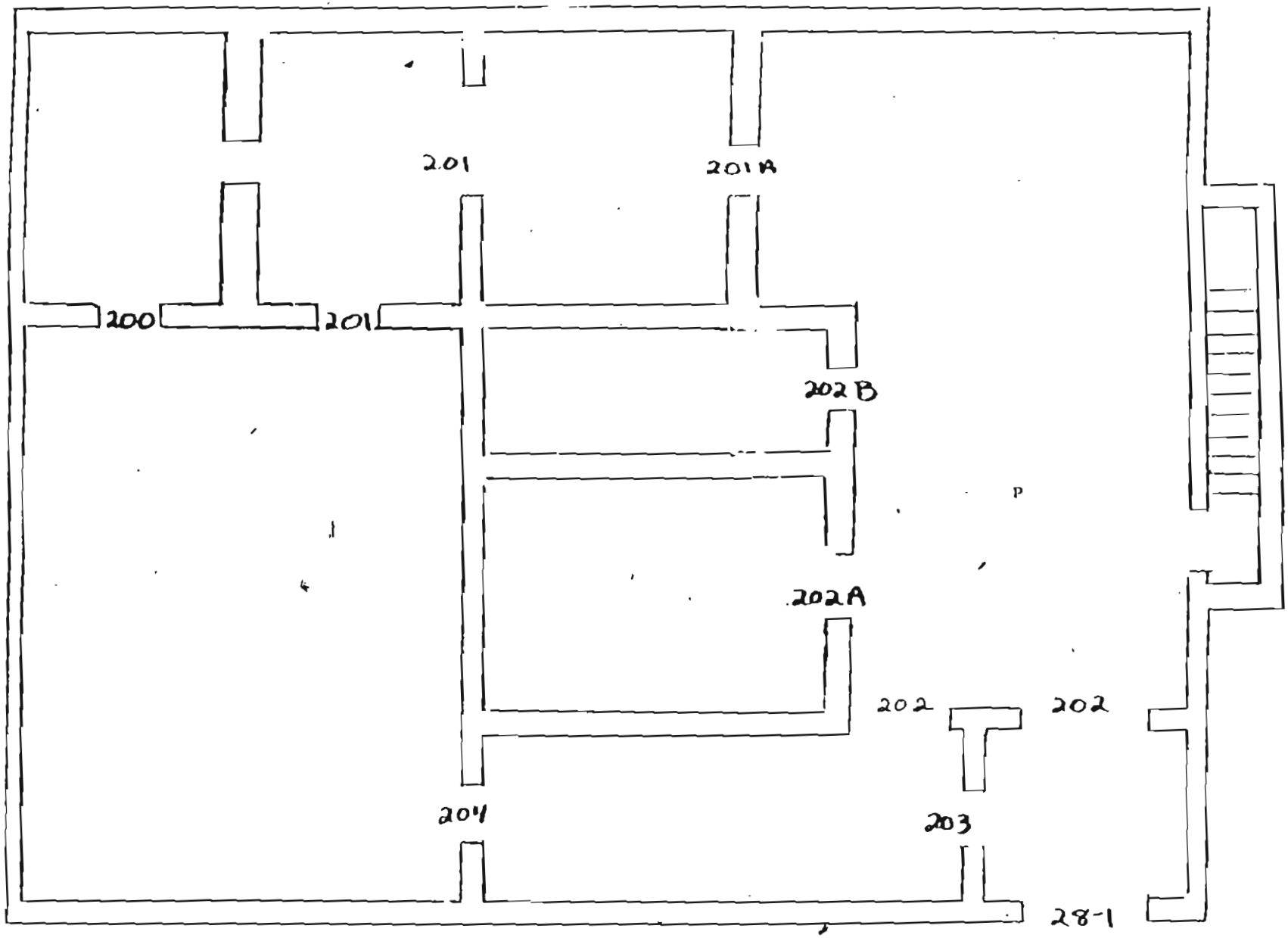
UPDATED:



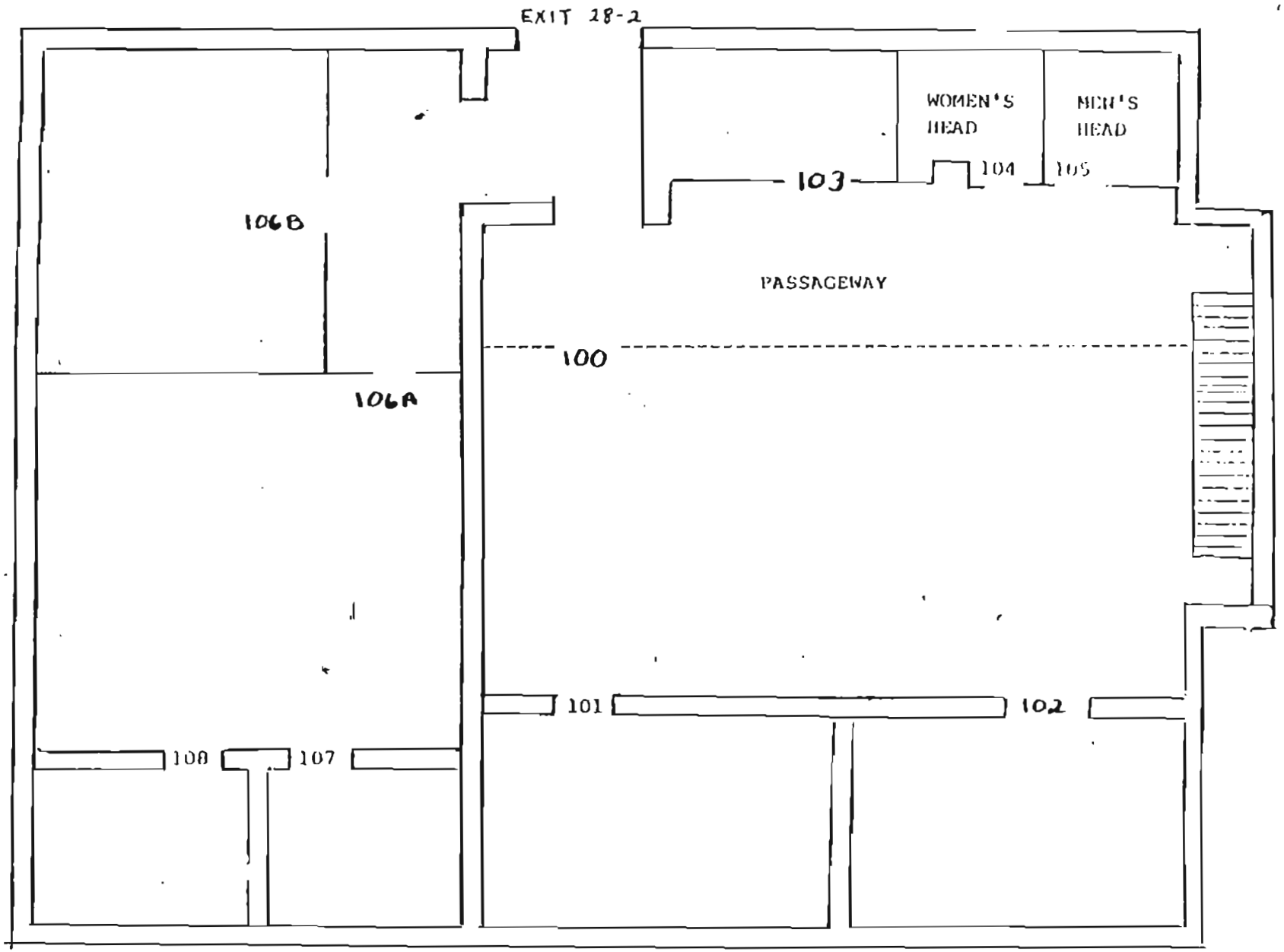
BASEMENT NEW ANIMAL HOUSE - BUILDING NUMBER 21

FD-26 NMRC Building 28 - First Floor

UNDER RECONSTRUCTION

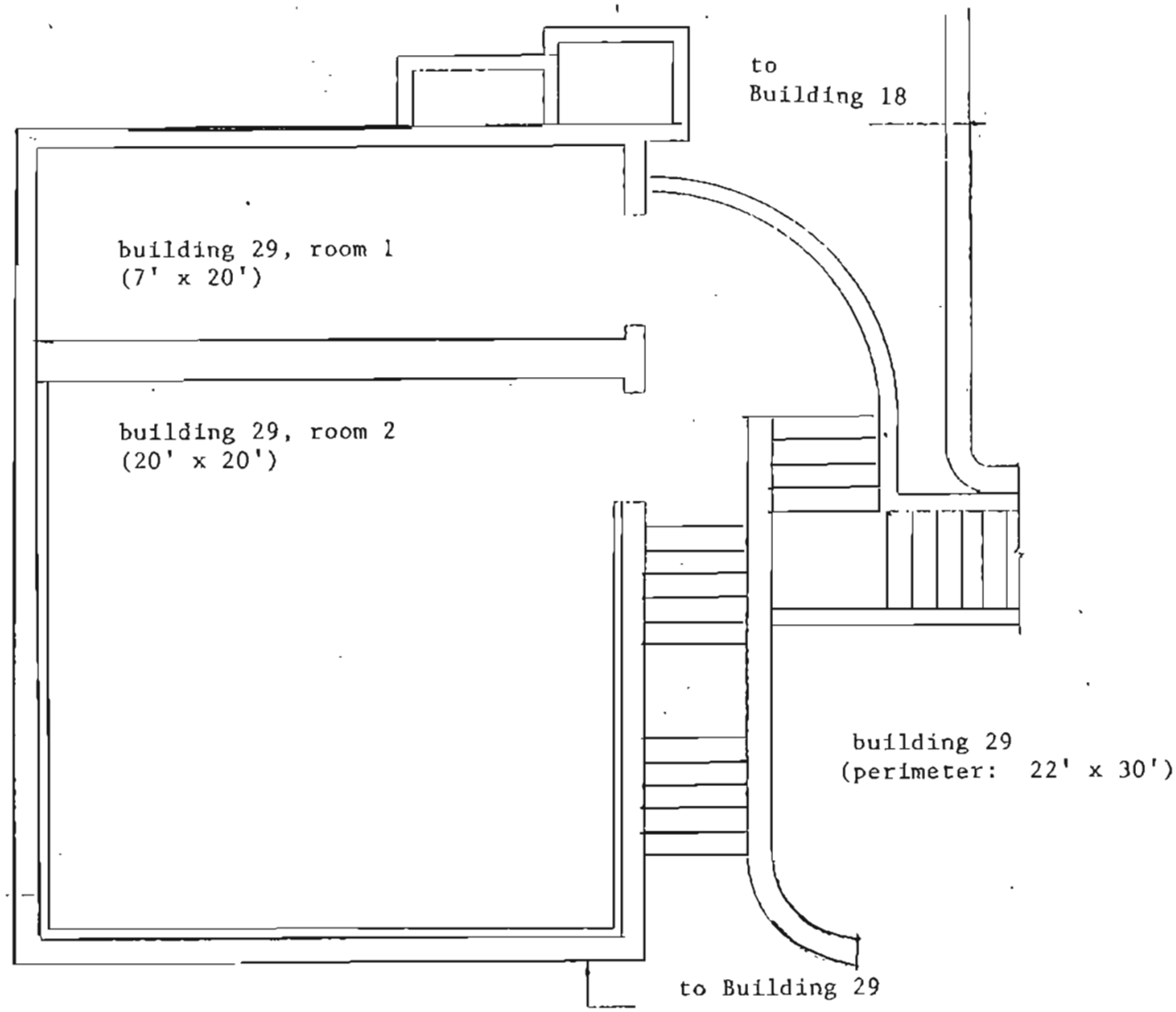


FD-27 NMRC Building 28 - Basement Floor

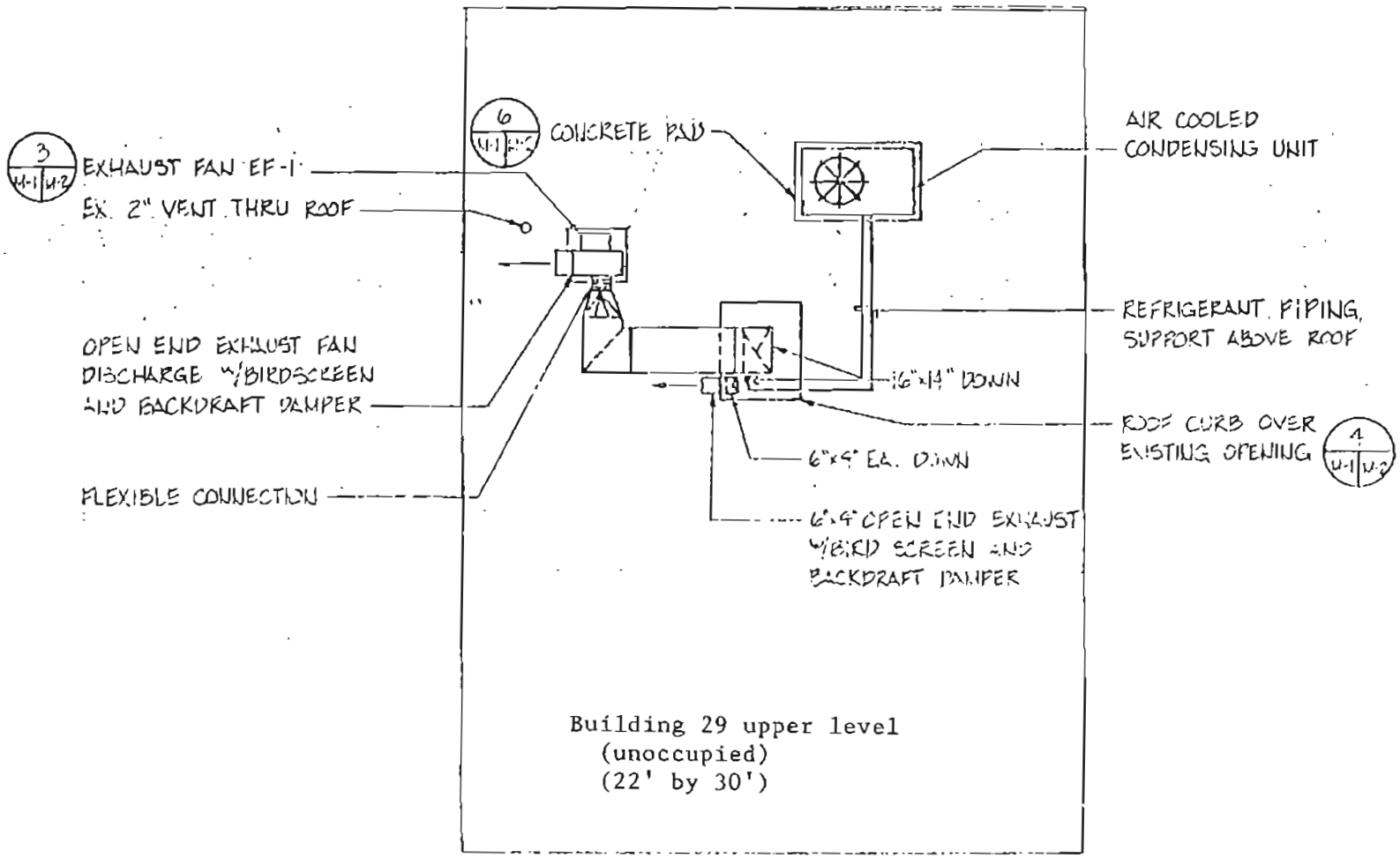


BASEMENT BUILDING NUMBER 28

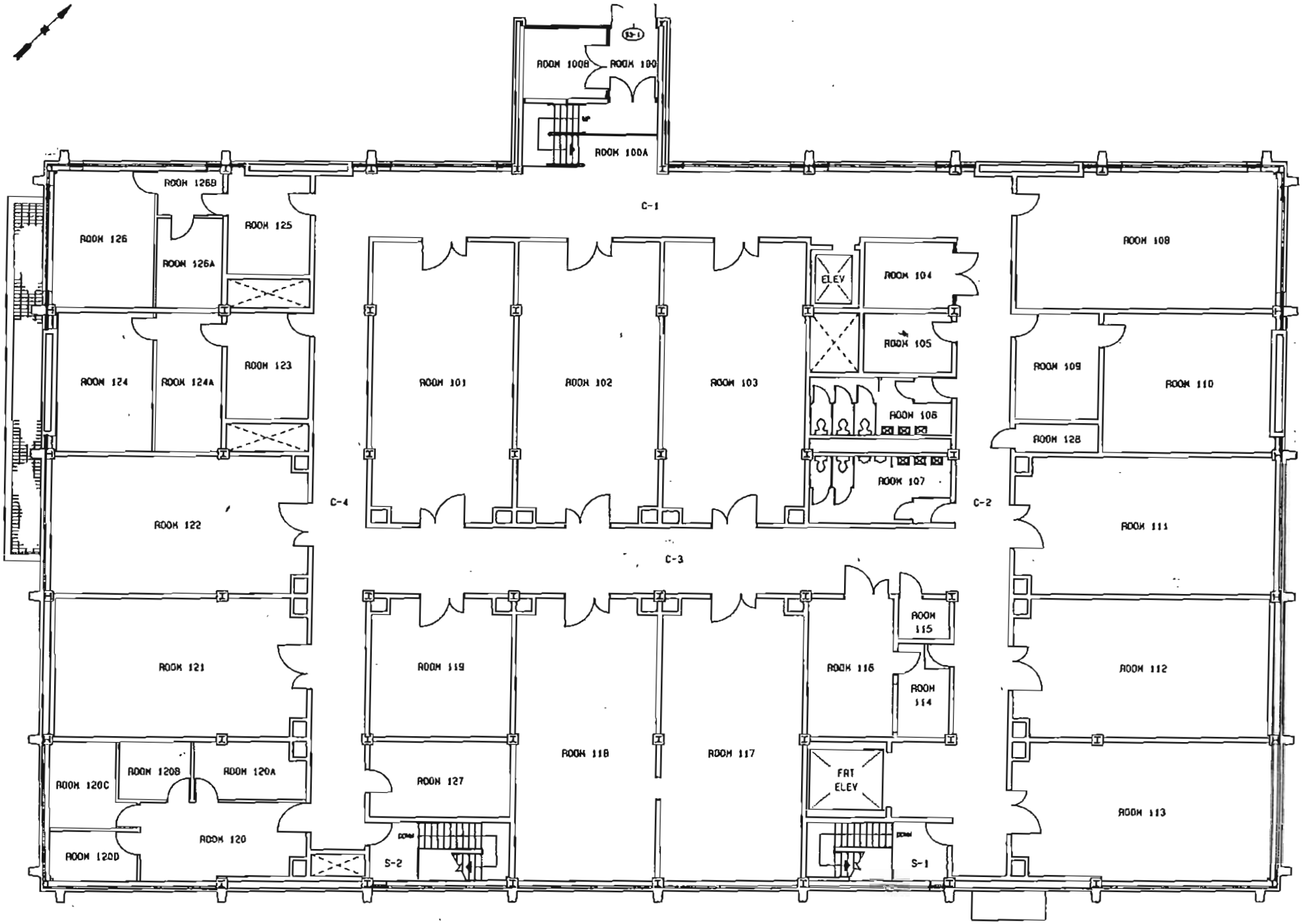
FD-28 NMRC Building 29 - First Floor


to
Building 18
building 29, room 1
(7' x 20')
building 29, room 2
(20' x 20')
building 29
(perimeter: 22' x 30')
to Building 29

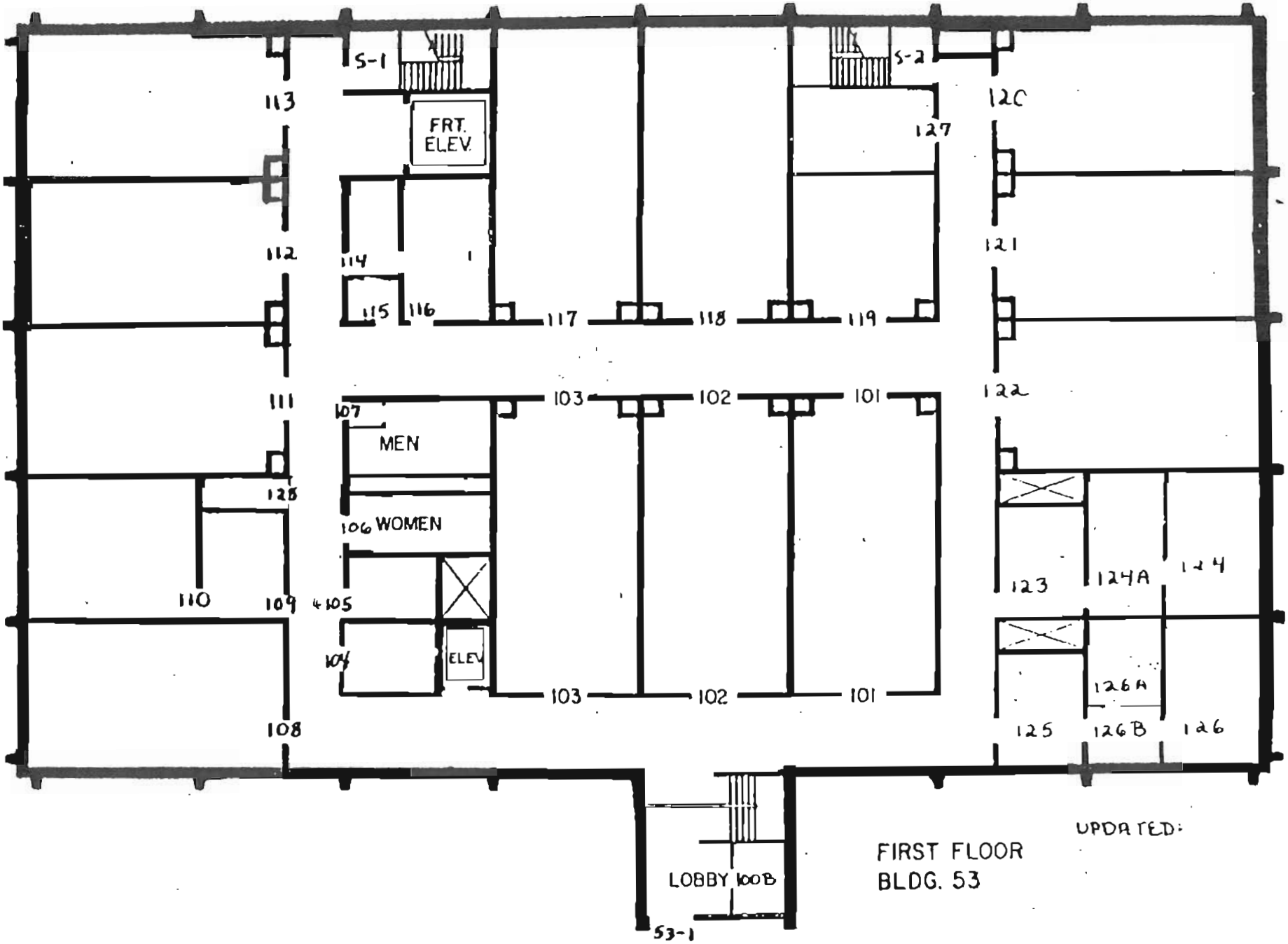
FD-29 NMRC Building 29 - Upper Level


3
M-1 M-2
EXHAUST FAN EF-1
EX. 2" VENT THRU ROOF
OPEN END EXHAUST FAN DISCHARGE W/BIRDSCREEN AND BACKDRAFT DAMPER
FLEXIBLE CONNECTION
6
M-1 M-2
CONCRETE PAD
AIR COOLED CONDENSING UNIT
REFRIGERANT PIPING, SUPPORT ABOVE ROOF
16"x14" DOWN
ROOF CURB OVER EXISTING OPENING
4
M-1 M-2
6"x9" EA. DOWN
6"x9" OPEN END EXHAUST W/BIRD SCREEN AND BACKDRAFT DAMPER
Building 29 upper level
(unoccupied)
(22' by 30')

FD-30 NMRC Building 53 - First Floor



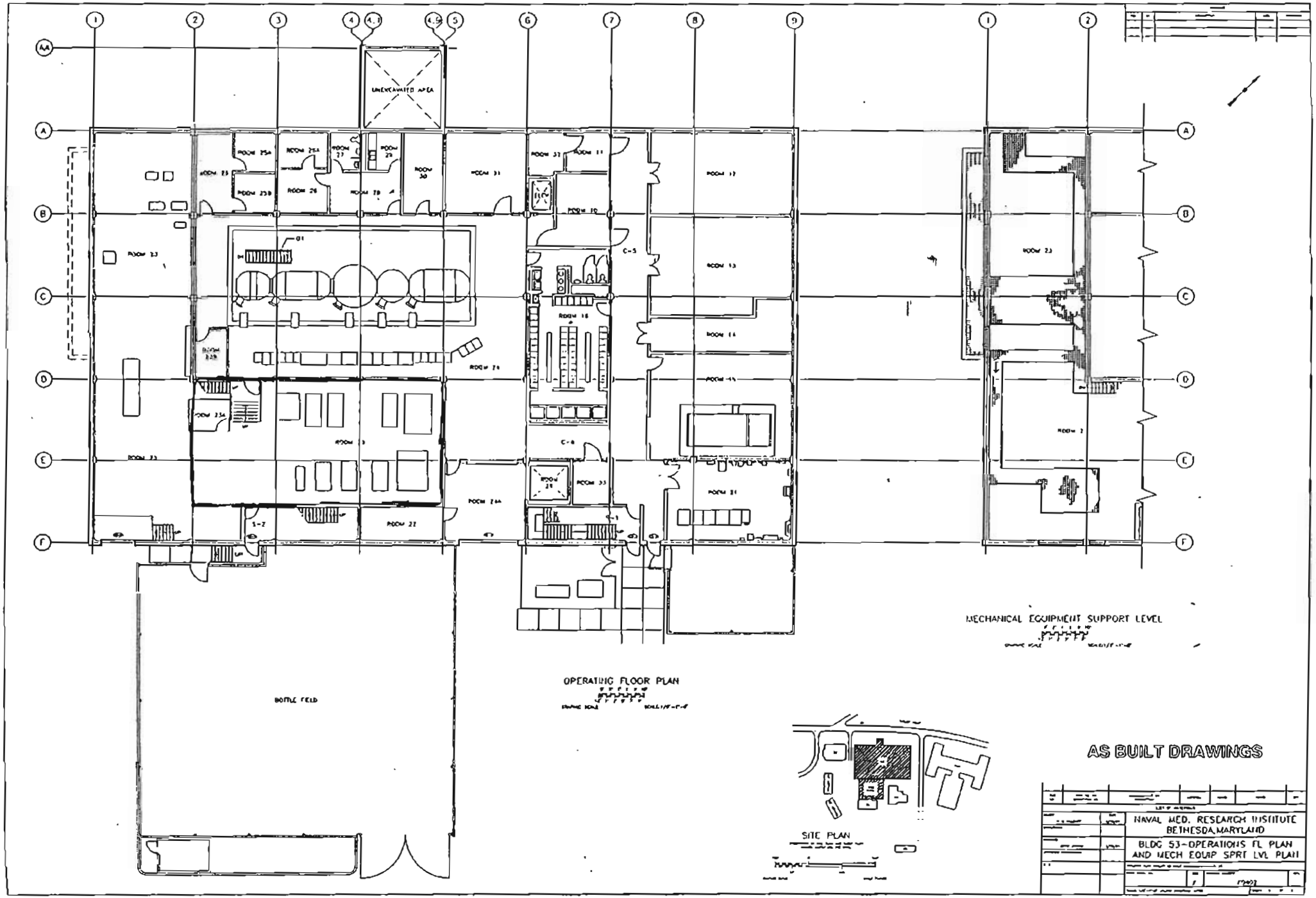
FIRST FLOOR PLAN BUILDING 53

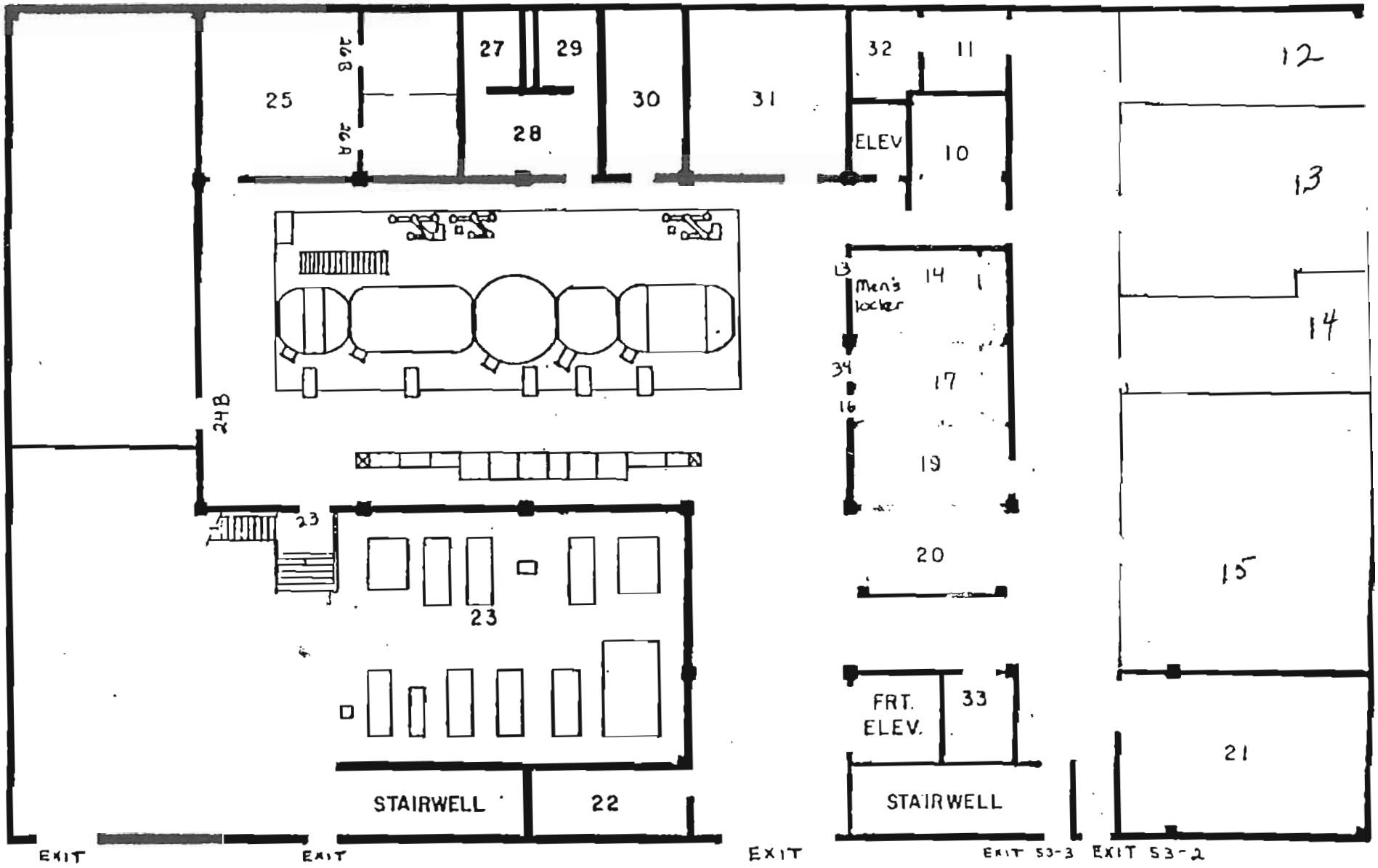


UPDATED:

FIRST FLOOR
BLDG. 53

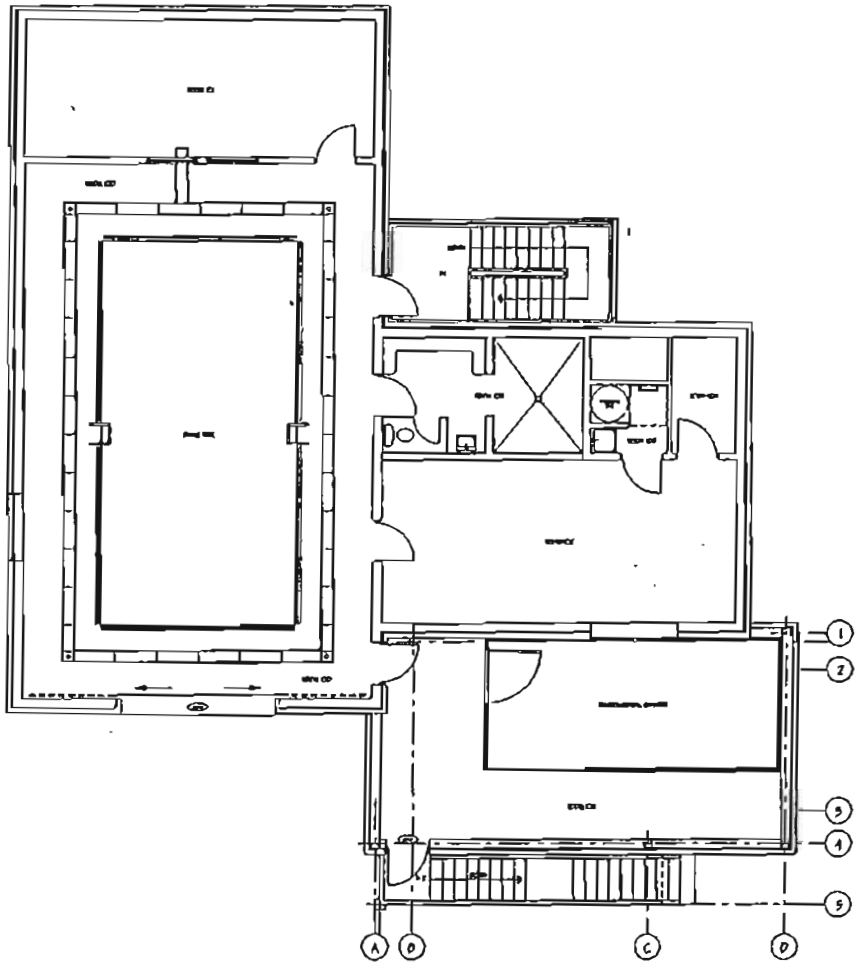
FD-31 NMRC Building 53 - Basement Floor


UNEXCAVATED AREA
BOTTLE FIELD
OPERATING FLOOR PLAN
MECHANICAL EQUIPMENT SUPPORT LEVEL
SITE PLAN
AS BUILT DRAWINGS
NAVAL MED. RESEARCH INSTITUTE
BETHESDA, MARYLAND
BLDG 53-OPERATIONS FL PLAN
AND MECH EQUIP SPRT LVL PLAN



BUILDING 53
BASEMENT

FD-32 NMRC Building 59 - First Floor



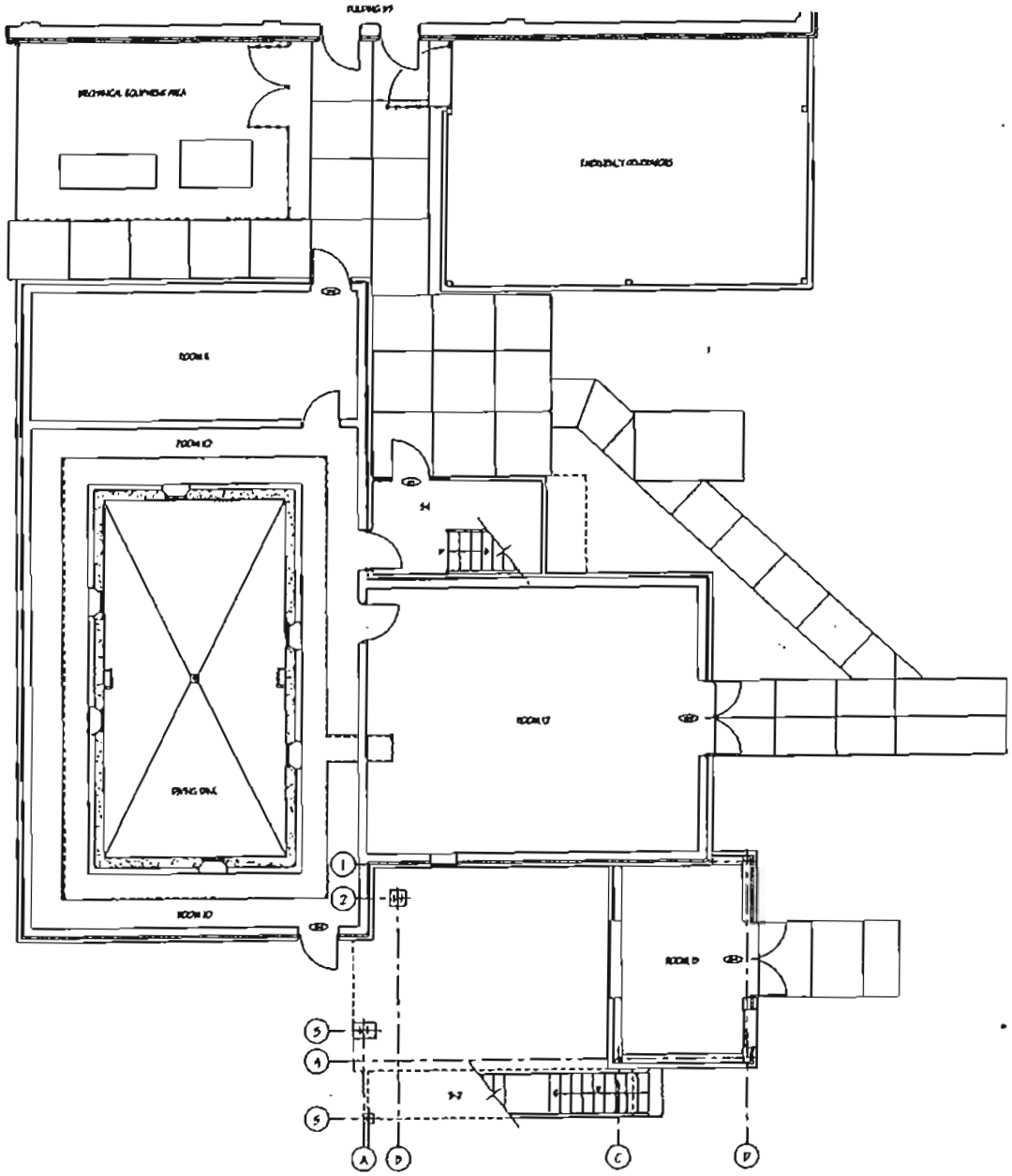
UPPER LEVEL FLOOR PLAN

NAVAL MED. RESEARCH INSTITUTE
BETHESDA, MARYLAND

BUILDING 39 - LOWER LEVEL AND
UPPER LEVEL FLOOR PLANS

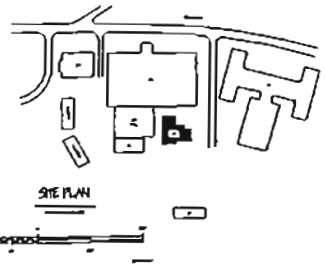
1
10100

FD-33 NMRC Building 59 - Basement Floor



LOWER LEVEL FLOOR PLAN

AS BUILT DRAWINGS



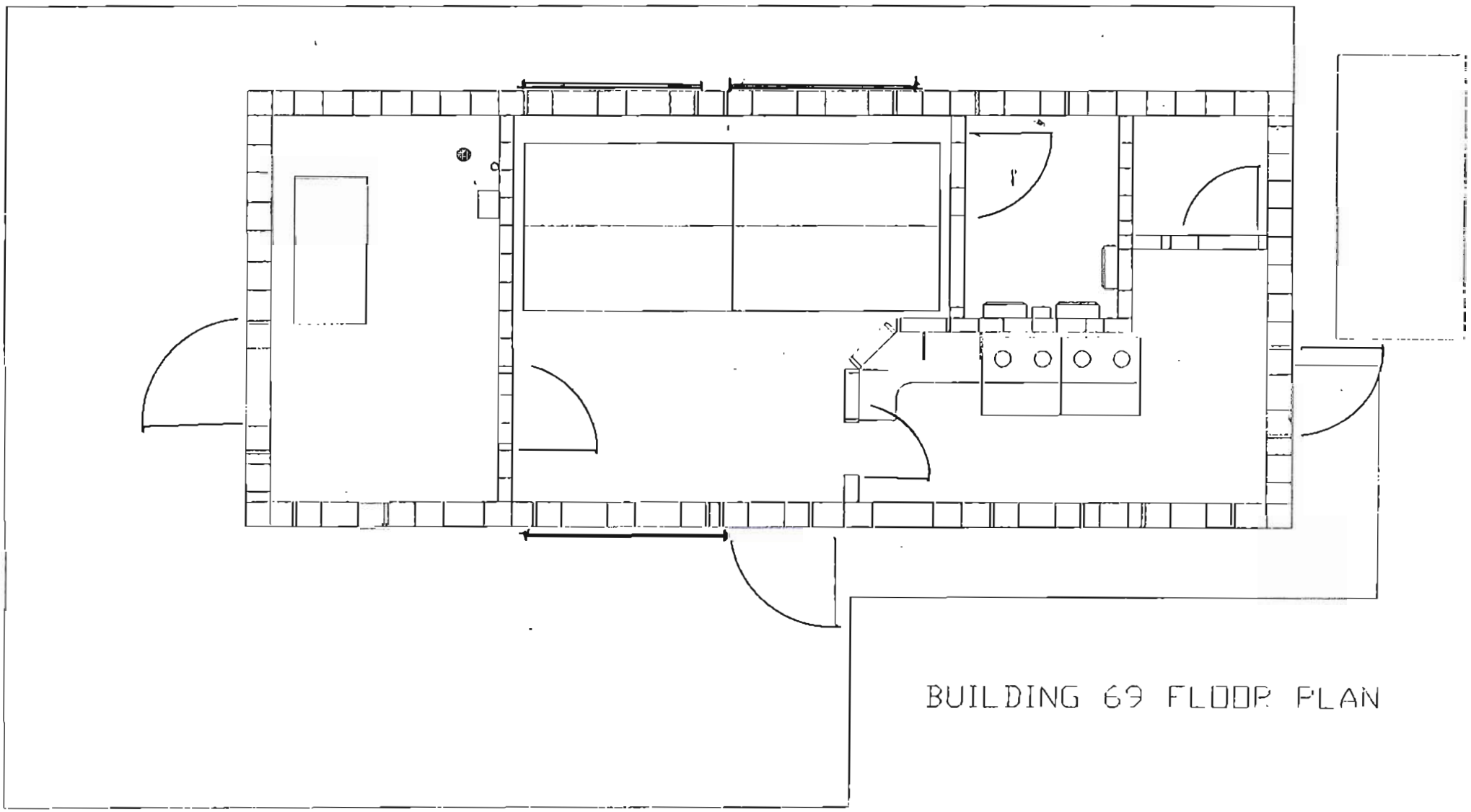
SITE PLAN

NAVAL MED. RESEARCH INSTITUTE
BETHESDA, MARYLAND

BUILDING 59 LOWER LEVEL AND
UPPER LEVEL FLOOR PLANS

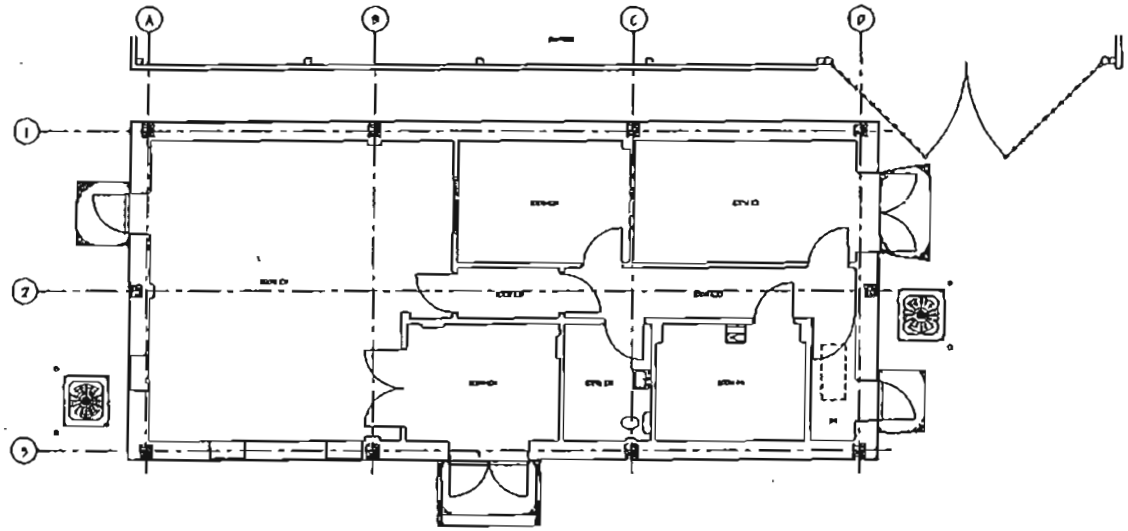
10100

FD-34 NMRC Building 69 - First Floor

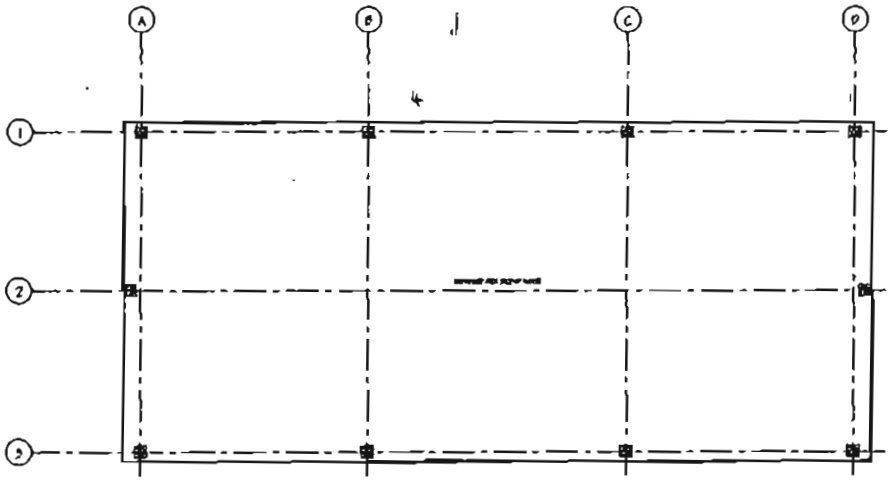


BUILDING 69 FLOOR PLAN

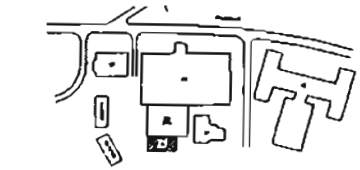
FD-35 NMRC Building 79 - First Floor



FIRST FLOOR PLAN



SECOND FLOOR PLAN



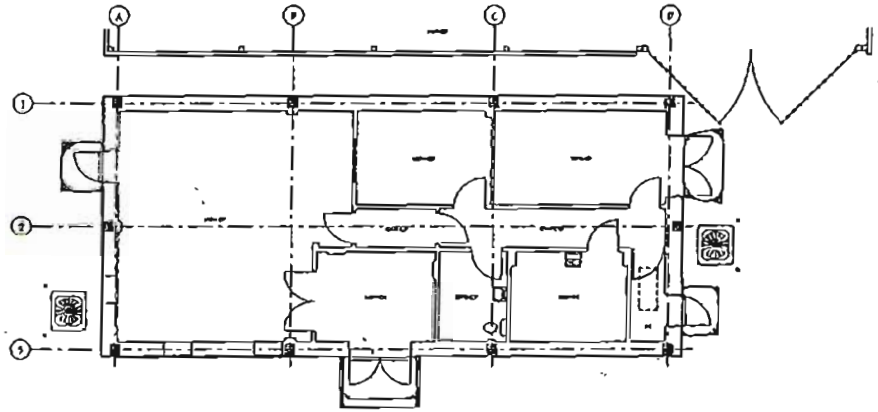
SITE PLAN

AS BUILT DRAWING

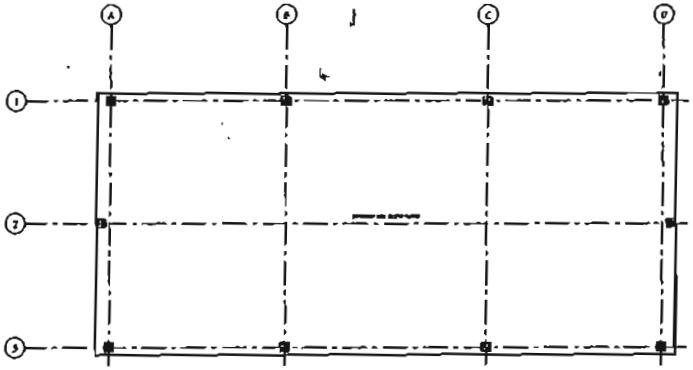
NAVAL MED. RESEARCH INSTITUTE
BETHESDA, MARYLAND

BUILDING 79
FIRST AND SECOND FLOOR PLANS

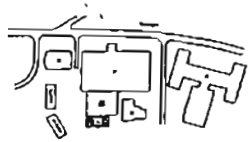
FD-36 NMRC Building 79 - Second Floor



FIRST FLOOR PLAN



SECOND FLOOR PLAN



SITE PLAN

AS BUILT DRAWING

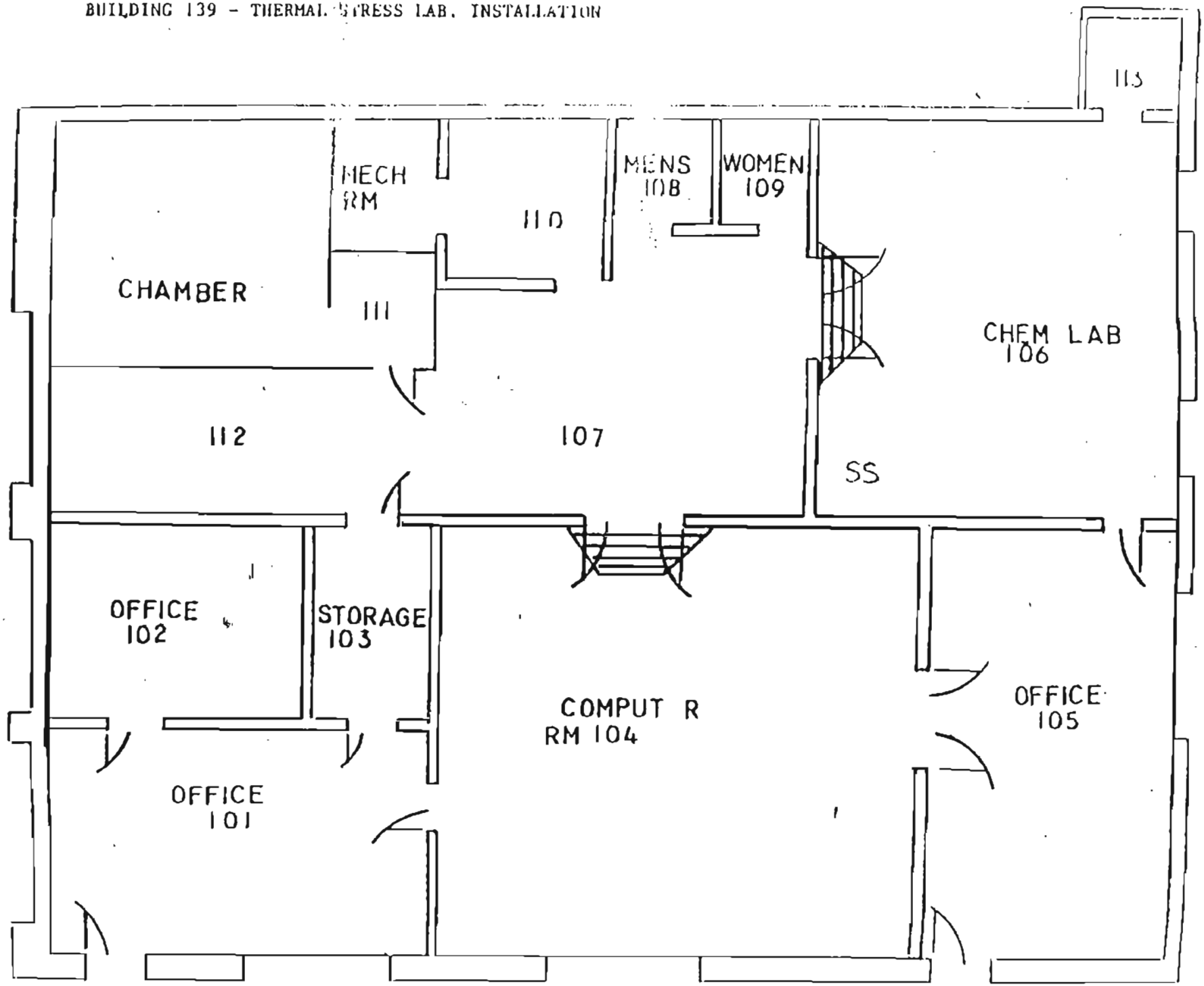
NAVAL MED. RESEARCH INSTITUTE
BETHESDA, MARYLAND

BUILDING 19

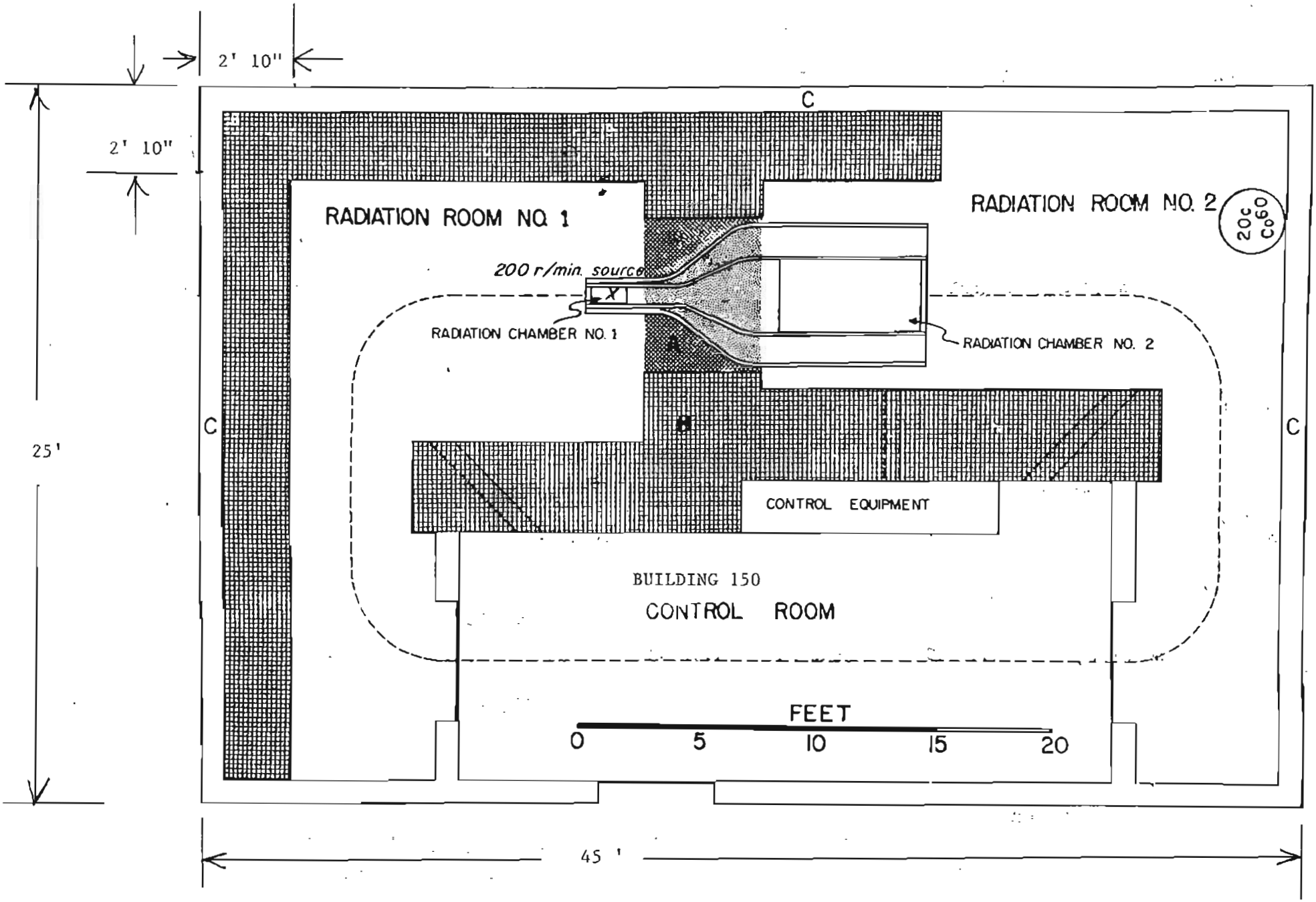
FIRST AND SECOND FLOOR PLANS

FD-37 NMRC Building 139 - First Floor

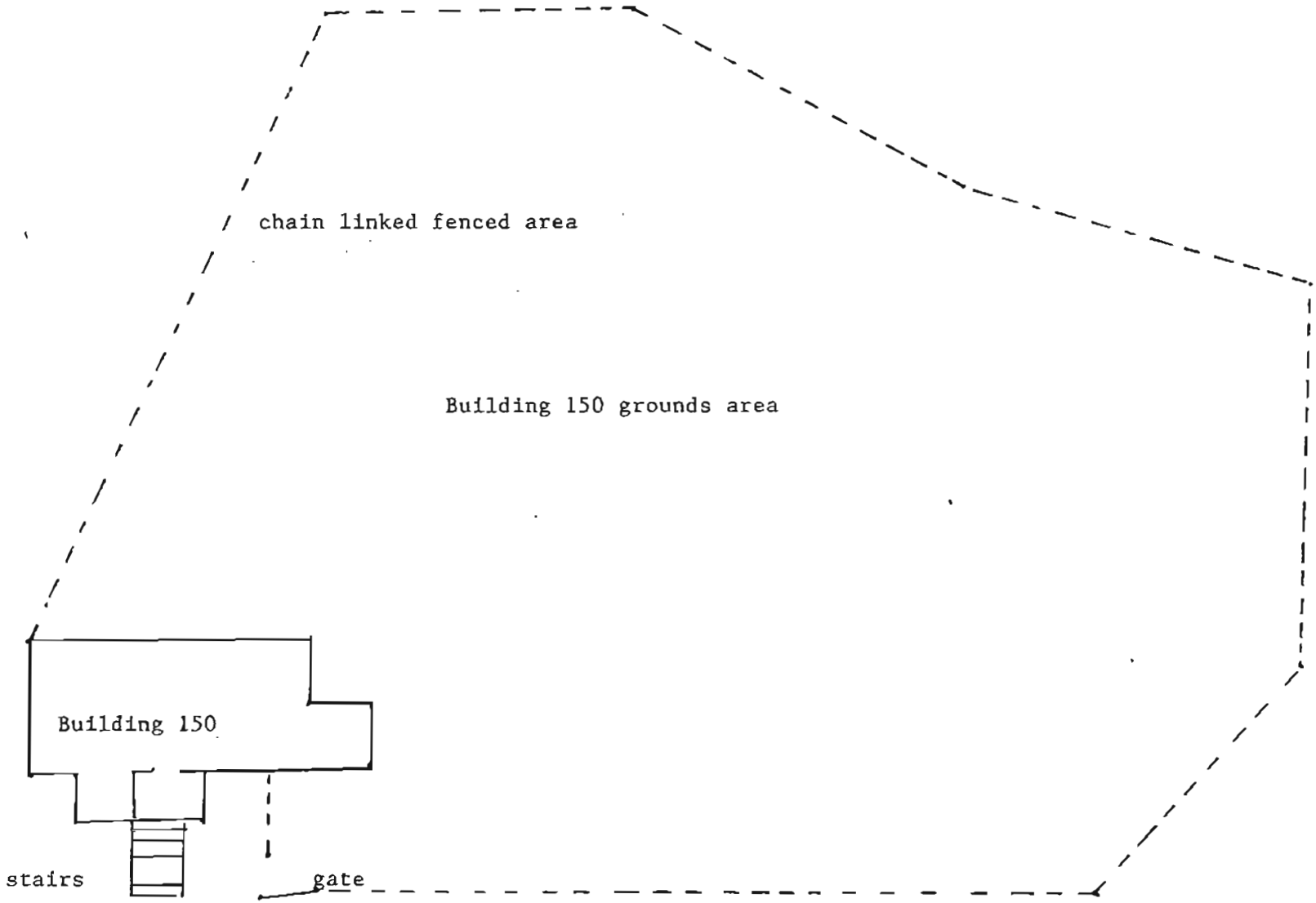
BUILDING 139 - THERMAL STRESS LAB. INSTALLATION



FD-38 NMRC Building 150 - remaining ground floor level



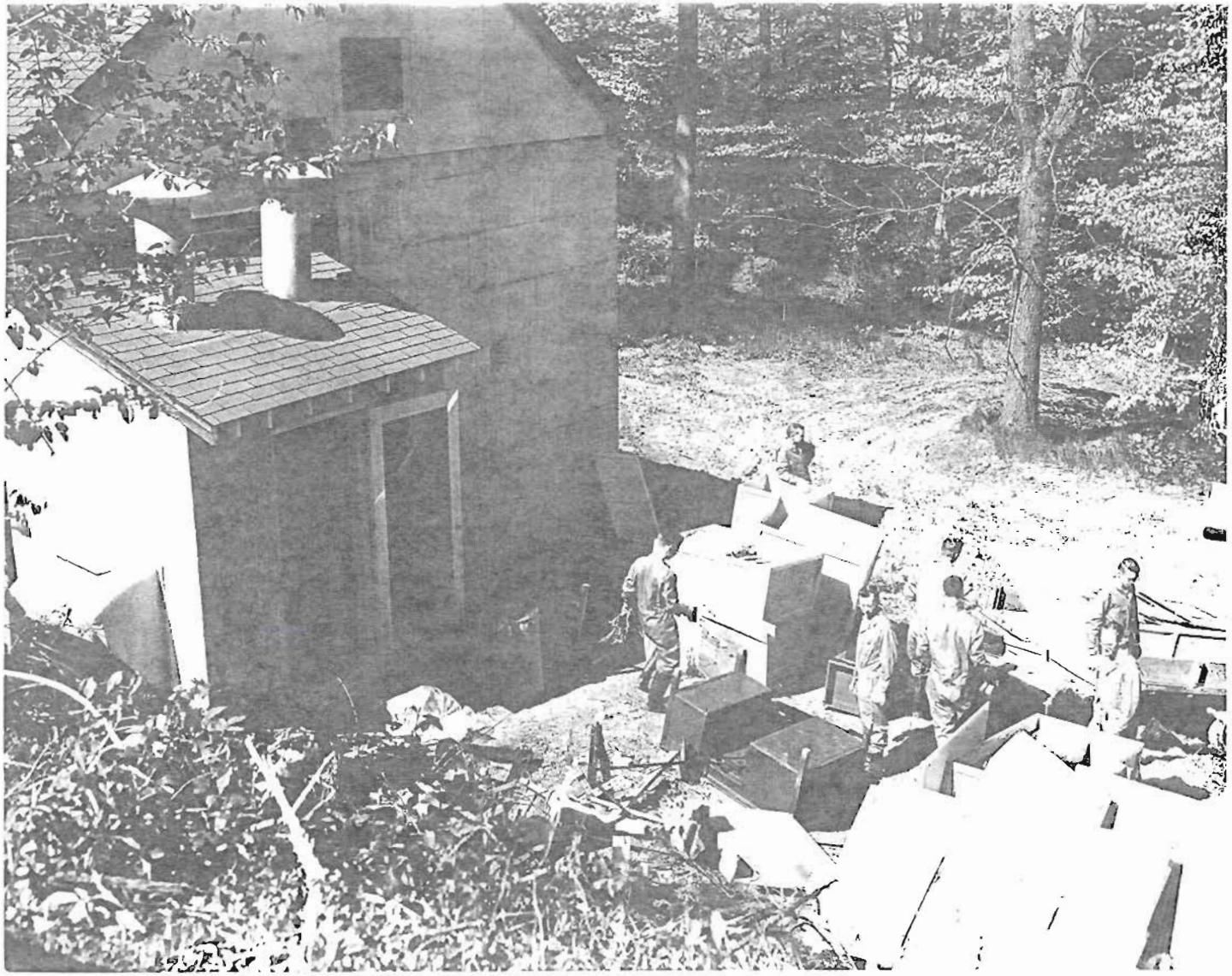
BUILDING 150 FLOOR PLAN (1950'S AND EARLY 1960'S)


chain linked fenced area
Building 150 grounds area
Building 150
stairs
gate

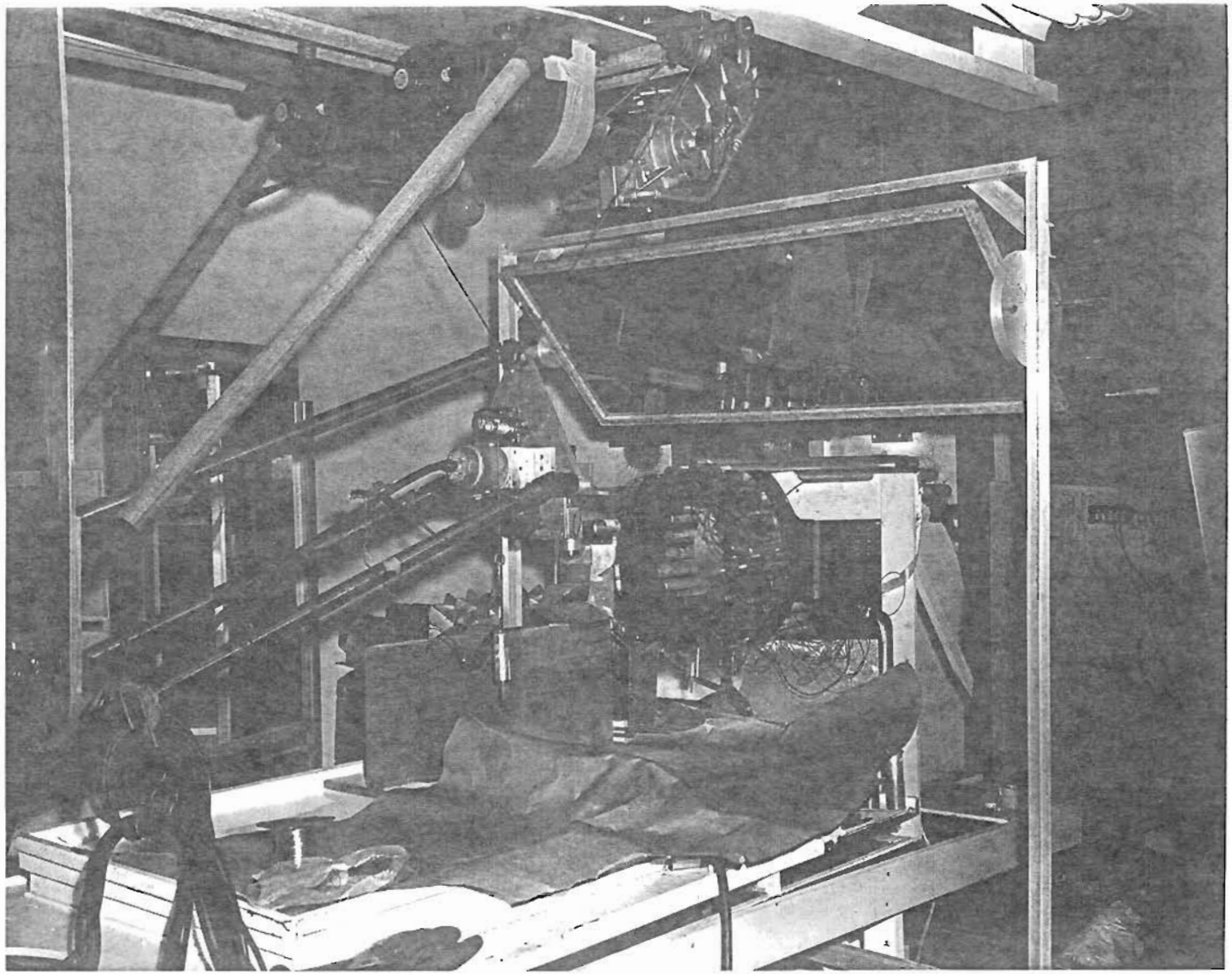
P-1 NMRC Bethesda building 150, north view 1963

P-2 NMRC Bethesda building 150, south view 1963

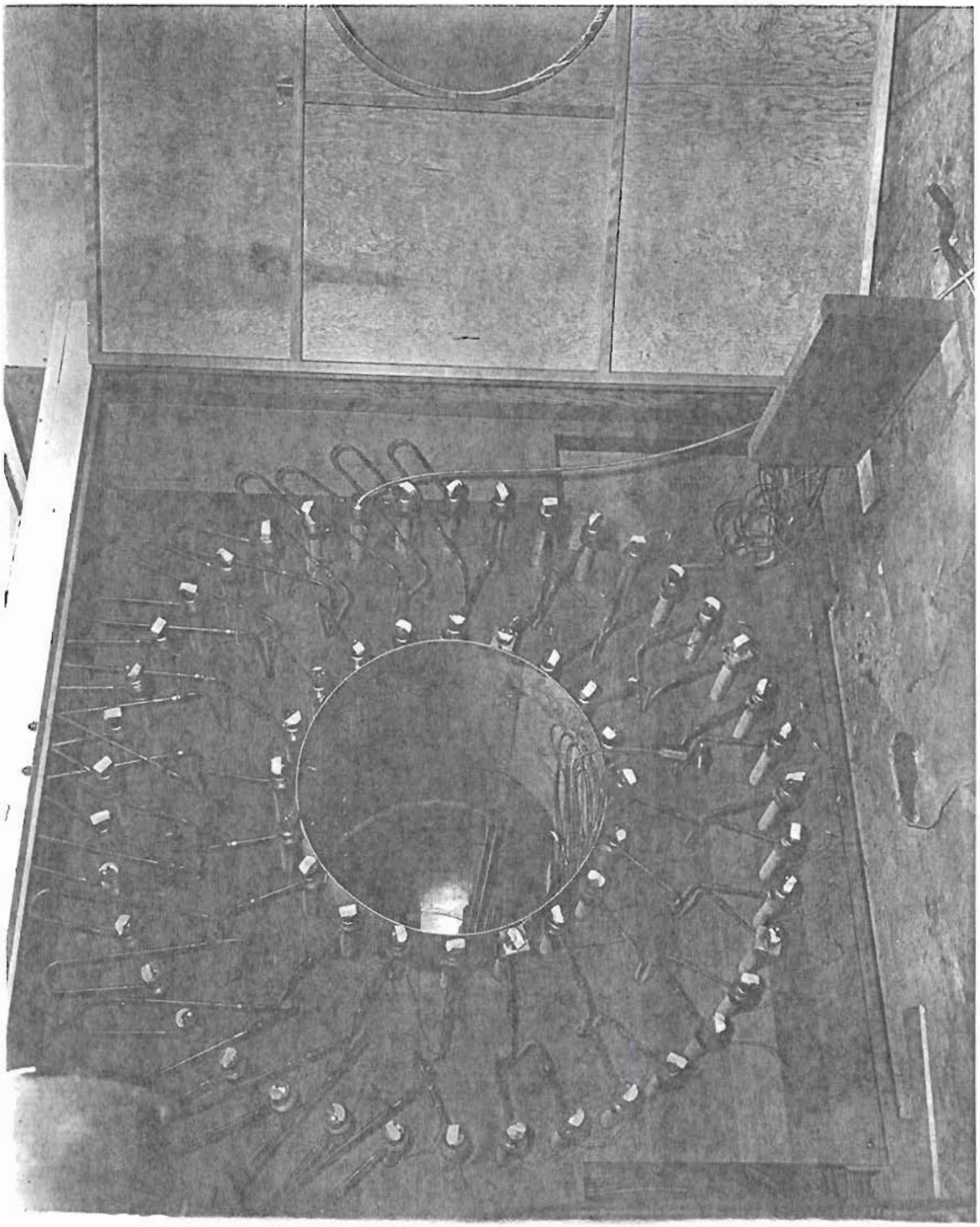
P-3 NMRC Bethesda building 150, south view with work crew 1963



P-4 NMRC Bethesda cobalt-60 source array 1962



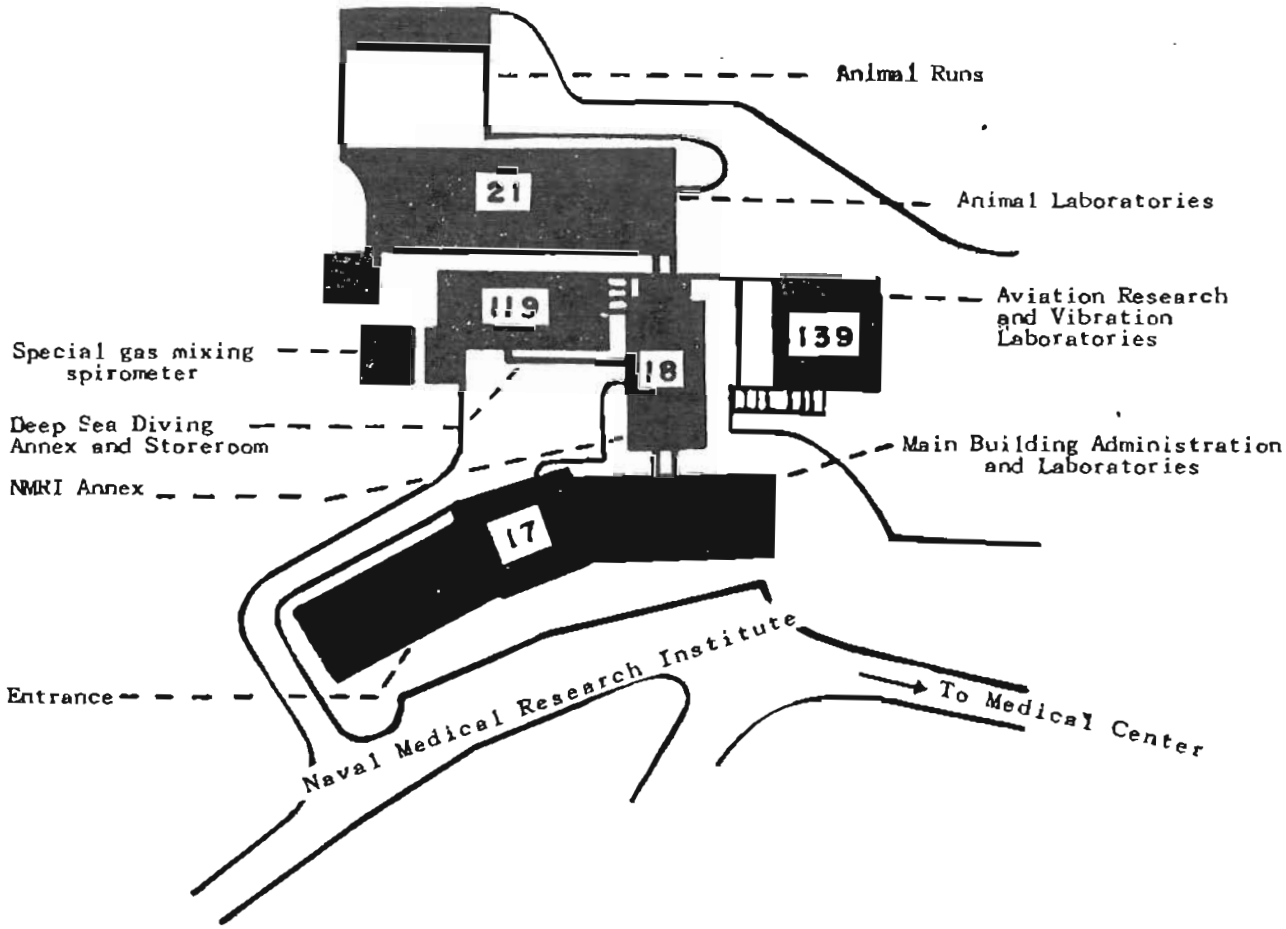
P-5 NMRC Bethesda cobalt-60 source array (close-up view)
1962



P-6 NMRI Ground Plan 1950

NAVAL MEDICAL RESEARCH INSTITUTE
GROUND PLAN

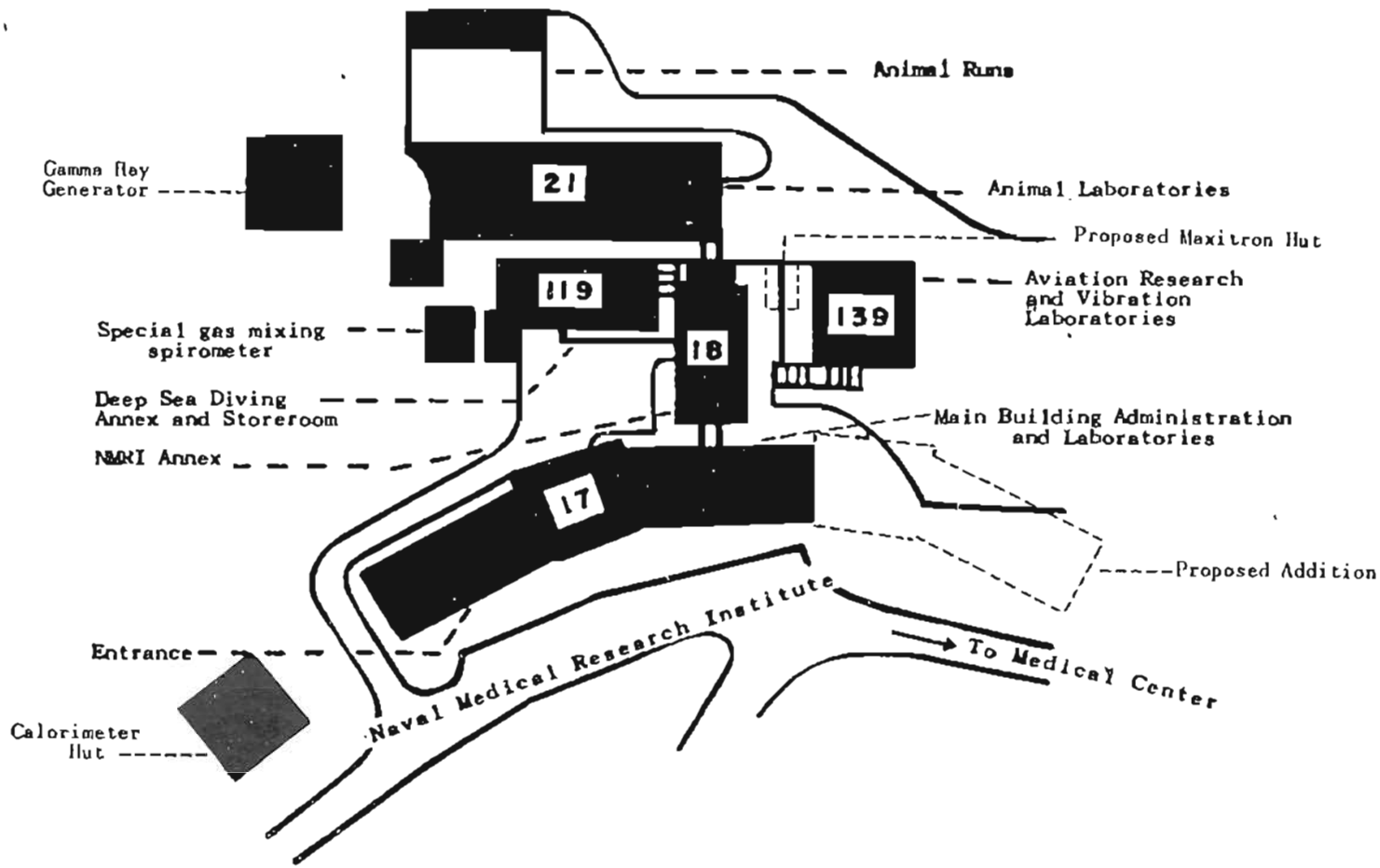
Circa 1950
Source: NMRI Scientific Seminar
15 June 1980



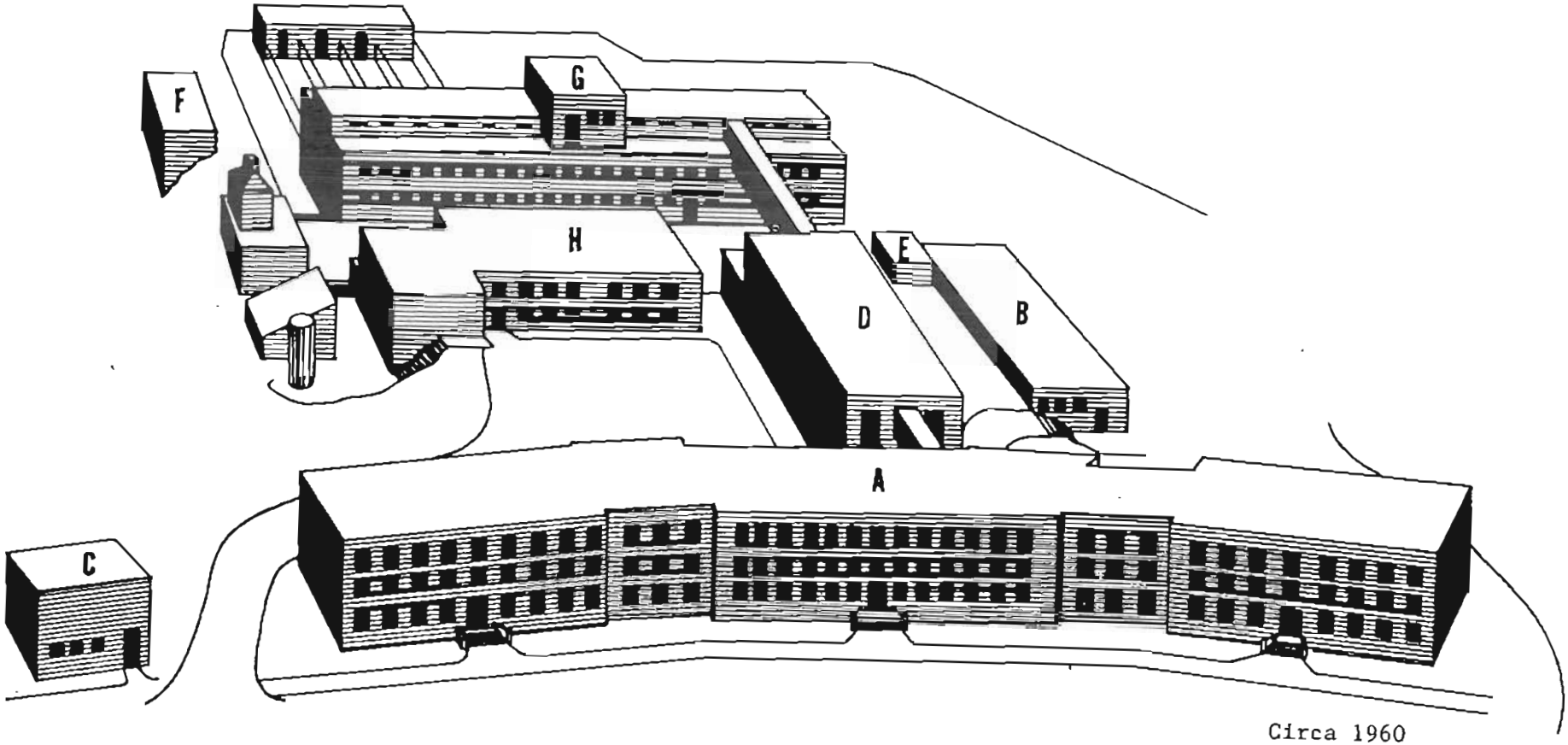
P-7 NMRI Ground Plan 1953

NAVAL MEDICAL RESEARCH INSTITUTE
GROUND PLAN

Circa 1953
Source: NMRI Sixth Annual Seminar
Naval Research Reserve
23 June 1953



P-8 NMRI Ground Plan 1960



Circa 1960
Source: NMRI Twelfth Annual Seminar
Naval Research Reserve
9 June 1960

A. LABORATORIES and ADMINISTRATION
B AVIATION LABORATORIES and SHOPS
C. BIOENERGETICS
D. LABORATORIES and SHOPS
E. MAXITRON
F. COBALT IRRADIATOR
G. ANIMAL LABORATORIES
H. DIVING APPARATUS

Naval Medical Research Institute

T-01 NMRC Building History and Information

NMRC Historical Site Assessment (HSA)

June 1999

Table T-01. NMRC Building History and Information

Building	Description	RAM use or storage ?
17	30,000 square foot, five-story concrete building constructed in 1942 to house biomedical research labs	Yes
17A	27,000 square foot, five-story concrete building constructed in 1945 to house biomedical research labs. Added as a wing to building 17.	Yes
17B	27,000 square foot, five-story concrete building constructed in 1955 to house biomedical research labs. Added as a wing to building 17.	Yes
18	14,300-square foot, three-story masonry building connected to building 17. The building was constructed in 1942 to house animals and animal-research-related activities. An incinerator was operated in the building until it was renovated in 1947 for research labs and office space.	Yes
21	86,400-square foot, four-story masonry building with an elevated walkway connection to building 18. It was constructed in 1947 to house animals and animal-research-related activities. A dual fuel (gas/fuel oil) incinerator was in service until about 1980. A 1,000-gallon fuel oil UST serving the incinerator was abandoned around 1979.	Yes

NMRC Historical Site Assessment (HSA)

June 1999

Table T-01. NMRC Building History and Information

Building	Description	RAM use or storage ?
22	180-square foot, one-story, two-room masonry building. It was constructed prior to 1944 for explosives storage. It is listed on 1953 and 1957 maps as a "Chemistry Building". It was used to store radioactive material and waste until 1994 and hazardous material and hazardous waste until 1996. It has been left abandoned since 1997.	Yes
28	2,900-square foot, two story masonry building. It was constructed in 1952 as the Calorimeter laboratory. A 3,000-square foot addition was constructed in 1961. A 1989 as-built drawing identified the facility as a hydrogen research building. One room of this building is presently used for hydrogen research and the rest of the building as an electronics shop and for storage space to support the Diving Department.	No
29	630-square foot, one-story masonry building constructed in 1955 to house the Maxitron unit (X-ray radiation source). The building may later have been used for human biochemistry research. Currently, the spaces are used for offices.	Possibly
49	70-square foot temporary storage shed attached to the south side of building 17B and presently used for equipment storage by the Infectious Diseases Department.	No

NMRC Historical Site Assessment (HSA)

June 1999

Table T-01. NMRC Building History and Information

Building	Description	RAM use or storage ?
53	35,000-square foot, two-story steel and concrete building constructed in 1976 to house the Diving Medicine Department. The building includes hyperbaric chambers, labs, and an adjacent outdoor 5,000-square foot gas farm used for the storage of large cylinders of compressed gases. A leaking 1,500-gallon emergency generator UST was removed with subsequent groundwater remediation occurring in 1989. A new 1,000-gallon UST replacement was installed in 1990.	Yes
59	Constructed in 1989 to house a 44,000-gallon human diving tank and environmental chamber.	No
69	Constructed in 1992 as a hydrogen/oxygen research facility.	No
79	Constructed in 1992. It contains the facility for cleaning equipment to "oxygen clean" levels.	No
111	Located west of building 139. It was built prior to 1948 and a 1953 NNMC map shows its use as a tool shed. A 1957 map shows its use as a "Classroom and Storage Building". The building was demolished after 1979.	No
119	Constructed prior to 1944; it housed dive research chambers, an open dive tank, and toxicology lab. It is visible in aerial photographs through 1985, but was demolished some time after that. The shell of the first floor supports the adjacent parking lot behind building 17.	No

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Table T-01. NMRC Building History and Information

Building	Description	RAM use or storage ?
139	6,525-square foot, one story masonry building constructed in 1945 to house the aviation Link Trainer. It was later used as a garage and automotive repair shop. The NMRC Operational Management and Support Office currently use it for offices, shops, and storage.	Yes
139A	50-square foot, one-story concrete block building constructed in 1945 as a utility building and to house aviation Link Trainer support equipment. Later, it housed exhaust ventilation equipment for the maintenance garage located in building 139.	No
140	Built prior to 1941 as an "H" style Women's Auxiliary Volunteer Emergency Services (WAVES) barracks (similar to building 141). It was demolished around 1976 to construct building 53.	No
141	Built prior to 1941. Formerly "H" style barracks in the NMRC area. On a 1953 map, it is shown as the naval School of Health and Sciences, a separate organization from NMRC.	No
142	Built prior to 1941. This building served as barracks during WWII and was subsequently used for the Research and Development Command headquarters and parasitology research labs until partially destroyed by fire in 1982. The remnant was removed in 1989. A child Development Center was constructed on the site after 1989 and it was demolished after 1995 to construct the present parking lot.	No

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Table T-01. NMRC Building History and Information

Building	Description	RAM use or storage ?
146	1,025-square foot, one-story masonry building constructed in 1947 as the enclosed portion of the building 21 dog runs. It is now abandoned.	No
150	Constructed prior to 1953 as a gamma-ray containment building to house two cobalt-source arrays for irradiating animals. Cobalt contamination during the late 1950's and early 1960's resulted in the closure and partial demolition of the building in 1962.	Yes
156	Shown on 1953 and 1957 maps as an aviary located southwest of building 174/T-11. It was demolished after 1976 to construct the present paved storage area.	No
157	Shown on 1953 and 1957 maps as the Sanitary Division Office and located adjacent to the west side of building 22. It was demolished after 1957 and is now a grassy area.	No
158	Shown on 1953 and 1957 maps as a rabbit hutch located southwest of building 174/T-11. It was demolished after 1976 to construct the present paved storage area.	No
165/T-2	Constructed prior to 1944 as a temporary storage building. During the 1970s, it was used to perform hyperbaric physiology experiments on animals. It was demolished in 1978.	No
174/T-11	960-square foot, single-story metal Quonset hut constructed in 1953 as temporary animal food storage for building 21. Presently it is used for general storage.	No

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Table T-01. NMRC Building History and Information

Building	Description	RAM use or storage ?
176	Constructed in 1947 to house cooling equipment for building 21, and later used to store lead blocks used as radiation shields. Interviews with NMRC personnel also indicated that the basement portion of the facility was used to house goats during Operation Crossroads. The upper story was demolished sometime after 1961. It is currently used to store discarded equipment and furniture.	No

T-02 Use of NMRC Buildings and Rooms

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Utilization	Floor Area (square feet)	Year of Most Recent RAM Use
Rockville Annex	Office, Laboratory, Storage, etc.	10657	1999
17	Office, Laboratory, Storage, etc.	51526	1999
18	Office, Laboratory, Storage, etc.	8254	1999
21	Office, Laboratory, Storage, etc.	21818	1999
28	Office, Laboratory, Storage, etc.	3415	
29	Office, etc.	489	
49	Storage, etc.	1089	
53	Office, Laboratory, Storage, etc.	21699	1999
59	Office, Laboratory, Storage, etc.	2695	
69	Office, Laboratory, Storage, etc.	805	
79	Office, Laboratory, Storage, etc.	1195	
139	Office, Laboratory, Storage, etc.	4343	1998
174/219	Storage, etc.	2142	
150	Vacated building		1963
Sub-total		130127	

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
Nicholson	337	Laboratory		07
		Photo laboratory		07
Sub-total				

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June 1999

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
Rockville Annex	100	Office	262	04
Rockville Annex	102	Office	213	04
Rockville Annex	103	Office	170	04
Rockville Annex	104	Office	90	04
Rockville Annex	109	Office/Duty Room	40	04
Rockville Annex	110	Laboratory	584	04
Rockville Annex	110A	Office	112	04
Rockville Annex	110B	Office	103	04
Rockville Annex	111	Equipment Storage	394	04
Rockville Annex	112	Sterilizer Room/Laboratory	138	04
Rockville Annex	113	Laboratory	153	04
Rockville Annex	114	Laboratory	153	04
Rockville Annex	115	Laboratory	532	04
Rockville Annex	116	Dark Room	113	04
Rockville Annex	117	Storage Room	40	04
Rockville Annex	118	Insect Room	322	04
Rockville Annex	118A	Insect/Animal Room	100	04
Rockville Annex	118B	Insect Room	107	04
Rockville Annex	118C	Insect Room	189	04
Rockville Annex	123	Laboratory	195	04
Rockville Annex	124	Cold Room	116	04
Rockville Annex	125	Insect Room	93	04
Rockville Annex	126	Laboratory	454	04
Rockville Annex	127	Laboratory	355	04
Rockville Annex	128	Laboratory	559	04
Rockville Annex	Loading dock	Storage	104	04
Rockville Annex	201	Laboratory	181	04
Rockville Annex	202	Office	150	04
Rockville Annex	203	Office	152	04
Rockville Annex	204	Office	105	04
Rockville Annex	205	Office	105	04
Rockville Annex	206	Office	15	04
Rockville Annex	207	Office	105	04
Rockville Annex	208	Conference Room	200	04
Rockville Annex	209	Office	64	04
Rockville Annex	210	Office	132	04
Rockville Annex	211	Office	76	04
Rockville Annex	213	Freezer/Storage	317	04
Rockville Annex	213A	Storage	50	04
Rockville Annex	213B	Gamma Counter	50	04
Rockville Annex	214A	Laboratory	151	04
Rockville Annex	214B	Laboratory	121	04
Rockville Annex	214C	Laboratory	56	04
Rockville Annex	215	Laboratory	235	04
Rockville Annex	215A	Animal Room	109	04
Rockville Annex	216	Animal Room	108	04
Rockville Annex	217	Laboratory	181	04
Rockville Annex	218	Storage	50	04
Rockville Annex	218A	Cold Room	50	04
Rockville Annex	218B	Cold Room	100	04
Rockville Annex	219	Laboratory	774	04
Rockville Annex	219A	Laboratory	247	04
Rockville Annex	219B	Laboratory	142	04
Rockville Annex	220	Laboratory	853	04
Rockville Annex	221	Tissue Culture	87	04
Sub-total			10657	

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June 1999

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
17	S-32	Laboratory/storage	262	02
17	S-31	Laboratory	77	02
17	S-30	Laboratory	220	02
17	S-23	Mechanical	749	01
17	1	Laboratory	121	02/01
17	1A	Laboratory	242	02/01
17	5	Laboratory	350	06/01
17	5A	Flow cytometer	197	02
17	6	Supply/LCPO	253	01
17	7A	Office	148	02
17	7B	Laboratory	185	02
17	7B1	Laboratory	170	02
17	7C	Office	210	02
17	8	Office/MID	186	01
17	10	Supply	445	01
17	11	Office	148	00
17	12	Laboratory	291	01
17	14	Storage	231	04
17	16	MID	46	01
17	32	Office	270	01
17	104	Quarterdeck	151	01
17	105	Office	157	04
17	107	Freezer/storage	70	04
17	108	Office	151	00
17	109 / 103	Laboratory	553	04
17	110	Office	136	00
17	111	Office	245	00
17	112	Office	280	00
17	113	Laboratory	162	04
17	114	Office	148	01
17	114	Office	148	00
17	114A	Office	170	01
17	115	Laboratory	195	06
17	116	Office	201	00
17	116A	Office	64	00
17	116B	Storage	46	00
17	117	Office	249	00
17	119	Office	219	01
17	119	Office	206	01
17	122D	Office	346	00
17	200	Freezer/Laboratory	289	06
17	203 / 215	Laboratory	622	06
17	204	Laboratory	315	06
17	206	Office	273	06
17	208	Laboratory	202	06
17	210	Laboratory	269	06
17	212	Laboratory	261	06
17	216	Conference room	618	00
17	217	Laboratory	461	06
17	219	Office	114	06
17	219A	Office	62	06
17	219B	Office	62	06
17	221	Office	92	06
17	221A	Laboratory	104	06
17	245A	Office	21	06

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

17	300A	Office	99	04
17	301	Laboratory	373	04
17	302	Laboratory	197	04
17	304	Office	306	04/01
17	304A	Office	80	04/01
17	305	Laboratory	337	04
17	306	Laboratory	371	04
17	306A	BSL3 Laboratory	42	04
17	307	Laboratory	354	04/01
17	308	Storage	221	04
17	310	Laboratory	254	04
17	311	Laboratory	321	04
17	312	Laboratory/freezer	221	04
17	312	Laboratory	74	04
17	313	Laboratory	287	04/01
17	325	Laboratory	288	04
17 Sub-total			16288	

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Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
17A	S- 1	Storage	202	00
17A	S- 2	Office	121	00
17A	S- 4	Office	133	00
17A	S- 6	Office	158	00
17A	S- 8	Purchasing	123	01
17A	S-10	Office	81	00
17A	S-12	Purchasing	119	01
17A	S-14	Radiation Safety	77	00
17A	S-16	Equipment	121	01
17A	S-16A	Equipment	144	01
17A	S-18	Office	165	01
17A	S-20	Receipt	301	01
17A	S-22	Office	72	00
17A	S-24	Office	54	01
17A	16	Office/custodian	47	01
17A	18	Office/MID	332	01
17A	20	Storage	53	01
17A	24	Storage/dry ice	79	01
17A	28	Office/Purchasing	308	01
17A	28A	Office	66	01
17A	30	Laboratory	343	06/01
17A	32A	Office/Supply	168	01
17A	32B	Office	95	01
17A	32C	Office/Contractor	155	01
17A	32D	Office	120	06
17A	34	Material Management	404	01
17A	34	MID	404	01
17A	38 / 42	MID Server	422	01
17A	48	Library	457	01
17A	50-1	Storage	80	04
17A	52	Storage	80	01
17A	52A	Storage	60	01
17A	54	Freezer/storage	164	04
17A	56	Freezer	118	04/01
17A	120	Office	239	00
17A	122	Office	423	00
17A	124	Office/XO	255	09
17A	126	Office	204	00
17A	128	Office	189	00
17A	130	Office	609	01
17A	132	Office	349	01
17A	134	LCPO/Admin office	147	01
17A	140	Library	1181	01
17A	140B	Library	89	01
17A	214	Office	139	06
17A	216	Conference room	483	01
17A	218	Laboratory	401	06
17A	220A	Duty room	119	00
17A	224	Laboratory	419	06/01
17A	226	Office	115	04/01
17A	226B	Storage	208	04/01
17A	230	Laboratory	209	06
17A	234	Laboratory	371	06
17A	238	Office	173	06
17A	240	Laboratory	604	04/01

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

17A	240	Laboratory	604	06
17A	242	Laboratory	420	06
17A	244	Office	123	06
17A	314	Storage	23	04/01
17A	316	Lab/Office	275	04
17A	316A	Laboratory	104	04
17A	316B	Office	65	04
17A	318	Freezer/storage	84	04
17A	318A	Storage	54	04/01
17A	318B	Office	97	04
17A	318C	Office	64	04
17A	318D	Laboratory	200	04
17A	320	Laboratory	401	04
17A	320A	Laboratory	192	04
17A	320B	Laboratory	51	04
17A	320C	Laboratory	52	04
17A	322	Office	176	04
17A	326	Laboratory	367	04
17A	326B	Laboratory	202	04
17A	336	Laboratory	300	04
17A	336A	Laboratory	289	04
17A	336B	Dark room/Laboratory	57	04
17A	338	Laboratory	165	04
17A	338	Laboratory	165	04/01
17A	338A	Laboratory	300	04
17A	340	Laboratory	196	04
17A	342	Laboratory	114	04/01
17A	342A	Laboratory	200	04
Sub-total			18092	

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Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
17B	S-15	Office	123	02/01
17B	S-19	Storage	1580	02/01
17B	S-23	Dive machine shop	711	05
17B	9	Passageway	171	02
17B	13B	Storage	80	02
17B	13C	Storage	80	02
17B	13	Office	93	02
17B	13A	Laboratory	159	04/01
17B	15	Laboratory	225	02
17B	15A	Laboratory	153	02
17B	17	Office	214	02
17B	19 / 27	Laboratory	528	02
17B	19B	Storage	33	02
17B	19C	Photo Lab	30	02
17B	21	Office	140	02
17B	23	Office	143	02
17B	35	Auditorium	1350	01
17B	123	Office	253	00
17B	125	Office	380	06
17B	125	Office	380	00
17B	127	Laboratory	199	06
17B	129	Laboratory	366	06
17B	131	Laboratory	423	06
17B	133	Laboratory	268	06
17B	135	Office	76	06
17B	135A	Office	97	06
17B	143	Gear Locker	146	01
17B	147A	Office	292	02
17B	147B	Office	107	02
17B	147	Office	121	06
17B	149	Laboratory	380	06
17B	149A	Laboratory	276	06
17B	151	Office	153	06
17B	153A	Office	310	02
17B	225/229	Laboratory	695	06
17B	231	Office	376	06
17B	235	Office	183	06
17B	237A	Office	100	06
17B	237	Laboratory	222	06
17B	239	Laboratory	345	06/01
17B	243	Laboratory	291	06/01
17B	249	Laboratory	619	06/01
17B	251	Laboratory	300	06
17B	251A	Laboratory	133	06/01
17B	253	Storage	3	06
17B	255	Office	251	06
17B	317/319	Laboratory	486	04
17B	319A	Office	120	04
17B	319B	Laboratory	93	04
17B	321	Office	289	04
17B	323	Office	111	04
17B	327	Laboratory	187	04
17B	329	Office	282	04/01
17B	329	Laboratory	282	04/01
17B	333	Office	162	04
17B	341A	Office	97	04

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

17B	341	Laboratory	373	04
17B	341B	Laboratory	64	04
17B	345A	Freezer/storage	32	04
17B	347	Office	191	04
17B	347A	Office	87	04
17B	349	Laboratory	202	06/01
17B	351	Office	114	04
17B	353	Laboratory	267	04/01
17B	353A	Animal	149	06/01
Sub-total	99999		17146	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
17			16288	
17A			18092	
17B			17146	
Sub-total			51526	

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
18	17	Laboratory	169	01
	18	Command inspection/Eval.	168	00
	19	Storage	63	01
	20	Storage	59	01
	21	Laboratory	156	01
	22	Office	188	00
	23	Office	200	00
	24	Animal Room	449	01
	26	Laboratory	400	00
	27	Freezer/Storage	143	00
	29	Laboratory	259	00
	30	Archive/Library	150	00
	32	Storage/Galley	130	01
	32A	Office	257	00
	32B	Office-Council Conference	262	00
	32C	Office	206	00
	126	Laboratory	203	04
	127 / 125	Laboratory	466	04
	128	Office	176	04
	129	Office	107	04
	130	Office	181	04
	132	Office	237	04
	134	Office	173	04
	135	Laboratory	218	04
	136	Office	201	04
	137	Laboratory	218	04
	138	Office	215	04
	223	Laboratory	656	06
	224	Laboratory	104	06
	226	Laboratory	152	06
	228	Office	147	06
	230	Office	177	06
	231	Laboratory	449	06
	231B	Dark Room	75	06
	232	Office	91	06
	232A	Office	289	06
	232B	Office	138	06
	233	Office	158	06
	233A	Office	164	06
Sub-total			8254	

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Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
21	2	Animal holding room	415	02
	3	Procedures	341	02
	3A	Mice quarantine	174	02
	3B	Rat quarantine	382	02
	4	Autoclave/Storage	343	02
	5	Animal room	21	02
	7	Animal room	288	02
	8	Housekeeping	21	01
	9	Animal room	359	02
	10	Head	250	01
	11	Animal room	266	02
	12	Laboratory	574	06
	14	Pharmacy	166	02
	16	Laboratory	192	02
	20	Necropsy room	169	02
	22A	Cage wash	1121	02
	101	Office	155	02
	103	Storage	477	02
	105	Animal room	61	02
	105A	Animal room	135	02
	106	Animal room	363	02
	107	Animal room	323	02
	108	Animal room	415	02
	110A	Refrigerator	155	02
	110B	Refrigerator	180	02
	111	Office	138	02
	111A	Storage	8	02
	112A	Office	90	02
	112	Animal room	478	02
	113	Animal room	191	02
	114	Office	266	02
	115	Storage	34	02
	117	Storage	54	02
	119	Office	134	02
	119A	Office	119	02
	121	Animal room	592	02
	125	Animal room	577	02
	127	Animal room	390	02
	129	Office	74	02
	201	Laboratory	202	06/01
	202	Surgery suite	62	02
	202A	Surgery Frig	519	02
	203	Laboratory	448	06
	204	Laboratory	365	06
	205A	Office	129	06
	205	Storage	75	06
	206	Office	66	02/01
	206A	Office	109	02/01
	208	Office	66	06/01
	208A	Office	110	06/01
	210	Freezer/storage	64	06
	211	Office	450	06/01
	211		450	06/01
	211	Laboratory	364	06/01
	211A	Laboratory	178	06/01

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

	212	Laboratory	291	06
Sub-total			14439	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
21 (continued) Sub-total brought forward			14439	
21	213	Head	487	01
21	214	Office	699	06/01
21	214A	Office	699	06/01
21	214B	Office	78	06/01
21	215	Office	89	04/01
21	215A	Office	133	04/01
21	217	Storage	242	06
21	219	Storage	523	07
21	221A	Office	136	07
21	221	Storage	70	07
21	225	Storage	157	07
21	225A	Storage	66	07
21	227	Storage	66	07
21	227A	Storage	112	07
21	229	Storage	62	07
21	231B	Freezer/ Laboratory	73	06
21	231	Freezer/storage	142	04/01
21	231	Freezer/Storage	142	07
21	233	Freezer/storage	274	04
21	233	Freezer/Storage	92	07
21	301	Office/Laboratory	297	00S
21	303A	Entry to Penthouse	35	01
21	303	Freezer/Storage	274	07
21	304	Storage	47	04
21	305	Storage	45	02
21	306	Storage	74	01
21	306	Storage	73	04/01
21	308	Storage	73	04
21	310	Storage	66	04
21	311	Storage	71	06/01
21	313	Storage	66	01
21	314	Storage	73	04/01
21	315	Storage	70	06/01
21	316	Storage	68	06
21	317	Storage	70	06/01
21	318	Storage	63	06
21	319	Storage	69	06/01
21	321	Storage	77	04
21	321	Storage	70	06
21	322	Storage	68	06
21	323	Storage	61	06
21	324	Storage	74	06
21	325	Storage	61	06/01
21	327	Storage	69	06/01
21	329	Storage	70	06
21	331	Storage	70	06
21	333	Storage	35	00
21	335	Storage	430	06
21	337	Storage	70	00

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

21	339	Storage	70	00
21	341	Storage	207	06
21	345	Storage	71	06/01
Sub-total			21818	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
28	100	Supply	749	05
	101	Mechanical	101	05/01
	102	Storage	178	05
	103	Storage	68	05
	106	Office	208	05
	106A	Laboratory	110	05
	107	Office	94	05
	108	Office	88	05
	200	Office	165	05
	201	Office	144	05
	201A	Office	149	05
	202B	Storage	111	05
	202A	Office	164	05
	203	Supply	257	05
	204	Shop	739	05
	205	Entryway	90	05/01
Sub-total			3415	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
29	1	Office	363	06
	2	Office	126	06
Sub-total			489	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
	S-1	Entryway	31	05
49	101	Mech/shop	144	05
	103	Office	103	05
	104	Laboratory	130	05
	107	Laboratory	529	05
	120A	Office	152	05
Sub-total			1089	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
53	S-1	Entryway	31	05
53	10	Shop	216	05
53	11	Shop	93	05
53	12	Laboratory	620	05
53	13	Office	713	05
53	14	Storage	372	05
53	15	Storage	775	05
53	22	Galley	156	05
53	23	Compressors	2490	05

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

53	24	NRCC	3081	05/01
53	25	Office	155	05
53	25A	Office	95	05
53	25B	Office	95	05
53	26	Office	125	05
53	26A	Sickbay	100	05
53	26B	Office	46	05
53	28	Sickbay	165	05
53	29	Office	56	05
53	30	Office	179	05
53	31	Instrument room	371	05
53	32	Mechanical	86	05/01
53	33	Mechanical	85	05/01
53	100	Foyer	130	05/01
53	100B	Office	110	05
53	101	Laboratory	760	05
53	102	Laboratory	760	05
53	103	Laboratory	760	05
53	104	Office	112	05
53	105	Office	99	05
53	108	Conference room	683	05
53	109	Office	170	05
53	110	Office	438	05
53	111	Laboratory	683	05
53	112	Office/Lab	683	05
53	113	Laboratory	683	05
53	114	Office	91	05
53	115	Gear Lab	40	01
53	116	Office	229	05
53	117	Laboratory	760	05
53	118	Laboratory	760	05
53	119	Laboratory	374	05
53	120	Office	250	05
53	120B	Office	80	05
53	120C	Office	100	05
53	120D	Office	88	05
53	121	Laboratory	670	05
53	122	Laboratory	670	05
53	123	Office	132	05
53	124	Office	283	05
53	124A	Office	155	05
53	125	Office	126	05
53	126	Office	283	05
53	126A	Office	104	05
53	126B	Office	80	05
53	127	Office	203	05
53	128	Telephone	45	01
Sub-total			21699	

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
59	11	Scuba Locker	286	01
59	100	Operational research tank	1114	01
59	101	Laboratory	286	01
59	102	Laboratory	353	01
59	103	Electrical room	72	01
59	104	Closet	72	01
59	106	Laboratory	512	01
Sub-total			2695	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
69	100	Shop/mechanical	166	05
69	102	Laboratory	65	05
69	103	Laboratory	380	05
69	104	Control room	194	05
Sub-total			805	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
79	101	Mechanical/shop	144	05
79	103	Office	103	05
79	120A	Office	152	05
79	S-1	Entryway	31	05
79	104	Laboratory	130	05
79	107	Laboratory	529	05
79	100	Storage	106	05
Sub-total			1195	

Table T-02. USE OF NMRC AND NMRC ROCKVILLE ANNEX BUILDINGS AND ROOMS

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
139	101	Office	254	01
139	102	Office	376	01
139	103	Exam room	68	01
139	104	Lab/office	660	01
139	105	DRMO Staging	304	01
139	106	DRMO Staging	469	01
139	106A	Storage	26	05
139	108	DRMO Staging	129	01
139	109	DRMO Staging	152	01
139	110	DRMO Staging	177	01
139	110B	DRMO Staging	95	01
139	111	DRMO Staging	338	01
139	112/107	DRMO Staging	765	01
139	BAY	Shop	530	01
Sub-total			4343	

Building	Room	Utilization (1998-1999)	Square Footage	NMRC Department or Program Code
174	1	Animal food storage	1008	02/01
174	2	Animal food storage	1008	02/01
219	1	Safety/storage	56	00S
219	2	Safety/storage	70	00S
Sub-total			2142	

T-03 Radioisotopes Used At NMRC (1942-1999)

Table T-03. RADIOISOTOPES USED AT NMRC (1942 - 1999)

RADIOISOTOPE		HALF LIFE	MAJOR RADIATION	RADIATION ENERGY (keV)
SYMBOL	NAME			
H3	HYDROGEN-3	12.3 Y	BETA	18.6 (max E)
C14	CARBON-14	5730 Y	BETA	156 (max E)
P32	PHOSPHORUS-32	14.3 D	BETA	1710 (max E)
P33	PHOSPHORUS-33	24.4 D	BETA	248 (max E)
S35	SULFUR-35	87.4 D	BETA	167 (max E)
Ar41	ARGON-41	1.83 H	BETA	1198 (99.2%) 2492 (0.8%)
			GAMMA	1293 (99.1%)
Ca45	CALCIUM-45	165 D	BETA	256 (max E)
Sc46	SCANDIUM-46	83.8 D	ETA	357 (max E)
			GAMMA	889 1120
Cr51	CHROMIUM-51	27.7 D	GAMMA	320 (10%)
Co57	COBALT-57	270.9 D	GAMMA	122 (85.5%) 136 (11%) 692 (0.16%)
Fe59	IRON-59	44.6 D	BETA	273 (45%) 466 (53%)
			GAMMA	1099 (56.5%) 1291 (43%)
Se75	SELENIUM-75	119.78 D	GAMMA	121 (16.7%) 136 (59%) 264 (60%) 280 (25%) 400 (11%)
Kr79	KRYPTON-79	34.9 D	GAMMA	136 (0.7%) 261 (9%) 398 (10%) 511 (15%) 606 (10%)
Kr85m	KRYPTON-85m	4.4 H	BETA	840 (78.6%)
			GAMMA	305 (14%) 151 (75%)
Sr85	STRONTIUM-85	64 D	GAMMA	514 (99%)

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Table T-03. RADIOISOTOPES USED AT NMRC (1942 - 1999)

RADIOISOTOPE		HALF LIFE	MAJOR RADIATION	RADIATION ENERGY (keV)
SYMBOL	NAME			
Nb95	NIOBIUM-95	35 D	BETA GAMMA	160 (max E) 765 (100%)
Tc99m	TECHNETIUM-99m	6.05 H	GAMMA	140 (89%)
Ru103	RUTHENIUM-103	39.5 D	BETA	226 (90%)
			GAMMA	497 (88.9%) 610 (5.6%)
In111	INDIUM-111	2.8 D	GAMMA	171 (90%) 245 (94%)
Sn113	TIN-113	115 D	GAMMA	255 (2.1%) 24 (61%)
I125	IODINE-125	60.2 D	GAMMA	27 (110%) 31 (25%)
Xe127	XENON-127	36.4 D	GAMMA	172 (22%) 203 (65%) 375 (20%)
I131	IODINE-131	8.1 D	BETA	606 (90%)
			GAMMA	637 (6.5%) 364 (82%)
Ba133	BARIUM-133	7.2 Y	GAMMA	302 (14%) 356 (69%) 382 (8%)
Xe133	XENON-133	5.3 D	BETA	346 (99%)
			GAMMA	31 (39%) 81 (36%)
Cs137	CESIUM-137	30 Y	BETA	511 (94.6%)
			GAMMA	662 (90% from Ba137m)
Ce141	CERIUM-141	32.5 D	BETA	434 (70%) 580 (30%)
			GAMMA	145 (48%)
Yb169	YTTERBIUM-169	31.97 D	GAMMA	177 (21%) 198 (35%) 308 (11%)

T-04 Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (beginning and ending years of use, isotopes, maximum on-hand activities, building and room numbers, investigators, and comments)

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1988	1991	Ar41	100	53/112	Novotny	Gas; animal inhalation
1992	1992	Ar41	50	53/122	Ball	
1988	1991	Ba133	1	53/112	Novotny	
1992	1992	Ba133	1	53/122	Ball	
1967	1985	C14	50	17/001,209,215,219,233,237,301,302,302A,307,310,313,317,319,325,326,326A,341B,353,353A	Weiss	
1971	1981	C14	10	136/ 142/7,10,11,12,18,119,121, 129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1972	1983	C14	10	136/;142/7;21/106,127 T2/165	Vannier	
1973	1988	C14	65	119, T2 53/101,102,105,106,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1974	1978	C14	20	21/202,203,206,211	Homer	
1976	1986	C14	1	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	
1978	1991	C14	20	17/1,204,207,301,302, 305,307,310,312,316, 316A,320A,321,325,326B,336A,336B,340A,341,341A 18/135,226,231	Dasch	
1979	1984	C14	20	17,115,200;18/123,126,127,128,130,135,137,223,224,228,231,232	Ryan	
1979	1990	C14	20	28/202,203,206 17/203,215,217,225,229,237,249,251	Homer, Williams	
1980	1988	C14	15	17/34,38,217,317,319,313,221,326,341 Annex/lab 1 (Jul86),220 (Jul87)	Pavlovskis	
1981	1983	C14	65	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1990	C14	10	142/7	McDonald, Yuan	
1981	1991	C14	1	53/106,113,122	Harabin	
1982	1987	C14	15	17/316,327,341,349,353	Coolbaugh, Myhal, Bourgeois	
1982	1987	C14	15	17/327,341,353	Coolbaugh/ Myhal/ Bourgeois	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1982	1990	C14	10	17/115,117,127A,131, 133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1983	1990	C14	40	17/218,224,230,234,240,242 1/43,153 18/127,128,223,224,226,228,231,231A 1/37,43,39,157,161,165	Hartzman	
1984	1990	C14	65	53/101,111,117,118,119,120,122	Dutka	Deoxyglucose and todoantipyrine
1984	1990	C14	10	17/12,230,234 9/2456 139/105,106,107	Quesada	
1986	1986	C14	100	T-2	Mangold	
1986	1987	C14	1	17/338A,342,336,342A 18/126	Guerry	
1986	1987	C14	20	17/218,224,230,234,242,240 1/43,153	Millar	
1986	1989	C14	1	21/201,210,211	Roth	
1987	1988	C14	10	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	C14	15	17/109;18/126,135,137 Annex/111,115,126,213,213A,220	Bourgeois, Rollwagen	
1987	1988	C14	10	21/210,211,231, 233	McKenna	
1987	1990	C14	15	17/109,327 18/126,135,137	Bourgeois	
1987	1991	C14	1	Annex/213,215,218,219A,219B,219C	Guerry	
1987	1992	C14	10	Annex/115,128, 213A	Yuan	
1991	1992	C14	20	17/203,215,217,225,229,249;251, 251A 21/203	Falk	
1991	1992	C14	20	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1993	C14	50	53/101,111,117,118,119,120,122	Moore	
1991	1996	C14	40	1/39,43, N moat, S moat,145,157,159F,149,161 18/223	Harlan, June	
1991	1998	C14	15	17/301,307,311,316,316A, 320,336,336A,341,347,353	Dasch	
1991	1998	C14	10	17/12 139/105,106	Quesada	
1992	1992	C14	5	53/122	Ball	
1993	1993	C14	5	Annex/110,115,128	Franke	
1993	1993	C14	6	Annex/128,218,220	Hedstrom	
1993	1998	C14	0.5	17/115,325 18/126,135,137 21/201	Bourgeois	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1993	1998	C14	1	Annex/201,213,215,218219,221	Guerry	
1994	1998	C14	11	Annex/110,111,113,115,124,126,127,128,213B,218,220	Hoffman	
1995	1997	C14	5	53/119,121,122	Axley	
1996	1998	C14	1	17/200,204,212,210,218,230,234,242 18/223,231	Harlan	
1997	1998	C14	1	53/118,119,121,122	Nadi	
1976	1986	Ca45	1	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Casey (1982)/Roth	26Mar85
1981	1983	Ca45	20	53/105,106,108,109,110,111,113,117,118,119,122 119/1-	Hallenbeck	
1982	1990	Ca45	40	17/115,117,127A,131, 133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1983	1988	Ca45	20	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1984	1990	Ca45	20	53/101,111,117,118,119,120,122	Dutka	CaCl
1986	1987	Ca45	10	17/218,224,230,234,242,240 1/43,153	Millar	
1986	1989	Ca45	5	21/201,210,211	Roth	
1987	1988	Ca45	80	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	Ca45	10	21/210,211,231, 233	McKenna	Apr88
1991	1993	Ca45	20	53/101,111,117,118,119,120,122	Moore	
1993	1997	Ca45	20	17/15,203,215,205,217,225,239,249,251,353, 353A	Falk	
1996	1997	Ca45	5	53/119,121,122	Axley	
1976	1986	Ce141	0.5	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	2Nov78, animal injection
1988	1991	Ce141	25	53/112	Novotny	
1989	1990	Ce141	1	53/111,117,118,119,120	Dutka	
1990	1990	Ce141	10	17/203,215,217,225,229,249,251,251A 21/201,204,212	Williams	Microspheres
1991	1992	Ce141	10	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	Ce141	10	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1993	Ce141	1	53/101,111,117,118,119,120,122	Moore	
1992	1992	Ce141	25	53/122	Ball	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1981	1983	Co57	2	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1985	Co57	2	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1982	1990	Co57	1	17/115,117,127A,131, 133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1984	1990	Co57	2	53/101,111,117,118,119,120,122	Dutka	
1987	1988	Co57	10	21/210,211,231, 233	McKenna	Apr88
1988	1991	Co57	6	53/112	Novotny	
1992	1992	Co57	6	53/122	Ball	
1954	1963	Co60	2500	150		
1971	1981	Cr51	10	136/ 142/7,10,11,12,18,119,121,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1972	1983	Cr51	10	136/;142/7;21/106,127 T2/165	Vannier	
1974	1978	Cr51	20	21/202,203,206,211	Homer	
1976	1986	Cr51	10	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Casey (1982)/Roth	30Ap85
1976	1986	Cr51	2	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	
1978	1990	Cr51	10	17/1,204,207,301,302, 305,307,310,312,316, 316A,320A,321,325 ,326B,336A,336B,340A,341 ,341A 18/135,226,231	Dasch	
1979	1984	CR51	15	17,115,200;18/123,126,127,128,130,135,137,223,224,228,231,232	Ryan	
1980	1990	Cr51	20	28/202,203,206 17/203,215,217,225,229,237,249,251	Homer, Williams	
1981	1983	Cr51	8	553/105,106,108,109,110, 111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1988	Cr51	8	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1981	1990	Cr51	20	142/7	McDonald, Yuan	
1982	1987	Cr51	15	17/316,327,341,349,353	Coolbaugh, Myhal, Bourgeois	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1983	1990	Cr51	40	17/218,224,230,234,240,242 1/43,153 18/127,128,223,224,226,228,231,231A 1/37,43,39,157,161,165	Hartzman	
1983	1990	Cr51	10	17/115,117,127A,131,133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1984	1990	Cr51	8	53/101,111,117,118,119,120,122	Dutka	Sodium chromate
1986	1989	Cr51	10	21/201,210,211	Roth	
1987	1987	Cr51	15	17/316,327,341,353	Coolbaugh/ Myhal/ Bourgeois	
1987	1988	Cr51	5	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	Cr51	15	17/109;18/126,135,137 Annex/111,115,126,213,213A,220	Bourgeois, Rollwagen	
1987	1990	Cr51	15	17/109,327 18/126,128,135,137	Bourgeois	
1987	1992	Cr51	20	Annex/115,128, 213A	Yuan	
1988	1991	Cr51	25	53/112	Novotny	
1991	1992	Cr51	15	17/316,326,336	Carl	
1991	1992	Cr51	10	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	Cr51	10	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1993	Cr51	1	53/101,111,117,118,119,120,122	Moore	
1991	1995	Cr51	5	17/231,242,316 18/232	Ryan	
1991	1996	Cr51	40	1/39,43, N moat, S moat,145,157,159F,149,161 18/223	Harlan, June	
1991	1997	Cr51	10	17/115,127,129,131,149,149A,	Rollwagen	
1991	1998	Cr51	20	17/301,307,311,316,316A, 320,336,336A,341,347,353	Dasch	
1992	1992	Cr51	25	53/122	Ball	
1993	1993	Cr51	30	Annex/110,115,128	Franke	
1993	1997	Cr51	30	17/15,203,215,205,217,225,239,249,251,353, 353A	Falk	
1993	1998	Cr51	1	17/115,325 18/126,135,137 21/201	Bourgeois	
1994	1998	Cr51	100	Annex/110,111,113,115,124,126,127,128,213B,218,220	Hoffman	
1996	1998	Cr51	15	17/200,204,212,210,218,230,234,242 18/223,231	Harlan	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1997	1998	Cr51	20	Nicholson/337	Carl	
1980	1998	CS137	12KCi	17A/S22	Ryan	SEALED SOURCE 6/1980
1988	1991	Cs137	1	53/112	Novotny	
1992	1992	Cs137	1	53/122	Ball	
1980	1988	Fe59	5	17/34,38,217,317,319,313 ,221,326,341 Annex/lab 1 (Jul86),220 (Jul87)	Pavlovskis	Fe59 used in 341 (Mar85)
1983	1990	Fe59	10	28/202,203,206 17/203,215,217,225,229,2 37,249,251	Homer, Williams	Fe59-deuteroheme-I125-hemopexin complex, rats, in vivo
1991	1992	Fe59	10	17/203,215,217,225,229,2 49,251, 251A 21/203	Falk	
1991	1992	Fe59	10	17/203,215,217,225,229,2 49,251, 251A 21/201,204,212	Williams	
1967	1985	H3	200	17/001,209,215,219,233,2 37,301,302,302A,307,310, 313,317,319,325,326,326A ,341B,353,353A	Weiss	
1971	1981	H3	100	136/ 142/7,10,11,12,18,119,12 1,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1972	1983	H3	50	136/;142/7;21/106,127 T2/165	Vannier	
1974	1978	H3	150	21/202,203,206,211	Homer	
1976	1986	H3	1	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher/ Casey (1982)	18Sep80
1978	1991	H3	35	17/1,34,38,204,207,301,3 02,305,307,310,311,312,3 16,316A,317,319,320,320A ,321,325,326B,336A,336B, 338,338A,340A,341,341A 18/135,226,231	Dasch	Rms 17/1,310,325 counter only
1979	1984	H3	100	17,115,200;18/123,126,12 7,128,130,135,137,223,22 4,228,231,232	Ryan	I125 IODINATIONS REQUIRED BIOASSAYS
1979	1990	H3	290	28/202,203,206 17/203,215,217,225,229,2 37,249,251	Homer, Williams	
1980	1988	H3	15	53/105,108,109,110,113 119/1-5	Hallenbeck/ Dutka	
1980	1988	H3	60	17/34,38,217,317,319,313 ,221,326,341 Annex/lab 1 (Jul86),220 (Jul87)	Pavlovskis	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1981	1983	H3	20	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1991	H3	1000	53/106,113,122	Harabin	
1982	1987	H3	50	17/316,327,341,349,353	Coolbaugh, Myhal, Bourgeois	
1982	1987	H3	50	17/327,341,353	Coolbaugh/ Myhal/ Bourgeois	
1982	1990	H3	30	17/115,117,127A,131,133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1983	1990	H3	100	17/218,224,230,234,240,242 1/43,153 18/127,128,223,224,226,228,231,231A 1/37,43,39,157,161,165	Hartzman	
1984	1987	H3	5	17/338A,342,336,342A 18/126	Guerry	
1984	1990	H3	20	53/101,111,117,118,119,120,122	Dutka	Serotonin,5-hete,12-hete,dopamine,glycine,norepinephrine,gaba,choline,glutamate,thymidine
1984	1990	H3	100	142/7,7A,7B	McDonald, Yuan	
1984	1990	H3	10	17/12,230,234 9/2456 139/105,106,107	Quesada	
1986	1986	H3	100	T-2	Mangold	
1986	1987	H3	15	17/218,224,230,234,242,240 1/43,153	Millar	
1986	1989	H3	10	21/201,210,211	Roth	
1987	1988	H3	21	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	H3	50	17/109;18/126,135,137 Annex/111,115,126,213,213A,220	Bourgeois, Rollwagen	
1987	1988	H3	10	21/210,211,231, 233	McKenna	
1987	1990	H3	50	17/109,327 18/126,135,137	Bourgeois	
1987	1991	H3	5	Annex/213,215,218,219A,219B,219C	Guerry	
1987	1992	H3	100	Annex/115,128, 213A	Yuan	
1989	1989	H3	0.5	Annex/218,219A,219B,220	Campbell/ Rogers	
1991	1992	H3	50	17/316,326,336	Carl	
1991	1992	H3	290	17/203,215,217,225,229,249,251, 251A 21/203	Falk	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1991	1992	H3	290	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1993	H3	10	53/101,111,117,118,119,120,122	Moore	
1991	1995	H3	15	17/231,242,316 18/232	Ryan	
1991	1996	H3	100	1/39,43, N moat, S moat,145,157,159F,149,161 18/223	Harlan, June	
1991	1997	H3	50	17/115,127,129,131,149,149A,	Rollwagen	
1991	1998	H3	40	17/301,307,311,316,316A, 320,336,336A,341,347,353	Dasch	
1991	1998	H3	10	17/12 139/105,106	Quesada	
1993	1993	H3	20	Annex/110,115,128	Franke	
1993	1993	H3	6	Annex/128,218,220	Hedstrom	
1993	1994	H3	15	53/111,117,122	Moore	
1993	1997	H3	50	17/15,203,215,205,217,225,239,249,251,353, 353A	Falk	
1993	1997	H3	34	53/111,112,121,122	Harabin	(1034 mCi for 1993)
1993	1998	H3	20	17/115,325 18/126,135,137 21/201	Bourgeois	
1993	1998	H3	5	Annex/201,213,215,218219,221	Guerry	
1994	1998	H3	26	Annex/110,111,113,115,124,126,127,128,213B,218,220	Hoffman	
1995	1997	H3	20	53/119,121,122	Axley	
1996	1998	H3	50	17/200,204,212,210,218,230,234,242 18/223,231	Harlan	
1997	1998	H3	20	Nicholson/337	Carl	
1997	1998	H3	15	17/131,149	McCarron	
1997	1998	H3	20	53/118,119,121,122	Nadi	
1988	1991	I123	10	53/112	Novotny	
1971	1981	I125	10	136/ 142/7,10,11,12,18,119,121,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1972	1983	I125	10	136/;142/7;21/106,127 T2/165	Vannier	
1974	1978	I125	10	17/255A,301,307,308,313	Pavlovskis	
1976	1986	I125	0.75	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	May78
1976	1986	I125	4	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher/ Casey (1982)	28Oct81, animal injection

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1979	1984	I125	35	17,115,200;18/123,126,127,128,130,135,137,223,224,228,231,232	Ryan	
1979	1990	I125	40	28/202,203,206 17/203,215,217,225,229,237,249,251	Homer, Williams	
1980	1988	I125	20	17/34,38,217,317,319,313,221,326,341 Annex/lab 1 (Jul86),220 (Jul87)	Pavlovskis	
1980	1991	I125	15	17/1,204,207,301,302,305,307,310,312,316,316A,320A,321,325,326B,336A,336B,340A,341,341A 18/135,226,231	Dasch	
1981	1983	I125	5	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1991	I125	0.1	53/106,113,122	Harabin	
1982	1987	I125	0.5	17/316,327,341,349,353	Coolbaugh, Myhal, Bourgeois	
1982	1987	I125	0.5	17/327,341,353	Coolbaugh/ Myhal/ Bourgeois	
1982	1990	I125	201	17/115,117,127A,131,133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1983	1990	I125	70	17/218,224,230,234,240,242 1/43,153 18/127,128,223,224,226,228,231,231A 1/37,43,39,157,161,165	Hartzman	
1984	1987	I125	1	17/338A,342,336,342A 18/126	Guerry	
1984	1990	I125	5	53/101,111,117,118,119,120,122	Dutka	NaI
1984	1990	I125	20	142/7,7A,7B	McDonald, Yuan	
1986	1987	I125	3	17/218,224,230,234,242,240 1/43,153	Millar	
1986	1989	I125	4	21/201,210,211	Roth	
1987	1988	I125	201	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	I125	0.5	17/109;18/126,135,137 Annex/111,115,126,213,213A,220	Bourgeois, Rollwagen	
1987	1988	I125	10	21/210,211,231, 233	McKenna	
1987	1990	I125	0.5	17/109,327 18/126,135,137	Bourgeois	
1987	1990	I125	12	17/12,230,234 9/2456 139/105,106,107	Quesada	I125 use at NNMC bldg 9, room 2456

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1987	1991	I125	1	Annex/213,215,218,219A,219B,219C	Guerry	
1987	1992	I125	20	Annex/115,128, 213A	Yuan	
1988	1991	I125	50	53/112	Novotny	
1989	1989	I125	1	Annex/218,219A,219B,220	Campbell/ Rogers	
1990	1991	I125	1	Annex/218,219A,219B,220	Rogers	
1991	1992	I125	40	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	I125	40	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1993	I125	1	53/101,111,117,118,119,120,122	Moore	
1991	1996	I125	70	1/39,43, N moat, S moat,145,157,159F,149,161 18/223	Harlan, June	
1991	1997	I125	0.5	17/115,127,129,131,149,149A,	Rollwagen	
1991	1998	I125	27	17/301,307,311,316,316A, 320,336,336A,341,347,353	Dasch	
1991	1998	I125	10	17/12 139/105,106	Quesada	
1992	1992	I125	50	53/122	Ball	
1993	1993	I125	30	Annex/110,115,128	Franke	
1993	1994	I125	12	17/316,336,336A	Carl	
1993	1994	I125	20	53/111,117,122	Moore	
1993	1997	I125	40	17/15,203,215,205,217,225,239,249,251,353, 353A	Falk	
1994	1998	I125	30	Annex/110,111,113,115,124,126,127,128,213B,218,220	Hoffman	
1996	1998	I125	15	17/200,204,212,210,218,230,234,242 18/223,231	Harlan	
1997	1998	I125	0.5	17/131,149	McCarron	
1971	1981	I131	10	136/ 142/7,10,11,12,18,119,121,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1972	1983	I131	10	136/;142/7;21/106,127 T2/165	Vannier	
1988	1991	I131	10	53/112	Novotny	
1974	1978	In111	1.5	21/202,203,206,211	Homer	
1976	1986	In111	1.5	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	May78
1976	1986	In111	1	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher/ Casey (1982)	30Mar82

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1981	1983	In111	5	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1988	In111	5	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1984	1990	In111	5	53/101,111,117,118,119,120,122	Dutka	Oxine
1988	1991	Kr79	10	53/112	Novotny	
1992	1992	Kr79	10	53/122	Ball	
1992	1992	Kr83m	4000	53/122	Ball	
1988	1991	Kr85m	75	53/112	Novotny	
1992	1992	Kr85m	200	53/122	Ball	
1976	1986	Nb95	0.5	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher/ Casey (1982)	28Oct81, animal injection
1981	1983	Nb95	2	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1985	Nb95	2	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1984	1990	Nb95	2	53/101,111,117,118,119,120,122	Dutka	Microspheres
1988	1991	Nb95	25	53/112	Novotny	
1991	1993	Nb95	1	53/101,111,117,118,119,120	Moore	
1992	1992	Nb95	25	53/122	Ball	
1971	1981	P32	10	136/ 142/7,10,11,12,18,119,121,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1972	1983	P32	10	136/;142/7;21/106,127 T2/165	Vannier	
1974	1978	P32	5	21/202,203,206,211	Homer	
1974	1978	P32	25	17/255A,301,307,308,313	Pavlovskis	
1978	1991	P32	25	17/1,204,207,301,302, 305,307,310,312,316, 316A,320A,321,325 ,326B,336A,336B,340A,341 ,341A 18/135,226,231	Dasch	
1980	1990	P32	30	28/202,203,206 17/203,215,217,225,229,237,249,251	Homer, Williams	
1981	1983	P32	20	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1988	P32	20	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1982	1987	P32	10	17/316,327,341,349,353	Coolbaugh, Myhal, Bourgeois	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1982	1987	P32	10	17/327,341,353	Coolbaugh/ Myhal/ Bourgeois	
1983	1990	P32	40	17/218,224,230,234,240,242 1/43,153 18/127,128,223,224,226,228,231,231A 1/37,43,39,157,161,165	Hartzman	
1984	1987	P32	18	17/338A,342,336,342A 18/126	Guerry	
1984	1990	P32	20	53/101,111,117,118,119,120,122	Dutka	Adenosine triphosphate
1984	1990	P32	10	142/7,7A,7B	McDonald, Yuan	
1986	1987	P32	10	17/218,224,230,234,242,240 1/43,153	Millar	
1986	1989	P32	23	21/201,210,211	Roth	24Jun86, nonhuman
1987	1988	P32	80	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	P32	10	17/109;18/126,135,137 Annex/111,115,126,213,213A,220	Bourgeois, Rollwagen	
1987	1990	P32	10	17/109,327 18/126,135,137	Bourgeois	
1987	1991	P32	18	Annex/213,215,218,219A,219B,219C	Guerry	
1987	1992	P32	10	Annex/115,128, 213A	Yuan	
1988	1990	P32	80	17/115,117,127A,131, 133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1989	1989	P32	2	Annex/218,219A,219B,220	Campbell/ Rogers	
1991	1992	P32	20	17/316,326,336	Carl	
1991	1992	P32	20	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	P32	20	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1993	P32	20	53/101,111,117,118,119,120	Moore	
1991	1996	P32	40	1/39,43, N moat, S moat,145,157,159F,149,161 18/223	Harlan, June	
1991	1998	P32	35	17/301,307,311,316,316A, 320,336,336A,341,347,353	Dasch	
1993	1993	P32	6	Annex/128,218,220	Hedstrom	
1993	1994	P32	20	17/316,336,336A	Carl	
1993	1994	P32	20	17/225,229,239,249	Robinson	
1993	1997	P32	20	17/15,203,215,205,217,225,239,249,251,353, 353A	Falk	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1993	1997	P32	2	17/115,127,129,131,149,149A,	Rollwagen	
1993	1998	P32	18	Annex/201,213,215,218219,221	Guerry	
1994	1998	P32	6	Annex/110,111,113,115,124,126,127,128,213B,218,220	Hoffman	
1995	1997	P32	10	53/111,112,121,122	Harabin	
1996	1997	P32	10	53/119,121,122	Axley	
1996	1998	P32	30	17/200,204,212,210,218,230,234,242 18/223,231	Harlan	
1997	1998	P32	5	Nicholson/337	Carl	
1997	1998	P32	1	53/118,119,121,122	Nadi	
1990	1991	P-32	2	Annex/218,219A,219B,220	Rogers	
1974	1978	P33	25	17/255A,301,307,308,313	Pavlovskis	
1978	1991	P33	10	17/1,204,207,301,302,305,307,310,312,316,316A,320A,321,325,326B,336A,336B,340A,341,341A 18/135,226,231	Dasch	
1991	1995	P33	2	17/231,242,316 18/232	Ryan	
1991	1998	P33	10	17/301,307,311,316,316A,320,336,336A,341,347,353	Dasch	
1996	1997	P33	10	53/119,121,122	Axley	
1996	1998	P33	2	17/200,204,212,210,218,230,234,242 18/223,231	Harlan	
1997	1998	P33	10	53/118,119,121,122	Nadi	
1976	1986	Ru103	0.5	17/23,223,225 21/202,204,210A,211,217,219,231 18/223,232B	Fletcher	12Jan81, animal injection
1981	1983	Ru103	2	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1985	Ru103	2	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1984	1990	Ru103	2	53/101,111,117,118,119,120,122	Dutka	Microspheres
1987	1988	Ru103	10	21/210,211,231, 233	McKenna	Apr88
1988	1991	Ru103	25	53/112	Novotny	
1991	1993	Ru103	1	53/101,111,117,118,119,120	Moore	
1992	1992	Ru103	25	53/122	Ball	
1976	1986	S35	5	17/23,223,225 21/202,204,210,210A,211,217,219,231 18/223,232B	Casey (1982)/Roth	25Jul85
1978	1983	S35	5	136/;142/7;21/106,127 T2/165	Vannier	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1979	1981	S35	5	136/ 142/7,10,11,12,18,119,121,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1979	1984	S35	15	17,115,200;18/123,126,127,128,130,135,137,223,224,228,231,232	Ryan	
1980	1988	S35	30	17/34,38,217,317,319,313,221,326,341 Annex/lab 1 (Jul86),220 (Jul87)	Pavlovskis	
1980	1991	S35	16	17/1,204,207,301,302,305,307,310,312,316,316A,320A,321,325,326B,336A,336B,340A,341,341A 18/135,226,231	Dasch	
1981	1988	S35	10	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1982	1987	S35	10	17/316,327,341,349,353	Coolbaugh, Myhal, Bourgeois	
1982	1987	S35	10	17/327,341,353	Coolbaugh/ Myhal/ Bourgeois	
1982	1990	S35	5	17/115,117,127A,131,133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1983	1990	S35	20	17/218,224,230,234,240,242 1/43,153 18/127,128,223,224,226,228,231,231A 1/37,43,39,157,161,165	Hartzman	
1984	1987	S35	14	17/338A,342,336,342A 18/126	Guerry	
1984	1990	S35	5	142/7,7A,7B	McDonald, Yuan	
1985	1990	S35	10	28/202,203,206 17/203,215,217,225,229,237,249,251	Homer, Williams	
1986	1986	S35	15	T-2	Mangold	
1986	1989	S35	5	21/201,210,211	Roth	Jun86
1987	1988	S35	10	17/115,127,129,131,133,149,149A	Balekjian	
1987	1988	S35	10	17/109;18/126,135,137 Annex/111,115,126,213,213A,220	Bourgeois, Rollwagen	
1987	1990	S35	10	17/109,327 18/126,135,137	Bourgeois	
1987	1991	S35	14	Annex/213,215,218,219A,219B,219C	Guerry	
1987	1992	S35	5	Annex/115,128, 213A	Yuan	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1989	1989	S35	1	Annex/218,219A,219B,220	Campbell/ Rogers	Methionine
1991	1992	S35	20	17/316,326,336	Carl	
1991	1992	S35	10	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	S35	10	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1991	1995	S35	4	17/231,242,316 18/232	Ryan	
1991	1996	S35	40	1/39,43, N moat, S moat,145,157,159F,149,161 18/223	Harlan, June	
1991	1998	S35	40	17/301,307,311,316,316A, 320,336,336A,341,347,353	Dasch	
1993	1993	S35	10	Annex/110,115,128	Franke	
1993	1993	S35	12	Annex/128,218,220	Hedstrom	
1993	1994	S35	20	17/316,336,336A	Carl	
1993	1997	S35	20	17/15,203,215,205,217,225,239,249,251,353, 353A	Falk	
1993	1998	S35	14	Annex/201,213,215,218219,221	Guerry	
1994	1994	S35	0.5	17/225,229,249	Robinson	
1994	1998	S35	22	Annex/110,111,113,115,124,126,127,128,213B,218,220	Hoffman	
1995	1997	S35	10	53/111,112,121,122	Harabin	
1995	1997	S35	12	17/115,127,129,131,149,149A,	Rollwagen	
1996	1997	S35	10	53/119,121,122	Axley	
1996	1998	S35	10	1/39,43, N moat, 145,157,159F,149,161 18/223	Harlan	
1997	1998	S35	10	53/118,119,121,122	Nadi	
1990	1991	S-35	1	Annex/218,219A,219B,220	Rogers	
1976	1986	Sc46	0.5	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher/ Casey (1982)	28Oct81, animal injection
1981	1983	Sc46	4	553/105,106,108,109,110, 111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1985	Sc46	4	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1982	1986	Sc46	4	53/111,117,118,119,120	Dutka	Microspheres
1990	1990	Sc46	10	17/203,215,217,225,229,249,251,251A 21/201,204,212	Williams	Microspheres
1991	1992	Sc46	10	17/203,215,217,225,229,249,251, 251A 21/203	Falk	

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1991	1992	Sc46	10	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1981	1981	Se75	10	136/ 142/7,10,11,12,18,119,121,129(1979) 17/109 (1981) 21/127 (1981)	Vannier, McDonald	
1982	1983	Se75	10	136/;142/7;21/106,127 T2/165	Vannier	
1986	1986	Se75	10	T-2	Mangold	
1986	1991	Se75	5	17/1,204,207,301,302, 305,307,310,312, 316, 316A,320A,321,325 ,326B,336A,336B, 340A,341,341A 18/135,226,231	Dasch	
1981	1983	Sn113	2	53/105,106,108,109,110,111,113,117,118,119,122 119/1-5	Hallenbeck	
1981	1985	Sn113	2	53/105,108,109,110,113,117,118, 119,120 119/1-5	Hallenbeck/ Dutka	
1984	1990	Sn113	2	53/101,111,117,118,119,120,122	Dutka	Microspheres
1990	1990	Sn113	10	28/202,203,206 17/203,215,217,225,229,237,249,251	Homer, Williams	Microspheres
1991	1992	Sn113	10	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	Sn113	10	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1976	1986	Sr85	0.5	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	2Nov78, animal injection
1982	1990	Sr85	10	17/115,117,127A, 131, 133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1990	1990	Sr85	10	17/203,215,217,225,229,249,251,251A 21/201,204,212	Williams	Microspheres

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Table T-04. NMRC Historical Review of Use of Radioactive Materials at NMRC (1954-1999) (sorted by isotope then by year of use)

From Date	To Date	RAM		Building/rooms	Investigator	Comments
		Isotope	Max (mCi)			
1991	1992	Sr85	10	17/203,215,217,225,229,249,251, 251A 21/203	Falk	
1991	1992	Sr85	10	17/203,215,217,225,229,249,251, 251A 21/201,204,212	Williams	
1982	1990	Tc99m	100	17/115,117,127A, 131, 133,149,149A,237 125/39	Triplett, Balekjian, Ryan	
1992	1992	Tc99m	100	53/122	Ball	
1988	1991	Xe127	300	53/112	Novotny	
1992	1992	Xe127	300	53/122	Ball	
1988	1991	Xe133	2500	53/112	Novotny	
1992	1992	Xe133	2500	53/122	Ball	
1974	1978	Yb169	3	21/202,203,206,211	Homer	
1976	1986	Yb169	3	17/23,223,225 21/202,204,210,210A, 211,217,219,231 18/223,232B	Fletcher	May78

T-05 Personnel Dosimeter Results - Annual Summaries (1990 - 1999)

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Table T-05. NMRC PERSONNEL RADIATION EXPOSURE SUMMARY REPORT

Statistical Summary Report of the personnel monitoring information recorded for individuals for whom personal monitoring was either required or provided, indicating the number of individuals whose total whole-body exposure recorded during the previous year was in each of the following estimated exposure ranges (10CFR Ch. 1, Section 20.407). The term exposure refers to the total effective dose equivalent in rems. The following data was prepared using NMRC's Annual NAVMED 6470/1 Reports.

Estimated Whole-Body Exposure Range (rems) [1]	**Number of individuals in each range**									
	1999[2]	**1998**	**1997**	**1996**	**1995**	**1994**	**1993**	**1992**	**1991**	**1990**
No measurable exposure (0 mrem)	47	42	49	45	49	47	69	55	69	33
Measurable exposure less than 0.1 (100 mrem)	25	46	53	60	56	75	45	69	46	95
0.1 to 0.25									1	1
Total number of persons monitored	**72**	**88**	**102**	**115**	**105**	**122**	**114**	**124**	**116**	**129**
Highest individual exposure (mrem)	**11**	**25**	**21**	**39**	**19**	**49**	**68**	**70**	**139**	**156**

[1] Individual values exactly equal to the separating exposure ranges shall be reported in the higher range.

[2] The exposure is for a part-year period: 4 Jan 99 to 27 Apr 99.

T-06 Posted (Environmental) Dosimeter Results - 1995

Table T-06. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1995

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD **Dose equivalent data reported in rem.**	Post 01 Bldg 17 Room 1, BG	Post 02 Bldg 17 Room 1, SG	Post 03 Bldg 17 Room 1, FG	Post 04 Supply	Post 07 NNMC site	Post 08 Annex Gamma
21DEC94-07FEB95	0.006	0.003	0	0	0.084	0.004
07FEB95-21MAR95	0.004	0	0	0.007	0.078	0.008
21MAR95-09MAY95	0.007	0	0	0	0.049	0.004
09MAY95-22JUN95	0.006	0	0	0	0.038	0
22JUN95-03AUG95	0.007	0	0	0	0.043	0.007
03AUG95-21SEP95	0.009	0	0	0	0.051	0.006
21SEP95-07NOV95	0.005	0	0	0	0.055	0
07NOV95-20DEC95	0.005	0	0	0	0.046	0
TOTALS	0.049	0.003	0	0.007	0.444	0.029

RADIATION PERIOD **Dose equivalent data reported in rem.**	Post 09 Annex Room 114	Post 10 Bldg 21 X-ray Exam Room	Post 11 Bldg 21 Outside X-ray Room 1	Control #1	Control #2
21DEC94-07FEB95	0	0.035	0.006	0.014	0.017
07FEB95-21MAR95	0	0.034	0	0.011	0.011
21MAR95-09MAY95	0	0.03	0.008	0.011	0.008
09MAY95-22JUN95	0	0.029	0.009	0.011	0.01
22JUN95-03AUG95	0	0.023	0.005	0.01	0.011
03AUG95-21SEP95	0	0.033	0.006	0.015	0.011
21SEP95-07NOV95	0	0.009	0.016	0.015	0.013
07NOV95-20DEC95	0	0.006	0.006	0.015	0.015
TOTALS	0	0.199	0.056	0.102	0.096

NMRI RADIATION EXPOSURE REPORT DATA

SUMMARY FOR CALENDAR YEAR 1995

Posted radiation dosimetry locations:

Location	1995 TEDE (mrem)
#1 Bldg 17, room 1 (gamma irrad. rear)	49
#2 Bldg. 17, room 1 (gamma irrad. side)	3
#3 Bldg. 17, room 1 (gamma irrad. front)	0
#4 Receiving, Bldg. 17, room 10	7
#7 NNMC site (gamma irrad., isolated room)	444
#8 Annex gamma irradiator front	29
#9 Annex room 114	0
#10 Bldg 21, x-ray exam room (no equipment)	199
#11 Bldg. 21, outside x-ray room	56

Interpretation of posted radiation dosimetry data: The majority of the 1995 TEDE values (annual totals for the posted dosimetry results per location) were below the 100-mrem limit for the total effective dose equivalent (TEDE) for the general public. In two instances, the TEDE values for posted-dosimeter sites exceeded 100 mrem; however, these sites were restricted areas in which the general public had little or no access. Therefore, it was very unlikely that any member of the general public received 100 mrem TEDE.

Additional information regarding estimated doses to the public:

- all areas used by the general public that were situated adjacent to designated radiation areas: (1) exhibited at or near background radiation levels as evidenced by quarterly radiation safety swipes and surveys; (2) were not occupied full-time by the general public, and (3) it is estimated that the infrequent occupancy of such spaces would not result in the general public receiving more than 100 mrem total effective dose equivalent.

- there were no high or very high radiation areas at NMRI.

- NMRI's radioactive materials permit allow the command to possess very limited quantities; NMRI used 331 mCi, less than one curie, of radioactive materials in 1995, excluding NMRI's three sealed-source, Cs-137 gamma irradiators.

- the highest radiation dose equivalent received by NMRI personnel authorized as radiation workers for 1995 was 33 mrem; in 1994, 49 mrem; in 1993, 68 mrem.

- all NMRI radioactive-material use and storage areas were posted with "Caution Radioactive Materials" signs to alert the general public of the possible presence of radioactive materials in the room or equipment.

BOTTOM LINE

Estimated dose to the general public for 1995: < 100 mrem

Estimated maximum dose rate to the general public for 1995: < 2 mrem/hr

T-07 Posted (Environmental) Dosimeter Results - 1996

NMRC Historical Site Assessment (HSA)

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Table T-07. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1996

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD **Dose equivalent data reported in rem.**	Post 01 Bldg 17 Room 1, BG	Post 02 Bldg 17 Room 1, SG	Post 03 Bldg 17 Room 1, FG	Post 04 Supply	Post 07 NNMC site (gamma irrad.)	Post 08 Annex Gamma
20DEC95-22FEB96		0.011	0.004	0	0.061	0
22FEB96-25APR96	0.008	0.009	0.007	0	0.051	0.005
22APR96-02JUL96	0.009	0.007	0	0	0.067	0.003
01JUL96-04SEP96	0.006	0.008	0	0	0.05	0.006
29AUG96-07OCT96	0.005	0.004	0	0	0.026	0.005
07OCT96-12DEC96	0.009	0.011	0.005	0.008	0.035	0.006
TOTALS	0.037	0.05	0.016	0.008	0.29	0.025

RADIATION PERIOD **Dose equivalent data reported in rem.**	Post 09 Annex Room 114	Post 10 Bldg 21 X-ray Exam Room	Post 11 Bldg 21 Outside X-ray Room	Control #1	Control #2
20DEC95-22FEB96	0	0.007	0.011	0.018	0.016
22FEB96-25APR96	0	0.009	0.009	0.026	0.016
22APR96-02JUL96	0	0.009	0.011	0.015	0.02
01JUL96-04SEP96	0	0.008		0.02	0.021
29AUG96-07OCT96	0	0.003	0.009	0.018	0.019
07OCT96-12DEC96	0	0.011	0.021	0.013	0.014
TOTALS	0	0.047	0.061	0.11	0.106

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Table T-07. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1996

Posted radiation dosimetry locations:

Location	1996 TEDE (mrem)
#1 Bldg 17, room 1 (gamma irrad. rear)	37
#2 Bldg. 17, room 1 (gamma irrad. side)	50
#3 Bldg. 17, room 1 (gamma irrad. front)	16
#4 Receiving, Bldg. 17, room 10	8
#7 NNMC site (gamma irrad., isolated room)	290
#8 Annex gamma irradiator front	25
#9 Annex room 114	0
#10 Bldg 21, x-ray exam room (no equipment)	47
#11 Bldg. 21, outside x-ray room	61

Interpretation of posted radiation dosimetry data: The majority of the 1996 TEDE values (annual totals for the posted dosimetry results per location) were below the 100-mrem limit for the total effective dose equivalent (TEDE) for the general public. In one instance, the TEDE value for a posted-dosimeter site exceeded 100 mrem; however, this site was a restricted area in which the general public had little or no access. Therefore, it was very unlikely that any member of the general public received 100 mrem TEDE.

Additional information regarding estimated doses to the public:

- all areas used by the general public that were situated adjacent to designated radiation areas: (1) exhibited at or near background radiation levels as evidenced by quarterly radiation safety swipes and surveys; (2) were not occupied full-time by the general public, and (3) it was estimated that the infrequent occupancy of such spaces would not result in the general public receiving more than 100 mrem total effective dose equivalent.

- there were no high or very high radiation areas at NMRI.

- NMRI's radioactive materials permit allow the command to possess very limited quantities; NMRI used 381 mCi, less than one curie, of radioactive materials in 1996, excluding NMRI's three sealed-source, Cs-137 gamma irradiators.

- the highest radiation dose equivalent received by NMRI personnel authorized as radiation workers for 1996 was 39 mrem; in 1995, 33 mrem; in 1994, 49 mrem; in 1993, 68 mrem.

- all NMRI radioactive-material use and storage areas were posted with "Caution Radioactive Materials" signs to alert the general public of the possible presence of radioactive materials in the room or equipment.

BOTTOM LINE

Estimated dose to the general public for 1996: < 100 mrem

Estimated maximum dose rate to the general public for 1996: < 2 mrem/hr

T-08 Posted (Environmental) Dosimeter Results - 1997

NMRC Historical Site Assessment (HSA)

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Table T-08. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1997

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD Dose equivalent data reported in rem.	Post 01 Bldg 17 Room 1, BG	Post 02 Bldg 17 Room 1, SG	Post 03 Bldg 17 Room 1, FG	Post 04 Supply	Post 07 NNMC site	Post 08 Annex Gamma
12DEC96-28JAN97	0.008	0.005	0	0	0.019	0.004
28JAN97-03MAR97	0.003	0.004	0	0	0.015	0
03MAR97-16APR97	0.006	0	0	0	0.024	0.003
16APR97-29MAY97	0.005	0	0	0	0.018	0
27MAY97-16JUL97	0.004	0	0	0	0.031	0
16JUL97-03SEP97	0.006	0	0	0	0.031	0
03SEP97-27OCT97	0.005	0.000	0.000	0.003	0.036	0.000
27OCT97-15DEC97		0.005	0.005	0.004	0.053	0.000
TOTALS	0.037	0.014	0.005	0.007	0.227	0.007

RADIATION PERIOD Dose equivalent data reported in rem.	Post 09 Annex Room 114	Post 10 Bldg 21 X-ray Exam Room	Post 11 Bldg 21 Out-side X-ray Room	Control #1	Control #2
12DEC96-28JAN97	0	0.007	0.013	0.019	0.015
28JAN97-03MAR97	0	0.005	0.007	0.01	0.014
03MAR97-16APR97	0	0.007	0.013	0.011	0.011
16APR97-29MAY97	0	0.005	0.012	0.009	0.012
27MAY97-16JUL97	0	0.006	0.011	0.014	0.012
16JUL97-03SEP97	0	0.005	0.011	0.01	0.011
03SEP97-27OCT97	0	0.005	0.014	0.015	0.015
27OCT97-15DEC97		0.111	0.014	0.014	0.012
TOTALS	0	0.151	0.095	0.102	0.102

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Table T-08. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1997

Posted radiation dosimetry locations:

Location	1997 TEDE (mrem)
#1 Bldg 17, room 1 (gamma irrad. rear)	37
#2 Bldg. 17, room 1 (gamma irrad. side)	14
#3 Bldg. 17, room 1 (gamma irrad. front)	5
#4 Receiving, Bldg. 17, room 10	7
#7 NNMC site (gamma irrad., isolated room)	227
#8 Annex gamma irradiator front	7
#9 Annex room 114	0
#10 Bldg 21, x-ray exam room (no equipment)	151
#11 Bldg. 21, outside x-ray room	95

Interpretation of posted radiation dosimetry data: The majority of the 1997 TEDE values (annual totals for the posted dosimetry results per location) were below the 100-mrem limit for the total effective dose equivalent (TEDE) for the general public. In two instances, the TEDE value for posted-dosimeter sites exceeded 100 mrem; however, these sites were restricted areas in which the general public had little or no access. Therefore, it is very unlikely that any member of the general public received 100 mrem TEDE.

Additional information regarding estimated doses to the public:

- all areas used by the general public that are situated adjacent to designated radiation areas: (1) exhibit at or near background radiation levels as evidenced by quarterly radiation safety swipes and surveys; (2) are not occupied full-time by the general public, and (3) it is estimated that the infrequent occupancy of such spaces would not result in the general public receiving more than 100 mrem total effective dose equivalent.

- there are no high or very high radiation areas at NMRI.

- NMRI's radioactive materials permit allow the command to possess very limited quantities; NMRI used 512 mCi (less than one curie) of radioactive materials during 1997, excluding NMRI's three sealed-source, Cs-137 gamma irradiators.

- the highest radiation dose equivalent received by NMRI personnel authorized as radiation workers for 1997 was 21 mrem; in 1996, 39 mrem; in 1995, 33 mrem; in 1994, 49 mrem; in 1993, 68 mrem.

- all NMRI radioactive-material use and storage areas are posted with "Caution Radioactive Materials" signs to alert the general public of the possible presence of radioactive materials in the room or equipment.

BOTTOM LINE

Estimated dose to the general public for 1997: < 100 mrem

Estimated maximum dose rate to the general public for 1997: < 2 mrem/hr

T-09 Posted (Environmental) Dosimeter Results - 1998

NMRC Historical Site Assessment (HSA)

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Table T-09. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1998

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD **Dose equivalent data reported in rem.**	Post 01 Bldg 17 Room 1, BG	Post 02 Bldg 17 Room 1, SG	Post 03 Bldg 17 Room 1, FG	Post 04 Supply	Post 07 NNMC site	Post 08 Annex Gamma Irrad.
12/15/97-2/4/98	0.007	0.005	0	0	0.040	0.005
2/4/98-3/24/98	0.007	0	0.003	0	0.030	0.004
3/24/98-5/5/98	0.004	0	0	0	0.012	0
5/5/98-6/17/98	0.006	0.006	0	0	0.020	0
6/17/98-7/23/98	0.003	0.003	0	0	0.029	0
7/23/98-9/3/98	0.005	0.003	0.004	0	0.004	0
9/3/98-10/8/98	0.006	0	0	0	---	0
10/8/98-11/16/98	0.007	0.007	0.004	0.003	---	0
11/16/98-1/4/99	00.005	00.004	00.000	00.000	---	0
TOTALS	0.050	0.028	0.011	0.003	0.135	0.009

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD **Dose equivalent data reported in rem.**	Post 09 Annex Room 114	Post 11 Bldg 21 X-ray Exam Room	Post 12 Bldg 21 Out-side X-ray Room	Post 13 Annex Lab 115 RAM Liquid Waste	Post 14 Annex Lab 115 RAM Solid Waste	Post 15 Annex Loading Dock Storage Area
12/15/97-2/4/98	0	0.008	0.013	0	0.274	0.010
2/4/98-3/24/98	0	0.009	0.016	0	0.061	0.009
3/24/98-5/5/98	0	0	0.005	0	0.128	0.011
5/5/98-6/17/98	0	0.007	0.011	0.004	0.060	0.029
6/17/98-7/23/98	0	0.005	0.008	0.016	0.037	0.013
7/23/98-9/3/98	0	0.009	0.007	0.010	0	0.054
9/3/98-10/8/98	0	0.007	0.006	0.034	0.022	0.014
10/8/98-11/16/98	0	0.010	0.007	0.067	0.483	0.013
11/16/98-1/4/99	0	00.010	00.004	00.042	00.357	00.006
Total	0	0.065	0.077	0.173	1.422	0.159

NMRC Historical Site Assessment (HSA)

June 1999

Table T-09. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR CALENDAR YEAR 1998

SUMMARY FOR CALENDAR YEAR 1998

Posted radiation dosimetry locations:

Location	1998 TEDE (mrem)
#1 Bldg 17, room 1 (gamma irradiator rear)	50
#2 Bldg. 17, room 1 (gamma irradiator side)	28
#3 Bldg. 17, room 1 (gamma irradiator front)	11
#4 Receiving, Bldg. 17, room 10	3
#7 NNMC site (gamma irradiator, isolated room)	135
#8 Annex gamma irradiator front	9
#9 Annex room 114	0
#11 Bldg 21, x-ray exam room (no equipment)	65
#12 Bldg. 21, outside x-ray room	77
#13 Annex Liquid RAM waste storage	173
#14 Annex Solid RAM waste storage	1422
#15 Annex loading Dock Storage	159

Interpretation of posted radiation dosimetry data: The majority of the 1998 TEDE values (annual totals for the posted dosimetry results per location) were below 100 mrem for the (1998) total effective dose equivalent (TEDE). In four instances, the TEDE values for posted-dosimeter sites exceeded 100 mrem; however, these sites were for restricted areas in which the general public had little or no access. Therefore, it is very unlikely that any member of the general public received 100 mrem TEDE during the3 year. No NMRC radiation areas had exposure rates which exceeded the 2-mrem-per hour. Posted #14 data reflects elevated reading due to improper storage of RAM liquid waste in a controlled space. The personnel involved were informed of the proper storage procedures. Corrective actions have been implemented.

Additional information regarding estimated doses to the public:

- all areas used by the general public that are situated adjacent to designated radiation areas: (1) exhibit at or near background radiation levels as evidenced by quarterly radiation safety swipes and surveys; (2) are not occupied full-time by the general public, and (3) it is estimated that the infrequent occupancy of such spaces would not result in the general public receiving more than 100 mrem total effective dose equivalent.
- there are no high or very high radiation areas at NMRI.
- NMRC's radioactive materials permit allows the command to possess very limited quantities; NMRI used less than one curie of radioactive materials during January - December 1998, excluding NMRC's three sealed-source, Cs-137 gamma irradiators. Two of NMRC's three Cesium-137 gamma irradiators were transferred from the custody of NMRC to Shepherd & Associates for disposal (one in 8/98) and refurbishment (one in 12/98).
- the highest individual radiation dose equivalent received by NMRI personnel authorized as radiation workers for 1998 was 25 mrem; in 1997, 21 mrem; in 1996, 39 mrem; in 1995, 33 mrem; in 1994, 49 mrem; in 1993, 68 mrem.
- all NMRC radioactive-material use and storage areas are posted with "Caution Radioactive Materials" signs to alert the general public of the possible presence of radioactive materials in the room or equipment.

BOTTOM LINE

Estimated dose to the general public for 1998: < 100 mrem

Maximum exposure rate to the general public for 1998: < 2 mrem/hr

T-10 Posted (Environmental) Dosimeter Results - 1999

NMRC Historical Site Assessment (HSA)

June 1999

Table T-10. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR JAN - APR 1999

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD Dose equivalent data reported in rem.	Post 01 Bldg 17 Room 1, BG	Post 02 Bldg 17 Room 1, SG	Post 03 Bldg 17 Room 1, FG	Post 04 Supply	Post 08 Annex Gamma Irrad.
04Jan99 - 03Feb99	---	---	---	00.000	00.000
03Feb99 - 15Mar99	00.004	00.007	00.000	00.000	00.005
15Mar99 - 27Apr99	00.008	00.000	00.000	00.000	00.007
TOTALS	00.012	00.007	00.000	00.000	00.012

(DEEP DOSE EQUIVALENT PHOTON, REM)

RADIATION PERIOD Dose equivalent data reported in rem.	Post 09 Annex Room 114	Post 11 Bldg 21 X-ray Exam Room	Post 12 Bldg 21 Out-side X-ray Room	Post 13 Annex Lab 115 RAM Liquid Waste	Post 14 Annex Lab 115 RAM Solid Waste	Post 15 Annex Loading Dock Storage Area
04Jan99 - 03Feb99	00.000	00.007	00.004	00.000	00.006	00.000
03Feb99 - 15Mar99	00.000	00.009	00.006	00.012	00.009	00.012
15Mar99 - 27Apr99	00.000	00.007	00.004	00.039	00.683	00.000
TOTALS	00.000	00.023	00.014	00.051	00.698	00.012

Note: The 1998 posted TLD results were available for the period 15 December 1997 through 11 November 1998; data for one period is pending.

NMRC Historical Site Assessment (HSA)

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Table T-10. NMRI RADIATION EXPOSURE REPORT DATA -- POSTED TLD RESULTS FOR JAN - APR 1999

Posted radiation dosimetry locations:

Location	1999 TEDE (mrem)
#1 Bldg 17, room 1 (gamma irradiator rear)	00.012
#2 Bldg. 17, room 1 (gamma irradiator side)	00.007
#3 Bldg. 17, room 1 (gamma irradiator front)	00.000
#4 Receiving, Bldg. 17, room 10	00.000
#8 Annex gamma irradiator front	00.005
#9 Annex room 114	00.000
#11 Bldg 21, x-ray exam room (no equipment)	00.023
#12 Bldg. 21, outside x-ray room	00.014
#13 Annex Liquid RAM waste storage	00.051
#14 Annex Solid RAM waste storage	00.698
#15 Annex loading Dock Storage	00.012

Interpretation of posted radiation dosimetry data: The majority of the 1999 TEDE values (annual totals for the posted dosimetry results per location) were below 100 mrem for the (1999) total effective dose equivalent (TEDE). In one instance, the TEDE value for one posted-dosimeter site exceeded 100 mrem; however, this site was for a restricted waste storage area in which the general public had little or no access. Therefore, it is very unlikely that any member of the general public received 100 mrem TEDE during the year. No NMRC radiation areas had exposure rates that exceeded the 2-mrem-per hour.

Additional information regarding estimated doses to the public:

- all areas used by the general public that are situated adjacent to designated radiation areas: (1) exhibit at or near background radiation levels as evidenced by quarterly radiation safety swipes and surveys; (2) are not occupied full-time by the general public, and (3) it is estimated that the infrequent occupancy of such spaces would not result in the general public receiving more than 100 mrem total effective dose equivalent.
- there are no high or very high radiation areas at NMRI.
- NMRC's radioactive materials permit allows the command to possess very limited quantities; NMRI has used less than one curie of radioactive materials during January ▒ June 1999, excluding NMRC's two sealed-source, Cs-137 gamma irradiators.
- the highest individual radiation dose equivalent received by NMRI personnel authorized as radiation workers for January-April 1999 was 11 mrem; in 1998, 25 mrem; in 1997, 21 mrem; in 1996, 39 mrem; in 1995, 33 mrem; in 1994, 49 mrem; in 1993, 68 mrem.
- all NMRC radioactive-material use and storage areas are posted with "Caution Radioactive Materials" signs to alert the general public of the possible presence of radioactive materials in the room or equipment.

BOTTOM LINE

Estimated dose to the general public for Jan-Apr 1999: < 100 mrem

Maximum exposure rate to the general public for Jan-Apr 1999: < 2 mrem/hr

T-11 Radioisotope Inventory Log - NMRC Bethesda (1989-1999)

NMRC Historical Site Assessment (HSA)

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Table T-11. Radioisotope Inventory Log - NMRC Bethesda (1989 - 1999)

(This data represents isotopes received at NMRC during the calendar year.)

Year		H3	C14	P32	P33	S35	Ar41	Ca45	CR51	I125	Others	TOTALS
1999 (to 6/99)		11.5	0	3.5	0	2	0	0	5	0		22
1998		40.5	0.1	15.75	1	9.15	0	0	22	0		88.5
1997		50.85	0	28	0.2566	21.24	0	1	31	1.602		133.9486
1996		77.65	0.325	20.25	0.0066	11.25	0	0	37	2.436		148.9176
1995		72.255	0.05	31	0	15.75	0	0	29	4.85		152.905
1994		88.513	0.002	61.25	0	31.01	0	0	17	6.9442		204.7192
1993		106.678	0.004	60.6	0	49.5	0	0	0	16.515		233.297
1992		2085.279	11.021	73.92	0	85.038	0	0	35.677	60.579	2.5	3412.741
1991		146.594	3.771	36.693	0	55	0	0	49.2775	11.8226	4494.08	4797.2381
1990		178.002	16.05	26.25	0	3	1.7	1	89.75	27.858	2953.25	3296.86
1989		212.3571	3.555	52.6	0	47	0	0	56	27.6745	2821	3220.1866

Other Radioisotopes (1989 – 1992)

Year		In111	Xe133	Ce141	Sc46	Sn113	Sr85	Ru103	Nb95	TOTALS
1992		23.981	1032	2.5					2.5	2.5
1991		48.58	4429	4.5	1.5	1.5	1	4	4	4494.08
1990		0	2944	3.75	0.5	0.5	1	1.75	1.75	2953.25
1989		0	2800	12.5	0	0	0	7.5	1	2821

T-12 Radioisotope Inventory Log - NMRC Rockville Annex (1987-1999)

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Table T-12. Radioactive Material Inventory Log - NMRC Rockville Annex (1987-1999)

(This data represents isotopes received at NMRC during the calendar year.)

Year		H-3	C-14	P-32	P-33	S-35	CR51	I-125	TOTALS
1999 (to 6/99)		10	0	17.5	0	1	90	0	118.5
1998		40	0	43.5	0	0	85	0	168.5
1997		20.5	0	50.5	0	2	305	0	378
1996		30	0	46	0	1.25	155	0	232.25
1995		21	0	41.85	0	4.25	111	0	178.1
1994		34	0.5	42.75	0	14.579	130	0	221.829
1993		14.5	2.3	56.369	0	24.75	100	0	197.919
1992		0	0	39	0	2.028	120	0.25	161.278
1991		20	0	41.5	0	7.75	110	0.025	179.275
1990		5.001	0	34.5	0	12.5	120	0.65	172.651
1989		30	0	38.5	0	9	60.2	1.11	138.81
1988		.25	0.555	37.75	0	9.5	60	1.1	109.155
1987		12.01	0	27.5	0	60	17	0.419	116.929

T-13 Radioisotope Inventory Log - Total for NMRC (1989-1999)

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Table T-13. Radioisotope Inventory Log - Total for NMRC Bethesda and NMRC Annex (1989 - 1999)

(This data represents isotopes received at NMRC during the calendar year.)

Year		H3	C14	P32	P33	S35	Ca45	CR51	I125	Others	TOTALS
1999 (to 6/99)		21.5	0	21	0	3	0	95	0	0	140.5
1998		35.5	0.1	12.5	1	9.15	0	22	0	0	80.25
1997		50.85	0	28	0.2566	21.24	1	31	1.602	0	133.9486
1996		77.65	0.325	20.25	0.0066	11.25	0	37	2.436	0	148.9176
1995		72.255	0.05	31	0	15.75	0	29	4.85	0	152.905
1994		88.513	0.002	61.25	0	31.01	0	17	6.9442	0	204.7192
1993		106.678	0.004	60.6	0	49.5	0	0	16.515	0	233.297
1992		2085.279	11.021	73.92	0	85.038	0	35.677	60.579	1061.227	3412.741
1991		146.594	3.771	36.693	0	55	0	49.2775	11.8226	4494.08	4797.2381
1990		178.002	16.05	26.25	0	3	1	89.75	27.858	2954.95	3296.86
1989		212.3571	3.555	52.6	0	47	0	56	27.6745	2821	3220.1866

Other Radioisotopes (1989 - 1992)

Year		Ar41	In111	Xe133	Ce141	Sc46	Sn113	Sr85	Ru103	Nb95	TOTALS
1992		0	23.981	1032.246	2.5	0	0	0	0	2.5	1061.227
1991		0	48.58	4429	4.5	1.5	1.5	1	4	4	4494.08
1990		1.7	0	2944	3.75	0.5	0.5	1	1.75	1.75	2954.95
1989		0	0	2800	12.5	0	0	0	7.5	1	2821

T-14 Solid Radioactive Waste Log (1989 - 1999)

Table T-14. NMRC Solid Radioactive Waste Log (1989 – 1998)

Year		H-3	C-14	P-32	P-33	S-35	OTHER	CR51	I-125	TOTALS
1999		34.1	0	17.652	0	7.01	0	90	0	148.762
1998		53.75	0	38.256	0	3.942	0	99.74	0	195.688
1997		49.78	0.002	51.827	0.006	1.44	0	360.606	0.47	464.131
1996		33.408	0.05	33.6375	0	2.056	0	112.979	10.243	192.3735
1995		6.15297	0.016	32.323	0	12.452	0.02	29.091	0.2041	80.23907
1994		66.038	1.3	70.7778	0	8.892	0.61	4.452	4.3847	156.4545
1993		817.361	14.98	80.54	0	36.46	0	3.2	28.934	981.475
1992		1163.8642	0.8152	30.786	0	18.1	6.282	104.671	3.517	1328.0354
1991		34.525	0.7235	0.23	0	0.503	0.04	0.125	0.16	36.3065
1990		18.9256	4.0656	0.005	0	0.9	1.21	38.275	12.269	75.6502
1989		20.7249	4.672	23.795	0	6.4003	0	17.502	3.452	76.5462

T-15 Liquid Radioactive Waste Log - NMRC Bethesda
(1982 - 1999)

Table T-15. Liquid Radioactive Waste Log – NMRC Bethesda (1982 – 1998)

NMRC, SINKS IN BUILDINGS 17/127,214, 307,309,317,S-20; 18/135; 53/122,113; AND 21/301,211

Year		H-3	C-14	P-32	P-33	Ca-45	S-35	CR51	I-125	Other	Totals
1999		13.8391	0	0.11646	0.00034	0	0.048	0.1017	0	0	14.1056
1998		27.3613	0.0013	1.915		0	0	3.3938	0.001		32.6724
1997		35.811	0	0.082		0	0	0.0608	0.004		35.9578
1996		27.471	0	0.223		0	0.003	0.02027	0.082		27.79927
1995		21.36	0.581	1.567		0	1.366	0	0.447		25.321
1994		33.585	0	2.074		0	2.863	0	3.846		42.368
1993		86.882	0.001	0.790		0	15	0	2.492		105.165
1992		32.988	0	0		1.25	1.000	0	0		35.238
1991		38.876	0.0026	0		0	0.030	0	182.81		221.7186
1990		18.078	0.025	0.001		0.00007	0	0.2	0.061		18.36507
1989		49.26	2.9205	0		0	0.314	0.0095	0.08014		52.58414
1988		49.952	2.053	0.0329		0.0928	0.8922	0.0688	0.7474		53.8391
1987		50.02	0.44	0.0		0.0	0.0	0.002	0.78		51.242
1986		44.45	0.27	0.0		0.05	0.0	0.1281	0.08		44.9781
1985		45.812	0.55	0.0		0.0	0.0	0.1	0.00068		46.46268
1984		8.7823	0.72	0.0		2	0.001	0.32	2.5		14.3233
1983		9.87	1.37	0.0		3.1	0.0088	3.18	0.0		17.5288
1982		8.61	0.016	1		0.0	0.07	0.067	0.021	3	12.784

T-16 Liquid Radioactive Waste Log - NMRC Annex (1988 - 1999)

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Table T-16. NMRC Annex Liquid Radioactive Waste Log (1988 - 1999)

ANNEX, SINKS IN ROOMS 202, 219B, 115, ETC.

Year		H-3	C-14	P-32	P-33	S-35	CR51	I-125	TOTALS
1999		3.66207	0	0.2966	0	0.3104	14.6489	0	18.91797
1998		8.2631	0	1.1946	0	0	2.858	0	12.3157
1997		6.485	0	2.053	0	0.0016	14.279	0	22.8186
1996		9.93	0	3.398	0	0.00064	6.045	0	19.37364
1995		6.566	0	0.910	0	0.003	2.354	0	9.833
1994		1.938	0	3.023	0	0.942	2.953	0	8.856
1993		7.993	0	12.045	0	0.70	0	0.001	20.739
1992		0.34	0	0	0	0.003	0	0	0.343
1991		67.5	0	0	0	6.225	0	0	73.725
1990		0	0	0.394	0	0	0.240	0	0.634
1989		0	0	14.6	0	0	0	0	14.6
1988		0	0.030	0.335	0	0.028	0	0	0.393

T-17 Liquid Radioactive Waste Log - Total for NMRC (1982 - 1999)

Table T-17. NMRC Bethesda and NMRC Annex Liquid Radioactive Waste Log (1982 – 1999)

Year		H-3	C-14	P-32	P-33	S-35	CR51	I-125	TOTALS
1999 (To 6/99)		17.502	0.0	0.4131	0.00034	0.3584	14.7506	0.0	33.02444
1998		35.6244	0.001	3.107	0.0	0.0	6.252	0.001	44.9854
1997		42.296	0	2.135	0	0.0016	14.3398	0.004	58.7764
1996		37.401	0	3.621	0	0.00364	6.06527	0.082	47.17291
1995		27.926	0.581	2.477	0	1.369	2.354	0.447	35.154
1994		35.523	0	5.097	0	3.805	2.953	3.846	51.224
1993		94.875	0.001	12.835	0	15.7	0	2.493	125.904
1992		33.328	0	0	1.25	1.003	0	0	35.581
1991		106.376	0.0026	0	0	6.255	0	182.81	295.4436
1990		18.078	0.025	0.395	0.00007	0	0.44	0.061	18.99907
1989		49.26	2.9205	14.6	0	0.314	0.0095	0.08014	67.18414
1988		49.952	2.083	0.3679	0.0928	0.9202	0.0688	0.7474	54.2321
1987		50.02	0.44	0.0	0.0	0.0	0.002	0.78	51.242
1986		44.45	0.27	0.0	0.05	0.0	0.1281	0.08	44.9781
1985		45.812	0.55	0.0	0.0	0.0	0.1	0.00068	46.46268
1984		8.7823	0.72	0.0	2	0.001	0.32	2.5	14.3233
1983		9.87	1.37	0.0	3.1	0.0088	3.18	0.0	17.5288
1982		8.61	0.016	1	0.0	0.07	0.067	0.021	12.784

T-18 Sewer Disposal of Radioactive Materials in NMRC Sinks (1982-1999)

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Table T-18. Sewer Disposal of Radioactive Materials in NMRC Sinks (1982-1999)

Year	Building/room	Isotopes	Comments
1982	17/S-20	SE75	SLENOMETHYOMINE
1982	17/309	P32	ADENOSINE-TRIPHOSPHATE (ADT)
1982	17/214,	H3	THYMIDINE
1982	18/214	C14	AMINO ACID
1982	52/122	I125	SODIUM IODIDE, PROTEIN
1982	53/113	I125	
1982	142/7	CR51	SODIUM CHROMATE
1983	17/S-20	C14	
1983	17/322	C14	CELL WASHINGS
1983	17/307	H3	
1983	18/307	CR51	SODIUM CHROMATE
1983	17/224	C14	
1983	17/224	H3	
1983	17/219	CR51	CELL WASHINGS
1983	17/214	C14	PROTEIN
1983	17/214	H3	THYMIDINE
1983	17/214	I125	PROTEIN
1983	17/214	S35	
1983	53/122	I125	
1983	53/120	I125	
1984	21/BASEMENT	C14	
1984	21/BASEMENT	H3	
1984	T2/RIGHT SINK	SE75	SELOMETHININE
1984	17/S-20	C14	
1984	17/S-20	H3	THYMIDINE
1984	17/321	H3	
1984	17/317	I125	
1984	17/307	H3	UTP, AMINO ACIDS
1984	17/307	I125	STAPH-A, PROTEIN
1984	17/307	S35	METHIONINE, DCTP
1984	17/304	CR51	SODIUM CHROMATE
1984	17/302	H3	PROLAINE
1984	17/214	H3	THYMIDINE
1984	18/214	H3	
1984	21/211	H3	6KETO
1984	21/211	H3	
1984	17/135	C14	
1984	17/135	H3	
1984	53/119	C14	
1984	142/7	I125	BOND PROTEIN
1985	21/CAGEWASH	H3	
1985	21/CAGEWASH	I125	12 UCI
1985	21/CAGEWASH	IN111	0.68 UCI
1985	17/301	H3	PROLINE

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Table T-18. Sewer Disposal of Radioactive Materials in NMRC Sinks (1982-1999)

Year	Building/room	Isotopes	Comments
1985	18/214	H3	
1985	21/211	H3	NALOXONE
1985	53/122	C14	SODIUM ACETATE
1985	53/111	C14	GLUCOSE
1985	142/7	I125	
1986	17/214	H3	CELL WASH
1986	17/214	I125	URIDINE
1986	17/214	P32	URIDINE
1986	18/214	H3	THYMIDINE
1986	21/211	CA45++	FREE CALCIUM
1986	21/211	H3	NALOXONE
1986	17/127	C14	URIDINE
1986	17/127	H3	THYMIDINE
1986	17/127	I125	C-AMP, BOLTON-HUNTER REAGENT
1986	17/127	S35	METHIONINE
1987	ANNEX/219B	I125	PROTEIN A
1987	17/215	C14	URIDINE
1987	17/215	H3	THYMIDINE
1987	17/214	C14	GLUTAMATE, AMINO ACIDS
1987	17/214	H3	THYMIDINE
1987	17/210	CA45	
1987	17/210	H3	
1987	18/214	H3	
1987	21/211	H3	INOSITOL
1987	17/127	H3	THYMIDINE
1988	ANNEX/219B	C14	
1988	ANNEX/202	C14	
1988	ANNEX/219B	P32	
1988	ANNEX/219B	S35	
1988	17/217	H3	
1988	17/214	CA45	
1988	17/214	CR51	
1988	17/214	H3	
1988	17/214	I125	
1988	17/214	P32	
1988	17/214	S35	
1988	21/211	I125	
1988	21/211	P32	
1988	18/135	CR51	
1989	ANNEX/219B	P32	
1989	17/214	C14	
1989	17/214	H3	
1989	17/214	I125	
1989	17/214	S35	

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Table T-18. Sewer Disposal of Radioactive Materials in NMRC Sinks (1982-1999)

Year	Building/room	Isotopes	Comments
1989	18/135	CR51	
1989	18/135	H3	
1989	17/127	C14	
1989	17/127	H3	
1989	17/127	S35	
1990	ANNEX/115	CR51	
1990	ANNEX/219B	P32	
1990	17/214	C14	
1990	17/214	CR51	
1990	17/214	I125	
1990	17/214	P32	
1990	17/127	CA45	
1990	17/127	H3	
1991	ANNEX/115	H3	
1991	ANNEX/115	S35	
1991	17/214	C14	
1991	17/214	H3	
1991	17/214	I125	
1991	17/214	S35	
1992	17/214	CA45	
1992	17/214	H3	
1992	17/214	S35	
1993	ANNEX/115	H3	
1993	ANNEX/115	I125	
1993	ANNEX/115	P32	
1993	ANNEX/115	S35	
1993	21/301	CR51	
1993	21/301	H3	
1993	21/301	P32	
1993	17/214	C14	
1993	17/214	H3	
1993	17/214	P32	
1993	17/214	S35	
1994	Annex/115	Cr51	
1994	Annex/115	H3	
1994	Annex/115	P32	
1994	Annex/115	S35	
1994	21/301	H3	
1994	21/301	I125	
1994	21/301	P32	
1994	21/301	S35	
1995	Annex/115	Cr51	
1995	Annex/115	H3	
1995	Annex/115	P32	
1995	Annex/115	S35	

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Table T-18. Sewer Disposal of Radioactive Materials in NMRC Sinks (1982-1999)

Year	Building/room	Isotopes	Comments
1995	21/301	C14	
1995	21/301	H3	
1995	21/301	I125	
1995	21/301	P32	
1995	21/301	S35	
1996	Annex/115	Cr51	
1996	Annex/115	H3	
1996	Annex/115	P32	
1996	Annex/115	S35	
1996	21/301	Cr51	
1996	21/301	H3	
1996	21/301	I125	
1996	21/301	P32	
1996	21/301	S35	
1997	Annex/115	Cr51	
1997	Annex/115	H3	
1997	Annex/115	P32	
1997	Annex/115	S35	
1997	21/301	C14	
1997	21/301	Cr51	
1997	21/301	H3	
1997	21/301	I125	
1997	21/301	P32	
1997	21/301	S35	
1998	Annex/115	Cr51	
1998	Annex/115	H3	
1998	Annex/115	P32	
1998	Annex/115	S35	
1998	21/301	C14	
1998	21/301	Cr51	
1998	21/301	H3	
1998	21/301	I125	
1998	21/301	P32	
1998	21/301	S35	
1999	Annex/115	Cr51	
1999	Annex/115	H3	
1999	Annex/115	P32	
1999	Annex/115	S35	
1999	21/301	C14	
1999	21/301	Cr51	
1999	21/301	H3	
1999	21/301	I125	
1999	21/301	P32	

T-19 Inventory of Solid Radioactive Waste (1998-1999)

Table T-19. NMRC RADIOACTIVE WASTE SEMI-ANNUAL INVENTORY (1998)
Inventory Date: 28 Dec 98
Open NMRC Radioactive Waste Accounts

Account Number	Radioisotope	Activity (mCi)	Date Placed in Storage	Storage Location
95022	Ra-226	0.01	950213	Building 21 hot locker
95119	Ra-226	0.01	951214	Building 21 hot locker
97019	I-125	0.370	970307	Building 21 hot locker
97020	I-125	0.00002	970307	Building 21 hot locker
97021	I-125	0.00002	970307	Building 21 hot locker
97095	I-125	0.1	971031	Building 21 hot locker
97096	Cr-51	15	971105	Building 21 hot locker
97098	Cr-51	10	971113	Building 21 hot locker
97099	Cr-51	10	971113	Building 21 hot locker
97100	Cr-51	7	971113	Building 21 hot locker
97102	Cr-51	10	971121	Building 21 hot locker
97103	Cr-51	10	971121	Building 21 hot locker
97106	Cr-51	10	971205	Building 21 hot locker
97110	Cr-51	10	971215	Building 21 hot locker
97111	Cr-51	10	971215	Building 21 hot locker
98001	Cr-51	10	980108	Building 21 hot locker
98007	Cr-51	0.2	980224	Building 21 hot locker
98008	Cr-51	10	980303	Building 21 hot locker
98009	Cr-51	10	980303	Building 21 hot locker
98010	P-32	3.01	980305	Building 21 hot locker
98013	Cr-51	5	980325	Building 21 hot locker
98014	Cr-51	10	980325	Building 21 hot locker
98016	P-32	2.34	980416	Building 21 hot locker
98018	Cr-51	10	980501	Building 21 hot locker
98021	Cr-51	5	980513	Building 21 hot locker
98024	P-32	0.002	980520	Building 21 hot locker
98025	P-32	3.05	980522	Building 21 hot locker
98027	Cr-51	0.5	980610	Building 21 hot locker
98028	Cr-51	1.5	980611	Building 21 hot locker
98029	P-32	5	980616	Building 21 hot locker
98030	P-32	1.85	980623	Building 21 hot locker
98031	Cr-51	8.54	980625	Building 21 hot locker
98033	P-32	3	980731	Building 21 hot locker
98034	P-32	3.85	980811	Building 21 hot locker
98036	Cr-51	5	980820	Building 21 hot locker
98037	Cr-51	3	980820	Building 21 hot locker
98039	P-32	0.002	980824	Building 21 hot locker
98040	Cr-51	10	980826	Building 21 hot locker
98041	H-3	10	980917	Building 21 hot locker
98042	H-3	10	980917	Building 21 hot locker
98043	Cr-51	10	981002	Building 21 hot locker
98044	Cr-51	1	981006	Building 21 hot locker
98045	P-32	4.05	981009	NMRC Annex hot locker
98046	H-3	5	981027	Building 21 hot locker
98047	S-35	0.94	981013	Building 21 hot locker
98048	H-3	5	981110	NMRC Annex hot locker

T-20 NMRC Potential Radioactive Contaminants

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Table T-20. Potential Radioactive Contaminants and Radiological Classifications (1942-1999)

BUILDING NUMBER	BUILDING DESCRIPTION OR USE	RADIOLOGICAL CLASSIFICATIONS	FLOOR AREA (SQUARE FOOTAGE)	OCCUPANCY OR YEARS OF RAM USE		ISOTOPES OF CONCERN
				Start	Stop	
17 17A 17B	Offices, Labs, Storage, Utility Machinery	Non-impacted and Impacted Class 3	84,398 (total)	1942 1946 1956	1999 1999 1999	H3,C14,P32, P33,S35, Ca45, Cr51, I125
18	Animal Facility, Model shops, Offices, Labs, Storage	Non-impacted and Impacted Class 3	14,300	1942	1999	H3, C14, P32, S35, Cr51
21	Animal Facility, Offices, Labs, Storage	Non-impacted And Impacted Class 3	35,828	1946	1999	H3,C14,P32, P33,S35, Ca45, Cr51, I125
28	Machine Shop, Offices, Labs, Storage	Non-impacted And Impacted Class 3	5,856	1952	1999	H3,C14 (highly unlikely)
29	Offices, Labs, Storage, X-ray Facility	Non-impacted And Impacted Class 3	630	1955	1999	H3,C14 (highly unlikely)
53	Diving Facility, Offices, Labs, Storage	Non-impacted And Impacted Class 3	35,000	1976	1999	H3,C14,P32, P33,S35, Ca45, Cr51, I125
59	Diving Facility	Non-impacted	2,695	1989	1999	None
69	H2/O2 Research Facility	Non-impacted	805	1992	1999	None
79	Equipment Facility	Non-impacted	1,195	1992	1999	None
139	Offices, Labs, Storage	Non-impacted And Impacted Class 3	4,343	1944	1999	H3,C14 (very unlikely)
150	Cobalt-60 Irradiator	Impacted Class 2 and 3 Areas	1100	1950	1963	Co-60
ANNEX	Offices, Labs, Storage	Non-impacted and Impacted Class 3	10,657	1986	1999	H3,C14,P32,S35,Cr51

T-21 Summary of NMRC Radiation Wipe Testing and Meter Survey Monitoring (1979-1999) (Buildings and rooms)

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
ANNEX	HL	H3,C14,S35	X	X	X	X	X	X	X														
ANNEX	LOAD DOCK	H3,C14	X	X																			
ANNEX	110	H3,C14	X	X	X	X	X	X	X														
ANNEX	111		X	X	X	X	X	X	X					X	X								
ANNEX	113	H3	X	X																			
ANNEX	115	H3,C14,S35	X	X	X	X	X	X	X	X		X		X	X								
ANNEX	118 HALL	H3,C14,S35	X	X	X																		
ANNEX	124		X	X	X	X	X	X															
ANNEX	126		X	X	X									X	X								
ANNEX	127		X	X																			
ANNEX	128	H3,C14,S35	X	X	X	X	X	X	X	X		X	X	X	X								
ANNEX	201		X	X																			
ANNEX	213	H3,C14,S35	X	X	X	X	X	X	X	X	X	X		X	X								
ANNEX	213B		X	X	X	X	X	X	X	X													
ANNEX	215	S35					X		X	X	X												
ANNEX	218	H3,C14,S35	X	X	X	X	X	X	X	X	X	X	X	X									
ANNEX	219	H3,C14,S35	X	X	X	X	X	X	X	X	X	X	X	X									
ANNEX	220	H3,S35	X	X	X	X	X	X	X	X	X	X	X	X	X								
ANNEX	221	H3,C14,S35	X	X	X	X	X	X	X	X													
NICH	337		X	X																			
NICH	424		X	X																			

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
017	S-30								X									X					
017	S-22	ALL							X	X													
017	S-14	ALL	X	X	X	X	X	X	X														
017	S-06	ALL	X	X	X	X	X	X	X														
017	001	CS137	X	X	X	X	X	X	X														
017	007B	H3,C14,S35															X						
017	010	ALL	X	X	X	X	X	X	X	X													
017	012	H3,C14	X	X	X	X	X	X	X	X	X	X	X										
017	014				X	X																	
017	015					X	X	X	X														
017	034	H3,C14,S35, SE75,P33												X	X	X							
017	038	H3,C14,S35, SE75,P33												X	X	X							
017	056			X																			
017	109	H3,C14,S35						X	X	X					X					X	X		
017	115	H3,C14,S35, CA45,CO57, SR85			X	X	X			X	X	X	X	X	X	X	X	X	X	X			
017	117	H3,C14,S35, CA45,CO57, SR85						X-	X-	X	X	X	X	X	X	X	X	X	X	X			
017	127	H3,C14,S35, CA45,CO57, SR85	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
017	129	H3,C14,S35, CA45,CO57, SR85	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X			

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
017	131	H3,C14,S35, CA45,CO57, SR85								X	X	X	X	X	X	X	X	X	X	X			
017	133	H3,C14,S35, CA45	X	X	X	X	X	X	X	X	X	X	X	X	X								
017	149	H3,C14,S35, CA45	X	X	X	X	X	X	X	X	X	X	X	X	X								
017	149A	H3,C14,S35, CA45	X	X	X	X					X	X	X	X	X								
017	200	H3,S35	X	X	X	X		X	X	X													
017	203	H3,C14,S35, FE59,CE141, SC46,SR85, SN113	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	
017	204			X	X	X	X	X	X														
017	205	H3	X	X	X	X																	
017	210		X	X	X	X																	
017	212		X	X	X	X		X	X	X													
017	215	H3,C14,S35, FE59,CE141, SC46,SR85, SN113		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
017	217	H3,C14,S35, FE59,CE141, SC46,SR85, SN113	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	
017	218	H3,C14,S35			X	X	X	X	X	X	X	X		X	X	X							
017	221	H3,C14,S35, FE59																					
017	224	H3,C14,S35									X	X		X	X	X							
017	225	H3,C14,S35, FE59,CE141, SC46,SR85, SN113			X	X	X	X	X	X	X	X	X	X	X	X	X						

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
017	229	H3,C14,S35, FE59,CE141, SC46,SR85, SN113	X	X	X	X				X	X	X	X	X	X	X	X	X	X				
017	230	H3,C14	X	X	X	X				X	X	X	X	X	X	X	X	X					
017	234	H3,C14									X	X	X	X	X	X	X	X					
017	237	H3,C14,S35		X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	
017	239		X	X	X	X		X	X	X													
017	240	H3,C14,S35									X	X		X	X	X							
017	242	H3,S35,P33				X	X	X	X	X	X	X		X	X	X							
017	249	H3,C14,S35, FE59,CE141, SC46,SR85, SN113		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
017	251	H3,C14,S35, FE59,CE141, SC46,SR85, SN113		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
017	251A	H3,C14,S35, FE59,CE141, SC46,SR85, SN113							X	X	X	X	X	X	X	X	X						
017	255	H3,C14,S35								X													
017	301	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	302	H3,C14,S35, SE75,P33							X	X	X			X	X	X							
017	304	H3,C14,S35, SE75,P33							X	X	X			X	X	X							

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
017	305	H3,C14,S35, SE75,P33									X			X	X	X							
017	306	H3,C14,S35, SE75,P33								X	X												
017	307	H3,C14,S35, SE75,P33							X	X	X			X	X	X							
017	308	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	310	H3,C14,S35, SE75,P33	X	X	X	X	X			X	X			X	X	X							
017	311	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	312	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	313	H3,C14,S35, SE75,P33	X	X	X	X	X	X	X	X	X			X	X	X							
017	316	H3	X	X	X	X	X		X	X	X			X	X	X							
017	316A	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	317	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	319	H3,C14,S35, SE75,P33				X	X	X	X	X	X			X	X	X							
017	320	H3,C14,S35, SE75,P33				X	X	X	X	X	X			X	X	X							

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
017	320A	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	321	H3,C14,S35, SE75,P33						X	X	X				X	X	X							
017	325	H3,C14								X													
017	326	H3,C14,S35, SE75,P33								X	X			X	X	X							
017	326A&B	H3,C14,S35, SE75,P33						X	X	X	X			X	X	X							
017	327	H3,C14,S35													X	X	X	X	X	X			
017	329	S35							X	X													
017	336	H3,C14,S35, SE75,P33						X	X	X	X		X	X	X	X							
017	336A	H3,C14,S35, SE75,P33						X	X	X	X			X	X	X							
017	336B	H3,C14,S35, SE75,P33						X		X	X			X	X	X							
017	338	H3,C14,S35, SE75,P33						X		X	X			X	X	X							
017	338A	H3,C14,S35, SE75,P33								X	X		X	X	X	X							
017	340	H3,C14,S35, SE75,P33									X			X	X	X							
017	340A	H3,C14,S35, SE75,P33	X	X		X	X	X	X	X	X			X	X	X							

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
017	341	H3,C14,S35, SE75,P33									X					X	X	X	X				
017	341B	H3,C14,S35, SE75,P33								X	X												
017	342	H3,C14,S35, SE75,P33								X			X	X	X	X							
017	342A	H3,C14,S35, SE75,P33							X	X			X	X	X	X							
017	347	H3,C14,S35, SE75,P33									X												
017	349	H3,C14,S35, SE75,P33			X						X				X	X	X	X	X				
017	353	H3,C14,S35, SE75,P33									X				X	X	X	X	X				
017	353A	H3,C14,S35, SE75,P33						X	X	X	X												
018	123	H3,C14,S35															X						
018	126	H3,C14,S35								X	X	X	X	X	X	X	X						
018	127	H3,C14,S35								X	X	X	X	X	X	X	X	X	X				
018	128	H3,C14,S35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
018	135	H3,C14,S35	X	X	X	X	X	X	X	X	X	X	X	X			X						
018	137	H3,C14,S35	X	X	X	X	X	X	X	X	X	X	X	X			X						
018	223	H3,C14,S35								X	X	X	X	X	X	X	X	X	X				
018	224	H3,C14,S35								X	X	X	X	X	X	X	X						
018	226	H3,C14,S35								X	X	X	X	X	X	X	X	X	X				

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
018	228	H3,C14,S35	X	X	X	X		X	X	X	X	X	X	X	X	X	X						
018	231	H3,C14,S35	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X				
018	231A	H3,C14,S35							X	X	X	X	X	X	X	X							
018	232	H3,S35	X	X	X	X	X	X	X	X	X						X						
021	HL	ALL																					
021	106	H3,C14, S35, SE75	X	X	X	X	X	X	X	X									X				
021	110B FRZR	ALL																					
021	127	H3,C14, S35, SE75, SR85						X	X	X										X	X		
021	201	H3,C14,S35, FE59,CE141, SC46,SR85, SN113									X	X	X	X	X								
021	203	H3,C14,S35, FE59, CE141, SN113,SR85, SC46									X												
021	204	H3,C14,S35, FE59,CE141, SC46,SR85, SN113									X	X	X										
021	210	H3,C14, S35, CA45											X	X	X								
021	211	H3,C14, S35, CA45											X	X	X								
021	212	H3,C14,S35, FE59,CE141, SC46,SR85, SN113	X	X	X					X	X	X	X										
021	231	H3,C14,S35, FE59, RU103, CA45, CO57											X	X	X								

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
021	233	H3,C14,S35, FE59, RU103, CA45, CO57	X	X	X	X	X						X	X	X								
021	301	H3,C14,S35																					
021	341	SR85																		X			
021	343	SR85																		X			
028	202	H3,C14																					X
028	203	H3,C14,S35, FE59, CE141, SN113,SR85, SC46																					X
028	206	H3,C14	X																				X
053	012	H3							X	X													
053	101	H3,C14,CA45, RU103,NB95, CE141			X	X	X	X	X	X	X												
053	106	H3,C14																	X	X	X		
053	111	H3,C14,CA45, RU103,NB95, CE141						X-	X	X	X			X	X	X							
053	112	H3,C14,CA45,CE141, NB95,XE133,XE127, BA133,CO57,CS137, KR85,RU103,NB95, CE141,AR41							X	X	X	X	X	X									
053	113	H3,C14																	X	X	X		
053	117	H3,C14,CA45, RU103,NB95, CE141	X	X	X	X	X	X-	X	X	X			X	X	X							

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Table T-21. NMRC RADIATION WIPE TEST AND METER SURVEY MONITORING (1992-1999)

ACTION LIMIT: 900 DPM (H3 AND C14); "X" DENOTES ACTUAL DATA SWIPES AT <400 DPM, SURVEY METERS RESULTS WERE LESS THAN TWICE BACKGROUND, AND WHENEVER CONTAMINATION WAS FOUND, TRACE AMOUNTS WERE CLEANED TO BACKGROUND.

Bldg	Room	Isotopes (half life > 65d)	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79
053	118	H3,C14,CA45, RU103,NB95, CE141	X	X	X	X	X		X	X	X			X	X	X							
053	119	H3,C14,CA45, RU103,NB95, CE141								X	X			X	X	X							
053	120	H3,C14,CA45, NB95,CE141	X	X	X	X	X				X			X	X	X							
053	121	H3,C14	X	X	X	X	X		X	X													
053	122	H3,C14		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
139	105	H3,C14		X	X	X	X	X	X	X	X	X	X										
139	106	H3,C14								X	X												
139	107	H3,C14									X	X	X										
142	007	H3,C14, S35, SE75																X	X	X	X	X	X
142	009	H3,C14																				X	X
142	010	H3,C14																				X	X
142	011	H3,C14																				X	X
142	012	H3,C14																				X	X
142	018	H3,C14, S35																				X	X
142	020F	H3,C14																				X	X
142	119	H3,C14, S35																				X	
142	121	H3,C14, S35																				X	X
142	129	H3,C14, S35																				X	X

T-22 Radiological Classification of NMRC Buildings (1999)

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Table T-22. Radiological Classification of NMRC Buildings (1999)

Building Number	Building Description or Use	Square Footage	Occupancy or Years of RAM Use		Isotopes of Concern	Classification
			Start	Stop		
17 17A 17B	Offices, Labs, Storage, Utility Machinery	84,398 (total)	1942 1946 1956	1999 1999 1999	H3,C14,S35	NON-IMPACTED AND IMPACTED CLASS 3
18	Animal Facility, Model shops, Offices, Labs, Storage	14,300	1942	1999	H3, C14, S35	NON-IMPACTED AND IMPACTED CLASS 3
21	Animal Facility, Offices, Laboratories, Storage	35,828	1946	1999	H3,C14,S35	NON-IMPACTED AND IMPACTED CLASS 3
28	Machine Shop, Offices, Laboratories, Storage	5,856	1952	1999	H3,C14,S35	NON-IMPACTED
29	Offices, Laboratories, Storage, X-ray Facility	630	1955	1999	H3,C14,S35	NON-IMPACTED AND IMPACTED CLASS 3
53	Diving Facility, Offices, Laboratories, Storage	35,000	1976	1999	H3,C14,S35	NON-IMPACTED AND IMPACTED CLASS 3
59	Diving Facility	2,695	1989	1999	H3,C14,S35	NON-IMPACTED
69	H2/O2 Research Facility	805	1992	1999	H3,C14,S35	NON-IMPACTED
79	Equipment Facility	1,195	1992	1999	H3,C14,S35	NON-IMPACTED
139	Offices, Laboratories	4,343	1944	1999	H3,C14,S35	NON-IMPACTED AND IMPACTED CLASS 3
150	Cobalt-60 Irradiator	500	1950	1963	CO-60	IMPACTED CLASSES 2 & 3
ANNEX	Offices, Laboratories	10,657	1986	1999	H3,C14,S35	NON-IMPACTED AND IMPACTED CLASS 3
ALL OTHERS	Offices, Storage, Labs					NON-IMPACTED

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
Rockville Annex	Loading dock	Storage	104	9.6616	Impacted, Class 3
Rockville Annex	100	Office	262	24.3398	Non-Impacted
Rockville Annex	102	Office	213	19.7877	Non-Impacted
Rockville Annex	103	Office	170	15.793	Non-Impacted
Rockville Annex	104	Office	90	8.361	Non-Impacted
Rockville Annex	109	Office/Duty Room	40	3.716	Non-Impacted
Rockville Annex	110	Laboratory	584	54.2536	Impacted, Class 3
Rockville Annex	110A	Office	112	10.4048	Impacted, Class 3
Rockville Annex	110B	Office	103	9.5687	Impacted, Class 3
Rockville Annex	111	Equipment Storage	394	36.6026	Impacted, Class 3
Rockville Annex	112	Sterilizer Room/Laboratory	138	12.8202	Impacted, Class 3
Rockville Annex	113	Laboratory	153	14.2137	Impacted, Class 3
Rockville Annex	114	Laboratory	153	14.2137	Impacted, Class 3
Rockville Annex	115	Laboratory	532	49.4228	Impacted, Class 3
Rockville Annex	116	Dark Room	113	10.4977	Non-Impacted
Rockville Annex	117	Storage Room	40	3.716	Non-Impacted
Rockville Annex	118	Insect Room	322	29.9138	Non-Impacted
Rockville Annex	118A	Insect/Animal Room	100	9.29	Non-Impacted
Rockville Annex	118B	Insect Room	107	9.9403	Non-Impacted
Rockville Annex	118C	Insect Room	189	17.5581	Non-Impacted
Rockville Annex	123	Laboratory	195	18.1155	Non-Impacted
Rockville Annex	124	Cold Room	116	10.7764	Impacted, Class 3
Rockville Annex	125	Insect Room	93	8.6397	Impacted, Class 3
Rockville Annex	126	Laboratory	454	42.1766	X
Rockville Annex	127	Laboratory	355	32.9795	Impacted, Class 3
Rockville Annex	128	Laboratory	559	51.9311	Impacted, Class 3
Rockville Annex	201	Laboratory	181	16.8149	Impacted, Class 3
Rockville Annex	202	Office	150	13.935	Non-Impacted
Rockville Annex	203	Office	152	14.1208	Non-Impacted
Rockville Annex	204	Office	105	9.7545	Non-Impacted
Rockville Annex	205	Office	105	9.7545	Non-Impacted
Rockville Annex	206	Office	15	1.3935	Non-Impacted
Rockville Annex	207	Office	105	9.7545	Non-Impacted
Rockville Annex	208	Conference Room	200	18.58	Impacted, Class 3
Rockville Annex	209	Office	64	5.9456	Non-Impacted
Rockville Annex	210	Office	132	12.2628	Non-Impacted
Rockville Annex	211	Office	76	7.0604	Non-Impacted
Rockville Annex	213	Freezer/Storage	317	29.4493	Impacted, Class 3
Rockville Annex	213A	Storage	50	4.645	Impacted, Class 3
Rockville Annex	213B	Gamma Counter	50	4.645	Impacted, Class 3
Rockville Annex	214A	Laboratory	151	14.0279	Non-Impacted
Rockville Annex	214B	Laboratory	121	11.2409	Non-Impacted
Rockville Annex	214C	Laboratory	56	5.2024	Non-Impacted
Rockville Annex	215	Laboratory	235	21.8315	Impacted, Class 3
Rockville Annex	215A	Animal Room	109	10.1261	Impacted, Class 3
Rockville Annex	216	Animal Room	108	10.0332	Non-Impacted
Rockville Annex	217	Laboratory	181	16.8149	Non-Impacted
Rockville Annex	218	Storage	50	4.645	Impacted, Class 3
Rockville Annex	218A	Cold Room	50	4.645	Impacted, Class 3
Rockville Annex	218B	Cold Room	100	9.29	Impacted, Class 3
Rockville Annex	219	Laboratory	774	71.9046	Impacted, Class 3
Rockville Annex	219A	Laboratory	247	22.9463	Impacted, Class 3
Rockville Annex	219B	Laboratory	142	13.1918	Impacted, Class 3

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
Rockville Annex	220	Laboratory	853	79.2437	Impacted, Class 3
Rockville Annex	221	Tissue Culture	87	8.0823	Impacted, Class 3
Sub-total			10657	990.0353	
17	001	Laboratory	121	11.2409	Non-Impacted
17	001A	Laboratory	242	22.4818	Non-Impacted
17	005	Laboratory	350	32.515	Non-Impacted
17	005A	Flow cytometer	197	18.3013	Non-Impacted
17	006	Supply/LCPO	253	23.5037	Non-Impacted
17	007A	Office	148	13.7492	Non-Impacted
17	007B	Laboratory	185	17.1865	Non-Impacted
17	007BI	Laboratory	170	15.793	Non-Impacted
17	007C	Office	210	19.509	Non-Impacted
17	008	Office/MID	186	17.2794	Non-Impacted
17B	009	Passageway	171	15.8859	Non-Impacted
17	010	Supply	445	41.3405	Impacted, Class 3
17	011	Office	148	13.7492	Non-Impacted
17	012	Laboratory	291	27.0339	Impacted, Class 3
17B	013	Office	93	8.6397	Non-Impacted
17B	013A	Laboratory	159	14.7711	Non-Impacted
17B	013B	Storage	80	7.432	Non-Impacted
17B	013C	Storage	80	7.432	Non-Impacted
17	014	Storage	231	21.4599	Impacted, Class 3
17B	015	Laboratory	225	20.9025	Impacted, Class 3
17	016	MID	46	4.2734	Non-Impacted
17A	016	Office/custodian	47	4.3663	Non-Impacted
17B	017	Office	214	19.8806	Non-Impacted
17A	018	Office/MID	332	30.8428	Non-Impacted
17B	019 / 027	Laboratory	528	49.0512	Non-Impacted
17B	019B	Storage	33	3.0657	Non-Impacted
17B	019C	Photo Lab	30	2.787	Non-Impacted
17A	020	Storage	53	4.9237	Non-Impacted
17B	021	Office	140	13.006	Non-Impacted
17B	023	Office	143	13.2847	Non-Impacted
17A	024	Storage/dry ice	79	7.3391	Non-Impacted
17A	028	Office/Purchasing	308	28.6132	Non-Impacted
17A	030	Laboratory	343	31.8647	Non-Impacted
17	032	Office	270	25.083	Non-Impacted
17A	032A	Office/Supply	168	15.6072	Non-Impacted
17A	032B	Office	95	8.8255	Non-Impacted
17A	032C	Office/Contractor	155	14.3995	Non-Impacted
17A	032D	Office	120	11.148	Non-Impacted
17A	034	Material Mgmt	404	37.5316	Non-Impacted
17B	035	Auditorium	1350	125.415	Non-Impacted
17A	038 /042	MID Server	422	39.2038	Non-Impacted
17A	048	Library	457	42.4553	Non-Impacted
17A	050-1	Storage	80	7.432	Non-Impacted
17A	052	Storage	80	7.432	Non-Impacted
17A	052A	Storage	60	5.574	Non-Impacted
17A	054	Freezer/storage	164	15.2356	Non-Impacted
17A	056	Freezer	118	10.9622	Impacted, Class 3
17	104	Quarterdeck	151	14.0279	Non-Impacted
17	105	Office	157	14.5853	Non-Impacted

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17	107	Freezer/storage	70	6.503	Non-Impacted
17	108	Office	151	14.0279	Non-Impacted
17	109 / 103	Laboratory	553	51.3737	Impacted, Class 3
17	110	Office	136	12.6344	Non-Impacted
17	111	Office	245	22.7605	Non-Impacted
17	112	Office	280	26.012	Non-Impacted
17	113	Laboratory	162	15.0498	Non-Impacted
17	114	Office	148	13.7492	Non-Impacted
17	114A	Office	170	15.793	Non-Impacted
17	115	Laboratory	195	18.1155	Impacted, Class 3
17	116	Office	201	18.6729	Non-Impacted
17	116A	Office	64	5.9456	Non-Impacted
17	116B	Storage	46	4.2734	Non-Impacted
17	117	Office	249	23.1321	Impacted, Class 3
17	119	Office	219	20.3451	Non-Impacted
17	119	Office	206	19.1374	Non-Impacted
17A	120	Office	239	22.2031	Non-Impacted
17A	122	Office	423	39.2967	Non-Impacted
17	122D	Office	346	32.1434	Non-Impacted
17B	123	Office	253	23.5037	Non-Impacted
17A	124	Office/XO	255	23.6895	Non-Impacted
17B	125	Office	380	35.302	Non-Impacted
17B	125	Office	380	35.302	Non-Impacted
17A	126	Office	204	18.9516	Non-Impacted
17B	127	Laboratory	199	18.4871	Impacted, Class 3
17A	128	Office	189	17.5581	Non-Impacted
17B	129	Laboratory	366	34.0014	Impacted, Class 3
17A	130	Office	609	56.5761	Non-Impacted
17B	131	Laboratory	423	39.2967	Impacted, Class 3
17A	132	Office	349	32.4221	Non-Impacted
17B	133	Laboratory	268	24.8972	Impacted, Class 3
17A	134	LCPO/Admin office	147	13.6563	Non-Impacted
17B	135	Office	76	7.0604	Non-Impacted
17B	135A	Office	97	9.0113	Non-Impacted
17A	140	Library	1181	109.7149	Non-Impacted
17A	140B	Library	89	8.2681	Non-Impacted
17B	143	Gear Locker	146	13.5634	Non-Impacted
17B	147	Office	121	11.2409	Non-Impacted
17B	147A	Office	292	27.1268	Non-Impacted
17B	147B	Office	107	9.9403	Non-Impacted
17B	149	Laboratory	380	35.302	Impacted, Class 3
17B	149A	Laboratory	276	25.6404	Impacted, Class 3
17B	151	Office	153	14.2137	Non-Impacted
17B	153A	Office	310	28.799	Non-Impacted
17B	015A	Laboratory	153	14.2137	Non-Impacted
17	200	Freezer/Laboratory	289	26.8481	Impacted, Class 3
17	203 / 215	Laboratory	622	57.7838	Impacted, Class 3
17	204	Laboratory	315	29.2635	Impacted, Class 3
17	206	Office	273	25.3617	Impacted, Class 3
17	208	Laboratory	202	18.7658	Impacted, Class 3
17	210	Laboratory	269	24.9901	Impacted, Class 3
17	212	Laboratory	261	24.2469	Impacted, Class 3
17A	214	Office	139	12.9131	Non-Impacted
17	216	Conference room	618	57.4122	Non-Impacted
17A	216	Conference room	483	44.8707	Non-Impacted

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17	217	Laboratory	461	42.8269	Impacted, Class 3
17A	218	Laboratory	401	37.2529	Impacted, Class 3
17	219	Office	114	10.5906	Non-Impacted
17	219A	Office	62	5.7598	Non-Impacted
17	219B	Office	62	5.7598	Non-Impacted
17A	220A	Duty room	119	11.0551	Non-Impacted
17	221	Office	92	8.5468	Non-Impacted
17	221A	Laboratory	104	9.6616	Impacted, Class 3
17A	224	Laboratory	419	38.9251	Impacted, Class 3
17B	225/229	Laboratory	695	64.5655	Impacted, Class 3
17A	226	Office	115	10.6835	Non-Impacted
17A	226B	Storage	208	19.3232	Non-Impacted
17A	230	Laboratory	209	19.4161	Impacted, Class 3
17B	231	Office	376	34.9304	Non-Impacted
17A	234	Laboratory	371	34.4659	Impacted, Class 3
17B	235	Office	183	17.0007	Non-Impacted
17B	237	Laboratory	222	20.6238	Impacted, Class 3
17B	237A	Office	100	9.29	Non-Impacted
17A	238	Office	173	16.0717	Non-Impacted
17B	239	Laboratory	345	32.0505	Impacted, Class 3
17A	240	Laboratory	604	56.1116	Impacted, Class 3
17A	240	Laboratory	604	56.1116	Impacted, Class 3
17A	242	Laboratory	420	39.018	Impacted, Class 3
17B	243	Laboratory	291	27.0339	Non-Impacted
17A	244	Office	123	11.4267	Non-Impacted
17	245A	Office	21	1.9509	Non-Impacted
17B	249	Laboratory	619	57.5051	Impacted, Class 3
17B	251	Laboratory	300	27.87	Impacted, Class 3
17B	251A	Laboratory	133	12.3557	Impacted, Class 3
17B	253	Storage	3	0.2787	Non-Impacted
17B	255	Office	251	23.3179	Impacted, Class 3
17A	028A	Office	66	6.1314	Non-Impacted
17	300A	Office	99	9.1971	Non-Impacted
17	301	Laboratory	373	34.6517	Impacted, Class 3
17	302	Laboratory	197	18.3013	Impacted, Class 3
17	304	Office	306	28.4274	Impacted, Class 3
17	304A	Office	80	7.432	Impacted, Class 3
17	305	Laboratory	337	31.3073	Impacted, Class 3
17	306	Laboratory	371	34.4659	Impacted, Class 3
17	306A	BSL3 Laboratory	42	3.9018	Impacted, Class 3
17	307	Laboratory	354	32.8866	Impacted, Class 3
17	308	Storage	221	20.5309	Impacted, Class 3
17	310	Laboratory	254	23.5966	Impacted, Class 3
17	311	Laboratory	321	29.8209	Impacted, Class 3
17	312	Laboratory/freezer	221	20.5309	Impacted, Class 3
17	312	Laboratory	74	6.8746	Impacted, Class 3
17	313	Laboratory	287	26.6623	Impacted, Class 3
17A	314	Storage	23	2.1367	Non-Impacted
17A	316	Lab/Office	275	25.5475	Impacted, Class 3
17A	316A	Laboratory	104	9.6616	Impacted, Class 3
17A	316B	Office	65	6.0385	Impacted, Class 3
17B	317/319	Laboratory	486	45.1494	Impacted, Class 3
17A	318	Freezer/storage	84	7.8036	Non-Impacted
17A	318A	Storage	54	5.0166	Non-Impacted
17A	318B	Office	97	9.0113	Non-Impacted

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17A	318C	Office	64	5.9456	Non-Impacted
17A	318D	Laboratory	200	18.58	Non-Impacted
17B	319A	Office	120	11.148	Impacted, Class 3
17B	319B	Laboratory	93	8.6397	Impacted, Class 3
17A	320	Laboratory	401	37.2529	Impacted, Class 3
17A	320A	Laboratory	192	17.8368	Impacted, Class 3
17A	320B	Laboratory	51	4.7379	Impacted, Class 3
17A	320C	Laboratory	52	4.8308	Impacted, Class 3
17B	321	Office	289	26.8481	Impacted, Class 3
17A	322	Office	176	16.3504	Non-Impacted
17B	323	Office	111	10.3119	Non-Impacted
17	325	Laboratory	288	26.7552	Impacted, Class 3
17A	326	Laboratory	367	34.0943	Impacted, Class 3
17A	326B	Laboratory	202	18.7658	Impacted, Class 3
17B	327	Laboratory	187	17.3723	Impacted, Class 3
17B	329	Laboratory	282	26.1978	Impacted, Class 3
17B	333	Office	162	15.0498	Non-Impacted
17A	336	Laboratory	300	27.87	Impacted, Class 3
17A	336A	Laboratory	289	26.8481	Impacted, Class 3
17A	336B	Darkroom	57	5.2953	Impacted, Class 3
17A	338	Laboratory	165	15.3285	Impacted, Class 3
17A	338A	Laboratory	300	27.87	Impacted, Class 3
17A	340	Laboratory	196	18.2084	Impacted, Class 3
17B	341	Laboratory	373	34.6517	Impacted, Class 3
17B	341A	Office	97	9.0113	Impacted, Class 3
17B	341B	Laboratory	64	5.9456	Impacted, Class 3
17A	342	Laboratory	114	10.5906	Impacted, Class 3
17A	342A	Laboratory	200	18.58	Impacted, Class 3
17B	345A	Freezer/storage	32	2.9728	Impacted, Class 3
17B	347	Office	191	17.7439	Impacted, Class 3
17B	347A	Office	87	8.0823	Impacted, Class 3
17B	349	Laboratory	202	18.7658	Impacted, Class 3
17B	351	Office	114	10.5906	Non-Impacted
17B	353	Laboratory	267	24.8043	Impacted, Class 3
17B	353A	Animal	149	13.8421	Impacted, Class 3
17A	S-01	Storage	202	18.7658	Non-Impacted
17A	S-02	Office	121	11.2409	Non-Impacted
17A	S-04	Office	133	12.3557	Impacted, Class 3
17A	S-06	Office	158	14.6782	Impacted, Class 3
17A	S-08	Purchasing	123	11.4267	Non-Impacted
17A	S-10	Office	81	7.5249	Non-Impacted
17A	S-12	Purchasing	119	11.0551	Non-Impacted
17A	S-14	Radiation Safety	77	7.1533	Impacted, Class 3
17B	S-15	Office	123	11.4267	Non-Impacted
17A	S-16	Equipment	121	11.2409	Non-Impacted
17A	S-16A	Equipment	144	13.3776	Non-Impacted
17A	S-18	Office	165	15.3285	Non-Impacted
17B	S-19	Storage	1580	146.782	Non-Impacted
17A	S-20	Receipt	301	27.9629	Non-Impacted
17A	S-22	Office	72	6.6888	Non-Impacted
17	S-23	Mechanical	749	69.5821	Non-Impacted
17B	S-23	Dive machine shop	711	66.0519	Non-Impacted
17A	S-24	Office	54	5.0166	Non-Impacted
17	S-30	Laboratory	220	20.438	Non-Impacted
17	S-31	Laboratory	77	7.1533	Non-Impacted

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17	S-32	Laboratory/storage	262	24.3398	Non-Impacted
Sub-total	z999999		14989	1392.4781	
18	17	Laboratory	169	15.7001	Non-Impacted
18	18	Command inspection/Eval.	168	15.6072	Non-Impacted
18	19	Storage	63	5.8527	Non-Impacted
18	20	Storage	59	5.4811	Non-Impacted
18	21	Laboratory	156	14.4924	Non-Impacted
18	22	Office	188	17.4652	Non-Impacted
18	23	Office	200	18.58	Non-Impacted
18	24	Animal Room	449	41.7121	Non-Impacted
18	26	Laboratory	400	37.16	Non-Impacted
18	27	Freezer/Storage	143	13.2847	Non-Impacted
18	29	Laboratory	259	24.0611	Non-Impacted
18	30	Archive/Library	150	13.935	Non-Impacted
18	32	Storage/Galley	130	12.077	Non-Impacted
18	32 A	Office	257	23.8753	Non-Impacted
18	32 B	Office-Council Conference	262	24.3398	Non-Impacted
18	32 C	Office	206	19.1374	Non-Impacted
18	123				Impacted, Class 3
18	126	Laboratory	203	18.8587	Impacted, Class 3
18	127 / 125	Laboratory	466	43.2914	Impacted, Class 3
18	128	Office	176	16.3504	Impacted, Class 3
18	129	Office	107	9.9403	Non-Impacted
18	130	Office	181	16.8149	Non-Impacted
18	132	Office	237	22.0173	Non-Impacted
18	134	Office	173	16.0717	Non-Impacted
18	135	Laboratory	218	20.2522	Impacted, Class 3
18	136	Office	201	18.6729	Non-Impacted
18	137	Laboratory	218	20.2522	Impacted, Class 3
18	138	Office	215	19.9735	Non-Impacted
18	223	Laboratory	656	60.9424	Impacted, Class 3
18	224	Laboratory	104	9.6616	Impacted, Class 3
18	226	Laboratory	152	14.1208	Impacted, Class 3
18	228	Office	147	13.6563	Impacted, Class 3
18	230	Office	177	16.4433	Non-Impacted
18	231	Laboratory	449	41.7121	Impacted, Class 3
18	231 B	Dark Room	75	6.9675	Impacted, Class 3
18	232	Office	91	8.4539	Impacted, Class 3
18	232 A	Office	289	26.8481	Impacted, Class 3
18	232 B	Office	138	12.8202	Impacted, Class 3
18	233	Office	158	14.6782	Non-Impacted
18	233 A	Office	164	15.2356	Non-Impacted
	Sub-total		4995	766.7966	

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	2	Animal holding room	415	38.5535	Non-Impacted
21	3	Procedures	341	31.6789	Non-Impacted
21	3 A	Mice quarantine	174	16.1646	Non-Impacted
21	3 B	Rat quarantine	382	35.4878	Non-Impacted
21	4	Autoclave/Storage	343	31.8647	Non-Impacted
21	5	Animal room	21	1.9509	Non-Impacted
21	7	Animal room	288	26.7552	Non-Impacted
21	8	Housekeeping	21	1.9509	Non-Impacted
21	9	Animal room	359	33.3511	Non-Impacted
21	10	Head	250	23.225	Non-Impacted
21	11	Animal room	266	24.7114	Non-Impacted
21	12	Laboratory	574	53.3246	Non-Impacted
21	14	Pharmacy	166	15.4234	Non-Impacted
21	16	Laboratory	192	17.8368	Non-Impacted
21	20	Necropsy room	169	15.7001	Non-Impacted
21	22 A	Cage wash	1121	104.1409	Non-Impacted
21	101	Office	155	14.3995	Non-Impacted
21	103	Storage	477	44.3133	Non-Impacted
21	105	Animal room	61	5.6669	Non-Impactedz
21	105 A	Animal room	135	12.5415	Non-Impacted
21	106	Animal room	363	33.7227	Impacted, Class 3
21	107	Animal room	323	30.0067	Non-Impacted
21	108	Animal room	415	38.5535	Non-Impacted
21	110 A	Refrigerator	155	14.3995	Impacted, Class 3
21	110 B	Refrigerator	180	16.722	Impacted, Class 3
21	111	Office	138	12.8202	Non-Impacted
21	111 A	Storage	8	0.7432	Non-Impacted
21	112 A	Office	90	8.361	Non-Impacted
21	112	Animal room	478	44.4062	Non-Impacted
21	113	Animal room	191	17.7439	Non-Impacted
21	114	Office	266	24.7114	Non-Impacted
21	115	Storage	34	3.1586	Non-Impacted
21	117	Storage	54	5.0166	Non-Impacted
21	119	Office	134	12.4486	Non-Impacted
21	119 A	Office	119	11.0551	Non-Impacted
21	121	Animal room	592	54.9968	Non-Impacted
21	125	Animal room	577	53.6033	Non-Impacted
21	127	Animal room	390	36.231	Impacted, Class 3
21	129	Office	74	6.8746	Non-Impacted
21	201	Laboratory	202	18.7658	Impacted, Class 3
21	202	Surgery suite	62	5.7598	Non-Impacted
21	202 A	Surgery Frig	519	48.2151	Non-Impacted
21	203	Laboratory	448	41.6192	Impacted, Class 3
21	204	Laboratory	365	33.9085	Impacted, Class 3
21	205 A	Office	129	11.9841	Non-Impacted
21	205	Storage	75	6.9675	Non-Impacted
21	206	Office	66	6.1314	Non-Impacted
21	206 A	Office	109	10.1261	Non-Impacted
21	208	Office	66	6.1314	Non-Impacted
21	208 A	Office	110	10.219	Non-Impacted
21	210	Freezer/storage	64	5.9456	Impacted, Class 3
21	211	Office	450	41.805	Impacted, Class 3

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	211	Laboratory	364	33.8156	Impacted, Class 3
21	211 A	Laboratory	178	16.5362	Impacted, Class 3
21	212	Laboratory	291	27.0339	Impacted, Class 3
Sub-total (next page)			14439	1341.3831	
21 (continued) Sub-total brought forward			14439	1341.3831	
21	213	Head	487	45.2423	Non-Impacted
21	214	Office	699	64.9371	Non-Impacted
21	214 A	Office	699	64.9371	Non-Impacted
21	214 B	Office	78	7.2462	Non-Impacted
21	215	Office	89	8.2681	Non-Impacted
21	215 A	Office	133	12.3557	Non-Impacted
21	217	Storage	242	22.4818	Non-Impacted
21	219	Storage	523	48.5867	Non-Impacted
21	221 A	Office	136	12.6344	Non-Impacted
21	221	Storage	70	6.503	Non-Impacted
21	225	Storage	157	14.5853	Non-Impacted
21	225 A	Storage	66	6.1314	Non-Impacted
21	227	Storage	66	6.1314	Non-Impacted
21	227 A	Storage	112	10.4048	Non-Impacted
21	229	Storage	62	5.7598	Non-Impacted
21	231 B	Freezer/ Laboratory	73	6.7817	Impacted, Class 3
21	231	Freezer/storage	142	13.1918	Impacted, Class 3
21	233	Freezer/storage	274	25.4546	Non-Impacted
21	233	Freezer/Storage	92	8.5468	Non-Impacted
21	301	Office/Laboratory	297	27.5913	Impacted, Class 3
21	303 A	Entry to Penthouse	35	3.2515	Non-Impacted
21	303	Freezer/Storage	274	25.4546	Non-Impacted
21	304	Storage	47	4.3663	Non-Impacted
21	305	Storage	45	4.1805	Non-Impacted
21	306	Storage	74	6.8746	Non-Impacted
21	306	Storage	73	6.7817	Non-Impacted
21	308	Storage	73	6.7817	Non-Impacted
21	310	Storage	66	6.1314	Non-Impacted
21	311	Storage	71	6.5959	Non-Impacted
21	313	Storage	66	6.1314	Non-Impacted
21	314	Storage	73	6.7817	Non-Impacted
21	315	Storage	70	6.503	Non-Impacted
21	316	Storage	68	6.3172	Non-Impacted
21	317	Storage	70	6.503	Non-Impacted
21	318	Storage	63	5.8527	Non-Impacted
21	319	Storage	69	6.4101	Non-Impacted
21	321	Storage	77	7.1533	Non-Impacted
21	321	Storage	70	6.503	Non-Impacted
21	322	Storage	68	6.3172	Non-Impacted
21	323	Storage	61	5.6669	Non-Impacted
21	324	Storage	74	6.8746	Non-Impacted
21	325	Storage	61	5.6669	Non-Impacted
21	327	Storage	69	6.4101	Non-Impacted
21	329	Storage	70	6.503	Non-Impacted
21	331	Storage	70	6.503	Non-Impacted
21	333	Storage	35	3.2515	Non-Impacted
21	335	Storage	430	39.947	Non-Impacted

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	337	Storage	70	6.503	Non-Impacted
21	339	Storage	70	6.503	Non-Impacted
21	341	Storage	207	19.2303	Non-Impacted
21	345	Storage	71	6.5959	Non-Impacted
Sub-total			21676	2026.8922	
28	100	Supply	749	69.5821	Non-Impacted
28	101	Mechanical	101	9.3829	Non-Impacted
28	102	Storage	178	16 5362	Non-Impacted
28	103	Storage	68	6.3172	Non-Impacted
28	106	Office	208	19.3232	Non-Impacted
28	106 A	Laboratory	110	10.219	Non-Impacted
28	107	Office	94	8.7326	Non-Impacted
28	108	Office	88	8.1752	Non-Impacted
28	200	Office	165	15.3285	Non-Impacted
28	201	Office	144	13.3776	Non-Impacted
28	201A	Office	149	13.8421	Non-Impacted
28	202 B	Storage	111	10.3119	Non-Impacted
28	202 A	Office	164	15.2356	Non-Impacted
28	203	Supply	257	23.8753	Non-Impacted
28	204	Shop	739	68.6531	Non-Impacted
28	205	Entryway	90	8.361	Non-Impacted
	Sub-total		3415	317.2535	
29	1	Office	363	33.7227	Non-Impacted
29	2	Office	126	11.7054	Non-Impacted
Sub-total			489	45.4281	
49	S-1	Entryway	31	2.8799	Non-Impacted
49	101	Mech/shop	144	13.3776	Non-Impacted
49	103	Office	103	9.5687	Non-Impacted
49	104	Laboratory	130	12.077	Non-Impacted
49	107	Laboratory	529	49.1441	Non-Impacted
49	120 A	Office	152	14.1208	Non-Impacted
Sub-total			1089	101.1681	
59	11	Scuba Locker	286	26.5694	Non-Impacted
59	100	Operational research tank	1114	103.4906	Non-Impacted
59	101	Laboratory	286	26.5694	Non-Impacted
59	102	Laboratory	353	32.7937	Non-Impacted
59	103	Electrical room	72	6.6888	Non-Impacted
59	104	Closet	72	6.6888	Non-Impacted
59	106	Laboratory	512	47.5648	Non-Impacted
Sub-total			2695	250.3655	

Table T-22. NMRC SURVEY UNITS -- RADIOLOGICAL CLASSIFICATIONS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
69	100	Shop/mechanical	166	15.4214	Non-Impacted
69	102	Laboratory	65	6.0385	Non-Impacted
69	103	Laboratory	380	35.302	Non-Impacted
69	104	Control room	194	18.0226	Non-Impacted
Sub-total			805	74.7845	
53	S-1	Entryway	31	2.8799	Non-Impacted
53	10	Shop	216	20.0664	Non-Impacted
53	11	Shop	93	8.6397	Non-Impacted
53	12	Laboratory	620	57.598	Impacted, Class 3
53	13	Office	713	66.2377	Non-Impacted
53	14	Storage	372	34.5588	Non-Impacted
53	15	Storage	775	71.9975	Non-Impacted
53	22	Galley	156	14.4924	Non-Impacted
53	23	Compressors	2490	231.321	Non-Impacted
53	24	NRCC	3081	286.2249	Non-Impacted
53	25	Office	155	14.3995	Non-Impacted
53	25 A	Office	95	8.8255	Non-Impacted
53	25 B	Office	95	8.8255	Non-Impacted
53	26	Office	125	11.6125	Non-Impacted
53	26 A	Sickbay	100	9.29	Non-Impacted
53	26 B	Office	46	4.2734	Non-Impacted
53	28	Sickbay	165	15.3285	Non-Impacted
53	29	Office	56	5.2024	Non-Impacted
53	30	Office	179	16.6291	Non-Impacted
53	31	Instrument room	371	34.4659	Non-Impacted
53	32	Mechanical	86	7.9894	Non-Impacted
53	33	Mechanical	85	7.8965	Non-Impacted
53	100	Foyer	130	12.077	Non-Impacted
53	100 B	Office	110	10.219	Non-Impacted
53	101	Laboratory	760	70.604	Impacted, Class 3
53	102	Laboratory	760	70.604	Non-Impacted
53	103	Laboratory	760	70.604	Non-Impacted
53	104	Office	112	10.4048	Non-Impacted
53	105	Office	99	9.1971	Non-Impacted
53	108	Conference room	683	63.4507	Non-Impacted
53	109	Office	170	15.793	Non-Impacted
53	110	Office	438	40.6902	Non-Impacted
53	111	Laboratory	683	63.4507	Impacted, Class 3
53	112	Office/Lab	683	63.4507	Impacted, Class 3
53	113	Laboratory	683	63.4507	Impacted, Class 3
53	114	Office	91	8.4539	Non-Impacted
53	115	Gear Lab	40	3.716	Non-Impacted
53	116	Office	229	21.2741	Non-Impacted
53	117	Laboratory	760	70.604	Impacted, Class 3
53	118	Laboratory	760	70.604	Impacted, Class 3
53	119	Laboratory	374	34.7446	Impacted, Class 3
53	120	Office	250	23.225	Impacted, Class 3
53	120 B	Office	80	7.432	Non-Impacted
53	120 C	Office	100	9.29	Non-Impacted
53	120 D	Office	88	8.1752	Non-Impacted
53	121	Laboratory	670	62.243	Impacted, Class 3

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Table T-23. NMRC D&D SURVEY UNITS -- IMPACTED CLASS 2 AND 3

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
Rockville Annex	Hot Locker	Storage	60	5.574	Impacted, Class 3
Rockville Annex	Loading dock	Storage	104	9.6616	Impacted, Class 3
Rockville Annex	110	Laboratory	584	54.2536	Impacted, Class 3
Rockville Annex	110A	Office	112	10.4048	Impacted, Class 3
Rockville Annex	110B	Office	103	9.5687	Impacted, Class 3
Rockville Annex	111	Equipment Storage	394	36.6026	Impacted, Class 3
Rockville Annex	112	Sterilizer//Lab	138	12.8202	Impacted, Class 3
Rockville Annex	113	Laboratory	153	14.2137	Impacted, Class 3
Rockville Annex	114	Laboratory	153	14.2137	Impacted, Class 3
Rockville Annex	115	Laboratory	532	49.4228	Impacted, Class 3
Rockville Annex	126	Laboratory	454	42.1766	Impacted, Class 3
Rockville Annex	127	Laboratory	355	32.9795	Impacted, Class 3
Rockville Annex	128	Laboratory	559	51.9311	Impacted, Class 3
Rockville Annex	201	Laboratory	181	16.8149	Impacted, Class 3
Rockville Annex	213	Freezer/Storage	317	29.4493	Impacted, Class 3
Rockville Annex	213A	Storage	50	4.645	Impacted, Class 3
Rockville Annex	213B	Gamma Counter	50	4.645	Impacted, Class 3
Rockville Annex	218	Storage	50	4.645	Impacted, Class 3
Rockville Annex	218A	Cold Room	50	4.645	Impacted, Class 3
Rockville Annex	218B	Cold Room	100	9.29	Impacted, Class 3
Rockville Annex	219	Laboratory	774	71.9046	Impacted, Class 3
Rockville Annex	219A	Laboratory	247	22.9463	Impacted, Class 3
Rockville Annex	219B	Laboratory	142	13.1918	Impacted, Class 3
Rockville Annex	220	Laboratory	853	79.2437	Impacted, Class 3
Rockville Annex	221	Tissue Culture	87	8.0823	Impacted, Class 3
17A	S-14	Radiation Safety	77	7.1533	Impacted, Class 3
17A	S-06	Office	158	14.6782	Impacted, Class 3
17	203 / 215	Laboratory	622	57.7838	Impacted, Class 3
17B	225/229	Laboratory	695	64.5655	Impacted, Class 3
17B	317/319	Laboratory	486	45.1494	Impacted, Class 3
17	109 / 103	Laboratory	553	51.3737	Impacted, Class 3
17	012	Laboratory	291	27.0339	Impacted, Class 3
17B	015	Laboratory	225	20.9025	Impacted, Class 3
17	115	Laboratory	195	18.1155	Impacted, Class 3
17	117	Office	249	23.1321	Impacted, Class 3
17B	127	Laboratory	199	18.4871	Impacted, Class 3
17B	129	Laboratory	366	34.0014	Impacted, Class 3
17B	131	Laboratory	423	39.2967	Impacted, Class 3
17B	133	Laboratory	268	24.8972	Impacted, Class 3
17B	149	Laboratory	380	35.302	Impacted, Class 3
17B	149A	Laboratory	276	25.6404	Impacted, Class 3
17	200	Freezer/Laboratory	289	26.8481	Impacted, Class 3
17	204	Laboratory	315	29.2635	Impacted, Class 3
17	206	Office	273	25.3617	Impacted, Class 3
17	208	Laboratory	202	18.7658	Impacted, Class 3
17	210	Laboratory	269	24.9901	Impacted, Class 3
17	212	Laboratory	261	24.2469	Impacted, Class 3
17	217	Laboratory	461	42.8269	Impacted, Class 3
17A	218	Laboratory	401	37.2529	Impacted, Class 3
17A	224	Laboratory	419	38.9251	Impacted, Class 3
17A	230	Laboratory	209	19.4161	Impacted, Class 3
17A	234	Laboratory	371	34.4659	Impacted, Class 3
17B	237	Laboratory	222	20.6238	Impacted, Class 3
17B	239	Laboratory	345	32.0505	Impacted, Class 3
17A	240	Laboratory	604	56.1116	Impacted, Class 3
17A	242	Laboratory	420	39.018	Impacted, Class 3
17B	249	Laboratory	619	57.5051	Impacted, Class 3

Table T-23. NMRC D&D SURVEY UNITS -- IMPACTED CLASS 2 AND 3

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17B	251	Laboratory	300	27.87	Impacted, Class 3
17B	251A	Laboratory	133	12.3557	Impacted, Class 3
17	301	Laboratory	373	34.6517	Impacted, Class 3
17	302	Laboratory	197	18.3013	Impacted, Class 3
17	304	Office	306	28.4274	Impacted, Class 3
17	304A	Office	80	7.432	Impacted, Class 3
17	305	Laboratory	337	31.3073	Impacted, Class 3
17	306	Laboratory	371	34.4659	Impacted, Class 3
17	306A	BSL3 Laboratory	42	3.9018	Impacted, Class 3
17	307	Laboratory	354	32.8866	Impacted, Class 3
17	308	Storage	221	20.5309	Impacted, Class 3
17	310	Laboratory	254	23.5966	Impacted, Class 3
17	311	Laboratory	321	29.8209	Impacted, Class 3
17	312	Laboratory/freezer	221	20.5309	Impacted, Class 3
17	312	Laboratory	74	6.8746	Impacted, Class 3
17	313	Laboratory	287	26.6623	Impacted, Class 3
17A	316	Lab/Office	275	25.5475	Impacted, Class 3
17A	316A	Laboratory	104	9.6616	Impacted, Class 3
17A	316B	Office	65	6.0385	Impacted, Class 3
17B	319A	Office	120	11.148	Impacted, Class 3
17B	319B	Laboratory	93	8.6397	Impacted, Class 3
17A	320	Laboratory	401	37.2529	Impacted, Class 3
17A	320A	Laboratory	192	17.8368	Impacted, Class 3
17A	320B	Laboratory	51	4.7379	Impacted, Class 3
17A	320C	Laboratory	52	4.8308	Impacted, Class 3
17B	321	Office	289	26.8481	Impacted, Class 3
17A	326	Laboratory	367	34.0943	Impacted, Class 3
17A	326B	Laboratory	202	18.7658	Impacted, Class 3
17B	327	Laboratory	187	17.3723	Impacted, Class 3
17B	329	Laboratory	282	26.1978	Impacted, Class 3
17A	336	Laboratory	300	27.87	Impacted, Class 3
17A	336A	Laboratory	289	26.8481	Impacted, Class 3
17A	336B	Darkroom	57	5.2953	Impacted, Class 3
17A	338	Laboratory	165	15.3285	Impacted, Class 3
17A	338A	Laboratory	300	27.87	Impacted, Class 3
17A	340	Laboratory	196	18.2084	Impacted, Class 3
17B	341	Laboratory	373	34.6517	Impacted, Class 3
17B	341B	Laboratory	64	5.9456	Impacted, Class 3
17A	342	Laboratory	114	10.5906	Impacted, Class 3
17A	342A	Laboratory	200	18.58	Impacted, Class 3
17B	345A	Freezer/storage	32	2.9728	Impacted, Class 3
17B	349	Laboratory	202	18.7658	Impacted, Class 3
17B	353	Laboratory	267	24.8043	Impacted, Class 3
17B	353A	Animal Lab	149	13.8421	Impacted, Class 3
18	127 / 125	Laboratory	466	43.2914	Impacted, Class 3
18	126	Laboratory	203	18.8587	Impacted, Class 3
18	135	Laboratory	218	20.2522	Impacted, Class 3
18	137	Laboratory	218	20.2522	Impacted, Class 3
18	223	Laboratory	656	60.9424	Impacted, Class 3
18	224	Laboratory	104	9.6616	Impacted, Class 3
18	226	Laboratory	152	14.1208	Impacted, Class 3
18	228	Office	147	13.6563	Impacted, Class 3
18	231	Laboratory	449	41.7121	Impacted, Class 3
18	232	Office	91	8.4539	Impacted, Class 3
18	232 A	Office	289	26.8481	Impacted, Class 3
18	232 B	Office	138	12.8202	Impacted, Class 3
21	Loading dock	Waste	400	37.16	Impacted, Class 2

Table T-23. NMRC D&D SURVEY UNITS -- IMPACTED CLASS 2 AND 3

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	106	Animal room	363	33.7227	Impacted, Class 3
21	110 A	Refrigerator	155	14.3995	Impacted, Class 3
21	110 B	Refrigerator	180	16.722	Impacted, Class 3
21	127	Animal room	390	36.231	Impacted, Class 3
21	201	Laboratory	202	18.7658	Impacted, Class 3
21	204	Laboratory	365	33.9085	Impacted, Class 3
21	210	Freezer/storage	64	5.9456	Impacted, Class 3
21	211	Laboratory	364	33.8156	Impacted, Class 3
21	212	Laboratory	291	27.0339	Impacted, Class 3
21	231	Freezer/storage	142	13.1918	Impacted, Class 3
21	231 B	Freezer/ Laboratory	73	6.7817	Impacted, Class 3
21	301	Office/Laboratory	297	27.5913	Impacted, Class 3
53	12	Laboratory	620	57.598	Impacted, Class 3
53	101	Laboratory	760	70.604	Impacted, Class 3
53	102	Laboratory	760	70.604	Impacted, Class 3
53	111	Laboratory	683	63.4507	Impacted, Class 3
53	112	Office/Lab	683	63.4507	Impacted, Class 3
53	113	Laboratory	683	63.4507	Impacted, Class 3
53	117	Laboratory	760	70.604	Impacted, Class 3
53	118	Laboratory	760	70.604	Impacted, Class 3
53	119	Laboratory	374	34.7446	Impacted, Class 3
53	120	Office	250	23.225	Impacted, Class 3
53	121	Laboratory	670	62.243	Impacted, Class 3
53	122	Laboratory	670	62.243	Impacted, Class 3
139	105	DRMO Staging	304	28.2416	Impacted, Class 3
139	106	DRMO Staging	469	43.5701	Impacted, Class 3
150	Basement	Irrad. Room	880	81.752	Impacted, Class 2
150	Grounds	Bldg. Grounds	1500	139.35	Impacted, Class 3

T-23 NMRC Survey Units - Radiological Impacted Classes 2 and 3

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Table T-23. NMRC D&D SURVEY UNITS -- IMPACTED CLASS 2 AND 3

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
Rockville Annex	Hot Locker	Storage	60	5.574	Impacted, Class 3
Rockville Annex	Loading dock	Storage	104	9.6616	Impacted, Class 3
Rockville Annex	110	Laboratory	584	54.2536	Impacted, Class 3
Rockville Annex	110A	Office	112	10.4048	Impacted, Class 3
Rockville Annex	110B	Office	103	9.5687	Impacted, Class 3
Rockville Annex	111	Equipment Storage	394	36.6026	Impacted, Class 3
Rockville Annex	112	Sterilizer//Lab	138	12.8202	Impacted, Class 3
Rockville Annex	113	Laboratory	153	14.2137	Impacted, Class 3
Rockville Annex	114	Laboratory	153	14.2137	Impacted, Class 3
Rockville Annex	115	Laboratory	532	49.4228	Impacted, Class 3
Rockville Annex	126	Laboratory	454	42.1766	Impacted, Class 3
Rockville Annex	127	Laboratory	355	32.9795	Impacted, Class 3
Rockville Annex	128	Laboratory	559	51.9311	Impacted, Class 3
Rockville Annex	201	Laboratory	181	16.8149	Impacted, Class 3
Rockville Annex	213	Freezer/Storage	317	29.4493	Impacted, Class 3
Rockville Annex	213A	Storage	50	4.645	Impacted, Class 3
Rockville Annex	213B	Gamma Counter	50	4.645	Impacted, Class 3
Rockville Annex	218	Storage	50	4.645	Impacted, Class 3
Rockville Annex	218A	Cold Room	50	4.645	Impacted, Class 3
Rockville Annex	218B	Cold Room	100	9.29	Impacted, Class 3
Rockville Annex	219	Laboratory	774	71.9046	Impacted, Class 3
Rockville Annex	219A	Laboratory	247	22.9463	Impacted, Class 3
Rockville Annex	219B	Laboratory	142	13.1918	Impacted, Class 3
Rockville Annex	220	Laboratory	853	79.2437	Impacted, Class 3
Rockville Annex	221	Tissue Culture	87	8.0823	Impacted, Class 3
17A	S-14	Radiation Safety	77	7.1533	Impacted, Class 3
17A	S-06	Office	158	14.6782	Impacted, Class 3
17	203 / 215	Laboratory	622	57.7838	Impacted, Class 3
17B	225/229	Laboratory	695	64.5655	Impacted, Class 3
17B	317/319	Laboratory	486	45.1494	Impacted, Class 3
17	109 / 103	Laboratory	553	51.3737	Impacted, Class 3
17	012	Laboratory	291	27.0339	Impacted, Class 3
17B	015	Laboratory	225	20.9025	Impacted, Class 3
17	115	Laboratory	195	18.1155	Impacted, Class 3
17	117	Office	249	23.1321	Impacted, Class 3
17B	127	Laboratory	199	18.4871	Impacted, Class 3
17B	129	Laboratory	366	34.0014	Impacted, Class 3
17B	131	Laboratory	423	39.2967	Impacted, Class 3
17B	133	Laboratory	268	24.8972	Impacted, Class 3
17B	149	Laboratory	380	35.302	Impacted, Class 3
17B	149A	Laboratory	276	25.6404	Impacted, Class 3
17	200	Freezer/Laboratory	289	26.8481	Impacted, Class 3
17	204	Laboratory	315	29.2635	Impacted, Class 3
17	206	Office	273	25.3617	Impacted, Class 3
17	208	Laboratory	202	18.7658	Impacted, Class 3
17	210	Laboratory	269	24.9901	Impacted, Class 3
17	212	Laboratory	261	24.2469	Impacted, Class 3
17	217	Laboratory	461	42.8269	Impacted, Class 3
17A	218	Laboratory	401	37.2529	Impacted, Class 3
17A	224	Laboratory	419	38.9251	Impacted, Class 3
17A	230	Laboratory	209	19.4161	Impacted, Class 3
17A	234	Laboratory	371	34.4659	Impacted, Class 3
17B	237	Laboratory	222	20.6238	Impacted, Class 3
17B	239	Laboratory	345	32.0505	Impacted, Class 3
17A	240	Laboratory	604	56.1116	Impacted, Class 3
17A	242	Laboratory	420	39.018	Impacted, Class 3
17B	249	Laboratory	619	57.5051	Impacted, Class 3

Table T-23. NMRC D&D SURVEY UNITS -- IMPACTED CLASS 2 AND 3

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17B	251	Laboratory	300	27.87	Impacted, Class 3
17B	251A	Laboratory	133	12.3557	Impacted, Class 3
17	301	Laboratory	373	34.6517	Impacted, Class 3
17	302	Laboratory	197	18.3013	Impacted, Class 3
17	304	Office	306	28.4274	Impacted, Class 3
17	304A	Office	80	7.432	Impacted, Class 3
17	305	Laboratory	337	31.3073	Impacted, Class 3
17	306	Laboratory	371	34.4659	Impacted, Class 3
17	306A	BSL3 Laboratory	42	3.9018	Impacted, Class 3
17	307	Laboratory	354	32.8866	Impacted, Class 3
17	308	Storage	221	20.5309	Impacted, Class 3
17	310	Laboratory	254	23.5966	Impacted, Class 3
17	311	Laboratory	321	29.8209	Impacted, Class 3
17	312	Laboratory/freezer	221	20.5309	Impacted, Class 3
17	312	Laboratory	74	6.8746	Impacted, Class 3
17	313	Laboratory	287	26.6623	Impacted, Class 3
17A	316	Lab/Office	275	25.5475	Impacted, Class 3
17A	316A	Laboratory	104	9.6616	Impacted, Class 3
17A	316B	Office	65	6.0385	Impacted, Class 3
17B	319A	Office	120	11.148	Impacted, Class 3
17B	319B	Laboratory	93	8.6397	Impacted, Class 3
17A	320	Laboratory	401	37.2529	Impacted, Class 3
17A	320A	Laboratory	192	17.8368	Impacted, Class 3
17A	320B	Laboratory	51	4.7379	Impacted, Class 3
17A	320C	Laboratory	52	4.8308	Impacted, Class 3
17B	321	Office	289	26.8481	Impacted, Class 3
17A	326	Laboratory	367	34.0943	Impacted, Class 3
17A	326B	Laboratory	202	18.7658	Impacted, Class 3
17B	327	Laboratory	187	17.3723	Impacted, Class 3
17B	329	Laboratory	282	26.1978	Impacted, Class 3
17A	336	Laboratory	300	27.87	Impacted, Class 3
17A	336A	Laboratory	289	26.8481	Impacted, Class 3
17A	336B	Darkroom	57	5.2953	Impacted, Class 3
17A	338	Laboratory	165	15.3285	Impacted, Class 3
17A	338A	Laboratory	300	27.87	Impacted, Class 3
17A	340	Laboratory	196	18.2084	Impacted, Class 3
17B	341	Laboratory	373	34.6517	Impacted, Class 3
17B	341B	Laboratory	64	5.9456	Impacted, Class 3
17A	342	Laboratory	114	10.5906	Impacted, Class 3
17A	342A	Laboratory	200	18.58	Impacted, Class 3
17B	345A	Freezer/storage	32	2.9728	Impacted, Class 3
17B	349	Laboratory	202	18.7658	Impacted, Class 3
17B	353	Laboratory	267	24.8043	Impacted, Class 3
17B	353A	Animal Lab	149	13.8421	Impacted, Class 3
18	127 / 125	Laboratory	466	43.2914	Impacted, Class 3
18	126	Laboratory	203	18.8587	Impacted, Class 3
18	135	Laboratory	218	20.2522	Impacted, Class 3
18	137	Laboratory	218	20.2522	Impacted, Class 3
18	223	Laboratory	656	60.9424	Impacted, Class 3
18	224	Laboratory	104	9.6616	Impacted, Class 3
18	226	Laboratory	152	14.1208	Impacted, Class 3
18	228	Office	147	13.6563	Impacted, Class 3
18	231	Laboratory	449	41.7121	Impacted, Class 3
18	232	Office	91	8.4539	Impacted, Class 3
18	232 A	Office	289	26.8481	Impacted, Class 3
18	232 B	Office	138	12.8202	Impacted, Class 3
21	Loading dock	Waste	400	37.16	Impacted, Class 2

Table T-23. NMRC D&D SURVEY UNITS -- IMPACTED CLASS 2 AND 3

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	106	Animal room	363	33.7227	Impacted, Class 3
21	110 A	Refrigerator	155	14.3995	Impacted, Class 3
21	110 B	Refrigerator	180	16.722	Impacted, Class 3
21	127	Animal room	390	36.231	Impacted, Class 3
21	201	Laboratory	202	18.7658	Impacted, Class 3
21	204	Laboratory	365	33.9085	Impacted, Class 3
21	210	Freezer/storage	64	5.9456	Impacted, Class 3
21	211	Laboratory	364	33.8156	Impacted, Class 3
21	212	Laboratory	291	27.0339	Impacted, Class 3
21	231	Freezer/storage	142	13.1918	Impacted, Class 3
21	231 B	Freezer/ Laboratory	73	6.7817	Impacted, Class 3
21	301	Office/Laboratory	297	27.5913	Impacted, Class 3
53	12	Laboratory	620	57.598	Impacted, Class 3
53	101	Laboratory	760	70.604	Impacted, Class 3
53	102	Laboratory	760	70.604	Impacted, Class 3
53	111	Laboratory	683	63.4507	Impacted, Class 3
53	112	Office/Lab	683	63.4507	Impacted, Class 3
53	113	Laboratory	683	63.4507	Impacted, Class 3
53	117	Laboratory	760	70.604	Impacted, Class 3
53	118	Laboratory	760	70.604	Impacted, Class 3
53	119	Laboratory	374	34.7446	Impacted, Class 3
53	120	Office	250	23.225	Impacted, Class 3
53	121	Laboratory	670	62.243	Impacted, Class 3
53	122	Laboratory	670	62.243	Impacted, Class 3
139	105	DRMO Staging	304	28.2416	Impacted, Class 3
139	106	DRMO Staging	469	43.5701	Impacted, Class 3
150	Basement	Irrad. Room	880	81.752	Impacted, Class 2
150	Grounds	Bldg. Grounds	1500	139.35	Impacted, Class 3

T-24 NMRC Survey Units - Radiological Non-impacted

NMRC Historical Site Assessment (HSA)

June 1999

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
Rockville Annex	100	Office	262	24.3398	Non-impacted
Rockville Annex	102	Office	213	19.7877	Non-impacted
Rockville Annex	103	Office	170	15.793	Non-impacted
Rockville Annex	104	Office	90	8.361	Non-impacted
Rockville Annex	109	Office/Duty Room	40	3.716	Non-impacted
Rockville Annex	116	Dark Room	113	10.4977	Non-impacted
Rockville Annex	117	Storage Room	40	3.716	Non-impacted
Rockville Annex	118	Insect Room	322	29.9138	Non-impacted
Rockville Annex	118A	Insect/Animal Room	100	9.29	Non-impacted
Rockville Annex	118B	Insect Room	107	9.9403	Non-impacted
Rockville Annex	118C	Insect Room	189	17.5581	Non-impacted
Rockville Annex	123	Laboratory	195	18.1155	Non-impacted
Rockville Annex	124	Cold Room	116	10.7764	Non-impacted
Rockville Annex	125	Insect Room	93	8.6397	Non-impacted
Rockville Annex	202	Office	150	13.935	Non-impacted
Rockville Annex	203	Office	152	14.1208	Non-impacted
Rockville Annex	204	Office	105	9.7545	Non-impacted
Rockville Annex	205	Office	105	9.7545	Non-impacted
Rockville Annex	206	Office	15	1.3935	Non-impacted
Rockville Annex	207	Office	105	9.7545	Non-impacted
Rockville Annex	208	Conference Room	200	18.58	Non-impacted
Rockville Annex	209	Office	64	5.9456	Non-impacted
Rockville Annex	210	Office	132	12.2628	Non-impacted
Rockville Annex	211	Office	76	7.0604	Non-impacted
Rockville Annex	214A	Laboratory	151	14.0279	Non-impacted
Rockville Annex	214B	Laboratory	121	11.2409	Non-impacted
Rockville Annex	214C	Laboratory	56	5.2024	Non-impacted
Rockville Annex	215	Laboratory	235	21.8315	Non-impacted
Rockville Annex	215A	Animal Room	109	10.1261	Non-impacted
Rockville Annex	216	Animal Room	108	10.0332	Non-impacted
Rockville Annex	217	Laboratory	181	16.8149	Non-impacted
17	S-32	Laboratory/storage	262	24.3398	Non-impacted
17	S-31	Laboratory	77	7.1533	Non-impacted
17	S-30	Laboratory	220	20.438	Non-impacted
17A	S-24	Office	54	5.0166	Non-impacted
17	S-23	Mechanical	749	69.5821	Non-impacted
17B	S-23	Dive machine shop	711	66.0519	Non-impacted
17A	S-22	Office	72	6.6888	Non-impacted
17A	S-20	Receipt	301	27.9629	Non-impacted
17B	S-19	Storage	1580	146.782	Non-impacted
17A	S-18	Office	165	15.3285	Non-impacted
17A	S-16	Equipment	121	11.2409	Non-impacted
17A	S-16A	Equipment	144	13.3776	Non-impacted
17B	S-15	Office	123	11.4267	Non-impacted
17A	S-12	Purchasing	119	11.0551	Non-impacted
17A	S-10	Office	81	7.5249	Non-impacted
17A	S-08	Purchasing	123	11.4267	Non-impacted
17A	S-04	Office	133	12.3557	Non-impacted
17A	S-02	Office	121	11.2409	Non-impacted
17A	S-01	Storage	202	18.7658	Non-impacted
17B	019 / 027	Laboratory	528	49.0512	Non-impacted
17A	038 /042	MID Server	422	39.2038	Non-impacted
17	001	Laboratory	121	11.2409	Non-impacted
17	001A	Laboratory	242	22.4818	Non-impacted
17	005	Laboratory	350	32.515	Non-impacted
17	005A	Flow cytometer	197	18.3013	Non-impacted
17	006	Supply/LCPO	253	23.5037	Non-impacted
17	007A	Office	148	13.7492	Non-impacted

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17	007B	Laboratory	185	17.1865	Non-impacted
17	007B1	Laboratory	170	15.793	Non-impacted
17	007C	Office	210	19.509	Non-impacted
17	008	Office/MID	186	17.2794	Non-impacted
17B	009	Passageway	171	15.8859	Non-impacted
17	010	Supply	445	41.3405	Non-impacted
17	011	Office	148	13.7492	Non-impacted
17B	013	Office	93	8.6397	Non-impacted
17B	013A	Laboratory	159	14.7711	Non-impacted
17B	013B	Storage	80	7.432	Non-impacted
17B	013C	Storage	80	7.432	Non-impacted
17	014	Storage	231	21.4599	Non-impacted
17B	015A	Laboratory	153	14.2137	Non-impacted
17	016	MID	46	4.2734	Non-impacted
17A	016	Office/custodian	47	4.3663	Non-impacted
17B	017	Office	214	19.8806	Non-impacted
17A	018	Office/MID	332	30.8428	Non-impacted
17B	019B	Storage	33	3.0657	Non-impacted
17B	019C	Photo Lab	30	2.787	Non-impacted
17A	020	Storage	53	4.9237	Non-impacted
17B	021	Office	140	13.006	Non-impacted
17B	023	Office	143	13.2847	Non-impacted
17A	024	Storage/dry ice	79	7.3391	Non-impacted
17A	028	Office/Purchasing	308	28.6132	Non-impacted
17A	028A	Office	66	6.1314	Non-impacted
17A	030	Laboratory	343	31.8647	Non-impacted
17	032	Office	270	25.083	Non-impacted
17A	032A	Office/Supply	168	15.6072	Non-impacted
17A	032B	Office	95	8.8255	Non-impacted
17A	032C	Office/Contractor	155	14.3995	Non-impacted
17A	032D	Office	120	11.148	Non-impacted
17A	034	Material Mgmt	404	37.5316	Non-impacted
17B	035	Auditorium	1350	125.415	Non-impacted
17A	048	Library	457	42.4553	Non-impacted
17A	050-1	Storage	80	7.432	Non-impacted
17A	052	Storage	80	7.432	Non-impacted
17A	052A	Storage	60	5.574	Non-impacted
17A	054	Freezer/storage	164	15.2356	Non-impacted
17A	056	Freezer	118	10.9622	Non-impacted
17	104	Quarterdeck	151	14.0279	Non-impacted
17	105	Office	157	14.5853	Non-impacted
17	107	Freezer/storage	70	6.503	Non-impacted
17	108	Office	151	14.0279	Non-impacted
17	110	Office	136	12.6344	Non-impacted
17	111	Office	245	22.7605	Non-impacted
17	112	Office	280	26.012	Non-impacted
17	113	Laboratory	162	15.0498	Non-impacted
17	114	Office	148	13.7492	Non-impacted
17	114A	Office	170	15.793	Non-impacted
17	116	Office	201	18.6729	Non-impacted
17	116A	Office	64	5.9456	Non-impacted
17	116B	Storage	46	4.2734	Non-impacted
17	119	Office	219	20.3451	Non-impacted
17	119	Office	206	19.1374	Non-impacted
17A	120	Office	239	22.2031	Non-impacted
17A	122	Office	423	39.2967	Non-impacted
17	122D	Office	346	32.1434	Non-impacted
17B	123	Office	253	23.5037	Non-impacted

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
17A	124	Office/XO	255	23.6895	Non-impacted
17B	125	Office	380	35.302	Non-impacted
17B	125	Office	380	35.302	Non-impacted
17A	126	Office	204	18.9516	Non-impacted
17A	128	Office	189	17.5581	Non-impacted
17A	130	Office	609	56.5761	Non-impacted
17A	132	Office	349	32.4221	Non-impacted
17A	134	LCPO/Admin office	147	13.6563	Non-impacted
17B	135	Office	76	7.0604	Non-impacted
17B	135A	Office	97	9.0113	Non-impacted
17A	140	Library	1181	109.7149	Non-impacted
17A	140B	Library	89	8.2681	Non-impacted
17B	143	Gear Locker	146	13.5634	Non-impacted
17B	147	Office	121	11.2409	Non-impacted
17B	147A	Office	292	27.1268	Non-impacted
17B	147B	Office	107	9.9403	Non-impacted
17B	151	Office	153	14.2137	Non-impacted
17B	153A	Office	310	28.799	Non-impacted
17A	214	Office	139	12.9131	Non-impacted
17	216	Conference room	618	57.4122	Non-impacted
17A	216	Conference room	483	44.8707	Non-impacted
17	219	Office	114	10.5906	Non-impacted
17	219A	Office	62	5.7598	Non-impacted
17	219B	Office	62	5.7598	Non-impacted
17A	220A	Duty room	119	11.0551	Non-impacted
17	221	Office	92	8.5468	Non-impacted
17	221A	Laboratory	104	9.6616	Non-impacted
17A	226	Office	115	10.6835	Non-impacted
17A	226B	Storage	208	19.3232	Non-impacted
17B	231	Office	376	34.9304	Non-impacted
17B	235	Office	183	17.0007	Non-impacted
17B	237A	Office	100	9.29	Non-impacted
17A	238	Office	173	16.0717	Non-impacted
17B	243	Laboratory	291	27.0339	Non-impacted
17A	244	Office	123	11.4267	Non-impacted
17	245A	Office	21	1.9509	Non-impacted
17B	253	Storage	3	0.2787	Non-impacted
17B	255	Office	251	23.3179	Non-impacted
17	300A	Office	99	9.1971	Non-impacted
17A	314	Storage	23	2.1367	Non-impacted
17A	318	Freezer/storage	84	7.8036	Non-impacted
17A	318A	Storage	54	5.0166	Non-impacted
17A	318B	Office	97	9.0113	Non-impacted
17A	318C	Office	64	5.9456	Non-impacted
17A	318D	Laboratory	200	18.58	Non-impacted
17A	322	Office	176	16.3504	Non-impacted
17B	323	Office	111	10.3119	Non-impacted
17	325	Laboratory	288	26.7552	Non-impacted
17B	333	Office	162	15.0498	Non-impacted
17B	341A	Office	97	9.0113	Non-impacted
17B	347	Office	191	17.7439	Non-impacted
17B	347A	Office	87	8.0823	Non-impacted
17B	351	Office	114	10.5906	Non-impacted
18	17	Laboratory	169	15.7001	Non-impacted
18	18	Command inspection/Eval.	168	15.6072	Non-impacted
18	19	Storage	63	5.8527	Non-impacted
18	20	Storage	59	5.4811	Non-impacted

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
18	21	Laboratory	156	14.4924	Non-impacted
18	22	Office	188	17.4652	Non-impacted
18	23	Office	200	18.58	Non-impacted
18	24	Animal Room	449	41.7121	Non-impacted
18	26	Laboratory	400	37.16	Non-impacted
18	27	Freezer/Storage	143	13.2847	Non-impacted
18	29	Laboratory	259	24.0611	Non-impacted
18	30	Archive/Library	150	13.935	Non-impacted
18	32	Storage/Galley	130	12.077	Non-impacted
18	32 A	Office	257	23.8753	Non-impacted
18	32 B	Office-Council Conference	262	24.3398	Non-impacted
18	32 C	Office	206	19.1374	Non-impacted
18	128	Office	176	16.3504	Non-impacted
18	129	Office	107	9.9403	Non-impacted
18	130	Office	181	16.8149	Non-impacted
18	132	Office	237	22.0173	Non-impacted
18	134	Office	173	16.0717	Non-impacted
18	136	Office	201	18.6729	Non-impacted
18	138	Office	215	19.9735	Non-impacted
18	230	Office	177	16.4433	Non-impacted
18	231 B	Dark Room	75	6.9675	Non-impacted
18	233	Office	158	14.6782	Non-impacted
18	233 A	Office	164	15.2356	Non-impacted
21	2	Animal room	415	38.5535	Non-impacted
21	3	Procedures	341	31.6789	Non-impacted
21	3 A	Mice quarantine	174	16.1646	Non-impacted
21	3 B	Rat quarantine	382	35.4878	Non-impacted
21	4	Autoclave/Storage	343	31.8647	Non-impacted
21	5	Animal room	21	1.9509	Non-impacted
21	7	Animal room	288	26.7552	Non-impacted
21	8	Housekeeping	21	1.9509	Non-impacted
21	9	Animal room	359	33.3511	Non-impacted
21	10	Head	250	23.225	Non-impacted
21	11	Animal room	266	24.7114	Non-impacted
21	12	Laboratory	574	53.3246	Non-impacted
21	14	Pharmacy	166	15.4214	Non-impacted
21	16	Laboratory	192	17.8368	Non-impacted
21	20	Necropsy room	169	15.7001	Non-impacted
21	22 A	Cage wash	1121	104.1409	Non-impacted
21	101	Office	155	14.3995	Non-impacted
21	103	Storage	477	44.3133	Non-impacted
21	105	Animal room	61	5.6669	Non-impacted
21	105 A	Animal room	135	12.5415	Non-impacted
21	107	Animal room	323	30.0067	Non-impacted
21	108	Animal room	415	38.5535	Non-impacted
21	111	Office	138	12.8202	Non-impacted
21	111 A	Storage	8	0.7432	Non-impacted
21	112	Animal room	478	44.4062	Non-impacted
21	112 A	Office	90	8.361	Non-impacted
21	113	Animal room	191	17.7439	Non-impacted
21	114	Office	266	24.7114	Non-impacted
21	115	Storage	34	3.1586	Non-impacted
21	117	Storage	54	5.0166	Non-impacted
21	119	Office	134	12.4486	Non-impacted
21	119 A	Office	119	11.0551	Non-impacted
21	121	Animal room	592	54.9968	Non-impacted
21	125	Animal room	577	53.6033	Non-impacted

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	129	Office	74	6.8746	Non-impacted
21	202	Surgery suite	62	5.7598	Non-impacted
21	202 A	Surgery Frig	519	48.2151	Non-impacted
21	203	Laboratory	448	41.6192	Non-impacted
21	205	Storage	75	6.9675	Non-impacted
21	205 A	Office	129	11.9841	Non-impacted
21	206	Office	66	6.1314	Non-impacted
21	206 A	Office	109	10.1261	Non-impacted
21	208	Office	66	6.1314	Non-impacted
21	208 A	Office	110	10.219	Non-impacted
21	211	Office	450	41.805	Non-impacted
21	211 A	Laboratory	178	16.5362	Non-impacted
21	213	Head	487	45.2423	Non-impacted
21	214	Office	699	64.9371	Non-impacted
21	214 A	Office	699	64.9371	Non-impacted
21	214 B	Office	78	7.2462	Non-impacted
21	215	Office	89	8.2681	Non-impacted
21	215 A	Office	133	12.3557	Non-impacted
21	217	Storage	242	22.4818	Non-impacted
21	219	Storage	523	48.5867	Non-impacted
21	221	Storage	70	6.503	Non-impacted
21	221 A	Office	136	12.6344	Non-impacted
21	225	Storage	157	14.5853	Non-impacted
21	225 A	Storage	66	6.1314	Non-impacted
21	227	Storage	66	6.1314	Non-impacted
21	227 A	Storage	112	10.4048	Non-impacted
21	229	Storage	62	5.7598	Non-impacted
21	233	Freezer/storage	274	25.4546	Non-impacted
21	233	Freezer/Storage	92	8.5468	Non-impacted
21	303	Freezer/Storage	274	25.4546	Non-impacted
21	303 A	Entry to Penthouse	35	3.2515	Non-impacted
21	304	Storage	47	4.3663	Non-impacted
21	305	Storage	45	4.1805	Non-impacted
21	306	Storage	74	6.8746	Non-impacted
21	306	Storage	73	6.7817	Non-impacted
21	308	Storage	73	6.7817	Non-impacted
21	310	Storage	66	6.1314	Non-impacted
21	311	Storage	71	6.5959	Non-impacted
21	313	Storage	66	6.1314	Non-impacted
21	314	Storage	73	6.7817	Non-impacted
21	315	Storage	70	6.503	Non-impacted
21	316	Storage	68	6.3172	Non-impacted
21	317	Storage	70	6.503	Non-impacted
21	318	Storage	63	5.8527	Non-impacted
21	319	Storage	69	6.4101	Non-impacted
21	321	Storage	77	7.1533	Non-impacted
21	321	Storage	70	6.503	Non-impacted
21	322	Storage	68	6.3172	Non-impacted
21	323	Storage	61	5.6669	Non-impacted
21	324	Storage	74	6.8746	Non-impacted
21	325	Storage	61	5.6669	Non-impacted
21	327	Storage	69	6.4101	Non-impacted
21	329	Storage	70	6.503	Non-impacted
21	331	Storage	70	6.503	Non-impacted
21	333	Storage	35	3.2515	Non-impacted
21	335	Storage	430	39.947	Non-impacted
21	337	Storage	70	6.503	Non-impacted
21	339	Storage	70	6.503	Non-impacted

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
21	341	Storage	207	19.2303	Non-impacted
21	345	Storage	71	6.5959	Non-impacted
28	100	Supply	749	69.5821	Non-impacted
28	101	Mechanical	101	9.3829	Non-impacted
28	102	Storage	178	16.5362	Non-impacted
28	103	Storage	68	6.3172	Non-impacted
28	106	Office	208	19.3232	Non-impacted
28	106 A	Laboratory	110	10.219	Non-impacted
28	107	Office	94	8.7326	Non-impacted
28	108	Office	88	8.1752	Non-impacted
28	200	Office	165	15.3285	Non-impacted
28	201	Office	144	13.3776	Non-impacted
28	201A	Office	149	13.8421	Non-impacted
28	202 A	Office	164	15.2356	Non-impacted
28	202 B	Storage	111	10.3119	Non-impacted
28	203	Supply	257	23.8753	Non-impacted
28	204	Shop	739	68.6531	Non-impacted
28	205	Entryway	90	8.361	Non-impacted
29	1	Office	363	33.7227	Non-impacted
29	2	Office	126	11.7054	Non-impacted
49	S-1	Entryway	31	2.8799	Non-impacted
49	101	Mech/shop	144	13.3776	Non-impacted
49	103	Office	103	9.5687	Non-impacted
49	104	Laboratory	130	12.077	Non-impacted
49	107	Laboratory	529	49.1441	Non-impacted
49	120 A	Office	152	14.1208	Non-impacted
53	S-1	Entryway	31	2.8799	Non-impacted
53	10	Shop	216	20.0664	Non-impacted
53	11	Shop	93	8.6397	Non-impacted
53	13	Office	713	66.2377	Non-impacted
53	14	Storage	372	34.5588	Non-impacted
53	15	Storage	775	71.9975	Non-impacted
53	22	Galley	156	14.4924	Non-impacted
53	23	Compressors	2490	231.321	Non-impacted
53	24	NRCC	3081	286.2249	Non-impacted
53	25	Office	155	14.3995	Non-impacted
53	25 A	Office	95	8.8255	Non-impacted
53	25 B	Office	95	8.8255	Non-impacted
53	26	Office	125	11.6125	Non-impacted
53	26 A	Sickbay	100	9.29	Non-impacted
53	26 B	Office	46	4.2734	Non-impacted
53	28	Sickbay	165	15.3285	Non-impacted
53	29	Office	56	5.2024	Non-impacted
53	30	Office	179	16.6291	Non-impacted
53	31	Instrument room	371	34.4659	Non-impacted
53	32	Mechanical	86	7.9894	Non-impacted
53	33	Mechanical	85	7.8965	Non-impacted
53	100	Foyer	130	12.077	Non-impacted
53	100 B	Office	110	10.219	Non-impacted
53	103	Laboratory	760	70.604	Non-impacted
53	104	Office	112	10.4048	Non-impacted
53	105	Office	99	9.1971	Non-impacted
53	108	Conference room	683	63.4507	Non-impacted
53	109	Office	170	15.793	Non-impacted
53	110	Office	438	40.6902	Non-impacted
53	114	Office	91	8.4539	Non-impacted
53	115	Gear Lab	40	3.716	Non-impacted
53	116	Office	229	21.2741	Non-impacted

TABLE T-24. NMRC D&D SURVEY UNITS -- NON-IMPACTED AREAS

BUILDING	ROOM	UTILIZATION (1998-1999)	FLOOR AREA		RADIOLOGICAL CLASSIFICATION
			SQUARE FOOTAGE (FT^2)	SQUARE METERS (M^2)	
53	120 B	Office	80	7.432	Non-impacted
53	120 C	Office	100	9.29	Non-impacted
53	120 D	Office	88	8.1752	Non-impacted
53	123	Office	132	12.2628	Non-impacted
53	124	Office	283	26.2907	Non-impacted
53	124 A	Office	155	14.3995	Non-impacted
53	125	Office	126	11.7054	Non-impacted
53	126	Office	283	26.2907	Non-impacted
53	126 A	Office	104	9.6616	Non-impacted
53	126 B	Office	80	7.432	Non-impacted
53	127	Office	203	18.8587	Non-impacted
53	128	Telephone	45	4.1805	Non-impacted
59	11	Scuba Locker	286	26.5694	Non-impacted
59	100	Oper. Research tank	1114	103.4906	Non-impacted
59	101	Laboratory	286	26.5694	Non-Impacted
59	102	Laboratory	353	32.7937	Non-impacted
59	103	Electrical room	72	6.6888	Non-impacted
59	104	Closet	72	6.6888	Non-impacted
59	106	Laboratory	512	47.5648	Non-impacted
69	100	Shop/mechanical	166	15.4214	Non-impacted
69	102	Laboratory	65	6.0385	Non-impacted
69	103	Laboratory	380	35.302	Non-impacted
69	104	Control room	194	18.0226	Non-impacted
139	BAY	Shop	530	49.237	Non-impacted
139	112/107	DRMO Staging	765	71.0685	Non-impacted
139	101	Office	254	23.5966	Non-impacted
139	102	Office	376	34.9304	Non-impacted
139	103	Exam room	68	6.3172	Non-impacted
139	104	Lab/office	660	61.314	Non-impacted
139	106 A	Storage	26	2.4154	Non-impacted
139	108	DRMO Staging	129	11.9841	Non-impacted
139	109	DRMO Staging	152	14.1208	Non-impacted
139	110	DRMO Staging	177	16.4433	Non-impacted
139	110 B	DRMO Staging	95	8.8255	Non-impacted
139	111	DRMO Staging	338	31.4002	Non-impacted
174	1	Animal food storage	1008	93.6432	Non-Impacted
174	2	Animal food storage	1008	93.6432	Non-Impacted
219	1	Safety/storage	56	5.2024	Non-Impacted
219	2	Safety/storage	70	6.503	Non-Impacted
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T-25 D&D Conceptual Model Information

Table T-25. NMRC D&D Conceptual Model Information

NMRC D&D Phase	Buildings	Number of Survey Units		Floor Area (square feet)	
		Non-impacted	Class 2 or 3	Non-impacted	Class 2 or 3
1	17,18,21,22,29, 49,79,139,146, 174,219	283	103	60,274	27,592
2	Rockville Annex	31	25	4,115	6,602
3	150	1	1	0	2,380
4	28,53, 59,69	71	12	20,941	7,673
Totals		386	146	85,330	44,252

T-26 Milestone Chart for D&D Final Status Survey Activities

NMRC Historical Site Assessment (HSA)

June 1999

Table T-26. Milestone Chart for Final Survey Activities

A. Evaluate Contamination Potential	<----	---->							
B. Establish Grid			<-----	----->					
C. Assemble Monitoring Support and Equipment	<----	-----	----->						
D. Determine Background	<----	---->							
E. Develop/Implement RAM Transfer and Waste Collection Efforts	<----	-----	-----	----->					
F. Develop/Implement Environment Sampling Plan	<----	-----	-----	---->					
G. Inspect Areas for Clearance of RAM materials/equipment			<----	-----	-----	-----	---->		
H. Collect Samples			<----	-----	-----	-----	---->		
I. Analyze Samples									
J. Interpret Data						<----	-----	---->	
K. Prepare Report								<----	----->
L. Submit Report								<----	----→

T-27 NMRC Radiological Decommissioning Surveys

Table T-27. NMRC Radiological Decommissioning Surveys

AREAS	TYPE OF SURVEY					
	Scoping	Character-ization	Remedial Action	Final Status	Third-Party Final Status	Regulatory Confirmatory
Building floor and walls				X	X	Optional
Sinks, traps, waste storage	X			X	X	Optional
Grounds	X			X	X	Optional
All Contaminated Areas		X	X	X	X	Optional

T-28 Residual Radioactivity Values (Screening Value Table)

Table T-28. Residual Radioactivity Values and Limits ($dpm/100\ cm^2$)

Radio-nuclide	Emission α= alpha β= beta γ= gamma	NRC D&D Screening Values[1] (equivalent to 25 mrem/y) (same as DCGLs)		Action Plan Values[2] (Reg. Guide 1.86 limits)	NMRC Residual Radioactivity Action Limits
		90th Percentile of the output dose distribution	Mean of the output dose distribution		
H-3	β	1.2E+08	1.9E+08	5,000	1,000
C-14	β	3.7E+06	5.6E+06	5,000	1,000
S-35	β	1.3E+07	2.4E+07	5,000	1,000
Co-60	βγ	7.1E+03	7.5E+03	5,000	1,000

Residual radioactivity limits for the radionuclides present at the site have been selected. NMRC action limits will be equivalent to a small fraction of D&D Screening values at 90th percentile of the output dose distribution and are set such that the NRC release criteria will be satisfied. Table 8.1 provides the NRC D&D Screening Values for NMRC isotopes of concern, Action Plan values, and NMRC's residual radioactivity limits. Table T-29 provides the NMRC residual radioactivity action limits.

T-29 Interpretation of Sample Measurements When No Reference Area Is Used

Table T-29. Interpretation of Sample Measurements When No Reference Area Is Used (MARSSIM, Table 2.5)

SURVEY UNIT MEASUREMENT RESULTS	CONCLUSION
All concentrations are less that $DCGL_W$	Survey unit meets release criteria
Average concentration is greater than $DCGL_W$	Survey unit fails
Any concentration is greater than $DCGL_W$ and average concentration is less than $DCGL_W$	Conduct Sign test and elevated measurement comparison