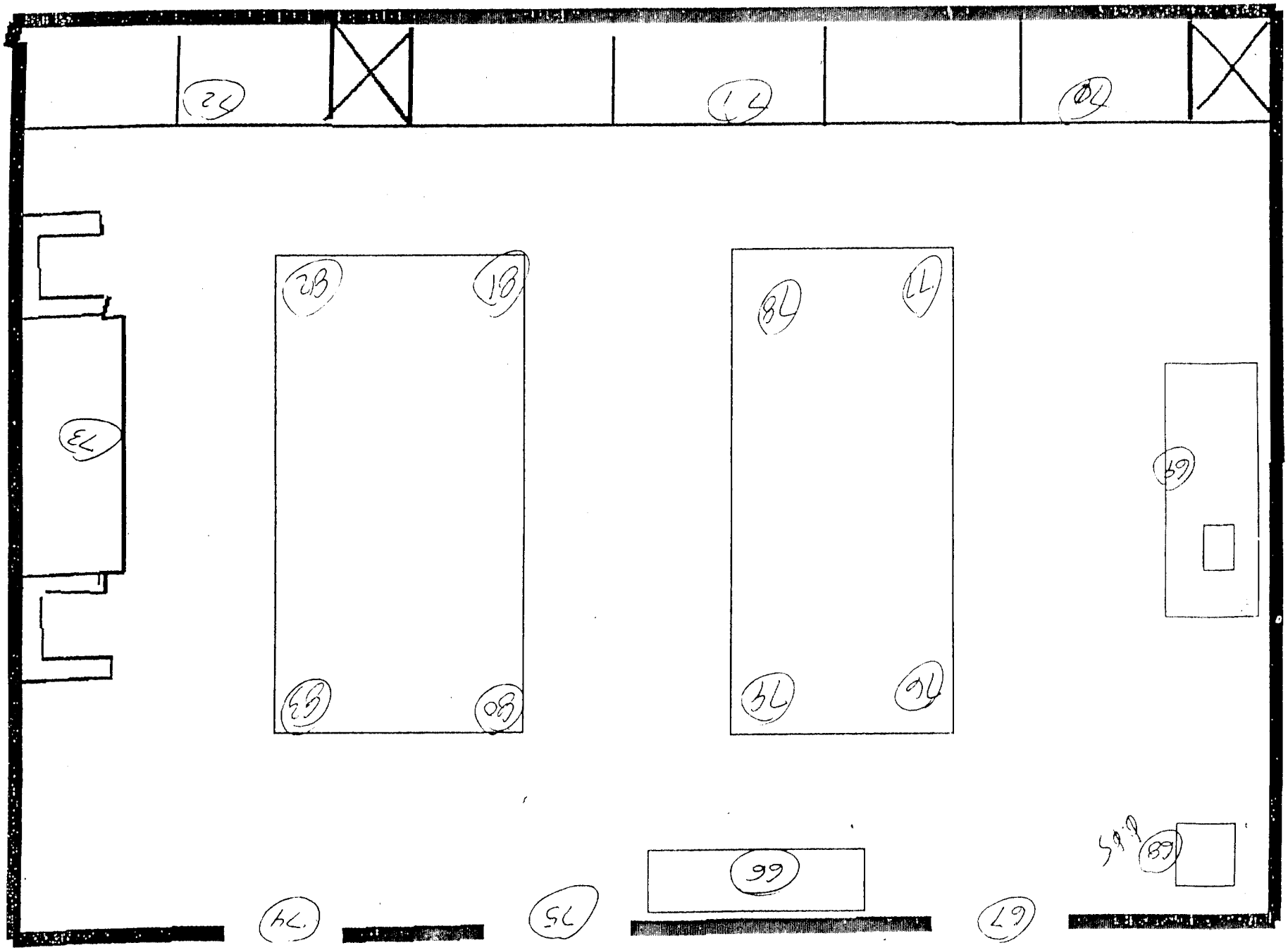


LAB 7

WIPE SURVEY SAMPLE ANALYSIS OF 9 FEB 98 FOR ERB LABORATORIES
MAIN HALLWAY, HP LAB, PREP LAB & VAULT

INSTRUMENT

Contamination Survey
Tennelec LB5100, S/N 64169

	Alpha	Beta	Gamma
Efficiency	57.90%	16.59%	22.11%
Bkg CPM	0.20	16.50	11.20

Instrument Survey
Meter: Eberline E-520, S/N 3813
Probe: Eberline HP-270 SN 2813
Cal Due: 16-Mar-98
Background: as noted in mR/hr

Sensitivity (CPM)	L_c	LLD	L_D	L_Q
Alpha	1.04	2.08	4.79	100.89
Beta	9.46	18.93	21.60	107.55
Gamma	7.80	15.60	18.27	106.30

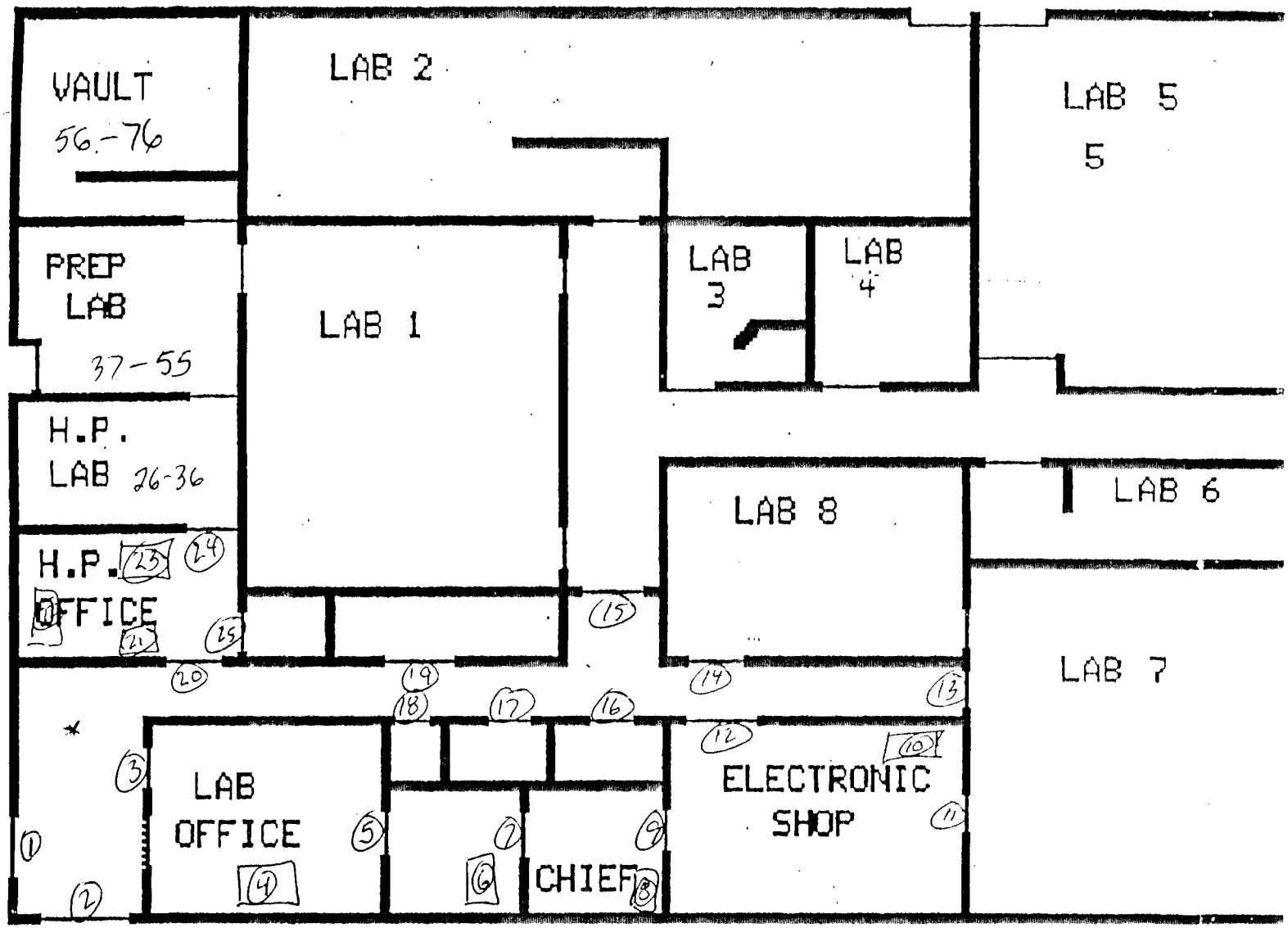
DISPOSITION
[ ] HIGHLIGHTED READINGS RESURVEYED
ALPHA > 220 DPM/100 cm²
BETA/GAMMA > 2200 DPM/100 cm²
[X] NO ACTION REQUIRED

SURVEYOR: SSG DEGUMBIA
REVIEWED BY:
HEALTH PHYSICS MANAGER

#	LOCATION	AREA (cm²)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1	Hallway Entr. to Outside	100	0.02	0.00	17.70	9.70	-0.2	1.2	-1.5	-0.3	7.2	-6.8
2	Hallway Entr. to Adj. Hallway	100	0.02	0.20	18.20	9.30	0.0	1.7	-1.9	0.0	10.2	-8.6
3	Hallway Entr. to Lab. Office	100	0.02	0.00	18.00	5.30	-0.2	1.5	-5.9	-0.3	9.0	-26.7
4	Lab. Office Tech's Desk	100	0.02	0.00	19.30	2.30	-0.2	2.8	-8.9	-0.3	16.9	-40.3
5	Lab. Floor Entr. to RM 1010A	100	0.02	0.30	18.60	9.80	0.1	2.1	-1.4	0.2	12.7	-6.3
6	Instructor's Desk RM 1010A	100	0.02	0.50	19.00	7.50	0.3	2.5	-3.7	0.5	15.1	-16.7
7	Floor RM 1010A Entr. to Chief's Ofc.	100	0.02	0.10	18.10	8.20	-0.1	1.6	-3.0	-0.2	9.6	-13.6
8	Chief's Desk	100	0.02	0.00	22.40	5.00	-0.2	5.9	-6.2	-0.3	35.6	-28.0
9	Floor Chief's Ofc. Entr. Electron Shp	100	0.02	0.10	19.80	7.80	-0.1	3.3	-3.4	-0.2	19.9	-15.4
10	Desk Electronic Shop	100	0.02	0.00	19.50	5.70	-0.2	3.0	-5.5	-0.3	18.1	-24.9
11	Floor Electronic Shop Entr. Lab 7	100	0.02	0.00	17.50	1.50	-0.2	1.0	-9.7	-0.3	6.0	-43.9
12	Floor Electronic Shop Entr. Hallway	100	0.02	0.20	19.10	5.30	0.0	2.6	-5.9	0.0	15.7	-26.7
13	Hallway Floor Entr. Lab 7	100	0.02	0.00	18.90	9.00	-0.2	2.4	-2.2	-0.3	14.5	-10.0
14	Hallway Floor Entr. Lab 8	100	0.02	0.10	18.00	7.60	-0.1	1.5	-3.6	-0.2	9.0	-16.3
15	Hallway Floor Entr. Lab Hallway	100	0.02	0.20	18.00	6.50	0.0	1.5	-4.7	0.0	9.0	-21.3
16	Hallway Floor Entr. Janitor Rm	100	0.02	0.10	17.00	10.40	-0.1	0.5	-0.8	-0.2	3.0	-3.6
17	Hallway Floor Entr. Men's Rm	100	0.02	0.00	17.00	6.70	-0.2	0.5	-4.5	-0.3	3.0	-20.4
18	Hallway Floor Entr. Women's Rm	100	0.02	0.00	19.90	7.30	-0.2	3.4	-3.9	-0.3	20.5	-17.6
19	Hallway Floor Entr. Storage Rm	100	0.02	0.10	19.60	3.60	-0.1	3.1	-7.6	-0.2	18.7	-34.4
20	Hallway Floor Entr. HP Ofc	100	0.02	0.10	19.50	8.30	-0.1	3.0	-2.9	-0.2	18.1	-13.1
21	HP NCOIC's Desk	100	0.02	0.10	18.50	10.40	-0.1	2.0	-0.8	-0.2	12.1	-3.6
22	RPO'S Desk	100	0.02	0.20	20.50	7.10	0.0	4.0	-4.1	0.0	24.1	-18.5
23	HP Tech's Desk	100	0.02	0.10	17.30	7.70	-0.1	0.8	-3.5	-0.2	4.8	-15.8

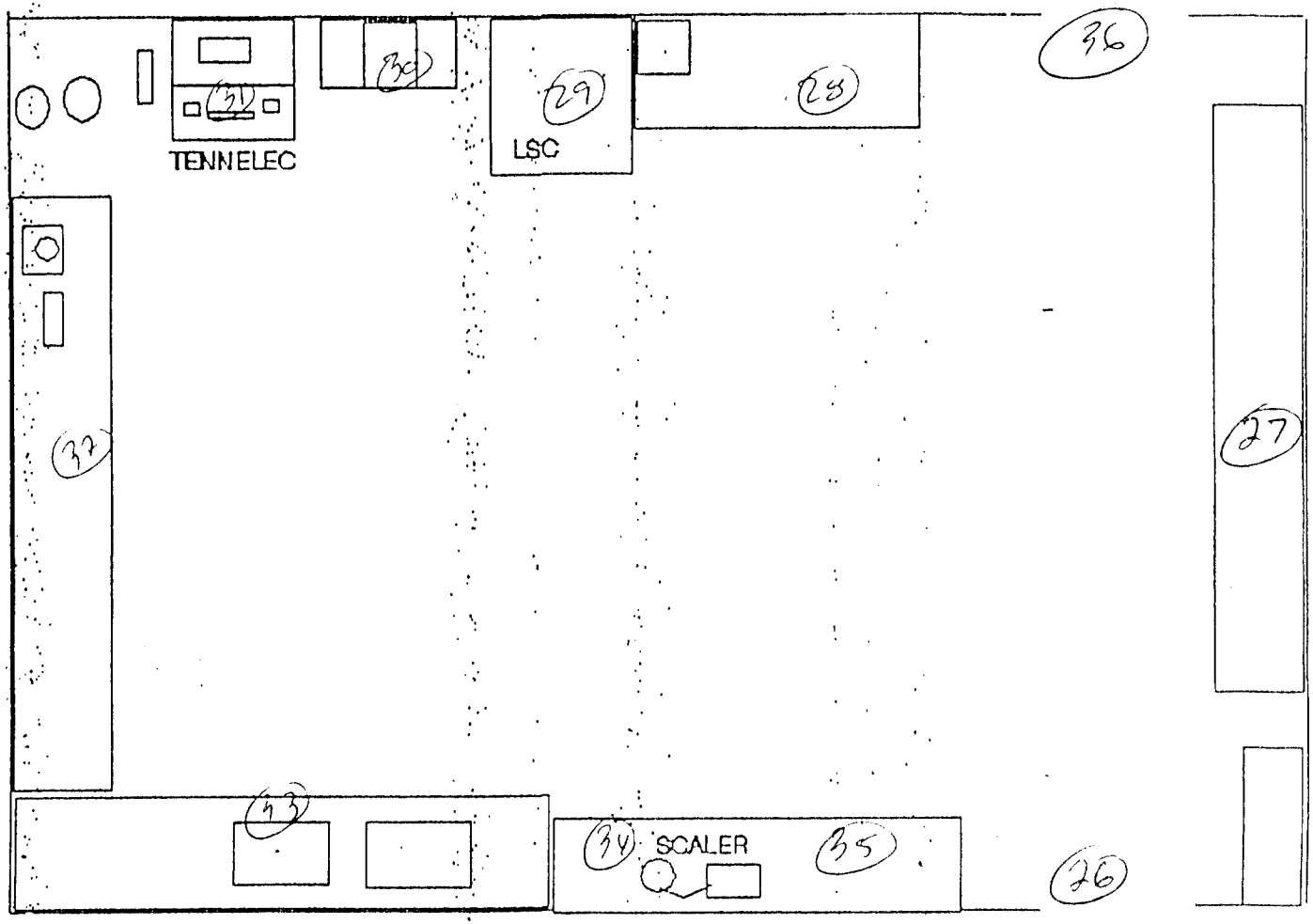
24	Floor HP Ofc. Entr. HP Lab.	100	0.02	0.10	18.80	3.00	-0.1	2.3	-8.2	-0.2	13.9	-37.1
25	Floor HP Ofc. Entr. Prep. Lab.	100	0.02	0.10	20.50	3.90	-0.1	4.0	-7.3	-0.2	24.1	-33.0
26	HP Lab Floor Entr. HP Ofc.	100	0.02	0.20	16.50	11.20	0.0	0.0	0.0	0.0	0.0	0.0
27	HP Lab Counter Top	100	0.02	0.10	19.30	7.70	-0.1	2.8	-3.5	-0.2	16.9	-15.8
28	HP Lab Computor Table Top	100	0.02	0.20	20.30	5.10	0.0	3.8	-6.1	0.0	22.9	-27.6
29	HP Lab LSC Top	100	0.02	0.10	17.10	7.80	-0.1	0.6	-3.4	-0.2	3.6	-15.4
30	HP Lab Work Station Top	100	0.02	0.10	16.90	5.50	-0.1	0.4	-5.7	-0.2	2.4	-25.8
31	HP Lab Tennelec Top	100	0.02	0.00	17.10	3.50	-0.2	0.6	-7.7	-0.3	3.6	-34.8
32	HP Lab Counter Top	100	0.02	0.20	15.10	4.10	0.0	-1.4	-7.1	0.0	-8.4	-32.1
33	HP Lab Counter Top	100	0.02	0.20	15.00	2.70	0.0	-1.5	-8.5	0.0	-9.0	-38.4
34	HP Lab Counter Top	100	0.02	0.10	17.10	6.00	-0.1	0.6	-5.2	-0.2	3.6	-23.5
35	HP Lab Counter Top	100	0.02	0.00	15.70	4.70	-0.2	-0.8	-6.5	-0.3	-4.8	-29.4
36	HP Lab Floor Exit Prep Lab	100	0.01	0.20	18.70	5.50	0.0	2.2	-5.7	0.0	13.3	-25.8
37	Prep Lab Floor Entr. to HP Lab	100	0.01	0.20	18.10	8.80	0.0	1.6	-2.4	0.0	9.6	-10.9
38	Prep Lab Counter Top	100	0.01	0.00	17.20	1.00	-0.2	0.7	-10.2	-0.3	4.2	-46.1
39	Prep Lab Sink	100	0.01	0.00	16.80	4.20	-0.2	0.3	-7.0	-0.3	1.8	-31.7
40	Prep Lab Trash Can	100	0.01	0.00	20.50	11.30	-0.2	4.0	0.1	-0.3	24.1	0.5
41	Prep Lab Floor Entrance Lab 1	100	0.01	0.10	18.80	7.40	-0.1	2.3	-3.8	-0.2	13.9	-17.2
42	Prep Lab Cabinet Door	100	0.01	0.00	16.20	6.20	-0.2	-0.3	-5.0	-0.3	-1.8	-22.6
43	Prep Lab Floor Vault Entrance	100	0.01	0.10	16.90	5.10	-0.1	0.4	-6.1	-0.2	2.4	-27.6
44	Prep Lab Counter Top	100	0.01	0.20	18.70	6.90	0.0	2.2	-4.3	0.0	13.3	-19.4
45	Prep Lab Counter Top	100	0.01	0.00	18.90	4.70	-0.2	2.4	-6.5	-0.3	14.5	-29.4
46	Prep Lab Counter Top	100	0.01	0.10	16.20	0.50	-0.1	-0.3	-10.7	-0.2	-1.8	-48.4
47	Prep Lab Floor	100	0.01	0.10	18.40	10.90	-0.1	1.9	-0.3	-0.2	11.5	-1.4
48	Prep Lab Inside Fume Hood	100	0.01	0.20	16.80	6.10	0.0	0.3	-5.1	0.0	1.8	-23.1
49	Prep Lab Door Ent Load Dock	100	0.01	0.10	18.60	2.70	-0.1	2.1	-8.5	-0.2	12.7	-38.4
50	Prep Lab Floor Ent Load Dock	100	0.01	0.00	19.30	5.50	-0.2	2.8	-5.7	-0.3	16.9	-25.8
51	Prep Lab Door Locker	100	0.01	0.10	16.10	9.30	-0.1	-0.4	-1.9	-0.2	-2.4	-8.6
52	Prep Lab Door Cabinet	100	0.01	0.00	17.70	7.20	-0.2	1.2	-4.0	-0.3	7.2	-18.1
53	Prep Lab File Cabinet Top	100	0.01	0.00	19.50	7.70	-0.2	3.0	-3.5	-0.3	18.1	-15.8
54	Prep Lab Cabinet Door	100	0.01	0.00	16.80	3.50	-0.2	0.3	-7.7	-0.3	1.8	-34.8
55	Prep Lab Cabinet Door	100	0.01	0.40	18.60	10.30	0.2	2.1	-0.9	0.3	12.7	-4.1
56	Vault Floor Entr.	100	0.03	0.00	17.20	4.20	-0.2	0.7	-7.0	-0.3	4.2	-31.7
57	Vault Floor	100	0.04	0.00	19.30	8.80	-0.2	2.8	-2.4	-0.3	16.9	-10.9
58	Top Old Safe	100	0.05	0.00	17.30	4.90	-0.2	0.8	-6.3	-0.3	4.8	-28.5
59	Vault Counter Top	100	0.18	0.10	15.60	8.80	-0.1	-0.9	-2.4	-0.2	-5.4	-10.9
60	Vault Counter Top	100	0.11	0.10	16.90	7.00	-0.1	0.4	-4.2	-0.2	2.4	-19.0

61	Top Blue Shielded Box	100	0.90	0.10	20.40	6.30	-0.1	3.9	-4.9	-0.2	23.5	-22.2
62	Vault Cart Top	100	0.90	0.20	17.30	6.30	0.0	0.8	-4.9	0.0	4.8	-22.2
63	Top Orange Container	100	0.70	0.10	18.20	2.40	-0.1	1.7	-8.8	-0.2	10.2	-39.8
64	Vault Blue Container	100	4.50	0.00	17.50	9.60	-0.2	1.0	-1.6	-0.3	6.0	-7.2
65	Vault Wooden Crate	100	0.04	0.20	16.60	4.40	0.0	0.1	-6.8	0.0	0.6	-30.8
66	Vault Yellow Cabinet Door	100	0.50	0.60	19.50	5.10	0.4	3.0	-6.1	0.7	18.1	-27.6
67	Vault Yellow Cabinet Door	100	0.06	0.10	18.90	6.60	-0.1	2.4	-4.6	-0.2	14.5	-20.8
68	Vault 55 Gallon #1 Drum	100	0.60	0.10	14.60	10.20	-0.1	-1.9	-1.0	-0.2	-11.5	-4.5
69	Vault 55 Gallon #3 Drum	100	1.80	0.50	16.40	8.40	0.3	-0.1	-2.8	0.5	-0.6	-12.7
70	Vault Red Waste Container	100	0.80	0.30	18.60	11.50	0.1	2.1	0.3	0.2	12.7	1.4
71	Vault Floor	100	0.40	0.00	18.10	11.70	-0.2	1.6	0.5	-0.3	9.6	2.3
72	Vault Blue Cabinet Door	100	1.10	0.00	17.60	7.60	-0.2	1.1	-3.6	-0.3	6.6	-16.3
73	Vault Blue Cabinet Door	100	0.70	0.00	18.10	2.90	-0.2	1.6	-8.3	-0.3	9.6	-37.5
74	Vault Blue Cabinet Door	100	2.5	0.10	18.20	7.00	-0.1	1.7	-4.2	-0.2	10.2	-19.0
75	Vault Blue Cabinet Door	100	2.5	0.20	17.90	7.80	0.0	1.4	-3.4	0.0	8.4	-15.4
76	Vault Floor Around Drain	100	0.8	0.40	18.30	5.50	0.2	1.8	-5.7	0.3	10.8	-25.8



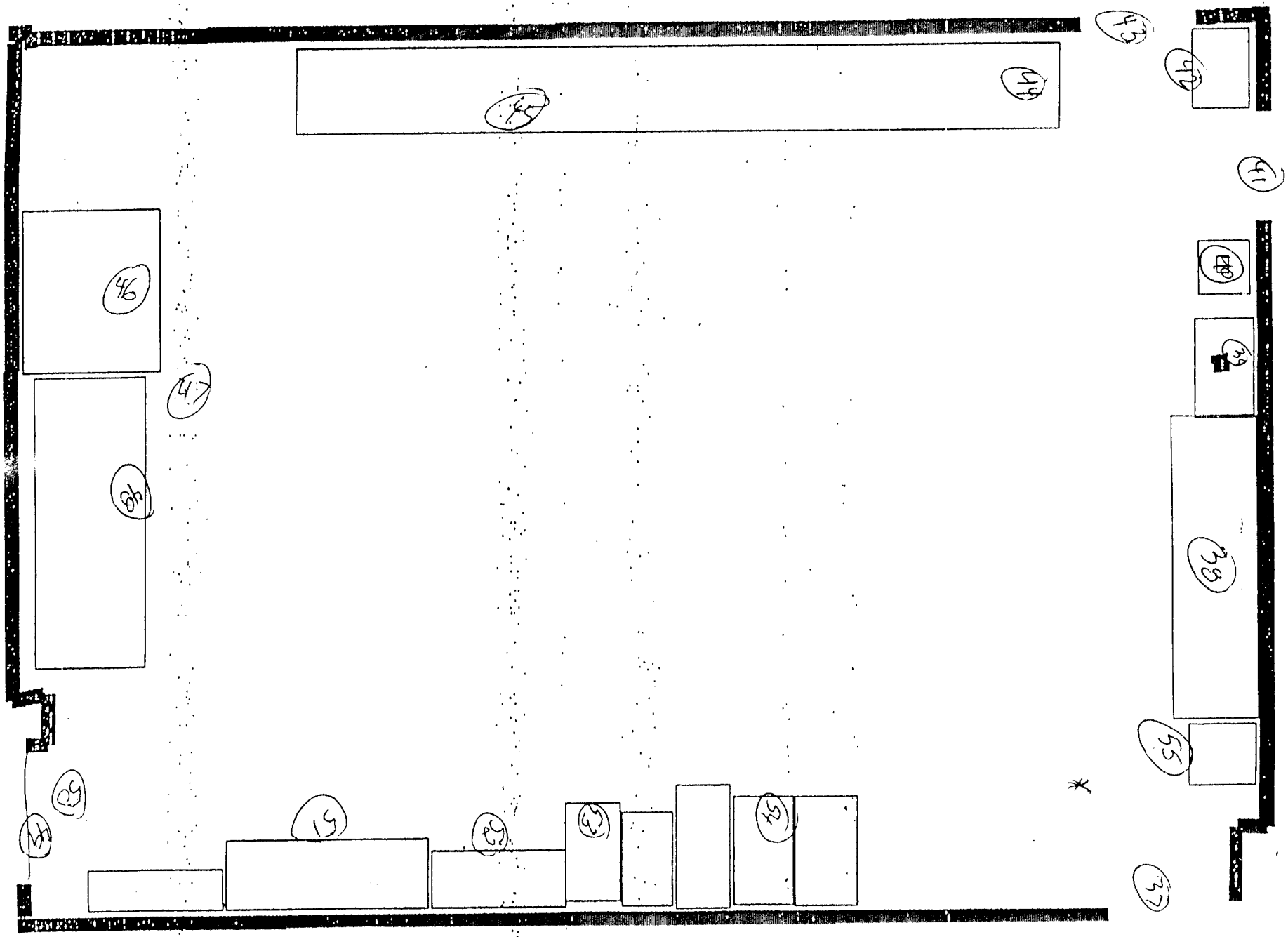
NOTE 8*13KG = Φ.Φ2 mR/hr

H.P. LAB

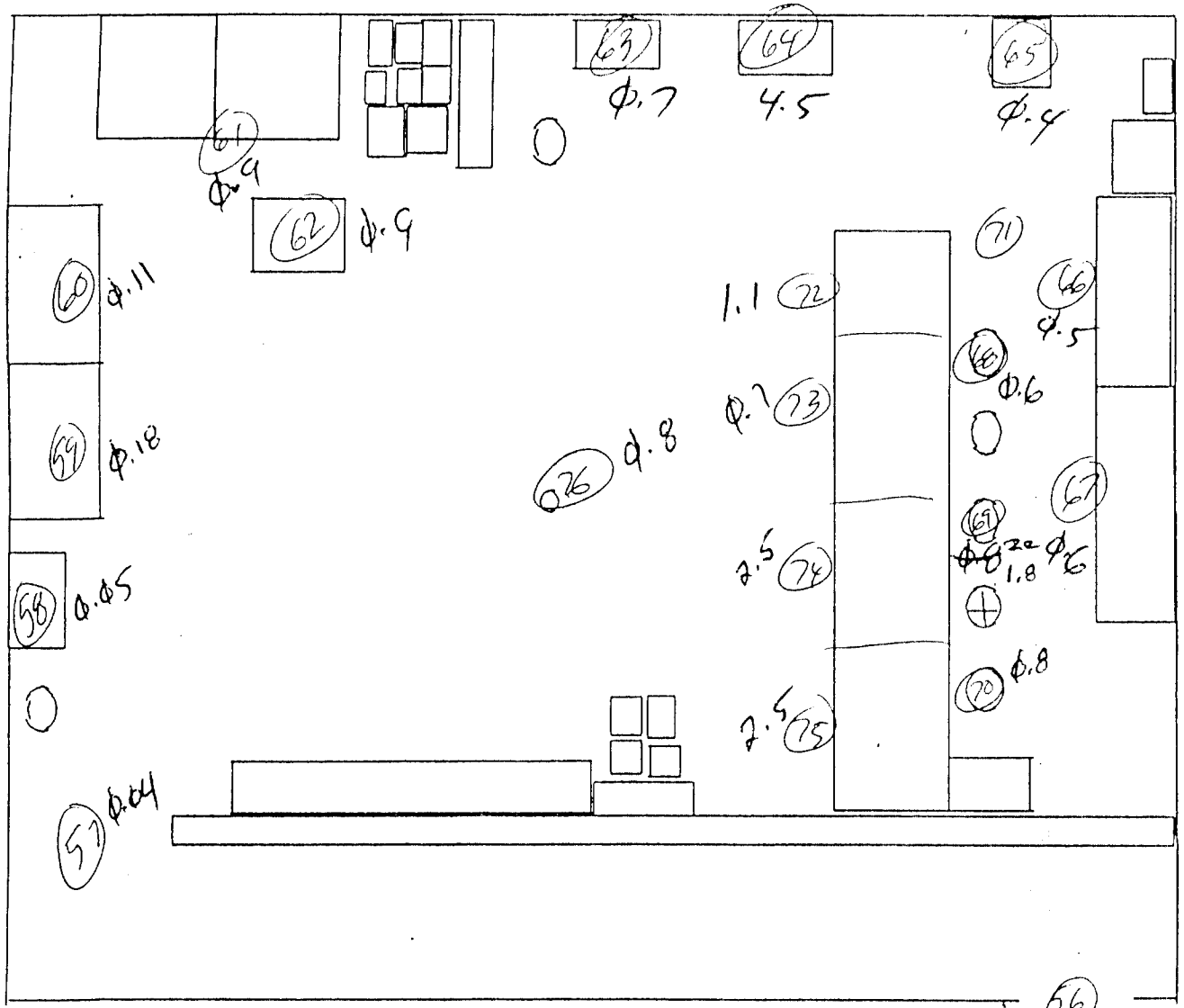


NOTE 8 * BKG ~ 0.02 mR/hr

PRE[illegible]AB



NOTE: * BKG 0.01 mR/hr



VAULT

NOTES * BKG = Φ.Φ3 mR/hr.

MONTHLY WIPE SURVEY SAMPLE ANALYSIS - DEC 98 FOR ERB LABORATORIES
LAB 1, LAB 2, LAB 5 & LAB 7

INSTRUMENT

Contamination Survey
Tennelec LB5100, S/N 64169

	Alpha	Beta	Gamma
at 2 PI Efficiency	58.00%	16.15%	25.37%
at 2 PI BKG CPM	0.20	16.80	55.00

Instrument Survey
Meter: Eberline E-520, S/N 3813
Probe: Eberline HP-270, S/N 2813
Cal Due: 23-Dec-98
Background: as noted mR/hr

Sensitivity (CPM)	L_C	LLD	L_D	L_Q
Alpha	0.33	0.66	3.37	100.28
Beta	3.02	6.04	8.74	102.53
Gamma	5.46	10.93	13.62	104.49

DISPOSITION

[ ] HIGHLIGHTED READINGS RESURVEYED
ALPHA > LLD/100 cm^2
BETA/GAMMA > LLD/100 cm^2

[ ] NO ACTION REQUIRED

SURVEYOR: SSG DEGUMBIA

REVIEWED BY: HEALTH PHYSICS MANAGER

#	LOCATION	AREA (cm^2)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm^2		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
85R	Vault, No # Waste Barrell	100	0.01	0.40	2.30	50.50	0.2	-14.5	-4.5	0.3	-89.8	-17.7
1	Lab 1 Door & Knob to PREP Lab	100	0.01	0.10	3.00	55.60	-0.1	-13.8	0.6	-0.2	-85.4	2.4
2	Lab 1 Floor Near Exit Prep Lab	100	0.01	0.30	2.30	50.20	0.1	-14.5	-4.8	0.2	-89.8	-18.9
3	Lab 1 Trash Container	100	0.01	0.00	1.70	52.30	-0.2	-15.1	-2.7	-0.3	-93.5	-10.6
4	Lab 1 Sink 1	100	0.01	0.10	5.70	51.80	-0.1	-11.1	-3.2	-0.2	-68.7	-12.6
5	Lab 1 Sink 2	100	0.01	0.20	1.90	52.90	0.0	-14.9	-2.1	0.0	-92.3	-8.3
6	Lab 1 Sink 3	100	0.01	0.10	1.80	51.90	-0.1	-15.0	-3.1	-0.2	-92.9	-12.2
7	Lab 1 Counter Top	100	0.01	0.20	1.40	56.30	0.0	-15.4	1.3	0.0	-95.4	5.1
8	Lab 1 Cabinet Door	100	0.01	0.10	2.40	53.60	-0.1	-14.4	-1.4	-0.2	-89.2	-5.5
9	Lab 1 Floor Near Cabinet	100	0.01	0.20	1.40	50.50	0.0	-15.4	-4.5	0.0	-95.4	-17.7
10	Lab 1 Counter Top	100	0.01	0.10	1.40	50.50	-0.1	-15.4	-4.5	-0.2	-95.4	-17.7
11	Lab 1 Counter Top	100	0.01	0.00	1.80	53.40	-0.2	-15.0	-1.6	-0.3	-92.9	-6.3
12	Lab 1 Counter Top	100	0.01	0.20	2.40	53.70	0.0	-14.4	-1.3	0.0	-89.2	-5.1
13	Lab 1 Counter Top	100	0.01	0.00	3.00	55.80	-0.2	-13.8	0.8	-0.3	-85.4	3.2
14	Lab 1 Door & Knob Far Exit	100	0.01	0.70	3.90	53.40	0.5	-12.9	-1.6	0.9	-79.9	-6.3
15	Lab1 Floor Near Far Exit Hallway	100	0.01	0.10	2.00	49.20	-0.1	-14.8	-5.8	-0.2	-91.6	-22.9
16	Lab 1 Light Switch	100	0.01	0.20	2.30	50.90	0.0	-14.5	-4.1	0.0	-89.8	-16.2
17	Lab 1 Counter Top	100	0.01	0.10	1.40	51.30	-0.1	-15.4	-3.7	-0.2	-95.4	-14.6
18	Lab 1 Counter Top	100	0.01	0.00	1.90	54.60	-0.2	-14.9	-0.4	-0.3	-92.3	-1.6
19	Lab 1 Counter Top	100	0.01	0.60	4.00	49.70	0.4	-12.8	-5.3	0.7	-79.3	-20.9
20	Lab 1 Counter Top	100	0.01	0.10	2.20	56.90	-0.1	-14.6	1.9	-0.2	-90.4	7.5
21	Lab 1 Counter Top	100	0.01	0.00	2.10	51.60	-0.2	-14.7	-3.4	-0.3	-91.0	-13.4
22	Lab 1 Door & Knob Near Exit	100	0.01	0.00	2.10	51.30	-0.2	-14.7	-3.7	-0.3	-91.0	-14.6
23	Lab 1 Floor At Near Exit	100	0.01	0.00	1.00	53.50	-0.2	-15.8	-1.5	-0.3	-97.8	-5.9
24	Lab 1 Light Switch	100	0.01	0.30	2.20	49.80	0.1	-14.6	-5.2	0.2	-90.4	-20.5
25	Lab 1 Foot Monitor	100	0.01	0.00	1.70	49.70	-0.2	-15.1	-5.3	-0.3	-93.5	-20.9

26	Lab 1 [illegible] Monitor	100	0.01	0.00	1.90	[illegible]90	-0.2	-14.9	-1.1	-0.3	-92.3	[illegible]
27	Lab 1 Counter Top	100	0.01	0.10	2.60	51.70	-0.1	-14.2	-3.3	-0.2	-87.9	-13.0
28	Lab 1 Cabinet Door	100	0.01	0.10	1.80	46.00	-0.1	-15.0	-9.0	-0.2	-92.9	-35.5
29	Lab 1 Floor Near Cabinet	100	0.01	0.00	1.80	57.50	-0.2	-15.0	2.5	-0.3	-92.9	9.9
30	Lab 2 Floor At Entrance	100	0.01	0.50	19.50	59.90	0.3	2.7	4.9	0.5	16.7	19.3
31	Lab 2 Door & Knob at Entrance	100	0.01	0.03	17.90	58.10	-0.2	1.1	3.1	-0.3	6.8	12.2
32	Lab 2 Light Switch	100	0.01	0.20	18.30	53.80	0.0	1.5	-1.2	0.0	9.3	-4.7
33	Lab 2, Floor	100	0.01	0.10	18.50	56.40	-0.1	1.7	1.4	-0.2	10.5	5.5
34	Lab 2 Counter Top	100	0.01	0.30	17.70	59.90	0.1	0.9	4.9	0.2	5.6	19.3
35	Lab 2 Counter Top	100	0.01	0.00	19.00	53.10	-0.2	2.2	-1.9	-0.3	13.6	-7.5
36	Lab 2 Counter Top	100	0.01	0.00	17.20	55.80	-0.2	0.4	0.8	-0.3	2.5	3.2
37	Lab 2 Counter Top	100	0.01	0.20	17.10	56.90	0.0	0.3	1.9	0.0	1.9	7.5
38	Lab 2 Counter Top	100	0.01	0.00	17.90	64.60	-0.2	1.1	9.6	-0.3	6.8	37.8
39	Lab 2 Counter Top	100	0.01	0.40	18.40	58.40	0.2	1.6	3.4	0.3	9.9	13.4
40	Lab 2 Counter Top	100	0.01	0.00	17.60	54.20	-0.2	0.8	-0.8	-0.3	5.0	-3.2
41	Lab 2 Counter Top	100	0.01	0.10	17.20	58.20	-0.1	0.4	3.2	-0.2	2.5	12.6
42	Lab 2 Counter Top	100	0.01	0.10	19.50	58.70	-0.1	2.7	3.7	-0.2	16.7	14.6
43	Lab 2 Counter Top	100	0.01	0.00	17.60	56.50	-0.2	0.8	1.5	-0.3	5.0	5.9
44	Lab 2 Counter Top	100	0.01	0.20	16.70	55.80	0.0	-0.1	0.8	0.0	-0.6	3.2
45	Lab 2 Counter Top	100	0.01	0.00	18.60	58.10	-0.2	1.8	3.1	-0.3	11.1	12.2
46	Lab 2 Counter Top	100	0.01	0.10	17.80	58.40	-0.1	1.0	3.4	-0.2	6.2	13.4
47	Lab 2 Counter Top	100	0.01	0.10	18.40	57.60	-0.1	1.6	2.6	-0.2	9.9	10.2
48	Lab 2 Counter Top	100	0.01	0.10	15.70	54.30	-0.1	-1.1	-0.7	-0.2	-6.8	-2.8
49	Lab 2 Back Ledge on UDM-1a	100	0.07	0.00	19.70	55.60	-0.2	2.9	0.6	-0.3	18.0	2.4
50	Lab 2 Floor Back of UDM-1a	100	0.01	0.00	17.10	54.50	-0.2	0.3	-0.5	-0.3	1.9	-2.0
51	Lab 2 Front Ledge of UDM-1a	100	0.70	0.10	16.50	55.50	-0.1	-0.3	0.5	-0.2	-1.9	2.0
52	Lab 2 Floor Front of UDM-1a	100	0.01	0.20	17.00	56.40	0.0	0.2	1.4	0.0	1.2	5.5
53	Lab 2 Calibration Stand	100	0.01	0.00	16.50	52.80	-0.2	-0.3	-2.2	-0.3	-1.9	-8.7
54	Lab 5 Door & Knob at Entrance	100	0.01	0.00	19.40	56.70	-0.2	2.6	1.7	-0.3	16.1	6.7
55	Lab 5 Floor Near Entrance	100	0.01	0.10	17.80	62.40	-0.1	1.0	7.4	-0.2	6.2	29.2
56	Lab 5 Light Switch	100	0.01	0.00	15.30	58.70	-0.2	-1.5	3.7	-0.3	-9.3	14.6
57	Lab 5 Counter Top	100	0.01	0.20	18.80	55.20	0.0	2.0	0.2	0.0	12.4	0.8
58	Lab 5 Cart Top	100	0.01	0.10	16.70	56.10	-0.1	-0.1	1.1	-0.2	-0.6	4.3
59	Lab 5 Counter Top	100	0.01	0.20	20.70	55.70	0.0	3.9	0.7	0.0	24.1	2.8
60	Lab 5 Counter Top	100	0.01	0.10	15.60	55.50	-0.1	-1.2	0.5	-0.2	-7.4	2.0
61	Lab 5 Cabinet Door	100	0.01	0.10	17.30	60.10	-0.1	0.5	5.1	-0.2	3.1	20.1
62	Lab 5, Floor Near Cabinet	100	0.01	0.10	15.20	57.20	-0.1	-1.6	2.2	-0.2	-9.9	8.7
63	Lab 5 Counter Top	100	0.01	0.10	18.00	54.50	-0.1	1.2	-0.5	-0.2	7.4	-2.0
64	Lab 5 Door to Outside	100	0.01	0.00	18.70	56.00	-0.2	1.9	1.0	-0.3	11.8	3.9
65	Lab 5 Floor Exit Outdoors	100	0.01	0.00	17.20	58.10	-0.2	0.4	3.1	-0.3	2.5	12.2
66	Lab 5 Counter Top	100	0.01	0.20	15.70	57.80	0.0	-1.1	2.8	0.0	-6.8	11.0

67	Lab 5 [illegible]er Top	100	0.01	0.00	16.50	[illegible]0	-0.2	-0.3	0.3	-0.3	-1.9	[illegible]
68	Lab 5 Floor	100	0.01	0.10	18.00	60.00	-0.1	1.2	5.0	-0.2	7.4	19.7
69	Lab 5 Counter Top	100	0.01	0.10	19.00	52.80	-0.1	2.2	-2.2	-0.2	13.6	-8.7
70	Lab 5 Counter Top	100	0.01	0.60	18.10	57.00	0.4	1.3	2.0	0.7	8.0	7.9
71	Lab 5 Floor	100	0.01	0.10	18.30	57.40	-0.1	1.5	2.4	-0.2	9.3	9.5
72	Lab 5 Counter Top	100	0.01	0.00	18.00	54.70	-0.2	1.2	-0.3	-0.3	7.4	-1.2
73	Lab 5 Counter Top	100	0.01	0.00	19.10	55.40	-0.2	2.3	0.4	-0.3	14.2	1.6
74	Lab 5 Table Top	100	0.01	0.00	18.70	59.60	-0.2	1.9	4.6	-0.3	11.8	18.1
75	Lab 7 Door & Knob to Hallway	100	0.01	0.10	17.10	56.70	-0.1	0.3	1.7	-0.2	1.9	6.7
76	Lab 7 Floor at Main Entrance	100	0.01	0.10	15.70	55.50	-0.1	-1.1	0.5	-0.2	-6.8	2.0
77	Lab 7 Light Switch	100	0.01	0.20	19.20	55.40	0.0	2.4	0.4	0.0	14.9	1.6
78	Lab 7 Counter Top	100	0.01	0.00	16.40	57.60	-0.2	-0.4	2.6	-0.3	-2.5	10.2
79	Lab 7 Door & Knob to Elect Lab	100	0.01	0.20	17.50	61.30	0.0	0.7	6.3	0.0	4.3	24.8
80	Lab 7 Floor at Exit to Elect Lab	100	0.01	0.10	18.90	52.00	-0.1	2.1	-3.0	-0.2	13.0	-11.8
81	Lab 7 Cabinet Door	100	0.07	0.20	19.10	55.00	0.0	2.3	0.0	0.0	14.2	0.0
82	Lab 7 Floor Near Cabinet	100	0.01	0.00	19.50	57.60	-0.2	2.7	2.6	-0.3	16.7	10.2
83	Lab 7 Counter Top	100	0.01	0.20	19.20	55.30	0.0	2.4	0.3	0.0	14.9	1.2
84	Lab 7 Counter Top	100	0.01	0.00	19.10	58.00	-0.2	2.3	3.0	-0.3	14.2	11.8
85	Lab 7 Counter Top	100	0.01	0.20	16.90	54.80	0.0	0.1	-0.2	0.0	0.6	-0.8
86	Lab 7 Counter Top	100	0.01	0.10	17.30	50.00	-0.1	0.5	-5.0	-0.2	3.1	-19.7
87	Lab 7 Counter Top	100	0.01	0.10	17.50	56.80	-0.1	0.7	1.8	-0.2	4.3	7.1
88	Lab 7 Counter Top	100	0.01	0.00	16.50	53.90	-0.2	-0.3	-1.1	-0.3	-1.9	-4.3
89	Lab 7 Counter Top	100	0.01	0.00	17.70	57.40	-0.2	0.9	2.4	-0.3	5.6	9.5
90	Lab 7 Door & Knob to Lab 8	100	0.01	0.00	17.80	58.00	-0.2	1.0	3.0	-0.3	6.2	11.8
91	Lab 7 Floor at Exit to Lab 8	100	0.01	0.10	16.80	59.10	-0.1	0.0	4.1	-0.2	0.0	16.2
92	Lab 7 Counter Top	100	0.01	0.10	17.30	52.80	-0.1	0.5	-2.2	-0.2	3.1	-8.7
93	Lab 7 Counter Top	100	0.01	0.10	17.00	57.90	-0.1	0.2	2.9	-0.2	1.2	11.4
94	Lab 7 Floor	100	0.01	0.00	16.40	61.50	-0.2	-0.4	6.5	-0.3	-2.5	25.6
95	Lab 7 Floor	100	0.01	0.50	21.60	57.30	0.3	4.8	2.3	0.5	29.7	9.1

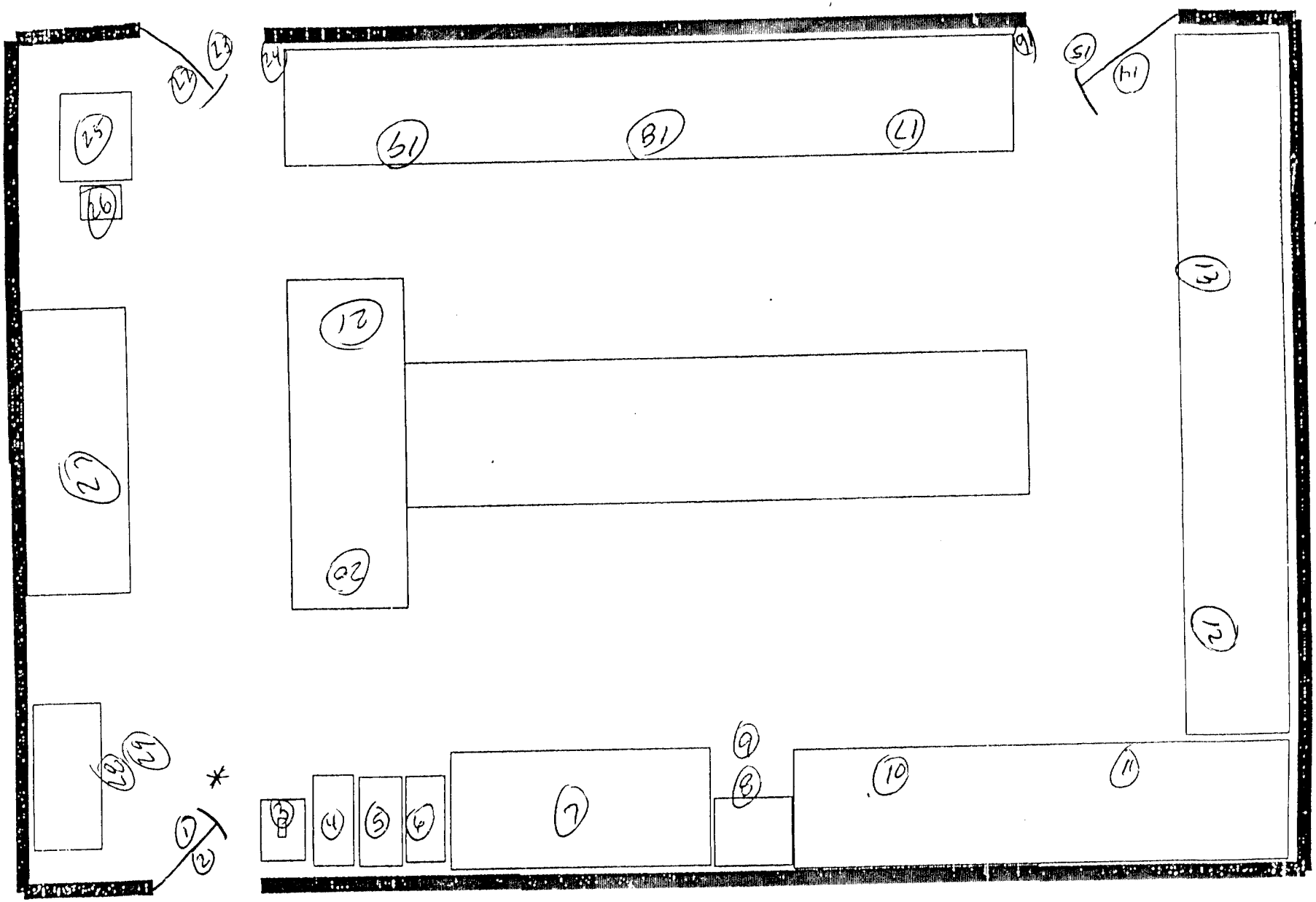
NOTE: Sample # 85R "Vault, No # Waste Barrel" was initially determined to be above BKG + LLD in the Alpha Channelfor run titled 99026. It was recounted on 3 DEC 98 and determined to be free of detectable activity. On 3 DEC 98 at 0730 Hrs, SSG DeGumbia performed a monthly smear survey of Labs 1, 2, 5 & 7. All 95 samples were determined to be free of removeable contamination. No further action required.

CONCUR/~~NONCONCUR~~
Health Physics Manger

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

3 DEC 98 @ 0730

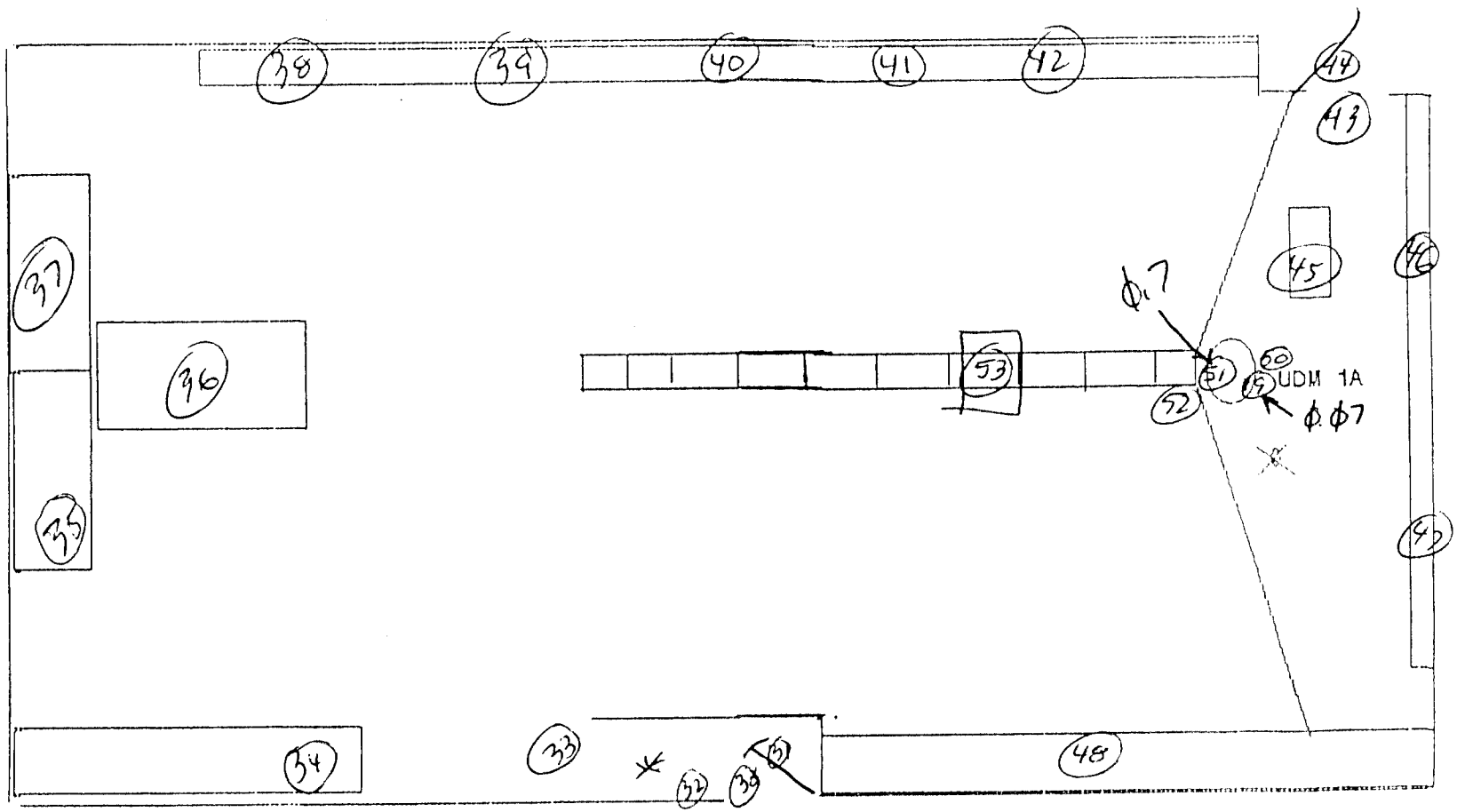
LAB 1



* BKG = 0.01 mR/hr

1-29

3 Dec 98 @ 1345



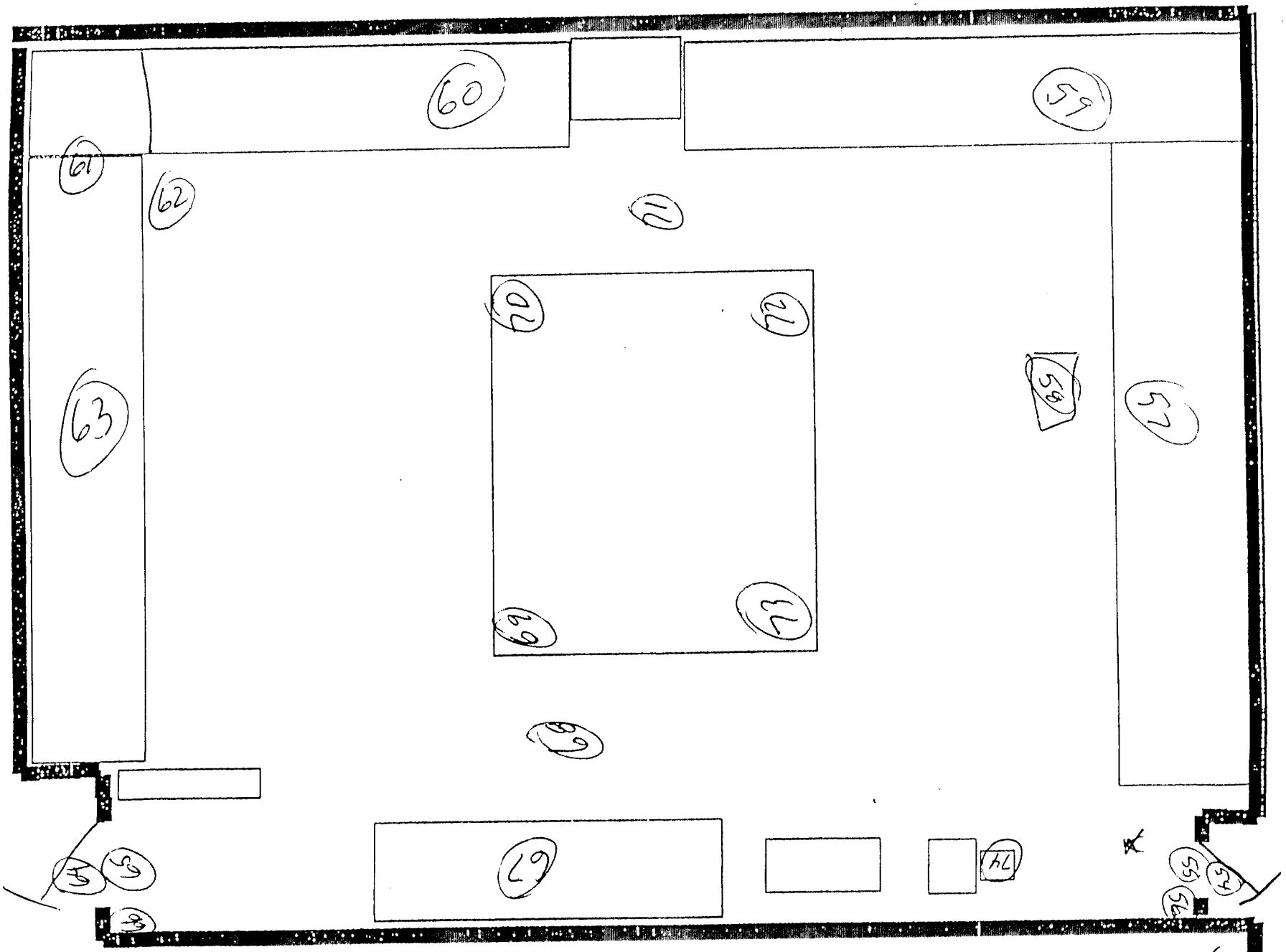
* BKG = Φ.Φ1 mR/hr.

Sample 30 - 53

LAB 2

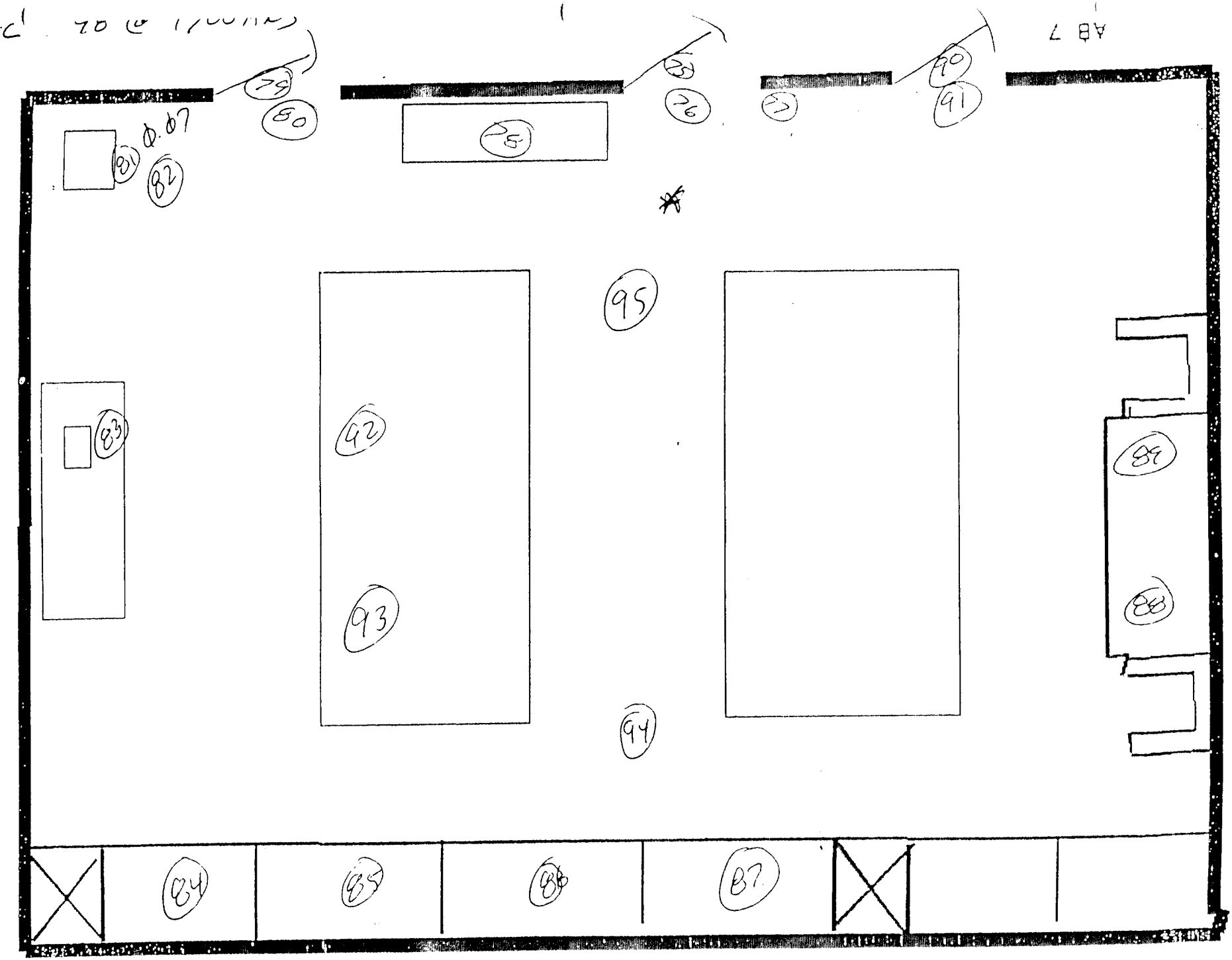
5 DEC 1105

LAB 3



SAMPLES 1-74

* BKG - 0.01 mR/hr.



SAMPLES 75–9

* BKG = 0.01 mR/hr

MONTHLY WIPE SURVEY SAMPLE ANALYSIS OF 2 DEC 98 FOR ERB LABORATORIES
MAIN HALLWAY, HP LAB, PREP LAB & VAULT

INSTRUMENT

Contamination Survey
Tennelec LB5100, S/N 64169

	Alpha	Beta	Gamma
at 2 PI Efficiency	58.00%	16.15%	25.37%
at 2 PI Bkg CPM	0.20	17.70	56.00

Sensitivity (CPM)	L_C	LLD	L_D	L_Q
Alpha	0.33	0.66	3.37	100.28
Beta	3.10	6.20	8.90	102.59
Gamma	5.51	11.03	13.71	104.53

Instrument Survey
Meter: Eberline E-520, S/N 3813
Probe: Eberline HP-270 SN 2813
Cal Due: 23-Dec-98
Background: as noted in mR/hr

SURVEYOR: SSG DEGUMBIA
REVIEWED BY: HEALTH PHYSICS MANAGER

DISPOSITION

[ ] HIGHLIGHTED READINGS RESURVEYED
ALPHA > LLD/100 cm²
BETA/GAMMA > LLD/100 cm²

[ ] NO ACTION REQUIRED

#	LOCATION	AREA (cm²)	Dose Rate (mR/hr)	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1	Hallway Entr. to Adj. Hallway	100	0.01	0.20	17.70	56.00	0.0	0.0	0.0	0.0	0.0	0.0
2	Hallway Entr. to Outside	100	0.01	0.00	17.20	55.40	-0.2	-0.5	-0.6	-0.3	-3.1	-2.4
3	Hallway to Health Physics Ofc.	100	0.01	0.30	19.20	58.40	0.1	1.5	2.4	0.2	9.3	9.5
4	Hallway Entr. to Instructor's Ofc.	100	0.01	0.00	16.40	55.00	-0.2	-1.3	-1.0	-0.3	-8.0	-3.9
5	Instructor,s Computer Station Top	100	0.01	0.20	19.00	55.70	0.0	1.3	-0.3	0.0	8.0	-1.2
6	Instructor,s Desk	100	0.01	0.00	18.90	54.00	-0.2	1.2	-2.0	-0.3	7.4	-7.9
7	Floor Entr. to RM 1010A	100	0.01	0.00	18.40	59.40	-0.2	0.7	3.4	-0.3	4.3	13.4
8	Computer Work Station Top RM 1010A	100	0.01	0.00	17.10	53.00	-0.2	-0.6	-3.0	-0.3	-3.7	-11.8
9	Instructor's Desk RM 1010A	100	0.01	0.20	17.50	60.90	0.0	-0.2	4.9	0.0	-1.2	19.3
10	Floor RM 1010A Entr. to Chief's Ofc.	100	0.01	0.00	17.60	60.20	-0.2	-0.1	4.2	-0.3	-0.6	16.6
11	Computer Work Station Top Chief's	100	0.01	0.20	17.00	58.90	0.0	-0.7	2.9	0.0	-4.3	11.4
12	Chief's Desk	100	0.01	0.00	19.10	56.20	-0.2	1.4	0.2	-0.3	8.7	0.8
13	Floor Chief's Ofc. Entr. Electron Shp	100	0.01	0.40	15.80	55.80	0.2	-1.9	-0.2	0.3	-11.8	-0.8
14	Floor Electronic Shop Entr. Lab 7	100	0.01	0.60	21.00	56.00	0.4	3.3	0.0	0.7	20.4	0.0
15	Desk, Electronic Shop	100	0.01	0.30	16.50	56.90	0.1	-1.2	0.9	0.2	-7.4	3.5
16	Floor Electronic Shop Entr. Hallway	100	0.01	0.10	19.50	55.30	-0.1	1.8	-0.7	-0.2	11.1	-2.8
17	Hallway Floor Entr. Lab 7	100	0.01	0.00	16.80	55.80	-0.2	-0.9	-0.2	-0.3	-5.6	-0.8
18	Hallway Floor Entr. Lab 8	100	0.01	0.10	18.80	53.10	-0.1	1.1	-2.9	-0.2	6.8	-11.4
19	Hallway Floor Entr. to Lab Hallway	100	0.01	0.50	19.00	56.60	0.3	1.3	0.6	0.5	8.0	2.4
20	Hallway Floor Entr. Janitor Rm	100	0.01	0.00	15.70	57.60	-0.2	-2.0	1.6	-0.3	-12.4	6.3
21	Hallway Floor Entr. Men's Rm	100	0.01	0.00	18.50	53.40	-0.2	0.8	-2.6	-0.3	5.0	-10.2
22	Hallway Floor Entr. Storage Rm	100	0.01	0.00	18.50	54.60	-0.2	0.8	-1.4	-0.3	5.0	-5.5
23	Hallway Floor Entr. Women's Rm	100	0.01	0.00	16.50	56.60	-0.2	-1.2	0.6	-0.3	-7.4	2.4
24	Hallway Floor Entr. HP Ofc	100	0.01	0.00	18.40	51.90	-0.2	0.7	-4.1	-0.3	4.3	-16.2
25	HP Office Storage Rm	100	0.01	0.00	19.00	58.30	-0.2	1.3	2.3	-0.3	8.0	9.1
26	HP NCOIC's Desk	100	0.01	0.00	19.00	54.80	-0.2	1.3	-1.2	-0.3	8.0	-4.7

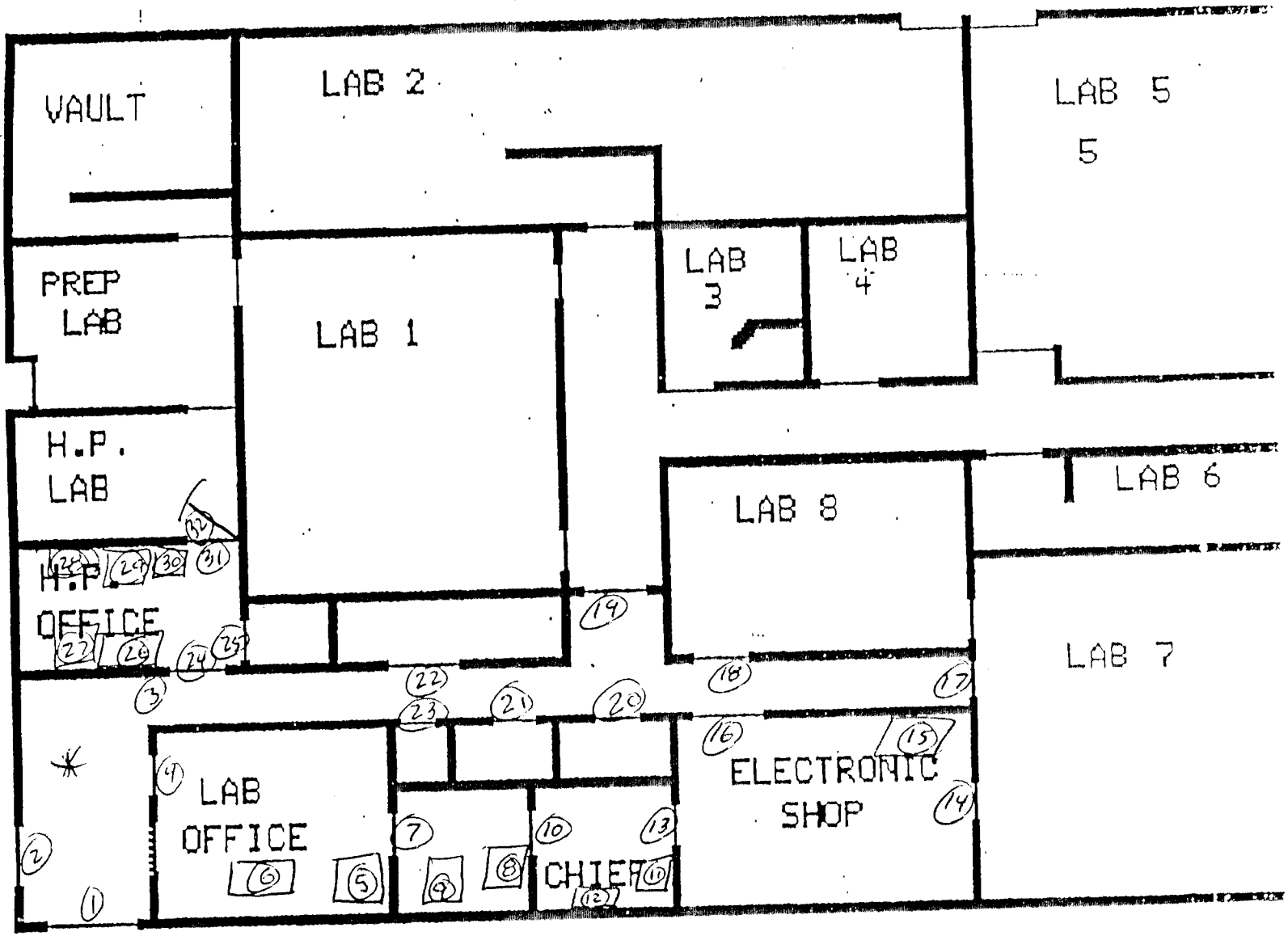
27	HP NCO...,s Computer Table Top	100	0.01	0.00	17.00	60.00	-0.2	-0.7	4.0	-0.3	-4.3	15.8
28	RPO,s Desk Top	100	0.01	0.00	17.90	58.40	-0.2	0.2	2.4	-0.3	1.2	9.5
29	HP Tech's Computer Table Top	100	0.01	0.10	15.90	53.60	-0.1	-1.8	-2.4	-0.2	-11.1	-9.5
30	HP Tech's Desk	100	0.01	0.00	17.30	54.20	-0.2	-0.4	-1.8	-0.3	-2.5	-7.1
31	Floor HP Ofc. Entr. HP Lab.	100	0.01	0.00	19.10	51.40	-0.2	1.4	-4.6	-0.3	8.7	-18.1
32	HP Office Door & Knob to HPO Lab	100	0.01	0.30	16.60	51.50	0.1	-1.1	-4.5	0.2	-6.8	-17.7
33	HP Lab Door & Knob to HPO Offices	100	0.01	0.10	17.90	55.70	-0.1	0.2	-0.3	-0.2	1.2	-1.2
34	HP Lab Floor Exit HP Ofc.	100	0.01	0.00	16.90	58.50	-0.2	-0.8	2.5	-0.3	-5.0	9.9
35	HP Lab Light Switch	100	0.01	0.20	18.70	58.40	0.0	1.0	2.4	0.0	6.2	9.5
36	HP Lab Counter Top	100	0.01	0.00	16.00	58.10	-0.2	-1.7	2.1	-0.3	-10.5	8.3
37	HP Lab Door & Knob to Prep Lab.	100	0.01	0.00	18.10	54.90	-0.2	0.4	-1.1	-0.3	2.5	-4.3
38	HP Lab. Floor Entr. Prep. Lab.	100	0.01	0.40	17.50	55.00	0.2	-0.2	-1.0	0.3	-1.2	-3.9
39	HP Lab Light Switch	100	0.01	0.00	18.70	57.40	-0.2	1.0	1.4	-0.3	6.2	5.5
40	HP Lab LSC Top	100	0.01	0.20	18.30	57.70	0.0	0.6	1.7	0.0	3.7	6.7
41	HP Lab Computer Work Station Top	100	0.01	0.10	19.30	61.70	-0.1	1.6	5.7	-0.2	9.9	22.5
42	HP Lab Tennelec Top	100	0.01	0.30	16.60	56.10	0.1	-1.1	0.1	0.2	-6.8	0.4
43	HP Lab Counter Top	100	0.01	0.10	15.40	53.30	-0.1	-2.3	-2.7	-0.2	-14.2	-10.6
44	HP Lab Counter Top	100	0.01	0.00	17.40	56.30	-0.2	-0.3	0.3	-0.3	-1.9	1.2
45	HP Lab Floor	100	0.01	0.00	18.80	57.60	-0.2	1.1	1.6	-0.3	6.8	6.3
46	HP Lab Counter Top	100	0.01	0.40	17.30	55.30	0.2	-0.4	-0.7	0.3	-2.5	-2.8
47	Prep Lab Door & Knob to HP Lab.	100	0.01	0.10	16.10	52.00	-0.1	-1.6	-4.0	-0.2	-9.9	-15.8
48	Prep Lab Floor Entrance to HP Lab	100	0.01	0.00	17.00	56.30	-0.2	-0.7	0.3	-0.3	-4.3	1.2
49	Prep Lab Light Switch	100	0.01	0.10	16.40	57.00	-0.1	-1.3	1.0	-0.2	-8.0	3.9
50	Prep Lab Counter Top	100	0.01	0.20	17.80	58.60	0.0	0.1	2.6	0.0	0.6	10.2
51	Prep Lab Sink	100	0.01	0.10	17.00	57.40	-0.1	-0.7	1.4	-0.2	-4.3	5.5
52	Prep Lab Trash Container	100	0.01	0.00	18.70	58.20	-0.2	1.0	2.2	-0.3	6.2	8.7
53	Prep Lab Door & Knob To Lab 1	100	0.01	0.20	17.30	58.20	0.0	-0.4	2.2	0.0	-2.5	8.7
54	Prep Lab Floor Entrance Lab 1	100	0.01	0.20	17.70	53.70	0.0	0.0	-2.3	0.0	0.0	-9.1
55	Prep Lab Door & Knob to Vault	100	0.01	0.30	18.60	54.60	0.1	0.9	-1.4	0.2	5.6	-5.5
56	Prep Lab Floor to Vault	100	0.01	0.00	20.50	55.70	-0.2	2.8	-0.3	-0.3	17.3	-1.2
57	Prep Lab Counter Top	100	0.01	0.30	18.70	52.10	0.1	1.0	-3.9	0.2	6.2	-15.4
58	Prep Lab Counter Top	100	0.01	0.50	17.30	54.50	0.3	-0.4	-1.5	0.5	-2.5	-5.9
59	Prep Lab Fume Hood Ledge	100	0.02	0.20	17.70	53.30	0.0	0.0	-2.7	0.0	0.0	-10.6
60	Prep Lab Floor at Fume Hood	100	0.01	0.40	17.40	57.10	0.2	-0.3	1.1	0.3	-1.9	4.3
61	Prep Lab Doors to Load Dock (L)	100	0.01	0.40	18.80	52.10	0.2	1.1	-3.9	0.3	6.8	-15.4
62	Prep Lab Doors to Load Dock (R)	100	0.01	0.10	19.90	55.50	-0.1	2.2	-0.5	-0.2	13.6	-2.0
63	Prep Lab Floor Ent Load Dock	100	0.01	0.20	16.00	56.40	0.0	-1.7	0.4	0.0	-10.5	1.6
64	Prep Lab Door Locker	100	0.01	0.10	17.70	61.00	-0.1	0.0	5.0	-0.2	0.0	19.7
65	Prep Lab File Cabinet Top	100	0.01	0.30	19.60	56.50	0.1	1.9	0.5	0.2	11.8	2.0
66	Vault Door & Knob	100	0.03	0.40	18.90	58.60	0.2	1.2	2.6	0.3	7.4	10.2
67	Vault Floor at Entrance	100	0.03	0.20	17.30	53.30	0.0	-0.4	-2.7	0.0	-2.5	-10.6

68	Vault Lig... ...itch	100	0.03	0.00	16.30	+.50	-0.2	-1.4	-1.5	-0.3	-8.7	-5.9
69	Vault Floor	100	0.03	0.20	18.80	57.50	0.0	1.1	1.5	0.0	6.8	5.9
70	Vault, Yellow Shipping Box Top	100	0.11	0.00	16.40	55.40	-0.2	-1.3	-0.6	-0.3	-8.0	-2.4
71	Vault, Yellow Shipping Box Top	100	0.19	0.10	18.20	56.30	-0.1	0.5	0.3	-0.2	3.1	1.2
72	Vault, Top Old Safe	100	1.00	0.50	18.00	55.80	0.3	0.3	-0.2	0.5	1.9	-0.8
73	Vault Counter Top	100	0.14	0.10	16.60	55.20	-0.1	-1.1	-0.8	-0.2	-6.8	-3.2
74	Vault Counter Top	100	0.19	0.10	16.90	57.50	-0.1	-0.8	1.5	-0.2	-5.0	5.9
75	Vault, Top Leaded Glass Shield	100	0.15	0.10	16.60	55.80	-0.1	-1.1	-0.2	-0.2	-6.8	-0.8
76	Vault Cart	100	0.18	0.20	14.00	56.70	0.0	-3.7	0.7	0.0	-22.9	2.8
77	Vault, Top Blue Shielded Box	100	0.19	0.50	14.70	55.10	0.3	-3.0	-0.9	0.5	-18.6	-3.5
78	Vault, Top Orange Container	100	1.10	0.20	17.20	55.30	0.0	-0.5	-0.7	0.0	-3.1	-2.8
79	Vault Floor	100	0.30	0.20	17.50	56.30	0.0	-0.2	0.3	0.0	-1.2	1.2
80	Vault Yellow Cabinet Door	100	1.50	0.00	18.40	58.10	-0.2	0.7	2.1	-0.3	4.3	8.3
81	Vault Yellow Cabinet Door	100	0.10	0.10	17.70	60.00	-0.1	0.0	4.0	-0.2	0.0	15.8
82	Vault, # 1 Waste Barrel	100	0.07	0.20	19.10	55.60	0.0	1.4	-0.4	0.0	8.7	-1.6
83	Vault, # 2 Waste Barrel	100	0.04	0.10	15.60	58.10	-0.1	-2.1	2.1	-0.2	-13.0	8.3
84	Vault, # 3 Waste Barrel	100	0.04	0.40	18.10	59.10	0.2	0.4	3.1	0.3	2.5	12.2
85	Vault, No # Waste Barrel	100	0.05	1.10	18.00	57.30	0.9	0.3	1.3	1.6	1.9	5.1
86	Vault Red Waste Container	100	0.04	0.40	17.20	57.30	0.2	-0.5	1.3	0.3	-3.1	5.1
87	Vault Yellow Waste Container	100	0.04	0.40	16.20	55.90	0.2	-1.5	-0.1	0.3	-9.3	-0.4
88	Vault Blue Cabinet Door	100	0.13	0.00	18.40	58.20	-0.2	0.7	2.2	-0.3	4.3	8.7
89	Vault, Floor Front of Blue Cabinet	100	0.11	0.00	2.60	59.00	-0.2	-15.1	3.0	-0.3	-93.5	11.8
90	Vault Floor Around Drain	100	0.11	0.10	1.30	51.10	-0.1	-16.4	-4.9	-0.2	-101.5	-19.3
91	Vault, Shelf # 1 B	100	0.20	0.00	1.10	52.40	-0.2	-16.6	-3.6	-0.3	-102.8	-14.2
92	Vault, Shelf # 2 B	100	1.50	0.20	2.20	55.20	0.0	-15.5	-0.8	0.0	-96.0	-3.2
93	Vault, Shelf # 3 B	100	1.40	0.60	3.50	48.80	0.4	-14.2	-7.2	0.7	-87.9	-28.4

NOTE: On 3 DEC 98 SSG DeGumbia performed a monthly survey on the RAD LAB & HPO Offices Hallways and LABS.
Of the 95 samples analyzed, only sample # 85 was initially determined to be above background and LLD in the Alpha channel by 0.24 cpm.
That one sample was recounted on 3 DEC 98, under title 99026. After this recounted sample was realyzed, it was determined to be free of contamination.
No further action required.

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

CONCUR/~~NONCONCUR~~
Health Physics Manger

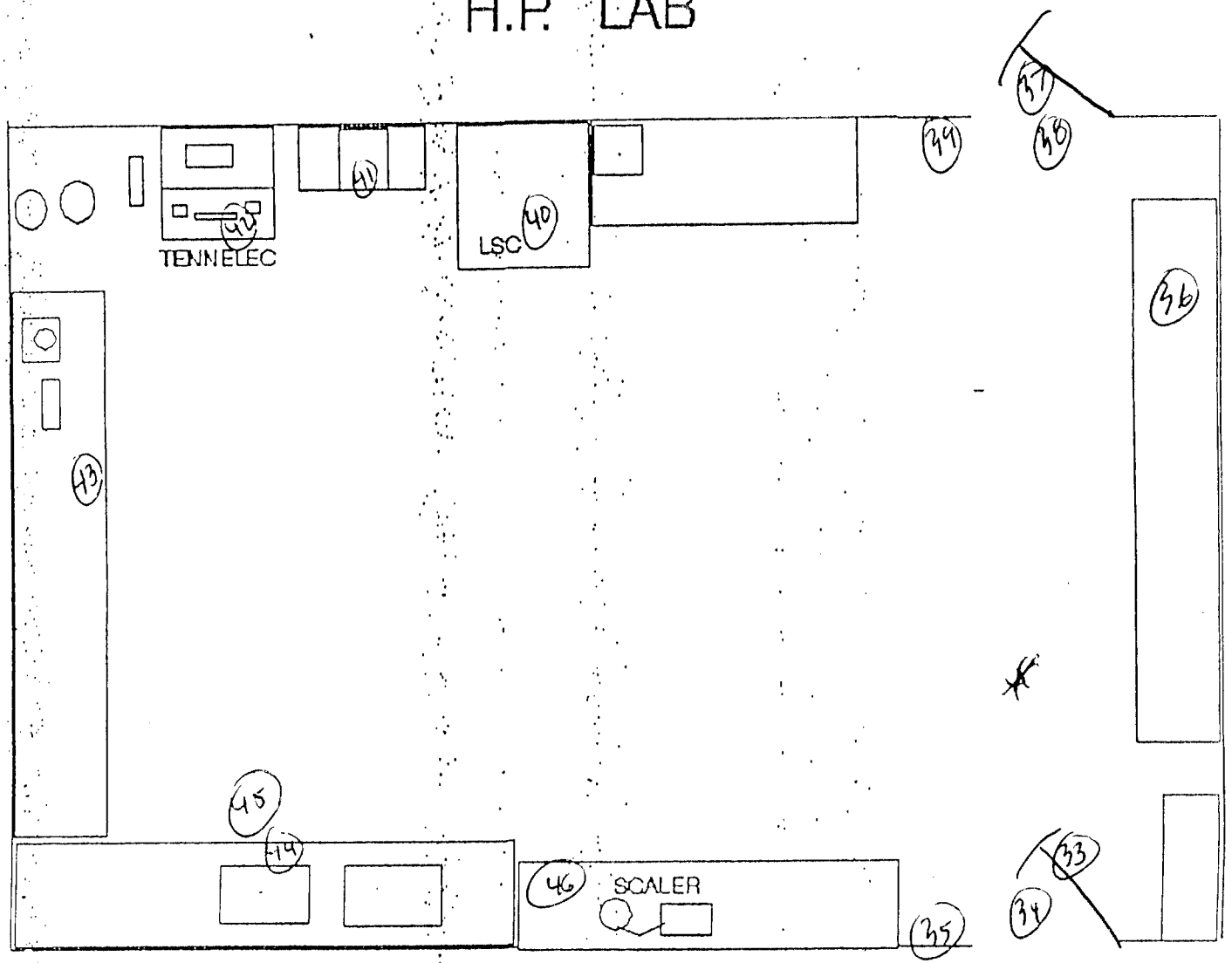


* BKG = 0.01 mR/Hr

2 DEC 98 @ 0800 HRS

SMEARS (1-32)

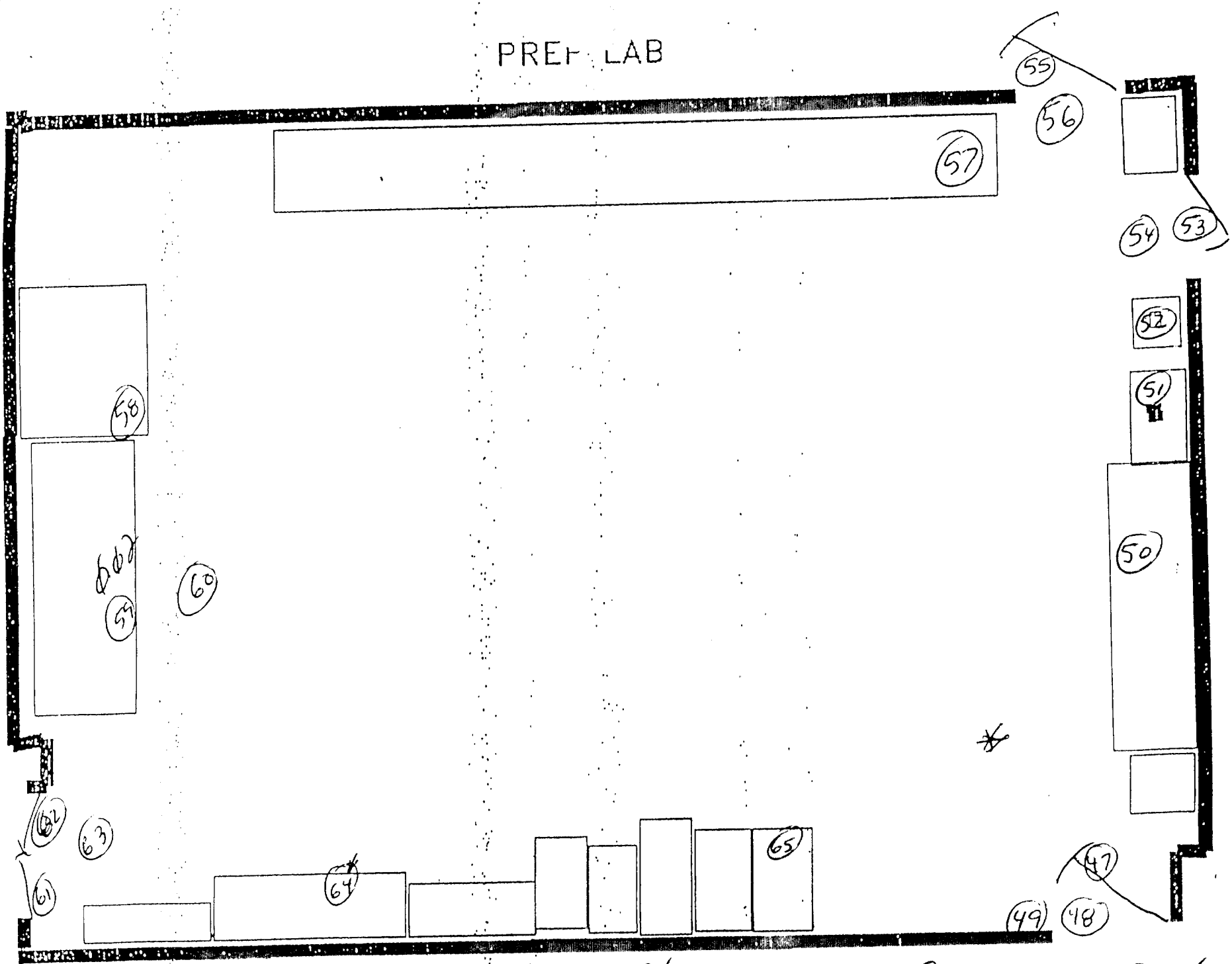
EBERLINE E-520 SN:
HP 270 SN 2813
CAL DUE DATE 23 D



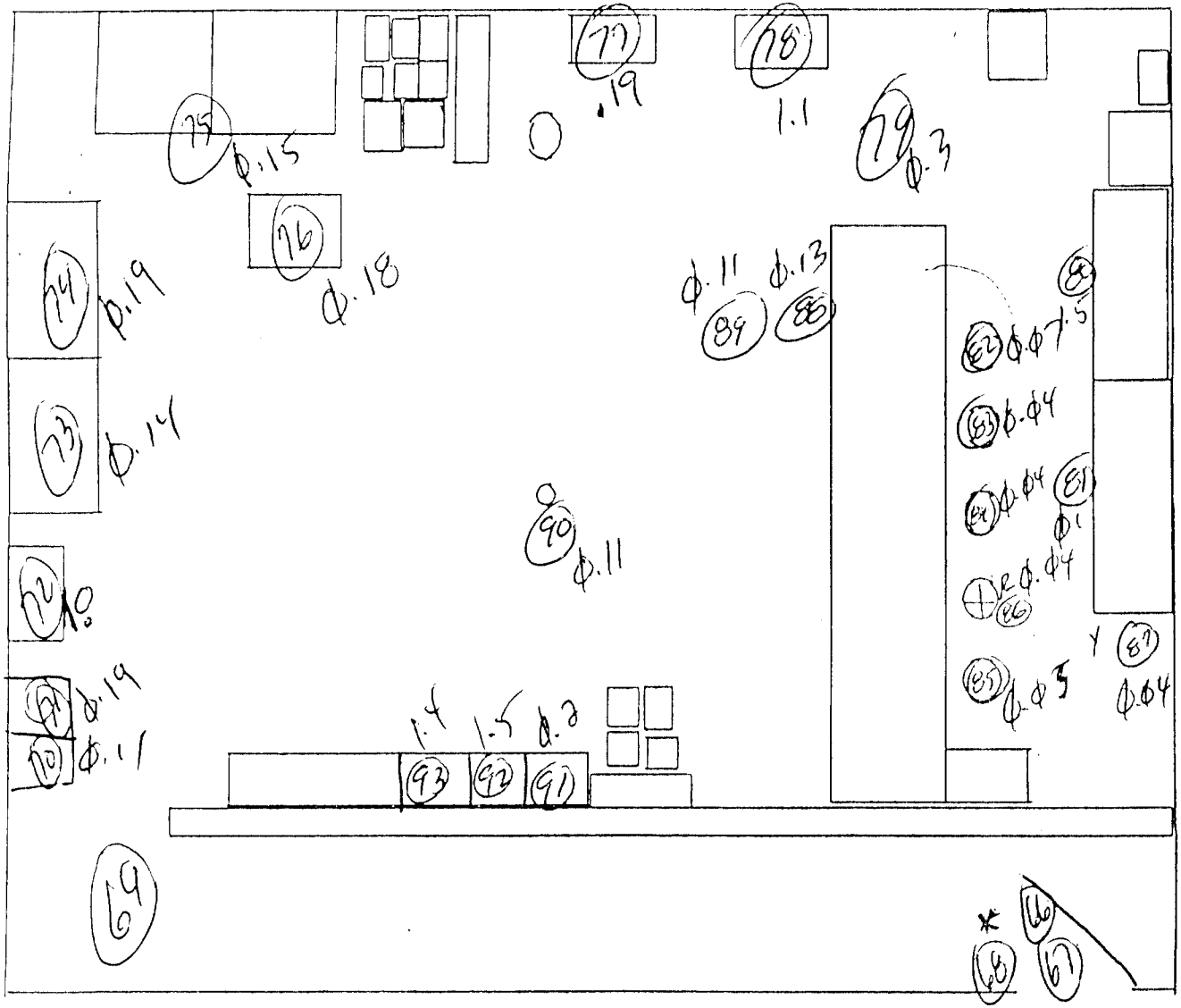
Smears (33 - 46)

* BKG = 0.01 mR/hr

2 DEC 98 @ 0915.



Items (47 - 65) * BKG = 0.6 mR/hr 2 Dec 98 @ 1030 Hrs



VAULT

SMEARS (66 – 93)

* = BKG .03 mR/hr

21 DEC 98 @ 1415 HRS

TABLE I

ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDE[a]	AVERAGE[b c]	MAXIMUM[b d]	REMOVABLE[b e]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm^2	3000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm β-γ/100 cm^2	15,000 dpm β-γ/100 cm^2	1000 dpm β-γ/100 cm^2

[a]Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b]As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c]Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d]The maximum contamination level applies to an area of not more than 100 cm^2.

[e]The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

ERB CLOSEOUT SURVEY FOR AREA O FLOOR, RM 1011A, HEALTH PHYSICS LABORATORY, DATED , AT HOURS

Radiation Type	EFFICIENCY % at 2 Pi	EFFICIENCY % at 4 Pi	BKGRND(cpm) at 2 Pi	BKGRND(cpm) at 4 Pi
ALPHA		NA		NA
H-3 BETA 1	NA	varies	NA	
C-14 BETA 2	NA	varies	NA	
GAMMA		NA		NA

Radiation Type	SENSITIVITY (cpm) L_C	LLD	L_D	L_Q
ALPHA				
H-3 BETA 1				
C-14 BETA 2				
GAMMA				

INSTRUMENT/EQUIPMENT INFORMATION

COUNTING

(2 Pi) Tennelec LB5100, S/N 64169

(4 Pi) LSC Packard 1900CA, S/N 102105

SURVEY METER

Meter Type: BICRON micro rem, S/N C162C

Calib.Due: ; Background urem/hr

LSC Computations for Each Individual Sample

tSIE	Beta 1	%	tSIE	Beta 2	%
	equals			equals	
sample	unkwn	x	sample	unkwn	x
	equals			equals	

DISPOSITION

[ ] ELEVATED SAMPLE RESULTS HIGHLIGHTED

ALPHA > LLD/100 cm^2 for SAMPLE # :

BETA > LLD/100 cm^2 for SAMPLE # :

GAMMA > LLD/100 cm^2 for SAMPLE # :

[ ] RECOUNTED ON: UNDER TITLE:

[ ] DECONTAMINATION & RESURVEY TO BE PERFORMED

[ ] NO ACTION REQUIRED

SURVEYED BY: SSG RONALD DEGUMBIA
Health Physics Technician. DATED:

REVIEWED BY: JOHN W. MAY
Health Physics Manager. DATED:

seq #	DIGIT CODE 1	2	3	4	5	AREA cm^2	doserate urem/hr	Gross CPM Alpha	Beta 1	Beta 2	Gamma	Net CPM Alpha	Beta 1	Beta 2	Gamma	LSC BETA 1 DATA tSIE	Xstrap	Eff/Vial	LSC BETA 2 DATA tSIE	Xstrap	Eff/Vial	Net DPM/100 cm^2 Alpha	Beta 1	Beta 2	Gamma	Sample Remark
1	O	F	4	D	1	100																				
2	O	F	4	D	2	100																				
3	O	F	4	D	3	100																				
4	O	F	4	D	4	100																				
5	O	F	4	E	1	100																				
6	O	F	4	E	2	100																				
7	O	F	4	E	3	100																				
8	O	F	4	E	4	100																				
9	O	F	4	F	1	100																				
10	O	F	4	F	2	100																				
11	O	F	4	F	3	100																				
12	O	F	4	F	4	100																				
13	O	F	4	G	1	100																				
14	O	F	4	G	2	100																				
15	O	F	4	G	3	100																				
16	O	F	4	G	4	100																				
17	O	F	4	H	1	100																				
18	O	F	4	H	2	100																				
19	O	F	4	H	3	100																				
20	O	F	4	H	4	100																				
21	O	F	4	I	1	100																				
22	O	F	4	I	2	100																				
23	O	F	4	I	3	100																				
24	O	F	4	I	4	100																				
25	O	F	4	J	1	100																				
26	O	F	4	J	2	100																				

90	O	F	7	J	3	100
91	O	F	7	J	4	100
92	O	F	7	K	1	100
93	O	F	7	K	3	100

NOTE: FIRST DIGIT = AREA CODE: (O), ROOM 1011A, HEALTH PHYSICS LABORATORY
SECOND DIGIT = SURFACE BEING SURVEYED: FLOOR
THIRD DIGIT = Y AXIS QUADRANT: 4 THRU 7
FOURTH DIGIT = X AXIS QUADRANT: D THRU K
FIFTH DIGIT = SMEAR LOCATION IN QUADRANT: 1 THRU 4
TOP TO BOTTOM THEN LEFT TO RIGHT: 1 = TOP LEFT; 2 = TOP RIGHT; 3 = BOTTOM LEFT; & 4 = BOTTOM RIGHT

LEGEND: R4 = RECOUNT FOR; A = ALPHA; B1 = BETA 1; B2 = BETA 2; AND G = GAMMA
DIGITS 1, 2, & 4 ARE LETTERS ONLY. DIGIT 3 & 5 ARE NUMBERS ONLY.

RONALD DEGUMBIA
SSG, US ARMY
Health Physics Technician

CONCUR/NONCONCUR
Health Physics Manager

WIPE SURVEY SAM ANALYSIS RECORD

PURPOSE: [ ] SPECIAL [ ] SCHEDULED [ ] OTHER (SPECIFY)

DATE:	SURVEY #:	LOCATION:

INSTRUMENT						DISPOSITION
Contamination				Instrument Survey		[ ] HIGHLIGHTED READINGS RESURVEYED
Tennelec LB5100, S/N 64169				Meter:		ALPHA > 220 DPM/100 cm²
	Alpha	Beta	Gamma	Probe:	Cal Due:	BETA/GAMMA > 2200 DPM/100 cm²
Efficiency						
Bkg CPM				Background:	(mR/hr)(CPM)(μR/hr)	[ ] NO ACTION REQUIRED

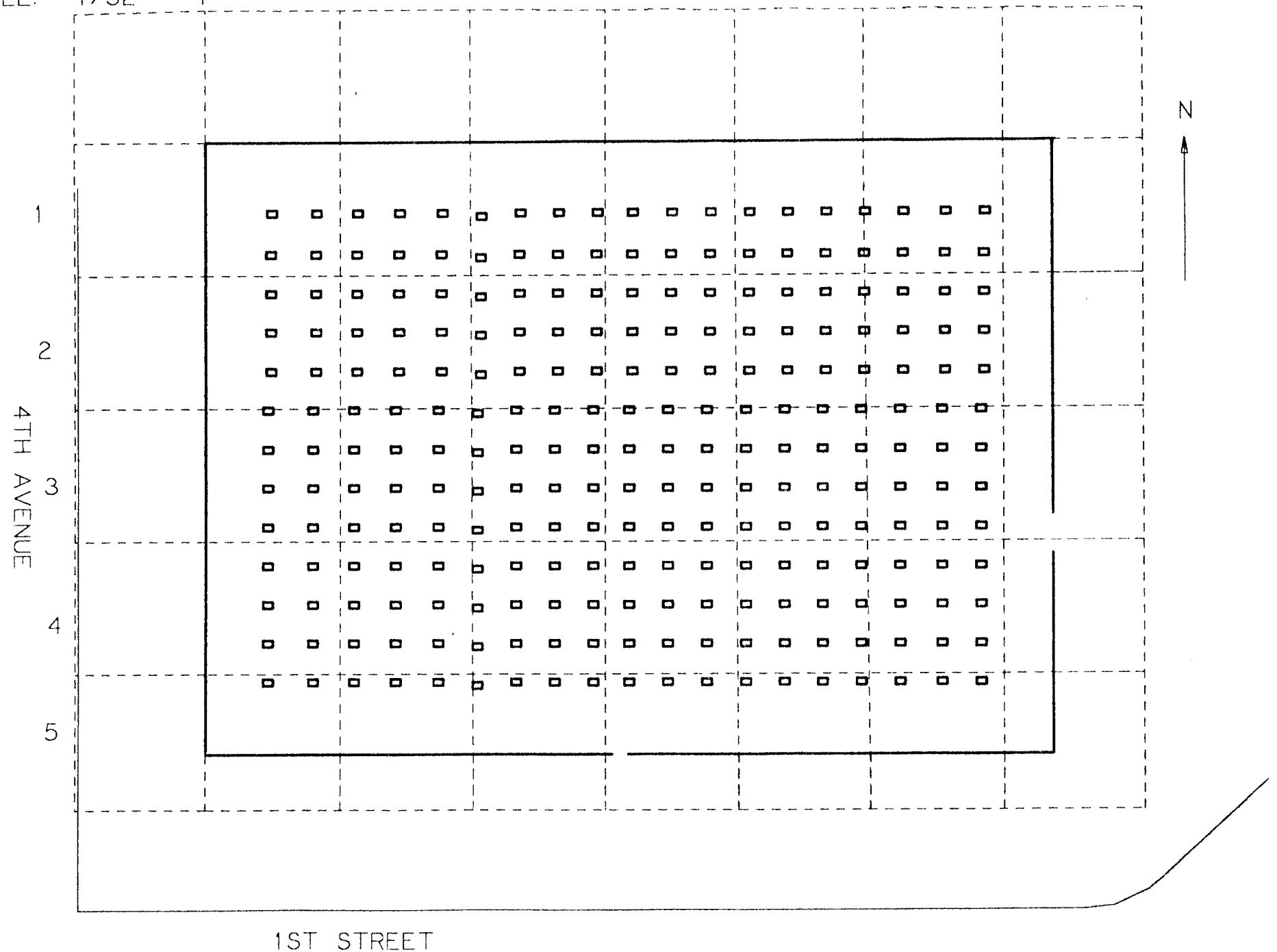
Sensitivity (CPM)	L_C	LLD	L_D	L_Q	SURVEYOR:
Alpha					
Beta					REVIEWED BY:
Gamma					HEALTH PHYSICS MANAGER

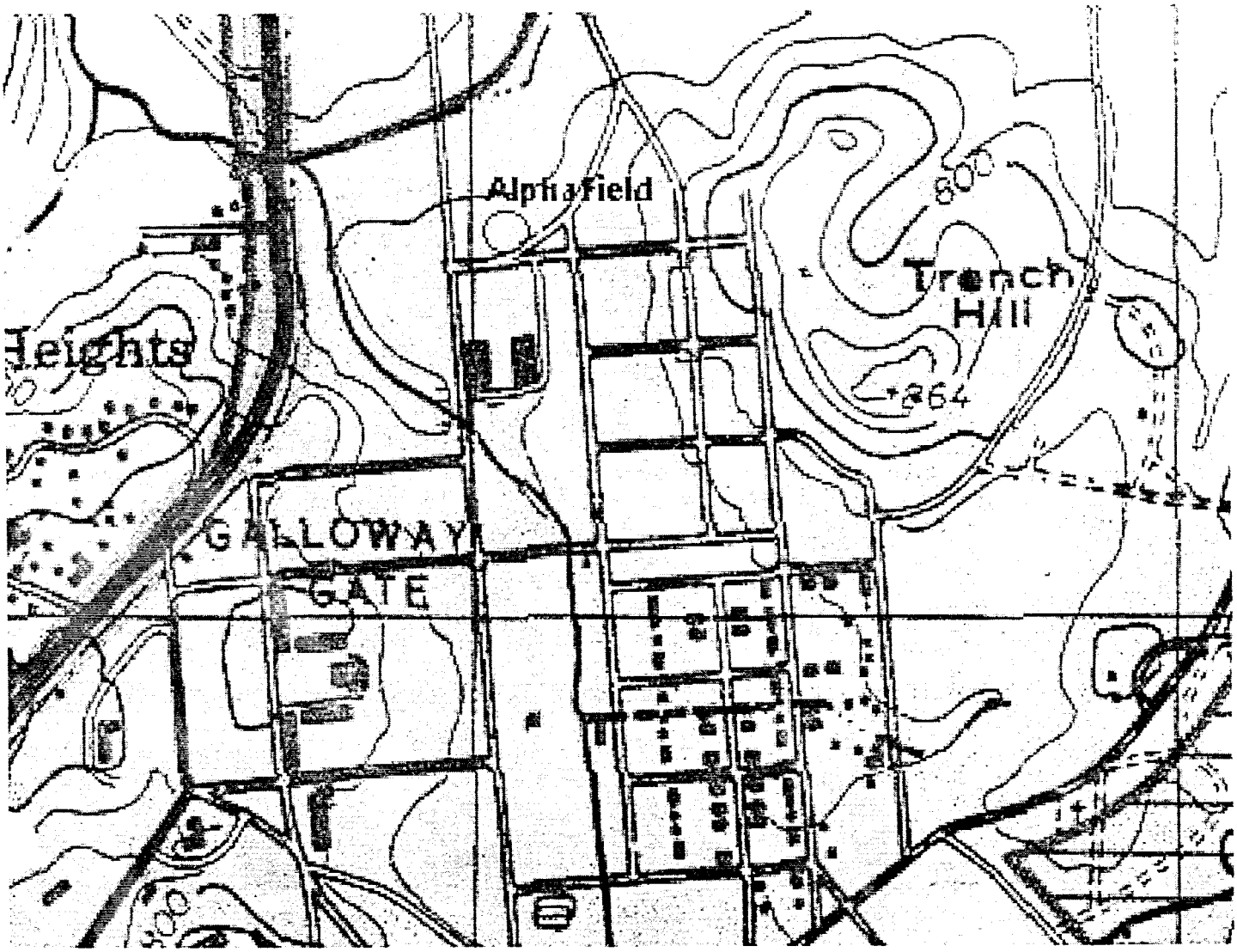
#	LOCATION	AREA (cm²)	Dose Rate	Gross CPM			Net CPM			Net DPM/100 cm²		
				Alpha	Beta	Gamma	Alpha	Beta	Gamma	Alpha	Beta	Gamma
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												

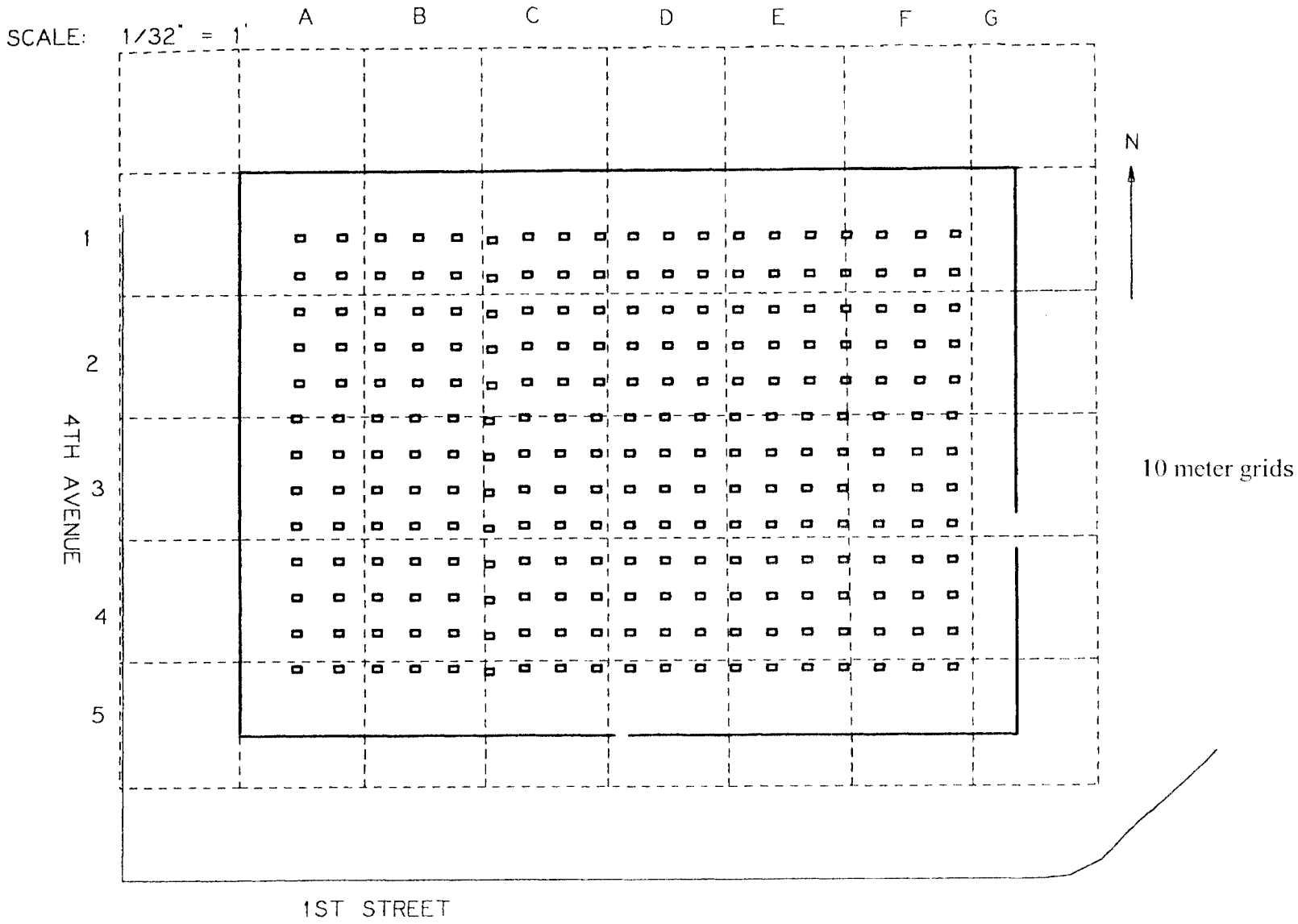
US ARMY CHEMICAL SCHOOL ALPHA FIELD

GRID COORDINATE FN12033356

SCALE: 1/32" = 1'




Alpha Field
Trench Hill
364
GALLOWAY GATE



U.S. Army Chemical School Alpha Field

Grid Coordinates FN12033356

Survey Number: 85-173

RECORD OF HEALTH PHYSICS SURVEY
(OCSR 385-2)

Date Started: 4 June 85

Date Completed: 12 June 85

Survey of: ALPHA FIELD USACMLS, 1st St. Ft McCl.

Surveyor: SP5 Juan A. Torres Number of Samples: 148

Type of Survey: ✓ Area Wipe Test, ___ Instrument Survey, ___ Source Leak Test;

Environmental Sample: ___ Air, ___ Water, ___ Soil.

Portable Instrument Data: ___ Alpha Instrument, ___ Beta-Gamma Instrument;

Model: _____ Serial: _____ Surveyor: _____

Laboratory Instrument Data:

Beta: Model: _____, SN: _____, Eff: ___%, Volts: _____

Beta-Gamma: Model: MS-2, SN: 623, Eff: ___% 0.705% Cs-137, Volts: 900 V.

Gamma: _____, SN: _____, Eff: ___%, Volts: _____

Alpha: SAC 4, SN: 533, Eff: ___& 82.25% U-235, Volts: _____

Counted by: SP5 Torres / SP5 Barnes USAR Reviewer's Init: _____

Action: ___ None, ___ On Back of Sheet, ___ See Attached Sheets

Ft McCl Fm 1560-R
(8 Aug 80)

HEALTH PHYSICS SU. WORKSHEET

BACKGROUN. (10 Min Count)
0.7 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 1985

Surveyer: SPS Torres

NO	Background swipes from the ALPHA Field LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
1	4th St.	3/2 = 1.5	0.8		45/2 = 21.5	0		
2	1st St. (SEE MAP)	2/2 = 1	0.3		54/2 = 27	1.4		
3	1st St. (SEE Sketch)	2/2 = 1	0.3		42/2 = 21	0		
4	1st St "	0/2 = 0	0		60/2 = 30	4.4		
5	1st St. "	1/2 = 0.5	0		53/2 = 26.5	0.9		
6	1st St. "	0/2 = 0	0		42/2 = 21	0		
7	1st St "	0/2 = 0	0		42/2 = 21	0		
8	1st St. "	0/2 = 0	0		47/2 = 23.5	0		
9	1st St. "	0/2 = 0	0		41/2 = 20.5	0		
10	1st St. "	2/2 = 1	0.3		58/2 = 29	3.4		
11	LANDFILL Rd (SEE Sketch)	1/2 = 0.5	0		46/2 = 23	0		
12	" "	1/2 = 0.5	0		47/2 = 23.5	0		
13	" "	0/2 = 0	0		49/2 = 24.5	0		
14	Cement Pad In Front of Field	1/2 = 0.5	0		48/2 = 24	0		
15	ENTRANCE TO THE PAD "	3/2 = 1.5	0.8		53/2 = 26.5	0.9		
16	DIRT Rd (see sketch)	1/2 = 0.5	0		40/2 = 20	0		
17	"	1/2 = 0.5	0		34/2 = 17	0		
18	"	1/2 = 0.5	0		35/2 = 17.5	0		
19	"	0/2 = 0	0		45/2 = 22.5	0		
20	Decontamination Area	1/2 = 0.5	0		49/2 = 24.5	0		
21	"	0/2 = 0	0		62/2 = 31	5.4		
22	"	1/2 = 0.5	0		52/2 = 26.5	0.9		
23	"	1/2 = 0.5	0		58/2 = 29	3.4		
24	Blisters at Decon Area	0/2 = 0	0		39/2 = 19.5	0		
	" " "	0/2 = 0	0		46/2 = 23	0		

HEALTH PHYSICS SU WORKSHEET

BACKGROU (10 Min Count)
0.7 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	ALPH FIELD LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
26	From Corner LEFT ON NORTH side OF THE OREA Base #2	0/2 = 0	0		51/2 = 25.5	0		
27	Base No. 4 (See Attached Diagram)	0/2 = 0	0		44/2 = 22	0		
28	Base No. 6	0/2 = 0	0		35/2 = 17.5	0		
29	Base No. 8	1/2 = 0.5	0		49/2 = 24.5	0		
30	Base No. 10	0/2 = 0	0		44/2 = 22	0		
31	Base No. 12	1/2 = 0.5	0		62/2 = 31	5.4		
32	Base No. 14	1/2 = 0.5	0		61/2 = 30.5	4.9		
33	Base No. 16	2/2 = 1	0.3		46/2 = 23	0		
34	Base No. 18	0/2 = 0	0		55/2 = 27.5	1.9		
35	Base No. 20	1/2 = 0.5	0		41/2 = 20.5	0		
36	Base No. 22	1/2 = 0.5	0		56/2 = 28	2.4		
37	Base No. 24	0/2 = 0	0		59/2 = 29.5	3.9		
38	Base No. 26	1/2 = 0.5	0		36/2 = 18	0		
39	Base No. 28	0/2 = 0	0		31/2 = 15.5	0		
40	Base No. 30	0/2 = 0	0		46/2 = 23	0		
41	Base No. 32	0/2 = 0	0		62/2 = 31	5.4		
42	Base No. 34	2/2 = 1	0.3		43/2 = 21.5	0		
43	Base No. 36	2/2 = 1	0.3		62/2 = 31	5.4		
44	Base No. 38	1/2 = 0.5	0		50/2 = 25	0		
45	Base No. 40	1/2 = 0.5	0		51/2 = 25.5	0		
46	Base No. 42	1/2 = 0.5	0		47/2 = 23.5	0		
47	Base No. 44	2/2 = 1	0.3		49/2 = 24.5	0		
48	Base No. 46	1/2 = 0.5	0		45/2 = 21.5	0		
49	Base No. 48	1/2 = 0.5	0		42/2 = 21	0		
[illegible]	Base No. 50	0/2 = 0	0		47/2 = 23.5	0		

HEALTH PHYSICS SUI WORKSHEET

BACKGROUN (0.8 Min Count)
0.7 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	LOCATION ALPHA FIELD	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
51	Base #52	0/2 = 0	0		47/2 = 23.5	0		
52	Base #54	0/2 = 0	0		44/2 = 22	0		
53	Base #56	3/2 = 1.5	0.8		57/2 = 28.5	2.9		
54	Base #58	2/2 = 1	0.3		37/2 = 18.5	0		
55	Base #60	0/2 = 0	0		45/2 = 22.5	0		
56	Base #62	0/2 = 0	0		40/2 = 20	0		
57	Base #64	1/2 = 0.5	0		45/2 = 22.5	0		
58	Base #66	1/2 = 0.5	0		52/2 = 26	0.4		
59	Base #68	1/2 = 0.5	0		45/2 = 22.5	0		
60	Base #70	1/2 = 0.5	0		49/2 = 24.5	0		
61	Base #72	1/2 = 0.5	0					DISCARDED AFTER ∝ COUNTS
62	Base #74	0/2 = 0	0					"
63	Base #76	0/2 = 0	0					"
64	Base #78	1/2 = 0.5	0					"
65	Base #80	3/2 = 1.5	0.8					"
66	Base #82	1/2 = 0.5	0					"
67	Base #84	2/2 = 1	0.3					"
68	Base #86	1/2 = 0.5	0		47/2 = 23.5	0		
69	Base #88	0/2 = 0	0		42/2 = 21	0		
70	Base #90	2/2 = 1	0.3		30/2 = 15	0		
71	Base #92	1/2 = 0.5	0		51/2 = 25.5	0		
72	Base #94	1/2 = 0.5	0		44/2 = 22	0		
73	Base #96	3/2 = 1.5	0.8		42/2 = 21	0		
74	Base #98	2/2 = 1	0.3		48/2 = 24	0		
	Base #100	3/2 = 1.5	0.8		52/2 = 26	0.4		

BACKGROU (10 Min Count)
0.8 CPM Alpha
25.6 CPM Beta/Gamma

HEALTH PHYSICS SU WORKSHEET

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	ALPHA Field LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
76	Base # 102	0/2 = 0	0		37/2 = 18.5	0		
77	Base # 104	1/2 = 0.5	0		60/2 = 30	4.4		
78	Base # 106	2/2 = 1	0.2		66/2 = 33	7.4		
79	Ground 108	0/2 = 0	0		45/2 = 22.5	0		
80	Base # 110	3/2 = 1.5	0.7		46/2 = 23	0		
81	Base # 112	0/2 = 0	0		55/2 = 27.5	1.9		
82	Base # 114	4/2 = 2	1.2		49/2 = 24.5	0		
83	Base # 116	0/2 = 0	0		38/2 = 19	0		
84	Base # 118	2/2 = 1	0.2		38/2 = 19	0		
85	Base # 120	1/2 = 0.5	0		48/2 = 24	0		
86	Base # 122	1/2 = 0.5	0		53/2 = 26	0.4		
87	Base # 124	0/2 = 0	0		39/2 = 19.5	0		
88	Base # 126	1/2 = 0.5	0		— missing	Lost in transit can after recounts		
89	Ground 128	0/2 = 0	0		— missing	"	"	" "
90	Base # 130	1/2 = 0.5	0		53/2 = 26.5	0.9		
91	Base # 132	0/2 = 0	0		49/2 = 24.5	0		
92	Base # 134	2/2 = 1	0.2		55/2 = 27.5	1.9		
93	Base # 136	2/2 = 1	0.2		47/2 = 23.5	0		
94	Base # 138	4/2 = 2	1.2		54/2 = 27	1.4		
95	Base # 140	1/2 = 0.5	0		58/2 = 29	3.4		
96	Base # 142	1/2 = 0.5	0		46/2 = 23	0		
97	Base # 144	0/2 = 0	0		46/2 = 23	0		
98	Base # 146	0/2 = 0	0		43/2 = 21.5	0		
99	Base # 148	2/2 = 1	0.2		46/2 = 23	0		
100	Base # 150	1/2 = 0.5	0		40/2 = 20	0		

DA Form 1585-R (5 Sep 80)

HEALTH PHYSICS SU WORKSHEET

BACKGROUN (10 Min Count)
0.8 CPM Alpha
25.4 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	ALPHA Field LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
101	Base # 152	1/2 = 0.5	.0		47/2 = 23.5	0		
102	Base # 154	1/2 = 0.5	0		39/2 = 19.5	0		
103	Base # 156	0/2 = 0	0		50/2 = 25	0		
104	Base # 158	1/2 = 0.5	0		46/2 = 23	0		
105	Base # 160	0/2 = 0	0		44/2 = 22	0		
106	Base # 162	1/2 = 0.5	0		40/2 = 20	0		
107	Base # 164	1/2 = 0.5	0		42/2 = 21	0		
108	Base # 166	1/2 = 0.5	0		54/2 = 27	1.4		
109	Base # 168	0/2 = 0	0		52/2 = 26	0.4		
110	Base # 170	2/2 = 1	0.2		46/2 = 23	0		
111	Base # 172	1/2 = 0.5	0		45/2 = 22.5	0		
112	Base # 174	2/2 = 1	0.2		54/2 = 27	1.4		
113	Base # 176	1/2 = 0.5	0		57/2 = 28.5	2.9		
114	Base # 178	3/2 = 1.5	0.7		38/2 = 19	0		
115	Base # 180	0/2 = 0	0		46/2 = 23	0		
116	Base # 182	0/2 = 0	0		36/2 = 18	0		
117	Base # 184	3/2 = 1.5	0.7		46/2 = 23	0		
118	Base # 186	1/2 = 0.5	0		57/2 = 28.5	2.9		
119	Base # 188	3/2 = 1.5	0.7		51/2 = 25.5	0		
120	Base # 190	0/2 = 0	0		59/2 = 29.5	3.4		
121	Base # 192	0/2 = 0	0		46/2 = 23	0		
122	Base # 194	1/2 = 0.5	0		48/2 = 24	0		
123	Base # ~~196~~ 196	0/2 = 0	0		52/2 = 26	0.4		
124	Base # ~~198~~ 198	0/2 = 0	0		72/2 = 36	10.4		
125	Base # ~~200~~ 200	0/2 = 0	0		36/2 = 18	0		

Ft McCl. Fm 1585-R (5 Sep 80)

HEALTH PHYSICS SU WORKSHEET

BACKGROUN. (10 Min Count)
0.8 CPM Alpha
25.6 CPM Beta/Gamma

BG+1.96$\sqrt{BG}$= Alpha, Beta/Gamma

Sample Count Time: 2 Min

Survey Date: 4 June 85

Surveyer: SP5 Torres

NO	ALPHA FIELD LOCATION	ALPHA GROSS CPM	ALPHA NET CPM	ALPHA ACTIVITY	BETA/GAMMA GROSS CPM	BETA/GAMMA NET CPM	BETA/GAMMA ACTIVITY	REMARKS
126	Base # 202	0/2 = 0	0		56/2 = 28	2.4		
127	Base # 204	2/2 = 1	0.2		51/2 = 25.5	0		
128	Base # 206	1/2 = 0.5	0		44/2 = 22	0		
129	Base # 208	2/2 = 1	0.2		— missing	After α count		
130	Base # 210	1/2 = 0.5	0		41/2 = 20.5	0		
131	Base # 212	0/2 = 0	0		43/2 = 21.5	0		
132	Base # 214	1/2 = 0.5	0		37/2 = 18.5	0		
133	Base # 216	0/2 = 0	0		37/2 = 18.5	0		
134	Base # 218	0/2 = 0	0		42/2 = 21	0		
135	Base # 220	3/2 = 1.5	0.7		45/2 = 22.5	0		
136	Base # 222	1/2 = 0.5	0		43/2 = 21.5	0		
137	Base # 224	0/2 = 0	0		51/2 = 25.5	0		
138	Base # 226	1/2 = 0.5	0		55/2 = 27.5	1.9		
139	Base # 228	1/2 = 0.5	0		54/2 = 27	1.4		
140	Base # 230	1/2 = 0.5	0		53/2 = 26.5	0.9		
141	Base # 232	1/2 = 0.5	0		49/2 = 24.5	0		
142	Base # 234	3/2 = 1.5	0.7		44/2 = 22	0		
143	Base # 236	1/2 = 0.5	0		42/2 = 21	0		
144	Base # 238	1/2 = 0.5	0		48/2 = 24	0		
145	Base # 240	0/2 = 0	0		41/2 = 20.5	0		
146	Base # 242	1/2 = 0.5	0		46/2 = 23	0		
147	Base # 244	0/2 = 0	0		60/2 = 30	4.4		
148	Base # 246	2/2 = 1	0.2		— missing After α count			
149								
150								

Ft McCl. Fm 1585-R (5 Sep 80)

ROUTING AND TRANSMITTAL SLIP

Date 17 June 85

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Dr Cheppola.		
2.		
3.		
4.		
5.		

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

This are the reports for the soil samples and swipes from the alpha field

I will be back probably a little late after lunch.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Juan, 1490	Phone No.

5041-102

☆ U.S. G.P.O. 1982-387-346

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

Survey Number: S5 [illegible]

RECORD OF HEALTH PHYSICS SURVEY
(OCSR 385-2)

Date Started: 7 June 85

Date Completed: 13 June 85

Survey of: Soil Samples From USACMLS ALPHA FIELD, 1st St Ft. McCl.

Surveyor: SP5 Juan A. Torres Number of Samples: 45

Type of Survey: ___Area Wipe Test, ___Instrument Survey, ___Source Leak Test;

Environmental Sample: ___Air, ___Water, ___Soil.

Portable Instrument Data: ___Alpha Instrument, ___Beta-Gamma Instrument;

Model: _____ Serial: _____ Surveyor: _____

Laboratory Instrument Data:

Beta: Model: _____, SN: _____, Eff: ___%, Volts: _____

Beta-Gamma: Model: _____, SN: _____, Eff: ___%, Volts: _____

Gamma: TN 7200, SN: 383317, Eff: ___%, Volts: ≈ 1100 Volts (as shown inside 600 to)

Alpha: _____, SN: _____, Eff: ___&, Volts: _____

Counted by: SP5 Juan A. Torres. Reviewer's Init: _____

Action: ___None, ___On Back of Sheet, ___See Attached Sheets

Ft McCl Fm 1560-R
(8 Aug 80)

SP5 Juan A. Torres. 11 June 1985

Soil Samples From ALPHA FIELD.

① Limits OF detection at the different regions:

(a) Limit of Detection: $(1.96\sqrt{Bg}) + \bar{x}$ or (b) $1.96\sqrt{Bg} = 1.96(SD)$, $\bar{x}$ = Bg in that region

	(a)	(b)
Region 1	6398.9	154.9
Region 2	492	41.6
Region 3	343.5	34.5
Region 4	237.3	28.3

② Actual activities of Calibration sources:

(a) Cs-137, 1.06 μCi @ 20 May 77, t = 8.06 yrs.

$\lambda = 0.0231\ yrs^{-1}$, actual activity = 0.879 μCi = 1951380 dpm.

1951380 dpm × (0.85 γ) = 1658673 dpm γ

1658673 dpm γ = 27644.6 γ dps

(b) Co-60, 1.06 μCi @ 20 MAY 77, t = 8.06 yrs

$\lambda = .1317\ yrs^{-1}$ actual activity = 0.367 μCi = 814056.2 dpm

(100%)$_{ea}$ 814056.2 dpm γ = 1628112.4 dpm γ → For the two peaks of Co-60

1628112.4 dpm = 27135.21 γ psec For the two peaks.

For only one of the peaks it should be ≃ 13567.6 γ psec.

③ EFFICIENCIES For The DIFFERENT REGIONS:

(a) Region 1 is the ENTIRE spectrum

(b) REGION 2 · Cs-137,

$\frac{250311\ cts}{60\ secs} = 4171.85$ dps

$\frac{4171.85}{27644.5} = 0.1509 \times 100 = 15.09\%$ EFFICIENCY

11 SP5 Jum A. Torres 11 June 85

Soil Samples From alpha Field

③ © Region 3 : Co-60

$\frac{47946}{60\ sec} = 799.1$ dps

$\frac{799.1}{13567.6} = 0.0589 = 5.89\%$ EFFICIENCY

ⓓ Region 4 : Co-60

$\frac{47946}{13567.6} = 0.0589 = 5.89\%$ EFFICIENCY

④ Minimum detectable Activity in each Region : (MDA)

Take the 1.96(SD) an divide it by the Efficiency on that region. Then divide that no. by the counting time in secs. This yields dps, change to dpm and then to Ci's

ⓐ Minimum detectable activity For Region # 2. Cs-137

$\frac{41.6}{.1509} = 275.68$, $275.68/300\ secs = 0.9189$ dps

0.9189 dps $\times 60\ sec/min = 55.14$ dpm $= 0.000024837\ \mu Ci's =$

$= 2.4837 \times 10^{-5}\ \mu Ci's = 24.837\ pCi's$ MDA Cs-137

ⓑ Minimum detectable Activity For Region #3 Co-60 FIRST peak

$\frac{34.5}{0.0589} = 585.74$, $585.74/300 = 1.95$ dps

1.95 dps $\times 60\ sec/min = 117.15$ dpm $= 0.000052769\ \mu Ci's =$

$5.2769 \times 10^{-5}\ \mu Cis = 52.769\ pCi's$ = MDA

© Minimum detectable Activity For Region #4 Co-60 second peak.

$\frac{28.3}{0.0589} = 480.48$, $480.48/300 = 1.6$ dps.

1.6 dps $\times 60\ sec/min = 96.1$ dpm $= 0.000043286\ \mu Cis =$

$4.3286 \times 10^{-5}\ \mu Cis = 43.286\ pCi's$ MDA

SP5 Juan A. Torres.

III ALPHA FIELD Soil Samples. 11 June 85

Activities Region II. Bg = 450 cts/300 sec = 1.5 cts/sec , MDA = 24.837 pCi (55.14 dpm)

...ple # (...ght cm)	Gross CTS	CPS	Corrected CTS	cpm	dpm	Activity pCi	Spec. Act. pCi/gr.		MDA = 8.3 ...
...2	577	1.923	0.423	25.38	168.2	75.761	0.3030		
...1	507	1.69	0.19	11.4	75.55	34.03	0.19001		
1.0	473	1.58	0.08	4.8	31.8	< MDA	—		
...9	554	1.847	0.347	20.8	137.8	62.1	0.2050		
5.2	632	2.11	0.61	36.4	241.2	108.7	0.5484		
...8	617	2.06	0.56	33.4	221.3	99.7	0.3563		
...0.6	504	1.68	0.18	10.8	71.4	32.2	0.14597		
...4.1	502	1.67	0.17	10.4	68.92	31.04	0.1093		
4 *	1490	4.97	3.47	208	1378.4	624.5	2.919	*	
...	642	2.14	0.64	38.4	254.5	114.63	0.5384		
8.9	544	1.81	0.31	18.8	124.6	56.12	0.2452		
...1	512	1.71	0.21	12.4	82.17	37.02	0.123		
9.7	459	1.53	0.03	1.8	< MDA	—	—		
...4.1	549	1.83	0.33	19.8	131.2	59.10	0.2080		
...5	519	1.73	0.23	13.8	91.45	41.19	0.2112		
3.8	492	1.64	0.14	8.4	55.67	25.1	0.1051		
...5	491	1.64	0.14	8.41	55.67	25.1	0.170		
3.1	455	1.52	0.02	1.2	< MDA	—	—		
3.9	469	1.56	0.06	3.6	< MDA	—	—		
...9	519	1.73	0.23	13.8	91.45	41.2	0.0598		
3.8 *	925	3.083	1.583	95	629.6	283.6	0.3839	*	
...	712	2.37	0.87	52.2	345.9	155.82	0.219	*	
3.8	736	2.45	0.95	57	377.7	170.15	0.223		
4	615	2.05	0.55	33	218.7	98.51	0.1361		
1.6	623	2.08	0.58	34.8	230.6	103.88	0.12799		
...0	566	1.89	0.39	23.4	155.1	69.85	0.082		
...7.6	596	1.99	0.49	29.4	194.8	87.76	0.1158		
16.6	702	2.34	0.84	50.4	333.99	150.45	0.1842		
37	573	1.91	0.41	24.6	163.02	73.43	0.107		
...8...	802	2.673	1.173	70.4	466.5	210.15	0.277	*	
74	658	2.193	0.693	41.6	275.7	124.18	0.184		
...8.9	639	2.13	0.63	37.8	250.5	112.84	0.1687		
...0	755	2.52	1.02	61.2	405.6	182.7	0.3045		

SPS Juan A. Torres

ALPHA FIELD SOIL SAMPLES — 11 June 85

Activities Region # II cont' — Bg = 450 cts / 300 sec = 1.5 cts/sec — MDA = 56.4 dpm, 8.3 cpm, 24.837 pCi/g

PLE # / ight	Gross cts	cps	corrected cps	cpm	dpm	Activity pCi	Spec ACT pCi/gr.	
8								
7	497	1.66	0.16	9.6	63.6	28.7	0.042	
9								
1.7	754	2.513	1.013	60.8	402.9	181.5	0.264	
0								
43	516	1.72	0.22	13.2	87.48	39.40	0.0613	
1								
8 *	819	2.73	1.23	73.8	489.1	220.3	0.3298	*
2								
3	795	2.65	1.15	69	457.3	205.97	0.289	
3								
5.4	664	2.213	0.713	42.8	283.6	127.76	0.2076	
1								
16.4	664	2.213	0.713	42.8	283.6	127.76	0.1835	
5								
49	793	2.643	1.143	68.58	454.5	204.72	0.2733	
6								
38.6 *	1294	4.313	2.813	168.8	1118.62	503.88	0.682	*
7								
4	695	2.32	0.82	49.2	326.04	146.87	0.2675	
8								
84	800	2.667	1.167	70.02	464.01	209.0	0.2659	
9								
70	810	2.7	1.2	72	477.14	214.9	0.2791	

* showed some Cs-137 peak in the multi channel analyzer. JAT

spc		1	1P	2	2P	3	3P	4	4P
7		7037	243 58	504	647 23				
8		7285	229 58	502	653 26				
9	cs	9113	682 92	1490	682 92				
10		7070	241 62	642	656 29				
18		6579	246 53	455	644 26				
11		7264	246 58	544	623 30				
12		7273	232 70	512	626 26				
13		7206	243 81	459	617 24				
14		7472	232 67	549	629 30				
15		7044	238 66	519	623 35				
16		7178	238 67	492	647 25				
1		6827	243 53	491	688 25				
19		6506	243 57	469	659 21				
20		7107	238 60	519	647 25				
21	cs	9977	241 126	905	638 43	3.38	1160 21		
23	cs	9031	232 102	712	623 39				
24		8665	238 118	736	667 36				
27		7366	246 72	615	664 35				
28		7529	238 82	623	626 32				
29		7109	243 66	566	620 29				
30		7288	235 65	596	679 31				
31		7986	238 77	702	703 32				
32		7275	238 67	573	617 28				
	cs	9486	235 115	802	662 44				
34		8008	241 87	658	667 32				
35		7712	235 91	639	688 34				
36		7598	235 85	755	656 38				
38		7167	238 74	497	629 26				
39		8188	238 96	754	667 41				
40		7339	232 79	516	647 26				
41	cs	8794	238 120	819	670 42				
4		10028	235 127	795	629 41				
43		8620	229 95	664	700 30				
44		8170	229 86	664	673 37				
45		9936	243 121	793	650 37				

mple	1	1P	2	2P	3	3P	4	4P
46 CS-	11382	243 115	1294	664 65				
F7	8458	241 90	695	623 34				
48	9463	241 123	800	664 38				
:9	9135	235 46	810	670 38				
		Bldg 2281						
'g LAB	6093	238 50	444	673 22	292	1201 14	277	1275 13
PHA LAB	6182	258 42	433	617 24	284	1148 14	237	1364 14
HEI LAB	6065	285 46	436	653 21	305	1124 14	223	1343 12
liAL LAB	6193	238 50	419	647 23	292	1201 15	226	1376 12
on LAB	6178	241 47	465	620 24	291	1171 15	206	1361 11
	6005	229 40	401	682 23	271	1124 16	206	1278 14

11 June 85

10 June 85

ROI [1]	229	TO	512 1747	CHN
ROI [2]	131 617	TO	161 706	
ROI [3]	300 1118	TO	336 1225	
ROI [4]	353 1275	TO	391 1388	

HOT cell

← CAVITY SPECTRUM → | ← CS-137 → | ← CO-60 →

	1	1P	2	2P	3	3P	4	4P
0-Cs min	622309	662 14632	250311	662 14632	47946	1168 2193	47946	1332 1816
ground ins	6244	232 44	450	664 21	309	1204 16	209	1385 12
mple #1 HOT Cell ins	35131	1192 Co-60 264	2115	697 93	5566	1192 264	4608	1352 217
mple #2 in HOT Cell ins	12085	235 67	765	676 38	Co-60 1417	1174 66	1154	1352 56
mple #3 in HOT Cell ins	29376	1201 Co- 230	1784	641 73	4562	1201 230	3579	1352 173
mple #4 in HOT Cell ins	119656	1198 Co 1023	7036	664 276	20912	1198 1023	17694	1358 866
		ALPHA FIELD						
1 From Field ins	7397	238 60	577	641 29	—	—	—	—
2	6595	238 49	507	632 25	—	—	—	—
3	6525	243 54	473	635 23	—	—	—	—
4	7326	235 67	554	647 34	—	—	—	—
5	7577	241 88	632	685 32				
6	7382	238 68	617	673 32				

Survey Number: 85 134

RECORD OF HEALTH PHYSICS SURVEY
(OCSR 385-2)

Date Started: 7 June 85

Date Completed: 13 June 85

Survey of: Soil Samples from USAMLS ALPHA Field, 1st St Ft. McCl.

Surveyor: SP5 Juan A. Torres Number of Samples: 45

Type of Survey: ___Area Wipe Test, ___Instrument Survey, ___Source Leak Test;

Environmental Sample: ___Air, ___Water, ✓Soil.

Portable Instrument Data: ___Alpha Instrument, ___Beta-Gamma Instrument;

Model: _____ Serial: _____ Surveyor: _____

Laboratory Instrument Data:

Beta: Model: _____, SN: _____, Eff: ___%, Volts: _____

Beta-Gamma: Model: _____, SN: _____, Eff: ___%, Volts: _____

Gamma: _____, SN: _____, Eff: ___%, Volts: _____

Alpha: SAC 4, SN: 533, Eff: U-235 82.25%, Volts: —

Counted by: SP5 Torres / SP5 Barnes USAR. Reviewer's Init: _____

Action: ___None, ___On Back of Sheet, ___See Attached Sheets

Ft McCl Fm 1560-R
(8 Aug 80)

1

EFFICIENCY = 82.25% 2π ≈ 41.12 % π

SPS Torrel

Area DIE #	Plate Wt	Wt Plate + Sample	Sample Net Wt.	Gross cpm	NET cpm	NET DPM	Activity pCi	Specific Activity pCi/gr.
1	2.15	6.55	4.40	$\frac{20}{5}=4.$	3.6	8.75	3.943	0.896
2	2.2	9.65	7.45	$\frac{12}{5}=2.4$	2.0	4.864	2.19	0.294
3	2.2	7.5	5.3	$\frac{7}{5}=1.4$	1.0	2.432	1.095	0.206
4	2.2	7.85	5.65	$\frac{9}{5}=1.8$	1.4	3.4	1.533	0.271
5	2.2	5.7	3.5	$\frac{12}{5}=2.4$	2.0	4.864	2.19	0.625
6	2.3	5.25	2.95	$\frac{5}{5}=1.0$	0.6	1.46	0.657	0.222
7	2.2	7.6	5.4	$\frac{8}{5}=1.6$	1.2	2.92	0.1314	0.243
8	2.1	5.1	3.0	$\frac{22}{5}/\frac{26}{10}=2.6$	2.2	4.84	2.18	0.756
9	2.4	5.4	3.0	$\frac{22}{5}/\frac{23}{10}=2.3$	1.9	4.62	2.08	0.643
10	2.35	6.75	4.40	$\frac{32}{10}=3.2$	2.8	7.84	3.531	0.802
11	2.2	5.00	2.8	$\frac{28}{10}=2.8$	2.4	5.84	2.63	0.938
12	2.3	6.4	4.1	$\frac{29}{10}=2.9$	2.5	6.08	2.74	0.667
	2.4	6.0	3.6	$\frac{31}{10}=3.1$	2.7	7.29	3.283	0.912
14	2.2	5.7	3.5	$\frac{27}{10}=2.7$	2.3	5.6	2.519	0.719
15	2.4	6.4	4.0	$\frac{19}{10}=1.9$	1.5	3.65	1.643	0.041
16	2.2	7.4	5.2	$\frac{17}{10}=1.7$	1.3	3.16	1.424	0.273
17	2.2	6.0	3.8	$\frac{23}{10}=2.3$	1.9	4.62	2.081	0.547
18	2.2	6.7	4.5	$\frac{17}{10}=1.7$	1.3	3.14	1.424	0.316
19	2.15	9.55	7.4	$\frac{17}{10}=1.7$	1.3	3.14	1.424	0.192
20	2.1	7.1	5.0	$\frac{26}{10}=2.6$	1.2	2.92	1.314	0.262
21	2.1	6.2	4.1	$\frac{30}{10}=3.0$	2.6	6.32	2.848	0.694
~~22~~	~~2.2~~	—	.	—	—	—	—	—
23	2.25	7.15	4.90	$\frac{40}{10}=4.0$	3.6	12.96	5.837	1.191
24	2.2	6.65	4.45	$\frac{27}{10}=2.7$	2.3	5.6	2.52	0.566
~~25~~	~~2.3~~	—		—	—	—	—	—
~~26~~	~~2.2~~	—			—	—	—	—
27	2.3	7.3	5.0	$\frac{8}{10}=8.0$	7.6	18.48	8.325	1.665
28	2.2	6.8	4.6	$\frac{19}{10}=1.9$	1.5	3.65	1.643	0.357
29	2.2	8.1	5.9	$\frac{10}{10}=1.0$	0.6	1.46	0.657	0.111
30	2.05	6.8	4.75	$\frac{28}{10}=2.8$	2.2	5.35	2.409	0.507
31	2.2	6.7	4.5	$\frac{25}{10}=2.5$	2.1	5.11	2.3	0.511
32	2.15	6.95	4.8	$\frac{20}{10}=2.0$	1.6	3.89	1.752	0.365
	2.1	8.00	5.9	$\frac{24}{10}=2.4$	2.0	4.86	2.19	0.371
34	2.15	7.4	5.25	$\frac{23}{10}=2.3$	1.9	4.62	2.081	0.396
35	2.2	7.35	5.15	$\frac{19}{10}=1.9$	1.5	3.65	1.643	0.319

Samples from ALPHA Field counted For ALPHA contamination 12 June 05
Continuation:

SPS Tonnes

mple No.	Plate wt.	wt plate + sample	sample NET wt	Gross cpm	NET cpm	NET DPM	ACTIVITY p.c.i	Specific Activity p.c.i/gm
36	2.2	7.3	5.1	$\frac{13}{10} = 1.3$	0.9	2.189	0.985	0.193
~~37~~	~~2~~							
38	2.2	8.15	5.95	$\frac{17}{10} = 1.7$	1.3	3.16	1.424	0.239
39	2.5	7.4	4.9	$\frac{19}{10} = 1.9$	1.5	3.65	1.643	0.335
40	2.2	7.4	5.2	$\frac{23}{10} = 2.3$	1.9	4.62	2.081	0.40
41	2.3	8.25	5.95	$\frac{23}{10} = 2.3$	1.9	4.62	2.081	0.349
42	2.2	7.8	5.6	$\frac{26}{10} = 2.6$	2.2	5.35	2.409	0.43
43	2.4	8.05	5.65	$\frac{28}{10} = 2.8$	2.4	5.84	2.63	0.465
44	2.5	7.95	5.45	$\frac{10}{10} = 1.0$	0.6	1.459	0.657	0.12
45	2.45	7.45	5.00	$\frac{30}{10} = 3.0$	2.6	6.32	2.874	0.574
46	2.3	8.0	5.7	$\frac{31}{10} = 3.1$	2.9	7.05	3.176	0.557
47	2.35	7.0	4.65	$\frac{24}{10} = 2.4$	2.0	4.86	2.19	0.471
48	2.4	8.0	5.6	$\frac{16}{10} = 1.6$	1.2	2.92	1.314	0.243
49	2.2	8.05	5.85	$\frac{24}{10} = 2.4$	2.0	4.864	2.19	0.374
50								

4th St
T-1271
T-1272
3rd RD

N
47th ST.