

J-6  
MS-16

**SmithKline Beecham Pharmaceuticals d/b/a GlaxoSmithKline**  
**License 37-00282-04 03005986**  
**Upper Merion Site at 709 Swedeland Road, King of Prussia 19406**  
**Attention Gail Martin UE 0393**  
**610-270-4113**

**Information of the release of waste storage freezer trailer (Upper Merion site outside of Building 35).**

On 4/11/2005 a survey for release for unrestricted use was performed on the waste storage freezer trailer. The meter and swipe survey was performed by Ron Lobb. The survey was performed to be able to remove the trailer off the site.

**Trailer History**

The 52' by 8' freezer trailer was previously used by radiation safety for short term decay-in-storage of radioactive animal carcasses. The radionuclides in the carcasses previously stored in the freezer trailer were <sup>51</sup>Cr, <sup>86</sup>Rb, <sup>99m</sup>Tc, <sup>95</sup>Nb, <sup>103</sup>Ru, <sup>123</sup>I, <sup>125</sup>I, and <sup>141</sup>Ce. The last carcasses stored in the freezer trailer were released in January 1993. The freezer trailer was kept operational for the possibility of more dog studies using short half-life radionuclides, but this did not occur. The freezer unit is currently inoperable and cost does not warrant repair.

**Swipe and meter results of trailer**

Meter survey did not exceed background. Background for the Ludlum 12/43-68 is ~ 250cpm and ~ 150cpm for the Ludlum 3/44-3.

Meter	Serial #	Probe	Calibration Due.
Ludlum 12	81563	43-68	7/3/05
Ludlum 3	47509	44-3	7/3/05

Day of use source check of both meters indicates that they are within 10% of the calibrated efficiency. **Copies of the current meter calibration records are attached**

Swipes (Whatman # 1 filters) were counted on the Beckman LS6000. The highest net count in all the channels was swipe #111 with 24.53 net dpm

Counter	Serial #	Calibration Due
Beckman Ls6000	7060918	8/5/05

- Background cpm for channel 1 = 20
- Background cpm for channel 2 = 12
- Background cpm for channel 3 = 14

**Swipe were counted on user #8 with background subtracted**  
Channel 1= 0-400

RECEIVED  
REGION 1  
MAY 31 AM 1:14 '05

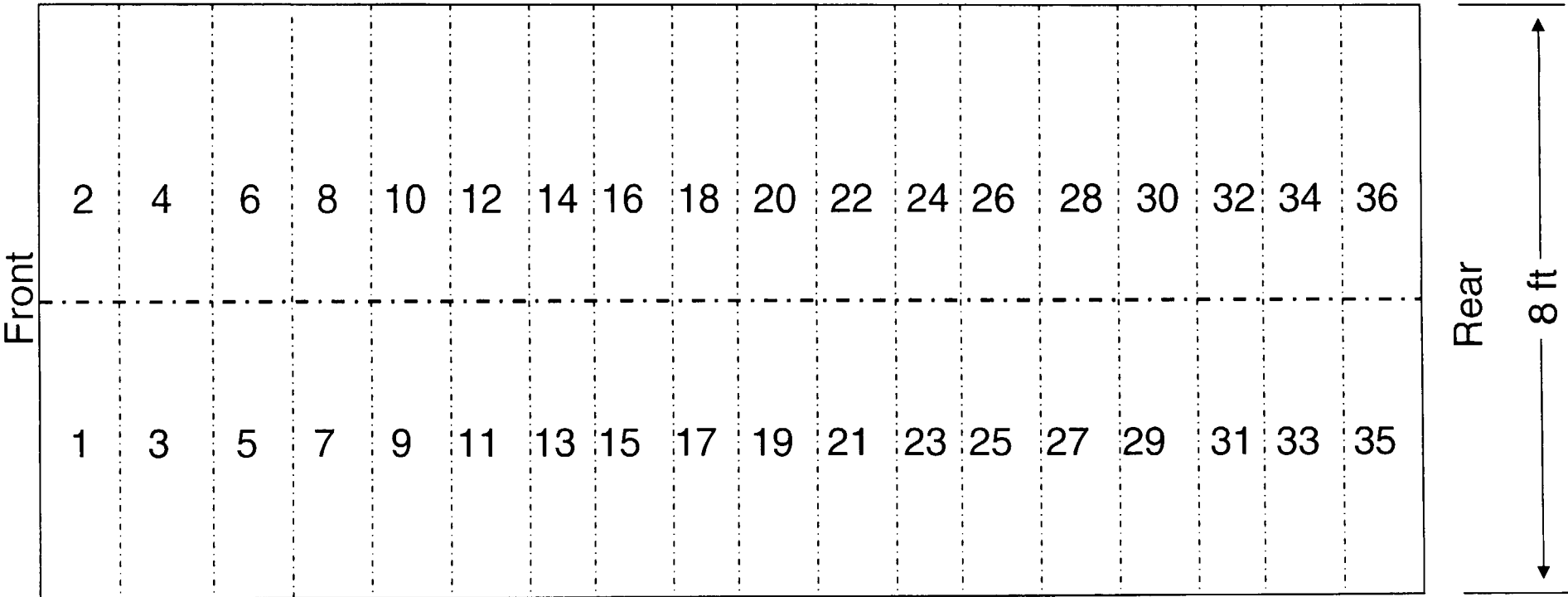
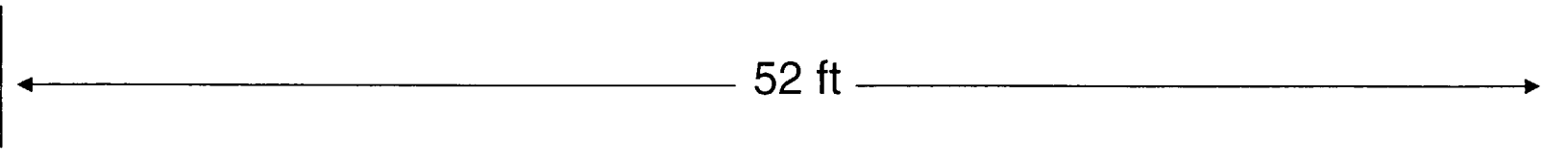
136908  
NMSS/RGNI MATERIALS-002

Channel 2= 400-670  
Channel 3= 670-1000

**Copies of the current calibration records and background counts are attached.**

# **Survey Maps and Results**

Inside Freezer Trailer  
Bottom



Inside Freezer Trailer  
Left Wall

52 ft

Top

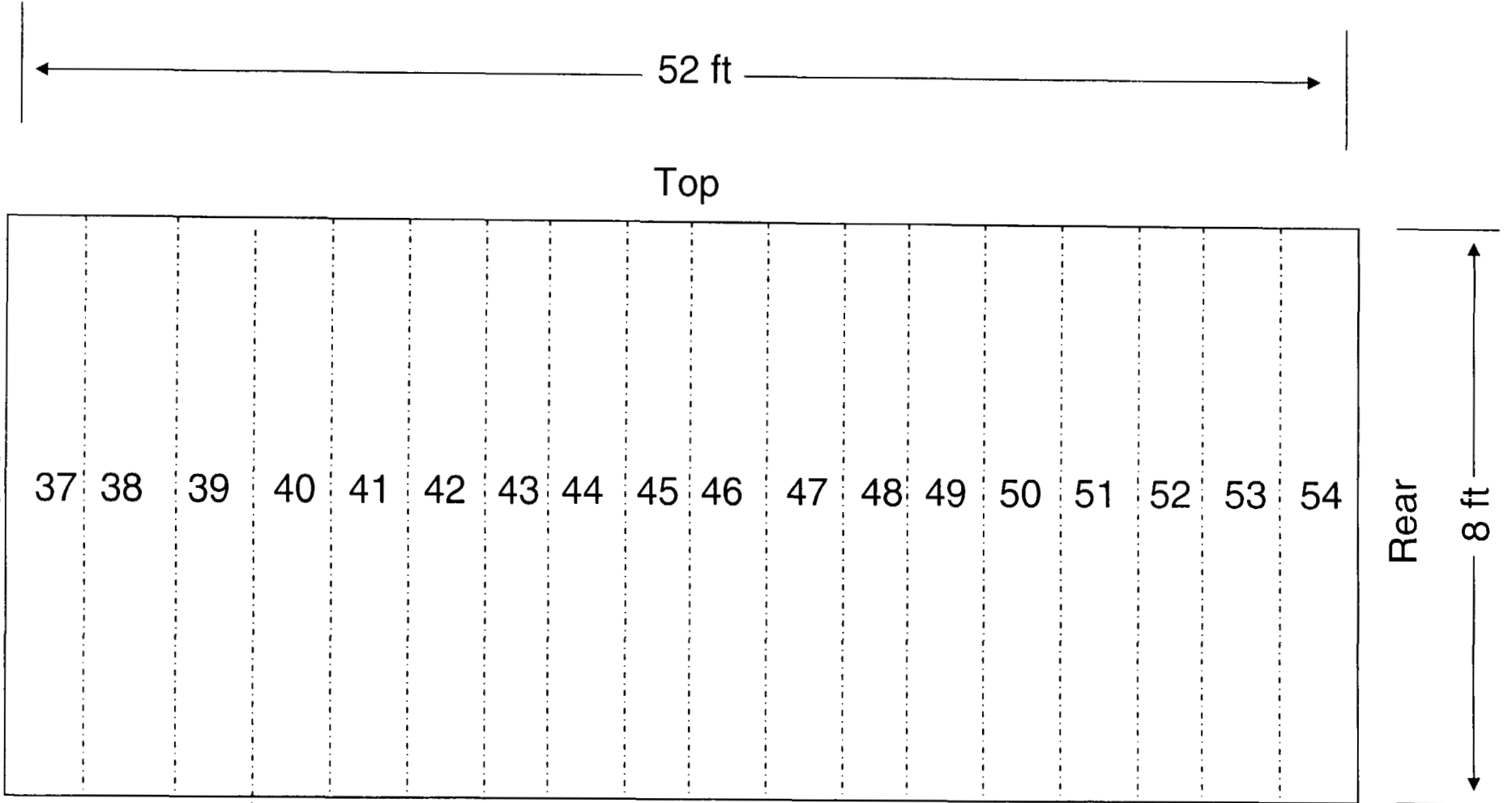
Front

37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54

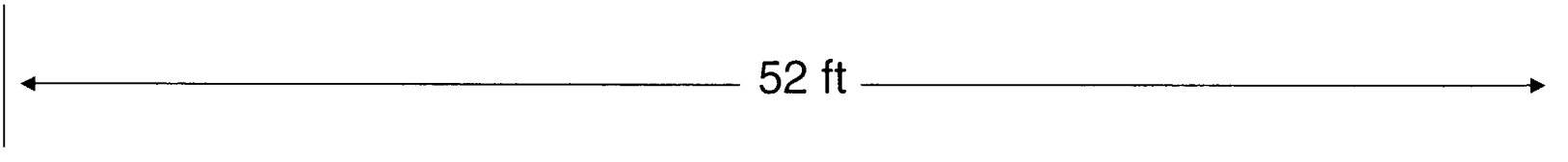
Rear

8 ft

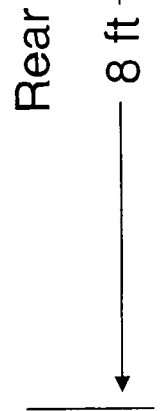
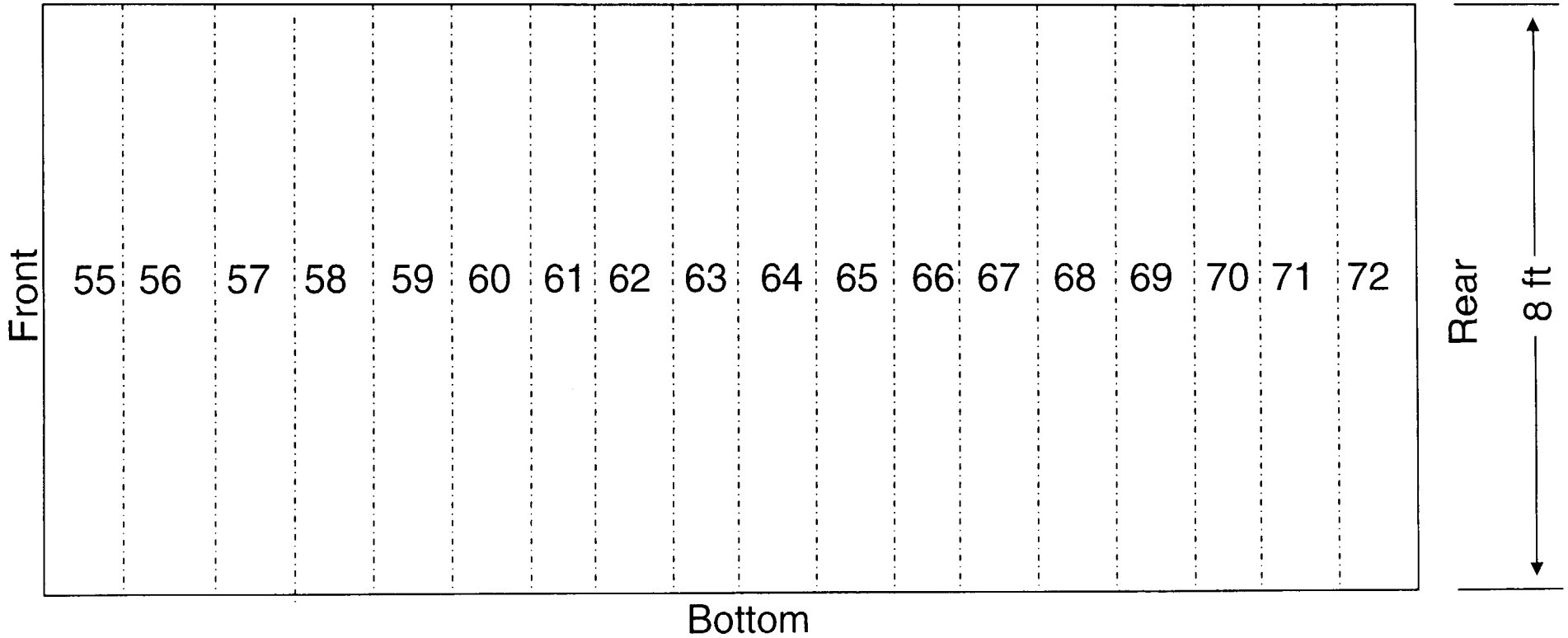
Bottom



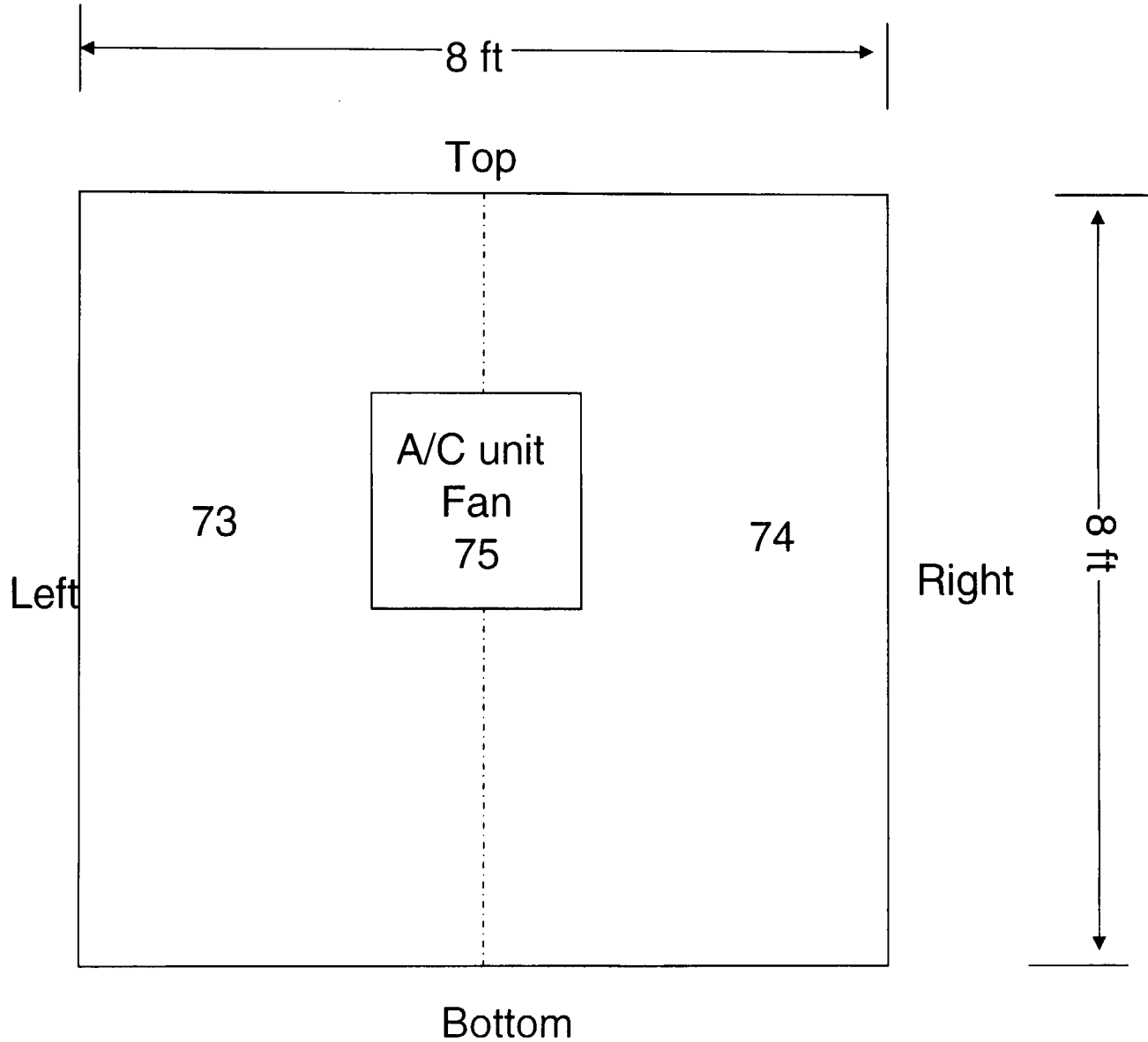
Inside Trailer  
Right Wall



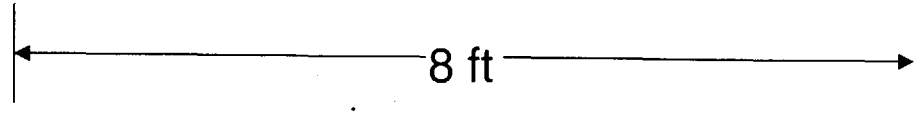
Top



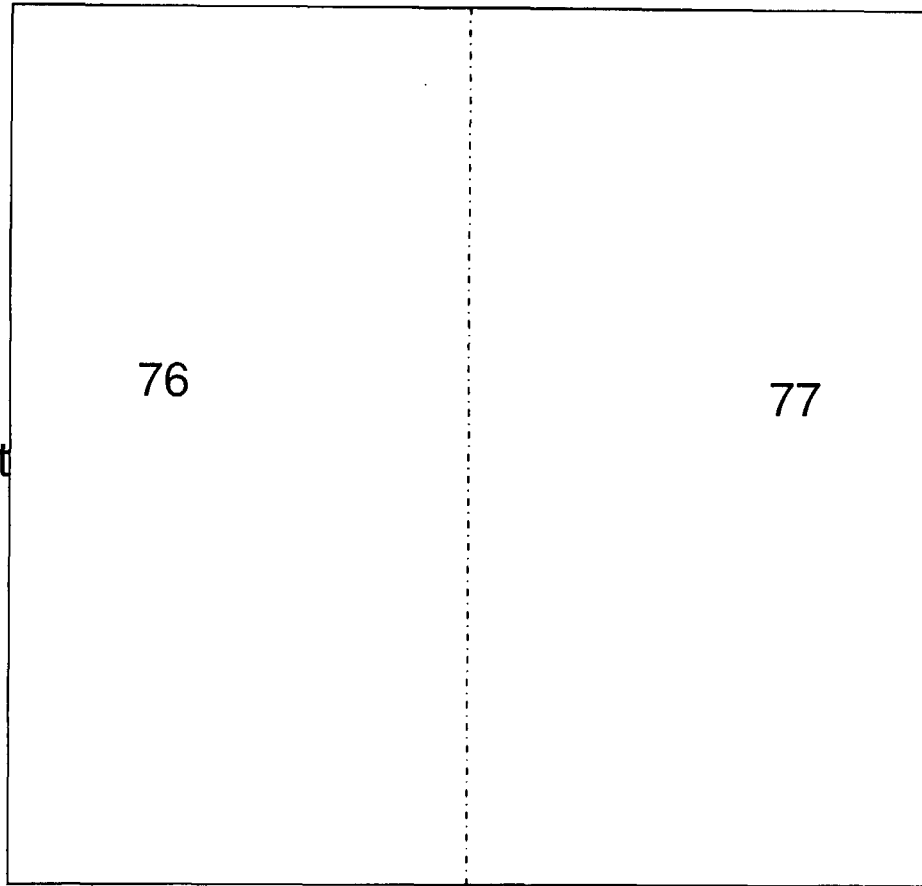
Inside trailer  
Front Wall



Inside trailer  
Doors



Top



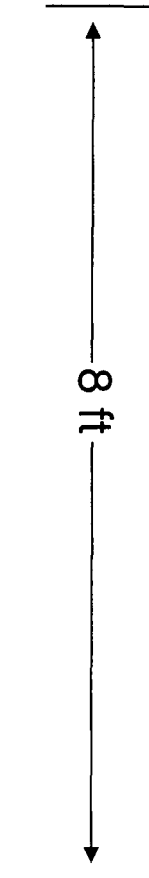
Left

76

77

Right

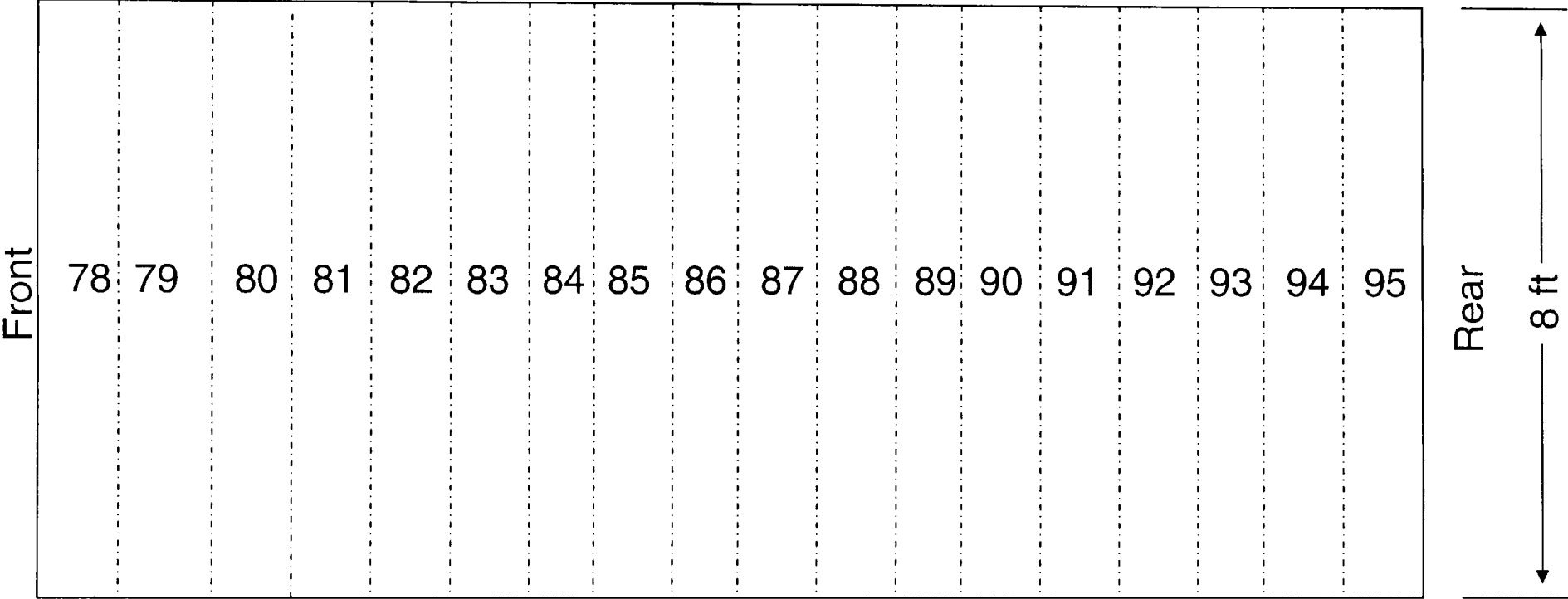
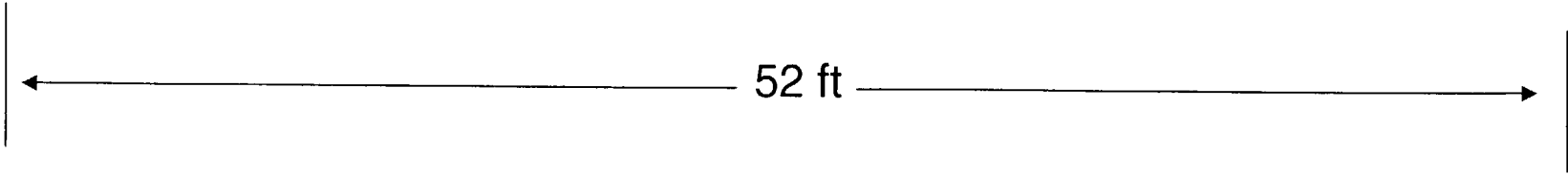
Bottom



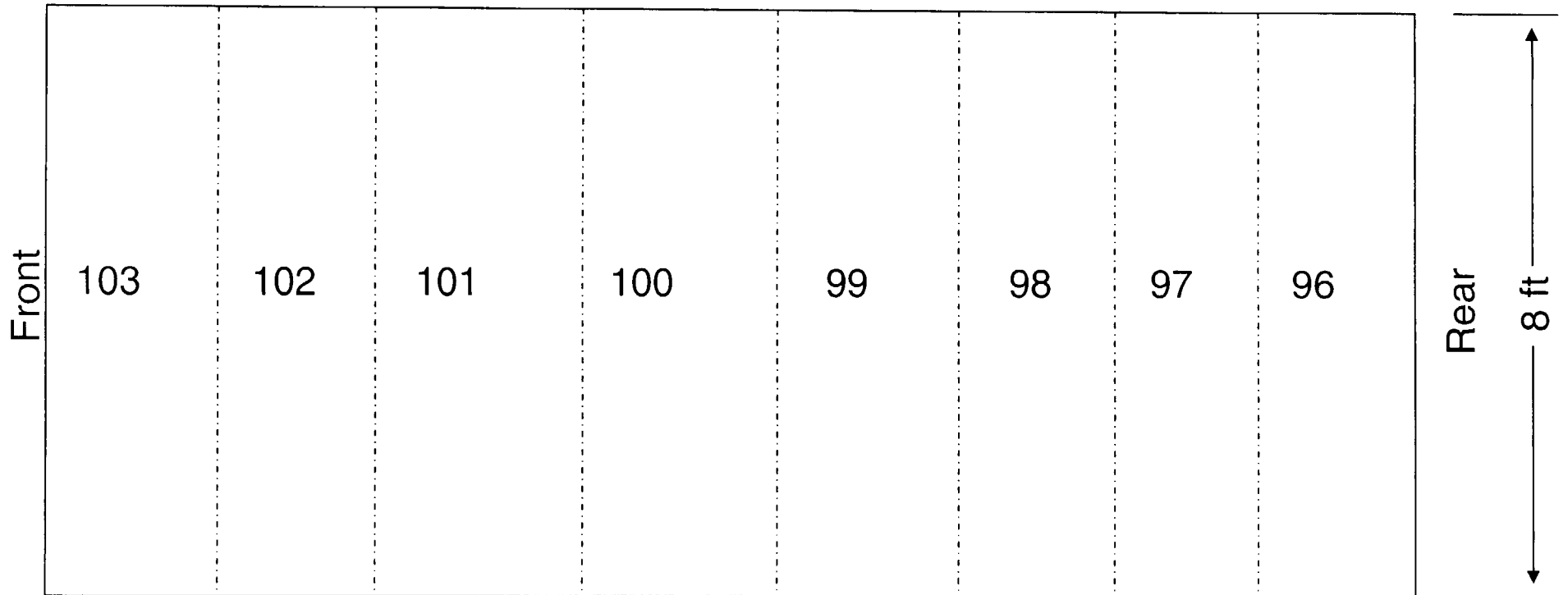
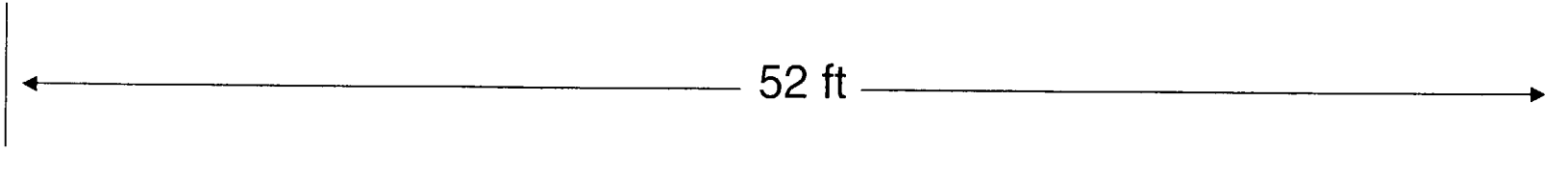
8 ft



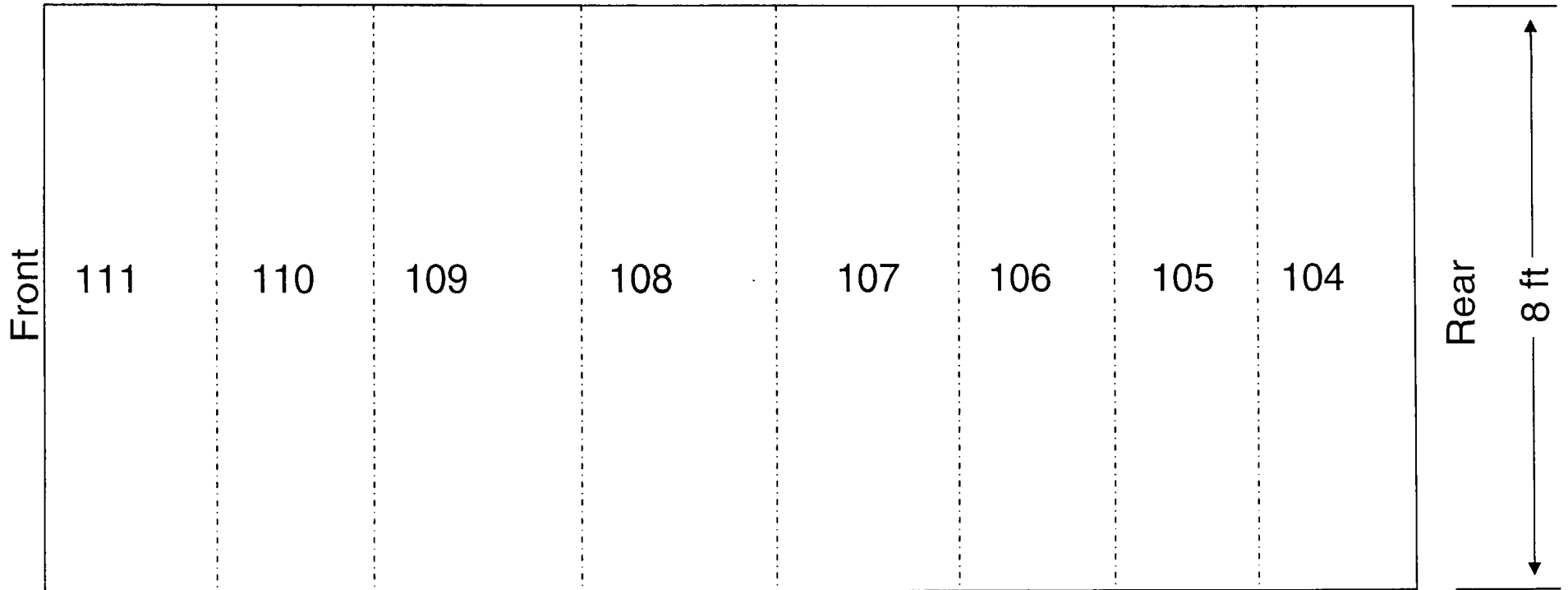
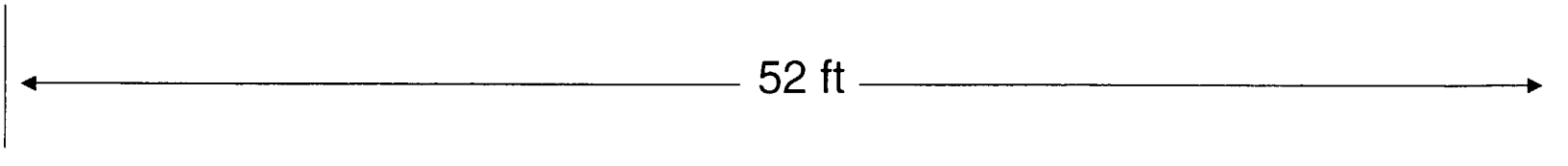
Inside freezer . railer  
Ceiling



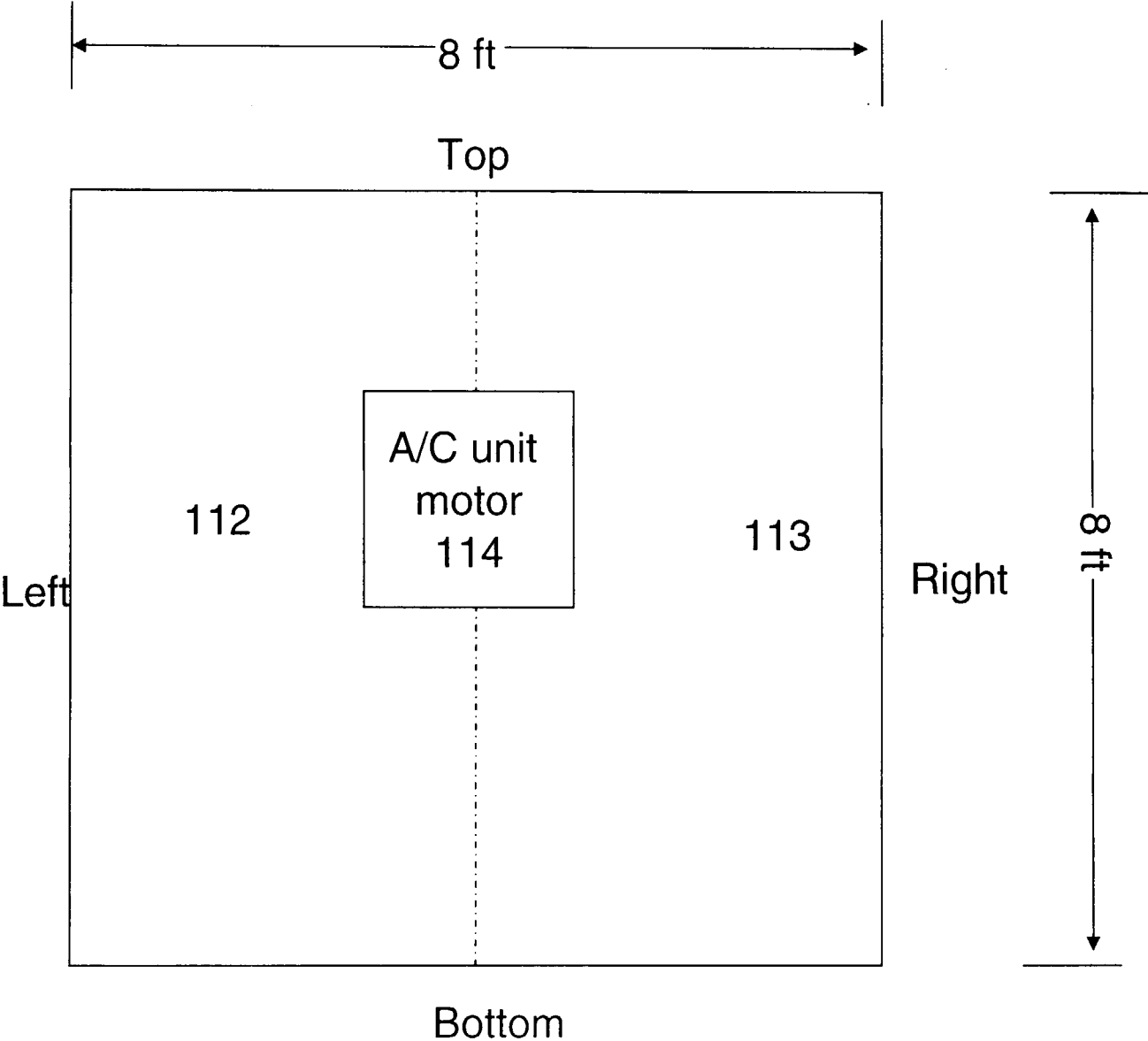
Outside Freezer Trailer  
Bottom



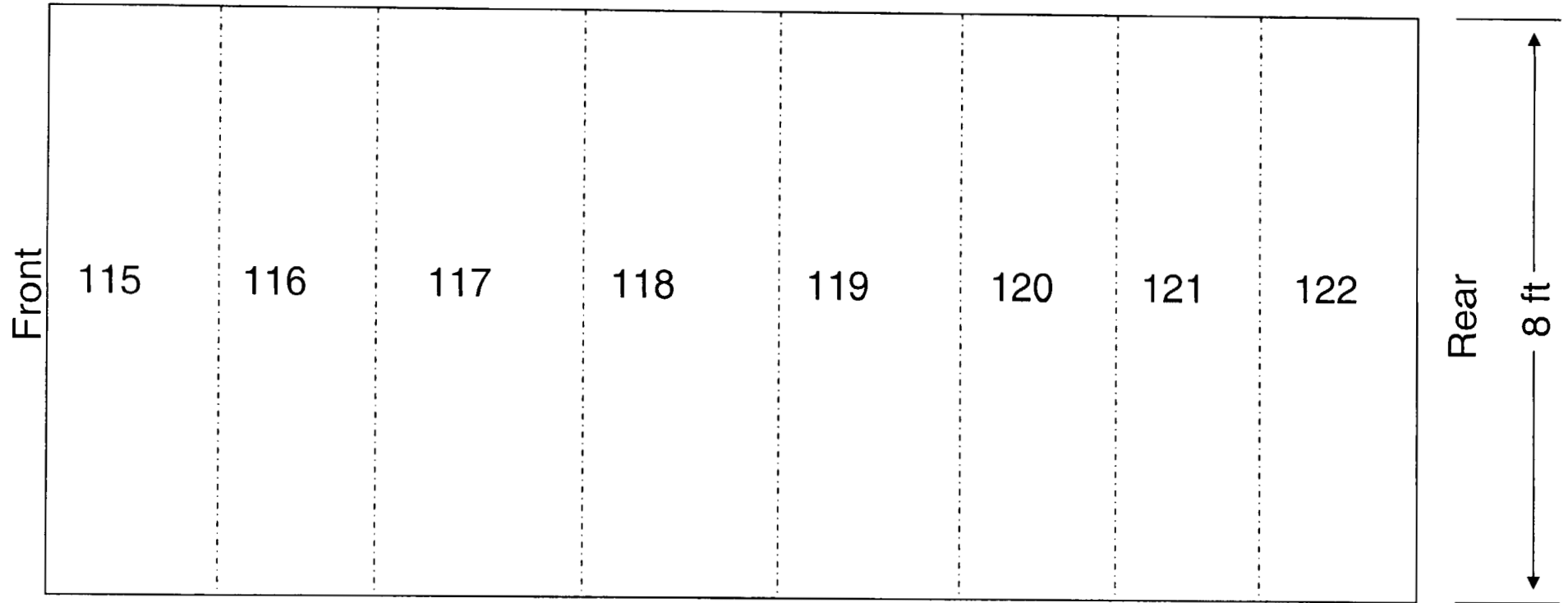
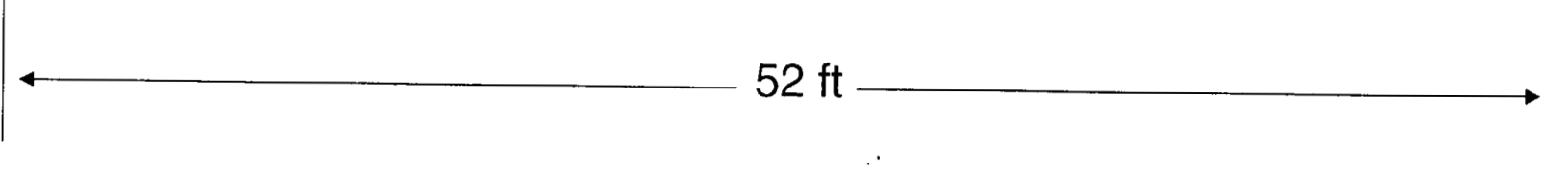
Outside Freezer Trailer  
Left Side



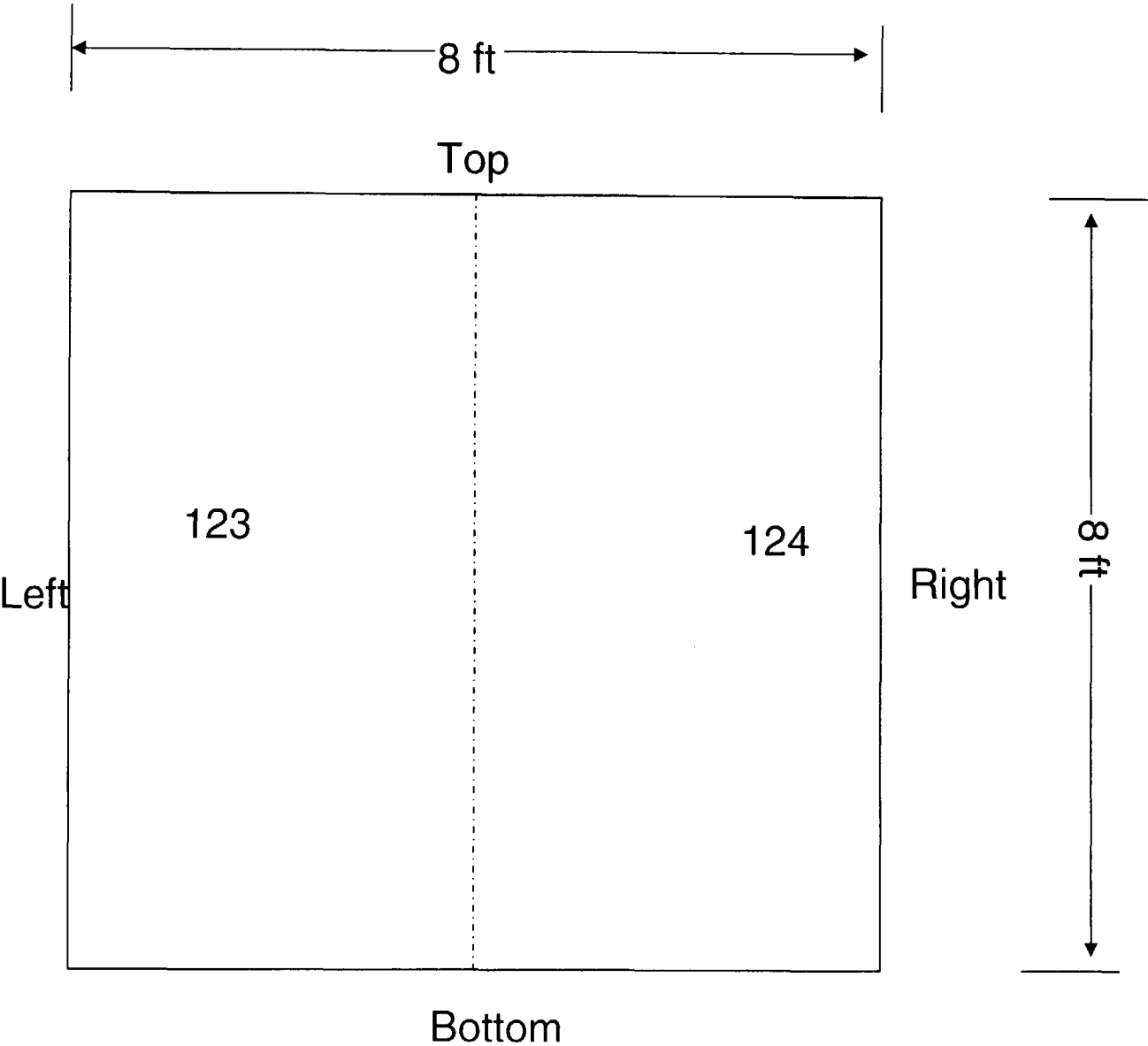
Outside Freezer Trailer  
Front Wall



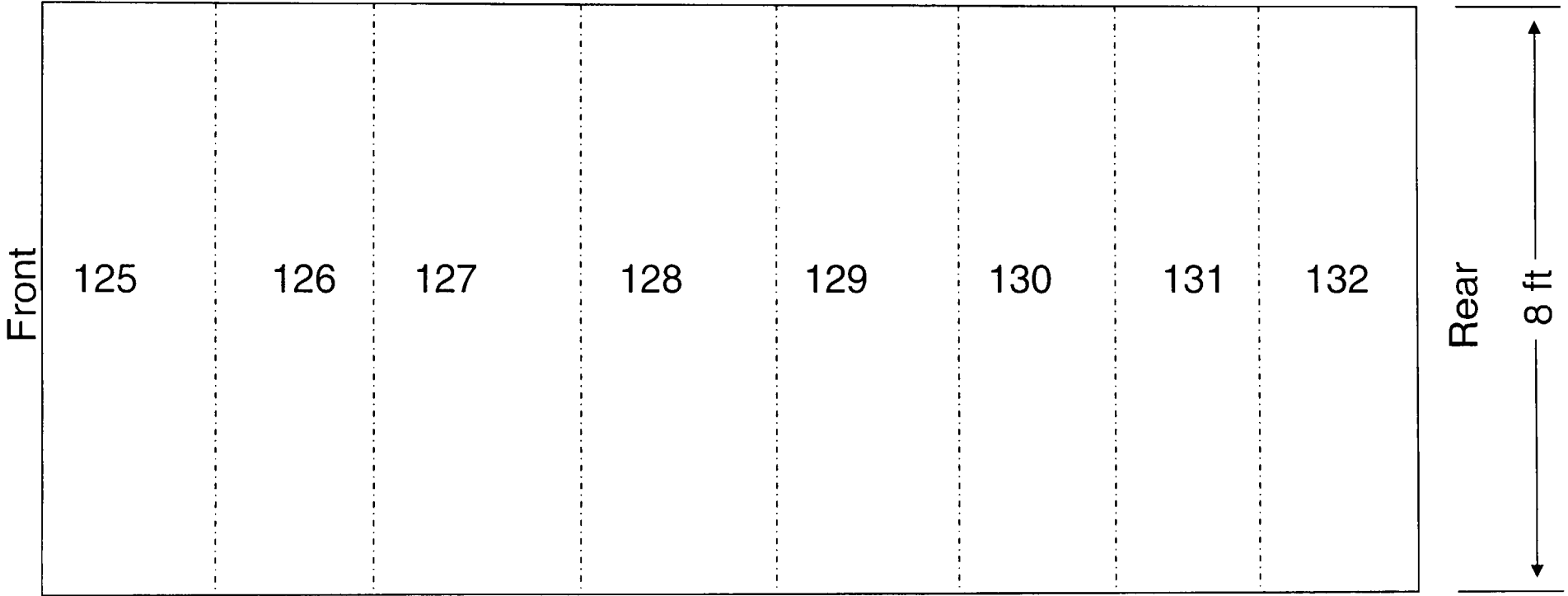
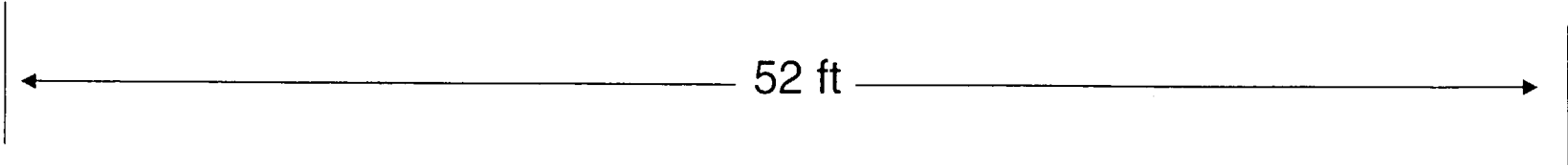
Outside Freezer Trailer  
Right Side



Outside Freezer Trailer  
Doors



Outside Freezer Trailer  
Top



Beckman 6000 user 8

Swipe Results for the Release of the  
Waste Freezer Trailer

On 4/11/2005

channels

channels

Swipe #	0-400	400-670	670-1000
1	10.18	-0.32	0.61
2	1.31	-0.02	0.00
3	19.00	-0.78	1.80
4	6.16	-0.07	0.00
5	-4.44	8.03	-0.08
6	4.12	5.05	-0.05
7	17.21	3.36	0.57
8	-0.99	4.18	2.96
9	1.32	0.02	0.00
10	-2.46	5.15	-0.05
11	10.91	7.67	-0.07
12	-1.08	2.42	-0.02
13	16.60	0.88	-0.01
14	3.64	11.79	-0.11
15	-5.13	10.58	-0.10
16	0.00	0.00	0.00
17	-0.50	1.08	-0.01
18	0.00	0.00	0.00
19	-1.10	2.42	-0.02
20	0.80	1.06	-0.01
21	-4.53	11.12	6.49
22	-5.11	13.29	-0.12
23	0.11	-0.94	3.01
24	1.36	-0.02	0.00
25	16.81	0.68	0.59
26	-2.43	5.14	-0.05
27	-7.26	15.89	-0.14
28	1.27	-0.01	0.00
29	16.62	-0.20	0.00
30	-4.18	9.15	-0.08
31	-3.71	7.84	-0.07
32	-1.74	3.77	-0.03
33	-1.90	1.56	11.35
34	-3.63	7.28	-0.07
35	0.00	0.00	0.00
36	-1.12	2.43	-0.02
37	-2.92	6.45	-0.06
38	4.55	3.69	-0.03
39	3.69	-0.04	0.00
40	7.55	2.32	-0.02
41	-0.48	1.07	-0.01
42	-3.51	10.48	-0.09
43	-1.71	3.77	-0.03
44	6.46	10.35	-0.09
45	19.53	3.52	-0.03
46	-0.37	0.14	2.99

Swipe #	0-400	400-670	670-1000
49	3.70	-0.04	0.00
50	-2.91	6.45	-0.06
51	0.02	-0.19	0.60
52	4.67	2.01	5.37
53	0.83	0.50	1.79
54	1.26	-0.01	0.00
55	-1.16	2.44	-0.02
56	-2.32	5.11	-0.04
57	0.00	0.00	0.00
58	-1.69	3.76	-0.03
59	0.00	0.00	0.00
60	-4.66	10.47	-0.09
61	-0.46	0.89	0.59
62	0.80	6.39	-0.05
63	1.34	-0.95	3.00
64	-4.68	10.47	-0.09
65	3.77	-0.04	0.00
66	0.00	0.00	0.00
67	3.83	5.02	0.04
68	0.00	0.00	0.00
69	-1.66	3.75	-0.03
70	-1.69	3.76	-0.03
71	8.92	4.04	2.96
72	0.00	0.00	0.00
73	10.80	3.86	7.75
74	0.00	0.00	0.00
75	3.33	0.84	0.59
76	-0.56	1.08	-0.01
77	0.02	-0.19	0.60
78	15.68	-0.18	0.00
79	20.12	0.84	-0.01
80	16.10	-0.19	0.00
81	11.72	-1.83	5.42
82	11.09	-0.13	0.00
83	0.02	-0.19	0.60
84	15.57	-0.18	0.00
85	6.03	-0.07	0.00
86	-3.99	9.11	-0.08
87	6.04	-0.62	1.80
88	0.00	0.00	0.00
89	-2.78	6.42	-0.05
90	0.02	-0.19	0.60
91	0.00	0.00	0.00
92	-3.37	7.76	-0.07
93	-6.74	14.49	4.07
94	-2.75	5.87	1.75



47	13.73	-0.16	0.00
48	-2.79	5.52	2.94

95	0.00	0.00	0.00
96	-2.89	6.45	-0.06

Swipe Results for the Release of the  
Waste Freezer Trailer

On 4/11/2005

Swipe #	channels		
	0-400	400-670	670-1000
97	0.00	0.00	0.00
98	-0.49	1.08	-0.01
99	-1.74	3.78	-0.03
100	0.00	0.00	0.00
101	-0.19	3.81	-0.04
102	0.00	0.00	0.00
103	-0.66	1.12	-0.01
104	-2.63	5.00	0.56
105	0.03	-0.19	0.61
106	0.00	0.00	0.00
107	-0.60	1.10	-0.01
108	0.02	-0.19	0.61
109	-0.59	1.10	-0.01
110	-1.20	2.45	-0.02
111	24.53	1.18	3.02
112	0.00	0.00	0.00
113	0.00	0.00	0.00
114	0.00	0.00	0.00

Swipe #	channels		
	0-400	400-670	670-1000
115	0.45	-3.66	11.45
116	1.37	-0.02	0.00
117	0.00	0.00	0.00
118	17.68	0.86	-0.01
119	0.11	0.96	3.04
120	16.37	3.39	0.57
121	23.52	1.96	0.59
122	2.94	2.39	-0.02
123	-1.80	6.50	-0.06
124	-1.20	2.26	0.59
125	14.55	-0.18	0.00
126	2.20	2.79	2.99
127	0.03	-0.19	0.61
128	0.19	-1.68	5.42
129	-2.78	4.41	6.60
130	-1.69	3.76	-0.03
131	1.30	-0.02	0.00
132	6.19	-0.07	0.00





SAM NO	PDS	TIME MIN	HR	ISO	CORRECTED CPM	ZERROR	DPM	EFF-1	EFF-2	EFF-3	RATIO	LUMEX %	ELAPSED TIME
33	XX-9	1.00	01.0	01	3.10 1.0E+00	-1.90	41.00	10.00	0.00	0.00	1.000	0.00	00.00
				140	2.00 1.0E+00	1.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	5.00 1.0E+00	1.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
34	XX-10	1.00	00.0	01	0.00 1.0E+00	-0.53	00.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	5.00 1.0E+00	7.82	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.07	0.00	0.00	0.00	0.00	1.000	0.00	00.00
35	XX-11	1.00	00.0	01	1.00 1.0E+00	0.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	0.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	1.00 1.0E+00	0.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
36	XX-12	1.00	01.0	01	0.00 1.0E+00	-1.12	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	1.00 1.0E+00	2.43	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.02	0.00	0.00	0.00	0.00	1.000	0.00	00.00
37	XX-1	1.00	01.0	01	0.00 1.0E+00	-2.92	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	4.00 1.0E+00	6.45	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
38	XX-2	1.00	00.0	01	0.00 1.0E+00	1.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	3.60	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	1.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
39	XX-3	1.00	01.0	01	0.00 1.0E+00	0.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
40	XX-4	1.00	01.0	01	0.00 1.0E+00	0.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	0.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
41	XX-5	1.00	00.0	01	0.00 1.0E+00	-2.40	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	1.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
42	XX-6	1.00	01.0	01	0.00 1.0E+00	-3.51	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	10.40	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
43	XX-7	1.00	01.0	01	0.00 1.0E+00	-1.71	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	3.70	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
44	XX-8	1.00	00.0	01	0.00 1.0E+00	6.45	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	10.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
45	XX-9	1.00	01.0	01	0.00 1.0E+00	10.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
46	XX-10	1.00	01.0	01	0.00 1.0E+00	-0.30	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	0.14	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	2.90	10.00	10.00	0.00	0.00	1.000	0.00	00.00
47	XX-11	1.00	01.0	01	0.00 1.0E+00	10.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	-0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
48	XX-12	1.00	01.0	01	0.00 1.0E+00	-2.70	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	5.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
49	XX-1	1.00	01.0	01	0.00 1.0E+00	0.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	0.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00
50	XX-2	1.00	00.0	01	0.00 1.0E+00	0.00	10.00	0.00	0.00	0.00	1.000	0.00	00.00
				140	0.00 1.0E+00	0.00	10.00	10.00	0.00	0.00	1.000	0.00	00.00
				02F	0.00 1.0E+00	0.00	0.00	0.00	0.00	0.00	1.000	0.00	00.00





SAM	NO	TOI		DPM	EFF-1	EFF-2	EFF-3	RATIO	LUMEX	ELAPSED
									%	TIME
88	88-8	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	-0.10	11.07	70.07	0.07
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
89	88-9	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
90	88-9	1.00	77.8	34	0.00	1.4E+06	-0.37	12.10	0.00	0.00
				40	0.00	1.4E+06	7.76	12.04	70.01	0.71
				140	0.00	1.4E+06	-0.07	41.37	10.16	0.00
93	88-9	1.00	77.8	34	0.00	1.4E+06	-0.74	12.04	70.01	0.71
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
94	88-10	1.00	77.8	34	0.00	1.4E+06	-0.75	12.07	70.01	0.71
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
95	88-11	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
96	88-10	1.00	77.8	34	0.00	1.4E+06	-0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	-0.06	12.01	70.03	0.74
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
97	88-1	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
98	88-2	1.00	77.8	34	0.00	1.4E+06	-0.49	12.03	70.01	0.71
				40	0.00	1.4E+06	1.00	12.16	74.90	0.73
				140	0.00	1.4E+06	-0.01	41.31	10.16	0.00
99	88-3	1.00	77.8	34	0.00	1.4E+06	-1.74	12.10	70.01	0.71
				40	0.00	1.4E+06	3.78	12.11	74.79	0.74
				140	0.00	1.4E+06	-0.03	41.31	10.16	0.00
100	88-4	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
101	88-5	1.00	77.8	34	0.00	1.4E+06	-0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
102	88-6	1.00	77.8	34	0.00	1.4E+06	-0.04	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
103	88-7	1.00	77.8	34	0.00	1.4E+06	-0.06	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
104	88-7	1.00	77.8	34	0.00	1.4E+06	-2.63	12.48	70.01	0.71
				40	0.00	1.4E+06	5.00	12.06	70.01	0.71
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
105	88-8	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
106	88-9	1.00	77.8	34	0.00	1.4E+06	-0.19	12.00	70.01	0.71
				40	0.00	1.4E+06	0.41	12.00	70.01	0.71
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
107	88-10	1.00	77.8	34	0.00	1.4E+06	0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00
108	88-11	1.00	77.8	34	0.00	1.4E+06	-0.00	41.37	10.16	0.00
				40	0.00	1.4E+06	0.00	41.37	10.16	0.00
				140	0.00	1.4E+06	0.00	41.37	10.16	0.00

SAM NO	POS	TIME MIN	R#	ISO	CORRECTED CPM	XERROR	DPM	EFF-1	EFF-2	EFF-3	RATIO	LUMEX %	ELAPSED TIME
108	XX-1	1.00	100.0	34	0.00 1.0E+06	-0.59	0.42	0.94	0.00	-0.507	0.40	177.78	
				140	0.00 902.84	1.10	17.44	70.78	0.05				
				328	0.00 1.5E+06	-0.01	4.02	20.75	87.40				
109	XX-2	1.00	90.0	34	0.00 1.0E+06	-1.20	1.16	0.91	0.00	-0.491	0.30	173.19	
				140	1.00 405.74	2.45	17.87	74.00	0.78				
				328	0.00 1.5E+06	-0.02	4.01	20.75	87.40				
110	XX-7	1.00	110.0	34	0.00 1.2E+06	24.30	00.00	0.00	0.00	10.000	0.00	177.78	
				140	1.00 1.0E+06	1.10	17.44	70.78	0.05				
				328	0.00 1.5E+06	-0.01	4.02	20.75	87.40				
111	XX-1	1.00	100.0	34	0.00 1.0E+06	0.70	00.00	0.00	0.70	0.000	0.30	177.78	
				140	1.00 1.0E+06	0.00	17.44	70.78	0.05				
				328	0.00 1.5E+06	0.00	4.02	20.75	87.40				
112	XX-5	1.00	100.0	34	0.00 1.0E+06	0.00	00.00	0.00	0.00	0.000	0.00	177.78	
				140	0.00 1.0E+06	-0.01	17.44	70.78	0.05				
				328	0.00 1.5E+06	-0.01	4.02	20.75	87.40				
113	XX-4	1.00	100.0	34	0.00 1.0E+06	0.00	00.00	0.00	0.00	0.000	0.00	177.78	
				140	0.00 1.0E+06	0.00	17.44	70.78	0.05				
				328	0.00 1.5E+06	0.00	4.02	20.75	87.40				
114	XX-7	1.00	100.0	34	0.00 1.0E+06	0.45	00.00	0.00	0.00	-0.100	0.00	177.78	
				140	0.00 1.0E+06	-3.56	17.70	71.00	0.00				
				328	0.00 1.0E+06	11.59	4.01	20.75	87.77				
115	XX-8	1.00	90.0	34	0.00 1.0E+06	1.37	00.00	0.00	0.00	-01.16	0.30	164.79	
				140	0.00 1.0E+06	-0.02	17.87	74.01	0.78				
				328	0.00 1.0E+06	0.00	4.02	20.70	80.92				
117	XX-9	1.00	120.0	34	0.00 1.0E+06	0.00	00.00	0.00	0.00	0.000	0.00	164.79	
				140	0.00 1.0E+06	0.00	17.87	74.01	0.78				
				328	0.00 1.0E+06	0.00	4.02	20.70	80.92				
118	XX-10	1.00	100.0	34	0.00 1.0E+06	17.60	00.00	0.00	0.00	00.000	0.00	167.93	
				140	0.00 1.0E+06	0.56	17.89	74.10	0.79				
				328	0.00 1.0E+06	-0.01	4.12	20.75	80.91				
119	XX-11	1.00	90.0	34	0.00 1.0E+06	0.11	00.00	0.00	0.00	-0.105	0.00	167.93	
				140	0.00 1.0E+06	-0.96	17.55	74.10	0.78				
				328	0.00 1.0E+06	3.04	4.02	20.70	80.91				
120	XX-12	1.00	100.0	34	0.00 1.0E+06	16.37	00.00	0.00	0.00	0.000	0.00	167.93	
				140	0.00 1.0E+06	3.39	17.78	74.25	0.77				
				328	0.00 1.0E+06	0.57	4.02	20.75	80.91				
121	XX-1	1.00	100.0	34	0.00 1.0E+06	23.52	00.00	0.00	0.00	12.000	0.00	167.93	
				140	1.00 01.00	1.94	17.86	70.86	0.81				
				328	0.00 1.0E+06	0.59	4.02	20.75	80.91				
122	XX-7	1.00	90.0	34	0.00 1.0E+06	2.94	00.00	0.00	0.00	1.200	0.00	167.93	
				140	0.00 1.0E+06	2.05	17.86	74.00	0.78				
				328	0.00 1.0E+06	-0.02	4.02	20.75	80.91				
123	XX-7	1.00	90.0	34	0.00 1.0E+06	0.00	00.00	0.00	0.00	0.000	0.00	167.93	
				140	0.00 1.0E+06	0.00	17.86	74.00	0.78				
				328	0.00 1.0E+06	0.00	4.02	20.75	80.91				
124	XX-1	1.00	100.0	34	0.00 1.0E+06	0.59	00.00	0.00	0.00	-0.500	0.00	167.93	
				140	0.00 1.0E+06	2.06	17.87	74.00	0.78				
				328	0.00 1.0E+06	0.59	4.01	20.70	80.78				
125	XX-1	1.00	90.0	34	0.00 1.0E+06	14.85	00.00	0.00	0.00	-00.00	0.00	167.93	
				140	0.00 1.0E+06	-0.16	18.00	74.00	0.78				
				328	0.00 1.0E+06	0.00	4.02	20.70	80.88				
126	XX-6	1.00	90.0	34	0.00 1.0E+06	2.00	00.00	0.00	0.00	0.750	0.00	167.93	
				140	0.00 1.0E+06	2.79	18.14	74.04	0.74				
				328	0.00 1.0E+06	2.09	4.01	20.70	80.86				
127	XX-1	1.00	100.0	34	0.00 1.0E+06	0.00	00.00	0.00	0.00	-0.100	0.00	167.93	
				140	0.00 1.0E+06	-0.19	17.80	70.80	0.80				
				328	0.00 1.0E+06	0.61	4.00	20.70	80.89				





# **LSC 6000 Background Counts and Auto Calibration Check**

*Belkman LS 6000*  
*Background & calibration*

ID: 3H-14C-32P

11 APR 2005 08:47

USER: 8 COMMENT:LS6000 7060918

ET TIME : 10.00  
DATA CALC : TL DPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD  
COUNT BLANK : NO IC# : NO REPLICATES : 1 RS232 : OFF  
TWO PHASE : NO AQC :YES CYCLE REPEATS : 1  
SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0  
LOW LEVEL : NO HALF LIFE CORRECTION DATE: 11 APR 2005 09:40

ISOTOPE 1: 3H ZERROR: 0.50 FACTOR:1.0000 BKG. SUB: 0  
ISOTOPE 2: 14C ZERROR: 0.00 FACTOR:1.0000 BKG. SUB: 0  
ISOTOPE 3: 32P ZERROR: 0.00 FACTOR:1.0000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:40.500 High:318.43

SAM NO	POS	TIME MIN	H#	ISO	CORRECTED CPM	ZERROR	DPM	EFF-1	EFF-2	EFF-3	RATIO	LUMEX %	ELAPSED TIME
1	11-1	10.00	56.7	3H	19.50	14.32	35.75	47.14	0.02	0.00	3.349	0.01	10.67
				14C	12.20	18.11	10.67	18.43	76.30	0.67			
				32P	13.50	17.21	15.85	4.31	23.75	84.73			

INSTRUMENT CALIBRATION: Maxi 11 APR 2005 10:30  
Calibration successful

# **Count Rate Instrument Calibration Records**

GLAXOSMITHKLINE, R&D  
CALIBRATION DATA SHEET

(Attachment 8.1)

Mfg: Ludlum Model: 12 Serial No. 81563  
Mfg: Ludlum Detector Model: 44-2 43-68 Serial No. 149285  
Mfg: Ludlum Detector Model: 44-9 Serial No. \_\_\_\_\_  
Cal. Date: 11/3/05 Cal. Due: 7/3/05  
Cal. Interval: 6 months Procedure: In accordance with GlaxoSmithKline policy

INSTRUMENT RECEIVED		OPERATING PARAMETERS	
<input checked="" type="checkbox"/> Within Tolerance +/- 10%	<input type="checkbox"/> Out of Tolerance	<input checked="" type="checkbox"/> Input Sensitivity <u>4.4</u> mv	<input checked="" type="checkbox"/> Det. Oper. Voltage <u>1800</u>
<input type="checkbox"/> 10% - 20%	<input type="checkbox"/> Requiring Repair	<input checked="" type="checkbox"/> Det. Efficiency <sup>19</sup> <u>8.7</u> %	<input checked="" type="checkbox"/> Det. Background Reading <u>250</u>
<input type="checkbox"/> New Instrument	<input checked="" type="checkbox"/> Battery Check OK	<input checked="" type="checkbox"/> Det. Efficiency <sup>32.5</sup> <u>41.4</u> %	<input checked="" type="checkbox"/> Det. Background Reading <u>250</u>
		<input type="checkbox"/> Det. Efficiency %	<input type="checkbox"/> Det. Background Reading

COMMENTS:

INSTRUMENT RANGE MULTIPLIER SETTING	INSTRUMENT REFERENCE CALIBRATION POINT	INSTRUMENT RECEIVED "AS FOUND" READING	INSTRUMENT READING AFTER CALIBRATION
X 100	400,000	<u>400,000</u>	400,000
	100,000	<u>100,000</u>	100,000
	40,000	<u>40,000</u>	40,000
X 10	10,000	<u>10,000</u>	10,000
	4,000	<u>4,000</u>	4,000
	1,000	<u>1,000</u>	1,000
X 0.1	400	<u>400</u>	400
	100	<u>100</u>	100

ELECTRONIC CALIBRATION (RANGES CALIBRATED WITH LUDLUM 500 PULSER)

SOURCES USED FOR EFFICIENCY CHECK

ALPHA \_\_\_\_\_  BETA C-14, Si-32  OTHER I-129

CALIBRATOR Non LoBB

DATE 11/3/05

APPROVAL John P. Miller

CSEA  
West

GLAXOSMITHKLINE, R&D

CALIBRATION DATA SHEET

(Attachment 8.1)

Mfg: Ludlum Model: 3 Serial No. 47509  
 Mfg: Ludlum Detector Model: 44-3 Serial No. 34098  
 Mfg: Ludlum Detector Model: 44-9 Serial No.  
 Cal. Date: 11/3/05 Cal. Due: 7/3/05  
 Cal. Interval: 6 month Procedure: In accordance with GlaxoSmithKline policy

INSTRUMENT RECEIVED		OPERATING PARAMETERS	
<input checked="" type="checkbox"/> Within Tolerance +/- 10%	<input type="checkbox"/> Out of Tolerance	<input checked="" type="checkbox"/> Input Sensitivity 25 mV	<input checked="" type="checkbox"/> Det. Oper. Voltage 1050
<input type="checkbox"/> 10% - 20%	<input type="checkbox"/> Requiring Repair	<input checked="" type="checkbox"/> Det. Efficiency <sup>125</sup> 33 %	<input type="checkbox"/> Det. Background Reading 150
<input type="checkbox"/> New Instrument	<input checked="" type="checkbox"/> Battery Check OK	<input type="checkbox"/> Det. Efficiency %	<input type="checkbox"/> Det. Background Reading
		<input type="checkbox"/> Det. Efficiency %	<input type="checkbox"/> Det. Background Reading

COMMENTS:

INSTRUMENT RANGE MULTIPLIER SETTING	INSTRUMENT REFERENCE CALIBRATION POINT	INSTRUMENT RECEIVED "AS FOUND" READING	INSTRUMENT READING AFTER CALIBRATION
X 100	400,000	400,000	400,000
	100,000	100,000	100,000
X 10	40,000	40,000	40,000
	10,000	10,000	10,000
X 1	4,000	4,000	4,000
	1,000	1,000	1,000
X 0.1	400	400	400
	100	100	100

ELECTRONIC CALIBRATION (RANGES CALIBRATED WITH LUDLUM 500 PULSER)

SOURCES USED FOR EFFICIENCY CHECK

ALPHA  BETA C-14, Si-32  OTHER I-129

CALIBRATOR Ren LOBB

DATE 11/3/05

APPROVAL J. P. Melle

**Annual Calibration of the Beckman  
6000 for Triple Label of User 8**

**Experiment #222**

Calibration of the Beckman LS6000, Serial # 7060918 for user #8, Triple label dpm for  $^3\text{H}$ ,  $^{14}\text{C}$ ,  $^{32}\text{P}$ .

**Use:** As received

$^3\text{H}$  Quench set from Beckman

(503,290 dpm on 7/15/02)

$^{14}\text{C}$  Quench set from Beckman

(147,795 dpm on 6/7/02)

$^{32}\text{P}$  Quench set from North American Scientific

(63,875 dpm on 8/3/04)

**Procedure**

Count  $^3\text{H}$ ,  $^{14}\text{C}$ ,  $^{32}\text{P}$ , Quench set on User #8 for Triple label dpm as explained in the Beckman Ls 6000 manual. Chapter 6 Section 6.2.4

A copy of the user #8 printout is attached to page 64.



TL Calibration: 3H/14C/32P

STANDARD COUNT

5 AUG 2004 15:54

Standard Curve Id: 3H, 14C, 32P

Comment1: LS6000

Comment2: 7060918

3H DPM: 503290.0

Date of Standardization: 15 JUL 2002 12:00

14C DPM: 147795.0

Date of Standardization: 7 JUN 2002 12:00

32P DPM: 63875.00

Date of Standardization: 3 AUG 2004 12:00

Isotope/Window: 3H/ EFF-1

## H# Efficiency Curve Correlation Table

STD. No.	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	10.6	57.99	57.99	0.0	
2	59.5	46.46	46.46	0.0	
3	102.1	35.61	35.61	-0.0	
4	133.2	28.16	28.16	0.0	
5	169.7	19.99	19.99	0.0	
6	196.9	14.76	14.76	0.0	
7	228.7	9.85	9.85	0.0	
8	249.0	7.38	7.38	0.0	
9	277.8	4.66	4.66	-0.0	
10	324.8	1.78	1.78	0.0	

Isotope/Window: 3H/ EFF-2

## H# Efficiency Curve Correlation Table

STD. No.	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	10.6	0.90	0.90	0.0	
2	59.5	0.82	0.82	0.0	
3	102.1	0.92	0.92	0.0	
4	133.2	0.97	0.97	0.0	
5	169.7	1.05	1.05	0.0	
6	196.9	1.09	1.09	0.0	
7	228.7	1.20	1.20	0.0	
8	249.0	1.19	1.19	0.0	
9	277.8	1.26	1.26	0.0	
10	324.8	1.28	1.28	0.0	

Isotope/Window: 3H/ EFF-3

## H# Efficiency Curve Correlation Table

No.		Efficiency	Efficiency	Difference
1	10.6	0.00	0.00	0.0
2	59.5	0.00	0.00	0.0
	102.1	0.00	0.00	0.0
4	133.2	0.00	0.00	-0.0
5	169.7	0.00	0.00	0.0
6	196.9	0.00	0.00	-0.0
7	228.7	0.00	0.00	-0.0
8	249.0	0.00	0.00	0.0
9	277.8	0.00	0.00	-0.0
10	324.8	0.00	0.00	-0.0

Isotope/Window: 14C/ EFF-1

## H# Efficiency Curve Correlation Table

STD. No.	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	15.5	17.42	17.42	-0.0	
2	63.4	18.45	18.45	0.0	
3	105.8	17.68	17.68	0.0	
4	141.4	16.84	16.84	0.0	
5	169.5	15.92	15.92	-0.0	
6	201.5	14.49	14.49	-0.0	
7	231.9	12.91	12.91	0.0	
8	245.8	11.79	11.79	-0.0	
9	275.6	9.75	9.75	0.0	
10	318.4	6.27	6.27	0.0	

Isotope/Window: 14C/ EFF-2

## H# Efficiency Curve Correlation Table

STD. No	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	15.5	79.10	79.10	0.0	
2	63.4	75.94	75.94	-0.0	
3	105.8	73.88	73.88	0.0	
4	141.4	71.27	71.27	0.0	
5	169.5	69.04	69.04	0.0	
6	201.5	67.26	67.26	-0.0	
7	231.9	65.01	65.01	-0.0	
8	245.8	62.37	62.37	-0.0	
9	275.6	58.55	58.55	-0.0	
10	318.4	51.80	51.80	0.0	

Isotope/Window: 14C/ EFF-3

## H# Efficiency Curve Correlation Table

STD. No.	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	15.5	0.68	0.68	0.0	
2	63.4	0.68	0.68	0.0	
3	105.8	0.81	0.81	0.0	
4	141.4	0.95	0.95	0.0	
5	169.5	1.03	1.03	0.0	
6	201.5	1.21	1.21	0.0	
7	231.9	1.40	1.40	0.0	
8	245.8	1.44	1.44	0.0	

9	275.6	1.63	1.63	0.0
10	318.4	1.35	1.35	0.0

Isotope/Window: 32P/ EFF-1

## H# Efficiency Curve Correlation Table

STD. No.	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	68.9	4.34	4.34	-0.0	
2	87.9	4.31	4.31	0.0	
3	101.1	4.32	4.32	0.0	
4	118.6	4.19	4.19	0.0	
5	137.5	3.98	3.98	-0.0	
6	165.7	3.87	3.87	0.0	
7	193.2	3.51	3.51	0.0	
8	226.5	3.15	3.15	0.0	
9	268.2	2.42	2.42	0.0	
10	352.0	0.92	0.92	0.0	

Isotope/Window: 32P/ EFF-2

## H# Efficiency Curve Correlation Table

STD. No	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	68.9	23.93	23.93	0.0	
2	87.9	23.65	23.65	0.0	
3	101.1	23.75	23.75	0.0	
4	118.6	23.70	23.70	0.0	
5	137.5	23.50	23.50	-0.0	
6	165.7	23.34	23.34	0.0	
7	193.2	23.36	23.36	-0.0	
8	226.5	22.95	22.95	0.0	
9	268.2	22.53	22.53	0.0	
10	352.0	21.96	21.96	0.0	

Isotope/Window: 32P/ EFF-3

## H# Efficiency Curve Correlation Table

STD. No.	H#	Measured Efficiency	Calculated Efficiency	Percent Difference	Flag
1	68.9	84.18	84.18	-0.0	
2	87.9	84.51	84.51	0.0	
3	101.1	83.81	83.81	0.0	
4	118.6	83.94	83.94	0.0	
5	137.5	83.61	83.61	-0.0	
6	165.7	83.55	83.55	0.0	
7	193.2	84.01	84.01	0.0	
8	226.5	83.72	83.72	0.0	

9	268.2	82.86	82.86	-0.0
10	352.0	73.91	73.91	-0.0

Q. ch Limits Low: 68.9 High:318.43

No Background Curve Stored