

HSA BUILDING FACT SHEET

Building Number / Name: 503 / Walter Reed Army Institute of Research

Current Tenant / Use: WRAIR/Naval Medical Research Command Laboratories

Original / Former Use: WRAIR/Naval Medical Research Command Laboratories

Date of Construction: 1998

Construction Materials: Concrete floors, corrugated metal over steel framing

Total Sq. Footage: 137761

Renovation Status: Never renovated

Floors: Unknown

Current Building Status: Existing, in-use

Sources of Information: (*References, Interviews*)

Document Reviews – 2006 Health Physics Surveys, Authorization 221; Current Radiological Status Surveys (7/9/08), including final survey room close-outs

Site Visit and Interviews – Interview with Mr. Burton

Radiological Data Summary (*RCOPCs, Impacted Room(s) / Area(s), etc.*):

- Radionuclides Used/Potential RCOPCs: C-14, Ca-45, Cr-51, Cs-137, H-3, I-125, P-32, P-33, S-35
- Rooms with History of Radiological Materials: 2E12, 3E12, 3E14, 3E18, 1E22, 1E24, 3E24, 1E26, 1N40, 2N22, 2N24, 2N34, 2N42, 2N47, 2N48, 2N58, 2N69, 2N80, 2S18, 2W02, 2W106, 2W18, 2W23, 3N38, 3N54, 3N66, 3W08, 3W10, 3W110, 3W16, 3W22, 3W26, 3W40, 3W50, 3W71, elevators, exits, floor 1, floor 2, floor 3, floor G, GW04, GW05B, GW72
- Preliminary Dose Rate Survey (July 31, 2008): Not performed due to building's planned continued usage of radioactive materials

Current Radiological Status: Current Radiological Status Survey Package (7/9/08) includes final survey room close-outs for: 2N22, 2S18, 3N54, 3W08, 3W10, 3W22, and 3W40

Site Visit Information: (*Date Toured, Site Contact, Security Issues*)

Site Contact – None

A drive-by observation of the building was conducted on July 31, 2008 by Paul Valentinelli, Mike Barsa, Dave Burton, and Anne Delp. The building was not toured due to its being out of the scope of this historical site assessment (as the building is currently slated to be turned over to the Navy, and radiological materials usage will continue).

Preliminary MARSSIM Classification(s): Impacted, for Rooms 2E12, 3E12, 3E14, 3E18, 1E22, 1E24, 3E24, 1E26, 1N40, 2N24, 2N34, 2N42, 2N47, 2N48, 2N58, 2N69, 2N80, 2W02, 2W106, 2W18, 2W23, 3N38, 3N66, 3W110, 3W16, 3W26, 3W50, 3W71, elevators, exits, floor 1, floor 2, floor 3, floor G, GW04, GW05B, GW72

Historical Site Assessment (HSA)
Walter Reed Army Medical Center, Forest Glen Annex

Recommendations: This building is slated to continue RAM usage under new licensee after BRAC; therefore, the only recommendation is to continue performing routine surveys in rooms with continued RAM usage and continue performing room final close-out surveys when RAM is no longer to be used in particular area.

Photograph(s) Taken:



Historical Site Assessment (HSA)
Walter Reed Army Medical Center, Forest Glen Annex



Floor Plan(s) / As-built Drawing(s):
(See attached routine survey package)

#8070

Radiation Lab Summary Report

Room: GW04

Building: 503, WRAIR/NMRC

HPO Surveyor: MS. Cox

Authorization: 221 / Mr. David Burton, Principal Investigator

Inspection Date: 7/9/08

Department: Health Physics Office

Meter Model: Geiger

Frequency: 90 days

Meter Serial Number: 11976

Radionuclides: All

Calibration Due Date: 10/12/08

Initial Checks

	Yes	No	NA
RAM Secure?			X
Room Posted?	X		
Work Area Posted?			X
Equipment Posted?	X		
User Surveys Performed?			X

User Inventory Log:

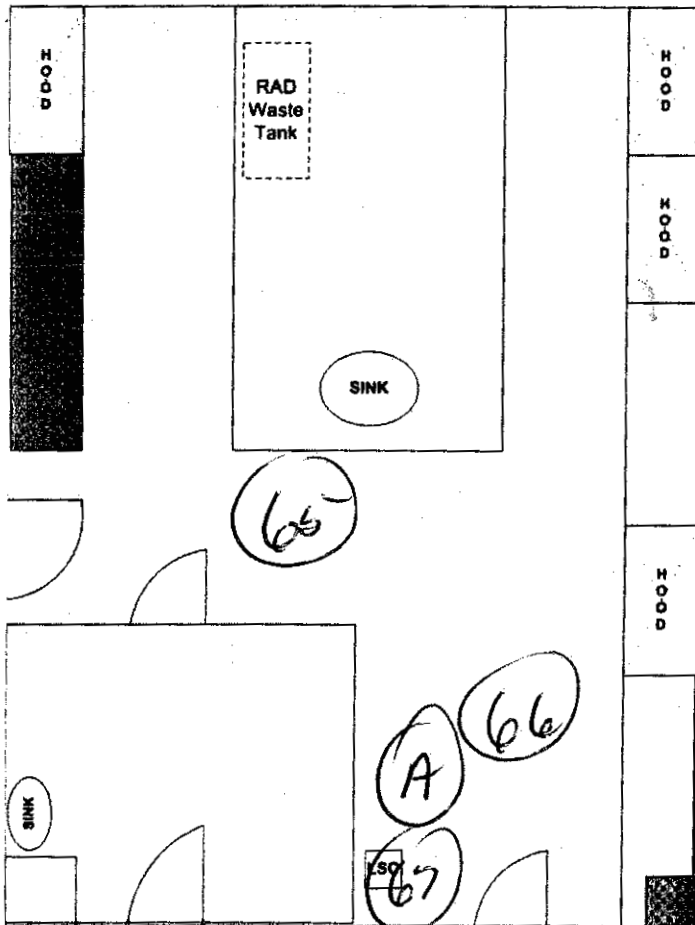
Isotope / Activity Used: N/AMax Daily Use: N/A

Lab Survey Meter:

Meter Model: SAMESerial Number: SAMECalibration Due Date: N/ADate Of Last User Survey: N/A

Meter Readings

BKG	cpm mR/hr
A	288
B	288
C	
D	
E	
F	
G	



503_GW04

Laboratory Analysis

Technician: MS. Cox Date: 7/10/08
 Auto-gamma: 35-37 LSC: 35-37 Swipe Numbers: 35-37

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Efficiency	MDA (dpm)	DPM

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Completed
 All swipes < 200 dpm

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

10-Jul-2008 07:42:51

Protocol id 1 ROUTINE2
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 28-Mar-2008 09:32:23
 Run id. 78

-----15-1024-----							-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	290	5.8	779.42	45	-3.4	109.42
2	1	2	120	279	-0.4	213.63	46	-2.9	129.44
3	1	3	120	257	-12.7	57.98	48	-1.9	201.03
4	1	4	120	255	-19.8	54.21	57	2.6	157.83
5	1	5	120	306	5.7	103.66	57	2.6	157.83
6	1	6	120	282	-0.2	328.55	48	-1.9	201.04
7	1	7	120	270	-9.6	102.90	53	0.6	663.34
8	1	8	120	253	-20.8	50.92	57	2.6	157.83
9	1	9	120	288	6.1	4747.60	43	-4.4	83.01
10	1	10	120	286	-5.7	1152.41	59	3.6	115.67
11	2	11	120	285	1.3	715.24	48	-1.9	201.03
12	2	12	120	253	-14.1	50.92	47	-2.4	157.78
13	2	13	120	310	13.8	85.54	48	-1.9	201.04
14	2	14	120	303	8.2	123.36	51	-0.4	979.16
15	2	15	120	295	2.2	254.01	54	1.1	364.65
16	2	16	120	303	4.9	123.36	56	2.1	193.95
17	2	17	120	256	-18.0	56.06	55	1.6	252.65
18	2	18	120	294	1.7	293.33	54	1.1	364.65
19	2	19	120	266	-10.9	83.24	52	0.1	3948.60
20	2	20	120	252	-14.6	49.41	47	-2.4	157.78
21	3	21	120	286	-6.3	1167.81	60	4.1	102.29
22	3	22	120	278	-4.3	190.64	51	-0.4	979.20
23	3	23	120	240	-20.6	36.23	47	-2.4	158.50
24	3	24	120	286	-11.1	1152.68	67	7.6	57.86
25	3	25	120	277	-2.1	172.75	47	-2.4	157.78
26	3	26	120	283	0.3	400.42	48	-1.9	199.90
27	3	27	120	265	-20.9	79.44	66	7.1	61.62
28	3	28	120	263	-11.8	72.75	51	-0.4	1005.47
29	3	29	120	282	-5.0	328.58	55	1.6	252.64
30	3	30	120	292	1.4	425.71	53	0.6	663.33
31	4	31	120	285	-5.5	709.56	58	3.1	133.35
32	4	32	120	252	-15.9	49.41	49	-1.4	275.16
33	4	33	120	271	-3.7	109.13	45	-3.4	109.42
34	4	34	120	284	-6.7	512.14	59	3.6	115.67
35	4	35	120	262	-14.3	69.80	54	1.1	364.67
36	4	36	120	332	16.7	44.46	60	4.1	102.54
37	4	37	120	250	-15.6	46.63	47	-2.4	157.78

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711_0801

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711_0801\20080711_0801.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	6	4	0	0	48.13	411.82	B
2	2.00	0	5	0	0	6	107.75	403.86	
3	2.00	0	0	2	0	0	0.00	390.11	
4	2.00	0	1	0	0	2	749.94	416.00	
5	2.00	0	5	3	0	6	87.05	409.35	
6	2.00	3	1	0	7	1	0.00	406.99	
7	2.00	0	0	0	0	1	0.00	421.10	
8	2.00	0	1	0	0	1	0.00	407.02	
9	2.00	0	1	0	0	1	117.08	403.20	

Protocol# 1 - routine surveys, 2 minute counts.lsa

User: routine

10	2.00	0	0	0	0	0	0.00	409.08
11	2.00	3	1	0	6	1	0.00	393.34
12	2.00	0	0	2	1	0	0.00	398.27
13	2.00	1	3	0	0	4	63.44	417.66
14	2.00	0	0	0	0	0	0.00	398.66
15	2.00	2	0	1	4	0	55.46	402.56
16	2.00	0	0	0	0	0	0.00	400.55
17	2.00	0	4	0	0	5	81.55	414.71
18	2.00	1	0	1	3	0	0.00	395.79
19	2.00	0	1	0	0	1	0.00	402.75
20	2.00	0	1	1	0	1	27.02	398.93
21	2.00	3	2	0	6	3	48.27	412.44
22	2.00	0	0	2	0	0	0.00	436.64
23	2.00	1	0	1	3	0	0.00	400.97
24	2.00	1	0	0	2	0	245.48	423.72
25	2.00	0	3	0	0	4	68.97	403.82
26	2.00	2	0	1	3	0	107.83	393.31
27	2.00	0	5	1	0	6	160.86	408.71
28	2.00	0	1	0	0	2	386.80	397.34
29	2.00	1	0	0	2	0	121.98	407.76
30	2.00	0	0	0	1	0	0.00	393.46
31	2.00	0	0	1	0	0	0.00	429.02
32	2.00	1	3	3	1	4	39.78	399.35
33	2.00	0	5	0	0	6	152.18	409.83
34	2.00	0	0	0	0	0	0.00	409.41
35	2.00	0	0	0	0	0	0.00	393.16
36	2.00	0	2	1	0	2	105.48	401.46
37	2.00	0	4	0	0	6	103.98	403.52

#8102

Radiation Lab Summary Report

Room: GW05B

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 221 / Mr. David Burton, Principal Investigator

Inspection Date: 7/23/08

Department: Health Physics Office

Meter Model: Geiger

Frequency: 7 days

Meter Serial Number: 11976

Radionuclide: All

Calibration Due Date: 10/12/08

Initial Checks

Yes No NA

User Inventory Log:

Isotope / Activity Used:

N/A

Max Daily Use:

N/A

Lab Survey Meter:

Meter Model:

SAME

Meter Serial Number:

SAME

Calibration Due Date:

SAME

Are all radioactive materials secure?

X

Is the room posted?

X

Is the work area posted?

X

Is equipment posted?

X

Have user performed surveys?

X

Date Of Last User Survey: N/A

Meter Readings

BKG

A

B

C

D

E

F

G

2100
2100
"
"
<100
<100
<100
<100

cpm

cpm

cpm

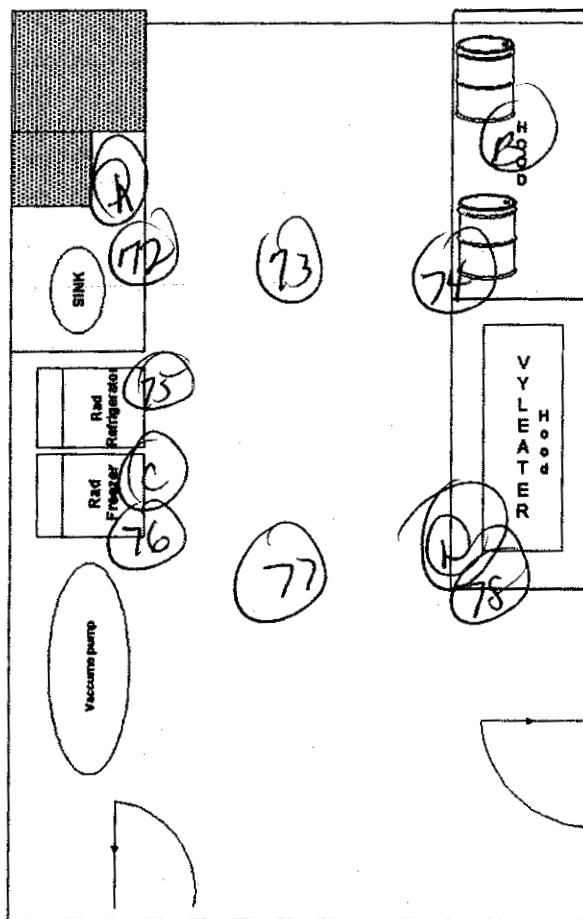
cpm

cpm

cpm

cpm

cpm



503_GW05B

Laboratory Analysis

Technician

Ms. Cox

Date

7/24/08

Auto-gamma

LSC

Swipe Numbers

72-78

Record any samples > 2000dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

24-Jul-2008 08:18:53

Protocol id 2 ROUTINE3
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 09-Feb-2006 10:59:54
Run id. 92

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	262	-12.9	69.80	52	0.1	3950.85
2	1	2	120	263	-19.2	72.75	62	5.1	83.40
3	1	3	120	281	-3.4	278.43	52	0.1	3947.28
4	1	4	120	275	-5.1	144.63	50	-0.9	431.62
5	1	5	120	287	0.2	3052.80	51	-0.4	979.23
6	1	6	120	300	9.4	152.59	47	-2.4	157.79
7	1	7	120	297	2.5	200.48	55	1.6	252.64
8	1	8	120	268	0.9	92.01	36	-7.9	43.03

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080724_0926

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080724_0926\20080724_0926.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	6	5	0	0	50.16	406.47	B
2	2.00	0	2	1	0	3	5.62	423.87	
3	2.00	1	0	0	5	0	0.00	400.24	
4	2.00	1	0	0	4	0	0.00	431.49	
5	2.00	0	0	0	1	0	0.00	416.28	
6	2.00	5	1	0	11	1	37.29	409.86	
7	2.00	2	0	0	5	0	14.57	403.04	
8	2.00	1	0	0	2	0	0.51	415.97	

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

18-Jun-2008 08:19:37

Protocol id 2 ROUTINE3
Time limit 120
Count limit 999999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 09-Feb-2006 10:59:54
Run id. 79

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	0.0	152.33	61	4.6	91.82
2	1	2	120	255	-14.4	54.21	49	-1.4	275.15
3	1	3	120	268	-12.6	92.01	56	2.1	193.96
4	1	4	120	267	-9.8	87.41	51	-0.4	954.07
5	1	5	120	284	-1.9	512.19	52	0.1	3947.55
6	1	6	120	294	9.1	292.36	43	-4.4	83.01
7	1	7	120	290	-1.0	772.73	55	1.6	252.64
8	1	8	120	280	-2.6	241.46	50	-0.9	431.61
9	1	9	120	286	4.5	1152.42	44	-3.9	94.52
10	1	10	120	286	-2.3	1167.76	54	1.1	364.65
11	2	11	120	290	-7.0	779.35	64	6.1	70.79
12	2	12	120	284	-6.7	512.18	59	3.6	115.67
13	2	13	120	314	7.7	73.03	60	4.1	102.29

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080618_1125

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080618_1125\20080618_1125.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	6	5	0	0	55.23	427.00	B
2	2.00	1	0	2	4	0	0.00	406.61	
3	2.00	3	1	2	5	1	50.05	415.87	
4	2.00	0	1	1	0	1	0.00	410.25	
5	2.00	0	0	1	0	0	0.00	417.14	
6	2.00	0	0	0	0	0	0.00	405.39	
7	2.00	0	2	0	0	3	371.24	405.02	
8	2.00	3	0	0	6	0	26.74	418.98	
9	2.00	1	1	0	1	1	134.45	408.86	

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 09-Feb-2006 10:59:54
Run id. 90

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	

MEMORANDUM FOR Dr. Marti Jett, Radioactive Materials Authorization Number 636

SUBJECT: Radiological Safety Certification for Building 503 Room 2S18

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

Building	Room
503, WRAIR/NMRC	2S18

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Whirlpool Refrigerator	N/A	N/A	Q4568
Sink	N/A	N/A	N/A

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.



VANESSA COX

Health Physicist

Health Physics Office

Protocol# 7 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070830_1158Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070830_1158\20070830_1158.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	7	5	0	0	61.20	388.87	B
2	2.00	1	3	0	1	4	15.60	390.62	
3	2.00	0	0	0	2	0	0.00	412.18	
4	2.00	0	0	1	0	0	0.00	389.03	
5	2.00	0	0	0	1	0	0.00	397.38	
6	2.00	1	0	0	3	0	18.66	400.67	
7	2.00	0	2	0	0	3	43.74	359.89	
8	2.00	1	3	3	0	4	52.65	384.70	
9	2.00	0	0	0	0	0	0.00	409.04	

30 Aug 2007 08:24

Packard Instrument Company

Page #1

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 2.00
 Assay Type: CFM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 XSpillup: 0.00
 XSpilldown: 0.00
 Screening: OFF

	Window A	Window B	Window C
Nuclide:	MAN	MAN	MAN
Bkg:	95.4	116	48.0
Sigma:	0.00	0.00	0.00
LCR:	0	0	0
Half Life(hours):	0.00	0.00	
Multiplier:	1.0000		
XCV Flag Limit:	0.00	0.00	

F#	S#	A:CFM	A:XSIG	B:CFM	B:XSIG	C:CFM	C:XSIG	TIME
7	1	0.6	91.3	0.0		0.0		2.00
7	2	0.0		0.0		0.0		2.00
7	3	3.1	47.4	0.0		0.0	50.0	2.00
7	4	3.1	31.3	4.3	34.0	0.0		2.00
7	5	0.0		21.8	15.1	0.0	27.6	2.00
7	6	6.8	24.1	0.0		0.0		2.00
7	7	0.0		0.0		0.0	50.0	2.00
7	8	0.0		0.0		0.0	70.7	2.00
7	9	5.6	29.9	0.0		0.0	57.7	2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		0.0	23.2	0.0	50.0	2.00
7	12	0.0		14.7	19.7	0.0		2.00
7	13	0.0		11.8	20.2	0.0		2.00
7	14	3.1	40.2	0.0		0.0	40.8	2.00
7	15	0.0		7.3	26.1	0.0		2.00
7	16	0.0	22.4	0.0		0.0	26.7	2.00
7	17	0.0		0.0		0.0		2.00
7	18	0.0		6.8	27.1	0.0		2.00
7	19	0.0		0.0		0.0	50.0	2.00
7	20	2.6	43.9	0.0	29.1	0.0	37.8	2.00
7	21	0.0		0.0		0.0	57.7	2.00
7	22	1.6	55.2	0.0		0.0		2.00
7	23	0.0		0.0	78.1	0.0		2.00
7	24	6.5	27.3	0.0		0.0	29.9	2.00
7	25	4.1	34.9	7.7	36.1	0.0	50.0	2.00
7	26	0.0		0.0		0.0		2.00
7	27	0.0		0.0		0.0		2.00
7	28	3.1	29.9	0.0		0.0		2.00
7	29	0.0		0.0	12.1	0.0		2.00
7	30	0.0	91.7	0.0		0.0		2.00
7	31	0.0		0.0		0.0		2.00
7	32	0.0		0.0	73.1	0.0	39.2	2.00
7	33	1.1	47.4	0.0		0.0	27.7	2.00
7	34	0.0		0.0		0.0	70.7	2.00

Resurvey

Radiation Equipment Survey Report

Room: 2S18

Building: 503

HPO Surveyor: MS. Cox

Authorization: 636, Jett

Inspection Date: 9/19/07

Department: Pathology

Meter Model:

Radionuclides:

Meter Serial Number: N/A

Calibration Due Date:

Equipment Information

Nomenclature: Sink
Manufacturer:
Model Number:
Serial Number:
MMCN:

Reason for Survey

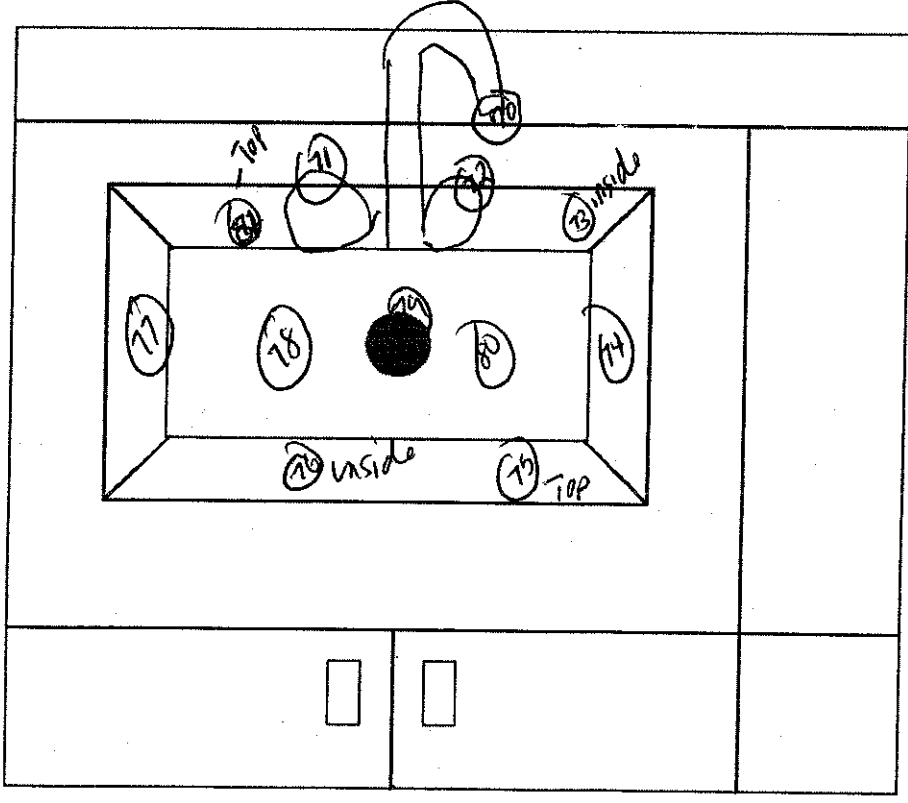
Mark a X for appropriate reason.

On/off-Site Repair: ☐
Turn-in/ Transfer: ☐
Administrative Hold: ☐
Non RAM use only: ☐
Other:

Meter Readings

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		

Rad Sink



Laboratory Analysis

Date: 9/20/07
Swipe Numbers: 70-81

Technician: MS. Cox
Auto-gamma: 67-18
LSC: 70-81

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days	Efficiency	MDA (dpm)	DPM	Isotope	Swipe	Efficiency	MDA (dpm)	DPM

Completed
All swipes < 200 dpm

Surveyor Comments

fr

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070920_1217

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070920_1217\20070920_1217.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	9	4	0	0	52.20	390.82	B
2	2.00	1	3	1	0	3	94.14	385.25	
3	2.00	2	0	1	7	0	0.00	368.05	
4	2.00	1	2	2	2	2	63.80	384.52	
5	2.00	0	0	0	0	1	0.00	387.41	
6	2.00	4	0	1	12	0	0.00	370.88	
7	2.00	3	1	0	6	1	25.93	385.95	
8	2.00	0	0	2	2	0	0.00	384.76	
9	2.00	0	0	1	0	0	0.00	403.23	

20 Sep 2007 09:48

Packard Instrument Company

Page #1

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 12.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

Window A

Window B

Window C		Window A		Window B	
Nuclide:	MAN	MAN	15 - 250 keV	MAN	250
50 keV	MAN	950 - 2000 keV			
Bkg:	47.8	95.3		114	
Sigma:	0.00	0.00		0.00	
LCR:	0	0		0	
Half Life(hours):	0.00			0.00	
Multiplier:	1.0000				
%CV Flag Limit:	0.00			0.00	

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	3.7	36.7	10.3	22.0	1.7	54.9	2.00
7	2	0.0		1.3	62.0	0.0		2.00
7	3	3.2	39.4	0.0		5.2	31.1	2.00
7	4	0.7	83.3	0.0		4.7	32.3	2.00
7	5	5.2	30.9	5.3	39.4	2.7	48.4	2.00
7	6	1.7	58.2	1.3	62.0	0.0		2.00
7	7	0.0		0.0		7.7	35.5	2.00
7	8	0.0		0.0		0.2	177	2.00
7	9	0.0		5.3	30.7	0.0		2.00
7	10	0.0		0.0		4.7	32.3	2.00
7	11	0.0		3.3	36.3	0.0		2.00
7	12	0.0		16.3	17.3	0.0		2.00
7	13	0.0		5.3	30.7	3.7	27.4	2.00
7	14	0.0		0.0		0.0		2.00
7	15	10.7	21.6	11.3	21.0	4.7	32.3	2.00
7	16	6.2	28.4	0.0		0.0		2.00
7	17	0.0	151	0.0		0.0		2.00
7	18	10.2	22.1	10.3	22.0	1.3	65.7	2.00

MEMORANDUM FOR Dr. Prabhati Ray, Department of Experimental Therapeutic,
Radioactive Materials Authorization Number 659

SUBJECT: Radiological Safety Certification for Building 503 Room 2N22

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

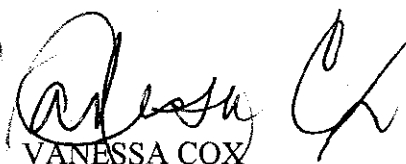
Building	Room
503, WRAIR/NMRC	2N22

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use. Prior to any isotope usage, the Health Physics Office must be notified so that the equipment may be labeled accordingly.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Radioactive Wash Sink	N/A	N/A	N/A
Thermo Forma Incubator	3110	45376-15447	P2810
Hamilton Fume Hood	N/A	N/A	EH-264

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.


VANESSA COX
Health Physicist
Health Physics Office

Radiation Final Laboratory Summary Report

Room: 2N22

Building: 503, WRAIR

HPO Surveyor: Ms. Cox

Authorization: 659 / Dr. Prabhati Ray

Inspection Date: 4/18/07

Department: Experimental Therapeutics

Meter Model:

Radionuclides: C-14, Ca-45, H-3, P-32, I-125, and Cs-137

Meter Serial Number:

Calibration Due Date:

H-3 Use Only

Room Checks

Administrative Checks

Meter Readings

All RAM removed from the room
Radioactive waste removed
All RAM use equipment cleared
All radiation labels removed
Entrance un-posted

Initials

✓

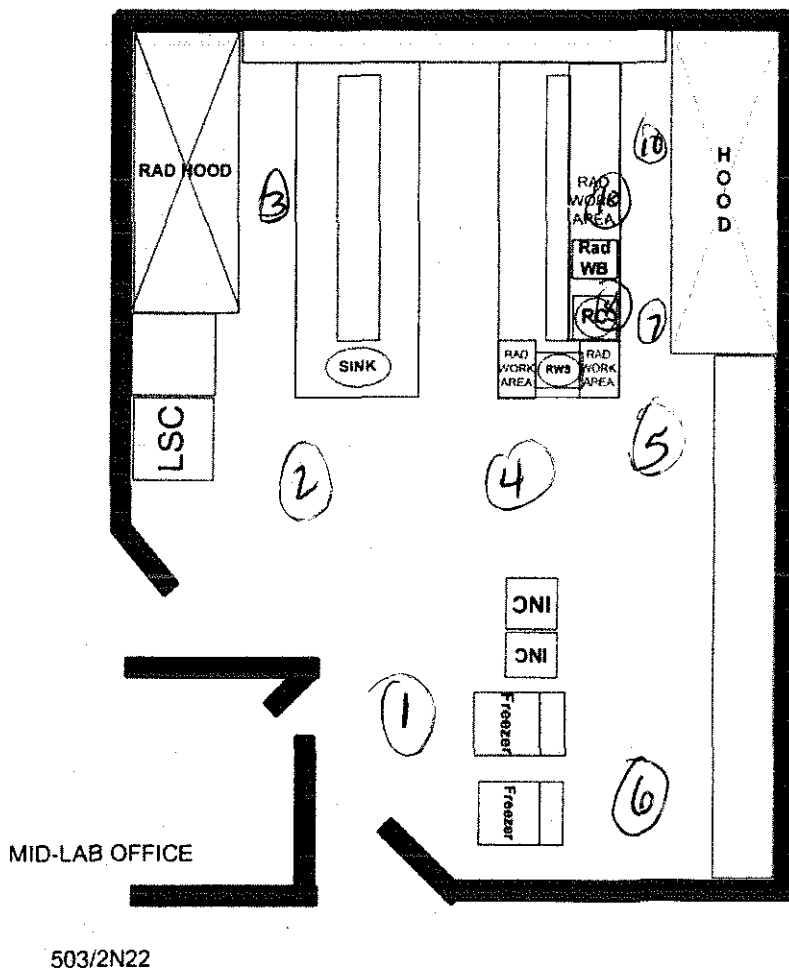
Equipment / Room Final Forms Completed

Initials

--

Additional Information:

BKG	cpm
A	cpm
B	cpm
C	cpm
D	cpm
E	cpm
F	cpm
G	cpm



Laboratory Analysis

Date: 4/19/07
Swipe Numbers: 1-10

Technician: Ms. Cox
Auto-gamma: 71-10 LSC: 72-11

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days	Efficiency	MDA (dpm)	Isotope	Swipe	DPM	DPM

Completed
All swipes < 200 dpm

Comments

Last used 5/25/01 Sm G of H-3

Surveyor Comments

Assay Definition-

Assay Description:
Routine survey, 2 minute counts

Assay Type: DPM (Dual)
Report Name: Contamination survey
Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070420_0812
Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070420_0812\20070420_0812.results
Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Sets:
Low Energy: 3H
Mid Energy: 14C
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On Luminescence Correction: On
Colored Samples: On Heterogeneity Monitor: n/a
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	7	5	0	0	38.27	401.46	B
2	2.00	0	1	0	0	1	0.00	378.79	
3	2.00	0	1	0	0	1	42.59	377.73	
4	2.00	0	1	0	0	2	535.27	392.03	
5	2.00	0	3	0	0	4	48.07	382.99	
6	2.00	0	0	0	0	0	0.00	373.01	
7	2.00	0	1	1	0	1	0.00	373.98	
8	2.00	0	0	0	0	0	0.00	386.07	
9	2.00	0	0	0	0	0	491.13	392.81	

10	2.00	0	0	0	0	0	0.00	393.92
11	2.00	0	3	0	0	4	31.42	376.46
12	2.00	0	0	0	0	0	0.00	385.82
13	2.00	0	2	0	0	3	100.39	390.00
14	2.00	0	1	0	0	1	0.00	409.50
15	2.00	0	2	0	0	2	15.55	389.40
16	2.00	0	0	0	0	0	0.00	386.01
17	2.00	0	0	0	0	0	28.23	387.80
18	2.00	0	1	0	0	1	215.61	389.12
19	2.00	0	0	0	0	0	0.00	373.71
20	2.00	0	3	0	0	4	15.83	431.47
21	2.00	0	2	0	0	3	47.30	380.34
22	2.00	0	0	0	0	0	0.00	412.21
23	2.00	0	0	0	0	0	5.12	391.29
24	2.00	0	0	0	0	0	0.00	384.63
25	2.00	0	2	0	0	3	0.00	388.79
26	2.00	0	0	0	0	0	0.00	384.40
27	2.00	0	0	0	0	0	0.00	382.31
28	2.00	0	0	0	0	0	0.00	422.49
29	2.00	0	1	0	0	1	0.00	385.37
30	2.00	0	1	0	0	2	0.00	380.98
31	2.00	0	0	0	0	0	0.00	383.50
32	2.00	0	2	0	0	2	42.59	387.25
33	2.00	0	0	0	0	0	0.00	383.72
34	2.00	0	0	0	0	0	503.17	396.66
35	2.00	0	2	0	0	3	10.63	394.65
36	2.00	0	0	0	0	0	0.00	359.65
37	2.00	0	0	0	0	0	20.94	387.94
38	2.00	0	1	1	0	2	1674.82	384.88
39	2.00	0	0	0	0	0	0.00	383.69
40	2.00	0	1	0	0	2	30.42	390.66
41	2.00	0	0	0	0	0	24.34	389.01
42	2.00	0	0	0	0	0	30.99	377.79
43	2.00	0	0	0	0	0	85.87	386.59
44	2.00	0	0	0	0	0	0.00	372.35

Protocol # 7

Swipes

User : Lab Staff

Count Time (minutes): 2.00
 Assay Type: CPM
 Background Subtract: IPA Bkg
 Outliers: 0.0 FLAG
 %Spillover: 0.00
 %Spilloverdown: 0.00
 Screenings: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	45 - 55 keV	MAN	550 - 950 keV	MAN	950 - 2000 keV
Bkg:	24.7		113		47.3	
Signal:	0.00		0.00		0.00	
CFR:	0		0		0	
Half Life (hours):	0.00		0.00			
Multiplier:	1.0000					
ACQ Flag Limit:	0.00		0.00			

#	SW	A:CFM	A:KE13	B:CFM	B:KE13	C:CFM	C:KE13	TIME
1	1	3.7	36.3	1.4	55.7	1.7	54.9	2.00
2	2	0.0	33.1	0.0		0.0		2.00
3	3	0.0		0.0		0.0		2.00
4	4	0.0	27.3	0.0	-8.0	0.0		2.00
5	5	0.0		0.0	16.3	0.0		2.00
6	6	0.0	34.1	0.0		0.0		2.00
7	7	0.0		0.0		0.0	48.1	2.00
8	8	0.0	16.2	0.0		0.0	67.0	2.00
9	9	0.0		0.0	40.0	0.0	37.7	2.00
10	10	0.0		0.0		0.0		2.00
11	11	0.0		0.0	21.7	0.0		2.00
12	12	4.3	34.0	0.0		0.0	48.1	2.00
13	13	0.0		0.0		0.0	17.7	2.00
14	14	0.0	25.7	0.0		0.0	43.7	2.00
15	15	13.5	15.7	0.0		0.0	24.0	2.00
16	16	11.3	20.2	0.0		0.0	42.1	2.00
17	17	0.0		4.0	32.9	0.0		2.00
18	18	0.0		0.0	40.0	0.0		2.00
19	19	0.0		0.0		0.0		2.00
20	20	0.0	24.5	0.0	38.6	0.0		2.00
21	21	0.0	40.1	0.0	32.2	0.0		2.00
22	22	0.0		0.0		0.0		2.00
23	23	4.3	32.1	0.0		0.0	31.1	2.00
24	24	10.3	21.5	0.0	69.5	0.0	73.2	2.00
25	25	0.0	46.4	0.0	17.0	0.0		2.00
26	26	0.0	37.3	0.0		0.0		2.00
27	27	0.0		0.0		0.0		2.00
28	28	0.0		0.0	22.8	0.0		2.00
29	29	10.7	21.0	0.0		0.0		2.00
30	30	0.0	34.7	0.0		0.0		2.00
31	31	4.3	32.0	0.0	17.1	0.0		2.00
32	32	0.0		0.0	27.4	0.0		2.00
33	33	0.0		0.0		0.0	27.4	2.00
34	34	0.0		0.0		0.0		2.00

FW	SW	ALPHA 41310	BETA 41310	ALPHA 41310	BETA 41310	TIME
1	35	1.5	10.0	1.5	10.0	1.00
2	35	1.5	10.0	1.5	10.0	1.00
3	35	1.5	10.0	1.5	10.0	1.00
4	35	1.5	10.0	1.5	10.0	1.00
5	35	1.5	10.0	1.5	10.0	1.00
6	35	1.5	10.0	1.5	10.0	1.00
7	35	1.5	10.0	1.5	10.0	1.00
8	35	1.5	10.0	1.5	10.0	1.00
9	35	1.5	10.0	1.5	10.0	1.00
10	35	1.5	10.0	1.5	10.0	1.00
11	35	1.5	10.0	1.5	10.0	1.00
12	35	1.5	10.0	1.5	10.0	1.00
13	35	1.5	10.0	1.5	10.0	1.00
14	35	1.5	10.0	1.5	10.0	1.00
15	35	1.5	10.0	1.5	10.0	1.00
16	35	1.5	10.0	1.5	10.0	1.00
17	35	1.5	10.0	1.5	10.0	1.00
18	35	1.5	10.0	1.5	10.0	1.00
19	35	1.5	10.0	1.5	10.0	1.00
20	35	1.5	10.0	1.5	10.0	1.00

Room: 2N22 Building: 503 HPO Surveyor: MS. Cox
Authorization: 659 Inspection Date: 4/18/07
Department: Experimental Therapeutics Meter Model: N/A
Radionuclides: H-3 Use Only Meter Serial Number: Calibration Due Date:

Nomenclature: _____
Manufacturer: _____
Model Number: _____
Serial Number: _____
MMCN: _____

Mark a **X** for appropriate reason.

On/off-Site Repair: _____
Turn-in/ Transfer: _____
Administrative Hold: _____
Non RAM use only: ☒ _____
Other: _____

BKG		cpm	mR/hr
A		cpm	mR/hr
B		cpm	mR/hr
C		cpm	mR/hr
D		cpm	mR/hr
E		cpm	mR/hr
F		cpm	mR/hr
G		cpm	mR/hr

The diagram shows a 3D rectangular box. On the top face, there are four circles labeled 11, 12, 13, and 14. Circle 12 is crossed out with a large 'X'. On the front face, there are four circles labeled 17, 18, 19, and 20. Circle 19 is a solid black dot. On the right face, there is a circle labeled 15. On the bottom face, there is a circle labeled 16. The entire diagram is enclosed in a rectangular frame.

Laboratory Analysis

Date 4/19/87 Swipe Numbers 11-20

Swine Numbers

LSC ⑦ 12-21

Technician G 11-20
Auto-gamma

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

Protocol# 7 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070420_0812Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070420_0812\20070420_0812.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	7	5	0	0	38.27	401.46	B
2	2.00	0	1	0	0	1	0.00	378.79	
3	2.00	0	1	0	0	1	42.59	377.73	
4	2.00	0	1	0	0	2	535.27	392.03	
5	2.00	0	3	0	0	4	48.07	382.99	
6	2.00	0	0	0	0	0	0.00	373.01	
7	2.00	0	1	1	0	1	0.00	373.98	
8	2.00	0	0	0	0	0	0.00	386.07	
9	2.00	0	0	0	0	0	491.13	392.81	

Protocol #: 7

Swipes

User : Lab Staff

Test Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.7		118		47.8	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
%CV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	3.3	38.8	1.6	55.6	1.7	54.9	2.00
7	2	0.8	78.1	0.0		0.0		2.00
7	3	0.0		0.0		0.0		2.00
7	4	9.3	23.2	2.1	48.6	0.0		2.00
7	5	0.0		7.1	26.5	0.0		2.00
7	6	7.3	26.1	0.0		0.0		2.00
7	7	0.0		0.0		2.2	48.1	2.00
7	8	3.8	36.2	0.0		0.7	87.0	2.00
7	9	0.0		3.1	40.0	5.7	29.7	2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		10.6	21.7	0.0		2.00
7	12	4.3	34.0	0.0		2.2	48.1	2.00
7	13	0.0		0.0		0.2	177	2.00
7	14	7.8	25.3	0.0		1.2	65.7	2.00
7	15	20.8	15.5	0.0		8.7	24.0	2.00
7	16	11.8	20.6	0.0		2.2	48.1	2.00
7	17	0.0		4.6	32.9	0.0		2.00
7	18	0.0		3.1	40.0	0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	8.3	24.5	6.1	28.6	0.0		2.00
7	21	2.8	42.1	9.6	22.8	0.0		2.00
7	22	0.0		0.0		0.0		2.00
7	23	4.8	32.2	0.0		5.2	31.1	2.00
7	24	10.8	21.5	0.6	89.8	4.7	32.8	2.00
7	25	2.3	46.4	16.1	17.6	0.0		2.00
7	26	7.8	25.3	0.0		0.0		2.00
7	27	0.0		1.1	66.8	0.0		2.00
7	28	0.0		9.6	22.8	0.0		2.00
7	29	11.3	21.0	0.0		0.0		2.00
7	30	3.8	36.2	0.0		0.0		2.00
7	31	4.3	34.0	17.1	17.1	0.0		2.00
7	32	0.0		0.1	204	0.0		2.00
7	33	0.0		0.0		6.7	27.4	2.00
7	34	0.0		0.0		0.0		2.00

Radiation Equipment Survey Report

Room: 2N22

Building: 503

HPO Surveyor: M.S. Cox

Authorization: 659

Inspection Date: 4/18/07

Department: Experimental Therapeutics

Meter Model: N/A

Radionuclides: H-3 Only

Meter Serial Number: N/A

Calibration Due Date: N/A

Equipment Information

Nomenclature: Incubator
 Manufacturer: Thermo Forma
 Model Number: 3110
 Serial Number: 45370-6447
 MMCN: P2810

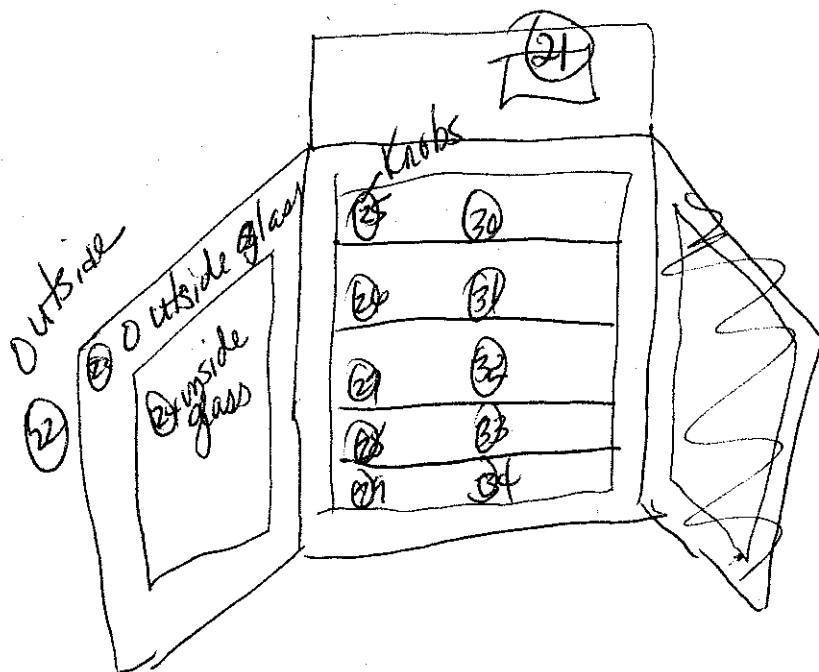
Reason for Survey

Mark a X for appropriate reason.

On/off-Site Repair: ☐
 Turn-in/ Transfer: ☐
 Administrative Hold: ☐
 Non RAM use only: ☐
 Other: ☐

Meter Readings

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		



Date: 4/19/07
 Swipe Numbers: 21-34

Technician: M.S. Cox
 Auto gamma: LSC
 Laboratory Analysis: 721-34, 22-35

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	DPM

Completed
 All swipes < 200 dpm

Surveyor Comments

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
 \20070420_0812

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
 \20070420_0812\20070420_0812.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	7	5	0	0	38.27	401.46	B
2	2.00	0	1	0	0	1	0.00	378.79	
3	2.00	0	1	0	0	1	42.59	377.73	
4	2.00	0	1	0	0	2	535.27	392.03	
5	2.00	0	3	0	0	4	48.07	382.99	
6	2.00	0	0	0	0	0	0.00	373.01	
7	2.00	0	1	1	0	1	0.00	373.98	
8	2.00	0	0	0	0	0	0.00	386.07	
9	2.00	0	0	0	0	0	491.13	392.81	

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IFA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Nuclide:	MAN		MAN		MAN	
Bkg:	94.7		118		47.8	
Sigma:	0.00		0.00		0.00	
LER:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
%CV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	3.3	38.8	1.6	55.6	1.7	54.9	2.00
7	2	0.8	78.1	0.0		0.0		2.00
7	3	0.0		0.0		0.0		2.00
7	4	9.3	23.2	2.1	48.6	0.0		2.00
7	5	0.0		7.1	26.5	0.0		2.00
7	6	7.3	26.1	0.0		0.0		2.00
7	7	0.0		0.0		2.2	48.1	2.00
7	8	3.8	36.2	0.0		0.7	87.0	2.00
7	9	0.0		3.1	40.0	5.7	29.7	2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		10.6	21.7	0.0		2.00
7	12	4.3	34.0	0.0		2.2	48.1	2.00
7	13	0.0		0.0		0.2	177	2.00
7	14	7.8	25.3	0.0		1.2	65.7	2.00
7	15	20.8	15.5	0.0		8.7	24.0	2.00
7	16	11.8	20.6	0.0		2.2	48.1	2.00
7	17	0.0		4.6	32.9	0.0		2.00
7	18	0.0		3.1	40.0	0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	8.3	24.5	6.1	28.6	0.0		2.00
7	21	2.8	42.1	9.6	22.8	0.0		2.00
7	22	0.0		0.0		0.0		2.00
7	23	4.8	32.2	0.0		5.2	31.1	2.00
7	24	10.8	21.5	0.6	89.8	4.7	32.8	2.00
7	25	2.3	46.4	16.1	17.6	0.0		2.00
7	26	7.8	25.3	0.0		0.0		2.00
7	27	0.0		1.1	66.8	0.0		2.00
7	28	0.0		9.6	22.8	0.0		2.00
7	29	11.3	21.0	0.0		0.0		2.00
7	30	3.8	36.2	0.0		0.0		2.00
7	31	4.3	34.0	17.1	17.1	0.0		2.00
7	32	0.0		0.1	204	0.0		2.00
7	33	0.0		0.0		6.7	27.4	2.00
7	34	0.0		0.0		0.0		2.00

Radiation Equipment Survey Report

Room: 2N22

Building: 503

HPO Surveyor: MS Cox

Authorization: 659

Inspection Date: 4/18/07

Department: Experimental Therapeutics

Meter Model: N/A

Radionuclides: 2-3 Only

Meter Serial Number: N/A

Calibration Due Date:

Equipment Information

Nomenclature: Fume Hood
 Manufacturer: Starnette
 Model Number: N/A
 Serial Number: EH-264
 MMCN: EH EH-264

Reason for Survey

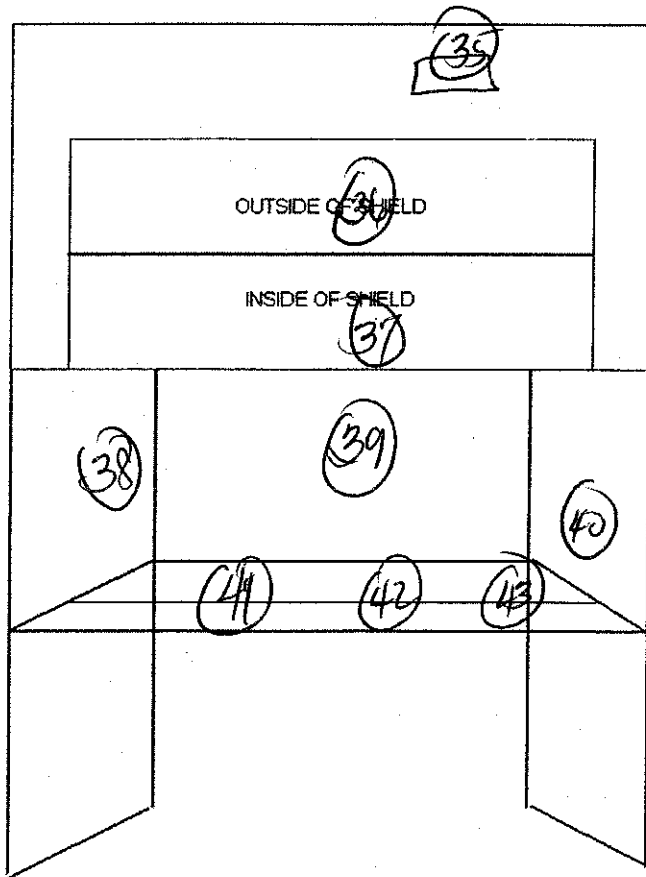
Mark a X for appropriate reason.

On/off-Site Repair: ☐
 Turn-in/ Transfer: ☐
 Administrative Hold: ☐
 Non RAM use only: ☒
 Other: ☐

Meter Readings

BKG		cpm mR/hr
A		cpm mR/hr
B		cpm mR/hr
C		cpm mR/hr
D		cpm mR/hr
E		cpm mR/hr
F		cpm mR/hr
G		cpm mR/hr

Fume Hood



Laboratory Analysis

Technician: MS Cox
 Date: 4/19/07
 Auto-gamma: 35-43
 LSC: 36-44
 Swipe Numbers: 35-43

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Swipe	Isotope	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Surveyor Comments

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
 \20070420_0812

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
 \20070420_0812\20070420_0812.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	7	5	0	0	38.27	401.46	B
2	2.00	0	1	0	0	1	0.00	378.79	
3	2.00	0	1	0	0	1	42.59	377.73	
4	2.00	0	1	0	0	2	535.27	392.03	
5	2.00	0	3	0	0	4	48.07	382.99	
6	2.00	0	0	0	0	0	0.00	373.01	
7	2.00	0	1	1	0	1	0.00	373.98	
8	2.00	0	0	0	0	0	0.00	386.07	
9	2.00	0	0	0	0	0	491.13	392.81	

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 2.00
 Count Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 XSpillup: 0.00
 XSpilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.7		118		47.8	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
ZCV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	3.3	38.8	1.6	55.6	1.7	54.9	2.00
7	2	0.8	78.1	0.0		0.0		2.00
7	3	0.0		0.0		0.0		2.00
7	4	9.3	23.2	2.1	48.6	0.0		2.00
7	5	0.0		7.1	26.5	0.0		2.00
7	6	7.3	26.1	0.0		0.0		2.00
7	7	0.0		0.0		2.2	48.1	2.00
7	8	3.8	36.2	0.0		0.7	87.0	2.00
7	9	0.0		3.1	40.0	5.7	29.7	2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		10.6	21.7	0.0		2.00
7	12	4.3	34.0	0.0		2.2	48.1	2.00
7	13	0.0		0.0		0.2	177	2.00
7	14	7.8	25.3	0.0		1.2	65.7	2.00
7	15	20.8	15.5	0.0		8.7	24.0	2.00
7	16	11.8	20.6	0.0		2.2	48.1	2.00
7	17	0.0		4.6	32.9	0.0		2.00
7	18	0.0		3.1	40.0	0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	8.3	24.5	6.1	28.6	0.0		2.00
7	21	2.8	42.1	9.6	22.8	0.0		2.00
7	22	0.0		0.0		0.0		2.00
7	23	4.8	32.2	0.0		5.2	31.1	2.00
7	24	10.8	21.5	0.6	89.8	4.7	32.8	2.00
7	25	2.3	46.4	16.1	17.6	0.0		2.00
7	26	7.8	25.3	0.0		0.0		2.00
7	27	0.0		1.1	66.8	0.0		2.00
7	28	0.0		9.6	22.8	0.0		2.00
7	29	11.3	21.0	0.0		0.0		2.00
7	30	3.8	36.2	0.0		0.0		2.00
7	31	4.3	34.0	17.1	17.1	0.0		2.00
7	32	0.0		0.1	204	0.0		2.00
7	33	0.0		0.0		6.7	27.4	2.00
7	34	0.0		0.0		0.0		2.00

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 90

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	

Protocol# 1 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711_0801Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711_0801\20080711_0801.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	6	4	0	0	48.13	411.82	B
2	2.00	0	5	0	0	6	107.75	403.86	
3	2.00	0	0	2	0	0	0.00	390.11	
4	2.00	0	1	0	0	2	749.94	416.00	
5	2.00	0	5	3	0	6	87.05	409.35	
6	2.00	3	1	0	7	1	0.00	406.99	
7	2.00	0	0	0	0	1	0.00	421.10	
8	2.00	0	1	0	0	1	0.00	407.02	
9	2.00	0	1	0	0	1	117.08	403.20	

10	2.00	0	0	0	0	0	0.00	409.08
11	2.00	3	1	0	6	1	0.00	393.34
12	2.00	0	0	2	1	0	0.00	398.27
13	2.00	1	3	0	0	4	63.44	417.66
14	2.00	0	0	0	0	0	0.00	398.66
15	2.00	2	0	1	4	0	55.46	402.56
16	2.00	0	0	0	0	0	0.00	400.55
17	2.00	0	4	0	0	5	81.55	414.71
18	2.00	1	0	1	3	0	0.00	395.79
19	2.00	0	1	0	0	1	0.00	402.75
20	2.00	0	1	1	0	1	27.02	398.93
21	2.00	3	2	0	6	3	48.27	412.44
22	2.00	0	0	2	0	0	0.00	436.64
23	2.00	1	0	1	3	0	0.00	400.97
24	2.00	1	0	0	2	0	245.48	423.72
25	2.00	0	3	0	0	4	68.97	403.82
26	2.00	2	0	1	3	0	107.83	393.31
27	2.00	0	5	1	0	6	160.86	408.71
28	2.00	0	1	0	0	2	386.80	397.34
29	2.00	1	0	0	2	0	121.98	407.76
30	2.00	0	0	0	1	0	0.00	393.46
31	2.00	0	0	1	0	0	0.00	429.02
32	2.00	1	3	3	1	4	39.78	399.35
33	2.00	0	5	0	0	6	152.18	409.83
34	2.00	0	0	0	0	0	0.00	409.41
35	2.00	0	0	0	0	0	0.00	393.16
36	2.00	0	2	1	0	2	105.48	401.46
37	2.00	0	4	0	0	6	103.98	403.52

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20071005_1004Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20071005_1004\20071005_1004.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	8	4	0	0	42.95	376.05	B
2	2.00	2	0	3	6	0	0.00	367.42	
3	2.00	0	0	0	0	0	0.00	361.70	
4	2.00	1	0	0	5	0	0.00	376.32	
5	2.00	0	0	0	0	0	0.00	375.06	
6	2.00	2	0	0	7	0	0.00	363.90	
7	2.00	0	0	0	0	0	0.00	375.27	
8	2.00	1	2	0	2	2	53.35	375.17	
9	2.00	0	0	0	1	0	0.00	363.44	

24 Oct 2007 08:36

Packard Instrument Company

Protocol #: 7

Swipes

Page #1

User: Lab Sta

Count Time(minutes): 3.00
 Assay Type: CPM
 Background Subtract: IPA Bkg
 Outlier: 5.0 FLAG
 %Spillover: 0.00
 %Spilloverdown: 0.00
 Screening: OFF

Window A

Window C

Window B

Nuclide:	MAN	15 - 250 keV	MAN	250 -
50 keV MAN	950 - 2000 keV			
Bkg:	97.0		117	
48.3				
Sigma:	0.00		0.00	
0.00				
LCP:	0		0	
0				
Half Life(hours):	0.00		0.00	
Multiplier:	1.0000			
%CV Flag Limit:	0.00		0.00	

P#	S#	A:CPM	A:XSIG	B:CPM	B:XSIG	C:CPM	C:XSIG	TIME
7	1	0.0		0.0		3.2	11.1	2.00
7	2	0.0		8.2	32.5	0.0		2.00
7	3	0.0		0.3	121	0.0		2.00
7	4	0.0		0.3	121	2.7	43.4	2.00
7	5	0.0		4.8	77.1	5.2	31.1	2.00
7	6	2.5	44.9	8.3	24.5	0.0		2.00
7	7	5.0	31.7	0.0		2.2	48.1	2.00
7	8	0.0		10.8	21.5	0.0		2.00
7	9	0.0		10.3	22.0	0.0		2.00
7	10	8.5	24.3	0.0		6.2	28.5	2.00
7	11	1.5	58.1	0.0		0.0		2.00
7	12	0.0		4.3	33.9	4.2	34.7	2.00
7	13	0.0		8.8	23.8	0.0		2.00
7	14	4.5	33.4	0.0		0.0		2.00
7	15	3.0	41.0	0.0		7.2	26.4	2.00
7	16	1.0	71.4	9.3	23.1	4.2	34.7	2.00
7	17	0.0		5.8	27.3	7.2	48.1	2.00
7	18	0.0		0.3	121	1.7	54.9	2.00
7	19	1.0	71.4	0.0		14.7	18.5	2.00
7	20	1.0	71.4	0.0		0.0		2.00
7	21	0.0		0.0		1.7	45.7	2.00
7	22	4.5	33.4	1.7	61.1	0.0		2.00
7	23	8.5	24.3	0.0		4.7	32.8	2.00
7	24	0.0		0.0		4.7	32.8	2.00
7	25	10.0	27.4	0.0		3.7	37.0	2.00
7	26	0.0		9.3	23.1	1.7	54.9	2.00
7	27	1.0	71.4	0.8	77.7	2.2	23.4	2.00
7	28	0.0		0.0		4.2	34.7	2.00
7	29	0.0		11.8	20.5	2.7	43.4	2.00
7	30	0.0		0.0		0.7	87.0	2.00
7	31	0.0		10.3	22.0	7.7	17.0	2.00
7	32	1.5	58.1	0.0		1.7	54.9	2.00
7	33	0.0		0.0		0.0		2.00
7	34	0.0		0.0		2.7	43.4	2.00

7931

Radiation Lab Summary Report

Room: 3W71

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 671, Dr. Urszula Krzych

Inspection Date: 6/4/08

Department: Immunology

Meter Model Number: N/A

Frequency: 90 days

Meter Serial Number: N/A

Radionuclides: Cr-51 and H-3

Calibration Due Date: _____

Initial Checks

User Inventory Log:

Isotope / Activity Used: N/A

Maximum Daily Use: N/A

Lab Survey Meter:

Model Meter Number: N/A

Serial Number: N/A

Calibration Due Date: N/A

Yes No NA

RAM Secure?	☒	☐	☐
Room Posted?	☐	☐	☒
Work Area Posted?	☐	☐	☒
Equipment Posted?	☒	☐	☐
User Surveys Performed?	☐	☐	☒

Date Of Last User Survey: N/A

Meter Readings

BKG

A

B

C

D

E

F

G

cpm mR/hr

cpm mR/hr

cpm mR/hr

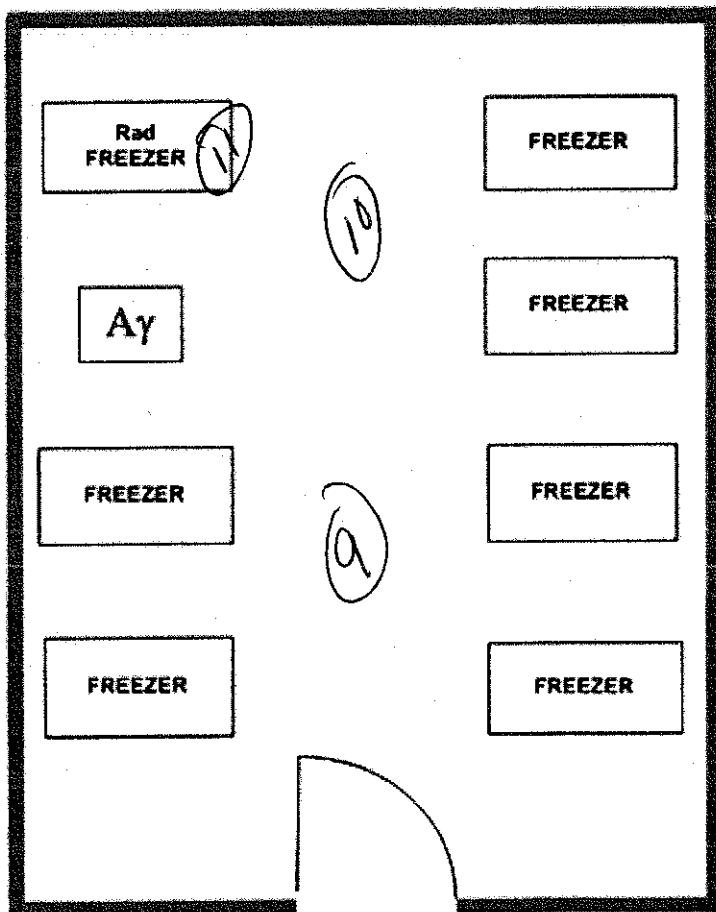
cpm mR/hr

cpm mR/hr

cpm mR/hr

cpm mR/hr

cpm mR/hr



503_3W71

Laboratory Analysis

Technician

Auto-gamma

Date

Swipe Numbers

6/5/08

9-11

Ms. Cox

10-12

LSC

10-12

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Swipe	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

05-Jun-2008 09:53:34

Protocol id 1 ROUTINE2
 Time limit 120
 Count limit 999999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 28-Mar-2008 09:32:23
 Run id. 66

POS	RACK	BATCH	TIME	-----15-1024-----			-----1k-2k-----		
				COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	309	18.0	89.49	41	-5.4	66.36
2	1	2	120	296	0.0	224.05	58	3.1	133.35
3	1	3	120	294	3.8	293.31	51	-0.4	907.82
4	1	4	120	278	-6.3	190.64	54	1.1	364.66
5	1	5	120	269	-12.1	97.11	56	2.1	193.96
6	1	6	120	255	-17.8	54.21	54	1.1	368.09
7	1	7	120	265	-16.8	79.43	60	4.1	102.29
8	1	8	120	299	2.2	165.75	57	2.6	158.44
9	1	9	120	274	-10.3	133.80	57	2.6	157.83
10	1	10	120	269	-6.7	97.11	48	-1.9	201.04
11	2	11	120	305	18.0	109.48	38	-6.9	50.39
12	2	12	120	301	14.7	141.39	40	-5.9	60.02
13	2	13	120	300	5.4	152.58	53	0.6	674.87
14	2	14	120	287	-0.4	3050.48	52	0.1	3948.87
15	2	15	120	280	-1.2	242.13	48	-1.9	199.90

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080605_1058

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080605_1058\20080605_1058.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	5	4	0	0	48.86	429.66	B
2	2.00	0	1	0	0	1	1607.41	470.89	
3	2.00	0	2	1	0	3	77.14	424.77	
4	2.00	3	1	0	6	1	21.78	436.51	
5	2.00	2	0	1	5	0	0.95	431.92	
6	2.00	0	0	0	0	0	0.00	422.38	
7	2.00	0	3	0	0	4	133.66	437.02	
8	2.00	2	2	0	2	2	55.48	436.21	
9	2.00	4	1	0	8	1	34.22	420.39	

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY 05-Jun-2008 09:53:34

Protocol id 1 ROUTINE2
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 28-Mar-2008 09:32:23
Run id. 66

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	309	18.0	89.49	41	-5.4	66.36
2	1	2	120	296	0.0	224.05	58	3.1	133.35
3	1	3	120	294	3.8	293.31	51	-0.4	907.82
4	1	4	120	278	-6.3	190.64	54	1.1	364.66
5	1	5	120	269	-12.1	97.11	56	2.1	193.96
6	1	6	120	255	-17.8	54.21	54	1.1	368.09
7	1	7	120	265	-16.8	79.43	60	4.1	102.29
8	1	8	120	299	2.2	165.75	57	2.6	158.44
9	1	9	120	274	-10.3	133.80	57	2.6	157.83
10	1	10	120	269	-6.7	97.11	48	-1.9	201.04
11	2	11	120	305	18.0	109.48	38	-6.9	50.39
12	2	12	120	301	14.7	141.39	40	-5.9	60.02
13	2	13	120	300	5.4	152.58	53	0.6	674.87
14	2	14	120	287	-0.4	3050.48	52	0.1	3948.87
15	2	15	120	280	-1.2	242.13	48	-1.9	199.90

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080605.1058Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080605.1058\20080605.1058.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	5	4	0	0	48.86	429.66	B
2	2.00	0	1	0	0	1	1607.41	470.89	
3	2.00	0	2	1	0	3	77.14	424.77	
4	2.00	3	1	0	6	1	21.78	436.51	
5	2.00	2	0	1	5	0	0.95	431.92	
6	2.00	0	0	0	0	0	0.00	422.38	
7	2.00	0	3	0	0	4	133.66	437.02	
8	2.00	2	2	0	2	2	55.48	436.21	
9	2.00	4	1	0	8	1	34.22	420.39	

Protocol# 2 - routine surveys, 2 minute counts.lsa

User: routine

10	2.00	1	1	1	2	1	27.49	417.34
11	2.00	1	1	0	2	2	23.09	412.45
12	2.00	0	0	1	1	0	0.00	424.57
13	2.00	3	1	0	5	2	4.36	419.31
14	2.00	1	2	1	0	2	64.31	413.46
15	2.00	0	5	0	0	6	67.94	426.37

#7929

Radiation Lab Summary Report

Room: 3W110

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Coy

Authorization: 671, Dr. Urszula Kryzch

Inspection Date: 6/4/08

Department: Immunology

Frequency: 90 Days

Meter Model: N/A

Radionuclides: Cr-51 and H-3

Meter Serial Number: N/A

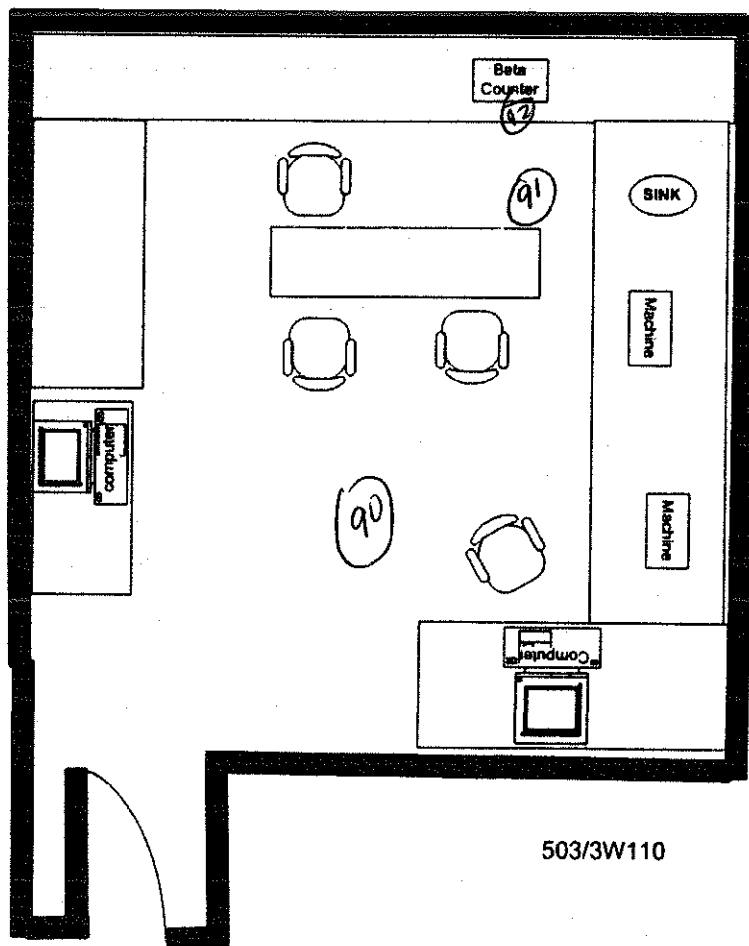
Read H-3 Plates Only

Calibration Due Date: N/A**Survey Checks**

	Yes	NA	No
Are all radioactive materials secure?			X
Is the room posted?	X		
Is the work area posted?			X
Is equipment use for rad use posted?			X
Have user performed surveys?			X

Date Of Last User Survey: N/A**User Inventory Log:**Isotope / Activity Used: N/AMax Daily Use: N/A**Lab Survey Meter:**Model Number: N/ASerial Number: N/ACalibration Due Date: N/A**Meter Readings**

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		



503/3W110

Laboratory AnalysisDate: 6/5/08Swipe Numbers: 90-92Technician: Ms. Coy

Auto-gamma

LSC

13-15

13-15

Record any samples > 2000dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

05-Jun-2008 09:53:34

Protocol id 1 ROUTINE2
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 28-Mar-2008 09:32:23
 Run id. 66

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	309	18.0	89.49	41	-5.4	66.36
2	1	2	120	296	0.0	224.05	58	3.1	133.35
3	1	3	120	294	3.8	293.31	51	-0.4	907.82
4	1	4	120	278	-6.3	190.64	54	1.1	364.66
5	1	5	120	269	-12.1	97.11	56	2.1	193.96
6	1	6	120	255	-17.8	54.21	54	1.1	368.09
7	1	7	120	265	-16.8	79.43	60	4.1	102.29
8	1	8	120	299	2.2	165.75	57	2.6	158.44
9	1	9	120	274	-10.3	133.80	57	2.6	157.83
10	1	10	120	269	-6.7	97.11	48	-1.9	201.04
11	2	11	120	305	18.0	109.48	38	-6.9	50.39
12	2	12	120	301	14.7	141.39	40	-5.9	60.02
13	2	13	120	300	5.4	152.58	53	0.6	674.87
14	2	14	120	287	-0.4	3050.48	52	0.1	3948.87
15	2	15	120	280	-1.2	242.13	48	-1.9	199.90

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080605_1058

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080605_1058\20080605_1058.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	5	4	0	0	48.86	429.66	B
2	2.00	0	1	0	0	1	1607.41	470.89	
3	2.00	0	2	1	0	3	77.14	424.77	
4	2.00	3	1	0	6	1	21.78	436.51	
5	2.00	2	0	1	5	0	0.95	431.92	
6	2.00	0	0	0	0	0	0.00	422.38	
7	2.00	0	3	0	0	4	133.66	437.02	
8	2.00	2	2	0	2	2	55.48	436.21	
9	2.00	4	1	0	8	1	34.22	420.39	

Radiation Equipment Survey Report

Room: 3N42

Building: 503

HPO Surveyor: MS-Cox

Authorization: 703

Inspection Date: 5/17/07

Department: Biochemistry

Meter Model: N/A

Frequency: N/A

Meter Serial Number: N/A

Radionuclides: H-3

Calibration Due Date: N/A

Equipment Information

Nomenclature: N/A

Manufacturer: N/A

Model Number: N/A

Serial Number: N/A

MMCN: N/A

Reason for Survey

Mark a X for appropriate reason.

On/off-Site Repair:

Turn-in/ Transfer: X

Administrative Hold:

Non RAM use only:

Other:

Meter Readings

BKG

A

B

C

D

E

F

G

cpm mR/hr

cpm mR/hr

cpm mR/hr

cpm mR/hr

cpm mR/hr

cpm mR/hr

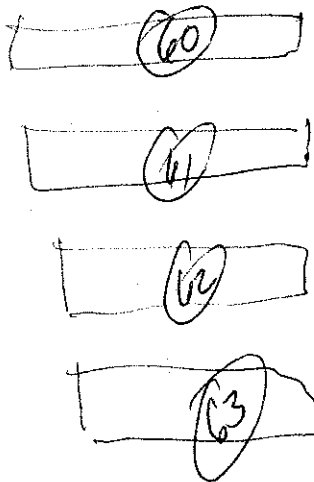
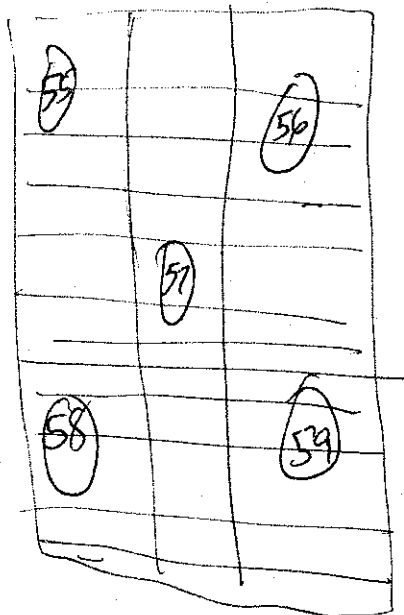
cpm mR/hr

cpm mR/hr

LSC
Racks

Equipment

LSC RACKS



Laboratory Analysis

Technician

Auto-gamma

MS-Cox

LSC

Date

Swipe Numbers

5/15/07

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Efficiency

MDA (dpm)

DPM

Swipe

Isotope

Efficiency

MDA (dpm)

DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070518_1050

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20070518_1050\20070518_1050.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	8	5	0	0	50.44	459.11	B
2	2.00	3	2	1	6	3	31.76	389.01	
3	2.00	0	2	0	0	3	0.00	348.33	
4	2.00	0	0	0	0	0	0.00	388.82	
5	2.00	0	0	0	0	0	0.00	385.57	
6	2.00	0	0	0	0	0	0.00	362.87	
7	2.00	0	0	0	0	0	0.00	385.41	
8	2.00	0	0	0	0	0	0.00	365.21	
9	2.00	0	1	0	0	1	0.00	378.93	

18 May 2007 08:47

Packard Instrument Company

Page #1

Protocol #: 8

Swipes

User: Hiet

Count Time (minutes): 2.00
 Assay Type: CFM
 Background Subtract: 1PA Eke
 Outlier: 5.0 FLAG
 %Spillover: 0.00
 %Spilldown: 0.00
 Screening: OFF

Window A

Window B

Window C

Nuclide: MAN 15 - 250 keV MAN 250 -
 50 keV MAN 950 - 1000 keV
 Eke: 48.6 94.7 111
 Sigma: 0.00 0.00
 LCR: 0.00 0.00
 Half Life (hours): 0.00 0.00
 Multiplier: 1.0000
 RCV Flag Limit: 0.00 0.00

F#	S#	A:CFM	A:SIG	E:CFM	E:SIG	C:CFM	C:SIG	TIME
3	1	12.8	19.8	0.0		0.0	74.5	2.00
3	2	12.8	19.8	0.0		0.4	28.7	2.00
3	3	9.2	32.8	0.0		0.0		2.00
3	4	19.8	18.8	0.0		0.4	45.8	2.00
3	5	12.8	19.0	0.0		0.0		2.00
3	6	0.0	32.1	0.0		0.4	45.8	2.00
3	7	14.8	18.4	0.0		0.0		2.00
3	8	0.0	32.1	1.5	35.1	0.0		2.00
3	9	0.0		15.5	17.0	0.4	59.5	2.00
3	10	0.0	138	0.0		0.0		2.00
3	11	0.0	47.0	0.0	40.7	0.4	110	2.00
3	12	0.0	32.1	0.0		0.0		2.00
3	13	0.0		1.5	37.4	0.0		2.00
3	14	0.0		8.5	27.7	0.8	74.5	2.00
3	15	0.0		10.6	32.8	0.0		2.00
3	16	0.0		4.0	35.7	0.8	41.5	2.00

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 90

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

#8097

Radiation Lab Summary Report

Room: 2N42

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 703, Dr. Richard Gordon

Inspection Date: 7/16/08

Department: Experimental Therapeutics

Frequency: 90 Days

Meter Model: N/A

Radionuclides: C-14, Ca-45, H-3, P-32, I-125, and Cs-137

Meter Serial Number: N/A

Calibration Due Date: _____

A-3 Use Only

Initial Checks

	Yes	NA	No
Are all radioactive materials secure?	☒		
Is the room posted?	☒		
Is the work area posted?	☒		
Is equipment use for rad use posted?	☒		
Have user performed surveys?	☒		

Date Of Last User Survey: 6/12/08

User Inventory Log:

Isotope / Activity Used: H-3 / 0.005 mCi

Max Daily Use: 0.0076 mCi

Lab Survey Meter:

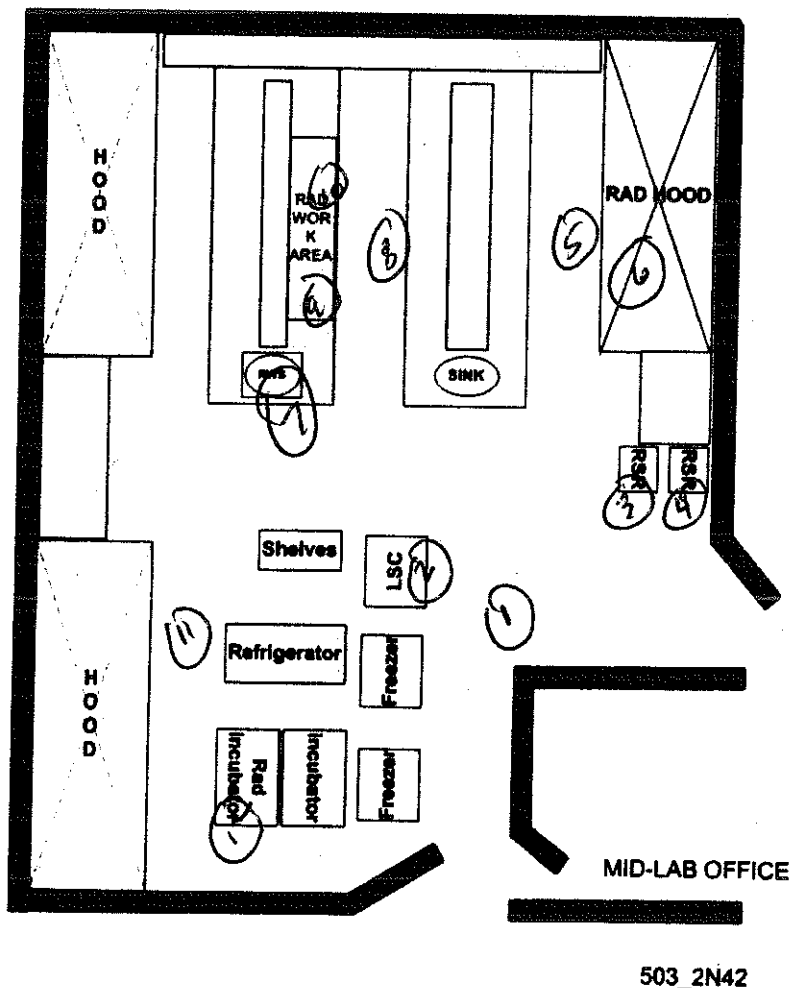
Model Number: N/A

Serial Number: N/A

Calibration Due Date: N/A

Meter Readings

BKG	cpm	mR/hr
A	<u>N/A</u>	
B		
C		
D		
E		
F		
G		



Laboratory Analysis

Technician: Ms. Cox
Date: 7/17/08

Auto-gamma: 2-1-12
LSC: 2-2-13

Record any samples > 200 dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 90

-----15-1024-----							-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	

#8123

Radiation Lab Summary Report

Room: 2N48

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 705, Dr. Thomas Hudson

Inspection Date: 7/25/08

Department: Experimental Therapeutics

Frequency: Weekly

Meter Model: Geiger

Radionuclides: H-3

Meter Serial Number: 11976

Calibration Due Date: 10/12/08

Survey Checks

	Yes	No	NA
Are all radioactive materials secure?	X		
Is the room posted?	X		
Is the work area posted?	X		
Is equipment posted?	X		
Have the user performing surveys?			X

Date Of Last User Survey: 2/22/07

User Inventory Log:

Isotope / Activity Used: N/A

Max Daily Use:

Lab Survey Meter:

Model Number:

Serial Number:

Calibration Due Date:

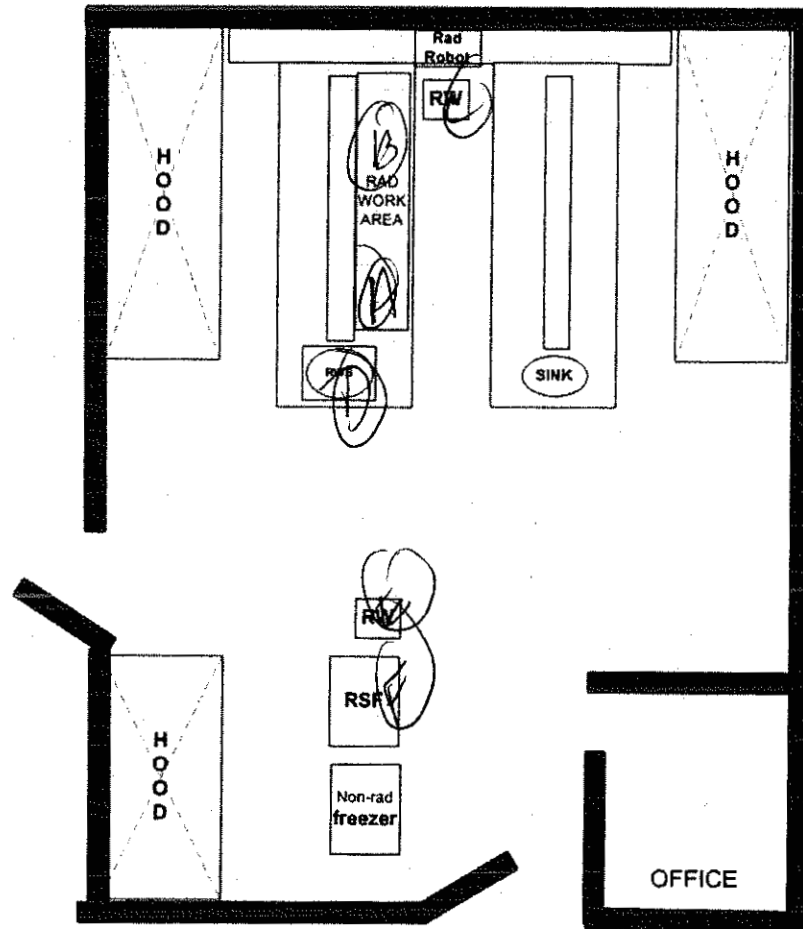
Same

Same

Same

Meter Readings

BKG	cpm
A	<100
B	<100
C	11
D	11
E	11
F	<100
G	cpm



Laboratory Analysis

Technician	Date	Swipe Numbers		
Auto-gamma	LSC			
Record any samples > 2000dpm of removable contamination. If 2000 dpm, resurvey within 5 working days				
Swipe	Isotope	Efficiency	MDA (dpm)	DPM
Swipe	Isotope	Efficiency	MDA (dpm)	DPM
Swipe	Isotope	Efficiency	MDA (dpm)	DPM
Swipe	Isotope	Efficiency	MDA (dpm)	DPM
Swipe	Isotope	Efficiency	MDA (dpm)	DPM
Swipe	Isotope	Efficiency	MDA (dpm)	DPM
Comments				

Surveyor Comments

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20071005_1004

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20071005_1004\20071005_1004.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	8	4	0	0	42.95	376.05	B
2	2.00	2	0	3	6	0	0.00	367.42	
3	2.00	0	0	0	0	0	0.00	361.70	
4	2.00	1	0	0	5	0	0.00	376.32	
5	2.00	0	0	0	0	0	0.00	375.06	
6	2.00	2	0	0	7	0	0.00	363.90	
7	2.00	0	0	0	0	0	0.00	375.27	
8	2.00	1	2	0	2	2	53.35	375.17	
9	2.00	0	0	0	1	0	0.00	363.44	

04 Oct 2007 09:36

Packard Instrument Company

Page #1

Protocol #: 7

Swipes

User: Lab Sta

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract: 1PA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

Window A

Window B

Window C		Window B	
Nuclide:	MAN	15 - 250 keV	MAN
50 keV	MAN	950 - 2000 keV	250 -
Bkg:	97.0		117
	48.3		
Sigma:	0.00		0.00
LCP:	0		0
Half Life(hours):	0.00		0.00
Multiplier:	1.0000		
%CV Flag limit:	0.00		0.00

P#	S#	A:CPM	A:XSIG	B:CPM	B:XSIG	C:CPM	C:XSIG	TIME
7	1	0.0		0.0		5.2	31.1	2.00
7	2	0.0		9.8	22.5	0.0		2.00
7	3	0.0		0.3	121	0.0		2.00
7	4	0.0		0.3	121	2.7	43.4	2.00
7	5	0.0		4.8	32.1	5.2	31.1	2.00
7	6	2.5	44.9	8.3	24.5	0.0		2.00
7	7	5.0	31.7	0.0		2.2	48.1	2.00
7	8	0.0		10.8	21.5	0.0		2.00
7	9	0.0		10.3	22.0	0.0		2.00
7	10	8.5	24.3	0.0		6.2	28.5	2.00
7	11	1.5	58.1	0.0		0.0		2.00
7	12	0.0		4.3	33.9	4.2	34.7	2.00
7	13	0.0		8.8	23.8	0.0		2.00
7	14	4.5	33.4	0.0		0.0		2.00
7	15	3.0	41.0	0.0		7.2	26.4	2.00
7	16	1.0	71.4	9.3	23.1	4.2	34.7	2.00
7	17	0.0		5.9	28.3	2.2	48.1	2.00
7	18	0.0		0.3	121	1.7	54.9	2.00
7	19	1.0	71.4	0.0		14.7	18.5	2.00
7	20	1.0	71.4	0.0		0.0		2.00
7	21	0.0		0.0		1.2	45.7	2.00
7	22	4.5	33.4	1.7	61.1	0.0		2.00
7	23	8.5	24.3	0.0		4.7	32.8	2.00
7	24	0.0		0.0		4.7	32.8	2.00
7	25	10.0	22.4	0.0		3.7	37.0	2.00
7	26	0.0		9.3	23.1	1.7	54.9	2.00
7	27	1.0	71.4	0.8	77.2	9.2	23.4	2.00
7	28	0.0		0.0		4.2	34.7	2.00
7	29	0.0		11.8	20.5	2.7	43.4	2.00
7	30	0.0		0.0		0.7	87.0	2.00
7	31	0.0		10.3	22.0	3.7	37.0	2.00
7	32	1.5	58.1	0.0		1.7	54.9	2.00
7	33	0.0		0.0		0.0		2.00
7	34	0.0		0.0		2.7	43.4	2.00

#7965

Radiation Lab Summary Report

Room: 3E14

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 706, Dr. Patricia Guerry-Kopecko

Inspection Date: 6/11/08

Department: NMRC / Enteric Diseases

Frequency: 90 Days

Meter Model: Geiger

Radionuclides: H-3, P-32, and S-35

Meter Serial Number: 11976

Calibration Due Date: 10/12/08

Survey Checks

Are all radioactive materials secure?	☒	☐	☐
Is the room posted?	☒	☐	☐
Is the work area posted?	☐	☒	☐
Is equipment use for rad use posted?	☒	☐	☐
Have user performed surveys?	☐	☒	☐

Yes NA No

User Inventory Log:

Isotope / Activity Used: N/A

Max Daily Use:

Lab Survey Meter:

Meter Model: Geiger

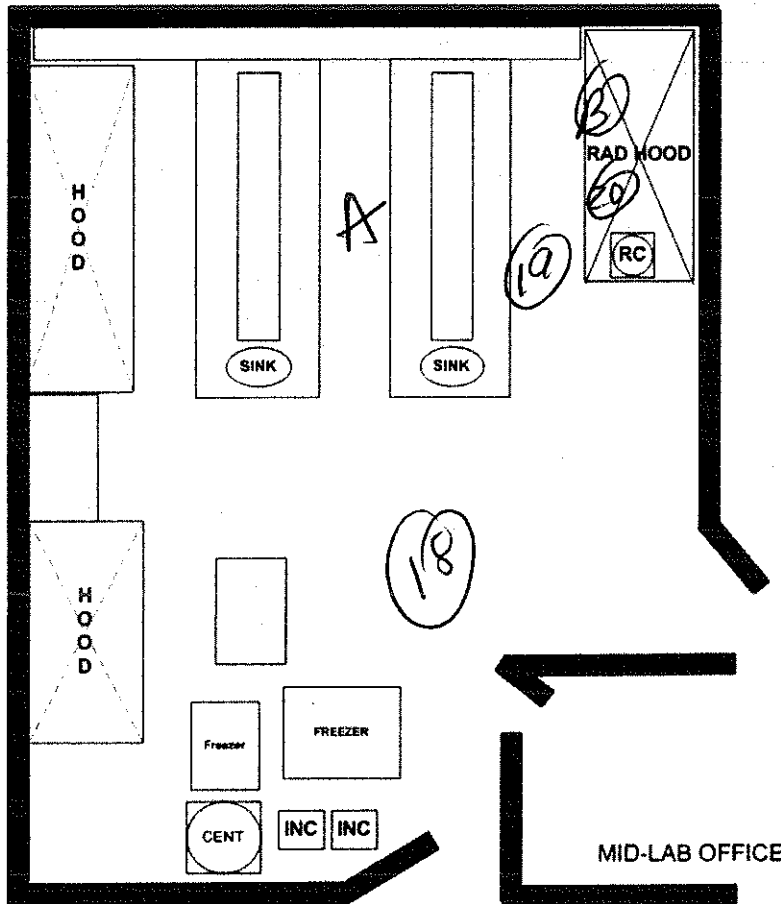
Serial Number: 11976

Calibration Due Date: 10/12/08

Date Of Last User Survey: 6/11/08

Meter Readings

BKG	<u>2100</u>	cpm mR/hr
A	<u>2100</u>	cpm mR/hr
B	<u>2100</u>	cpm mR/hr
C		cpm mR/hr
D		cpm mR/hr
E		cpm mR/hr
F		cpm mR/hr
G		cpm mR/hr



503_3E14

Laboratory Analysis

Technician: ms. Cox
Auto-gamma: 6/11/08
Date: 6/11/08
Swipe Numbers: 18-20
LSC: 14-16

Record any samples > 2000 dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

12-Jun-2008 07:29:17

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 76

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	249	-24.1	45.37	59	3.6	115.67
2	1	2	120	266	-17.0	83.32	61	4.6	91.82
3	1	3	120	289	4.6	1317.88	46	-2.9	129.44
4	1	4	120	271	1.0	109.13	38	-6.9	50.39
5	1	5	120	257	-19.5	57.94	58	3.1	133.36
6	1	6	120	292	4.8	423.66	48	-1.9	201.04
7	1	7	120	283	1.6	400.43	46	-2.9	129.44
8	1	8	120	278	-14.4	190.63	66	7.1	61.54
9	1	9	120	252	-15.2	49.41	48	-1.9	201.03
10	1	10	120	274	-7.6	134.01	53	0.6	663.32
11	2	11	120	275	-11.2	144.63	59	3.6	115.67
12	2	12	120	265	-10.8	79.43	51	-0.4	979.16
13	2	13	120	267	-7.7	87.41	48	-1.9	199.90
14	2	14	120	296	-4.0	224.05	64	6.1	70.68
15	2	15	120	279	-1.1	213.10	47	-2.4	157.07
16	2	16	120	286	-9.0	1152.73	64	6.1	70.68
17	2	17	120	224	-23.2	26.38	39	-6.4	54.89
18	2	18	120	274	-13.0	133.80	61	4.6	91.82
19	2	19	120	281	2.0	279.30	44	-3.9	94.25
20	2	20	120	271	-6.4	109.13	49	-1.4	275.16
21	3	21	120	307	4.8	98.46	59	3.6	115.67
22	3	22	120	287	0.2	3159.80	51	-0.4	979.17
23	3	23	120	273	-6.1	124.45	50	-0.9	431.62
24	3	24	120	269	-22.2	97.33	71	9.6	46.98
25	3	25	120	271	-7.1	109.13	50	-0.9	431.63
26	3	26	120	269	-13.5	97.11	58	3.1	133.36
27	3	27	120	250	-15.6	46.63	47	-2.4	157.78
28	3	28	120	284	-3.3	512.19	54	1.1	364.65
29	3	29	120	276	-8.6	157.32	56	2.1	193.96
30	3	30	120	275	-5.8	144.63	51	-0.4	979.22
31	4	31	120	299	9.6	165.75	46	-2.9	128.95
32	4	32	120	307	5.5	98.46	58	3.1	133.35
33	4	33	120	236	-17.8	33.20	40	-5.9	60.14
34	4	34	120	283	-1.8	400.44	51	-0.4	979.18
35	4	35	120	284	6.8	512.17	39	-6.4	54.89
36	4	36	120	286	-3.0	1167.75	55	1.6	252.64
37	4	37	120	290	-0.3	779.38	54	1.1	361.29
38	4	38	120	289	1.9	1337.25	50	-0.9	431.64
39	4	39	120	273	-4.7	124.45	48	-1.9	201.03
40	4	40	120	278	-2.2	190.64	48	-1.9	201.04
41	5	41	120	288	-4.6	4286.17	59	3.6	115.67
42	5	42	120	282	-2.9	328.54	52	0.1	3948.76

Protocol# 2 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
20080612_0948Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
20080612_0948\20080612_0948.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	7	4	0	0	53.26	414.80	B
2	2.00	0	0	1	2	0	0.00	412.96	
3	2.00	0	1	4	0	2	0.00	429.36	
4	2.00	0	0	0	0	0	0.00	430.46	
5	2.00	0	0	0	0	0	0.00	431.09	
6	2.00	1	0	0	2	0	0.00	427.59	
7	2.00	1	3	0	1	3	39.11	417.84	
8	2.00	0	1	1	0	1	0.00	420.79	
9	2.00	0	0	0	0	0	0.00	413.89	

Radiation Lab Summary Report

Room: 3E18

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 706, Dr. Patricia Guerry-Kopecko

Inspection Date: 6/11/08

Department: NMRC / Enteric Diseases

Frequency: 90 Days

Meter Model: Geiger

Radionuclides: H-3, P-32, and S-35

Meter Serial Number: 11976

Calibration Due Date: 10/12/08

Survey Checks

	Yes	NA	No
Are all radioactive materials secure?	☒	☐	☐
Is the room posted?	☒	☐	☐
Is the work area posted?	☐	☒	☐
Is equipment use for rad use posted?	☐	☒	☐
Have user performed surveys?	☐	☒	☐

Yes	NA	No
☒	☐	☐
☒	☐	☐
☐	☒	☐
☐	☒	☐
☐	☒	☐

User Inventory Log:

Isotope / Activity Used: N/A

Max Daily Use: N/A

Lab Survey Meter:

Meter Model: Same

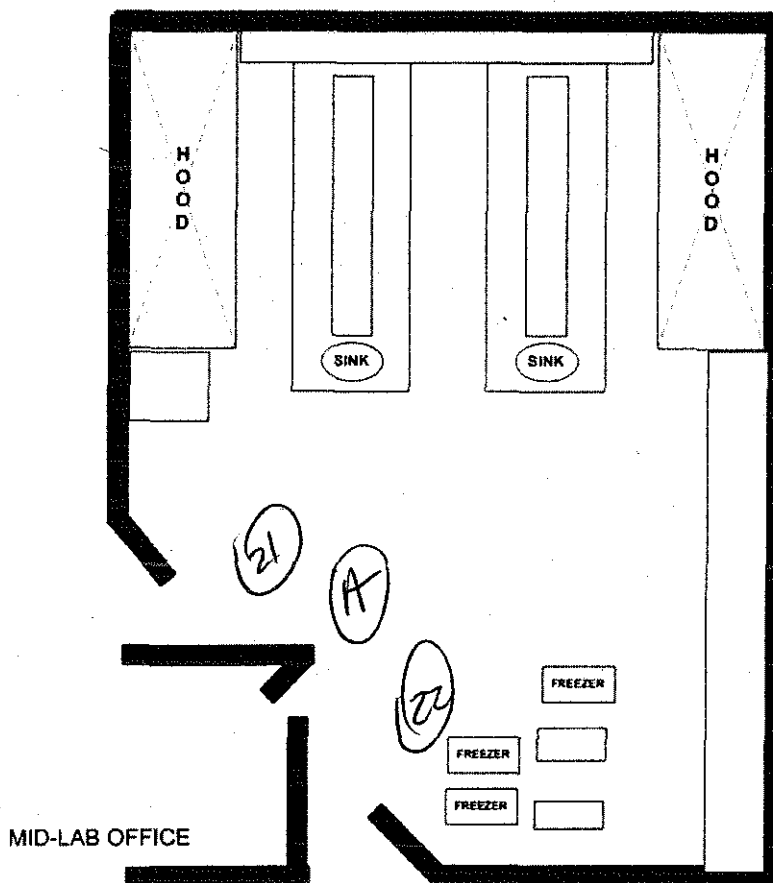
Serial Number: Same

Calibration Due Date:

Date Of Last User Survey: Never Used

Meter Readings

BKG		cpm	mR/hr
A	<u>2100</u>	cpm	mR/hr
B	<u>2100</u>	cpm	mR/hr
C		cpm	mR/hr
D		cpm	mR/hr
E		cpm	mR/hr
F		cpm	mR/hr
G		cpm	mR/hr



503_3E18

Laboratory Analysis

Technician: Ms. Cox

Date: 6/12/08

Auto-gamma: 17-18

LSC: 17-18

Swipe Numbers: 21-22

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Swipe	Efficiency	DPM	Comments

Completed
All swipes < 200 dpm

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

12-Jun-2008 07:29:17

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 76

POS	RACK	BATCH	TIME	-----15-1024-----			-----1k-2k-----		
				COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	249	-24.1	45.37	59	3.6	115.67
2	1	2	120	266	-17.0	83.32	61	4.6	91.82
3	1	3	120	289	4.6	1317.88	46	-2.9	129.44
4	1	4	120	271	1.0	109.13	38	-6.9	50.39
5	1	5	120	257	-19.5	57.94	58	3.1	133.36
6	1	6	120	292	4.8	423.66	48	-1.9	201.04
7	1	7	120	283	1.6	400.43	46	-2.9	129.44
8	1	8	120	278	-14.4	190.63	66	7.1	61.54
9	1	9	120	252	-15.2	49.41	48	-1.9	201.03
10	1	10	120	274	-7.6	134.01	53	0.6	663.32
11	2	11	120	275	-11.2	144.63	59	3.6	115.67
12	2	12	120	265	-10.8	79.43	51	-0.4	979.16
13	2	13	120	267	-7.7	87.41	48	-1.9	199.90
14	2	14	120	296	-4.0	224.05	64	6.1	70.68
15	2	15	120	279	-1.1	213.10	47	-2.4	157.07
16	2	16	120	286	-9.0	1152.73	64	6.1	70.68
17	2	17	120	224	-23.2	26.38	39	-6.4	54.89
18	2	18	120	274	-13.0	133.80	61	4.6	91.82
19	2	19	120	281	2.0	279.30	44	-3.9	94.25
20	2	20	120	271	-6.4	109.13	49	-1.4	275.16
21	3	21	120	307	4.8	98.46	59	3.6	115.67
22	3	22	120	287	0.2	3159.80	51	-0.4	979.17
23	3	23	120	273	-6.1	124.45	50	-0.9	431.62
24	3	24	120	269	-22.2	97.33	71	9.6	46.98
25	3	25	120	271	-7.1	109.13	50	-0.9	431.63
26	3	26	120	269	-13.5	97.11	58	3.1	133.36
27	3	27	120	250	-15.6	46.63	47	-2.4	157.78
28	3	28	120	284	-3.3	512.19	54	1.1	364.65
29	3	29	120	276	-8.6	157.32	56	2.1	193.96
30	3	30	120	275	-5.8	144.63	51	-0.4	979.22
31	4	31	120	299	9.6	165.75	46	-2.9	128.95
32	4	32	120	307	5.5	98.46	58	3.1	133.35
33	4	33	120	236	-17.8	33.20	40	-5.9	60.14
34	4	34	120	283	-1.8	400.44	51	-0.4	979.18
35	4	35	120	284	6.8	512.17	39	-6.4	54.89
36	4	36	120	286	-3.0	1167.75	55	1.6	252.64
37	4	37	120	290	-0.3	779.38	54	1.1	361.29
38	4	38	120	289	1.9	1337.25	50	-0.9	431.64
39	4	39	120	273	-4.7	124.45	48	-1.9	201.03
40	4	40	120	278	-2.2	190.64	48	-1.9	201.04
41	5	41	120	288	-4.6	4286.17	59	3.6	115.67
42	5	42	120	282	-2.9	328.54	52	0.1	3948.76

Protocol# 2 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948\20080612_0948.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	7	4	0	0	53.26	414.80	B
2	2.00	0	0	1	2	0	0.00	412.96	
3	2.00	0	1	4	0	2	0.00	429.36	
4	2.00	0	0	0	0	0	0.00	430.46	
5	2.00	0	0	0	0	0	0.00	431.09	
6	2.00	1	0	0	2	0	0.00	427.59	
7	2.00	1	3	0	1	3	39.11	417.84	
8	2.00	0	1	1	0	1	0.00	420.79	
9	2.00	0	0	0	0	0	0.00	413.89	

#7840

Radiation Lab Summary Report

Room: 3E24

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 707, Dr. Shahida Baqar

Inspection Date: 5/7/08

Department: NMRC / Enteric Diseases

Frequency: 30 Days

Meter Model: N/A

Radionuclides: Cr-51, H-3, P-32, I-125, and P-33

Meter Serial Number: 1/A

2-3 Use Only

Calibration Due Date:

Initial Checks

Are all radioactive materials secure?	☒	☐	☐
Is the room posted?	☒	☐	☐
Is the work area posted?	☒	☐	☐
Is equipment use for rad use posted?	☒	☐	☐
Have user performed surveys?	☒	☐	☐

Yes	NA	No
☒	☐	☐
☒	☐	☐
☒	☐	☐
☒	☐	☐
☒	☐	☐

User Inventory Log:

Isotope / Activity Used:

H-3 / 0.145 mCi

Max Daily Use:

0.145 mCi

Lab Survey Meter:

Model Number:

N/A

Serial Number:

1/A

Calibration Due Date:

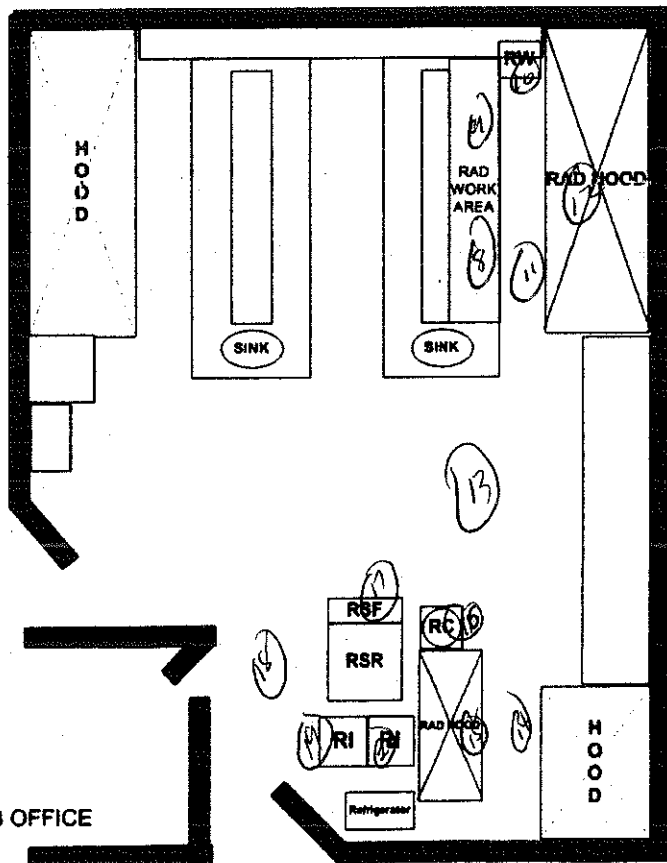
Date Of Last User Survey:

5/1/08

Meter Readings

BKG
A
B
C
D
E
F
G

cpm mR/hr
cpm mR/hr
cpm mR/hr
cpm mR/hr
cpm mR/hr
cpm mR/hr
cpm mR/hr



MID-LAB OFFICE

503_3e24

Laboratory Analysis

Date: 5/9/08

Swipe Numbers: 8-20

Technician: Ms. Cox

Auto-gamma: 2-14

LSC: 2-14

Record any samples > 2000 dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

09 May 2008 08:38

Packard Instrument Company

Page #1

Protocol #: 7

Swipes

User : Lab St

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

Window C		Window A		Window B	
Nuclide:	MAN	15	250 keV	MAN	250
50 keV	MAN	950	2000 keV		
Bkg:	45.9	94.2		116	
Sigma:	0.00	0.00		0.00	
LCR:	0	0		0	
Half Life(hours):	0.00			0.00	
Multiplier:	1.0000				
%CV Flag Limit:	0.00			0.00	

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	0.0		0.0		0.0		2.00
7	2	0.0		4.0	35.4	8.1	24.8	2.00
7	3	11.3	21.1	0.0		0.6	91.3	2.00
7	4	0.0		0.0		10.1	22.2	2.00
7	5	7.8	25.4	0.0		2.6	43.9	2.00
7	6	0.0		7.5	25.8	0.0		2.00
7	7	7.3	26.2	4.0	35.4	10.6	21.7	2.00
7	8	0.0		4.5	33.3	6.6	27.5	2.00
7	9	0.0		0.0		0.0		2.00
7	10	1.3	62.5	13.0	19.6	0.0		2.00
7	11	0.0		7.5	25.8	2.1	48.8	2.00
7	12	5.3	30.8	9.0	23.6	0.1	224	2.00
7	13	2.3	46.8	4.0	35.4	1.1	67.4	2.00
7	14	0.0		5.0	31.6	0.0		2.00

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080509_1023Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080509_1023\20080509_1023.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	6	5	0	0	44.45	415.47	B
2	2.00	0	0	1	1	0	0.00	417.58	
3	2.00	0	0	0	0	0	0.00	429.70	
4	2.00	1	1	0	2	1	83.35	411.40	
5	2.00	0	2	1	0	3	0.00	408.88	
6	2.00	0	3	2	0	3	0.00	428.23	
7	2.00	0	0	0	0	0	0.00	412.62	
8	2.00	0	0	1	1	0	0.00	418.53	
9	2.00	0	0	3	0	0	0.00	420.04	

Page # 2

User: routine

MEMORANDUM FOR CAPT Thomas Richie, NMRC/Malaria,
Radioactive Materials Authorization Number 709

SUBJECT: Radiological Safety Certification for Building 503 Room 3W08

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

Building	Room
503, WRAIR/NMRC	3W08

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Forma Scientific Co2 Water Jacketed Incubator	3110	28305-7151	3239803070
Naire Biological Safety Cabinet	NU425-600	84965	3239803071
Naire Biological Safety Cabinet	NU425-400	77978	3239806052

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.

VANESSA COX
Health Physicist
Health Physics Office

Protocol #: 7

Swipes

User : Lab Staff

Count Time (minutes): 2.00
 Decay Time: 0.00
 Background Subtract: 1PA Bkg
 Outliers: 5.0 FLAG
 %Spillover: 0.00
 %Spillover: 0.00
 Screening: OFF

	Window A	Window B	Window C
Nuclide:	MAN	MAN	MAN
Bkg:	94.8	120	51.9
Sigma:	0.00	0.00	0.00
LDR:	0	0	0
Half Life (hours):	0.00	0.00	
Multiplier:	1.0000		
MCV Flag Limit:	0.00	0.00	

PM	CM	A:CFM	A:LSIG	B:CFM	B:LSIG	C:CFM	C:LSIG	TIME
7	1	0.0		0.0		3.6	47.5	2.00
7	2	11.2	21.1	0.0		3.6	37.1	2.00
7	3	1.7	54.2	9.7	33.0	0.1	189	2.00
7	4	12.2	21.2	0.0		0.0		2.00
7	5	9.7	12.7	17.0	17.2	0.6	55.4	2.00
7	6	0.2	138	10.5	31.8	0.1	189	2.00
7	7	0.0		3.5	37.8	2.1	42.3	2.00
7	8	1.7	17.6	0.0		0.1	189	2.00
7	9	1.7	24.5	6.0	25.9	0.0		2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		6.5	27.6	0.0		2.00
7	12	6.2	28.4	0.0		0.0		2.00
7	13	1.2	24.5	19.0	16.2	0.0		2.00
7	14	6.7	27.3	0.0		0.6	38.4	2.00
7	15	14.2	18.5	0.0		0.0		2.00
7	16	1.7	29.1	0.0		0.0		2.00
7	17	12.2	20.1	2.5	44.7	0.1	189	2.00
7	18	0.0		0.0		0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	12.7	17.8	14.0	18.9	0.0		2.00
7	21	8.2	24.7	0.0		0.0		2.00
7	22	0.0		2.5	44.7	5.6	29.8	2.00
7	23	5.2	31.0	0.0		0.0		2.00
7	24	16.7	17.3	14.0	18.9	1.1	56.2	2.00
7	25	10.2	22.1	15.0	18.3	11.1	21.2	2.00
7	26	3.7	36.8	0.0		0.0		2.00
7	27	0.0		13.5	19.3	7.1	26.5	2.00
7	28	0.0		8.5	24.3	0.0		2.00
7	29	0.0		8.5	24.3	0.0		2.00
7	30	3.2	37.5	2.5	44.6	0.0		2.00
7	31	16.7	17.3	2.5	44.6	2.1	43.5	2.00
7	32	10.2	22.1	0.0		6.1	74.9	2.00
7	33	0.0		0.0		3.2	37.1	2.00
7	34	14.7	19.4	6.5	27.8	0.0		2.00

22 Feb 2007 12:19

Packard Instrument Company

Page #2

Protocol #: 7

Swipes

User : Lab Staff

F#	E#	A:CPM A:XSIG	B:CPM B:XSIG	C:CPM C:XSIG	TIME
7	35	0.0	1.5 58.1	0.0	2.00

3 Feb 2007 08:20

ALPHA/BETA - 1.09

Page #1

Protocol #: 1

Routine A

User : CPL Whicker

Time: 2.00

Data Mode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.0 - 18.6	0	0.0	4.71	
Region B:	18.6 - 156	0	0.0	7.19	
Region C:	156 - 2000	0	0.0	4.50	

Quench Indicator: tsIE/AEC

Ext Std Terminator: Count

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tsIE	FLAG
1	10.00	4.71	29.13	7.19	23.59	4.50			422.18	B
2	2.00	2.29	174.4	3.31	147.4	0.00	4.15	4.52	411.38	
3	2.00	4.62	98.16	5.48	96.89	0.00	9.37	7.47	407.63	
4	2.00	1.83	211.2	0.00	0.00	0.00	5.42	0.00	403.84	
5	2.00	0.29	1206	0.00	0.00	0.50	0.83	0.00	413.04	
6	2.00	1.29	289.8	0.00	0.00	0.00	3.54	0.00	445.03	
7	2.00	1.93	202.1	0.00	0.00	3.50	5.64	0.00	409.42	
8	2.00	2.79	147.5	0.00	0.00	0.00	8.01	0.00	419.63	
9	2.00	1.29	289.8	0.00	0.00	0.00	3.43	0.00	463.97	
10	2.00	0.29	1206	0.00	0.00	0.50	0.84	0.00	409.47	
11	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	403.89	
12	2.00	0.57	618.3	0.00	0.00	0.00	1.65	0.00	417.93	
13	2.00	0.00	0.00	0.81	533.6	0.00	0.00	1.12	411.12	
14	2.00	2.29	174.4	0.00	0.00	1.00	6.65	0.00	413.05	
15	2.00	1.29	289.8	0.00	0.00	2.00	3.76	0.00	410.78	
16	2.00	3.79	114.8	0.00	0.00	0.00	10.99	0.00	414.50	
17	2.00	0.35	998.9	0.00	0.00	0.00	0.97	0.00	434.24	
18	2.00	4.04	109.1	0.00	0.00	0.50	11.10	0.00	445.38	
19	2.00	0.79	456.8	0.00	0.00	0.00	2.22	0.00	430.90	
20	2.00	0.43	802.9	0.00	0.00	3.50	1.27	0.00	409.89	
21	2.00	0.53	667.8	0.00	0.00	0.00	1.53	0.00	415.32	
22	2.00	2.15	183.9	0.00	0.00	0.00	6.15	0.00	422.50	
23	2.00	0.48	732.7	0.00	0.00	0.00	1.37	0.00	421.54	
24	2.00	0.29	1206	0.00	0.00	0.00	0.83	0.00	411.83	
25	2.00	2.79	147.5	0.31	1345	0.00	7.91	0.38	409.76	
26	2.00	3.09	135.5	0.00	0.00	1.50	8.89	0.00	418.79	
27	2.00	0.29	1206	0.00	0.00	0.00	0.84	0.00	409.21	
28	2.00	0.00	0.00	0.37	1137	0.00	0.00	0.51	427.16	
29	2.00	0.29	1204	0.00	0.00	0.00	0.81	0.00	430.67	
30	2.00	0.96	379.2	0.00	0.00	0.00	2.75	0.00	420.98	
31	2.00	0.29	1206	1.31	339.2	1.00	0.00	1.80	417.09	
32	2.00	0.79	456.8	0.00	0.00	0.00	2.27	0.00	416.45	
33	2.00	0.79	456.8	0.00	0.00	1.50	2.23	0.00	428.03	
34	2.00	0.29	1206	0.00	0.00	0.00	0.78	0.00	448.37	
35	2.00	0.29	1206	0.00	0.00	0.00	0.82	0.00	422.73	
36	2.00	0.96	378.2	0.00	0.00	0.00	2.81	0.00	411.50	

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.8		120		51.9	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
XCV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	0.0		0.0		2.6	43.5	2.00
7	2	11.2	21.1	0.0		3.6	37.1	2.00
7	3	1.7	54.2	9.5	23.0	0.1	189	2.00
7	4	12.2	20.2	0.0		0.0		2.00
7	5	9.7	22.7	17.0	17.2	0.6	88.4	2.00
7	6	0.2	158	10.5	21.8	0.1	189	2.00
7	7	0.0		3.5	37.9	2.1	48.3	2.00
7	8	5.7	29.6	0.0		0.1	189	2.00
7	9	3.7	36.8	6.0	28.9	0.0		2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		6.5	27.8	0.0		2.00
7	12	6.2	28.4	0.0		0.0		2.00
7	13	1.2	64.5	19.0	16.2	0.0		2.00
7	14	6.7	27.3	0.0		0.6	88.4	2.00
7	15	14.2	18.8	0.0		0.0		2.00
7	16	5.7	29.6	0.0		0.0		2.00
7	17	12.2	20.2	2.5	44.9	0.1	189	2.00
7	18	0.0		0.0		0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	12.7	19.8	14.0	18.9	0.0		2.00
7	21	8.2	24.7	0.0		0.0		2.00
7	22	0.0		2.5	44.9	5.6	29.8	2.00
7	23	5.2	31.0	0.0		0.0		2.00
7	24	16.7	17.3	14.0	18.9	1.1	66.2	2.00
7	25	10.2	22.1	15.0	18.3	11.1	21.2	2.00
7	26	3.7	36.8	0.0		0.0		2.00
7	27	0.0		13.5	19.3	7.1	26.5	2.00
7	28	0.0		8.5	24.3	0.0		2.00
7	29	0.0		8.5	24.3	0.0		2.00
7	30	3.2	39.5	2.5	44.9	0.0		2.00
7	31	16.7	17.3	2.5	44.9	2.6	43.5	2.00
7	32	10.2	22.1	0.0		4.1	34.8	2.00
7	33	0.0		0.0		3.6	37.1	2.00
7	34	14.7	18.4	6.5	27.8	0.0		2.00

Feb 2007 08:20 ALPHA/BETA - 1.09 Page #1
 otocol #: 1 Routine A User : CPL Whicker

2.00
 Mode: Dual DPM Nuclides: 3H-14C-UG Quench Sets
 Low Energy: 3H-UG
 High Energy: 14C-UG
 Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
on A:	0.0 - 18.6		0	0.0	4.71
on B:	18.6 - 156		0	0.0	7.19
on C:	156 - 2000		0	0.0	4.50

ch Indicator: tsIE/AEC
 xt Std Terminator: Count
 idence Time(ns): 18
 y Before Burst(ns): Normal

#	TIME	CPMA A:2S%	CPMB B:2S%	CPMC	DPM1	DPM2	tsIE	FLAG
1	10.00	4.71 29.13	7.19 23.59	4.50			422.18	B
2	2.00	2.29 174.4	3.31 147.4	0.00	4.15	4.52	411.38	
3	2.00	4.62 98.16	5.48 96.89	0.00	9.37	7.47	407.63	
4	2.00	1.83 211.2	0.00 0.00	0.00	5.42	0.00	403.84	
5	2.00	0.29 1206	0.00 0.00	0.50	0.83	0.00	413.04	
6	2.00	1.29 289.8	0.00 0.00	0.00	3.54	0.00	445.03	
7	2.00	1.93 202.1	0.00 0.00	3.50	5.64	0.00	409.42	
8	2.00	2.79 147.5	0.00 0.00	0.00	8.01	0.00	419.63	
9	2.00	1.29 289.8	0.00 0.00	0.00	3.43	0.00	463.97	
10	2.00	0.29 1206	0.00 0.00	0.50	0.84	0.00	409.47	
11	2.00	0.00 0.00	0.00 0.00	0.00	0.00	0.00	403.89	
12	2.00	0.57 618.3	0.00 0.00	0.00	1.65	0.00	417.93	
13	2.00	0.00 0.00	0.81 533.6	0.00	0.00	1.12	411.12	
14	2.00	2.29 174.4	0.00 0.00	1.00	6.65	0.00	413.05	
15	2.00	1.29 289.8	0.00 0.00	2.00	3.76	0.00	410.78	
16	2.00	3.79 114.8	0.00 0.00	0.00	10.99	0.00	414.50	
17	2.00	0.35 998.9	0.00 0.00	0.00	0.97	0.00	434.24	
18	2.00	4.04 109.1	0.00 0.00	0.50	11.10	0.00	445.38	
19	2.00	0.79 456.8	0.00 0.00	0.00	2.22	0.00	430.90	
20	2.00	0.43 802.9	0.00 0.00	3.50	1.27	0.00	409.89	
21	2.00	0.53 667.8	0.00 0.00	0.00	1.53	0.00	415.32	
22	2.00	2.15 183.9	0.00 0.00	0.00	6.15	0.00	422.50	
23	2.00	0.48 732.7	0.00 0.00	0.00	1.37	0.00	421.54	
24	2.00	0.29 1206	0.00 0.00	0.00	0.83	0.00	411.83	
25	2.00	2.79 147.5	0.31 1345	0.00	7.91	0.38	409.76	
26	2.00	3.09 135.5	0.00 0.00	1.50	8.89	0.00	418.79	
27	2.00	0.29 1206	0.00 0.00	0.00	0.84	0.00	409.21	
28	2.00	0.00 0.00	0.37 1137	0.00	0.00	0.51	427.16	
29	2.00	0.29 1204	0.00 0.00	0.00	0.81	0.00	430.67	
30	2.00	0.96 379.2	0.00 0.00	0.00	2.75	0.00	420.98	
31	2.00	0.29 1206	1.31 339.2	1.00	0.00	1.80	417.09	
32	2.00	0.79 456.8	0.00 0.00	0.00	2.27	0.00	416.45	
33	2.00	0.79 456.8	0.00 0.00	1.50	2.23	0.00	428.03	
34	2.00	0.29 1206	0.00 0.00	0.00	0.78	0.00	448.37	
35	2.00	0.29 1206	0.00 0.00	0.00	0.82	0.00	422.73	
36	2.00	0.96 378.2	0.00 0.00	0.00	2.81	0.00	411.50	

Radiation Equipment Survey Report

Room: 3W08

Building: 503

HPO Surveyor: MS-Cox

Authorization: 709

Inspection Date: 2/21/07

Department: Malaria

Meter Model: Geiger

Radionuclides: C14, Cr51, H3, I125
7329 535

Meter Serial Number: 11833

Calibration Due Date: 9/17/07

Equipment Information

Reason for Survey

Mark a X for appropriate reason.

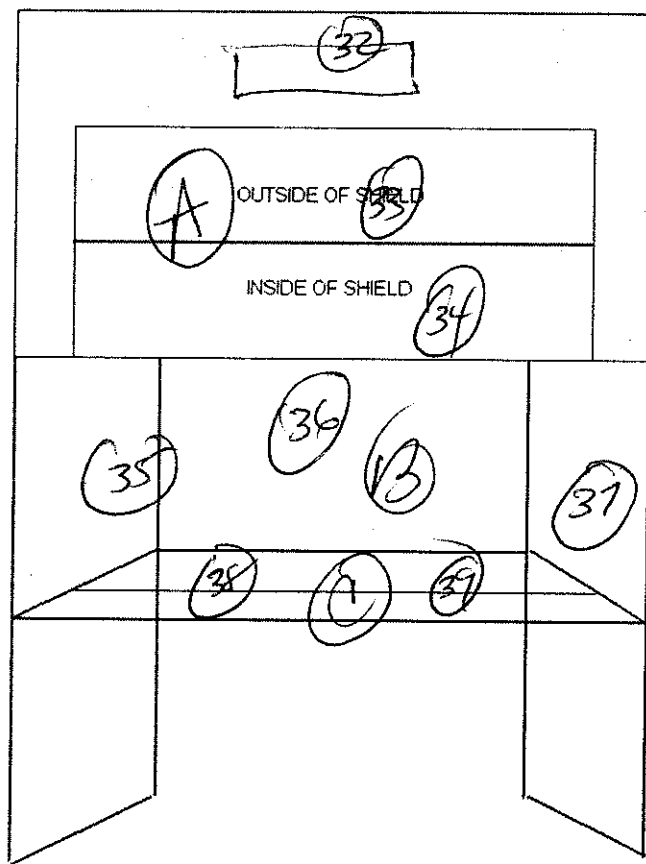
Nomenclature: Biological Safety Cabinets
Manufacturer: Nalco
Model Number: N/A 425-600
Serial Number: 84965
MMCN: 3239803071

On/off-Site Repair: ☐
Turn-in/ Transfer: ☐
Administrative Hold: ☐
Non RAM use only: ☒
Other: ☐

Meter Readings

BKG		
A	2100	cpm mR/hr
B	2100	cpm mR/hr
C	2100	cpm mR/hr
D		cpm mR/hr
E		cpm mR/hr
F		cpm mR/hr
G		cpm mR/hr

Fume Hood



Laboratory Analysis

Technician: MS-Cox
Auto-gamma: 280-27
Date: 2/21/07
Swipe Numbers: 32-39
LSC: 21-28

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Swipe	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Surveyor Comments

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.8		120		51.9	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
%CV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	0.0		0.0		2.6	43.5	2.00
7	2	11.2	21.1	0.0		3.6	37.1	2.00
7	3	1.7	54.2	9.5	23.0	0.1	189	2.00
7	4	12.2	20.2	0.0		0.0		2.00
7	5	9.7	22.7	17.0	17.2	0.6	88.4	2.00
7	6	0.2	158	10.5	21.8	0.1	189	2.00
7	7	0.0		3.5	37.9	2.1	48.3	2.00
7	8	5.7	29.6	0.0		0.1	189	2.00
7	9	3.7	36.8	6.0	28.9	0.0		2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		6.5	27.8	0.0		2.00
7	12	6.2	28.4	0.0		0.0		2.00
7	13	1.2	64.5	19.0	16.2	0.0		2.00
7	14	6.7	27.3	0.0		0.6	88.4	2.00
7	15	14.2	18.8	0.0		0.0		2.00
7	16	5.7	29.6	0.0		0.0		2.00
7	17	12.2	20.2	2.5	44.9	0.1	189	2.00
7	18	0.0		0.0		0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	12.7	19.8	14.0	18.9	0.0		2.00
7	21	8.2	24.7	0.0		0.0		2.00
7	22	0.0		2.5	44.9	5.6	29.8	2.00
7	23	5.2	31.0	0.0		0.0		2.00
7	24	16.7	17.3	14.0	18.9	1.1	66.2	2.00
7	25	10.2	22.1	15.0	18.3	11.1	21.2	2.00
7	26	3.7	36.8	0.0		0.0		2.00
7	27	0.0		13.5	19.3	7.1	26.5	2.00
7	28	0.0		8.5	24.3	0.0		2.00
7	29	0.0		8.5	24.3	0.0		2.00
7	30	3.2	39.5	2.5	44.9	0.0		2.00
7	31	16.7	17.3	2.5	44.9	2.6	43.5	2.00
7	32	10.2	22.1	0.0		4.1	34.8	2.00
7	33	0.0		0.0		3.6	37.1	2.00
7	34	14.7	18.4	6.5	27.8	0.0		2.00

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Page #1

Protocol #: 1

Routine A

User : CPL Whicker

e: 2.00

a#ode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

kground Subtract: 1st Vial

	LL	UL	LCR	25%	BKG
ion A:	0.0 - 18.6		0	0.0	4.71
ion B:	18.6 - 156		0	0.0	7.19
ion C:	156 - 2000		0	0.0	4.50

wh Indicator: tSIE/AEC

xt Std Terminator: Count

idence Time(ns): 18

Before Burst(ns): Normal

#	TIME	CPMA A:25%	CPMB B:25%	CPMC	DPM1	DPM2	tSIE	FLAG
1	10.00	4.71 29.13	7.19 23.59	4.50			422.18	B
2	2.00	2.29 174.4	3.31 147.4	0.00	4.15	4.52	411.38	
3	2.00	4.62 98.16	5.48 96.89	0.00	9.37	7.47	407.63	
4	2.00	1.83 211.2	0.00 0.00	0.00	5.42	0.00	403.84	
5	2.00	0.29 1206	0.00 0.00	0.50	0.83	0.00	413.04	
6	2.00	1.29 289.8	0.00 0.00	0.00	3.54	0.00	445.03	
7	2.00	1.93 202.1	0.00 0.00	3.50	5.64	0.00	409.42	
8	2.00	2.79 147.5	0.00 0.00	0.00	8.01	0.00	419.63	
9	2.00	1.29 289.8	0.00 0.00	0.00	3.43	0.00	463.97	
10	2.00	0.29 1206	0.00 0.00	0.50	0.84	0.00	409.47	
11	2.00	0.00 0.00	0.00 0.00	0.00	0.00	0.00	403.89	
12	2.00	0.57 618.3	0.00 0.00	0.00	1.65	0.00	417.93	
13	2.00	0.00 0.00	0.81 533.6	0.00	0.00	1.12	411.12	
14	2.00	2.29 174.4	0.00 0.00	1.00	6.65	0.00	413.05	
15	2.00	1.29 289.8	0.00 0.00	2.00	3.76	0.00	410.78	
16	2.00	3.79 114.8	0.00 0.00	0.00	10.99	0.00	414.50	
17	2.00	0.35 998.9	0.00 0.00	0.00	0.97	0.00	434.24	
18	2.00	4.04 109.1	0.00 0.00	0.50	11.10	0.00	445.38	
19	2.00	0.79 456.8	0.00 0.00	0.00	2.22	0.00	430.90	
20	2.00	0.43 802.9	0.00 0.00	3.50	1.27	0.00	409.89	
21	2.00	0.53 667.8	0.00 0.00	0.00	1.53	0.00	415.32	
22	2.00	2.15 183.9	0.00 0.00	0.00	6.15	0.00	422.50	
23	2.00	0.48 732.7	0.00 0.00	0.00	1.37	0.00	421.54	
24	2.00	0.29 1206	0.00 0.00	0.00	0.83	0.00	411.83	
25	2.00	2.79 147.5	0.31 1345	0.00	7.91	0.38	409.76	
26	2.00	3.09 135.5	0.00 0.00	1.50	8.89	0.00	418.79	
27	2.00	0.29 1206	0.00 0.00	0.00	0.84	0.00	409.21	
28	2.00	0.00 0.00	0.37 1137	0.00	0.00	0.51	427.16	
29	2.00	0.29 1204	0.00 0.00	0.00	0.81	0.00	430.67	
30	2.00	0.96 379.2	0.00 0.00	0.00	2.75	0.00	420.98	
31	2.00	0.29 1206	1.31 339.2	1.00	0.00	1.80	417.09	
32	2.00	0.79 456.8	0.00 0.00	0.00	2.27	0.00	416.45	
33	2.00	0.79 456.8	0.00 0.00	1.50	2.23	0.00	428.03	
34	2.00	0.29 1206	0.00 0.00	0.00	0.78	0.00	448.37	
35	2.00	0.29 1206	0.00 0.00	0.00	0.82	0.00	422.73	
36	2.00	0.96 378.2	0.00 0.00	0.00	2.81	0.00	411.50	

Radiation Equipment Survey Report

Room: 3W08

Building:

HPO Surveyor: [Signature]

Authorization: 799

Inspection Date: 2/21/07

Department: Malaria

Meter Model: Seigis

Radionuclides: C14, H3, C15, I125, P32 + S35

Meter Serial Number: 11835

Calibration Due Date: 9/17/07

Equipment Information

Nomenclature: Biological Safety Cabinet
 Manufacturer: None
 Model Number: NU 425400
 Serial Number: 77978
 MMCN: 3231806052

Reason for Survey

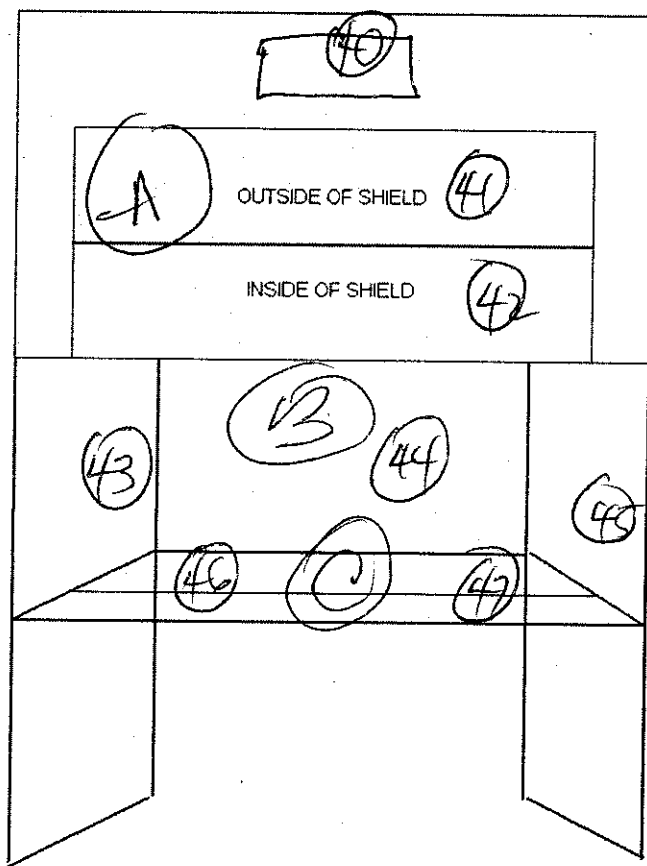
Mark a X for appropriate reason.

On/off-Site Repair: ☐
 Turn-in/ Transfer: ☐
 Administrative Hold: ☐
 Non RAM use only: ☒
 Other: ☐

Meter Readings

BKG		cpm mR/hr
A	<u>200</u>	cpm mR/hr
B	<u>200</u>	cpm mR/hr
C	<u>200</u>	cpm mR/hr
D	<u>200</u>	cpm mR/hr
E		cpm mR/hr
F		cpm mR/hr
G		cpm mR/hr

Fume Hood



Laboratory Analysis

Technician: MS. Cox Date: 2/22/07
 Auto-gamma: 1726-35 LSC: 1129-36 Swipe Numbers: 40-47

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Swipe	Efficiency	MDA (dpm)	DPM

Completed
 All swipes < 200 dpm

Surveyor Comments

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.8		120		51.9	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
ICV Flag Limit:	0.00		0.00			

#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	0.0		0.0		2.6	43.5	2.00
7	2	11.2	21.1	0.0		3.6	37.1	2.00
7	3	1.7	54.2	9.5	23.0	0.1	189	2.00
7	4	12.2	20.2	0.0		0.0		2.00
7	5	9.7	22.7	17.0	17.2	0.6	88.4	2.00
7	6	0.2	158	10.5	21.8	0.1	189	2.00
7	7	0.0		3.5	37.9	2.1	48.3	2.00
7	8	5.7	29.6	0.0		0.1	189	2.00
7	9	3.7	36.8	6.0	28.9	0.0		2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		6.5	27.8	0.0		2.00
7	12	6.2	28.4	0.0		0.0		2.00
7	13	1.2	64.5	19.0	16.2	0.0		2.00
7	14	6.7	27.3	0.0		0.6	88.4	2.00
7	15	14.2	18.8	0.0		0.0		2.00
7	16	5.7	29.6	0.0		0.0		2.00
7	17	12.2	20.2	2.5	44.9	0.1	189	2.00
7	18	0.0		0.0		0.0		2.00
7	19	0.0		0.0		0.0		2.00
7	20	12.7	19.8	14.0	18.9	0.0		2.00
7	21	8.2	24.7	0.0		0.0		2.00
7	22	0.0		2.5	44.9	5.6	29.8	2.00
7	23	5.2	31.0	0.0		0.0		2.00
7	24	16.7	17.3	14.0	18.9	1.1	66.2	2.00
7	25	10.2	22.1	15.0	18.3	11.1	21.2	2.00
7	26	3.7	36.8	0.0		0.0		2.00
7	27	0.0		13.5	19.3	7.1	26.5	2.00
7	28	0.0		8.5	24.3	0.0		2.00
7	29	0.0		8.5	24.3	0.0		2.00
7	30	3.2	39.5	2.5	44.9	0.0		2.00
7	31	16.7	17.3	2.5	44.9	2.6	43.5	2.00
7	32	10.2	22.1	0.0		4.1	34.8	2.00
7	33	0.0		0.0		3.6	37.1	2.00
7	34	14.7	18.4	6.5	27.8	0.0		2.00

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ALPHA/BETA - 1.09

Page #1

Protocol #: 1

Routine A

User : CPL Whicker

le: 2.00

a Mode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

kground Subtract: 1st Vial

	LL	UL	LCR	25%	BKG
ion A:	0.0 - 18.6	0	0.0	4.71	
ion B:	18.6 - 156	0	0.0	7.19	
ion C:	156 - 2000	0	0.0	4.50	

Indicator: tsIE/AEC

Std Terminator: Count

eidence Time(ns): 18

y Before Burst(ns): Normal

3#	TIME	CPMA	A:25%	CPMB	B:25%	CPMC	DPM1	DPM2	tsIE	FLAG
1	10.00	4.71	29.13	7.19	23.59	4.50			422.18	B
2	2.00	2.29	174.4	3.31	147.4	0.00	4.15	4.52	411.38	
3	2.00	4.62	98.16	5.48	96.89	0.00	9.37	7.47	407.63	
4	2.00	1.83	211.2	0.00	0.00	0.00	5.42	0.00	403.84	
5	2.00	0.29	1206	0.00	0.00	0.50	0.83	0.00	413.04	
6	2.00	1.29	289.8	0.00	0.00	0.00	3.54	0.00	445.03	
7	2.00	1.93	202.1	0.00	0.00	3.50	5.64	0.00	409.42	
8	2.00	2.79	147.5	0.00	0.00	0.00	8.01	0.00	419.63	
9	2.00	1.29	289.8	0.00	0.00	0.00	3.43	0.00	463.97	
10	2.00	0.29	1206	0.00	0.00	0.50	0.84	0.00	409.47	
11	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	403.89	
12	2.00	0.57	618.3	0.00	0.00	0.00	1.65	0.00	417.93	
13	2.00	0.00	0.00	0.81	533.6	0.00	0.00	1.12	411.12	
14	2.00	2.29	174.4	0.00	0.00	1.00	6.65	0.00	413.05	
15	2.00	1.29	289.8	0.00	0.00	2.00	3.76	0.00	410.78	
16	2.00	3.79	114.8	0.00	0.00	0.00	10.99	0.00	414.50	
17	2.00	0.35	998.9	0.00	0.00	0.00	0.97	0.00	434.24	
18	2.00	4.04	109.1	0.00	0.00	0.50	11.10	0.00	445.38	
19	2.00	0.79	456.8	0.00	0.00	0.00	2.22	0.00	430.90	
20	2.00	0.43	802.9	0.00	0.00	3.50	1.27	0.00	409.89	
21	2.00	0.53	667.8	0.00	0.00	0.00	1.53	0.00	415.32	
22	2.00	2.15	183.9	0.00	0.00	0.00	6.15	0.00	422.50	
23	2.00	0.48	732.7	0.00	0.00	0.00	1.37	0.00	421.54	
24	2.00	0.29	1206	0.00	0.00	0.00	0.83	0.00	411.83	
25	2.00	2.79	147.5	0.31	1345	0.00	7.91	0.38	409.76	
26	2.00	3.09	135.5	0.00	0.00	1.50	8.89	0.00	418.79	
27	2.00	0.29	1206	0.00	0.00	0.00	0.84	0.00	409.21	
28	2.00	0.00	0.00	0.37	1137	0.00	0.00	0.51	427.16	
29	2.00	0.29	1204	0.00	0.00	0.00	0.81	0.00	430.67	
30	2.00	0.96	379.2	0.00	0.00	0.00	2.75	0.00	420.98	
31	2.00	0.29	1206	1.31	339.2	1.00	0.00	1.80	417.09	
32	2.00	0.79	456.8	0.00	0.00	0.00	2.27	0.00	416.45	
33	2.00	0.79	456.8	0.00	0.00	1.50	2.23	0.00	428.03	
34	2.00	0.29	1206	0.00	0.00	0.00	0.78	0.00	448.37	
35	2.00	0.29	1206	0.00	0.00	0.00	0.82	0.00	422.73	
36	2.00	0.96	378.2	0.00	0.00	0.00	2.81	0.00	411.50	

MEMORANDUM FOR CAPT Thomas Richie, NMRC/Malaria,
Radioactive Materials Authorization Number 709

SUBJECT: Radiological Safety Certification for Building 503 Room 3W10

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

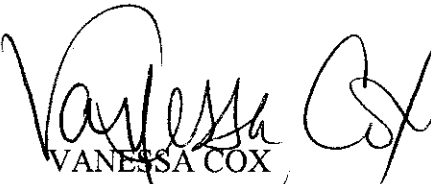
Building	Room
503, WRAIR/NMRC	3W10

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Forma Scientific Co2 Water Jacketed Incubator	3110	28304-7132	3234800841
Forma Scientific Co2 Water Jacketed Incubator	3110	28304-7121	3239800892
FilterMate Harvester	N/A	N/A	N/A

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.


VANESSA COX
Health Physicist
Health Physics Office

Radiation Final Laboratory Summary Report

Room: 3W10 Building: 503, WRAIR
 Authorization: 709 / CAPT Thomas Richie
 Department: NMRC / Malaria
 Radionuclides: C-14, Cr-51, H-3, I-125, P-32, and S-35

HPO Surveyor: Ms. Cox
 Inspection Date: 2/7/07
 Meter Model: Geiger
 Meter Serial Number: 11833
 Calibration Due Date: 9/17/07

Room Checks

Initials

All RAM removed from the room
 Radioactive waste removed
 All RAM use equipment cleared
 All radiation labels removed
 Entrance un-posted

K
K
K
K
K

Administrative Checks

Initials

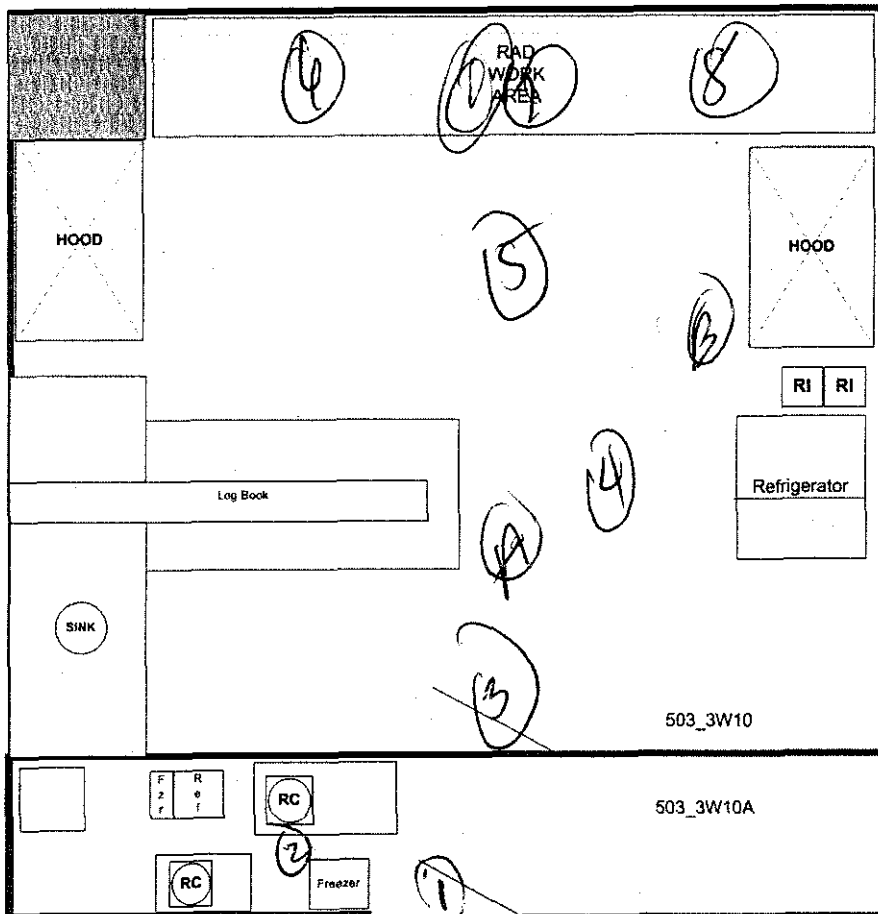
Equipment / Room Final
 Forms Completed

K

Additional Information:

Meter Readings

BKG		cpm
A	<u>500</u>	cpm
B	<u>2100</u>	cpm
C	<u>2100</u>	cpm
D	<u>2100</u>	cpm
E		cpm
F		cpm
G		cpm



Laboratory Analysis

Technician: Ms. Cox Date: 2/8/07
 Auto-gamma: 1-8 LSC: 15 2-9

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	Efficiency	MDA (dpm)	DPM

Completed
 All swipes < 200 dpm

Surveyor Comments

Count Time(minutes): 2.00
 Assay Type: CFM
 Background Subtract: IPA Bkg
 Detectors: 5.0 FLAS
 XSpillup: 0.00
 XSpilldown: 0.00
 Screening: RFP

Nuclide:	Window A		Window B		Window C	
	MAN	15 - 257 keV	MAN	257 - 530 keV	MAN	530 - 2000 keV
Bkg:	34.5		111		45.3	
Sigma:	0.00		0.35		3.85	
LER:	0		0		0	
Half Life(Incurs):	0.00		0.00			
MULTIPLIER:	1.0000					
NDV Flag Limit:	0.00		0.00			

PM	SM	CFM	4-3546	CFM	4-3546	CFM	4-3546	TIME
6	1	3.0	41.0	0.7	21.4	3.7	32.4	2.00
6	2	0.0		0.0		2.7	42.7	2.00
6	3	0.0		3.4	38.2	5.7	39.5	2.00
6	4	0.0		7.4	32.2	0.0		2.00
6	5	0.0		0.0		5.7	39.5	2.00
6	6	0.0		0.0		0.0		2.00
6	7	21.5	44.9	0.4	10.9	3.7	32.4	2.00
6	8	0.0		0.0		0.7	32.4	2.00
6	9	3.5	30.3	0.0		3.2	35.3	2.00
6	10	2.0	27.4	0.0		2.7	42.7	2.00
6	11	0.0		0.0		0.0		2.00
6	12	0.0		6.4	27.9	3.2	39.5	2.00
6	13	5.0	25.6	11.4	20.9	2.2	47.2	2.00
6	14	2.0	23.6	0.4	10.9	0.0		2.00
6	15	3.0	41.0	0.0		0.0		2.00
6	16	13.5	18.0	13.4	16.0	0.7	32.4	2.00
6	17	0.0		9.4	23.0	0.7	35.3	2.00
6	18	4.7	33.4	5.4	30.4	0.7	32.4	2.00
6	19	10.0	22.4	4.4	33.6	4.7	32.4	2.00
6	20	1.0	21.4	10.4	21.7	4.2	32.4	2.00
6	21	0.0		7.4	25.1	0.0		2.00
6	22	0.0		0.0		5.7	32.4	2.00
6	23	7.0	32.6	0.0		0.0		2.00
6	24	0.0		11.9	20.5	0.0		2.00
6	25	5.0	35.0	1.5	51.0	0.0		2.00
6	26	7.5	25.9	10.9	21.4	0.0		2.00
6	27	9.0	23.2	7.4	26.0	0.0		2.00
6	28	2.5	41.9	7.4	26.0	5.2	30.9	2.00
6	29	0.0		6.4	27.9	0.0		2.00
6	30	1.0	21.4	5.4	23.0	4.7	32.4	2.00
6	31	0.0		7.4	26.0	0.0		2.00
6	32	14.0	17.7	13.4	19.3	1.7	33.6	2.00
6	33	0.0		0.0		0.0		2.00
6	34	0.0		0.0		2.7	42.7	2.00

IP#	S#	A:CFM	A:NEIG	S:CFM	S:NEIG	T:CFM	T:NEIG	TIME
4	35	0.0		0.9	73.7	0.2	47.1	3.00
5	36	0.0		17.9	16.7	0.0		2.00
4	37	17.5	14.9	4.4	33.3	0.0		2.00
5	38	2.0	75.0	5.5	24.9	0.0	28.1	2.00
4	39	0.0		17.4	16.9	0.7	53.1	2.00
5	40	0.0		0.0		0.0		2.00
4	41	0.0		5.4	90.4	0.0	14.7	2.00
5	42	2.5	27.0	3.4	18.7	0.0	29.3	2.00
4	43	3.5	77.2	0.0		0.0		2.00
4	44	0.0		0.0	14.5	0.7	92.2	2.00
4	45	2.0	14.3	3.4	35.1	0.0		2.00
5	46	12.5	20.0	6.9	25.7	0.0		2.00

Protocol #: 5

ROUTINE A

User : CPL Whicke

Time: 2.00

Data Mode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

Background Subtract: 1st Vial

	LL	UL	LCR	25%	BKG
Region A:	0.0 - 18.6		0	0.0	3.92
Region B:	18.6 - 156		0	0.0	6.31
Region C:	156 - 2000		0	0.0	2.97

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

S#	TIME	CPMA A:25%	CPMB B:25%	CPMC	DPM1	DPM2	tSIE	FLAG
1	10.00	3.92 31.96	6.31 25.17	2.97			431.75	B
2	2.00	0.00 0.00	0.00 0.00	0.00	0.00	0.00	433.01	
3	2.00	2.58 147.7	0.69 592.1	1.03	7.04	0.90	409.66	
4	2.00	2.08 176.7	0.00 0.00	1.03	5.98	0.00	421.31	
5	2.00	0.00 0.00	0.00 0.00	0.53	0.00	0.00	423.17	
6	2.00	2.90 134.3	1.37 309.4	0.00	7.32	1.83	419.98	
7	2.00	2.08 176.7	0.00 0.00	2.53	6.00	0.00	418.85	
8	2.00	2.08 176.7	0.00 0.00	0.03	5.95	0.00	423.75	
9	2.00	3.08 127.9	1.19 352.5	0.03	7.82	1.58	430.55	
10	2.00	0.50 639.6	2.77 164.4	3.03	0.00	3.79	425.88	
11	2.00	1.85 195.4	1.42 299.0	0.53	4.28	1.92	416.91	
12	2.00	3.08 127.9	0.00 0.00	0.00	8.68	0.00	431.65	
13	2.00	1.58 223.7	0.00 0.00	0.00	4.54	0.00	421.43	
14	2.00	0.58 555.9	0.69 592.1	2.53	1.13	0.93	437.57	
15	2.00	3.58 113.5	0.00 0.00	0.53	9.92	0.00	441.47	
16	2.00	0.58 555.9	0.00 0.00	0.53	1.66	0.00	426.33	
17	2.00	0.00 0.00	0.00 0.00	0.00	0.00	0.00	427.46	
18	2.00	1.08 313.5	0.69 592.1	2.53	2.62	0.93	416.86	
19	2.00	1.58 223.7	0.00 0.00	0.00	4.60	0.00	413.82	
20	2.00	3.08 127.9	0.00 0.00	1.03	8.99	0.00	412.22	
21	2.00	0.08 3649	0.00 0.00	0.53	0.24	0.00	423.27	
22	2.00	4.89 89.58	0.00 0.00	0.00	14.07	0.00	418.98	
23	2.00	1.58 223.7	0.19 2113	0.53	4.38	0.23	424.63	
24	2.00	0.41 773.8	0.36 1113	0.00	0.92	0.49	420.49	
25	2.00	0.57 573.9	0.00 0.00	1.53	1.60	0.00	429.48	
26	2.00	2.58 147.7	0.00 0.00	0.03	7.40	0.00	422.19	
27	2.00	2.58 147.7	0.00 0.00	0.00	7.43	0.00	419.96	
28	2.00	0.58 555.9	0.00 0.00	1.53	1.67	0.00	423.64	
29	2.00	0.00 0.00	0.00 0.00	5.03	0.00	0.00	437.12	
30	2.00	1.08 313.5	3.19 145.6	1.53	0.73	4.36	417.50	
31	2.00	0.00 0.00	0.00 0.00	1.03	0.00	0.00	424.50	
32	2.00	2.08 176.7	0.00 0.00	1.03	5.97	0.00	421.61	
33	2.00	4.58 93.98	0.00 0.00	1.53	12.88	0.00	433.07	
34	2.00	1.90 191.5	0.00 0.00	2.03	5.45	0.00	419.48	
35	2.00	0.08 3649	0.00 0.00	0.00	0.24	0.00	425.57	
36	2.00	0.00 0.00	1.69 255.2	2.03	0.00	2.32	424.10	
37	2.00	1.58 223.7	0.00 0.00	1.03	4.51	0.00	424.93	
38	2.00	0.58 555.9	0.00 0.00	0.03	1.66	0.00	428.08	
39	2.00	0.08 3649	0.00 0.00	4.03	0.25	0.00	416.74	
40	2.00	1.08 313.5	1.19 352.8	0.00	2.26	1.61	411.44	

09 Feb 2007 10:40

ALPHA/BETA - 1.09

Page #2

Protocol #: 5

ROUTINE A

User : CPL Whicke

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
41	2.00	0.00	0.00	0.69	592.1	0.53	0.00	0.95	392.03	
42	2.00	0.24	1328	0.00	0.00	2.03	0.69	0.00	410.05	
43	2.00	3.26	122.5	1.89	230.5	0.16	8.32	2.54	394.62	
44	2.00	0.68	481.2	0.00	0.00	0.53	1.90	0.00	436.35	
45	2.00	0.00	0.00	0.00	0.00	1.53	0.00	0.00	424.29	
46	2.00	3.94	105.6	1.84	236.3	2.53	9.63	2.45	437.53	
47	2.00	2.08	176.7	0.00	0.00	0.00	6.12	0.00	407.93	

Radiation Equipment Survey Report

Room:

3W10

Building:

503

HPO Surveyor:

Ms. Cox

Authorization:

709

Inspection Date:

2/7/07

Department:

NMRC

Meter Model:

Geiger

Radionuclides:

C14, Cr51, H-3, I-125, P-32, S-35

Meter Serial Number:

11833

Calibration Due Date:

9/17/07

Equipment Information

Nomenclature:

CO₂ Water Jacketed Incubator

Manufacturer:

Ferm Scientific

Model Number:

3119

Serial Number:

28304-7138

MMCN:

NMRC 32348054

Reason for Survey

Mark a X for appropriate reason.

On/off-Site Repair: ☐

Turn-in/ Transfer: ☐

Administrative Hold: ☐

Non RAM use only: ☒

Other: ☐

Meter Readings

BKG

<100

cpm mR/hr

A

<100

cpm mR/hr

B

<100

cpm mR/hr

C

cpm mR/hr

D

cpm mR/hr

E

cpm mR/hr

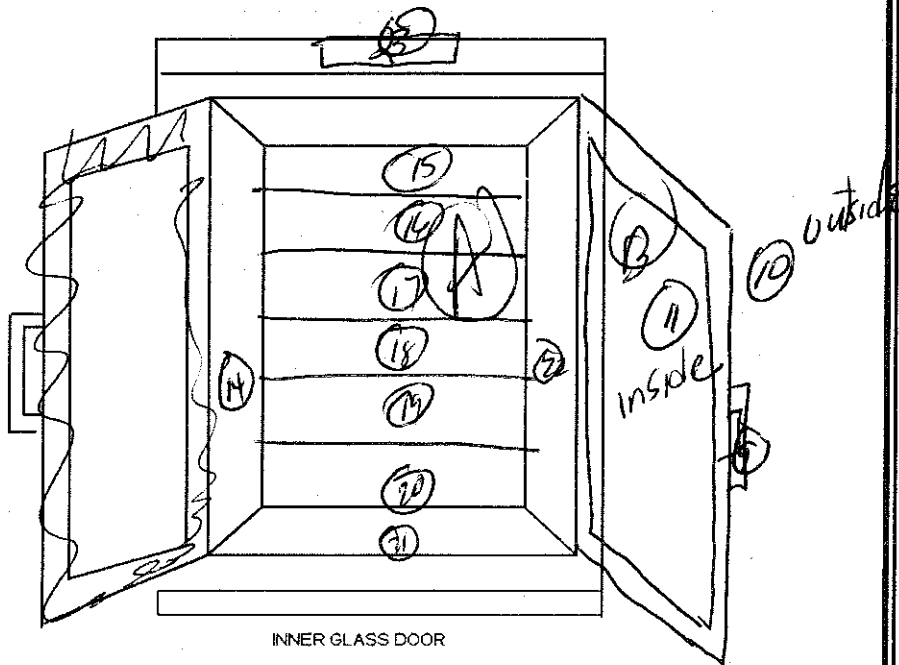
F

cpm mR/hr

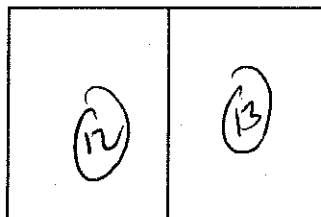
G

cpm mR/hr

Incubator



INNER GLASS DOOR



OUTSIDE

INSIDE

Laboratory Analysis

Technician

Auto-gamma

Date

2/8/07

Swipe Numbers

9-23

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Efficiency

MDA (dpm)

Isotope

Swipe

DPM

MDA (dpm)

Efficiency

Isotope

Swipe

DPM

MDA (dpm)

Efficiency

Isotope

Swipe

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract: IPA SK
 Outliers: 5.0 FLAG
 %Spillover: 0.00
 %Spilloverdown: 0.00
 Screenings: 000

	Window A	Window B	Window C
Widener:	MAN	MAN	MAN
	15 - 150 keV	150 - 950 keV	950 - 2000 keV
Flag:	74.5	1.4	40.7
Signal:	0.0	0.0	0.0
LOB:	0.0	0.0	0.0
Half Life(hours):	0.0	0.0	0.0
MC Estimator:	10000		
SDV Flag Limit:	0.00	0.0	

SW	CH	A:CPM-A:K510	B:CPM-B:K510	C:CPM-C:K510	TIME
1	1	3.0	0.9	31.4	2.00
2	2	0.0	0.0	2.7	2.00
3	3	1.0	3.4	38.2	2.00
4	4	0.0	7.4	38.2	2.00
5	5	0.0	0.0	0.0	2.00
6	6	0.0	0.0	0.0	2.00
7	7	3.5	0.4	10.7	2.00
8	8	0.0	0.0	0.7	2.00
9	9	3.5	0.0	3.2	2.00
10	10	4.0	0.0	2.7	2.00
11	11	0.0	0.0	0.0	2.00
12	12	0.0	0.4	27.7	2.00
13	13	6.0	11.4	20.3	2.00
14	14	7.0	0.4	10.7	2.00
15	15	3.0	0.0	0.0	2.00
16	16	19.3	12.0	0.7	2.00
17	17	0.0	0.4	23.0	2.00
18	18	1.5	0.4	30.4	2.00
19	19	10.0	4.4	37.4	2.00
20	20	1.0	10.4	21.9	2.00
21	21	0.0	7.7	25.1	2.00
22	22	0.0	0.0	0.0	2.00
23	23	0.0	0.0	0.0	2.00
24	24	0.0	11.2	20.3	2.00
25	25	0.0	1.5	31.0	2.00
26	26	0.5	10.9	21.4	2.00
27	27	0.0	7.4	24.0	2.00
28	28	2.7	7.4	24.0	2.00
29	29	0.0	6.4	27.3	2.00
30	30	0.0	5.4	33.0	2.00
31	31	0.0	7.4	24.0	2.00
32	32	10.0	17.4	19.3	2.00
33	33	0.0	0.0	0.0	2.00
34	34	0.0	0.0	0.0	2.00

Protocol #: 5

ROUTINE A

User: CPL Whicke

Time: 2.00

Data Mode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

Background Subtract: 1st Vial

	LL	UL	LCR	25%	BKG
Region A:	0.0 - 18.6		0	0.0	3.92
Region B:	18.6 - 156		0	0.0	6.31
Region C:	156 - 2000		0	0.0	2.97

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

S#	TIME	CPMA	A:25%	CPMB	B:25%	CPMC	DPM1	DPM2	tSIE	FLAG
1	10.00	3.92	31.96	6.31	25.17	2.97			431.75	B
2	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	433.01	
3	2.00	2.58	147.7	0.69	592.1	1.03	7.04	0.90	409.66	
4	2.00	2.08	176.7	0.00	0.00	1.03	5.98	0.00	421.31	
5	2.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	423.17	
6	2.00	2.90	134.3	1.37	309.4	0.00	7.32	1.83	419.98	
7	2.00	2.08	176.7	0.00	0.00	2.53	6.00	0.00	418.85	
8	2.00	2.08	176.7	0.00	0.00	0.03	5.95	0.00	423.75	
9	2.00	3.08	127.9	1.19	352.5	0.03	7.82	1.58	430.55	
10	2.00	0.50	639.6	2.77	164.4	3.03	0.00	3.79	425.88	
11	2.00	1.85	195.4	1.42	299.0	0.53	4.28	1.92	416.91	
12	2.00	3.08	127.9	0.00	0.00	0.00	8.68	0.00	431.65	
13	2.00	1.58	223.7	0.00	0.00	0.00	4.54	0.00	421.43	
14	2.00	0.58	555.9	0.69	592.1	2.53	1.13	0.93	437.57	
15	2.00	3.58	113.5	0.00	0.00	0.53	9.92	0.00	441.47	
16	2.00	0.58	555.9	0.00	0.00	0.53	1.66	0.00	426.33	
17	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	427.46	
18	2.00	1.08	313.5	0.69	592.1	2.53	2.62	0.93	416.86	
19	2.00	1.58	223.7	0.00	0.00	0.00	4.60	0.00	413.82	
20	2.00	3.08	127.9	0.00	0.00	1.03	8.99	0.00	412.22	
21	2.00	0.08	3649	0.00	0.00	0.53	0.24	0.00	423.27	
22	2.00	4.89	89.58	0.00	0.00	0.00	14.07	0.00	418.98	
23	2.00	1.58	223.7	0.19	2113	0.53	4.38	0.23	424.63	
24	2.00	0.41	773.8	0.36	1113	0.00	0.92	0.49	420.49	
25	2.00	0.57	573.9	0.00	0.00	1.53	1.60	0.00	429.48	
26	2.00	2.58	147.7	0.00	0.00	0.03	7.40	0.00	422.19	
27	2.00	2.58	147.7	0.00	0.00	0.00	7.43	0.00	419.96	
28	2.00	0.58	555.9	0.00	0.00	1.53	1.67	0.00	423.64	
29	2.00	0.00	0.00	0.00	0.00	5.03	0.00	0.00	437.12	
30	2.00	1.08	313.5	3.19	145.6	1.53	0.73	4.36	417.50	
31	2.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00	424.50	
32	2.00	2.08	176.7	0.00	0.00	1.03	5.97	0.00	421.61	
33	2.00	4.58	93.98	0.00	0.00	1.53	12.88	0.00	433.07	
34	2.00	1.90	191.5	0.00	0.00	2.03	5.45	0.00	419.48	
35	2.00	0.08	3649	0.00	0.00	0.00	0.24	0.00	425.57	
36	2.00	0.00	0.00	1.69	255.2	2.03	0.00	2.32	424.10	
37	2.00	1.58	223.7	0.00	0.00	1.03	4.51	0.00	424.93	
38	2.00	0.58	555.9	0.00	0.00	0.03	1.66	0.00	428.08	
39	2.00	0.08	3649	0.00	0.00	4.03	0.25	0.00	416.74	
40	2.00	1.08	313.5	1.19	352.8	0.00	2.26	1.61	411.44	

Room: 3W10 Building: 503 HPO Surveyor: M5Cv
 Authorization: 709 Inspection Date: 2/7/07
 Department: NMRC Meter Model: Gerson
 Radionuclides: C14/CB1/H-3/I125/P32/S35 Meter Serial Number: 11833
 Calibration Due Date: 9/17/07

Nomenclature: Co₂ Water Jacketed Incubator
 Manufacturer: Gamma Scientific
 Model Number: 3110
 Serial Number: 28304-7121
 MMCN: NMRC 3539800891

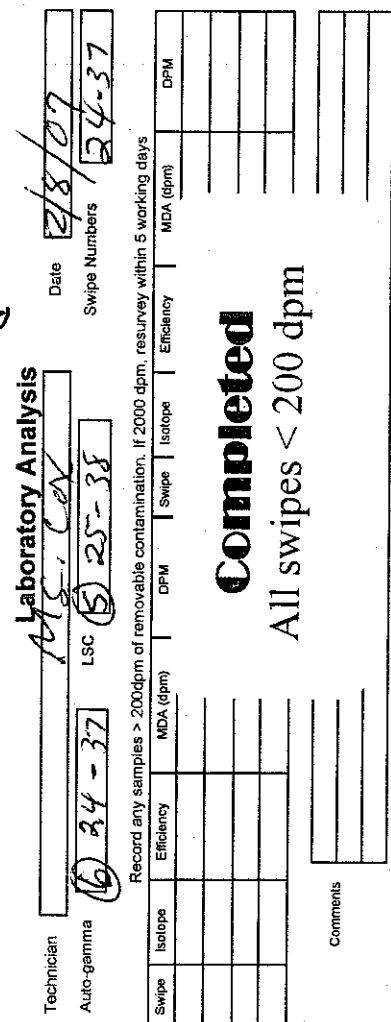
Mark a **X** for appropriate reason.

Turn-in/ Transfer:

Non-RAM use only: ☒

Other:

BKG		cpm	mR/hr
A	2100	cpm	mR/hr
B	"	cpm	mR/hr
C	400	cpm	mR/hr
D		cpm	mR/hr
E		cpm	mR/hr
F		cpm	mR/hr
G		cpm	mR/hr



Surveyor Comments

Count Time(minutes): 2.00
 Assay Type: IFM
 Background Substant: 150 Bkg
 Outlier: 5.0 FLAG
 %Spillover: 0.00
 %Spilloverdown: 0.00
 Screening: DEF

Nuclide:	Window 1		Window 2		Window 3	
	MAN	15 - 150 keV	MAN	150 - 750 keV	MAN	750 - 3000 keV
Flag:	25.5		114		46.7	
Signal:	0.00		0.00		0.00	
LDR:	1		1		1	
Half Life(hours):	1.00		1.00			
Minibatch:	1000					
NDM Flag Limit:	0.00		0.00			

Ch	Ch	Q: DPM	Q: WERS	Eff: DPM	Eff: WERS	Eff: DPM	Eff: WERS	TIME
1	1	3.0	41.0	10.9	21.4	3.7	32.6	2.00
2	2	0.0		0.0		2.7	42.7	2.00
3	3	0.0		3.4	38.2	5.7	39.5	2.00
4	4	0.0		3.4	38.2	0.0		2.00
5	5	0.0		0.0		5.7	39.5	2.00
6	6	0.0		0.0		0.0		2.00
7	7	2.5	44.0	0.4	10.9	5.7	32.6	2.00
8	8	0.0		0.0		0.7	32.3	2.00
9	9	3.5	30.7	0.0		3.2	39.3	2.00
10	10	3.0	27.6	0.0		2.7	42.7	2.00
11	11	0.0		0.0		0.0		2.00
12	12	0.0		5.4	27.9	3.2	39.3	2.00
13	13	5.0	33.0	11.4	20.8	2.0	47.3	2.00
14	14	3.0	27.6	3.4	10.9	0.0		2.00
15	15	3.0	41.0	0.0		0.0		2.00
16	16	15.3	13.0	15.4	13.0	0.7	32.3	2.00
17	17	0.0		3.4	27.0	2.7	32.3	2.00
18	18	4.7	33.4	3.4	30.4	0.2	14.0	2.00
19	19	13.0	23.4	4.7	33.4	4.3	33.3	2.00
20	20	1.0	31.4	10.4	21.3	4.2	33.3	2.00
21	21	2.5		0.0	23.1	0.0		2.00
22	22	0.0		0.0		5.7	21.3	2.00
23	23	3.0	24.5	0.0		0.0		2.00
24	24	0.0	10.5	11.3	20.3	0.0		2.00
25	25	0.0	27.0	1.7	31.0	0.0		2.00
26	26	3.3	23.0	1.3	31.4	0.0		2.00
27	27	3.0	27.6	7.4	26.0	0.0		2.00
28	28	2.7	44.0	7.4	35.0	3.2	30.9	2.00
29	29	0.0		4.4	17.3	0.0		2.00
30	30	0.0	31.5	3.4	27.0	4.7	32.5	2.00
31	31	0.0		3.4	26.0	0.0		2.00
32	32	15.0	17.7	17.4	19.1	1.7	33.3	2.00
33	33	0.0		0.0		0.0		2.00
34	34	0.0		0.0		2.7	30.7	2.00

Radiation Equipment Survey Report

Room: 3W 10

Building:

HPO Surveyor: Ms. Cox

Authorization: 709

Inspection Date: 2/7/07

Department: NMRC / Malaria

Meter Model: Geiger

Radionuclides: C14, Cr51, H-3, I125, P32 + 535

Meter Serial Number: 11833

Calibration Due Date: 9/17/07

Equipment Information

Nomenclature: HARVESTER

Manufacturer: Filter Mate

Model Number: N/A

Serial Number: N/A

MMCN:

Reason for Survey

Mark a X for appropriate reason.

On/off-Site Repair: ☐

Turn-in/ Transfer: ☐

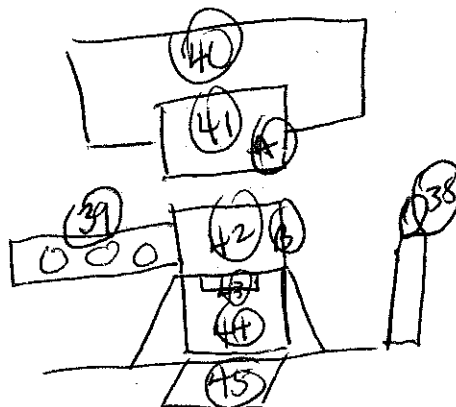
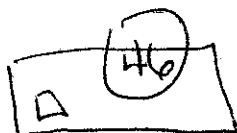
Administrative Hold: ☐

Non RAM use only: ☒

Other: ☐

Meter Readings

BKG	cpm mR/hr
A	200
B	200
C	200
D	cpm mR/hr
E	cpm mR/hr
F	cpm mR/hr
G	cpm mR/hr



Laboratory Analysis

Date: 2/8/07

Swipe Numbers: 38-46

MS: 4

LSC: 38-47

Technician: MS-46

Auto-gamma: 38-46

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days	Efficiency	Isotope	MDA (dpm)	DPM
Completed				
All swipes < 200 dpm				

Surveyor Comments

Count Time(minutes): 2.00
 Assay Type: CFM
 Background Subtract: IFA Bkg
 Detectors: 5.0 FLAS
 Scalllow: 0.00
 Scallhigh: 0.00
 Screening: OFF

Nuclide:	Window A		Window B		Window C	
	MAN	15 - 150 keV	NPA	250 - 350 keV	MAN	550 - 2000 keV
Bkg:	24.3		144		44.7	
Scalllow:	0.00		0.00		0.00	
Scallhigh:	0		0		0	
Half Life(days):	0.00		0.00			
Multiplicity:	1.0000					
NDY Flag Limit:	0.00		0.00			

SN	SM	A:CFM	A:NETS	B:CFM	B:NETS	C:CFM	C:NETS	TIME
1	1	3.0	41.0	10.9	71.4	3.7	34.4	2.00
2	2	0.0		0.0		2.7	42.7	2.00
3	3	1.0		3.4	38.1	3.7	37.5	2.00
4	4	0.0		7.4	38.7	0.0		2.00
5	5	0.0		0.0		3.7	39.5	2.00
6	6	0.0		0.0		0.0		2.00
7	7	2.3	44.5	0.4	105	3.7	23.5	2.00
8	8	0.0		0.0		0.7	32.2	2.00
9	9	3.5	70.7	0.0		3.1	35.3	2.00
10	10	9.0	27.4	0.0		2.7	42.7	2.00
11	11	0.0		0.0		0.0		2.00
12	12	0.0		6.4	27.5	3.2	35.7	2.00
13	13	8.0	15.0	11.4	30.5	2.3	47.2	2.00
14	14	3.0	27.5	0.4	105	0.0		2.00
15	15	3.0	41.0	0.0		0.0		2.00
16	16	12.3	13.7	5.4	15.0	0.7	32.2	2.00
17	17	0.0		5.5	23.0	0.7	31.1	2.00
18	18	4.5	33.4	3.4	33.4	0.0	1.14	2.00
19	19	10.0	23.4	4.7	33.6	4.7	31.1	2.00
20	20	1.0	71.4	10.4	21.9	4.3	28.3	2.00
21	21	0.0		7.7	25.1	0.0		2.00
22	22	0.0		0.0		2.7	27.5	2.00
23	23	3.1	74.5	0.0		0.0		2.00
24	24	0.0	172	11.5	20.3	0.0		2.00
25	25	3.0	33.2	1.5	31.0	0.0		2.00
26	26	7.5	37.0	1.5	21.4	0.0		2.00
27	27	7.0	23.6	7.4	25.0	1.5		2.00
28	28	2.5	41.9	7.4	25.0	3.0	70.9	2.00
29	29	0.0		6.4	27.5	0.0		2.00
30	30	1.0	71.4	5.4	33.0	4.7	32.5	2.00
31	31	0.0		7.4	25.0	0.0		2.00
32	32	10.0	17.7	17.4	14.3	1.5	33.5	2.00
33	33	0.0		0.0		0.0		2.00
34	34	0.0		0.0		2.7	32.7	2.00

Protocol #: 5

ROUTINE A

User: CPL Whicke

Time: 2.00

Data Mode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

Background Subtract: 1st Vial

	LL	UL	LCR	25%	BKG
Region A:	0.0 - 18.6		0	0.0	3.92
Region B:	18.6 - 156		0	0.0	6.31
Region C:	156 - 2000		0	0.0	2.97

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

S#	TIME	CPMA A:25%	CPMB B:25%	CPMC	DPM1	DPM2	tSIE	FLAG
1	10.00	3.92 31.96	6.31 25.17	2.97			431.75	B
2	2.00	0.00 0.00	0.00 0.00	0.00	0.00	0.00	433.01	
3	2.00	2.58 147.7	0.69 592.1	1.03	7.04	0.90	409.66	
4	2.00	2.08 176.7	0.00 0.00	1.03	5.98	0.00	421.31	
5	2.00	0.00 0.00	0.00 0.00	0.53	0.00	0.00	423.17	
6	2.00	2.90 134.3	1.37 309.4	0.00	7.32	1.83	419.98	
7	2.00	2.08 176.7	0.00 0.00	2.53	6.00	0.00	418.85	
8	2.00	2.08 176.7	0.00 0.00	0.03	5.95	0.00	423.75	
9	2.00	3.08 127.9	1.19 352.5	0.03	7.82	1.58	430.55	
10	2.00	0.50 639.6	2.77 164.4	3.03	0.00	3.79	425.88	
11	2.00	1.85 195.4	1.42 299.0	0.53	4.28	1.92	416.91	
12	2.00	3.08 127.9	0.00 0.00	0.00	8.68	0.00	431.65	
13	2.00	1.58 223.7	0.00 0.00	0.00	4.54	0.00	421.43	
14	2.00	0.58 555.9	0.69 592.1	2.53	1.13	0.93	437.57	
15	2.00	3.58 113.5	0.00 0.00	0.53	9.92	0.00	441.47	
16	2.00	0.58 555.9	0.00 0.00	0.53	1.66	0.00	426.33	
17	2.00	0.00 0.00	0.00 0.00	0.00	0.00	0.00	427.46	
18	2.00	1.08 313.5	0.69 592.1	2.53	2.62	0.93	416.86	
19	2.00	1.58 223.7	0.00 0.00	0.00	4.60	0.00	413.82	
20	2.00	3.08 127.9	0.00 0.00	1.03	8.99	0.00	412.22	
21	2.00	0.08 3649	0.00 0.00	0.53	0.24	0.00	423.27	
22	2.00	4.89 89.58	0.00 0.00	0.00	14.07	0.00	418.98	
23	2.00	1.58 223.7	0.19 2113	0.53	4.38	0.23	424.63	
24	2.00	0.41 773.8	0.36 1113	0.00	0.92	0.49	420.49	
25	2.00	0.57 573.9	0.00 0.00	1.53	1.60	0.00	429.48	
26	2.00	2.58 147.7	0.00 0.00	0.03	7.40	0.00	422.19	
27	2.00	2.58 147.7	0.00 0.00	0.00	7.43	0.00	419.96	
28	2.00	0.58 555.9	0.00 0.00	1.53	1.67	0.00	423.64	
29	2.00	0.00 0.00	0.00 0.00	5.03	0.00	0.00	437.12	
30	2.00	1.08 313.5	3.19 145.6	1.53	0.73	4.36	417.50	
31	2.00	0.00 0.00	0.00 0.00	1.03	0.00	0.00	424.50	
32	2.00	2.08 176.7	0.00 0.00	1.03	5.97	0.00	421.61	
33	2.00	4.58 93.98	0.00 0.00	1.53	12.88	0.00	433.07	
34	2.00	1.90 191.5	0.00 0.00	2.03	5.45	0.00	419.48	
35	2.00	0.08 3649	0.00 0.00	0.00	0.24	0.00	425.57	
36	2.00	0.00 0.00	1.69 255.2	2.03	0.00	2.32	424.10	
37	2.00	1.58 223.7	0.00 0.00	1.03	4.51	0.00	424.93	
38	2.00	0.58 555.9	0.00 0.00	0.03	1.66	0.00	428.08	
39	2.00	0.08 3649	0.00 0.00	4.03	0.25	0.00	416.74	
40	2.00	1.08 313.5	1.19 352.8	0.00	2.26	1.61	411.44	

MEMORANDUM FOR CAPT Thomas Richie, NMRC/Malaria,
Radioactive Materials Authorization Number 709

SUBJECT: Radiological Safety Certification for Building 503 Room 3W40

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

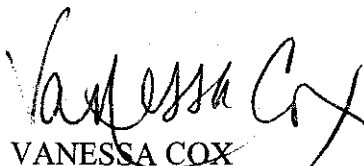
Building	Room
503, WRAIR/NMRC	3W40

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Forma Scientific Co2 Water Jacketed Incubator	3110	28304-7082	HMJ F14712

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.


VANESSA COX
Health Physicist
Health Physics Office

Radiation Final Laboratory Summary Report

Room: 3W40

Building: 503, WRAIR

Authorization: 709 / CAPT Thomas Richie

Department: NMRC / Malaria

Radionuclides: C-14, Cr-51, H-3, I-125, P-32, and S-35

HPO Surveyor: Ms. Cox

Inspection Date: 2/7/07

Meter Model: Leica

Meter Serial Number: 11833

Calibration Due Date: 9/17/07

Room Checks

Initials

Administrative Checks

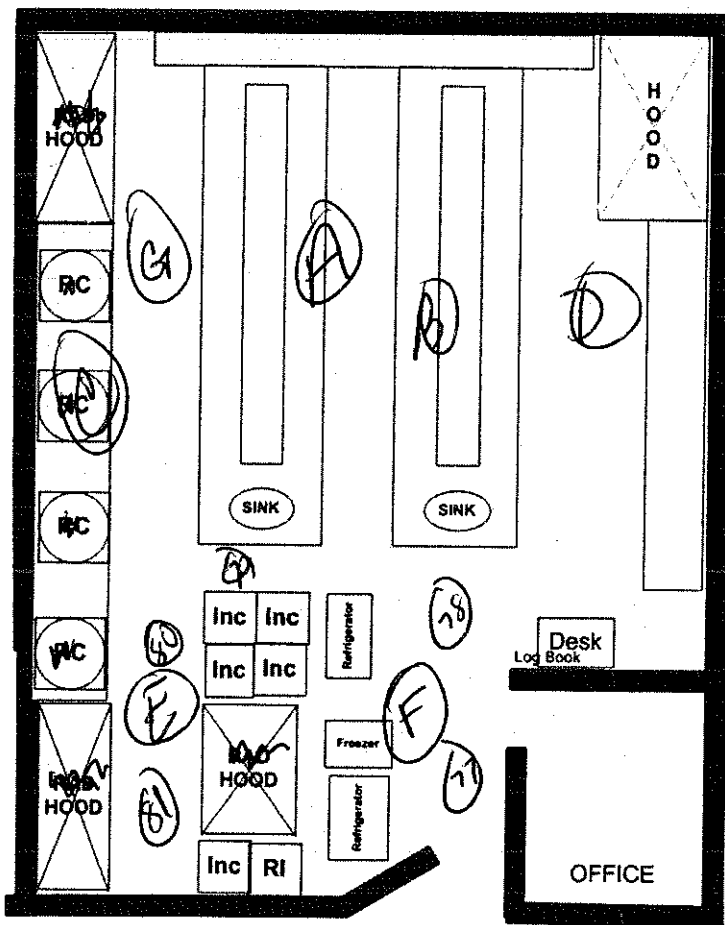
Initials

Equipment / Room Final
Forms Completed

Additional Information:

Meter Readings

BKG	2100	cpm
A	2100	cpm
B	"	cpm
C	"	cpm
D	"	cpm
E	"	cpm
F	2100	cpm
G	2100	cpm



503_3W40

Laboratory Analysis

Technician

Auto-gamma

LSC

5

Swipe Numbers

Date _____

[illegible]

5

7

BK

A
B

B
C

C
D

2. 3. 4.

13.

G

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

Protocol #: 8

Swipes

User: H.

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract: IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

Nuclide:	Window A		Window B	Window C	
	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN
Bkg:	74.5		114		45.7
Sigma:	0.00		0.00		0.00
LOR:	0		0		0
Half Life(hours):	0.00		0.00		
Multiplicity:	1.0000				
XCV Flag Limit:	0.00		0.00		

P#	R#	A:CPM	A:XSIG	B:CPM	B:XSIG	C:CPM	C:XSIG	TIME
8	1	0.0		12.4	20.1	0.0		2.00
8	2	0.0		0.0		0.0		2.00
8	3	5.5	30.2	0.0		5.2	23.3	2.00
8	4	2.5	44.9	3.4	18.2	0.0		2.00
8	5	0.0		0.0		9.2	27.1	2.00
8	6	0.0		7.3	25.1	0.7	32.7	2.00
8	7	0.0		0.0		8.2	34.2	2.00
8	8	4.8	33.4	3.2	18.2	3.2	41	2.00
8	9	0.0		0.0		0.0		2.00
8	10	10.0	20.4	17.9	17.0	0.0		2.00
8	11	4.0	15.4	6.9	26.5	0.7	42.7	2.00
8	12	0.0		7.4	23.2	3.2	39.0	2.00
8	13	0.0		0.0		0.7	32.3	2.00
8	14	1.8	37.8	3.4	10.4	3.2	23.7	2.00
8	15	1.0	31.4	6.4	27.5	1.7	53.6	2.00
8	16	0.0		0.0		0.0		2.00
8	17	0.0		0.0		0.0		2.00
8	18	0.0		3.9	13.7	3.2	47.2	2.00
8	19	5.0	31.7	0.0		0.0		2.00
8	20	7.0	36.8	2.9	41.4	0.0		2.00
8	21	0.0		1.5	31.5	0.0		2.00
8	22	6.0	29.8	1.4	39.7	0.2	144	2.00
8	23	0.0		5.9	25.1	0.0		2.00

09 Feb 2007 12:29

ALPHA/BETA - 1.09

Page #1

Protocol #: 7

ROUTINE A

User : CPL Whicke

Time: 2.00

Data Mode: Dual DPM

Nuclides: 3H-14C-UG

Quench Sets

Low Energy: 3H-UG

High Energy: 14C-UG

Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.0 - 18.6		0	0.0	5.03
Region B:	18.6 - 156		0	0.0	4.77
Region C:	156 - 2000		0	0.0	4.10

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
1	10.00	5.03	28.19	4.77	28.97	4.10			470.04	B
2	2.00	0.00	0.00	4.44	101.5	0.00	0.00	6.10	424.54	
3	2.00	0.97	387.4	0.73	489.7	1.40	2.24	0.99	417.94	
4	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	419.60	
5	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	416.63	
6	2.00	0.47	773.5	0.00	0.00	0.40	1.36	0.00	410.01	
7	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	419.01	
8	2.00	2.38	172.1	0.00	0.00	0.40	6.78	0.00	425.80	
9	2.00	0.00	0.00	2.98	139.8	0.00	0.00	4.10	425.69	
10	2.00	0.00	0.00	1.73	222.7	0.00	0.00	2.38	421.01	
11	2.00	0.00	0.00	3.13	134.5	0.90	0.00	4.31	407.38	
12	2.00	0.00	0.00	0.00	0.00	2.40	0.00	0.00	406.01	
13	2.00	0.06	6326	3.14	133.9	0.90	0.00	4.33	406.34	
14	2.00	1.55	250.9	0.00	0.00	0.00	4.58	0.00	406.21	
15	2.00	6.97	73.21	3.73	116.5	0.00	17.69	5.02	405.27	
16	2.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	418.80	
17	2.00	1.47	264.2	0.23	1477	0.00	3.95	0.30	432.12	
18	2.00	0.44	819.8	0.76	473.1	0.00	0.68	1.04	429.02	
19	2.00	0.82	452.4	5.88	81.90	0.40	0.00	8.07	421.90	
20	2.00	0.00	0.00	1.23	302.3	0.00	0.00	1.70	418.34	
21	2.00	1.20	317.2	0.00	0.00	0.00	3.48	0.00	415.53	
22	2.00	0.00	0.00	1.23	302.3	0.00	0.00	1.70	420.33	
23	2.00	1.47	264.2	0.23	1477	0.00	4.04	0.30	419.77	
24	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	416.34	

Calibration Due Date:

Other:

cpm mR/hr



Comments

Surveyor Comments

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract: IPA Bkg
 Outlier: 5.0 FLAG
 XSpillup: 0.00
 XSpilldown: 0.00
 Screening: OFF

Nuclide:	Window A		Window B		Window C	
	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	74.5		114		46.3	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
XCV Flag Limit:	0.00		0.00			

F#	S#	A:CPM	A:XSIG	B:CPM	B:XSIG	C:CPM	C:XSIG	TIME
8	1	0.0		12.4	20.1	0.0		2.00
8	2	0.0		0.0		0.0		2.00
8	3	5.5	30.2	0.0		0.0		2.00
8	4	2.5	44.9	3.4	38.2	9.2	23.3	2.00
8	5	0.0		0.0		0.0		2.00
8	6	0.0		7.9	25.1	9.2	23.3	2.00
8	7	0.0		0.0		0.7	82.2	2.00
8	8	4.5	33.4	3.4	38.2	8.2	24.6	2.00
8	9	0.0		0.0		0.2	144	2.00
8	10	10.0	22.4	13.9	17.0	0.0		2.00
8	11	4.0	35.4	6.9	26.5	0.0		2.00
8	12	0.0		3.4	38.2	2.7	42.7	2.00
8	13	0.0		0.0		3.2	39.3	2.00
8	14	6.5	27.8	5.4	30.4	0.7	82.2	2.00
8	15	1.0	71.4	6.4	27.9	9.2	23.3	2.00
8	16	0.0		0.0		1.7	53.6	2.00
8	17	0.0		0.0		0.0		2.00
8	18	0.0		3.9	35.7	0.0		2.00
8	19	5.0	31.7	0.0		2.2	47.2	2.00
8	20	7.0	26.8	2.9	41.4	0.0		2.00
8	21	0.0		4.5	31.5	0.0		2.00
8	22	6.0	28.9	1.4	59.3	0.0		2.00
8	23	0.0		5.9	29.1	0.2	144	2.00
						0.0		2.00

MEMORANDUM FOR CAPT Thomas Richie, NMRC/Malaria,
Radioactive Materials Authorization Number 709

SUBJECT: Radiological Safety Certification for Building 503 Room 3W22

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

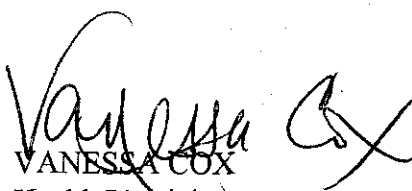
Building	Room
503, WRAIR/NMRC	3W22

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Forma Scientific Co2 Water Jacketed Incubator	3110	28305-7137	3239803259
Freezer	3767	394-008	3239801037
Hamilton Hood	0156470522	N/A	3239806132

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.


VANESSA COX
Health Physicist
Health Physics Office

Radiation Final Laboratory Summary Report

Room: 3W22 Building: 503, WRAIR
 Authorization: 709 / CAPT Thomas Richie
 Department: NMRC / Malaria
 Radionuclides: C-14, Cr-51, H-3, I-125, P-32, and S-35

HPO Surveyor: Ms. Cox
 Inspection Date: 2/7/07
 Meter Model: Geiger
 Meter Serial Number: 11833
 Calibration Due Date: 9/17/07

Room Checks

Initials

All RAM removed from the room
 Radioactive waste removed
 All RAM use equipment cleared
 All radiation labels removed
 Entrance un-posted

Initials
 [Handwritten initials in boxes]

Administrative Checks

Initials

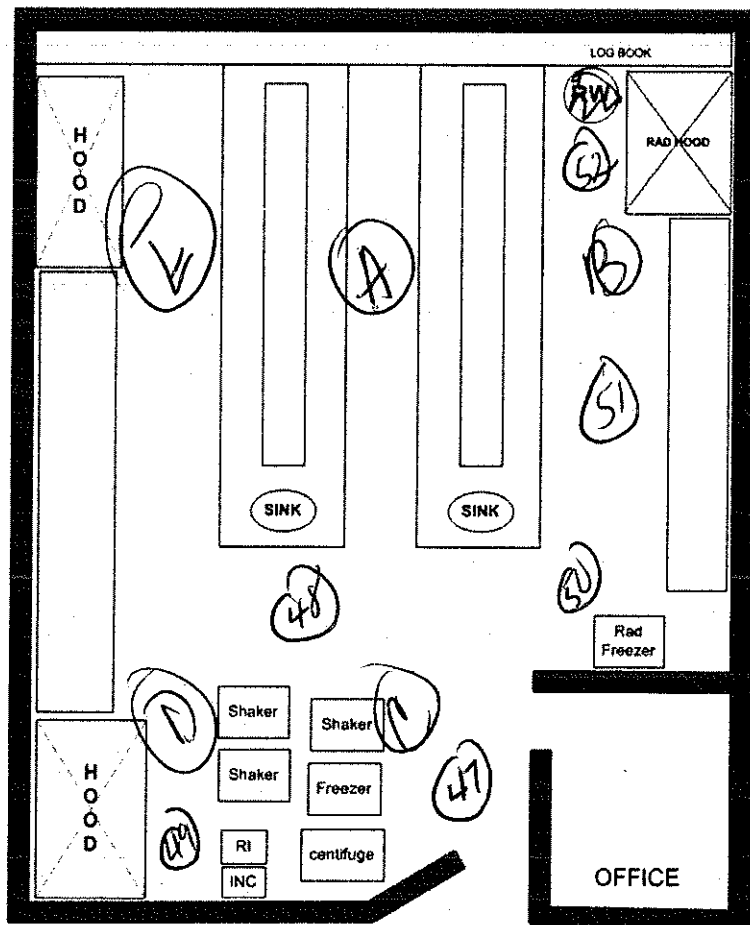
Equipment / Room Final
 Forms Completed

Additional Information:

Initials
 [Handwritten initials in box]

Meter Readings

BKG		cpm
A	400	cpm
B	480	cpm
C	"	cpm
D	"	cpm
E	"	cpm
F	<100	cpm
G		cpm



503_3W22

Laboratory Analysis

Technician: MS. Cox Date: 2/8/07
 Auto-gamma: LSC 62-7
 Swipe Numbers: 47-52

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Swipe	Efficiency	MDA (dpm)	DPM

Completed
 All swipes < 200 dpm

Comments

Surveyor Comments

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.5		114		46.3	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
%CV Flag Limit:	0.00		0.00			

PM	SM	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	0.0		0.0		14.7	18.4	2.00
7	2	2.0	50.3	5.9	29.1	0.0		2.00
7	3	4.0	35.4	4.4	33.2	0.0		2.00
7	4	0.0		0.4	109	6.2	28.3	2.00
7	5	5.5	30.2	7.4	26.0	2.2	47.2	2.00
7	6	7.5	25.9	9.9	22.5	1.2	53.5	2.00
7	7	11.5	20.9	15.4	18.0	0.0		2.00
7	8	5.5	30.2	4.9	31.9	5.7	29.5	2.00
7	9	5.5	30.2	0.0		0.7	82.2	2.00
7	10	6.0	28.9	13.4	18.0	10.7	21.6	2.00
7	11	6.5	27.8	5.4	30.4	9.2	23.3	2.00
7	12	3.5	37.7	3.4	38.2	0.0		2.00
7	13	0.0		5.4	30.4	0.0		2.00
7	14	2.5	44.9	0.0		8.7	23.9	2.00
7	15	0.0		0.4	109	0.0		2.00
7	16	0.0		8.9	23.7	0.0		2.00
7	17	8.5	24.3	10.9	21.4	0.0		2.00
7	18	0.0		0.4	109	0.0		2.00
7	19	0.0		0.0		1.7	53.6	2.00
7	20	0.0		0.0		0.0		2.00
7	21	0.0		0.0		0.0		2.00

Radiation Equipment Survey Report

Room: 3W22

Building: 503

HPO Surveyor: M.S. Cox

Authorization: 709

Inspection Date: 2/7/07

Department: Malaria

Meter Model: Geiger

Radionuclides:

Meter Serial Number: 11833

Calibration Due Date: 9/17/07

Equipment Information

Nomenclature: Freezer
 Manufacturer: _____
 Model Number: 3767
 Serial Number: 394-068
 MMCN: NMRC 3239801637

Reason for Survey

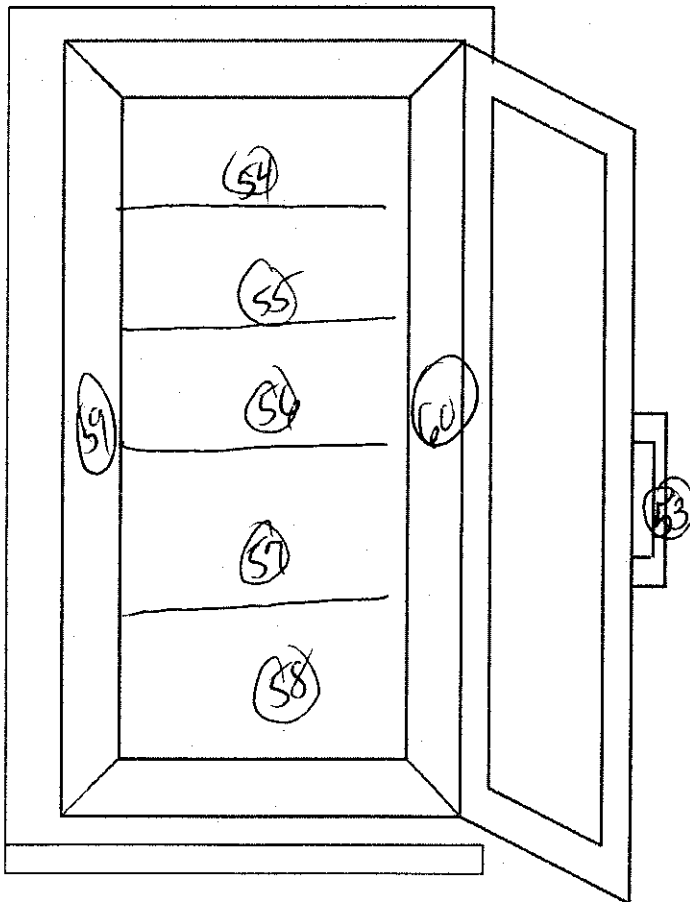
Mark a X for appropriate reason.

On/off-Site Repair: _____
 Turn-in/ Transfer: _____
 Administrative Hold: _____
 Non RAM use only: _____
 Other: _____

Meter Readings

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		

Refrigerator or Freezer



Laboratory Analysis

Technician: M.S. Cox
 Date: 2/8/07
 Auto-gamma: 709-17
 LSC: 10-15
 Swipe Numbers: 53-60

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	mR/hr	DPM	Isotope	Swipe	Efficiency	MDA (dpm)	DPM

Completed
 All swipes < 200 dpm

Comments

Surveyor Comments

Protocol #: 7

Swipes

User: Lab S

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract: IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.5		114		46.3	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
%CV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	0.0		0.0		14.7	18.4	2.00
7	2	2.0	50.3	5.9	29.1	0.0		2.00
7	3	4.0	35.4	4.4	33.6	0.0		2.00
7	4	0.0		0.4	109	6.2	28.3	2.00
7	5	5.5	30.2	7.4	26.0	2.2	47.2	2.00
7	6	7.5	25.9	9.9	22.5	1.2	63.5	2.00
7	7	11.5	20.9	15.4	18.0	0.0		2.00
7	8	5.5	30.2	4.9	31.9	5.7	29.5	2.00
7	9	5.5	30.2	0.0		0.7	82.2	2.00
7	10	6.0	28.9	15.4	18.0	10.7	21.4	2.00
7	11	6.5	27.8	5.4	30.4	9.2	23.3	2.00
7	12	3.5	37.9	3.4	38.2	0.0		2.00
7	13	0.0		5.4	30.4	0.0		2.00
7	14	2.5	44.9	0.0		8.7	23.9	2.00
7	15	0.0		0.4	109	0.0		2.00
7	16	0.0		8.9	23.7	0.0		2.00
7	17	8.5	24.3	10.9	21.4	0.0		2.00
7	18	0.0		0.4	109	0.0		2.00
7	19	0.0		0.0		1.7	53.4	2.00
7	20	0.0		0.0		0.0		2.00
7	21	0.0		0.0		0.0		2.00

Radiation Equipment Survey Report

Room: 3W22

Building: 503

HPO Surveyor: M.S. Cor

Authorization: 709

Inspection Date: 2/7/07

Department: Malaria

Meter Model: Geiger

Radionuclides:

Meter Serial Number: 11833

Calibration Due Date: 9/17/07

Equipment Information

Nomenclature: Hood
 Manufacturer: Hamilton
 Model Number: D116470522
 Serial Number: N/A
 MMCN: NMRC 3239806132

Reason for Survey

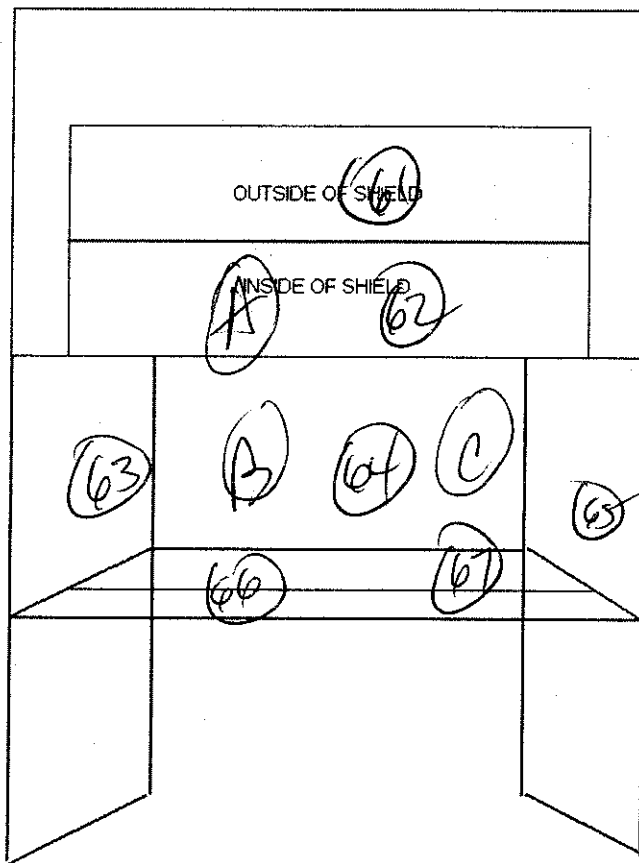
Mark a X for appropriate reason.

On/off-Site Repair: ☐
 Turn-in/ Transfer: ☐
 Administrative Hold: ☐
 Non RAM use only: ☒
 Other: ☐

Meter Readings

BKG	cpm	mR/hr
A	200	cpm
B	200	mR/hr
C	200	cpm
D	200	mR/hr
E	200	cpm
F	200	mR/hr
G	200	cpm

Fume Hood



Laboratory Analysis

Technician: M.S. Cor
 Date: 2/5/07
 Auto-gamma: 15-27
 LSC: 16-27
 Swipe Numbers: 61-67

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	Isotope	Efficiency	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Surveyor Comments

Count Time(minutes): 2.00
 Assay Toler: CFM
 Background Subtract: IP4 Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A	Window B	Window C
Nuclide:	MAN 15 - 250 keV	MAN 250 - 950 keV	MAN 950 - 2000 keV
Bkg:	94.5	111	44.7
Sigma:	0.00	0.00	0.00
LCR:	0	0	0
Half Life(hours):	0.00	0.00	
Multipier:	1.0000		
%CV Flag Limit:	0.00	0.00	

PM	SN	A:CFM-A:MSIG	B:CFM-B:MSIG	C:CFM-C:MSIG	TIME
7	1	0.0	0.0	14.7	2.00
7	2	0.0	8.3	0.0	2.00
7	3	41.0	4.4	0.0	2.00
7	4	0.0	0.4	38.4	2.00
7	5	5.5	7.4	47.1	2.00
7	6	7.5	9.9	67.3	2.00
7	7	41.5	15.4	0.0	2.00
7	8	5.5	8.9	27.3	2.00
7	9	5.5	0.0	81.3	2.00
7	10	6.0	15.4	21.4	2.00
7	11	6.5	5.4	23.3	2.00
7	12	7.5	3.4	0.0	2.00
7	13	0.0	5.4	0.0	2.00
7	14	2.5	0.0	23.3	2.00
7	15	0.0	0.4	0.0	2.00
7	16	0.0	8.9	0.0	2.00
7	17	8.5	10.9	0.0	2.00
7	18	0.0	0.4	0.0	2.00
7	19	0.0	0.0	53.4	2.00
7	20	0.0	0.0	0.0	2.00
7	21	0.0	0.0	0.0	2.00

09 Feb 2007 11:11

ALPHA/BETA - 1.09

Page #1

Protocol #: 6

ROUTINE A

User : CPL Whicker

Time: 2.00

Data Mode: Dual DPM

Nuclides: 3H-14C-UG Quench Sets

Low Energy: 3H-UG

Background Subtract: 1st Vial

High Energy: 14C-UG

	LL	UL	LCR	2S%	BKG
Region A:	0.0 - 18.6		0	0.0	5.80
Region B:	18.6 - 156		0	0.0	5.60
Region C:	156 - 2000		0	0.0	3.20

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

S#	TIME	CPMA	A:2S%	CPMB	B:2S%	CPMC	DPM1	DPM2	tSIE	FLAG
1	10.00	5.80	26.26	5.60	26.73	3.20			436.29	B
2	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	405.97	
3	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	433.17	
4	2.00	0.00	0.00	2.02	206.6	1.30	0.00	2.78	423.30	
5	2.00	0.00	0.00	1.40	287.8	0.00	0.00	1.93	409.73	
6	2.00	0.00	0.00	1.72	239.2	0.00	0.00	2.35	470.96	
7	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	405.86	
8	2.00	0.00	0.00	1.98	210.3	0.00	0.00	2.73	425.64	
9	2.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	448.54	
10	2.00	0.00	0.00	0.49	779.7	0.30	0.00	0.67	425.49	
11	2.00	4.20	112.5	0.90	433.8	0.30	11.27	1.16	426.01	
12	2.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	440.75	
13	2.00	0.00	0.00	0.00	0.00	2.80	0.00	0.00	417.05	
14	2.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	415.69	
15	2.00	0.00	0.00	0.40	943.4	0.00	0.00	0.55	428.26	
16	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	410.47	
17	2.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	448.62	
18	2.00	0.00	0.00	0.40	943.4	2.80	0.00	0.55	442.07	
19	2.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	455.71	
20	2.00	4.52	106.1	0.00	0.00	1.80	12.86	0.00	425.17	
21	2.00	0.67	584.7	2.93	149.9	0.30	0.00	4.00	458.28	
22	2.00	0.00	0.00	0.53	716.5	0.00	0.00	0.73	389.40	

Radiation Equipment Survey Report

Room: 3W22

Building: 503

HPO Surveyor: M. Cox

Authorization: 709

Inspection Date: 2/7/07

Department: NMRC/Malaria

Meter Model: Geiger

Radionuclides: C14, B251, H-3, I125 P32 + 935

Meter Serial Number: 11833

Calibration Due Date: 9/17/07

Equipment Information

Reason for Survey

Mark a X for appropriate reason.

Nomenclature: CO₂ Water Jacketed Incubator

Manufacturer: Forma Scientific

Model Number: 3110

Serial Number: 28305-7137

MMCN: NMRC3239803259

On/off-Site Repair: ☐

Turn-in/ Transfer: ☐

Administrative Hold: ☐

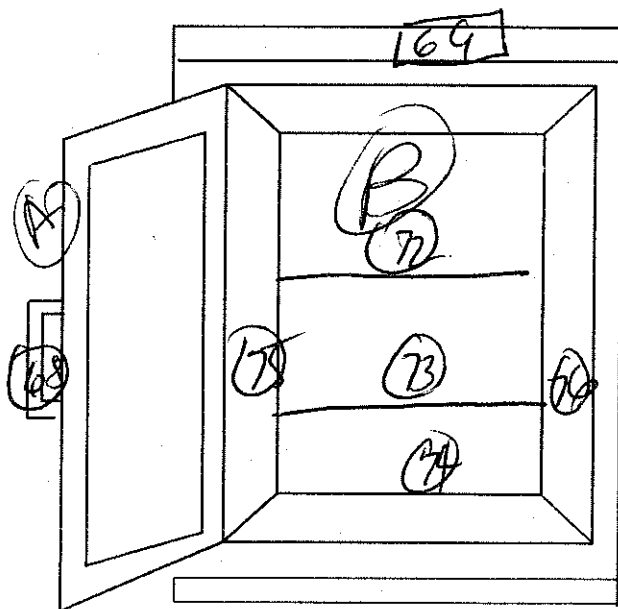
Non RAM use only: ☒

Other: ☐

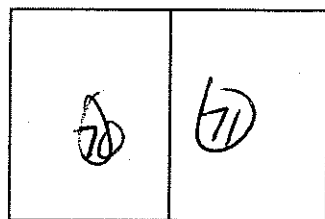
Meter Readings

BKG		cpm mR/hr
A	210	cpm mR/hr
B	210	cpm mR/hr
C	210	cpm mR/hr
D		cpm mR/hr
E		cpm mR/hr
F		cpm mR/hr
G		cpm mR/hr

Incubator



INNER GLASS DOOR



OUTSIDE

INSIDE

Laboratory Analysis

Date: 2/8/07

Swipe Numbers: 65-76

Technician: M. Cox

Auto-gamma: 1-9

Record any samples > 200 dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Efficiency

Isotope

MDA (dpm)

DPM

Completed

All swipes < 200 dpm

Surveyor Comments

Protocol #: 8

Swipes

User: H.

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract: IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

	Window A		Window B		Window C	
Nuclide:	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	94.5		114		46.3	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multilplier:	1.0000					
XCV Flag Limit:	0.00		0.00			

F#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
8	1	0.0		12.4	20.1	0.0		2.00
8	2	0.0		0.0		0.0		2.00
8	3	5.5	30.2	0.0		9.2	23.3	2.00
8	4	2.5	44.9	3.4	38.2	0.0		2.00
8	5	0.0		0.0		9.2	23.3	2.00
8	6	0.0		7.9	25.1	0.7	82.2	2.00
8	7	0.0		0.0		8.2	24.6	2.00
8	8	4.5	33.4	3.4	38.2	0.2	144	2.00
8	9	0.0		0.0		0.0		2.00
8	10	10.0	22.4	13.9	19.0	0.0		2.00
8	11	4.0	35.4	6.9	26.9	2.7	42.7	2.00
8	12	0.0		3.4	38.2	3.2	39.3	2.00
8	13	0.0		0.0		0.7	82.2	2.00
8	14	6.5	27.8	5.4	30.4	9.2	23.3	2.00
8	15	1.0	71.4	6.4	27.9	1.7	53.6	2.00
8	16	0.0		0.0		0.0		2.00
8	17	0.0		0.0		0.0		2.00
8	18	0.0		3.9	35.7	2.2	47.2	2.00
8	19	5.0	31.7	0.0		0.0		2.00
8	20	7.0	26.8	2.9	41.4	0.0		2.00
8	21	0.0		4.5	31.5	0.0		2.00
8	22	6.0	28.9	1.4	59.7	0.2	144	2.00
8	23	0.0		5.9	29.1	0.0		2.00

#17647

Radiation Lab Summary Report

Room: 3W16

Building: 503, WRAIR/NMRC

HPO Surveyor: M. Cox

Authorization: 709, CAPT Thomas Richie

Inspection Date: 3/11/08

Department: NMRC / Malaria

Frequency: 90 Days

Meter Model: Jager

Radionuclides: C-14, Cr-51, H-3, I-125, P-32 and S-35

Meter Serial Number: 11976

Calibration Due Date: 10/12/08

Survey Checks

	Yes	NA	No
Are all radioactive materials secure?	☒	☐	☐
Is the room posted?	☒	☐	☐
Is the work area posted?	☒	☐	☐
Is equipment use for rad use posted?	☒	☐	☐
Have user performed surveys?	☐	☒	☐

Date Of Last User Survey: 12/20/04

User Inventory Log:

Isotope / Activity Used: N/A

Max Daily Use: N/A

Lab Survey Meter:

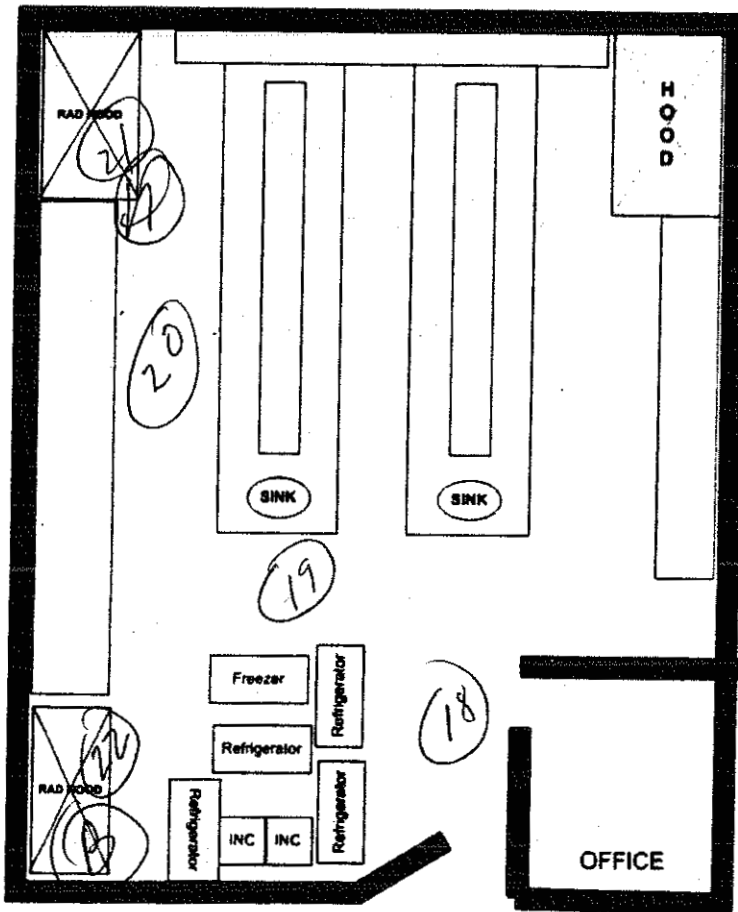
Meter Model Number: Same

Serial Number: Same

Calibration Due Date: Same

Meter Readings

BKG	cpm	mR/hr
A	<u>2100</u>	<u>2100</u>
B	<u>2100</u>	<u>2100</u>
C	<u>2100</u>	<u>2100</u>
D		
E		
F		
G		



503_3W16

Laboratory Analysis

Technician: M. Cox
Auto-gamma: 1718-22
LSC: 19-23
Date: 3/12/08
Swipe Numbers: 1718-22

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	Efficiency	MDA (dpm)	DPM

Completed
All swipes < 200 dpm

Surveyor Comments

12 Mar 2008 07:54

Packard Instrument Company

Page #1

Protocol #: 7

Swipes

User : Lab Staff

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

Window C		Window A	Window B
Nuclide:	MAN	15 - 250 keV	MAN
50 keV	MAN	950 - 2000 keV	250
Bkg:	98.4		118
48.3			
Sigma:	0.00		0.00
0.00			
LCR:	0		0
0			
Half Life(hours):	0.00		0.00
Multiplier:	1.0000		
%CV Flag Limit:	0.00		0.00

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	1.1	66.8	0.0		0.7	87.0	2.00
7	2	0.0		2.9	41.4	0.0		2.00
7	3	0.0		4.9	31.9	6.7	27.4	2.00
7	4	0.0		1.4	59.3	0.0		2.00
7	5	0.0		0.0		1.7	54.9	2.00
7	6	0.0		0.0		3.7	37.0	2.00
7	7	14.6	18.5	0.0		3.7	37.0	2.00
7	8	5.1	31.2	0.9	73.7	0.0		2.00
7	9	0.0		0.0		0.0		2.00
7	10	0.0		0.0		0.0		2.00
7	11	0.0		9.4	23.0	5.7	29.7	2.00
7	12	8.6	24.1	7.9	25.1	12.2	20.3	2.00
7	13	0.0		0.0		5.7	29.7	2.00
7	14	0.1	204	2.4	45.5	0.0		2.00
7	15	0.0		8.9	23.7	0.0		2.00
7	16	2.1	48.6	4.4	33.6	0.0		2.00
7	17	0.0		0.0		0.0		2.00
7	18	1.6	55.6	9.9	22.5	3.7	37.0	2.00
7	19	0.0		0.0		1.2	65.7	2.00
7	20	0.0		0.0		4.7	32.8	2.00
7	21	0.0		0.0		0.0		2.00
7	22	0.0		0.0		2.7	43.4	2.00
7	23	8.1	24.8	14.4	18.6	0.0		2.00
7	24	0.0		0.0		0.0		2.00
7	25	1.1	66.8	0.9	73.7	1.2	65.7	2.00
7	26	6.1	28.6	0.0		0.0		2.00
7	27	3.1	40.0	13.4	19.3	1.7	54.9	2.00
7	28	0.0		0.0		0.0		2.00
7	29	4.6	32.9	0.0		5.2	31.1	2.00
7	30	0.0		0.0		2.2	48.1	2.00
7	31	0.0		0.0		7.7	25.5	2.00
7	32	0.0		4.9	31.9	0.0		2.00
7	33	0.0		4.4	33.6	0.0		2.00
7	34	13.1	19.5	0.9	73.7	6.2	28.5	2.00

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080312_1039Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080312_1039\20080312_1039.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	7	4	0	0	30.78	420.72	B
2	2.00	0	0	1	0	0	0.00	410.56	
3	2.00	0	0	2	0	0	0.00	454.07	
4	2.00	0	0	2	0	0	0.00	380.52	
5	2.00	0	2	3	0	3	0.00	403.59	
6	2.00	0	1	0	0	2	0.00	399.71	
7	2.00	0	0	0	0	0	0.00	424.05	
8	2.00	0	0	0	0	0	0.00	406.79	
9	2.00	0	0	2	0	0	0.00	413.83	

Radiation Lab Summary Report

Room: 3W16

Building: 503, WRAIR/NMRC

HPO Surveyor: *Ms. Cox*

Authorization: 709, CAPT Thomas Richie

Inspection Date: *6/11/08*

Department: NMRC / Malaria

Frequency: 90 Days

Meter Model: *Elger*

Radionuclides: C-14, Cr-51, H-3, I-125, P-32 and S-35

Meter Serial Number: *11976*

Calibration Due Date: *10/14/08*

Survey Checks

Are all radioactive materials secure?	☒	☐	☐
Is the room posted?	☐	☐	☒
Is the work area posted?	☐	☒	☐
Is equipment use for rad use posted?	☒	☐	☐
Have user performed surveys?	☐	☒	☐

Yes NA No

User Inventory Log:

Isotope / Activity Used: *N/A*

Lab Survey Meter:

Meter Model Number: *SAM 8*

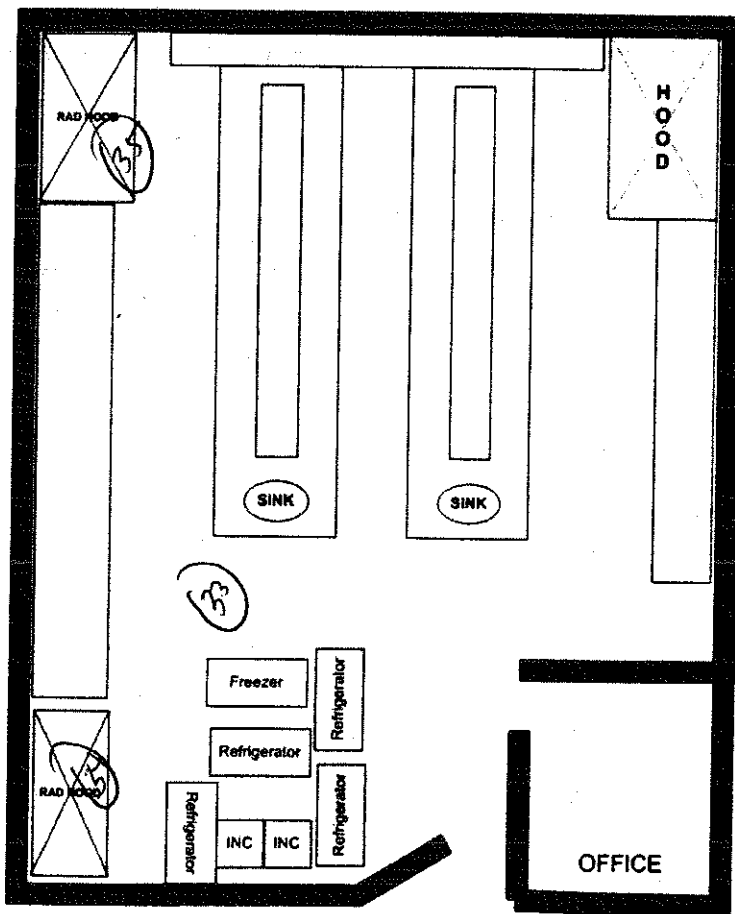
Serial Number: *SAM 8*

Calibration Due Date: *10/14/08*

Date Of Last User Survey: *12/20/04*

Meter Readings

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		



503_3W16

Laboratory Analysis

Technician

Auto-gamma

Ms. Cox

LSC

33-35

Date

6/12/08

Swipe Numbers

33-35

Record any samples > 2000dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

12-Jun-2008 07:29:17

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 76

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	249	-24.1	45.37	59	3.6	115.67
2	1	2	120	266	-17.0	83.32	61	4.6	91.82
3	1	3	120	289	4.6	1317.88	46	-2.9	129.44
4	1	4	120	271	1.0	109.13	38	-6.9	50.39
5	1	5	120	257	-19.5	57.94	58	3.1	133.36
6	1	6	120	292	4.8	423.66	48	-1.9	201.04
7	1	7	120	283	1.6	400.43	46	-2.9	129.44
8	1	8	120	278	-14.4	190.63	66	7.1	61.54
9	1	9	120	252	-15.2	49.41	48	-1.9	201.03
10	1	10	120	274	-7.6	134.01	53	0.6	663.32
11	2	11	120	275	-11.2	144.63	59	3.6	115.67
12	2	12	120	265	-10.8	79.43	51	-0.4	979.16
13	2	13	120	267	-7.7	87.41	48	-1.9	199.90
14	2	14	120	296	-4.0	224.05	64	6.1	70.68
15	2	15	120	279	-1.1	213.10	47	-2.4	157.07
16	2	16	120	286	-9.0	1152.73	64	6.1	70.68
17	2	17	120	224	-23.2	26.38	39	-6.4	54.89
18	2	18	120	274	-13.0	133.80	61	4.6	91.82
19	2	19	120	281	2.0	279.30	44	-3.9	94.25
20	2	20	120	271	-6.4	109.13	49	-1.4	275.16
21	3	21	120	307	4.8	98.46	59	3.6	115.67
22	3	22	120	287	0.2	3159.80	51	-0.4	979.17
23	3	23	120	273	-6.1	124.45	50	-0.9	431.62
24	3	24	120	269	-22.2	97.33	71	9.6	46.98
25	3	25	120	271	-7.1	109.13	50	-0.9	431.63
26	3	26	120	269	-13.5	97.11	58	3.1	133.36
27	3	27	120	250	-15.6	46.63	47	-2.4	157.78
28	3	28	120	284	-3.3	512.19	54	1.1	364.65
29	3	29	120	276	-8.6	157.32	56	2.1	193.96
30	3	30	120	275	-5.8	144.63	51	-0.4	979.22
31	4	31	120	299	9.6	165.75	46	-2.9	128.95
32	4	32	120	307	5.5	98.46	58	3.1	133.35
33	4	33	120	236	-17.8	33.20	40	-5.9	60.14
34	4	34	120	283	-1.8	400.44	51	-0.4	979.18
35	4	35	120	284	6.8	512.17	39	-6.4	54.89
36	4	36	120	286	-3.0	1167.75	55	1.6	252.64
37	4	37	120	290	-0.3	779.38	54	1.1	361.29
38	4	38	120	289	1.9	1337.25	50	-0.9	431.64
39	4	39	120	273	-4.7	124.45	48	-1.9	201.03
40	4	40	120	278	-2.2	190.64	48	-1.9	201.04
41	5	41	120	288	-4.6	4286.17	59	3.6	115.67
42	5	42	120	282	-2.9	328.54	52	0.1	3948.76

Protocol# 2 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948\20080612_0948.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	7	4	0	0	53.26	414.80	B
2	2.00	0	0	1	2	0	0.00	412.96	
3	2.00	0	1	4	0	2	0.00	429.36	
4	2.00	0	0	0	0	0	0.00	430.46	
5	2.00	0	0	0	0	0	0.00	431.09	
6	2.00	1	0	0	2	0	0.00	427.59	
7	2.00	1	3	0	1	3	39.11	417.84	
8	2.00	0	1	1	0	1	0.00	420.79	
9	2.00	0	0	0	0	0	0.00	413.89	

#7970

Radiation Lab Summary Report

Room: 3W26

Building: 503, WRAIR/NMRC

HPO Surveyor: MS. Cox

Authorization: 709, CAPT Thomas Richie

Inspection Date: 6/11/08

Department: NMRC / Malaria

Frequency: 90 Days

Meter Model: N/A

Radionuclides: C-14, Cr-51, H-3, I-125, P-32 and S-35

Meter Serial Number: N/ACalibration Due Date: N/A

Survey Checks

	Yes	NA	No
Are all radioactive materials secure?	X		
Is the room posted?	X		
Is the work area posted?		X	
Is equipment use for rad use posted?	X		
Have user performed surveys?		X	

User Inventory Log:

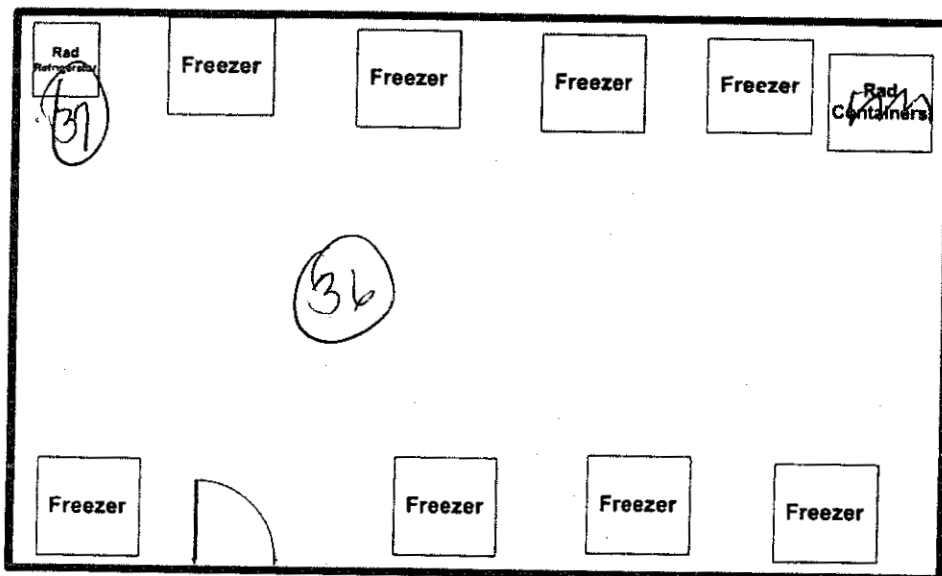
Isotope / Activity Used: N/AMax Daily Use: N/A

Lab Survey Meter:

Model Number: N/ASerial Number: N/ACalibration Due Date: N/ADate Of Last User Survey: N/A

Meter Readings

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		



503_3W26

Technician MS. Cox

Auto-gamma

LSC 32-33Date 6/12/08Swipe Numbers 36-37

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 90

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

Assay Definition-

Assay Description:
Routine survey, 2 minute counts

Assay Type: DPM (Dual)
Report Name: Contamination survey
Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854
Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results
Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Sets:
Low Energy: 3H
Mid Energy: 14C
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On Luminescence Correction: On
Colored Samples: On Heterogeneity Monitor: n/a
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	

Radiation Lab Summary Report

Room: 2N80

Building: 503, WRAIR/NMRC

HPO Surveyor:

Authorization: 711, Dr. Richard McCarron

Inspection Date:

Department: NMRC

Meter Model Number:

Frequency: 90 days

Meter Serial Number:

Radionuclides: H-3, & I-125

Calibration Due Date:

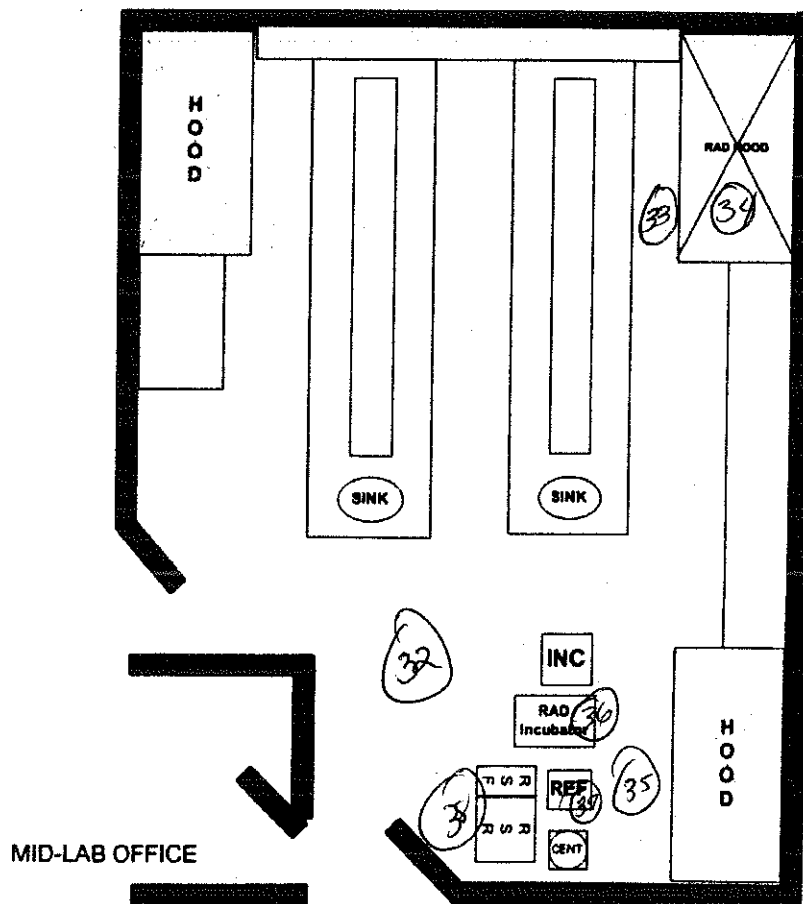
H-3 Use Only

	Yes	No	NA	
Is all radioactive materials secure?	X			Initial Checks User Inventory Log: Isotope / Activity Used: <u>N/A</u> Maximum Daily Use: _____
Is the room posted?	X			
Is the work area posted?	X			Lab Survey Meter: Model Meter Number: _____ Serial Number: <u>N/A</u> Calibration Due Date: <u>N/A</u>
Is equipment used for rad use posted?	X			
Have the user performed surveys?			X	

Date Of Last User Survey: 11/08/04

Meter Readings

BKG		cpm	mR/hr
A		cpm	mR/hr
B		cpm	mR/hr
C		cpm	mR/hr
D		cpm	mR/hr
E		cpm	mR/hr
F		cpm	mR/hr
G		cpm	mR/hr



MID-LAB OFFICE

503 2N80

Laboratory Analysis

Technician MS. Cox

Auto-gamma 12-8

LSC 12-8

Date 7/10/08

Swipe Numbers 32-38

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days

Swipe	Isotope	Efficiency	MDA (dpm)	DPM	MDA (dpm)	DPM

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY 10-Jul-2008 07:42:51

Protocol id 1 ROUTINE2
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 28-Mar-2008 09:32:23
Run id. 78

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	290	5.8	779.42	45	-3.4	109.42
2	1	2	120	279	-0.4	213.63	46	-2.9	129.44
3	1	3	120	257	-12.7	57.98	48	-1.9	201.03
4	1	4	120	255	-19.8	54.21	57	2.6	157.83
5	1	5	120	306	5.7	103.66	57	2.6	157.83
6	1	6	120	282	-0.2	328.55	48	-1.9	201.04
7	1	7	120	270	-9.6	102.90	53	0.6	663.34
8	1	8	120	253	-20.8	50.92	57	2.6	157.83
9	1	9	120	288	6.1	4747.60	43	-4.4	83.01
10	1	10	120	286	-5.7	1152.41	59	3.6	115.67
11	2	11	120	285	1.3	715.24	48	-1.9	201.03
12	2	12	120	253	-14.1	50.92	47	-2.4	157.78
13	2	13	120	310	13.8	85.54	48	-1.9	201.04
14	2	14	120	303	8.2	123.36	51	-0.4	979.16
15	2	15	120	295	2.2	254.01	54	1.1	364.65
16	2	16	120	303	4.9	123.36	56	2.1	193.95
17	2	17	120	256	-18.0	56.06	55	1.6	252.65
18	2	18	120	294	1.7	293.33	54	1.1	364.65
19	2	19	120	266	-10.9	83.24	52	0.1	3948.60
20	2	20	120	252	-14.6	49.41	47	-2.4	157.78
21	3	21	120	286	-6.3	1167.81	60	4.1	102.29
22	3	22	120	278	-4.3	190.64	51	-0.4	979.20
23	3	23	120	240	-20.6	36.23	47	-2.4	158.50
24	3	24	120	286	-11.1	1152.68	67	7.6	57.86
25	3	25	120	277	-2.1	172.75	47	-2.4	157.78
26	3	26	120	283	0.3	400.42	48	-1.9	199.90
27	3	27	120	265	-20.9	79.44	66	7.1	61.62
28	3	28	120	263	-11.8	72.75	51	-0.4	1005.47
29	3	29	120	282	-5.0	328.58	55	1.6	252.64
30	3	30	120	292	1.4	425.71	53	0.6	663.33
31	4	31	120	285	-5.5	709.56	58	3.1	133.35
32	4	32	120	252	-15.9	49.41	49	-1.4	275.16
33	4	33	120	271	-3.7	109.13	45	-3.4	109.42
34	4	34	120	284	-6.7	512.14	59	3.6	115.67
35	4	35	120	262	-14.3	69.80	54	1.1	364.67
36	4	36	120	332	16.7	44.46	60	4.1	102.54
37	4	37	120	250	-15.6	46.63	47	-2.4	157.78

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711_0801

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711_0801\20080711_0801.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	6	4	0	0	48.13	411.82	B
2	2.00	0	5	0	0	6	107.75	403.86	
3	2.00	0	0	2	0	0	0.00	390.11	
4	2.00	0	1	0	0	2	749.94	416.00	
5	2.00	0	5	3	0	6	87.05	409.35	
6	2.00	3	1	0	7	1	0.00	406.99	
7	2.00	0	0	0	0	1	0.00	421.10	
8	2.00	0	1	0	0	1	0.00	407.02	
9	2.00	0	1	0	0	1	117.08	403.20	

MEMORANDUM FOR LCDR Allen Richards, Department of Rickett Diseases
Radioactive Materials Authorization Number 712

SUBJECT: Radiological Safety Certification for Building 503 Room 3N54

1. The following room has been inspected, tested, and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed.

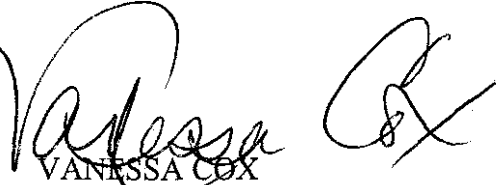
Building	Room
503, WRAIR/NMRC	3N54

2. The following equipment has been inspected, tested and certified by the Health Physics Office to be free of any hazards associated with removable radioactive contamination. Any previous radiological safety restrictions are hereby removed. Contamination surveys were performed in order to clear the equipment for non-radioactive material use.

Equipment:

Nomenclature	Model	Serial Number	MMCN
Puffer Hubbard Freezer	Puffer H	N/A	NMRC 3239805983
Sink	N/A	N/A	N/A

3. If you have any questions, problems and/or concerns regarding this survey, please contact the undersigned at 356-0047/58.


VANESSA COX
Health Physicist
Health Physics Office

Protocol# 1 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
20060323_1033Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
20060323_1033\20060323_1033.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	7	4	0	0	38.54	330.74	B
2	2.00	0	0	0	0	0	26.96	345.83	
3	2.00	0	0	0	0	0	0.00	330.03	

23 Mar 2006 09:54

Packard Instrument Company

Pa

Protocol #: 7

Swipes

Count Time(minutes): 2.00
 Assay Type: CPM
 Background Subtract : IPA Bkg
 Outlier: 5.0 FLAG
 %Spillup: 0.00
 %Spilldown: 0.00
 Screening: OFF

Nuclide:	Window A		Window B		Window C	
	MAN	15 - 250 keV	MAN	250 - 950 keV	MAN	950 - 2000 keV
Bkg:	98.0		117		47.0	
Sigma:	0.00		0.00		0.00	
LCR:	0		0		0	
Half Life(hours):	0.00		0.00			
Multiplier:	1.0000					
%CV Flag Limit:	0.00		0.00			

P#	S#	A:CPM	A:%SIG	B:CPM	B:%SIG	C:CPM	C:%SIG	TIME
7	1	5.0	31.6	0.0		0.0		2.00
7	2	3.5	37.7	12.2	20.3	6.5	27.7	2.00
7	3	0.0		0.2	167	0.0		2.00
7	4	0.0		0.0		3.5	37.8	2.00
7	5	0.0		0.0		0.0		2.00
7	6	0.0		0.0		0.0		2.00
7	7	0.0		0.0		1.5	57.7	2.00
7	8	0.0		0.0		6.5	27.7	2.00
7	9	0.0		23.2	14.7	1.0	70.7	2.00
7	10	0.0		0.0		3.0	40.8	2.00
7	11	0.0		0.0		2.0	50.0	2.00
7	12	4.5	33.3	0.0		0.0		2.00
7	13	0.0		0.0		0.0		2.00
7	14	0.0		8.7	24.0	0.0		2.00
7	15	0.0		0.7	85.7	0.0		2.00
7	16	0.0		0.0		0.5	100	2.00
7	17	0.0		0.0		2.0	50.0	2.00
7	18	5.5	30.1	0.0		0.0		2.00
7	19	13.5	19.2	0.0		0.0		2.00
7	20	1.0	70.0	18.7	16.4	0.0		2.00
7	21	0.0		0.0		5.0	31.6	2.00
7	22	8.0	25.0	5.7	29.7	0.0		2.00
7	23	0.0		0.0		1.0	70.7	2.00
7	24	0.0		0.0		0.0		2.00
7	25	0.0		0.0		0.0		2.00
7	26	0.0		0.0		2.0	50.0	2.00
7	27	1.0	70.0	0.0		1.5	57.7	2.00
7	28	0.0		9.2	23.3	0.0		2.00
7	29	0.0		11.7	20.7	3.0	40.8	2.00
7	30	4.0	35.3	0.0		0.0		2.00
7	31	6.0	28.8	1.2	65.1	0.0		2.00
7	32	0.0		27.2	13.6	0.5	100	2.00
7	33	0.0		8.2	24.7	0.0		2.00
7	34	0.0		0.0		2.5	44.7	2.00

#7908

Radiation Lab Summary Report

Room: 3N66

Building: 503, WRAIR/NMRC

HPO Surveyor: Ms. Cox

Authorization: 712, LSDR Allen Richards

Inspection Date: 6/11/08

Department: NMRC / Rickett Diseases

Frequency: 90 Days

Meter Model: N/A

Radionuclides: Cr-51 and H-3

Meter Serial Number: N/A

Calibration Due Date: _____

Survey Checks

Are all radioactive materials secure?
Is the room posted?
Is the work area posted?
Is equipment use for rad use posted?
Have user performed surveys?

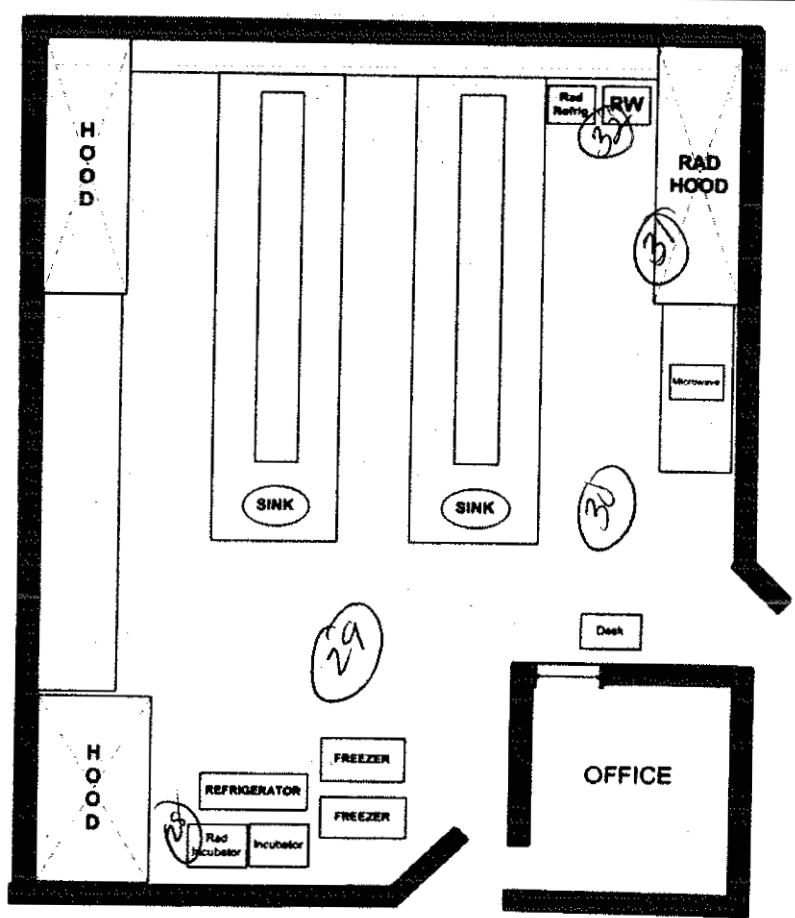
Yes	NA	No
X		
X		
	X	
X		
	X	

User Inventory Log:
Isotope / Activity Used: N/A
Max Daily Use: N/A
Lab Survey Meter:
Meter Model Number: N/A
Serial Number: N/A
Calibration Due Date: _____

Date Of Last User Survey: 2005

Meter Readings

BKG	cpm	mR/hr
A		
B		
C		
D		
E		
F		
G		



503_3N66

Laboratory Analysis
Technician: Ms. Cox
Auto-gamma: 24-28
Date: 6/12/08
Swipe Numbers: 29-32
LSC: 24-28
Record any samples > 2mCi of removable contamination. If 2000 dpm, resurvey within 5 working days.

Swipe	Isotope	Efficiency	M	DPM

Completed
All swipes < 200 dpm

Comments: _____

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

12-Jun-2008 07:29:17

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 76

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	249	-24.1	45.37	59	3.6	115.67
2	1	2	120	266	-17.0	83.32	61	4.6	91.82
3	1	3	120	289	4.6	1317.88	46	-2.9	129.44
4	1	4	120	271	1.0	109.13	38	-6.9	50.39
5	1	5	120	257	-19.5	57.94	58	3.1	133.36
6	1	6	120	292	4.8	423.66	48	-1.9	201.04
7	1	7	120	283	1.6	400.43	46	-2.9	129.44
8	1	8	120	278	-14.4	190.63	66	7.1	61.54
9	1	9	120	252	-15.2	49.41	48	-1.9	201.03
10	1	10	120	274	-7.6	134.01	53	0.6	663.32
11	2	11	120	275	-11.2	144.63	59	3.6	115.67
12	2	12	120	265	-10.8	79.43	51	-0.4	979.16
13	2	13	120	267	-7.7	87.41	48	-1.9	199.90
14	2	14	120	296	-4.0	224.05	64	6.1	70.68
15	2	15	120	279	-1.1	213.10	47	-2.4	157.07
16	2	16	120	286	-9.0	1152.73	64	6.1	70.68
17	2	17	120	224	-23.2	26.38	39	-6.4	54.89
18	2	18	120	274	-13.0	133.80	61	4.6	91.82
19	2	19	120	281	2.0	279.30	44	-3.9	94.25
20	2	20	120	271	-6.4	109.13	49	-1.4	275.16
21	3	21	120	307	4.8	98.46	59	3.6	115.67
22	3	22	120	287	0.2	3159.80	51	-0.4	979.17
23	3	23	120	273	-6.1	124.45	50	-0.9	431.62
24	3	24	120	269	-22.2	97.33	71	9.6	46.98
25	3	25	120	271	-7.1	109.13	50	-0.9	431.63
26	3	26	120	269	-13.5	97.11	58	3.1	133.36
27	3	27	120	250	-15.6	46.63	47	-2.4	157.78
28	3	28	120	284	-3.3	512.19	54	1.1	364.65
29	3	29	120	276	-8.6	157.32	56	2.1	193.96
30	3	30	120	275	-5.8	144.63	51	-0.4	979.22
31	4	31	120	299	9.6	165.75	46	-2.9	128.95
32	4	32	120	307	5.5	98.46	58	3.1	133.35
33	4	33	120	236	-17.8	33.20	40	-5.9	60.14
34	4	34	120	283	-1.8	400.44	51	-0.4	979.18
35	4	35	120	284	6.8	512.17	39	-6.4	54.89
36	4	36	120	286	-3.0	1167.75	55	1.6	252.64
37	4	37	120	290	-0.3	779.38	54	1.1	361.29
38	4	38	120	289	1.9	1337.25	50	-0.9	431.64
39	4	39	120	273	-4.7	124.45	48	-1.9	201.03
40	4	40	120	278	-2.2	190.64	48	-1.9	201.04
41	5	41	120	288	-4.6	4286.17	59	3.6	115.67
42	5	42	120	282	-2.9	328.54	52	0.1	3948.76

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948\20080612_0948.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	7	4	0	0	53.26	414.80	B
2	2.00	0	0	1	2	0	0.00	412.96	
3	2.00	0	1	4	0	2	0.00	429.36	
4	2.00	0	0	0	0	0	0.00	430.46	
5	2.00	0	0	0	0	0	0.00	431.09	
6	2.00	1	0	0	2	0	0.00	427.59	
7	2.00	1	3	0	1	3	39.11	417.84	
8	2.00	0	1	1	0	1	0.00	420.79	
9	2.00	0	0	0	0	0	0.00	413.89	

Radiation Lab Summary Report

Room:

FLOORS

3rd

HPO Surveyor:

For: Ms. Cox
Date: 6/11/08

Inspection Date:

Building:

503, WRAIR/NMRC

Meter Model:

Gerger

Frequency:

90 Days

Meter Serial Number:

11976

Calibration Due Date:

10/12/08

[illegible]

Laboratory Analysis

Date _____

2012/08

Swipe Numbers

17-85

7

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days.

Swipe

Isotope

Agency

 $\mathcal{A}(\text{dom})$

Mark

1999

Figure 6.6

(d)

1999

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

12-Jun-2008 07:29:17

Protocol id 2 ROUTINE3
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 09-Feb-2006 10:59:54
Run id. 76

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	249	-24.1	45.37	59	3.6	115.67
2	1	2	120	266	-17.0	83.32	61	4.6	91.82
3	1	3	120	289	4.6	1317.88	46	-2.9	129.44
4	1	4	120	271	1.0	109.13	38	-6.9	50.39
5	1	5	120	257	-19.5	57.94	58	3.1	133.36
6	1	6	120	292	4.8	423.66	48	-1.9	201.04
7	1	7	120	283	1.6	400.43	46	-2.9	129.44
8	1	8	120	278	-14.4	190.63	66	7.1	61.54
9	1	9	120	252	-15.2	49.41	48	-1.9	201.03
10	1	10	120	274	-7.6	134.01	53	0.6	663.32
11	2	11	120	275	-11.2	144.63	59	3.6	115.67
12	2	12	120	265	-10.8	79.43	51	-0.4	979.16
13	2	13	120	267	-7.7	87.41	48	-1.9	199.90
14	2	14	120	296	-4.0	224.05	64	6.1	70.68
15	2	15	120	279	-1.1	213.10	47	-2.4	157.07
16	2	16	120	286	-9.0	1152.73	64	6.1	70.68
17	2	17	120	224	-23.2	26.38	39	-6.4	54.89
18	2	18	120	274	-13.0	133.80	61	4.6	91.82
19	2	19	120	281	2.0	279.30	44	-3.9	94.25
20	2	20	120	271	-6.4	109.13	49	-1.4	275.16
21	3	21	120	307	4.8	98.46	59	3.6	115.67
22	3	22	120	287	0.2	3159.80	51	-0.4	979.17
23	3	23	120	273	-6.1	124.45	50	-0.9	431.62
24	3	24	120	269	-22.2	97.33	71	9.6	46.98
25	3	25	120	271	-7.1	109.13	50	-0.9	431.63
26	3	26	120	269	-13.5	97.11	58	3.1	133.36
27	3	27	120	250	-15.6	46.63	47	-2.4	157.78
28	3	28	120	284	-3.3	512.19	54	1.1	364.65
29	3	29	120	276	-8.6	157.32	56	2.1	193.96
30	3	30	120	275	-5.8	144.63	51	-0.4	979.22
31	4	31	120	299	9.6	165.75	46	-2.9	128.95
32	4	32	120	307	5.5	98.46	58	3.1	133.35
33	4	33	120	236	-17.8	33.20	40	-5.9	60.14
34	4	34	120	283	-1.8	400.44	51	-0.4	979.18
35	4	35	120	284	6.8	512.17	39	-6.4	54.89
36	4	36	120	286	-3.0	1167.75	55	1.6	252.64
37	4	37	120	290	-0.3	779.38	54	1.1	361.29
38	4	38	120	289	1.9	1337.25	50	-0.9	431.64
39	4	39	120	273	-4.7	124.45	48	-1.9	201.03
40	4	40	120	278	-2.2	190.64	48	-1.9	201.04
41	5	41	120	288	-4.6	4286.17	59	3.6	115.67
42	5	42	120	282	-2.9	328.54	52	0.1	3948.76

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080612_0948\20080612_0948.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	7	4	0	0	53.26	414.80	B
2	2.00	0	0	1	2	0	0.00	412.96	
3	2.00	0	1	4	0	2	0.00	429.36	
4	2.00	0	0	0	0	0	0.00	430.46	
5	2.00	0	0	0	0	0	0.00	431.09	
6	2.00	1	0	0	2	0	0.00	427.59	
7	2.00	1	3	0	1	3	39.11	417.84	
8	2.00	0	1	1	0	1	0.00	420.79	
9	2.00	0	0	0	0	0	0.00	413.89	

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 90

-----15-1024-----							-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

PAGE 2

43	5	43	120	290	1.1	779.46	52	0.1	4406.88
44	5	44	120	281	-3.4	278.41	52	0.1	3949.09
45	5	45	120	283	-1.1	400.43	50	-0.9	426.61
46	5	46	120	289	2.6	1337.86	49	-1.4	275.16
47	5	47	120	312	12.1	78.81	52	0.1	3946.62
48	5	48	120	263	-12.4	72.75	52	0.1	4407.57
49	5	49	120	262	-12.9	69.80	52	0.1	3949.81
50	5	50	120	305	10.6	109.47	49	-1.4	275.17
51	6	51	120	273	-8.8	124.45	54	1.1	364.66
52	6	52	120	284	-6.6	515.16	59	3.6	115.99
53	6	53	120	292	-2.7	423.69	59	3.6	115.35

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	

10	2.00	2	0	0	4	0	20.13	413.10
11	2.00	1	2	0	1	3	53.63	405.12
12	2.00	2	0	0	4	0	0.00	382.20
13	2.00	0	3	0	0	4	193.67	415.92
14	2.00	3	1	0	6	2	5.14	409.24
15	2.00	2	2	0	4	2	39.86	402.69
16	2.00	0	2	1	0	2	0.00	403.89
17	2.00	0	0	0	0	0	0.00	397.52
18	2.00	0	0	0	0	0	0.00	407.43
19	2.00	1	1	0	1	1	70.62	397.31
20	2.00	0	0	0	1	0	0.00	387.01
21	2.00	1	2	0	0	3	7.42	400.52
22	2.00	10	0	0	23	0	0.00	408.57
23	2.00	5	0	0	10	0	0.00	400.95
24	2.00	1	5	0	0	7	51.26	395.60
25	2.00	0	0	0	1	0	0.00	394.70
26	2.00	2	0	0	4	0	22.02	399.97
27	2.00	1	0	0	2	0	0.00	409.47
28	2.00	0	0	0	1	0	0.00	404.63
29	2.00	0	0	0	0	0	0.00	392.36
30	2.00	0	2	0	0	3	99.55	403.94
31	2.00	0	1	0	0	1	0.00	446.31
32	2.00	4	1	0	9	1	22.22	407.54
33	2.00	2	4	0	2	6	58.71	401.77
34	2.00	2	0	0	4	0	35.35	393.96
35	2.00	1	3	0	0	4	104.14	464.59
36	2.00	2	0	0	5	0	0.00	393.70
37	2.00	0	3	0	0	4	174.61	395.79
38	2.00	2	1	0	3	2	2.96	410.35
39	2.00	3	1	1	6	2	31.83	441.61
40	2.00	0	0	0	0	0	0.00	405.82
41	2.00	5	0	0	10	0	35.65	405.95
42	2.00	3	2	0	5	2	25.02	403.26
43	2.00	2	1	0	3	2	111.71	419.07
44	2.00	0	2	0	0	3	27.06	430.00
45	2.00	2	0	1	5	1	0.00	394.50
46	2.00	4	4	0	5	6	23.74	402.66
47	2.00	2	0	0	5	0	0.00	391.05
48	2.00	0	0	0	1	0	162.02	396.29
49	2.00	0	3	0	0	5	79.89	397.29
50	2.00	4	3	0	6	4	37.11	460.94
51	2.00	2	0	0	3	0	65.76	384.29
52	2.00	0	0	0	0	1	0.00	413.58
53	2.00	0	2	0	0	2	197.68	409.58
54	2.00	1	0	0	4	0	0.00	402.23

Radiation Lab Summary Report

Room: FLOORS 1st

HPO Surveyor:

Building: 503, WRAIR/NMRC

Inspection Date:

Frequency: 90 Days

Meter Model:

Meter Serial Number:

Calibration Due Date:

[illegible]

Laboratory Analysis

Date _____

4

Technician

Auto-gamma

100

100

00709

10

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days.

[illegible]

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY 10-Jul-2008 07:42:51

Protocol id 1 ROUTINE2
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 28-Mar-2008 09:32:23
Run id. 78

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	290	5.8	779.42	45	-3.4	109.42
2	1	2	120	279	-0.4	213.63	46	-2.9	129.44
3	1	3	120	257	-12.7	57.98	48	-1.9	201.03
4	1	4	120	255	-19.8	54.21	57	2.6	157.83
5	1	5	120	306	5.7	103.66	57	2.6	157.83
6	1	6	120	282	-0.2	328.55	48	-1.9	201.04
7	1	7	120	270	-9.6	102.90	53	0.6	663.34
8	1	8	120	253	-20.8	50.92	57	2.6	157.83
9	1	9	120	288	6.1	4747.60	43	-4.4	83.01
10	1	10	120	286	-5.7	1152.41	59	3.6	115.67
11	2	11	120	285	1.3	715.24	48	-1.9	201.03
12	2	12	120	253	-14.1	50.92	47	-2.4	157.78
13	2	13	120	310	13.8	85.54	48	-1.9	201.04
14	2	14	120	303	8.2	123.36	51	-0.4	979.16
15	2	15	120	295	2.2	254.01	54	1.1	364.65
16	2	16	120	303	4.9	123.36	56	2.1	193.95
17	2	17	120	256	-18.0	56.06	55	1.6	252.65
18	2	18	120	294	1.7	293.33	54	1.1	364.65
19	2	19	120	266	-10.9	83.24	52	0.1	3948.60
20	2	20	120	252	-14.6	49.41	47	-2.4	157.78
21	3	21	120	286	-6.3	1167.81	60	4.1	102.29
22	3	22	120	278	-4.3	190.64	51	-0.4	979.20
23	3	23	120	240	-20.6	36.23	47	-2.4	158.50
24	3	24	120	286	-11.1	1152.68	67	7.6	57.86
25	3	25	120	277	-2.1	172.75	47	-2.4	157.78
26	3	26	120	283	0.3	400.42	48	-1.9	199.90
27	3	27	120	265	-20.9	79.44	66	7.1	61.62
28	3	28	120	263	-11.8	72.75	51	-0.4	1005.47
29	3	29	120	282	-5.0	328.58	55	1.6	252.64
30	3	30	120	292	1.4	425.71	53	0.6	663.33
31	4	31	120	285	-5.5	709.56	58	3.1	133.35
32	4	32	120	252	-15.9	49.41	49	-1.4	275.16
33	4	33	120	271	-3.7	109.13	45	-3.4	109.42
34	4	34	120	284	-6.7	512.14	59	3.6	115.67
35	4	35	120	262	-14.3	69.80	54	1.1	364.67
36	4	36	120	332	16.7	44.46	60	4.1	102.54
37	4	37	120	250	-15.6	46.63	47	-2.4	157.78

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711 0801Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080711 0801\20080711 0801.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	5	6	4	0	0	48.13	411.82	B
2	2.00	0	5	0	0	6	107.75	403.86	
3	2.00	0	0	2	0	0	0.00	390.11	
4	2.00	0	1	0	0	2	749.94	416.00	
5	2.00	0	5	3	0	6	87.05	409.35	
6	2.00	3	1	0	7	1	0.00	406.99	
7	2.00	0	0	0	0	1	0.00	421.10	
8	2.00	0	1	0	0	1	0.00	407.02	
9	2.00	0	1	0	0	1	117.08	403.20	

Protocol# 1 - routine surveys, 2 minute counts.lsa

User: routine

10	2.00	0	0	0	0	0	0.00	409.08
11	2.00	3	1	0	6	1	0.00	393.34
12	2.00	0	0	2	1	0	0.00	398.27
13	2.00	1	3	0	0	4	63.44	417.66
14	2.00	0	0	0	0	0	0.00	398.66
15	2.00	2	0	1	4	0	55.46	402.56
16	2.00	0	0	0	0	0	0.00	400.55
17	2.00	0	4	0	0	5	81.55	414.71
18	2.00	1	0	1	3	0	0.00	395.79
19	2.00	0	1	0	0	1	0.00	402.75
20	2.00	0	1	1	0	1	27.02	398.93
21	2.00	3	2	0	6	3	48.27	412.44
22	2.00	0	0	2	0	0	0.00	436.64
23	2.00	1	0	1	3	0	0.00	400.97
24	2.00	1	0	0	2	0	245.48	423.72
25	2.00	0	3	0	0	4	68.97	403.82
26	2.00	2	0	1	3	0	107.83	393.31
27	2.00	0	5	1	0	6	160.86	408.71
28	2.00	0	1	0	0	2	386.80	397.34
29	2.00	1	0	0	2	0	121.98	407.76
30	2.00	0	0	0	1	0	0.00	393.46
31	2.00	0	0	1	0	0	0.00	429.02
32	2.00	1	3	3	1	4	39.78	399.35
33	2.00	0	5	0	0	6	152.18	409.83
34	2.00	0	0	0	0	0	0.00	409.41
35	2.00	0	0	0	0	0	0.00	393.16
36	2.00	0	2	1	0	2	105.48	401.46
37	2.00	0	4	0	0	6	103.98	403.52

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

18-Jun-2008 08:19:37

Protocol id 2 ROUTINE3
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 09-Feb-2006 10:59:54
Run id. 79

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	0.0	152.33	61	4.6	91.82
2	1	2	120	255	-14.4	54.21	49	-1.4	275.15
3	1	3	120	268	-12.6	92.01	56	2.1	193.96
4	1	4	120	267	-9.8	87.41	51	-0.4	954.07
5	1	5	120	284	-1.9	512.19	52	0.1	3947.55
6	1	6	120	294	9.1	292.36	43	-4.4	83.01
7	1	7	120	290	-1.0	772.73	55	1.6	252.64
8	1	8	120	280	-2.6	241.46	50	-0.9	431.61
9	1	9	120	286	4.5	1152.42	44	-3.9	94.52
10	1	10	120	286	-2.3	1167.76	54	1.1	364.65
11	2	11	120	290	-7.0	779.35	64	6.1	70.79
12	2	12	120	284	-6.7	512.18	59	3.6	115.67
13	2	13	120	314	7.7	73.03	60	4.1	102.29

END OF ASSAY

END OF COUNTING

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
20080618 1125

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
20080618 1125\20080618 1125.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	4	6	5	0	0	55.23	427.00	B
2	2.00	1	0	2	4	0	0.00	406.61	
3	2.00	3	1	2	5	1	50.05	415.87	
4	2.00	0	1	1	0	1	0.00	410.25	
5	2.00	0	0	1	0	0	0.00	417.14	
6	2.00	0	0	0	0	0	0.00	405.39	
7	2.00	0	2	0	0	3	371.24	405.02	
8	2.00	3	0	0	6	0	26.74	418.98	
9	2.00	1	1	0	1	1	134.45	408.86	

10	2.00	1	1	0	2	1	104.24	417.49
11	2.00	0	1	0	0	2	0.00	412.99
12	2.00	0	0	0	0	1	0.00	418.93
13	2.00	0	2	1	0	3	69.74	406.47

Room: ELEVATORS

Building: 503, WRAIR/NMRC

Frequency: 90 Days

Radiation Lab Summary Report

HPO Surveyor:

Inspection Date:

Meter Model:

Meter Serial Number:

Calibration Due Date:

[illegible]

Technician

Auto-gamma

Laboratory Analysis

251

Date _____

7/17

Isotope	Efficiency
Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 days.	

Swipe

Exhibit

4007

Appendix C

JK H U

1

STRENGTH

2

11

Completed

Completed
All swipes < 200 dpm

—

Surveyor Comments

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
 Time limit 120
 Count limit 99999999
 Dual isotopes 15-1024 + 1k-2k
 Protocol date 09-Feb-2006 10:59:54
 Run id. 90

				-----15-1024-----			-----1k-2k-----		
POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

Protocol# 2 - routine surveys, 2 minute counts.lsa

User: routine

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	

Radiation Lab Summary Report

Room: FLOORS

Ground

HPO Surveyor:

M. G.

Building: 503, WRAIR/NMRC

Inspection Date:

7/16/08

Meter Model:

Gelegen

Frequency: 90 Days

Meter Serial Number:

11976

Calibration Due Date:

10/12/08

[illegible]

Laboratory Analysis

Technician

Auto-gamma

Ms. Col

251

Date _____

3

8/2/16

1

46-47

1

Record any samples > 200dpm of removable contamination. If 2000 dpm, resurvey within 5 working days.

[illegible]

Completed

All swipes < 200 dpm

Comments

Surveyor Comments

PAGE 1

COUNTING

1480, RiaCalc WIZ, program 3.6, serial #4800540

ASSAY

17-Jul-2008 08:05:27

Protocol id 2 ROUTINE3
Time limit 120
Count limit 99999999
Dual isotopes 15-1024 + 1k-2k
Protocol date 09-Feb-2006 10:59:54
Run id. 90

POS	RACK	BATCH	TIME	COUNTS	CPM	ERROR %	COUNTS	CPM	ERROR %
1	1	1	120	300	10.1	152.58	46	-2.9	129.44
2	1	2	120	253	-26.2	50.92	65	6.6	65.77
3	1	3	120	263	-13.8	72.75	54	1.1	368.09
4	1	4	120	282	-11.7	328.56	65	6.6	65.77
5	1	5	120	294	8.5	293.32	44	-3.9	94.53
6	1	6	120	244	-26.0	39.82	58	3.1	133.36
7	1	7	120	279	-3.1	213.11	50	-0.9	431.63
8	1	8	120	249	-29.6	45.35	67	7.6	57.86
9	1	9	120	260	-7.9	64.54	43	-4.4	83.01
10	1	10	120	301	9.9	141.39	47	-2.4	157.78
11	2	11	120	316	12.0	68.07	55	1.6	252.63
12	2	12	120	278	-8.3	190.64	57	2.6	157.83
13	2	13	120	274	-8.3	133.80	54	1.1	364.65
14	2	14	120	285	-3.5	709.58	55	1.6	252.64
15	2	15	120	287	-5.2	3052.26	59	3.6	115.67
16	2	16	120	276	2.2	157.32	40	-5.9	60.14
17	2	17	120	283	-3.8	402.28	54	1.1	364.65
18	2	18	120	277	-10.8	172.41	60	4.1	102.29
19	2	19	120	277	-4.8	172.76	51	-0.4	979.17
20	2	20	120	300	1.4	152.58	59	3.6	116.31
21	3	21	120	275	-10.5	144.63	58	3.1	133.35
22	3	22	120	286	-7.0	1152.42	61	4.6	92.02
23	3	23	120	271	-13.2	109.13	59	3.6	115.67
24	3	24	120	301	9.3	141.39	48	-1.9	201.03
25	3	25	120	278	1.1	190.63	43	-4.4	83.01
26	3	26	120	259	-13.1	62.19	50	-0.9	431.61
27	3	27	120	279	-3.8	213.10	51	-0.4	954.10
28	3	28	120	280	-4.6	241.47	53	0.6	674.93
29	3	29	120	297	5.9	200.48	50	-0.9	431.63
30	3	30	120	285	-0.8	709.50	51	-0.4	979.12
31	4	31	120	277	-1.4	172.41	46	-2.9	129.44
32	4	32	120	276	-9.3	157.33	57	2.6	158.44
33	4	33	120	275	-1.0	144.62	44	-3.9	94.52
34	4	34	120	252	-15.2	49.41	48	-1.9	201.03
35	4	35	120	271	-3.0	109.13	44	-3.9	94.52
36	4	36	120	288	-1.3	4502.65	54	1.1	364.65
37	4	37	120	278	-9.0	190.63	58	3.1	133.36
38	4	38	120	303	13.0	123.36	44	-3.9	94.53
39	4	39	120	303	23.7	123.36	28	-11.9	26.02
40	4	40	120	275	-7.1	144.63	53	0.6	663.33
41	5	41	120	256	-11.9	56.02	46	-2.9	129.44
42	5	42	120	245	-24.8	40.84	57	2.6	158.45

Assay Definition-

Assay Description:

Routine survey, 2 minute counts

Assay Type: DPM (Dual)

Report Name: Contamination survey

Output Data Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854

Raw Results Path: C:\Packard\Tricarb\Results\routine\routine surveys, 2 minute counts
\20080718_0854\20080718_0854.results

Assay File Name: C:\Packard\TriCarb\Assays\routine surveys, 2 minute counts.lsa

Count Conditions-

Nuclide: 3H-14C+P32

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Sets:

Low Energy: 3H

Mid Energy: 14C

Count Time (min): 2.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

Regions	LL	UL	Bkg Subtract
A	0.0	18.6	1st Vial
B	18.6	156.0	1st Vial
C	156.0	2000.0	1st Vial

Count Corrections-

Static Controller: On

Luminescence Correction: On

Colored Samples: On

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

Regions	Half Life	Units	Reference Date	Reference Time
A				
B				
C				

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	DPM1	DPM2	SIS	tSIE	MESSAGES
1	10.00	3	6	6	0	0	55.58	397.88	B
2	2.00	0	3	0	0	5	238.00	414.08	
3	2.00	0	0	0	0	0	0.00	408.03	
4	2.00	3	0	0	5	0	22.61	413.17	
5	2.00	1	1	0	2	2	80.17	412.08	
6	2.00	3	1	0	6	1	3.23	408.95	
7	2.00	2	4	0	1	6	51.51	391.55	
8	2.00	0	5	0	0	7	75.29	409.94	
9	2.00	2	0	0	5	0	0.00	400.62	