Radiation Safety Office
106 Carrigan Drive, 004 Rowell Building
Burlington, Vermont 05405
(802) 656-2570
FAX: (802) 656-8876
radsafe@uvm.edu
www.uvm.edu/radsafe

The UNIVERSITY of VERMONT

Br. 2

September 25, 2017

Licensing Assistance Team
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region I
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713

Re: License Amendment Request for Removal of Cook Building for License No. ~~44-00728-13~~ 03013022

This letter is to request an amendment to the University of Vermont's radioactive materials license, no. 44-00728-13, for; 1) the removal of Cook Physical Science Building and 2) the addition of a new building, Discovery, on the main campus in Burlington, Vermont.

Licensed activities have ceased in the Cook Physical Science building and all radiation sources have been removed. The Cook building is being demolished. No unsealed radioactive materials have been used for many years and only low activity sealed check sources were currently stored and occasionally used. A final decommission survey was done by the Radiation Safety Office at the University of Vermont. Attached is the Decommission Final Status Report.

Myself and personnel from my office have personally inspected the building and verified that all licensed materials and all radioactive markings have been removed. The University of Vermont request the release of the Cook building from our materials license.

Please let me know if you have any questions or if you require more information.

Sincerely yours,

Thomas Kellogg, RSO
University of Vermont
Radiation Safety Office
004 Rowell Building
Burlington, VT 05403
Tel: 802-656-3283
Email: Thomas.Kellogg@uvm.edu

Cook Physical Science Building
Decommissioning Final Status Report

NRC License Number: 44-00728-13
University of Vermont
Burlington, VT 05405

September 25, 2017

Background Information:
The University of Vermont (UVM) has decided to demolish the Cook Physical Science building on its main campus in Burlington, Vermont in order to build a new STEM building complex at that same site.

Licensed radioactive materials were used in the Chemistry and Physics departments located in the Cook Physical Sciences building since the 1970's. Low levels, uCi and mCi quantities, of various radionuclides were used for research and educational purposes. Unsealed radiation sources, mostly H-3, were used and various low level sealed check sources had also been used. The attached laboratory decommission reports list the possible radioactive materials (both sealed and unsealed) for each authorized principal investigator. Up until 2001 a 2 Ci PuBe neutron howitzer was used for research in this building. This source was removed and disposed in 2001 by OSRP and our NRC license was amended at that time.

During times of active radioactive work radiation, handling labs were surveyed on a regular basis by lab personnel and/or the Radiation Safety Office. If contamination was ever detected at the time of the survey steps were taken to decontaminate those areas. There were never any reported spills or fixed contamination sites in this building. No residual radioactive contamination is present and all radioactive waste, equipment, material and radiation signage has been removed. There are no legacy contaminated sites in this building. Since the late 1970's UVM has had a self-imposed moratorium to not dispose radioactive materials in the sanitary sewer.

Since the facilities and all lab equipment in the Cook building have no radioactive contamination it meets the NRC criteria for release for unrestricted use and is being demolished . The Radiation Safety Office did all final surveys and removed all radiation sources along with removal of all radiation labels and signs.

The Radiation Safety Office's final surveys of radiation labs in the Cook building included; 1) areas that have the greatest potential for contamination in the lab - where radioactive materials were used or stored and 2) random areas throughout the lab to identify possible other areas of contamination. Wipe tests were performed with dry-filter papers and wiping large areas of the lab floors, walls, bench surfaces and equipment. The wipes were counted in a liquid scintillation counter using an 'open' window. In addition, radiation survey meters with appropriate detectors (GM tubes and NaI cystals) were also used for an area survey of the facility and equipment.

Attached are the contamination survey results for each lab where radioactive materials were used. Also, low-point drain samples were taken and monitored which showed no radioactive materials were present.

Decommission: Cook Physical Sciences Building

Date	Lab	Investigator	Department	Possession Limit	Survey Done
3/13/17	A207	Carrano	Chemistry	H-3 C-14 Cr-51 Fe-55	GM Survey - Wipe Test
3/13/17	A222	Carrano	Chemistry	H-3 C-14 Cr-51 Fe-55	GM Survey - Wipe Test
3/13/17	A225	Carrano	Chemistry	H-3 C-14 Cr-51 Fe-55	GM Survey - Wipe Test
3/27/17	A233	Carrano	Chemistry	H-3 C-14 Cr-51 Fe-55	GM Survey - Wipe Test
3/13/17	A236	Dostmann	Pharmacology	H-3 C-14 P-32 S-35 I-125	GM Survey - Wipe Test
3/13/17	A308	Kuehne	Chemistry	H-3	GM Survey - Wipe Test
3/24/17	A420	Spartalian	Physics	Co-57	GM Survey - Wipe Test
4/5/17	A433	Detenbeck	Physics	Na-22 C0-60 Ba-133 Cs-137 Am-241	GM Survey - Wipe Test
3/24/17	A434	Miller	Physics	Am-241	GM Survey - Wipe Test
3/24/17	A442	Detenbeck	Physics	Na-22 C0-60 Ba-133 Cs-137 Am-241 Pu-Be	GM Survey - Wipe Test
3/24/17	A443	Detenbeck	Physics	Na-22 C0-60 Ba-133 Cs-137 Am-241	GM Survey - Wipe Test
3/24/17	A445	Detenbeck	Physics	Na-22 C0-60 Ba-133 Cs-137 Am-241 Pu-Be	GM Survey - Wipe Test
3/30/17	A448	Detenbeck	Physics	Na-22 C0-60 Ba-133 Cs-137 Am-241	GM Survey - Wipe Test
3/30/17	A449	Detenbeck	Physics	Na-22 C0-60 Ba-133 Cs-137 Am-241	GM Survey - Wipe Test

Cook Low-Point Sampling

Chemical and Radiation Survey

Field Notes:

On Wednesday December 7, 2016, Jeff Rogers (Environmental Compliance) and Rodney Hydon (Physical Plant) performed destructive sampling of low point drains in the Cook Physical Science building. The purpose of the sampling was to further characterize the contents of these drains and assist with a waste determination.

Approval was given by the Chemistry and Physics department to remove low-point drains in unoccupied laboratories on the first and fourth floors. Once removed the fixtures, piping and sink basins were either blocked or covered to indicate they should not be used. A summary of the areas sampled and any observations are provided below:

- Lab A127 (7:45AM) – Removed one low-point drain that serviced 3-cup sinks and 1-large area sink, and one low-point that served 2 fume hood sinks. The fume hood low-point was completely dry and contained hard dirt clumps and glass shards. No visible evidence of mercury was observed. In the other low-point there was approximately ¾ gallons of water and dirt/sludge. In this low-point there was also a needle sharp. No visible evidence of mercury was observed.
- Lab A128 (8:15AM) – Half of this space was still active. We removed one low-point drain on the north end of the room that serviced 3-cup sinks and 1-large area sink. There were approximately ¾ gallons of water and dirt/sludge at the bottom. No visible evidence of mercury was observed.
- Lab A440 (8:40AM) – A long-time employee of the Physics department indicated this laboratory saw heavy use and would be our best opportunity to sample a worst-case scenario. There was only one main sink in the area along the west side of the room. Visual observations of the low-point contents were the same as seen in Lab A128. A grab sample was taken of this drain to assist with the detection of possible PCB contamination.
- Lab A442 (8:50AM) – This location had the same observations and grab sampling to A440.
- Samples of liquid and debris from the traps were taken and counted in a Packard Tricarb liquid scintillation counter in the Radiation Safety Office.

Sample Results:

Sample Location	Mercury (PPM)	EPA Threshold (PPM)	PCB (PPM)	EPA Threshold (PPM)	*Radioactive
Composite 1	2.7	0.2	ND	50	No
Composite 2	4.6	0.2	3.3	50	No
A440	0.2	0.2	0.7	50	No
A442	0.2	0.2	ND	50	No

*All sample counted in the liquid scintillation counter were counted for 10 minutes each. No samples were above background count.

Photos

Low-Point for A127 Fume Hood

Low-Point Contents

Collection Container

Low Point Sampling

Assay Definition

Assay Description:
Open Window
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\RSO\Open Window\20170330_1155
Raw Results Path: C:\Packard\Tricarb\Results\RSO\Open Window\20170330_1155\20170330_1155.results
Assay File Name: C:\Packard\TriCarb\Assays\Open Window.lsa

Count Conditions

Nuclide: Open
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 10.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	18.6
B	0.0	156.0
C	0.0	2000.0

Count Corrections

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

COOK PHYSICAL SCIENCES BUILDING SINK TRAPS SURVEY 3/30/2017

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	
1	10.00	5	14	17	316.11	SINK TRAP 1
2	10.00	4	11	16	642.79	SINK TRAP 2
3	10.00	5	12	16	507.17	SINK TRAP 3
4	10.00	4	12	16	249.70	LIQUID WASTE
5	10.00	7	15	19	448.70	BACKGROUND

20170330_1259.results

Low Point Sampling

Assay Definition

Assay Description:
Open Window
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\RSO\Open Window\20170330_1259\Replay_20170330_142459
Raw Results Path: C:\Packard\Tricarb\Results\RSO\Open Window\20170330_1259\20170330_1259.results
Assay File Name: C:\Packard\TriCarb\Assays\Open Window.lsa

Count Conditions

Nuclide: Open
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 10.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	18.6
B	0.0	156.0
C	0.0	2000.0

Count Corrections

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

3H + 14C STANDARDS RUN 3/30/2017

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	
1	10.00	135063	135785	135799	18.43	3H
2	10.00	24513	116504	117021	157.25	14C
3	10.00	13	20	33	1424.27	BKG

3H STANDARD 278,100 3/12/2013
14C STANDARD 123,800 3/12/2013

EFFICIENCY FOR 3H = 61%
EFFICIENCY FOR 14C = 94%

The UNIVERSITY of VERMONT
Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: CARRANO	Department: CHEMISTRY
Laboratory Number: A207	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/13/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{3}H ^{14}C ^{51}Cr ^{55}Fe
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	143715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125	^{55}Fe			
Area Survey			14.0%	1.4%						
Wipe Test	65.0%	96.0%			35.0%		35.0%			

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Carrano
Room Number	A207
Building	Cook
Authorized Radionuclides	H-3,C-14,Cr-51,Fe-55
Date Decommissioned	3/13/2017

Isotope	**H-3**							**C-14**							**Cr-51**						
Background	**15.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Hood 1	600	65%	19.00	4.00	6.15	1.03	21.01	600	96%	19.00	4.00	4.17	0.69	21.01	600	35%	19.00	4.00	11.43	1.90	21.01
Hood 2	600	65%	9.00	0.00	0.00	0.00	21.01	600	96%	9.00	0.00	0.00	0.00	21.01	600	35%	9.00	0.00	0.00	0.00	21.01
Hood 3	600	65%	25.00	10.00	15.38	2.56	21.01	600	96%	25.00	10.00	10.42	1.74	21.01	600	35%	25.00	10.00	28.57	4.76	21.01
Hood 4	600	65%	26.00	11.00	16.92	2.82	21.01	600	96%	26.00	11.00	11.46	1.91	21.01	600	35%	26.00	11.00	31.43	5.24	21.01
Middle Bench	800	65%	23.00	8.00	12.31	1.54	21.01	800	96%	23.00	8.00	8.33	1.04	21.01	800	35%	23.00	8.00	22.86	2.86	21.01
Floor 1	1200	65%	21.00	6.00	9.23	0.77	21.01	1200	96%	21.00	6.00	6.25	0.52	21.01	1200	35%	21.00	6.00	17.14	1.43	21.01
Floor 2	1200	65%	21.00	6.00	9.23	0.77	21.01	1200	96%	21.00	6.00	6.25	0.52	21.01	1200	35%	21.00	6.00	17.14	1.43	21.01
Refrigerator 1	400	65%	20.00	5.00	7.69	1.92	21.01	400	96%	20.00	5.00	5.21	1.30	21.01	400	35%	20.00	5.00	14.29	3.57	21.01
Sink	300	65%	18.00	3.00	4.62	1.54	21.01	300	96%	18.00	3.00	3.13	1.04	21.01	300	35%	18.00	3.00	8.57	2.86	21.01
Shakers	200	65%	19.00	4.00	6.15	3.08	21.01	200	96%	19.00	4.00	4.17	2.08	21.01	200	35%	19.00	4.00	11.43	5.71	21.01
Front Floor	1000	65%	17.00	2.00	3.08	0.31	21.01	1000	96%	17.00	2.00	2.08	0.21	21.01	1000	35%	17.00	2.00	5.71	0.57	21.01
Left Bench	800	65%	22.00	7.00	10.77	1.35	21.01	800	96%	22.00	7.00	7.29	0.91	21.01	800	35%	22.00	7.00	20.00	2.50	21.01
Right Bench	800	65%	32.00	17.00	26.15	3.27	21.01	800	96%	32.00	17.00	17.71	2.21	21.01	800	35%	32.00	17.00	48.57	6.07	21.01
Incubator	400	65%	16.00	1.00	1.54	0.38	21.01	400	96%	16.00	1.00	1.04	0.26	21.01	400	35%	16.00	1.00	2.86	0.71	21.01
Left Floor	1200	65%	15.00	0.00	0.00	0.00	21.01	1200	96%	15.00	0.00	0.00	0.00	21.01	1200	35%	15.00	0.00	0.00	0.00	21.01
Right Floor	1200	65%	17.00	2.00	3.08	0.26	21.01	1200	96%	17.00	2.00	2.08	0.17	21.01	1200	35%	17.00	2.00	5.71	0.48	21.01
Refrigerator 2	800	65%	13.00	0.00	0.00	0.00	21.01	800	96%	13.00	0.00	0.00	0.00	21.01	800	35%	13.00	0.00	0.00	0.00	21.01

Isotope	**F-55**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Hood 1	600	35%	19.00	4.00	11.43	1.90	21.01														
Hood 2	600	35%	9.00	0.00	0.00	0.00	21.01														
Hood 3	600	35%	25.00	10.00	28.57	4.76	21.01														
Hood 4	600	35%	26.00	11.00	31.43	5.24	21.01														
Middle Bench	800	35%	23.00	8.00	22.86	2.86	21.01														
Floor 1	1200	35%	21.00	6.00	17.14	1.43	21.01														
Floor 2	1200	35%	21.00	6.00	17.14	1.43	21.01														
Refrigerator 1	400	35%	20.00	5.00	14.29	3.57	21.01														
Sink	300	35%	18.00	3.00	8.57	2.86	21.01														
Shakers	200	35%	19.00	4.00	11.43	5.71	21.01														
Front Floor	1000	35%	17.00	2.00	5.71	0.57	21.01														
Left Bench	800	35%	22.00	7.00	20.00	2.50	21.01														
Right Bench	800	35%	32.00	17.00	48.57	6.07	21.01														
Incubator	400	35%	16.00	1.00	2.86	0.71	21.01														
Left Floor	1200	35%	15.00	0.00	0.00	0.00	21.01														
Right Floor	1200	35%	17.00	2.00	5.71	0.48	21.01														
Refrigerator 2	800	35%	13.00	0.00	0.00	0.00	21.01														

Laboratory Survey Data

Decommission Date: 3/13/2017 Lab Number: A207

Investigator: CARRANO Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	HOOD 1	600	19	60
2	HOOD 2	600	9	60
3	HOOD 3	600	25	60
4	HOOD 4	600	26	60
5	MIDDLE BENCH	800	23	60
6	FLOOR 1	1200	21	60
7	FLOOR 2	1200	21	60
8	REFRIGERATOR 1	400	20	60
9	SINK	300	18	60
10	SHAKERS	200	19	60
11	FRONT FLOOR	1000	17	60
12	LEFT BENCH	800	22	60
13	RIGHT BENCH	800	32	60
14	INCUBATOR	400	16	60
15	LEFT FLOOR	1200	15	60
16	RIGHT FLOOR	1200	17	60
17	REFRIGERATOR 2	800	13	60
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	60
Liquid Scintillation Counter	PACKARD	04130316	15

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170320_1353
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170320_1353\20170320_1353.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	4	9	6	585.34	A207
2	1.00	3	5	1	1007.54	A207
3	1.00	10	9	6	627.44	A207
4	1.00	10	12	4	242.15	A207
5	1.00	10	8	5	385.13	A207
6	1.00	9	7	5	397.08	A207
7	1.00	5	11	5	342.67	A207
8	1.00	6	8	6	352.91	A207
9	1.00	6	10	2	576.92	A207
10	1.00	5	13	1	241.39	A207
11	1.00	7	9	1	239.41	A207
12	1.00	8	8	6	359.83	A207
13	1.00	16	12	4	420.24	A207
14	1.00	5	7	4	626.13	A207
15	1.00	4	9	2	271.75	A207

16	1.00	7	5	5	681.14	A207
17	1.00	3	8	2	424.52	A207
18	1.00	9	7	4	542.94	A222
19	1.00	10	7	5	343.54	A222
20	1.00	9	6	1	397.24	A222
21	1.00	7	10	5	714.32	A222
22	1.00	8	2	3	133.28	A202
23	1.00	6	13	1	345.65	A222
24	1.00	3	6	5	247.28	A225
25	1.00	5	9	5	360.74	A225
26	1.00	6	6	6	757.72	A225
27	1.00	8	8	6	491.60	A225
28	1.00	9	10	3	398.92	A306
29	1.00	3	7	7	846.08	A306
30	1.00	9	10	3	209.94	A306
31	1.00	6	8	1	67.64	A306
32	1.00	6	16	4	330.01	A306
33	1.00	7	3	5	570.28	A306
34	1.00	9	10	5	316.29	A308
35	1.00	6	12	3	193.94	A308
36	1.00	5	9	3	352.80	A236
37	1.00	6	8	6	342.27	A236
38	1.00	7	13	6	253.22	A236
39	1.00	2	7	3	271.11	A236
40	1.00	10	10	4	250.54	A236
Missing vial 41.						
42	1.00	6	4	5	337.35	BACKGROUND

The UNIVERSITY of VERMONT
Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: CARRANO	Department: CHEMISTRY
Laboratory Number: A222	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/13/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{3}H ^{14}C ^{51}Cr ^{55}Fe
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	145715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125	^{55}Fe			
Area Survey			14.0%	1.4%						
Wipe Test	65.0%	96.0%			35.0%		35.0%			

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Carrano
Room Number	A222
Building	Cook
Authorized Radionuclides	H-3,C-14,Cr-51,Fe-55
Date Decommissioned	3/13/2017

Isotope	**H-3**							**C-14**							**Cr-51**						
Background	**15.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Fume Hood	600	65%	20.00	5.00	7.69	1.28	21.01	600	96%	20.00	5.00	5.21	0.87	21.01	600	35%	20.00	5.00	14.29	2.38	21.01
Sink	300	65%	22.00	7.00	10.77	3.59	21.01	300	96%	22.00	7.00	7.29	2.43	21.01	600	35%	22.00	7.00	20.00	3.33	21.01
Bench	800	65%	17.00	2.00	3.08	0.38	21.01	800	96%	17.00	2.00	2.08	0.26	21.01	600	35%	17.00	2.00	5.71	0.95	21.01
Refrigerator	200	65%	22.00	7.00	10.77	5.38	21.01	200	96%	22.00	7.00	7.29	3.65	21.01	600	35%	22.00	7.00	20.00	3.33	21.01
Shelves	800	65%	13.00	0.00	0.00	0.00	21.01	800	96%	13.00	0.00	0.00	0.00	21.01	800	35%	13.00	0.00	0.00	0.00	21.01
Floor Area	1200	65%	20.00	5.00	7.69	0.64	21.01	1200	96%	20.00	5.00	5.21	0.43	21.01	1200	35%	20.00	5.00	14.29	1.19	21.01

Isotope	**F-55**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Fume Hood	600	35%	20.00	5.00	14.29	2.38	21.01														
Sink	300	35%	22.00	7.00	20.00	6.67	21.01														
Bench	800	35%	17.00	2.00	5.71	0.71	21.01														
Refrigerator	200	35%	22.00	7.00	20.00	10.00	21.01														
Shelves	800	35%	13.00	0.00	0.00	0.00	21.01														
Floor Area	1200	35%	20.00	5.00	14.29	1.19	21.01														

Laboratory Survey Data

Decommission Date: 3/13/2017 **Lab Number:** A222

Investigator: CARRANO **Building:** COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	FUME HOOD	600	20	60
2	SINK	300	22	60
3	BENCH	800	17	60
4	REFRIGERATOR	200	22	60
5	SHELVES	800	13	60
6	FLOOR AREA	1200	20	60
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	60
Liquid Scintillation Counter	PACKARD	04130316	15

16	1.00	7	5	5	681.14	A207
17	1.00	3	8	2	424.52	A207
18	1.00	9	7	4	542.94	A222
19	1.00	10	7	5	343.54	A222
20	1.00	9	6	1	397.24	A222
21	1.00	7	10	5	714.32	A222
22	1.00	8	2	3	133.28	A222
23	1.00	6	13	1	345.65	A222
24	1.00	3	6	5	247.28	A225
25	1.00	5	9	5	360.74	A225
26	1.00	6	6	6	757.72	A225
27	1.00	8	8	6	491.60	A225
28	1.00	9	10	3	398.92	A306
29	1.00	3	7	7	846.08	A306
30	1.00	9	10	3	209.94	A306
31	1.00	6	8	1	67.64	A308
32	1.00	6	16	4	330.01	A308
33	1.00	7	3	5	570.28	A308
34	1.00	9	10	5	316.29	A308
35	1.00	6	12	3	193.94	A308
36	1.00	5	9	3	352.80	A236
37	1.00	6	8	6	342.27	A236
38	1.00	7	13	6	253.22	A236
39	1.00	2	7	3	271.11	A236
40	1.00	10	10	4	250.54	A236
Missing vial 41.						
42	1.00	6	4	5	337.35	BACKGROUND

The UNIVERSITY of VERMONT
Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: CARRANO	Department: CHEMISTRY
Laboratory Number: A225	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/13/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{3}H ^{14}C ^{51}Cr ^{55}Fe
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125	^{55}Fe			
Area Survey			14.0%	1.4%						
Wipe Test	65.0%	96.0%			35.0%		35.0%			

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Carrano
Room Number	A225
Building	Cook
Authorized Radionuclides	H-3,C-14,Cr-51,Fe-55
Date Decommissioned	3/13/2017

Isotope	**H-3**							**C-14**							**Cr-51**						
Background	**15.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Left Floor	1200	65%	14.00	0.00	0.00	0.00	21.01	1200	96%	14.00	0.00	0.00	0.00	21.01	1200	35%	14.00	0.00	0.00	0.00	21.01
Right Floor	1200	65%	19.00	4.00	6.15	0.51	21.01	1200	96%	19.00	4.00	4.17	0.35	21.01	1200	35%	19.00	4.00	11.43	0.95	21.01
Refrigerator	800	65%	18.00	3.00	4.62	0.58	21.01	800	96%	18.00	3.00	3.13	0.39	21.01	800	35%	18.00	3.00	8.57	1.07	21.01
Benches	1000	65%	22.00	7.00	10.77	1.08	21.01	1000	96%	22.00	7.00	7.29	0.73	21.01	1000	35%	22.00	7.00	20.00	2.00	21.01

Isotope	**F-55**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Left Floor	1200	35%	14.00	0.00	0.00	0.00	21.01														
Right Floor	1200	35%	19.00	4.00	11.43	0.95	21.01														
Refrigerator	800	35%	18.00	3.00	8.57	1.07	21.01														
Benches	1000	35%	22.00	7.00	20.00	2.00	21.01														

Laboratory Survey Data

Decommission Date: 3/13/2017 **Lab Number:** A225

Investigator: CARRANO **Building:** COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	LEFT FLOOR	1200	14	60
2	RIGHT FLOOR	1200	19	60
3	REFRIGERATOR	800	18	60
4	BENCHES	1000	22	60
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM 3	149715	60
Liquid Scintillation Counter	PACKARD	04130316	15

16	1.00	7	5	5	681.14	A207
17	1.00	3	8	2	424.52	A207
18	1.00	9	7	4	542.94	A222
19	1.00	10	7	5	343.54	A222
20	1.00	9	6	1	397.24	A222
21	1.00	7	10	5	714.32	A222
22	1.00	8	2	3	133.28	A222
23	1.00	6	13	1	345.65	A222
24	1.00	3	6	5	247.28	A225
25	1.00	5	9	5	360.74	A225
26	1.00	6	6	6	757.72	A225
27	1.00	8	8	6	491.60	A225
28	1.00	9	10	3	398.92	A306
29	1.00	3	7	7	846.08	A306
30	1.00	9	10	3	209.94	A306
31	1.00	6	8	1	67.64	A308
32	1.00	6	16	4	330.01	A308
33	1.00	7	3	5	570.28	A308
34	1.00	9	10	5	316.29	A308
35	1.00	6	12	3	193.94	A308
36	1.00	5	9	3	352.80	A236
37	1.00	6	8	6	342.27	A236
38	1.00	7	13	6	253.22	A236
39	1.00	2	7	3	271.11	A236
40	1.00	10	10	4	250.54	A236
Missing vial 41.						
42	1.00	6	4	5	337.35	BACKGROUND

The UNIVERSITY of VERMONT
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FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: CARRANO	Department: CHEMISTRY
Laboratory Number: A233	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/27/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{3}H ^{14}C ^{51}Cr ^{55}Fe
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155931
Wipe Test	PACKARD TRI-CARB	0413036	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125	^{55}Fe			
Area Survey			14.0%	1.4%						
Wipe Test	65.0%	96.0%			35.0%		35.0%			

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Carrano
Room Number	A233
Building	Cook
Authorized Radionuclides	H-3,C-14,Cr-51,Fe-55
Date Decommissioned	3/27/2017

Isotope	**H-3**							**C-14**							**Cr-51**						
Background	**23.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Bench	1000	65%	25.00	2.00	3.08	0.31	25.30	1000	96%	25.00	2.00	2.08	0.21	25.30	1000	35%	25.00	2.00	5.71	0.57	25.30
Sink	300	65%	14.00	0.00	0.00	0.00	25.30	300	96%	14.00	0.00	0.00	0.00	25.30	300	35%	14.00	0.00	0.00	0.00	25.30
Refrigerator	800	65%	19.00	0.00	0.00	0.00	25.30	800	96%	19.00	0.00	0.00	0.00	25.30	800	35%	19.00	0.00	0.00	0.00	25.30
Freezer	800	65%	14.00	0.00	0.00	0.00	25.30	800	96%	14.00	0.00	0.00	0.00	25.30	800	35%	14.00	0.00	0.00	0.00	25.30
Shelves	600	65%	17.00	0.00	0.00	0.00	25.30	600	96%	17.00	0.00	0.00	0.00	25.30	600	35%	17.00	0.00	0.00	0.00	25.30
Fume Hood	800	65%	21.00	0.00	0.00	0.00	25.30	800	96%	21.00	0.00	0.00	0.00	25.30	800	35%	21.00	0.00	0.00	0.00	25.30
Back Floor	1200	65%	22.00	0.00	0.00	0.00	25.30	1200	96%	22.00	0.00	0.00	0.00	25.30	1200	35%	22.00	0.00	0.00	0.00	25.30
Front Floor	1200	65%	15.00	0.00	0.00	0.00	25.30	1200	96%	15.00	0.00	0.00	0.00	25.30	1200	35%	15.00	0.00	0.00	0.00	25.30
Shakers	200	65%	25.00	2.00	3.08	1.54	25.30	200	96%	25.00	2.00	2.08	1.04	25.30	200	35%	25.00	2.00	5.71	2.86	25.30

Isotope	**F-55**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Bench	1000	35%	25.00	2.00	5.71	0.57	25.30														
Sink	300	35%	14.00	0.00	0.00	0.00	25.30														
Refrigerator	800	35%	19.00	0.00	0.00	0.00	25.30														
Freezer	800	35%	14.00	0.00	0.00	0.00	25.30														
Shelves	600	35%	17.00	0.00	0.00	0.00	25.30														
Fume Hood	800	35%	21.00	0.00	0.00	0.00	25.30														
Back Floor	1200	35%	22.00	0.00	0.00	0.00	25.30														
Front Floor	1200	35%	15.00	0.00	0.00	0.00	25.30														
Shakers	200	35%	25.00	2.00	5.71	2.86	25.30														

Laboratory Survey Data

Decommission Date: 3/27/2017 Lab Number: A233

Investigator: CARRANO Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	BENCH	1000	25	80
2	SINK	300	14	80
3	REFRIGERATOR	800	19	80
4	FREEZER	800	14	80
5	SHELVES	600	17	80
6	FUME HOOD	800	21	80
7	BACK FLOOR	1200	22	80
8	FRONT FLOOR	1200	15	80
9	SHAKERS	200	25	80
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	80
Liquid Scintillation Counter	PACKARD	04130316	23

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170328_1247
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170328_1247\20170328_1247.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	6	16	3	71.74	A233
2	1.00	5	6	3	162.41	A233
3	1.00	4	14	1	635.96	A233
4	1.00	3	8	3	145.94	A233
5	1.00	6	7	4	306.41	A233
6	1.00	10	8	3	186.45	A233
7	1.00	10	10	2	340.43	A233
8	1.00	6	8	1	143.43	A233
9	1.00	11	8	6	416.20	A233
10	1.00	8	12	3	182.45	BACKGROUND

The UNIVERSITY of VERMONT
Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
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Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DOSTMANN	Department: PHARMACOLOGY
Laboratory Number: A236	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/13/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	3H ^{14}C ^{32}P ^{35}S ^{125}I
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155-931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125				
Area Survey			14.0%	1.4%						
Wipe Test	65.0%	96.0%	100.0%	97.0%		78.0%				

Items Inspected

- [x] No "Caution Radioactive Materials Signs on Doors
- [x] No Radiation Labels Present In Lab Or On Any Equipment
- [x] No Posting of Emergency Procedures in Lab
- [x] No Significant Contamination Found With Area Survey
- [x] No Significant Contamination Found With Wipe Tests
- [x] No Radioactive Materials Stored In Laboratory
- [x] All Stock Vials Disposed Or Received By RSO
- [x] All Inventory Log Sheets Returned To RSO
- [x] All Radioactive Research Materials Received By RSO
- [x] No Radioactive Waste Containers Present In Laboratory
- [x] Access Data Base Updated To Reflect Decommissioning
- [x] Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

- Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Dostmann
Room Number	A236
Building	Cook
Authorized Radionuclides	H-3,C-14,P-32,S-35,I-125
Date Decommissioned	3/13/2017

Isotope	H-3							C-14							P-32						
Background	15.00																				
Area	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity
Bench	600	65%	17.00	2.00	3.08	0.51	21.01	600	96%	17.00	2.00	2.08	0.35	21.01	600	100%	17.00	2.00	2.00	0.33	21.01
Sink	200	65%	20.00	5.00	7.69	3.85	21.01	200	96%	20.00	5.00	5.21	2.60	21.01	200	100%	20.00	5.00	5.00	2.50	21.01
Hood	400	65%	26.00	11.00	16.92	4.23	21.01	400	96%	26.00	11.00	11.46	2.86	21.01	400	100%	26.00	11.00	11.00	2.75	21.01
Floor	1200	65%	12.00	0.00	0.00	0.00	21.01	1200	96%	12.00	0.00	0.00	0.00	21.01	1200	100%	12.00	0.00	0.00	0.00	21.01
LSC	600	65%	24.00	9.00	13.85	2.31	21.01	600	96%	24.00	9.00	9.38	1.56	21.01	600	100%	24.00	9.00	9.00	1.50	21.01

Isotope	S-35							I-125													
Area	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity
Bench	600	97%	17.00	2.00	2.06	0.34	21.01	600	78%	17.00	2.00	2.56	0.43	21.01							
Sink	200	97%	20.00	5.00	5.15	2.58	21.01	200	78%	20.00	5.00	6.41	3.21	21.01							
Hood	400	97%	26.00	11.00	11.34	2.84	21.01	400	78%	26.00	11.00	14.10	3.53	21.01							
Floor	1200	97%	12.00	0.00	0.00	0.00	21.01	1200	78%	12.00	0.00	0.00	0.00	21.01							
LSC	600	97%	24.00	9.00	9.28	1.55	21.01	600	78%	24.00	9.00	11.54	1.92	21.01							

Laboratory Survey Data

Decommission Date: 3/13/2017 Lab Number: A236

Investigator: DOSTMANN Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	BENCH	600	17	80
2	SINK	200	20	80
3	HOOD	400	26	80
4	FLOOR	1200	12	80
5	LIQUID SCINTILLATION COUNTER	600	24	80
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	80
Liquid Scintillation Counter	PACKARD	04130316	15

16	1.00	7	5	5	681.14	A207
17	1.00	3	8	2	424.52	A207
18	1.00	9	7	4	542.94	A222
19	1.00	10	7	5	343.54	A222
20	1.00	9	6	1	397.24	A222
21	1.00	7	10	5	714.32	A222
22	1.00	8	2	3	133.28	A222
23	1.00	6	13	1	345.65	A222
24	1.00	3	6	5	247.28	A225
25	1.00	5	9	5	360.74	A225
26	1.00	6	6	6	757.72	A225
27	1.00	8	8	6	491.60	A225
28	1.00	9	10	3	398.92	A306
29	1.00	3	7	7	846.08	A306
30	1.00	9	10	3	209.94	A306
31	1.00	6	8	1	67.64	A308
32	1.00	6	16	4	330.01	A308
33	1.00	7	3	5	570.28	A308
34	1.00	9	10	5	316.29	A308
35	1.00	6	12	3	193.94	A308
36	1.00	5	9	3	352.80	A236
37	1.00	6	8	6	342.27	A236
38	1.00	7	13	6	253.22	A236
39	1.00	2	7	3	271.11	A236
40	1.00	10	10	4	250.54	A236
Missing vial 41.						
42	1.00	6	4	5	337.35	BACKGROUND

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Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: KUEHNE	Department: CHEMISTRY
Laboratory Number: A308	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/13/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	3H
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	165931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125				
Area Survey			14.0%	1.4%						
Wipe Test	65.0%									

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING OF COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Kuehne
Room Number	A308
Building	Cook
Authorized Radionuclides	H-3
Date Decommissioned	3/13/2017

Isotope	**H-3**																						
Background	**15.00**																						
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**		
Floor 1	1200	65%	22.00	7.00	10.77	0.90	21.01																
Floor 2	1200	65%	17.00	2.00	3.08	0.26	21.01																
Floor 3	1200	65%	22.00	7.00	10.77	0.90	21.01																
Fume Hood 1	800	65%	15.00	0.00	0.00	0.00	21.01																
Fume Hood 2	800	65%	26.00	11.00	16.92	2.12	21.01																
Fume Hood 3	800	65%	15.00	0.00	0.00	0.00	21.01																
Bench 1	1000	65%	24.00	9.00	13.85	1.38	21.01																
Bench 2	1000	65%	21.00	6.00	9.23	0.92	21.01																

Laboratory Survey Data

Decommission Date: 3/13/2017 Lab Number: A308

Investigator: KUEHNE Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	FLOOR 1	1200	22	50
2	FLOOR 2	1200	17	50
3	FLOOR 3	1200	22	50
4	FUME HOOD 1	800	15	50
5	FUME HOOD 2	800	26	50
6	FUME HOOD 3	800	15	50
7	BENCH 1	1000	24	50
8	BENCH 2	1000	21	50
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	50
Liquid Scintillation Counter	PACKARD	04130316	15

16	1.00	7	5	5	681.14	A207
17	1.00	3	8	2	424.52	A207
18	1.00	9	7	4	542.94	A222
19	1.00	10	7	5	343.54	A222
20	1.00	9	6	1	397.24	A222
21	1.00	7	10	5	714.32	A222
22	1.00	8	2	3	133.28	A222
23	1.00	6	13	1	345.65	A222
24	1.00	3	6	5	247.28	A225
25	1.00	5	9	5	360.74	A225
26	1.00	6	6	6	757.72	A225
27	1.00	8	8	6	491.60	A225
28	1.00	9	10	3	398.92	A306
29	1.00	3	7	7	846.08	A306
30	1.00	9	10	3	209.94	A306
31	1.00	6	8	1	67.64	A308
32	1.00	6	16	4	330.01	A308
33	1.00	7	3	5	570.28	A308
34	1.00	9	10	5	316.29	A308
35	1.00	6	12	3	193.94	A308
36	1.00	5	9	3	352.80	A236
37	1.00	6	8	6	342.27	A236
38	1.00	7	13	6	253.22	A236
39	1.00	2	7	3	271.11	A236
40	1.00	10	10	4	250.54	A236
Missing vial 41.						
42	1.00	6	4	5	337.35	BACKGROUND

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FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: SPARTALIAN	Department: PHYSICS
Laboratory Number: A420	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/24/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{57}Co
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	148715	44-9	165931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125	^{57}Co			
Area Survey			14.0%	1.4%						
Wipe Test							80.0%			

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Spartalian
Room Number	A420
Building	Cook
Authorized Radionuclides	Co-57
Date Decommissioned	3/24/2017

Isotope	**Co-57**																						
Background	**14.00**																						
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**		
Sink	200	80%	21.00	7.00	8.75	4.38	20.40																
Left Bench	800	80%	12.00	0.00	0.00	0.00	20.40																
Center Bench	800	80%	24.00	10.00	12.50	1.56	20.40																
Front Floor	1200	80%	24.00	10.00	12.50	1.04	20.40																
Back Floor	1200	80%	22.00	8.00	10.00	0.83	20.40																
Left Wall	1000	80%	19.00	5.00	6.25	0.63	20.40																
Back Wall	1000	80%	19.00	5.00	6.25	0.63	20.40																
Right Wall	1000	80%	23.00	9.00	11.25	1.13	20.40																
Front Wall	1000	80%	19.00	5.00	6.25	0.63	20.40																

Laboratory Survey Data

Decommission Date: 3/24/2017 Lab Number: A420

Investigator: SPARTALIAN Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	SINK	200	21	50
2	LEFT BENCH	800	12	50
3	CENTER BENCH	800	24	50
4	FRONT FLOOR	1200	24	50
5	BACK FLOOR	1200	22	50
6	LEFT WALL	1000	19	50
7	BACK WALL	1000	19	50
8	RIGHT WALL	1000	23	50
9	FRONT WALL	1000	19	50
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	50
Liquid Scintillation Counter	PACKARD	04130316	14

16	1.00	4	7	6	1124.91	A443
17	1.00	7	11	7	570.06	A443
18	1.00	13	13	7	358.91	A443
19	1.00	3	13	5	281.97	A443
20	1.00	4	9	4	541.77	A434
21	1.00	7	6	4	783.56	A434
22	1.00	5	10	6	432.62	A434
23	1.00	7	7	1	331.83	A434
24	1.00	3	13	2	465.13	A434
25	1.00	7	17	3	265.00	A434
26	1.00	8	9	8	716.25	A434
27	1.00	5	8	4	369.33	A434
28	1.00	7	10	1	69.10	A434
29	1.00	5	5	11	462.58	A420
30	1.00	4	4	4	468.72	A420
31	1.00	8	11	5	385.77	A420
32	1.00	8	12	4	363.47	A420
33	1.00	9	4	9	480.09	A420
34	1.00	12	3	4	337.21	A420
35	1.00	8	7	4	110.36	A420
36	1.00	6	11	6	592.45	A420
37	1.00	7	10	2	532.06	A420
38	1.00	6	6	2	542.12	BACKGROUND

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FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DETENBECK	Department: PHYSICS
Laboratory Number: A433	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 4/5/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{22}Na ^{60}Co ^{133}Ba ^{137}Cs ^{241}Am
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	165931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	^{22}Na	^{60}Co	^{133}Ba	^{137}Cs	^{241}Am
Area Survey			14.0%	1.4%						
Wipe Test						100.0%	100.0%	70.0%	100.0%	100.0%

Items Inspected

- [x] No "Caution Radioactive Materials Signs on Doors
- [x] No Radiation Labels Present In Lab Or On Any Equipment
- [x] No Posting of Emergency Procedures in Lab
- [x] No Significant Contamination Found With Area Survey
- [x] No Significant Contamination Found With Wipe Tests
- [x] No Radioactive Materials Stored In Laboratory
- [x] All Stock Vials Disposed Or Received By RSO
- [x] All Inventory Log Sheets Returned To RSO
- [x] All Radioactive Research Materials Received By RSO
- [x] No Radioactive Waste Containers Present In Laboratory
- [x] Access Data Base Updated To Reflect Decommissioning
- [x] Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Detenbeck
Room Number	A433
Building	Cook
Authorized Radionuclides	Na-22,Co-60,Ba-133,Cs-137,Am-241
Date Decommissioned	4/5/2017

Isotope	**Na-22**							**Co-60**							**Ba-133**						
Background	**21.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Fume Hood	600	100%	18.00	0.00	0.00	0.00	24.31	600	100%	18.00	0.00	0.00	0.00	24.31	600	70%	18.00	0.00	0.00	0.00	24.31
Bench	800	100%	23.00	2.00	2.00	0.25	24.31	800	100%	23.00	2.00	2.00	0.25	24.31	800	70%	23.00	2.00	2.86	0.36	24.31
Sink	300	100%	23.00	2.00	2.00	0.67	24.31	300	100%	23.00	2.00	2.00	0.67	24.31	300	70%	23.00	2.00	2.86	0.95	24.31
Front Floor	1200	100%	26.00	5.00	5.00	0.42	24.31	1200	100%	26.00	5.00	5.00	0.42	24.31	1200	70%	26.00	5.00	7.14	0.60	24.31
Back Floor	1200	100%	19.00	0.00	0.00	0.00	24.31	1200	100%	19.00	0.00	0.00	0.00	24.31	1200	70%	19.00	0.00	0.00	0.00	24.31
Left Wall	600	100%	28.00	7.00	7.00	1.17	24.31	600	100%	28.00	7.00	7.00	1.17	24.31	600	70%	28.00	7.00	10.00	1.67	24.31
Right Wall	600	100%	26.00	5.00	5.00	0.83	24.31	600	100%	26.00	5.00	5.00	0.83	24.31	600	70%	26.00	5.00	7.14	1.19	24.31
Front Wall	600	100%	24.00	3.00	3.00	0.50	24.31	600	100%	24.00	3.00	3.00	0.50	24.31	600	70%	24.00	3.00	4.29	0.71	24.31
Back Wall	600	100%	25.00	4.00	4.00	0.67	24.31	600	100%	25.00	4.00	4.00	0.67	24.31	600	70%	25.00	4.00	5.71	0.95	24.31
Refrigerator	400	100%	27.00	6.00	6.00	1.50	24.31	400	100%	27.00	6.00	6.00	1.50	24.31	400	70%	27.00	6.00	8.57	2.14	24.31

Isotope	**Cs-137**							**Am-241**													
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Fume Hood	600	100%	18.00	0.00	0.00	0.00	24.31	600	100%	18.00	0.00	0.00	0.00	24.31							
Bench	800	100%	23.00	2.00	2.00	0.25	24.31	800	100%	23.00	2.00	2.00	0.25	24.31							
Sink	300	100%	23.00	2.00	2.00	0.67	24.31	300	100%	23.00	2.00	2.00	0.67	24.31							
Front Floor	1200	100%	26.00	5.00	5.00	0.42	24.31	1200	100%	26.00	5.00	5.00	0.42	24.31							
Back Floor	1200	100%	19.00	0.00	0.00	0.00	24.31	1200	100%	19.00	0.00	0.00	0.00	24.31							
Left Wall	600	100%	28.00	7.00	7.00	1.17	24.31	600	100%	28.00	7.00	7.00	1.17	24.31							
Right Wall	600	100%	26.00	5.00	5.00	0.83	24.31	600	100%	26.00	5.00	5.00	0.83	24.31							
Front Wall	600	100%	24.00	3.00	3.00	0.50	24.31	600	100%	24.00	3.00	3.00	0.50	24.31							
Back Wall	600	100%	25.00	4.00	4.00	0.67	24.31	600	100%	25.00	4.00	4.00	0.67	24.31							
Refrigerator	400	100%	27.00	6.00	6.00	1.50	24.31	400	100%	27.00	6.00	6.00	1.50	24.31							

Laboratory Survey Data

Decommission Date: 4/5/2017 **Lab Number:** A433

Investigator: DETENBECK **Building:** COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	FUME HOOD	600	18	80
2	BENCH	800	23	80
3	SINK	300	23	80
4	FRONT FLOOR	1200	26	80
5	BACK FLOOR	1200	19	80
6	LEFT WALL	600	28	80
7	RIGHT WALL	600	26	80
8	FRONT WALL	600	24	80
9	BACK WALL	600	25	80
10	REFRIGERATOR	400	27	80
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	80
Liquid Scintillation Counter	PACKARD	0430316	21

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170405_0919
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170405_0919\20170405_0919.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
  Quench Indicator: tSIE/AEC
  External Std Terminator (sec): 0.5 2s%
  Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	5	9	4	402.31	A433
2	1.00	14	8	1	203.03	A433
3	1.00	12	7	4	198.14	A433
4	1.00	12	7	7	277.10	A433
5	1.00	10	5	4	446.38	A433
6	1.00	14	12	2	62.77	A433
7	1.00	12	10	4	97.23	A433
8	1.00	11	11	2	66.47	A433
9	1.00	14	8	3	183.24	A443
10	1.00	12	8	7	237.11	A443
11	1.00	9	9	3	407.84	BKG

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Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: MILLER	Department: PHYSICS
Laboratory Number: A434	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/24/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	241 Am
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	I-125	241Am			
Area Survey			14.0%	1.4%						
Wipe Test							100.0%			

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

- Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Miller
Room Number	A434
Building	Cook
Authorized Radionuclides	Am-241
Date Decommissioned	3/24/2017

Isotope	**Am-241**																					
Background	**14.00**																					
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Left Floor	1200	100%	17.00	3.00	3.00	0.25	20.40														
Right Floor	1200	100%	17.00	3.00	3.00	0.25	20.40														
Back Bench	1000	100%	21.00	7.00	7.00	0.70	20.40														
Front Bench	800	100%	15.00	1.00	1.00	0.13	20.40														
Table	800	100%	18.00	4.00	4.00	0.50	20.40														
Left Wall	600	100%	27.00	13.00	13.00	2.17	20.40														
Right Wall	600	100%	25.00	11.00	11.00	1.83	20.40														
Front Wall	600	100%	17.00	3.00	3.00	0.50	20.40														
Back Wall	600	100%	18.00	4.00	4.00	0.67	20.40														

Laboratory Survey Data

Decommission Date: 3/24/2017 Lab Number: A434

Investigator: MILLER Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	LEFT FLOOR	1200	17	50
2	RIGHT FLOOR	1200	17	50
3	BACK BENCH	1000	21	50
4	FRONT BENCH	800	15	50
5	TABLE	800	18	50
6	LEFT WALL	600	27	50
7	RIGHT WALL	600	25	50
8	FRONT WALL	600	17	50
9	BACK WALL	600	18	50
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	50
Liquid Scintillation Counter	PACKARD	04130316	14

16	1.00	4	7	6	1124.91	A443
17	1.00	7	11	7	570.06	A443
18	1.00	13	13	7	358.91	A443
19	1.00	3	13	5	281.97	A443
20	1.00	4	9	4	541.77	A434
21	1.00	7	6	4	783.56	A434
22	1.00	5	10	6	432.62	A434
23	1.00	7	7	1	331.83	A434
24	1.00	3	13	2	465.13	A434
25	1.00	7	17	3	265.00	A434
26	1.00	8	9	8	716.25	A434
27	1.00	5	8	4	369.33	A434
28	1.00	7	10	1	69.10	A434
29	1.00	5	5	11	462.58	A420
30	1.00	4	4	4	468.72	A420
31	1.00	8	11	5	385.77	A420
32	1.00	8	12	4	363.47	A420
33	1.00	9	4	9	480.09	A420
34	1.00	12	3	4	337.21	A420
35	1.00	8	7	4	110.36	A420
36	1.00	6	11	6	592.45	A420
37	1.00	7	10	2	532.06	A420
38	1.00	6	6	2	542.12	BACKGROUND

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FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DETENBECK	Department: PHYSICS
Laboratory Number: A442	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/24/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{22}Na ^{60}Co ^{133}Ba ^{137}Cs ^{241}Am Pu-Be
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	165931
Wipe Test	PACKARD TRI-CARB	0413036	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	^{22}Na	^{60}Co	^{133}Ba	^{137}Cs	^{241}Am	Pu-Be
Area Survey			14.0%	1.4%						
Wipe Test					100.0%	100.0%	70.0%	100.0%	100.0%	

Items Inspected

- [x] No "Caution Radioactive Materials Signs on Doors
- [x] No Radiation Labels Present In Lab Or On Any Equipment
- [x] No Posting of Emergency Procedures in Lab
- [x] No Significant Contamination Found With Area Survey
- [x] No Significant Contamination Found With Wipe Tests
- [x] No Radioactive Materials Stored In Laboratory
- [x] All Stock Vials Disposed Or Received By RSO
- [x] All Inventory Log Sheets Returned To RSO
- [x] All Radioactive Research Materials Received By RSO
- [x] No Radioactive Waste Containers Present In Laboratory
- [x] Access Data Base Updated To Reflect Decommissioning
- [x] Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

- Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Detenbeck
Room Number	A442
Building	Cook
Authorized Radionuclides	Na-22,Co-60,Ba-133,Cs-137,Am-241,Pu-Be
Date Decommissioned	3/24/2017

Isotope	**Na-22**							**Co-60**							**Ba-133**						
Background	**14.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Howitzer Floor	600	100%	23.00	9.00	9.00	1.50	20.40	600	100%	23.00	9.00	9.00	1.50	20.40	600	70%	23.00	9.00	12.86	2.14	20.40
Left Wall	800	100%	16.00	2.00	2.00	0.25	20.40	800	100%	16.00	2.00	2.00	0.25	20.40	800	70%	16.00	2.00	2.86	0.36	20.40
Back Wall	800	100%	20.00	6.00	6.00	0.75	20.40	800	100%	20.00	6.00	6.00	0.75	20.40	800	70%	20.00	6.00	8.57	1.07	20.40
Right Wall	800	100%	15.00	1.00	1.00	0.13	20.40	800	100%	15.00	1.00	1.00	0.13	20.40	800	70%	15.00	1.00	1.43	0.18	20.40
Front Wall	800	100%	21.00	7.00	7.00	0.88	20.40	800	100%	21.00	7.00	7.00	0.88	20.40	800	70%	21.00	7.00	10.00	1.25	20.40
Bench	600	100%	20.00	6.00	6.00	1.00	20.40	600	100%	20.00	6.00	6.00	1.00	20.40	600	70%	20.00	6.00	8.57	1.43	20.40

Isotope	**Cs-137**							**Am-241**													
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Howitzer Floor	600	100%	23.00	9.00	9.00	1.50	20.40	600	100%	23.00	9.00	9.00	1.50	20.40							
Left Wall	800	100%	16.00	2.00	2.00	0.25	20.40	800	100%	16.00	2.00	2.00	0.25	20.40							
Back Wall	800	100%	20.00	6.00	6.00	0.75	20.40	800	100%	20.00	6.00	6.00	0.75	20.40							
Right Wall	800	100%	15.00	1.00	1.00	0.13	20.40	800	100%	15.00	1.00	1.00	0.13	20.40							
Front Wall	800	100%	21.00	7.00	7.00	0.88	20.40	800	100%	21.00	7.00	7.00	0.88	20.40							
Bench	600	100%	20.00	6.00	6.00	1.00	20.40	600	100%	20.00	6.00	6.00	1.00	20.40							

Laboratory Survey Data

Decommission Date: 3/24/2017 Lab Number: A442

Investigator: PETERBECK Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	HOWITZER FLOOR	600	23	50
2	LEFT WALL	800	16	50
3	BACK WALL	800	20	50
4	RIGHT WALL	800	15	50
5	FRONT WALL	800	21	50
6	BENCH	600	20	50
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	50
Liquid Scintillation Counter	PACKARD	04130316	14

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FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DETENBECK	Department: PHYSICS
Laboratory Number: A443	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/24/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{22}Na ^{60}Co ^{133}Ba ^{137}Cs ^{241}Am
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	140715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	Cr-51	^{22}Na	^{60}Co	^{133}Ba	^{137}Cs	^{241}Am
Area Survey			14.0%	1.4%						
Wipe Test						100.0%	100.0%	70.0%	100.0%	100.0%

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Detenbeck
Room Number	A443
Building	Cook
Authorized Radionuclides	Na-22,Co-60,Ba-133,Cs-137,Am-241
Date Decommissioned	3/24/2017

Isotope	**Na-22**							**Co-60**							**Ba-133**						
Background	**14.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Left Floor	800	100%	24.00	10.00	10.00	1.25	20.40	800	100%	24.00	10.00	10.00	1.25	20.40	800	70%	24.00	10.00	14.29	1.79	20.40
Right Floor	800	100%	21.00	7.00	7.00	0.88	20.40	800	100%	21.00	7.00	7.00	0.88	20.40	800	70%	21.00	7.00	10.00	1.25	20.40
Left Wall	1000	100%	17.00	3.00	3.00	0.30	20.40	1000	100%	17.00	3.00	3.00	0.30	20.40	1000	70%	17.00	3.00	4.29	0.43	20.40
Right Wall	1000	100%	25.00	11.00	11.00	1.10	20.40	1000	100%	25.00	11.00	11.00	1.10	20.40	1000	70%	25.00	11.00	15.71	1.57	20.40
Front Wall	1000	100%	33.00	19.00	19.00	1.90	20.40	1000	100%	33.00	19.00	19.00	1.90	20.40	1000	70%	33.00	19.00	27.14	2.71	20.40
Back Wall	1000	100%	21.00	7.00	7.00	0.70	20.40	1000	100%	21.00	7.00	7.00	0.70	20.40	1000	70%	21.00	7.00	10.00	1.00	20.40

Isotope	**Cs-137**							**Am-241**													
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Left Floor	800	100%	24.00	10.00	10.00	1.25	20.40	800	100%	24.00	10.00	10.00	1.25	20.40							
Right Floor	800	100%	21.00	7.00	7.00	0.88	20.40	800	100%	21.00	7.00	7.00	0.88	20.40							
Left Wall	1000	100%	17.00	3.00	3.00	0.30	20.40	1000	100%	17.00	3.00	3.00	0.30	20.40							
Right Wall	1000	100%	25.00	11.00	11.00	1.10	20.40	1000	100%	25.00	11.00	11.00	1.10	20.40							
Front Wall	1000	100%	33.00	19.00	19.00	1.90	20.40	1000	100%	33.00	19.00	19.00	1.90	20.40							
Back Wall	1000	100%	21.00	7.00	7.00	0.70	20.40	1000	100%	21.00	7.00	7.00	0.70	20.40							

Laboratory Survey Data

Decommission Date: 3/24/2017 **Lab Number:** A443

Investigator: DETENBECK **Building:** COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	LEFT FLOOR	800	24	50
2	RIGHT FLOOR	800	21	50
3	LEFT WALL	1000	17	50
4	RIGHT WALL	1000	25	50
5	FRONT WALL	1000	33	50
6	BACK WALL	1000	21	50
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	50
Liquid Scintillation Counter	PACKARD	04130316	14

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170327_0958
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170327_0958\20170327_0958.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	4	9	4	430.94	A445
2	1.00	2	8	5	675.09	A445
3	1.00	10	10	0	21.51	A445
4	1.00	2	8	4	396.81	A445
5	1.00	3	11	4	309.76	A445
6	1.00	4	6	4	670.49	A445
7	1.00	8	7	3	361.34	A445
8	1.00	7	11	5	396.85	A442
9	1.00	7	4	5	662.16	A442
10	1.00	3	15	2	299.03	A442
11	1.00	7	7	1	703.88	A442
12	1.00	5	15	1	287.15	A442
13	1.00	9	6	5	484.06	A442
14	1.00	8	10	6	332.46	A443
15	1.00	8	8	5	442.11	A443

16	1.00	4	7	6	1124.91	A443
17	1.00	7	11	7	570.06	A443
18	1.00	13	13	7	358.91	A443
19	1.00	3	13	5	281.97	A443
20	1.00	4	9	4	541.77	A434
21	1.00	7	6	4	783.56	A434
22	1.00	5	10	6	432.62	A434
23	1.00	7	7	1	331.83	A434
24	1.00	3	13	2	465.13	A434
25	1.00	7	17	3	265.00	A434
26	1.00	8	9	8	716.25	A434
27	1.00	5	8	4	369.33	A434
28	1.00	7	10	1	69.10	A434
29	1.00	5	5	11	462.58	A420
30	1.00	4	4	4	468.72	A420
31	1.00	8	11	5	385.77	A420
32	1.00	8	12	4	363.47	A420
33	1.00	9	4	9	480.09	A420
34	1.00	12	3	4	337.21	A420
35	1.00	8	7	4	110.36	A420
36	1.00	6	11	6	592.45	A420
37	1.00	7	10	2	532.06	A420
38	1.00	6	6	2	542.12	BACKGROUND

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FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DETENBECK	Department: PHYSICS
Laboratory Number: A445	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/24/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{22}Na ^{60}Co ^{133}Ba ^{137}Cs ^{241}Am Pu-Be
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155931
Wipe Test	PACKARD TRI-CARB	0413031G	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	^{22}Na	^{60}Co	^{133}Ba	^{137}Cs	^{241}Am	Pu-Be
Area Survey			14.0%	1.4%						
Wipe Test					100.0%	100.0%	70.0%	100.0%	100.0%	

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator Detenbeck
Room Number A445
Building Cook
Authorized Radionuclides Na-22,Co-60,Ba-133,Cs-137,Am-241,Pu-Be
Date Decommissioned 3/24/2017

Isotope	Na-22							Co-60							Ba-133						
Background	14.00																				
Area	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity
Left Floor	1600	100%	17.00	3.00	3.00	0.19	20.40	1600	100%	17.00	3.00	3.00	0.19	20.40	1600	70%	17.00	3.00	4.29	0.27	20.40
Right Floor	1600	100%	15.00	1.00	1.00	0.06	20.40	1600	100%	15.00	1.00	1.00	0.06	20.40	1600	70%	15.00	1.00	1.43	0.09	20.40
Left Wall	1200	100%	20.00	6.00	6.00	0.50	20.40	1200	100%	20.00	6.00	6.00	0.50	20.40	1200	70%	20.00	6.00	8.57	0.71	20.40
Back Wall	1200	100%	14.00	0.00	0.00	0.00	20.40	1200	100%	14.00	0.00	0.00	0.00	20.40	1200	70%	14.00	0.00	0.00	0.00	20.40
Right Wall	1200	100%	18.00	4.00	4.00	0.33	20.40	1200	100%	18.00	4.00	4.00	0.33	20.40	1200	70%	18.00	4.00	5.71	0.48	20.40
Front Wall	1200	100%	14.00	0.00	0.00	0.00	20.40	1200	100%	14.00	0.00	0.00	0.00	20.40	1200	70%	14.00	0.00	0.00	0.00	20.40
Vent	300	100%	18.00	4.00	4.00	1.33	20.40	300	100%	18.00	4.00	4.00	1.33	20.40	300	70%	18.00	4.00	5.71	1.90	20.40

Isotope	Cs-137							Am-241													
Area	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity
Left Floor	1600	100%	17.00	3.00	3.00	0.19	20.40	1600	100%	17.00	3.00	3.00	0.19	20.40							
Right Floor	1600	100%	15.00	1.00	1.00	0.06	20.40	1600	100%	15.00	1.00	1.00	0.06	20.40							
Left Wall	1200	100%	20.00	6.00	6.00	0.50	20.40	1200	100%	20.00	6.00	6.00	0.50	20.40							
Back Wall	1200	100%	14.00	0.00	0.00	0.00	20.40	1200	100%	14.00	0.00	0.00	0.00	20.40							
Right Wall	1200	100%	18.00	4.00	4.00	0.33	20.40	1200	100%	18.00	4.00	4.00	0.33	20.40							
Front Wall	1200	100%	14.00	0.00	0.00	0.00	20.40	1200	100%	14.00	0.00	0.00	0.00	20.40							
Vent	300	100%	18.00	4.00	4.00	1.33	20.40	300	100%	18.00	4.00	4.00	1.33	20.40							

Laboratory Survey Data

Decommission Date: 3/24/2017 Lab Number: A445

Investigator: DETENBECK Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	LEFT FLOOR	1600	17	50
2	RIGHT FLOOR	1600	15	50
3	LEFT WALL	1200	20	50
4	BACK WALL	1200	14	50
5	RIGHT WALL	1200	18	50
6	FRONT WALL	1200	14	50
7	VENT	300	18	50
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	50
Liquid Scintillation Counter	PACKARD	04130316	14

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170327_0958
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170327_0958\20170327_0958.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	4	9	4	430.94	A445
2	1.00	2	8	5	675.09	A445
3	1.00	10	10	0	21.51	A445
4	1.00	2	8	4	396.81	A445
5	1.00	3	11	4	309.76	A445
6	1.00	4	6	4	670.49	A445
7	1.00	8	7	3	361.34	A445
8	1.00	7	11	5	396.85	A442
9	1.00	7	4	5	662.16	A442
10	1.00	3	15	2	299.03	A442
11	1.00	7	7	1	703.88	A442
12	1.00	5	15	1	287.15	A442
13	1.00	9	6	5	484.06	A442
14	1.00	8	10	6	332.46	A443
15	1.00	8	8	5	442.11	A443

The UNIVERSITY of VERMONT
Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DETENBECK	Department: PHYSICS
Laboratory Number: A44B	Building: COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	Decommission Date: 3/30/2017
From: RON KIMBALL	Decommissioned By: TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{22}Na ^{60}Co ^{133}Ba ^{137}Cs ^{241}Am
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	^{22}Na	^{60}Co	^{133}Ba	^{137}Cs	^{241}Am	
Area Survey			14.0%	1.4%						
Wipe Test					100.0%	100.0%	70.0%	100.0%	100.0%	

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator Detenbeck
Room Number A448
Building Cook
Authorized Radionuclides Na-22,Co-60,8a-133,Cs-137,Am-241
Date Decommissioned 3/30/2017

Isotope	Na-22							Co-60							Ba-133						
Background	24.00																				
Area	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity
Main Bench	1200	100%	22.00	0.00	0.00	0.00	25.78	1200	100%	22.00	0.00	0.00	0.00	25.78	1200	70%	22.00	0.00	0.00	0.00	25.78
Sink	300	100%	16.00	0.00	0.00	0.00	25.78	300	100%	16.00	0.00	0.00	0.00	25.78	300	70%	16.00	0.00	0.00	0.00	25.78
Middle Table	800	100%	23.00	0.00	0.00	0.00	25.78	800	100%	23.00	0.00	0.00	0.00	25.78	800	70%	23.00	0.00	0.00	0.00	25.78
Back table	800	100%	22.00	0.00	0.00	0.00	25.78	800	100%	22.00	0.00	0.00	0.00	25.78	800	70%	22.00	0.00	0.00	0.00	25.78
Left Floor	1200	100%	26.00	2.00	2.00	0.17	25.78	1200	100%	26.00	2.00	2.00	0.17	25.78	1200	70%	26.00	2.00	2.86	0.24	25.78
Middle Floor	1200	100%	19.00	0.00	0.00	0.00	25.78	1200	100%	19.00	0.00	0.00	0.00	25.78	1200	70%	19.00	0.00	0.00	0.00	25.78
Back Floor	1200	100%	23.00	0.00	0.00	0.00	25.78	1200	100%	23.00	0.00	0.00	0.00	25.78	1200	70%	23.00	0.00	0.00	0.00	25.78
Walls	1600	100%	11.00	0.00	0.00	0.00	25.78	1600	100%	11.00	0.00	0.00	0.00	25.78	1600	70%	11.00	0.00	0.00	0.00	25.78

Isotope	Cs-137							Am-241													
Area	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity	CM2	Efficency	CPM	Net CPM	DPM	DPM/100 CM2	Min Det Activity
Main Bench	1200	100%	22.00	0.00	0.00	0.00	25.78	1200	100%	22.00	0.00	0.00	0.00	25.78							
Sink	300	100%	16.00	0.00	0.00	0.00	25.78	300	100%	16.00	0.00	0.00	0.00	25.78							
Middle Table	800	100%	23.00	0.00	0.00	0.00	25.78	800	100%	23.00	0.00	0.00	0.00	25.78							
Back table	800	100%	22.00	0.00	0.00	0.00	25.78	800	100%	22.00	0.00	0.00	0.00	25.78							
Left Floor	1200	100%	26.00	2.00	2.00	0.17	25.78	1200	100%	26.00	2.00	2.00	0.17	25.78							
Middle Floor	1200	100%	19.00	0.00	0.00	0.00	25.78	1200	100%	19.00	0.00	0.00	0.00	25.78							
Back Floor	1200	100%	23.00	0.00	0.00	0.00	25.78	1200	100%	23.00	0.00	0.00	0.00	25.78							
Walls	1600	100%	11.00	0.00	0.00	0.00	25.78	1600	100%	11.00	0.00	0.00	0.00	25.78							

Laboratory Survey Data

Decommission Date: 3/30/2017 **Lab Number:** A448

Investigator: DETENBECK **Building:** COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	MAIN BENCH	1200	22	60
2	SINK	300	16	60
3	MIDDLE TABLE	800	23	60
4	BACK TABLE	800	22	60
5	LEFT FLOOR	1200	26	60
6	MIDDLE FLOOR	1200	19	60
7	BACK FLOOR	1200	23	60
8	WALLS	1600	11	60
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	60
Liquid Scintillation Counter	PACKARD	04130316	24

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170331_1348
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170331_1348\20170331_1348.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	4	6	4	443.35	A449
2	1.00	4	13	4	374.69	A449
3	1.00	8	5	6	323.58	A449
4	1.00	10	13	4	314.92	A449
5	1.00	11	7	2	341.28	A449
6	1.00	7	9	3	470.43	A449
7	1.00	5	8	5	582.62	A449
8	1.00	6	13	1	200.82	A449
9	1.00	10	7	5	209.53	A446
10	1.00	6	6	4	427.26	A446
11	1.00	5	12	6	595.40	A446
12	1.00	7	11	4	215.57	A446
13	1.00	10	11	5	195.26	A446
14	1.00	5	8	6	662.60	A446
15	1.00	11	9	3	293.54	A446

16	1.00	3	5	3	593.98	A118
Missing vial 17.						
18	1.00	6	13	5	365.01	BACKGROUND

The UNIVERSITY of VERMONT
Radiation Safety Office

Radiation Safety Office
004 Rowell Building, 106 Carrigan Drive
Burlington, Vermont 05405-0068
Phone (802) 656-2570 Fax (802) 656-8876

FINAL INSPECTION FOR DECOMMISSIONED LABORATORIES

Investigator: DETENBECK	**Department:** PHYSICS
Laboratory Number: A449	**Building:** COOK PHYSICAL SCIENCES
Laboratory Status: HANDLING	**Decommission Date:** 3/30/2017
From: RON KIMBALL	**Decommissioned By:** TOM KELLOGG RON KIMBALL

Radionuclide Inventory

Authorized Radionuclides	^{22}Na ^{60}Co ^{133}Ba ^{137}Cs ^{241}Am
Radionuclides Present at Decommissioning	NO RADIOACTIVE MATERIALS

Instruments Used

Survey Type	Model	Serial No.	Probe Model	Probe Serial No.
Area Survey	LUDLUM 3	149715	44-9	155931
Wipe Test	PACKARD TRI-CARB	04130316	NA	NA

Detector Efficiencies

Radionuclide	H-3	C-14	P-32	S-35	^{22}Na	^{60}Co	^{133}Ba	^{137}Cs	^{241}Am	
Area Survey			14.0%	1.4%						
Wipe Test					100.0%	100.0%	70.0%	100.0%	100.0%	

Items Inspected

- ☑ No "Caution Radioactive Materials Signs on Doors
- ☑ No Radiation Labels Present In Lab Or On Any Equipment
- ☑ No Posting of Emergency Procedures in Lab
- ☑ No Significant Contamination Found With Area Survey
- ☑ No Significant Contamination Found With Wipe Tests
- ☑ No Radioactive Materials Stored In Laboratory
- ☑ All Stock Vials Disposed Or Received By RSO
- ☑ All Inventory Log Sheets Returned To RSO
- ☑ All Radioactive Research Materials Received By RSO
- ☑ No Radioactive Waste Containers Present In Laboratory
- ☑ Access Data Base Updated To Reflect Decommissioning
- ☑ Access Data Base Updated To Reflect Personnel Changes

Radiation Safety Office Comments: DECOMMISSIONING of COOK PHYSICAL SCIENCES BUILDING

- Please inform the Radiation Safety Office of any plans to use this lab for radioactive materials work in the future. The Radiation Safety Office must officially re-commission the lab for any future radioactive material handling or storage. Call 656-2570 or visit the Radiation Safety Office located in 004 Rowell.

Investigator	Detenbeck
Room Number	A449
Building	Cook
Authorized Radionuclides	Na-22,Co-60,Ba-133,Cs-137,Am-241
Date Decommissioned	3/30/2017

Isotope	**Na-22**							**Co-60**							**Ba-133**						
Background	**24.00**																				
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Bench	1000	100%	14.00	0.00	0.00	0.00	25.78	1000	100%	14.00	0.00	0.00	0.00	25.78	1000	70%	14.00	0.00	0.00	0.00	25.78
Floor Sink	400	100%	21.00	0.00	0.00	0.00	25.78	400	100%	21.00	0.00	0.00	0.00	25.78	400	70%	21.00	0.00	0.00	0.00	25.78
Sink	300	100%	19.00	0.00	0.00	0.00	25.78	300	100%	19.00	0.00	0.00	0.00	25.78	300	70%	19.00	0.00	0.00	0.00	25.78
Table	600	100%	27.00	3.00	3.00	0.50	25.78	600	100%	27.00	3.00	3.00	0.50	25.78	600	70%	27.00	3.00	4.29	0.71	25.78
Cabinets	800	100%	20.00	0.00	0.00	0.00	25.78	800	100%	20.00	0.00	0.00	0.00	25.78	800	70%	20.00	0.00	0.00	0.00	25.78
Left Floor	1200	100%	19.00	0.00	0.00	0.00	25.78	1200	100%	19.00	0.00	0.00	0.00	25.78	1200	70%	19.00	0.00	0.00	0.00	25.78
Right Floor	1200	100%	18.00	0.00	0.00	0.00	25.78	1200	100%	18.00	0.00	0.00	0.00	25.78	1200	70%	18.00	0.00	0.00	0.00	25.78
Walls	1600	100%	20.00	0.00	0.00	0.00	25.78	1600	100%	20.00	0.00	0.00	0.00	25.78	1600	70%	20.00	0.00	0.00	0.00	25.78

Isotope	**Cs-137**							**Am-241**													
Area	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**	**CM2**	**Efficency**	**CPM**	**Net CPM**	**DPM**	**DPM/100 CM2**	**Min Det Activity**
Bench	1000	100%	14.00	0.00	0.00	0.00	25.78	1000	100%	14.00	0.00	0.00	0.00	25.78							
Floor Sink	400	100%	21.00	0.00	0.00	0.00	25.78	400	100%	21.00	0.00	0.00	0.00	25.78							
Sink	300	100%	19.00	0.00	0.00	0.00	25.78	300	100%	19.00	0.00	0.00	0.00	25.78							
Table	600	100%	27.00	3.00	3.00	0.50	25.78	600	100%	27.00	3.00	3.00	0.50	25.78							
Cabinets	800	100%	20.00	0.00	0.00	0.00	25.78	800	100%	20.00	0.00	0.00	0.00	25.78							
Left Floor	1200	100%	19.00	0.00	0.00	0.00	25.78	1200	100%	19.00	0.00	0.00	0.00	25.78							
Right Floor	1200	100%	18.00	0.00	0.00	0.00	25.78	1200	100%	18.00	0.00	0.00	0.00	25.78							
Walls	1600	100%	20.00	0.00	0.00	0.00	25.78	1600	100%	20.00	0.00	0.00	0.00	25.78							

Laboratory Survey Data

Decommission Date: 3/30/2017 Lab Number: A449

Investigator: DETENBECK Building: COOK PHYSICAL SCIENCES

Location Number	Location Description	Survey Area (cm^2)	Wipe Test (cpm)	Area Survey (max cpm)
1	BENCH	1000	14	60
2	FLOOR SINK	400	21	60
3	SINK	300	19	60
4	TABLE	600	27	60
5	CABINETS	800	20	60
6	LEFT FLOOR	1200	19	60
7	RIGHT FLOOR	1200	18	60
8	WALLS	1600	20	60
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Instruments Used

Instrument	Model	Serial Number	Background (cpm)
Geiger Mueller Survey Meter	LUDLUM	149715	60
Liquid Scintillation Counter	PACKARD	04130316	24

Assay Definition

Assay Description:
Wipe Test
Assay Type: CPM
Report Name: Report1
Output Data Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170331_1348
Raw Results Path: C:\Packard\Tricarb\Results\Default\Wipe Test RSO\20170331_1348\20170331_1348.results
Assay File Name: C:\Packard\TriCarb\Assays\Wipe Test RSO.lsa

Count Conditions

Nuclide: 3H-14C-32P
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set: n/a
Count Time (min): 1.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract

Background Subtract: Off
Low CPM Threshold: Off
2 Sigma % Terminator: Off

Regions	LL	UL
A	0.0	12.0
B	12.0	156.0
C	156.0	1700.0

Count Corrections

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

Cycle 1 Results

S#	Count Time	CPMA	CPMB	CPMC	SIS	MESSAGES
1	1.00	4	6	4	443.35	A449
2	1.00	4	13	4	374.69	A449
3	1.00	8	5	6	323.58	A449
4	1.00	10	13	4	314.92	A449
5	1.00	11	7	2	341.28	A449
6	1.00	7	9	3	470.43	A449
7	1.00	5	8	5	582.62	A449
8	1.00	6	13	1	200.82	A449
9	1.00	10	7	5	209.53	A446
10	1.00	6	6	4	427.26	A446
11	1.00	5	12	6	595.40	A446
12	1.00	7	11	4	215.57	A446
13	1.00	10	11	5	195.26	A446
14	1.00	5	8	6	662.60	A446
15	1.00	11	9	3	293.54	A446

NRC FORM 532
(05-2016)

U.S. NUCLEAR REGULATORY COMMISSION

ACKNOWLEDGEMENT - RECEIPT OF CORRESPONDENCE

Name and Address of Applicant and/or Licensee

The University of Vermont and State
Agriculture College
ATTN: Thomas J. Gustafson, VP for University
Relations & Administration
Radiation Safety Office, 004 Rowell Building
106 Carrigan Drive
Burlington, VT 05405

Date
October 5, 2017

License Number(s)
44-00728-13

Mail Control Number(s)
601350

Licensing and/or Technical Reviewer or Branch
Commercial, Industrial, R&D, & Academic Branch (Branch 2)

This is to acknowledge receipt of your: ☑ **Letter and/or** ☐ **Application** **Dated:** 09/25/2017

The initial processing, which included an administrative review, has been performed.

☑ **Amendment** ☐ **Termination** ☐ **New License** ☐ **Renewal**

☑ **There were no administrative omissions identified during our initial review.**

☐ **This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.**

☐ **Your application for a new NRC license did not include your taxpayer identification number. Please complete and submit NRC Form 531, Request for Taxpayer Identification Number, located at the following link:** http://www.nrc.gov/reading-rm/doc-collections/forms/nrc531.pdf

Follow the instructions on the form for submission.

☐ **The following administrative omissions have been identified:**

Your application has been assigned the above listed MAIL CONTROL NUMBER. When calling to inquire about this action, please refer to this control number. Your application has been forwarded to a technical reviewer. Please note that the technical review, which is normally completed within 180 days for a renewal application (90 days for all other requests), may identify additional omissions or require additional information. If you have any questions concerning the processing of your application, our contact information is listed below:

Region I
U. S. Nuclear Regulatory Commission
Division of Nuclear Materials Safety
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(610) 337-5260, (610) 337-5313,
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