



27 June 2013

SWAB REPORT # 683

SWAB DATE: 19 June 2013

R/V Endeavor & rad vans

James D. Happell

Distribution:
SWAB Committee
William Fanning

COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for ^3H and ^{14}C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (dpm m^2)	Recommendations
A	<500	<50	No action
B*	500-10,000	50-10,000	Needs cleaning before any natural tracer work. Decks in radiation vans with activities above 1000 dpm/m^2 should be cleaned.
C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: ^{14}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

^{14}C : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}\text{CO}_2$). Follow up with wash as if for ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

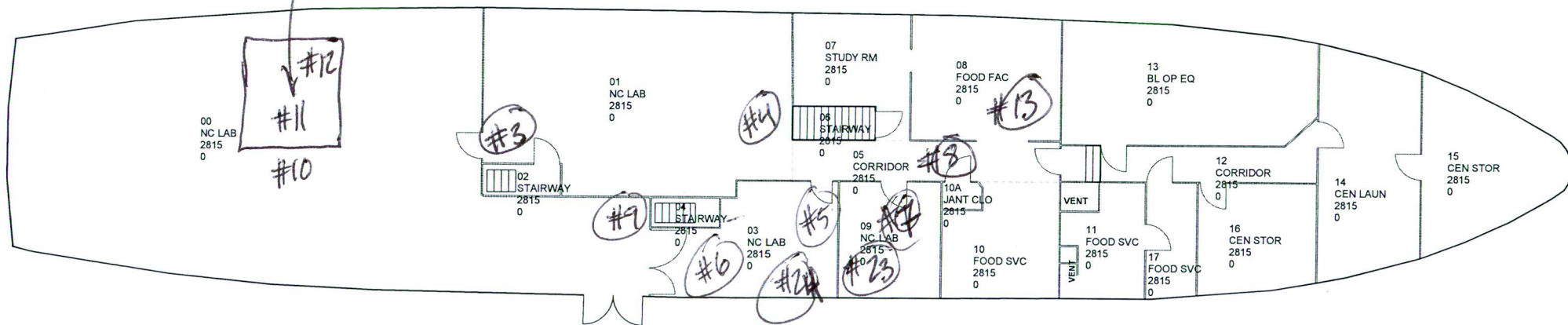
Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested on the ship were free from radioisotope activity that requires cleaning. Minor ^{14}C and ^3H contamination was found in the vans. No cleaning is necessary unless natural abundance work is to be conducted in the vans. However it is recommended that contaminated deck areas in the vans be cleaned to prevent tracking contamination into the ship.

Figure 1
SWAB 683
19 June 2013

UNOLS
isotope van (small)
on main deck.



85

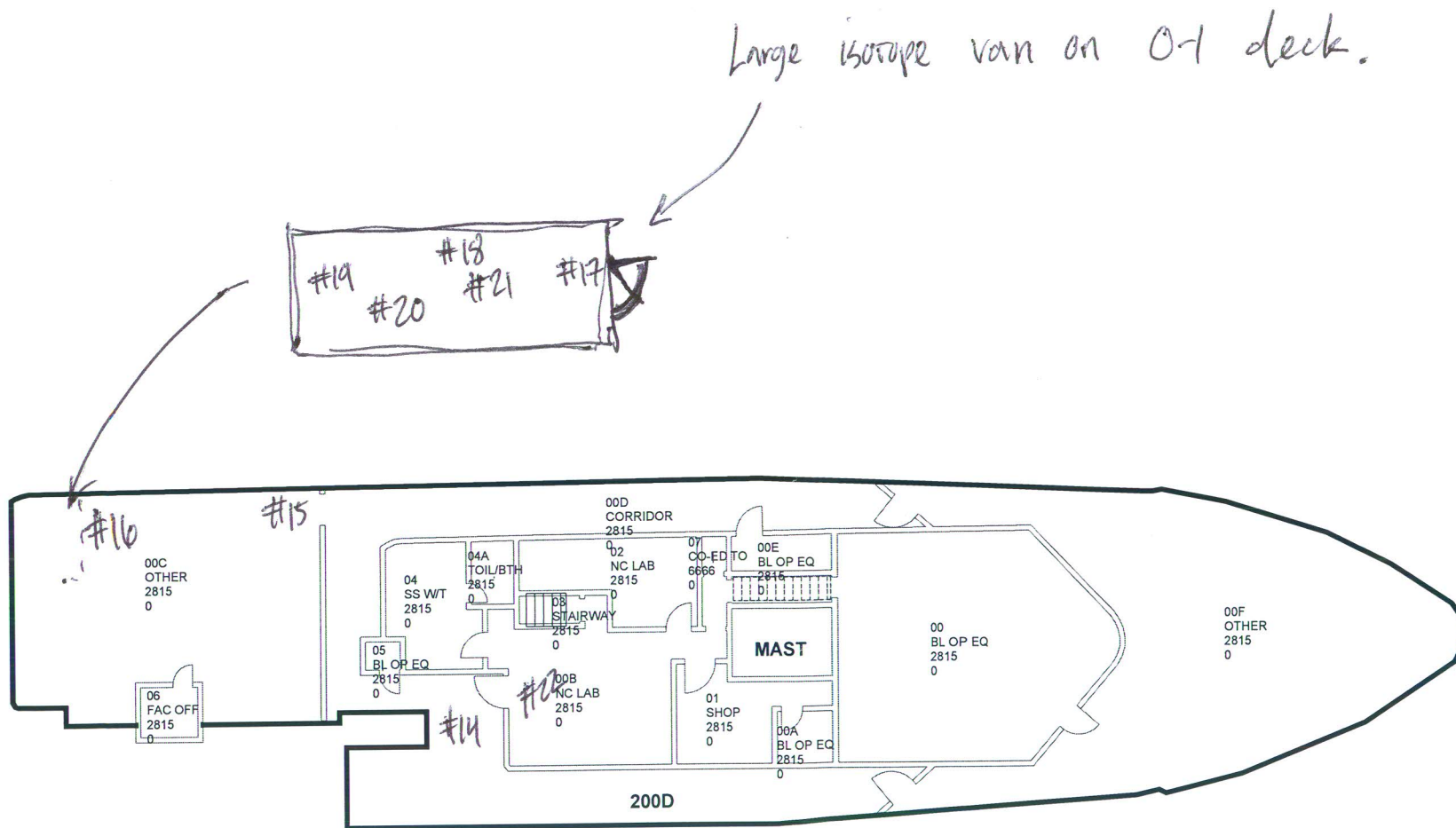
2 4

RV ENDEAVOR

MAIN/BREAK

10OCT95

Figure 2
SWAB 683
19 June 2013



85

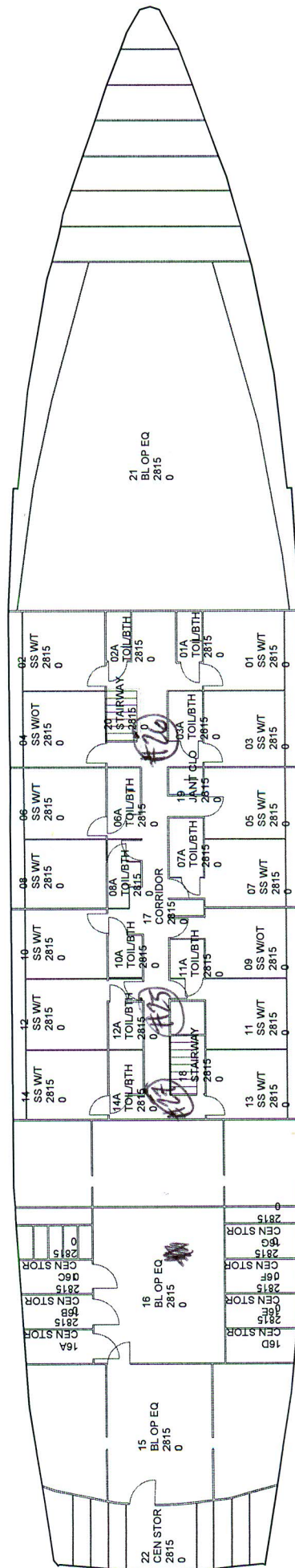
3 4

RV ENDEAVOR

WHALEBACK

10OCT95

Figure 3
 SWAB 683
 19 June 2013



85 1 4

RV ENDEAVOR

PLATFORM 10OCT95

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Tritium Laboratory
6 December 2012

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SWAB REPORT # 661

SWAB DATE: 30 November 2012

East Coast Pool Van #2408-04

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Tim Deering

COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for ^3H and ^{14}C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (dpm m^2)	Recommendations
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C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: ^{14}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

^{14}C : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}\text{CO}_2$). Follow up with wash as if for ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

REPORT FOR SWAB # 661

LOCATION: Lewes, DE
VESSEL: UNOLS Van 2408-04

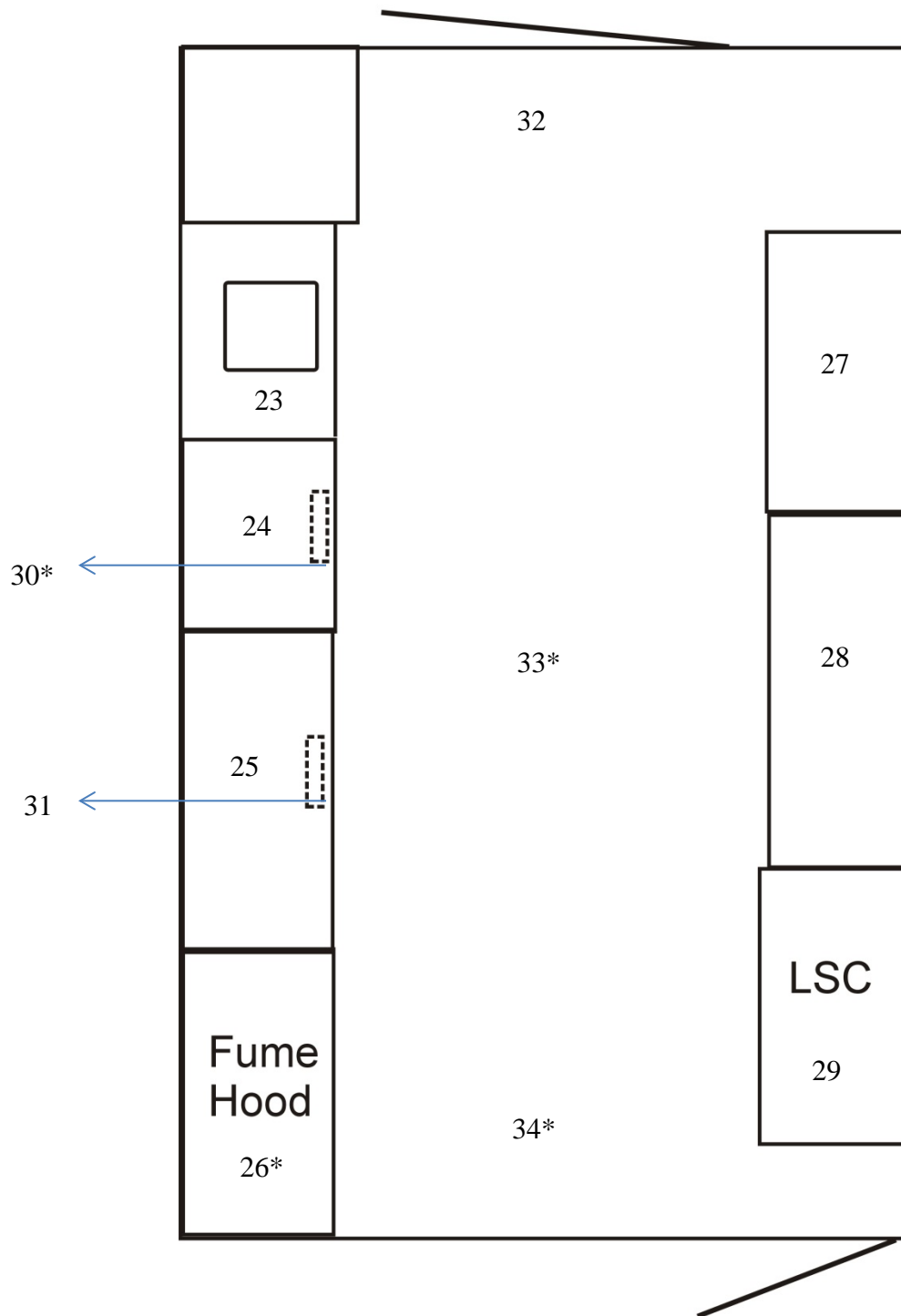
DATE: 30 November 2012
TECHNICIAN: Cecilia Roig

Sample # Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
	activity	error	activity	error
1 1st Vial Bkgnd	0	± 0	0	± 0
22 Bucket blank	0	± 0	0	± 0
23 Sink area	229	± 59	22	± 23
24 Bench top left of sink	204	± 54	47	± 30
25 Bench top right of hood	240	± 60	26	± 24
26 Inside hood	121	± 25	*439	± 49
27 Bench top across sink	19	± 30	23	± 34
28 Bench top left of LSC	47	± 48	0	± -59
29 Top of LSC	85	± 53	1	± 7
30 Inside fridge	*841	± 88	35	± 16
31 Inside freezer	157	± 54	21	± 25
32 Deck at entrance next to sink	365	± 64	63	± 29
33 Deck center of van	*1,300	± 101	*159	± 30
34 Deck at entrance next to hood	*1,282	± 102	*91	± 23
35 Bucket blank	0	± 0	0	± 0

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. Minor ³H and ¹⁴C contamination found in van. Van must be cleaned before any natural tracer work. Deck areas should be cleaned to prevent tracking contamination into ship.

UNOLS VAN 2408-04



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Tritium Laboratory

22 October 2012

SWAB REPORT # 650

SWAB DATE: 18 October 2012

East Coast Van Pool Van #2408-04

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Tim Deering

COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for ^3H and ^{14}C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (dpm m^2)	Recommendations
A	<500	<50	No action
B*	500-10,000	50-10,000	Needs cleaning before any natural tracer work. Decks in radiation vans with activities above 1000 dpm/m^2 should be cleaned.
C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: ^{14}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

^{14}C : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}\text{CO}_2$). Follow up with wash as if for ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

REPORT FOR SWAB # 650

LOCATION: Lwews, Delaware
VESSEL: Van #2408-04

DATE: 18 October 2012
TECHNICIAN: Jim Happell

Sample # Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
	activity	error	activity	error
1 1st Vial Bkgnd	0	± 0	0	± 0
2 Initial bucket blank	26	± 23	36	± 30
3 Inside freezer	144	± 38	*55	± 29
4 Inside refrigerator	61	± 32	33	± 29
5 Inside fume hood	53	± 29	47	± 31
6 Stainless bench top above refrigerator	80	± 36	33	± 28
7 Stainless bench top above freezer	72	± 32	49	± 30
8 Stainless bench top aroiund sink	47	± 30	33	± 29
9 Wooden bench top next to LSC	58	± 33	25	± 28
10 Wooden bench top across from sink	53	± 24	*86	± 33
11 Deck near double doors	481	± 58	*65	± 24
12 Center deck	*647	± 65	*105	± 27
13 Deck near single door	221	± 45	40	± 25
14 Intermediate bucket blank	15	± 24	18	± 30

Comments

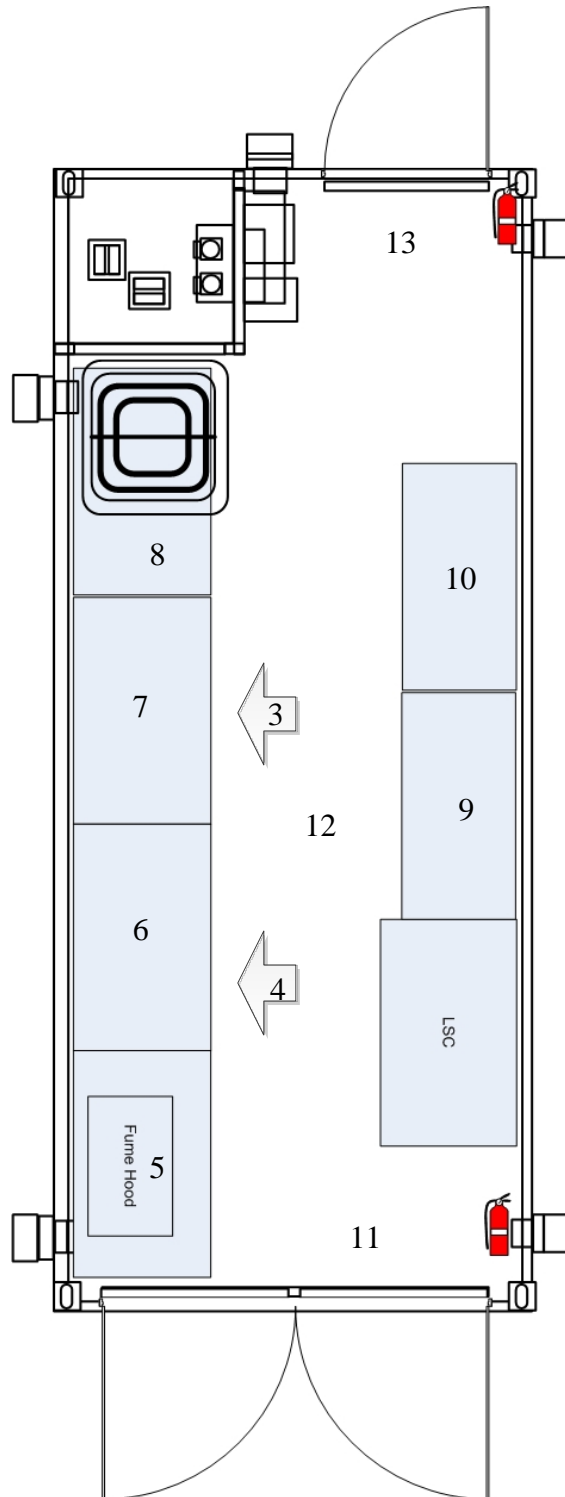
Please note that the error reported for each isotope is the two-standard deviation counting error.

Minor ³H and ¹⁴C contamination found in the van

Cleaning of deck is recommended to prevent tracking contamination out of van.

East Coast Van Pool Van #2408-04

Figure 1
SWAB #650
18 October 2012



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21 November 2011

SWAB REPORT # 610

SWAB DATE: 14 November 2011

R/V Hugh Sharp and Vans

James D. Happell

Distribution:
SWAB Committee
Tim Deering

COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for ^3H and ^{14}C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (dpm m^2)	Recommendations
A	<500	<50	No action
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C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: ^{14}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

^{14}C : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}\text{CO}_2$). Follow up with wash as if for ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D dispose in radiation waste system.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	<u>Radioisotope Van #2408-04 (see Figure 4)</u>				
34	Initial bucket blank C.O. # 2	20	± 85	0	± 0
35	Inside fume hood	43	± 39	34	± 35
36	Benchtop adjacent to sink	2	± 20	6	± 35
37	Benchtop adjacent to LSC	12	± 37	9	± 34
38	Deck at entrance near fume hood	*1266	± 106	46	± 16
39	Deck at entrance near sink	265	± 63	36	± 27
	<u>Radioisotope Van #625.5.02 (see Figure 5)</u>				
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Comments

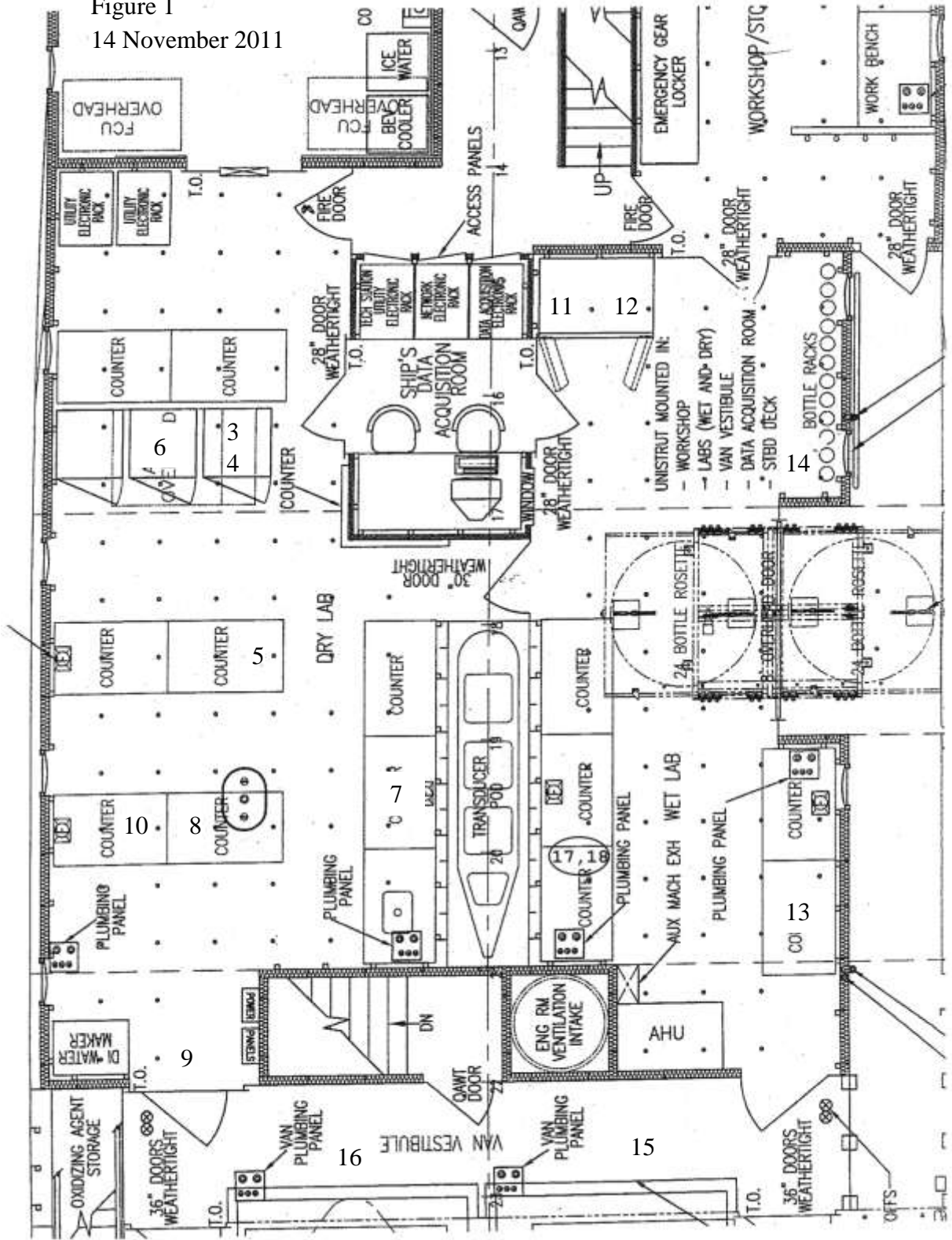
Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested on the R/V Hugh R. Sharp were free of radioisotope contamination that requires cleaning. However several samples (6, 7, 9, 13, and 16) have above background ³H suggesting that ³H has been transported from the rad van into the ship. Minor ¹⁴C and minor to moderate ³H contamination was found inside the Rad Van on the deck and around the sink area. We suggest cleaning the deck and all contaminated areas. The Shared Use Van and Rad Vans 2408-04 and 625.5.02 also had some minor ³H and/or ¹⁴C contamination on their decks. The Shared Use Van should be cleaned before any use, and we recommend that the decks of the vans 2408-04 and 635.5.02 be cleaned to help prevent tracking of contamination into the ship.

RV Hugh Sharp Lab Spaces

SWAB #610

Figure 1

14 November 2011

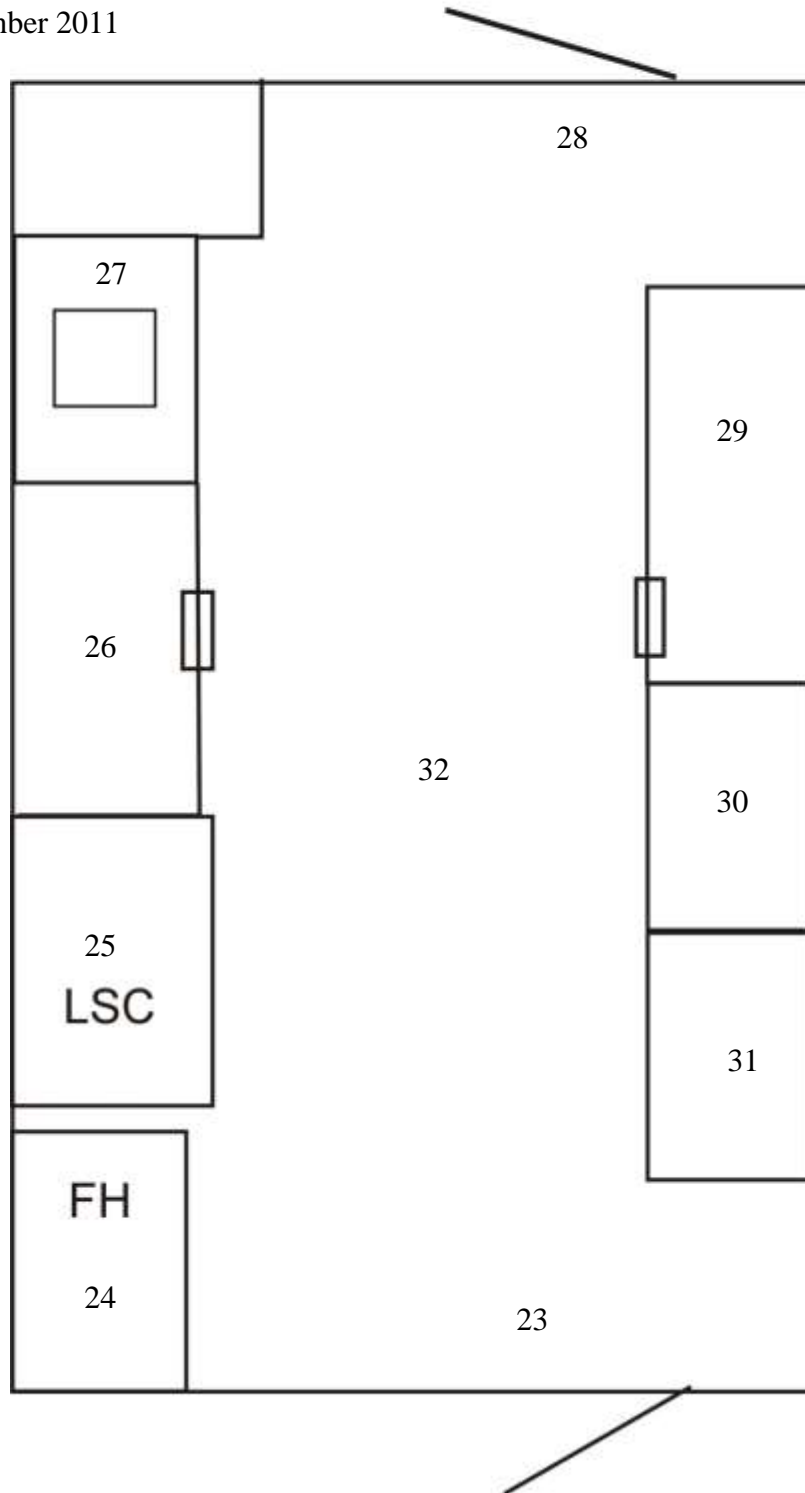


University of Delaware Radioisotope Van

SWAB #610

Figure 2

14 November 2011

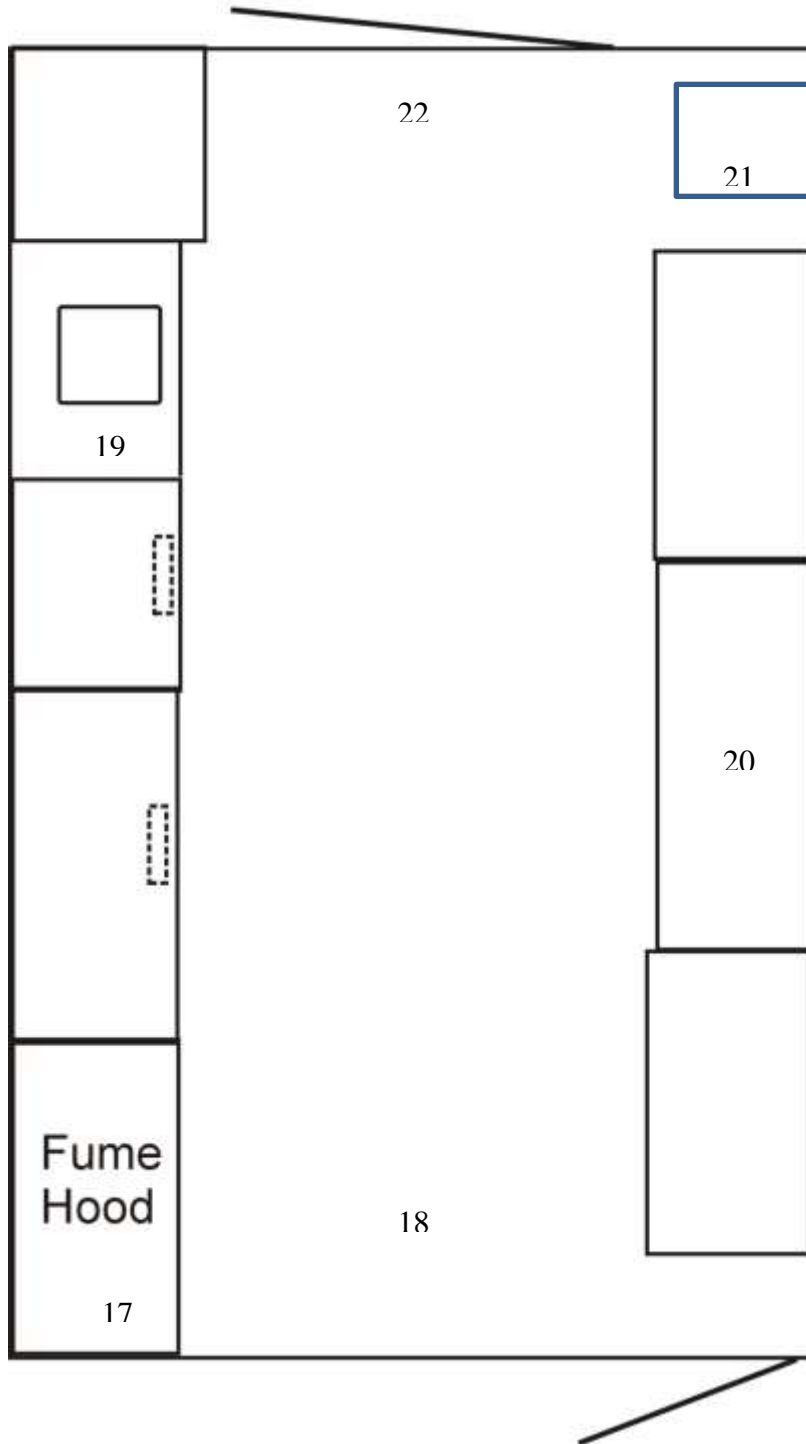


UNOLS Shared Use Van

SWAB #610

Figure 3

14 November 2011

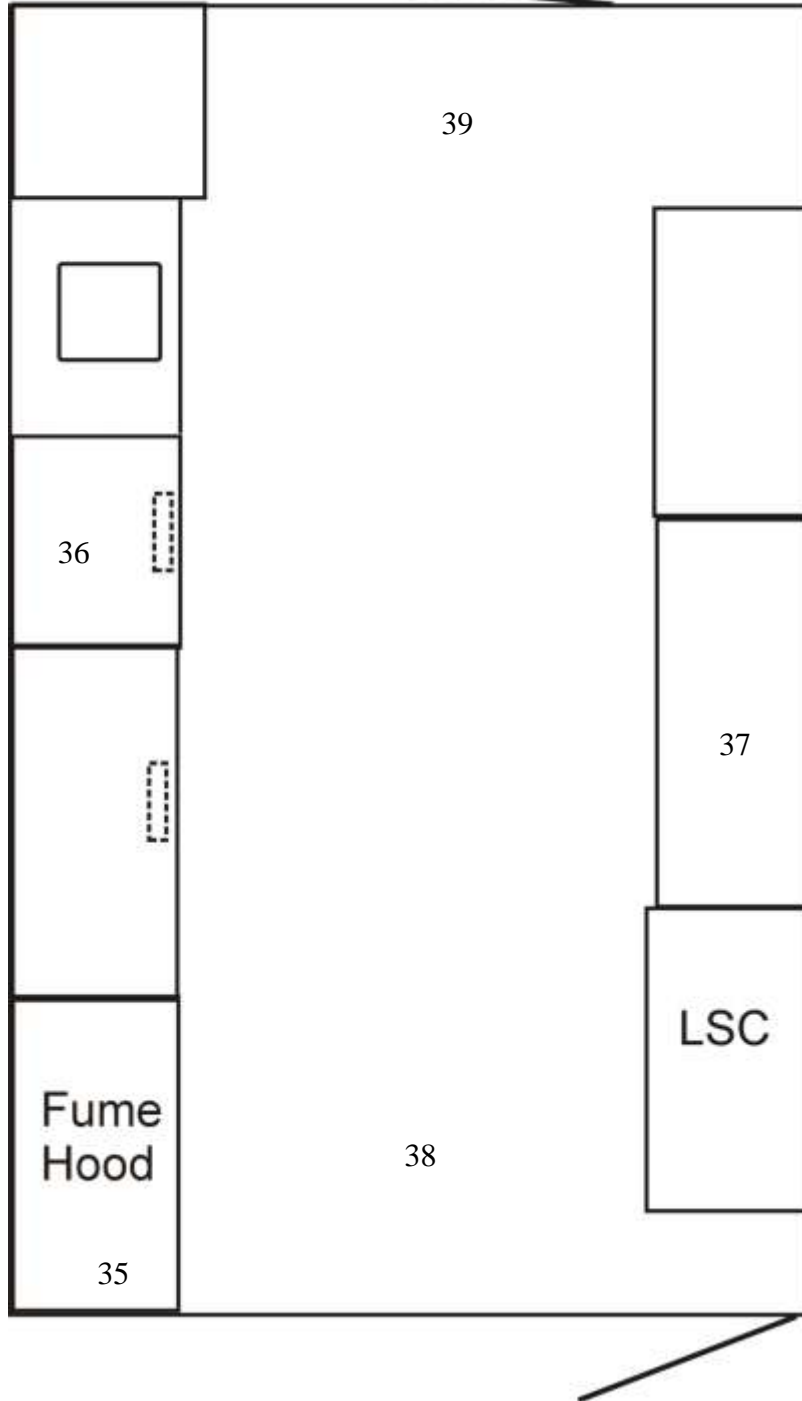


UNOLS VAN 2408-04

SWAB #610

Figure 4

14 November 2011

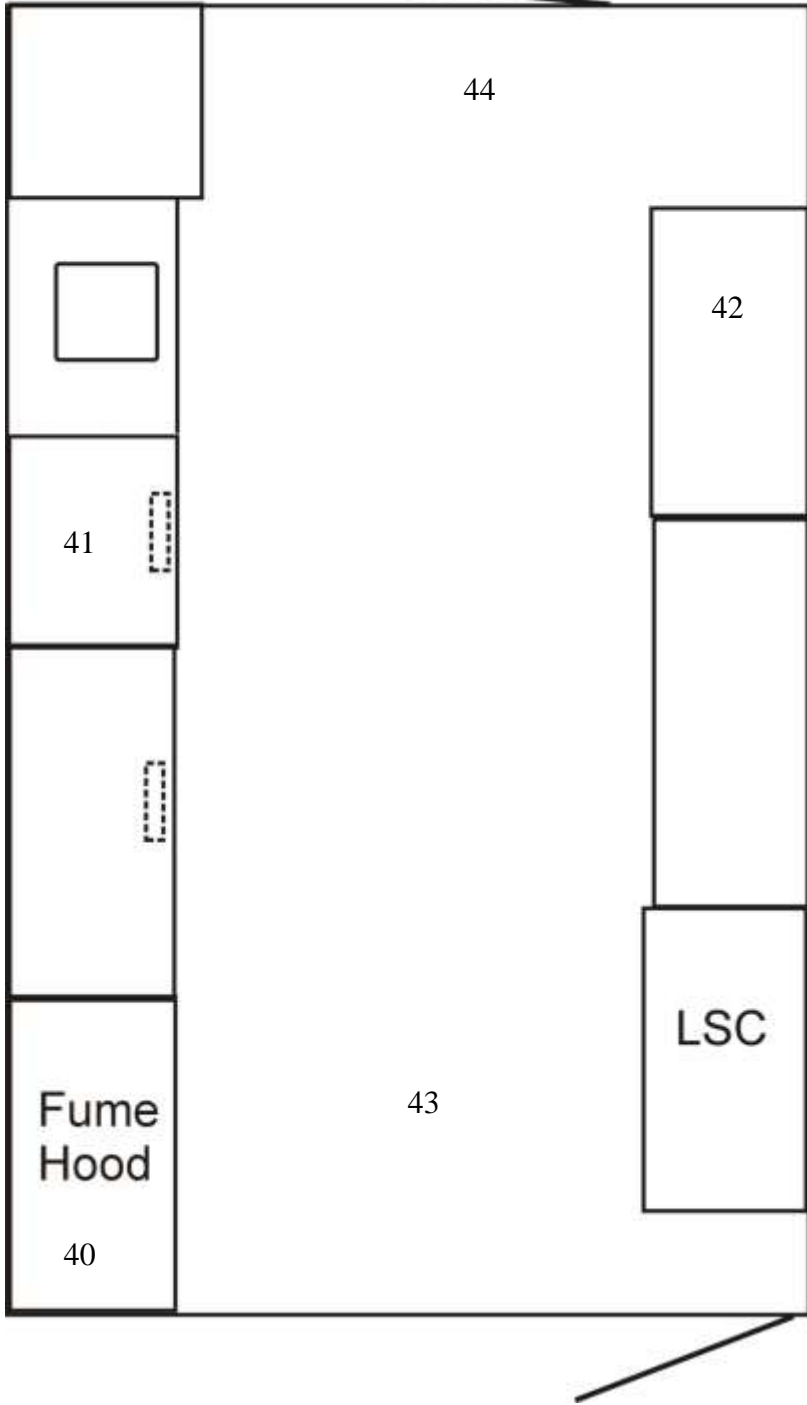


UNOLS VAN 625.5.02

SWAB #610

Figure 5

14 November 2011



Tritium Laboratory
27 July 2011

SWAB REPORT # 586

SWAB DATE: 13 July 2011

R/V Hugh R. Sharp and Vans

James D. Happell

Distribution:
SWAB Committee
Tim Deering

REPORT FOR SWAB # 586

LOCATION: Cambridge, MD; Lewes, DL
 VESSEL/LAB: *R/V Hugh R. Sharp* and Vans

DATE: 13 July 2011
 TECHNICIAN: Charlene Grall

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
<u>Main Lab (See Figure 1)</u>					
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<u>Wet Lab (See Figure 1)</u>					
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<u>General Purpose Van (See Figure 2)</u>					
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

