

UNIVERSITY OF MIAMI
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SCHOOL of MARINE &
ATMOSPHERIC SCIENCE



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Tritium Laboratory

22 October 2012

SWAB REPORT # 651

SWAB DATE: 18 October 2012

East Coast Van Pool Van #625.5.02

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 # 651

LOCATION: Lwews, Delaware
VESSEL: Van #625.5.02

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
14 Intermediate bucket blank	15	± 24	18	± 30
15 Inside freezer	41	± 31	16	± 27
16 Inside refrigerator	48	± 30	33	± 29
17 Inside fume hood	90	± 36	28	± 27
18 Stainless bench top above refrigerator	38	± 28	34	± 30
19 Stainless bench top above freezer	59	± 31	44	± 30
20 Stainless becnch top around sink	46	± 32	17	± 27
21 Wooden bench top next to LSC	40	± 29	30	± 29
22 Wooden bench top across from sink	39	± 26	42	± 30
23 Deck near double doors	82	± 31	*67	± 31
24 Center deck	59	± 31	33	± 29
25 Deck near single door	62	± 33	38	± 29
26 Intermediate bucket blank	33	± 26	31	± 30

Comments

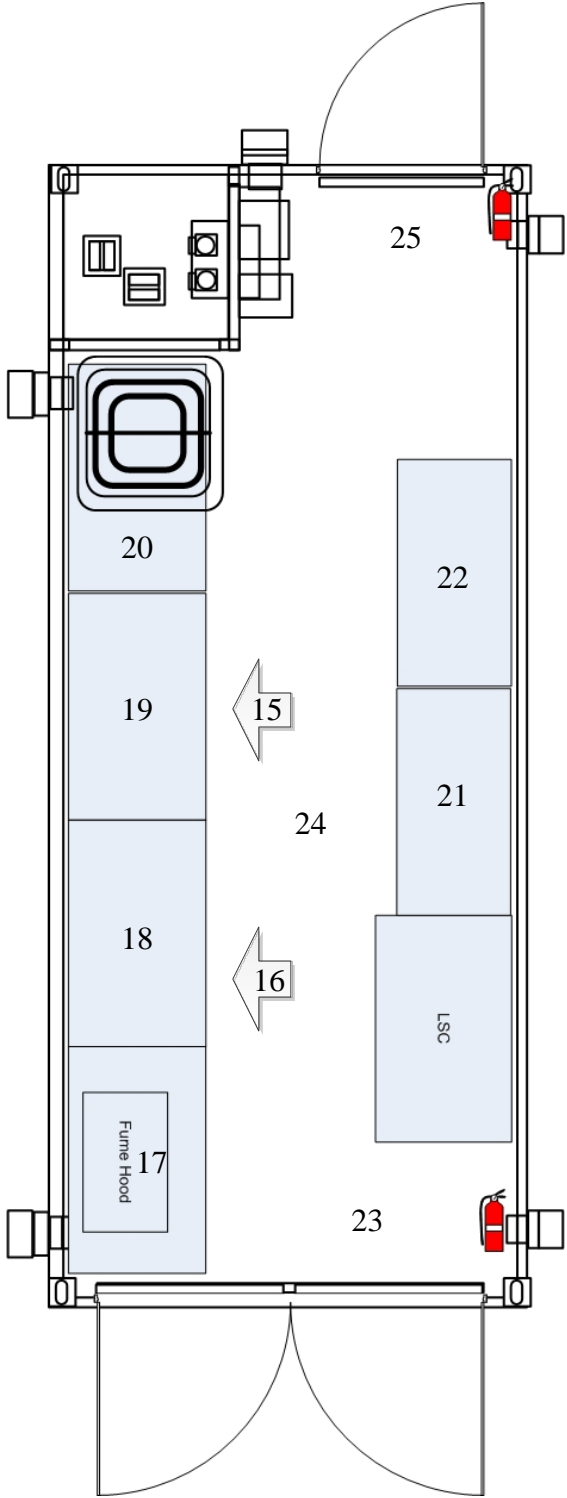
Please note that the error reported for each isotope is the two-standard deviation counting error.

Minor ¹⁴C contamination found in the van

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

East Coast Van Pool Van #625.5.02

Figure 1
SWAB #651
18 October 2012



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3 April 2012

SWAB REPORT # 620

SWAB DATE: 24 March 2012

R/V Roger Revelle

James D. Happell

Distribution:
SWAB Committee
Gary Lain
Scripps Swab Committee

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 institution 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. Only one sample in the van showed minor ^{14}C activity and this area will need to be cleaned before any natural tracer work.

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13 February 2012

SWAB REPORT # 615

SWAB DATE: 8 February 2012

University of Delaware Radioisotope Van

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
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 # 615

LOCATION: Lewes, Delaware
VESSEL/LAB: UDE Radioisotope Van

DATE: 8 February 2012
TECHNICIAN: Cecilia Roig

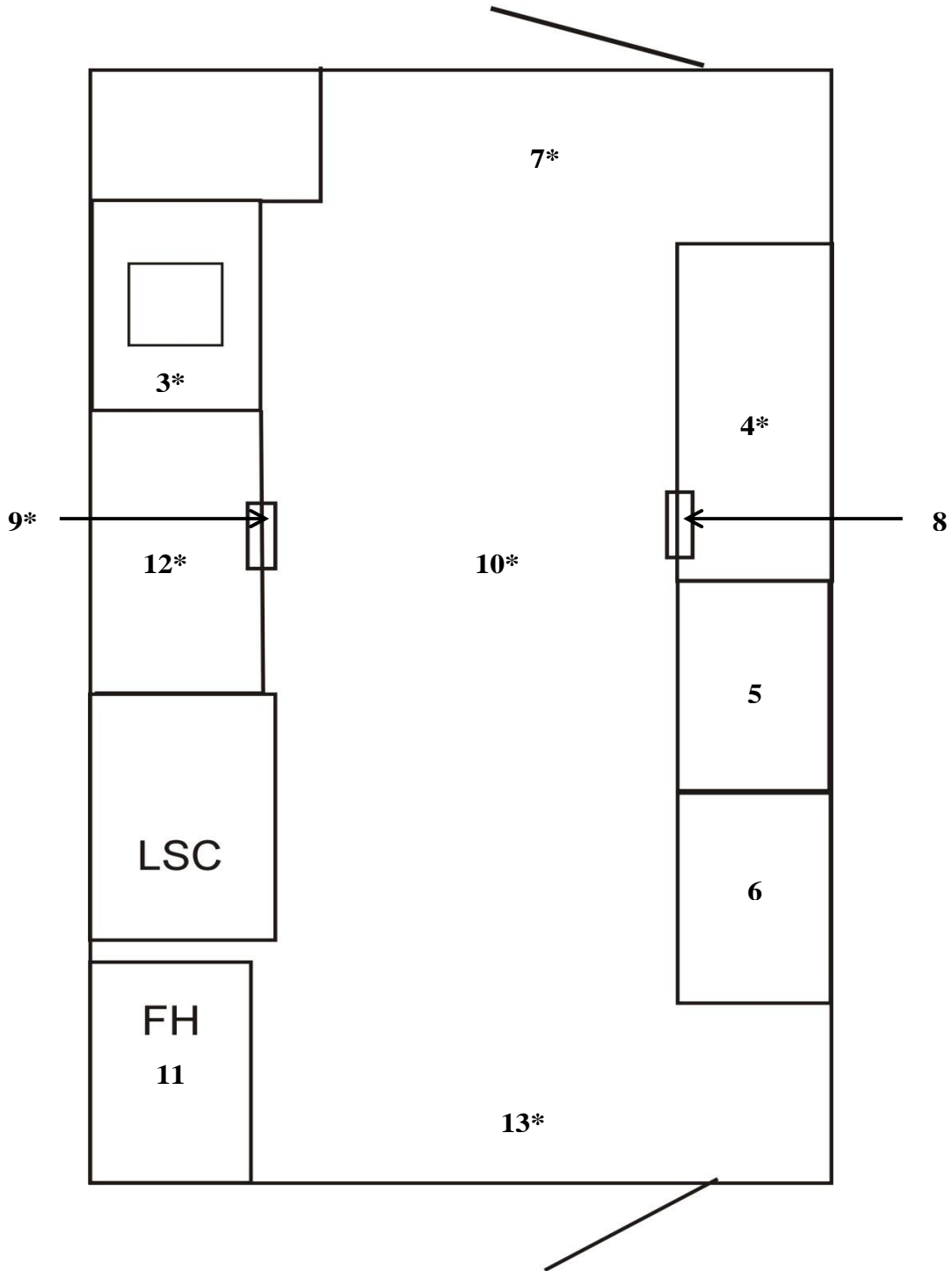
Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank	3	± 2	1	± 0
3	Sink area	*1542	± 108	*56	± 15
4	Benchtop above freezer	461	± 67	*72	± 27
5	Benchtop across refrigerator	161	± 49	25	± 24
6	Benchtop across LSC	24	± 30	27	± 31
7	Deck inside entrance close to sink	*4732	± 183	*137	± 16
8	Inside freezer	163	± 50	30	± 26
9	Inside refrigerator	252	± 54	*56	± 28
10	Deck center of van	*9528	± 262	*240	± 18
11	Inside fume hood	42	± 33	37	± 31
12	Benchtop above fridge	*621	± 78	23	± 14
13	Deck inside entrance next to hood	*1277	± 105	*100	± 23
14	Final bucket blank	0	± 0	50	± 34

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. Although the van was cleaned after SWAB #612 deck areas still show contamination. It is recommended van deck is cleaned again to prevent tracking contamination into the ship.

University of Delaware Radioisotope Van

SWAB # 615
8 February 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
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.

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]
	Radioisotope Van #2408-04 (see Figure 4)	[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]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	Radioisotope Van #625.5.02 (see Figure 5)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
40	Inside fume hood	213	± 63	2	± 6
41	Benchtop adjacent to sink	20	± 31	28	± 35
42	Benchtop opposite of sink	54	± 62	0	± 0
43	Deck between fume hood and LSC	92	± 34	*155	± 40
44	Deck at entrance near sink	167	± 43	*176	± 40
45	Final bucket blank C.O. # 2	0	± 0	32	± 38

Comments

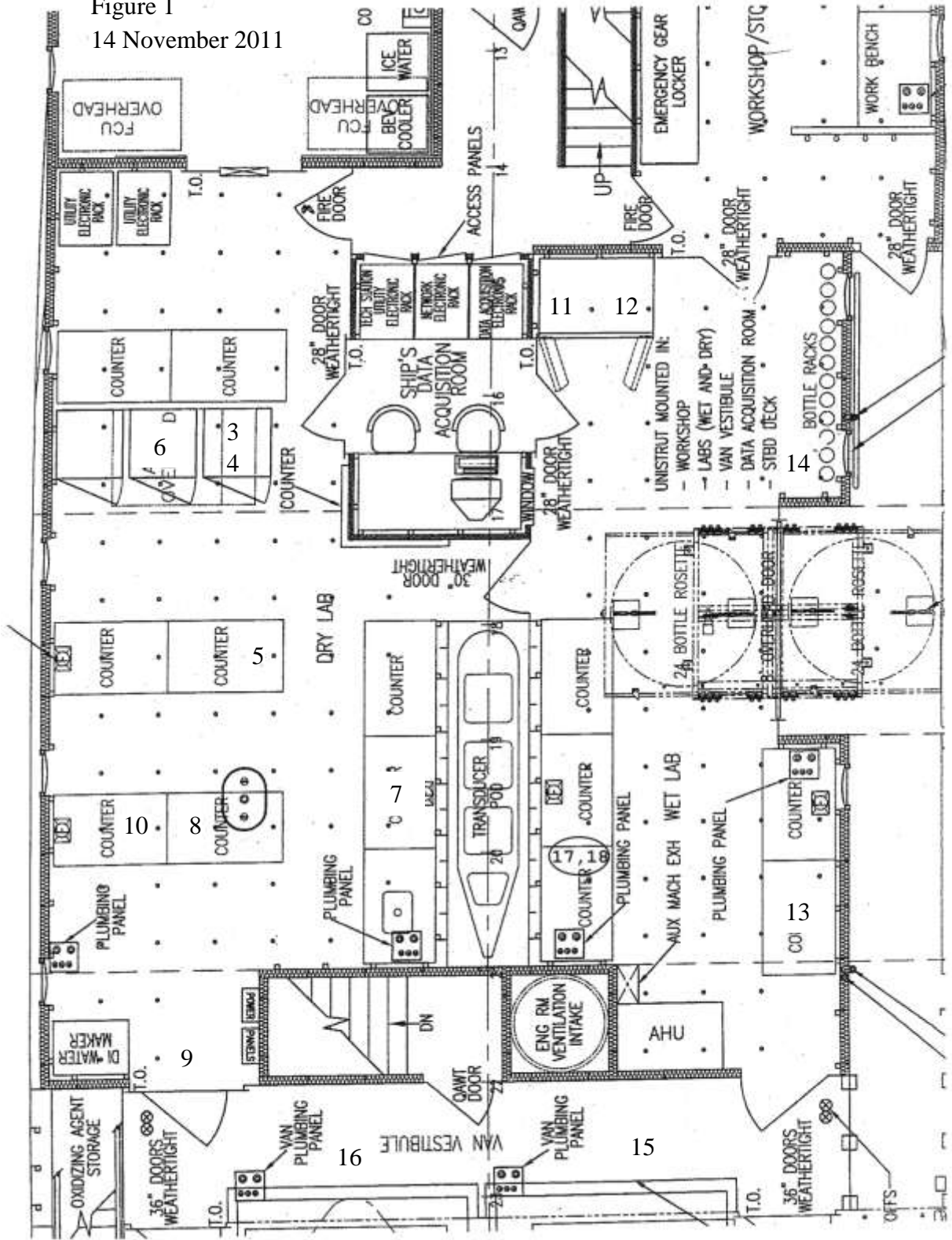
Please note that the error reported for each isotope is the two-standard deviation counting error. All areas tested on the R/V Hugh R. Sharp were free of radioisotope contamination that requires cleaning. However several samples (6, 7, 9, 13, and 16) have above background ³H suggesting that ³H has been 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

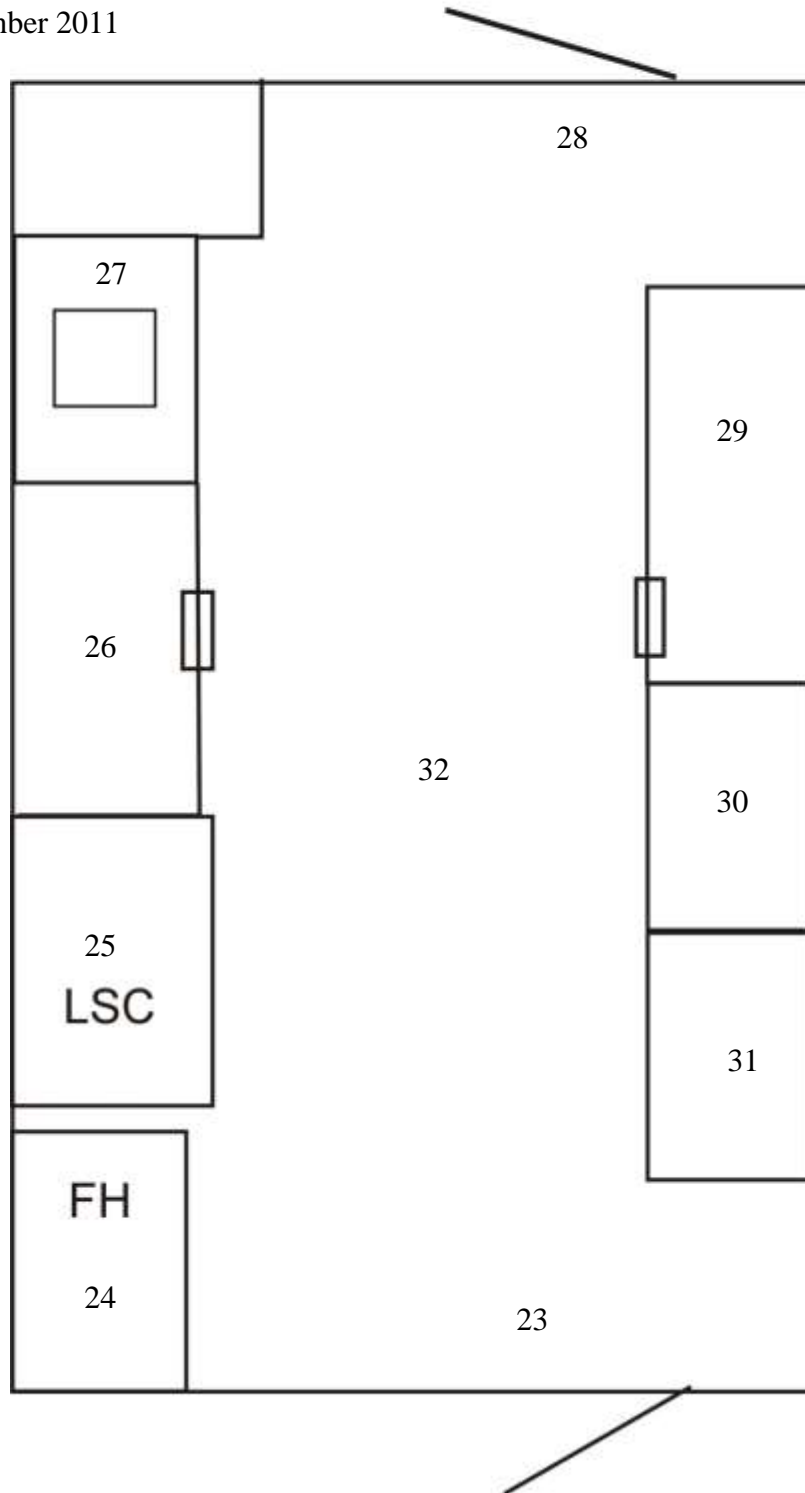


University of Delaware Radioisotope Van

SWAB #610

Figure 2

14 November 2011

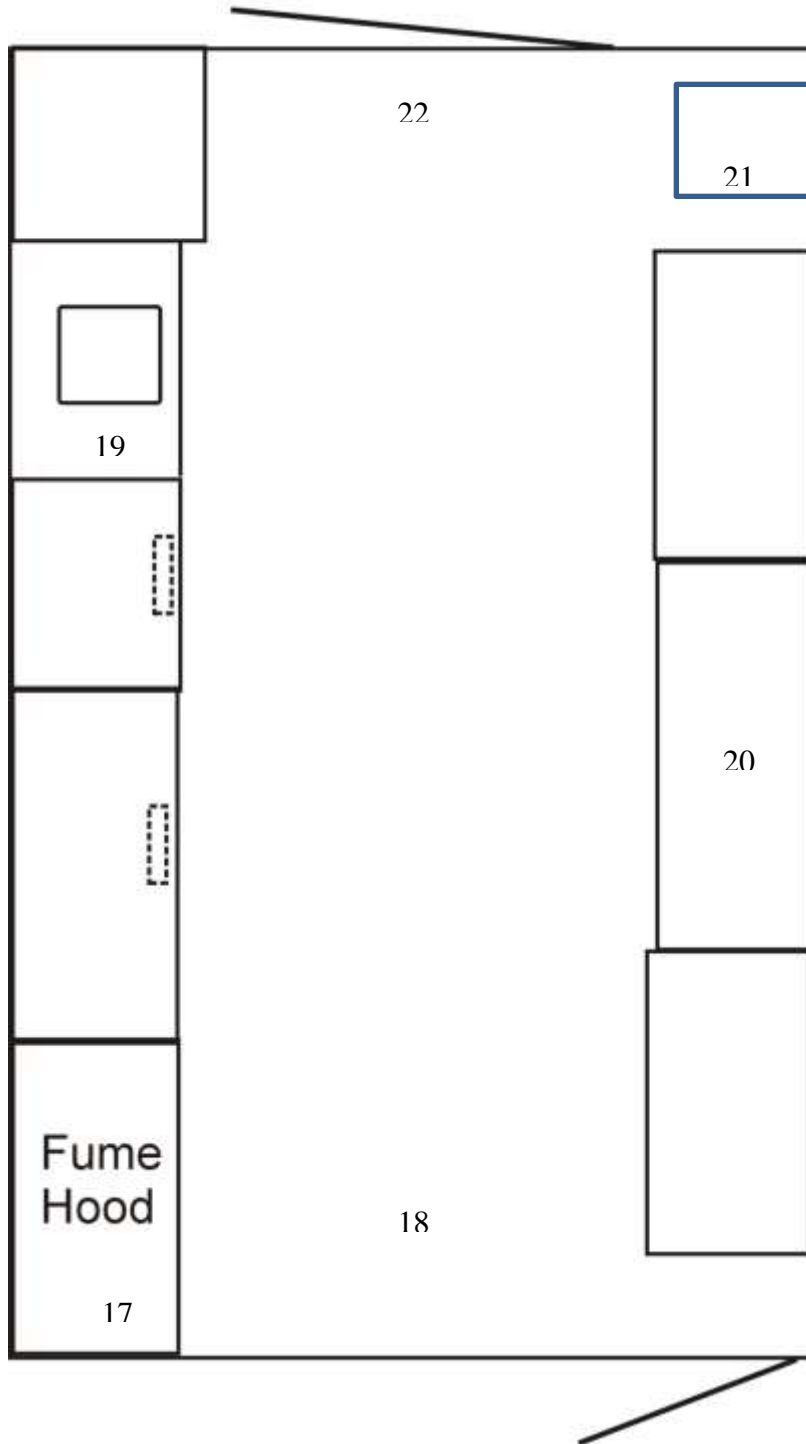


UNOLS Shared Use Van

SWAB #610

Figure 3

14 November 2011

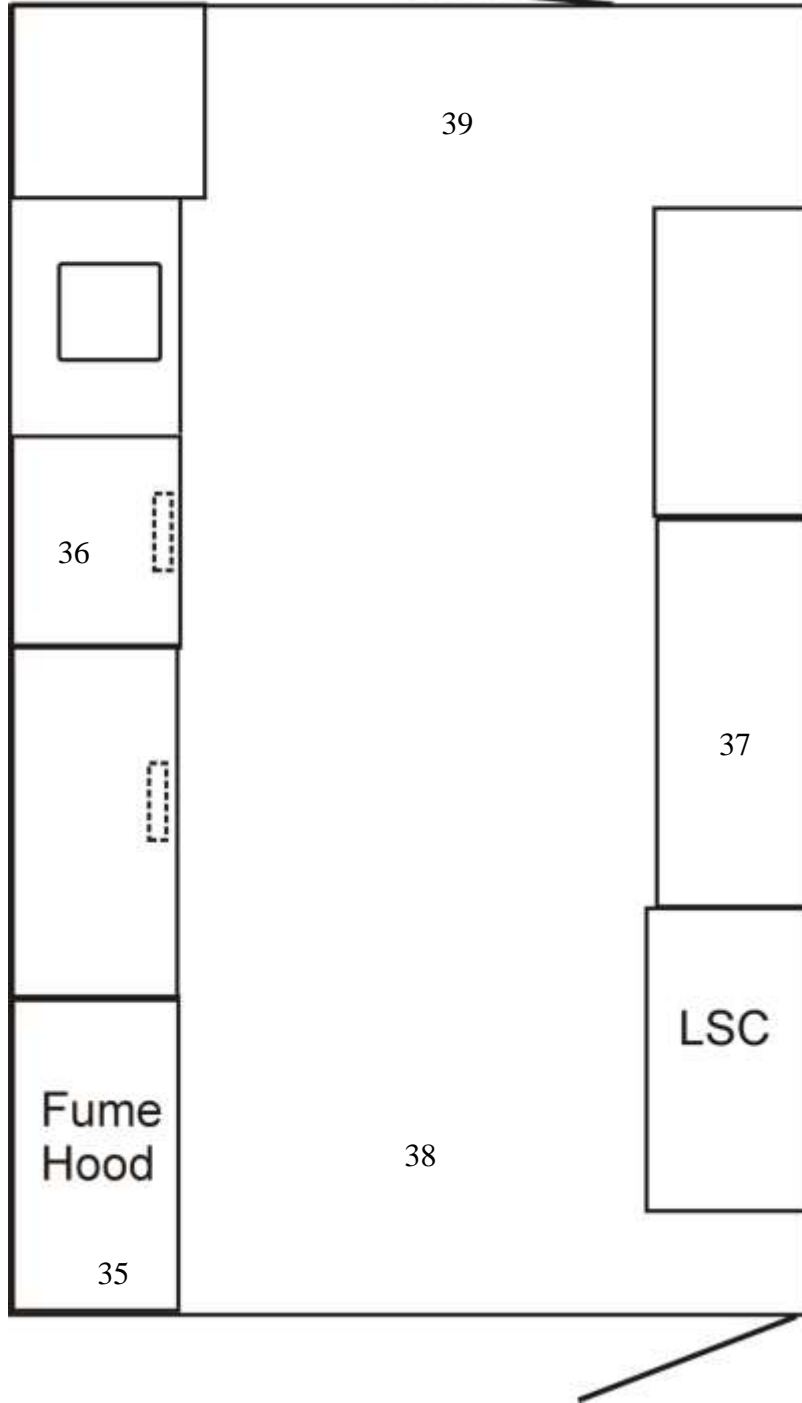


UNOLS VAN 2408-04

SWAB #610

Figure 4

14 November 2011

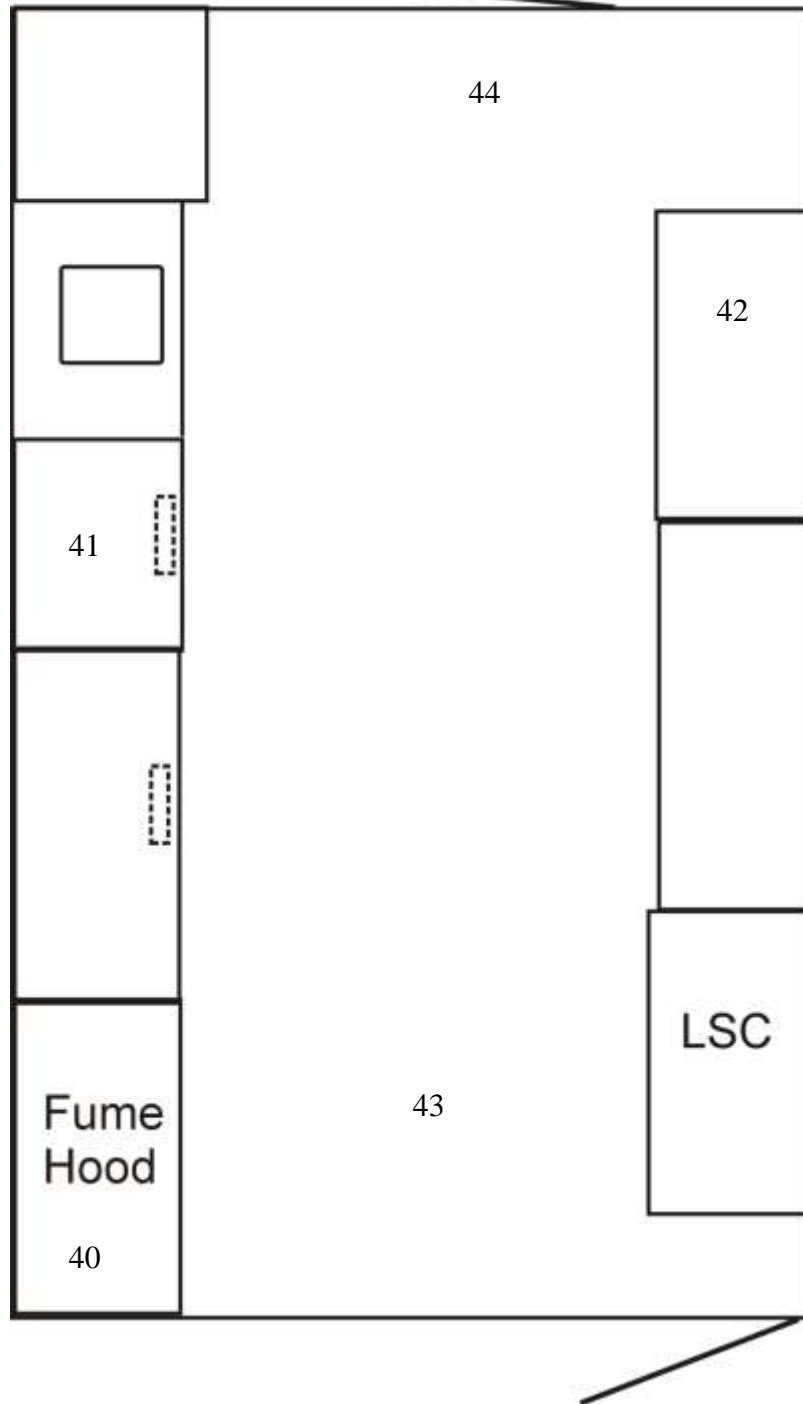


UNOLS VAN 625.5.02

SWAB #610

Figure 5

14 November 2011



Tritium Laboratory
16 August 2011

SWAB REPORT # 592

SWAB DATE: 10 August 2011

R/V Hugh R. Sharp and Radioisotope Vans

James D. Happell

Distribution:
SWAB Committee
Tim Deering

Figure 1.
SWAB #592
10 August 2011

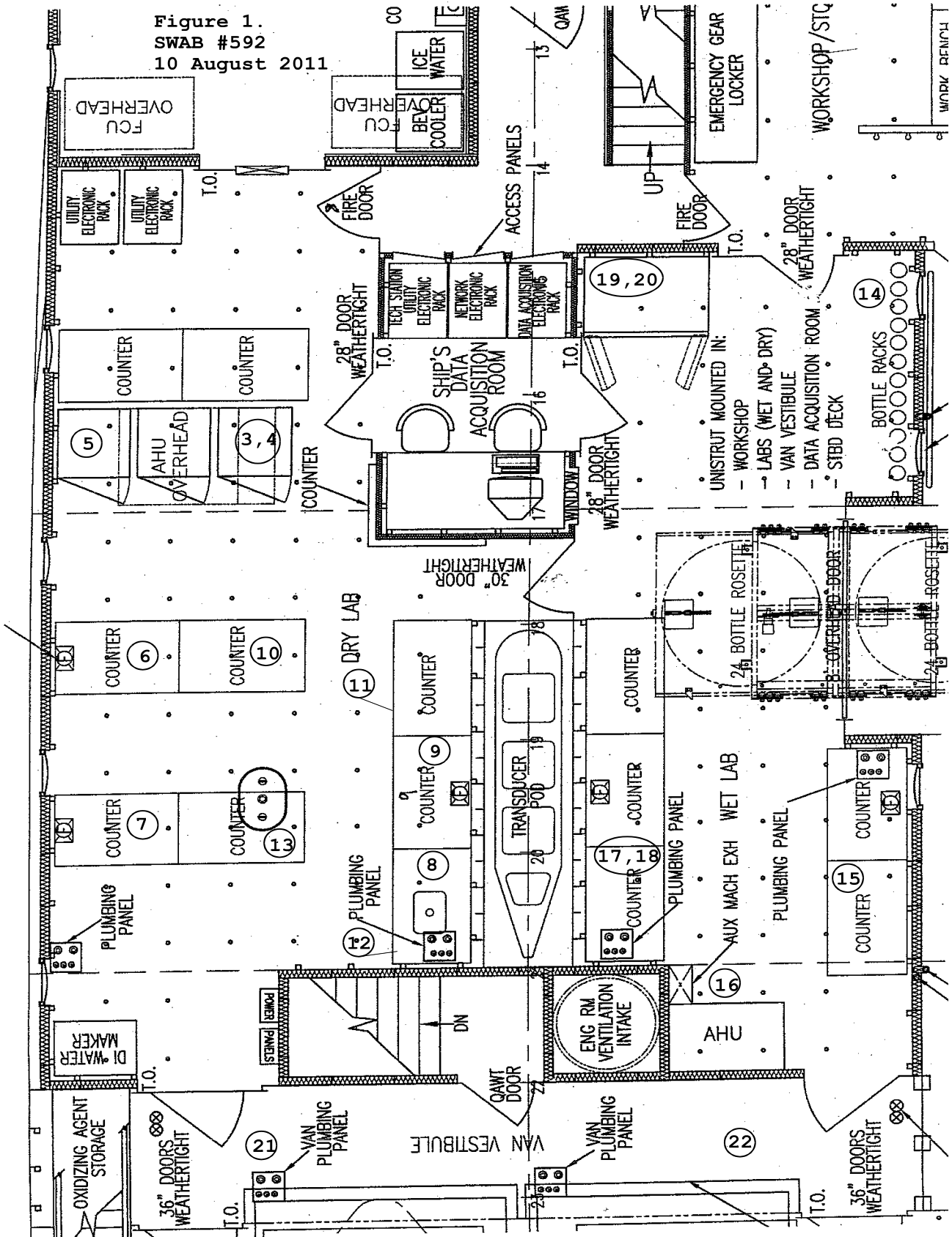


Figure 2.
SWAB #592
10 August 2011

University of Delaware Radioisotope Van

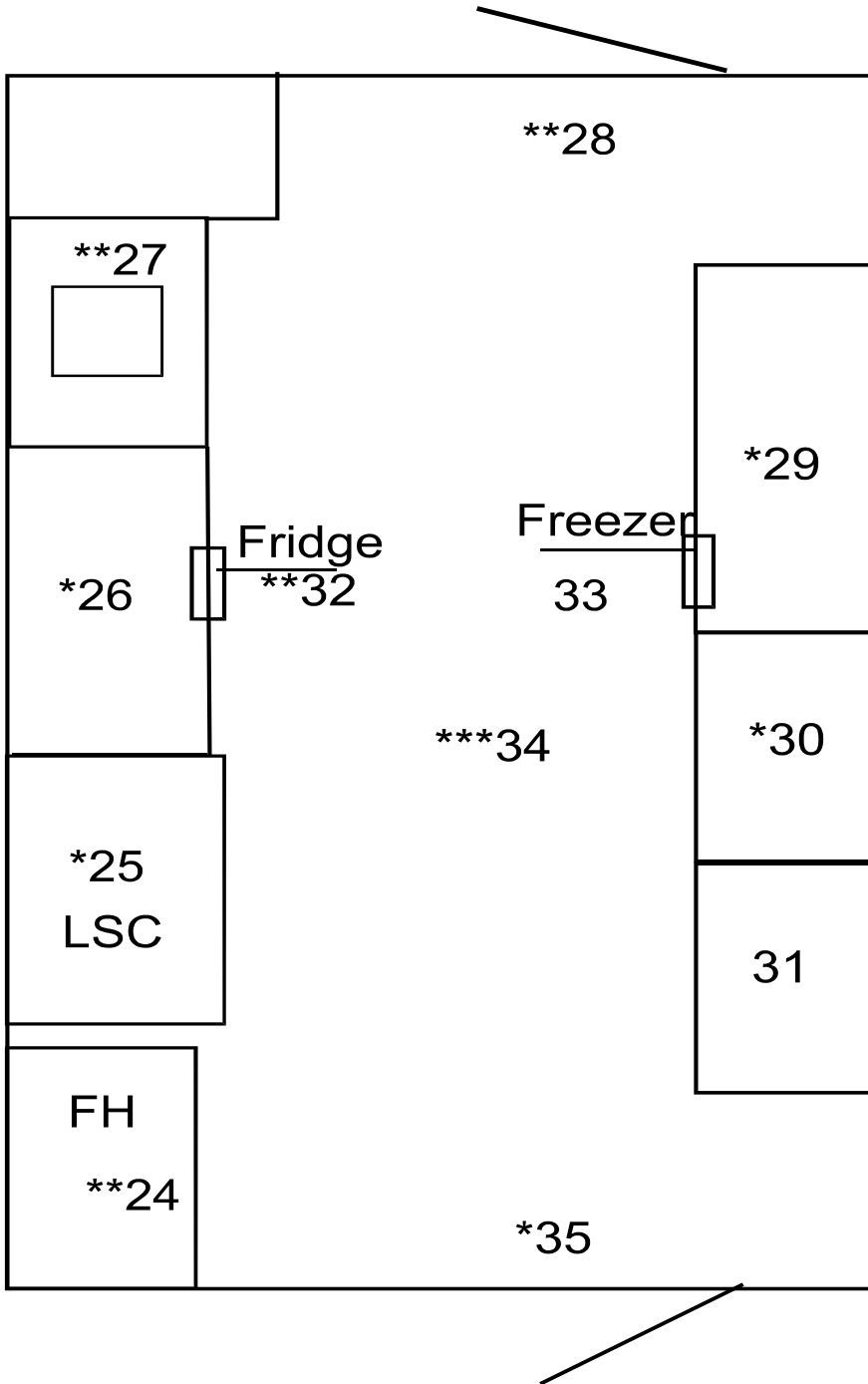


Figure 3.
SWAB #592
10 August 2011

Van Pool Radiation Van

