

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
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Tritium Laboratory
9 November 2012

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SWAB REPORT # 654

SWAB DATE: 1 November 2012

R/V Laurence M. Gould

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Ethan Norris
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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 # 654

LOCATION: Punta Arenas, Chile
VESSEL: *R/V Laurence M. Gould*

DATE: 1 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
2	Initial bucket blank #1	0	± 0	0	± 0
	<u>Dry Lab (Figure 1)</u>				
3	Inside Kenmore 00010415	0	± 0	0	± 0
4	Inside Isotemp 00010622	0	± 0	0	± 0
5	Inside Consul top	31	± 70	0	± 0
6	Inside Consul bottom	0	± 0	0	± 0
7	Inside fume hood	0	± 0	0	± 0
8	Benchtop aft of hood	0	± 0	0	± 0
9	Deck inside door to Electronic Lab	0	± 0	0	± 0
10	Deck inside aft door	0	± 0	0	± 0
11	Sink area	0	± 0	7	± 43
12	Benchtop across hood	0	± 0	5	± 74
13	Deck in front of sink	0	± 0	0	± 0
14	Deck inside port entrance	0	± 0	0	± 0
15	Intermediate bucket blank	0	± 0	0	± 0
	<u>Wet Lab (Figure 2)</u>				
16	Aft sink area	0	± 0	4	± 43
17	Benchtop across aft sink	0	± 0	0	± 0
18	Deck in front of aft sink	0	± 0	23	± 41
19	Fwd. sink area	0	± 0	0	± 0
20	Inside fume hood	0	± 0	0	± 0
21	Deck in front of fwd. sink	0	± 0	1	± 0
22	Deck inside stbd. fwd. entrance	0	± 0	0	± 0
23	Deck between port work benches	0	± 0	14	± 42
24	Inside Fisher 00010559	0	± 0	16	± 41
25	Inside Percival 00010565	0	± 0	0	± 0
26	Inside Revco	0	± 0	0	± 0
27	Inside stbd. aft door	0	± 0	0	± 0
28	Intermediate bucket blank	0	± 0	0	± 0
	<u>Hydro Lab (Figure 3)</u>				
29	Inside Kenmore 4860-W072	0	± 0	0	± 0

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
30	Inside Fisher 00010558	0	± 0	10	± 43
31	Inside Revco 00010117	0	± 0	0	± 0
32	Deck in front of Revco	0	± 0	0	± 0
33	Fwd. sink area	0	± 0	0	± 0
34	Benchtop aft of fwd. sink	0	± 0	0	± 0
35	Deck in front of fwd. sink	0	± 0	*68	± 39
36	Inside fume hood	0	± 0	0	± 0
37	Deck in front of aft sink	0	± 0	0	± 0
38	Benchtop fwd. fo freezers	0	± 0	0	± 0
39	Inside stbd. door	0	± 0	0	± 0
40	Aft stbd. benchtop	0	± 0	0	± 0
41	Benchtop across hood	0	± 0	0	± 0
42	Benchtop aft of freezers	0	± 0	0	± 0
<u>Miscellaneous Areas (Figure 3)</u>					
43	Deck inside Dark Room	0	± 0	0	± 0
44	Deck inside Enviro Room	0	± 0	0	± 0
45	Final bucket blank	0	± 0	0	± 0

Comments

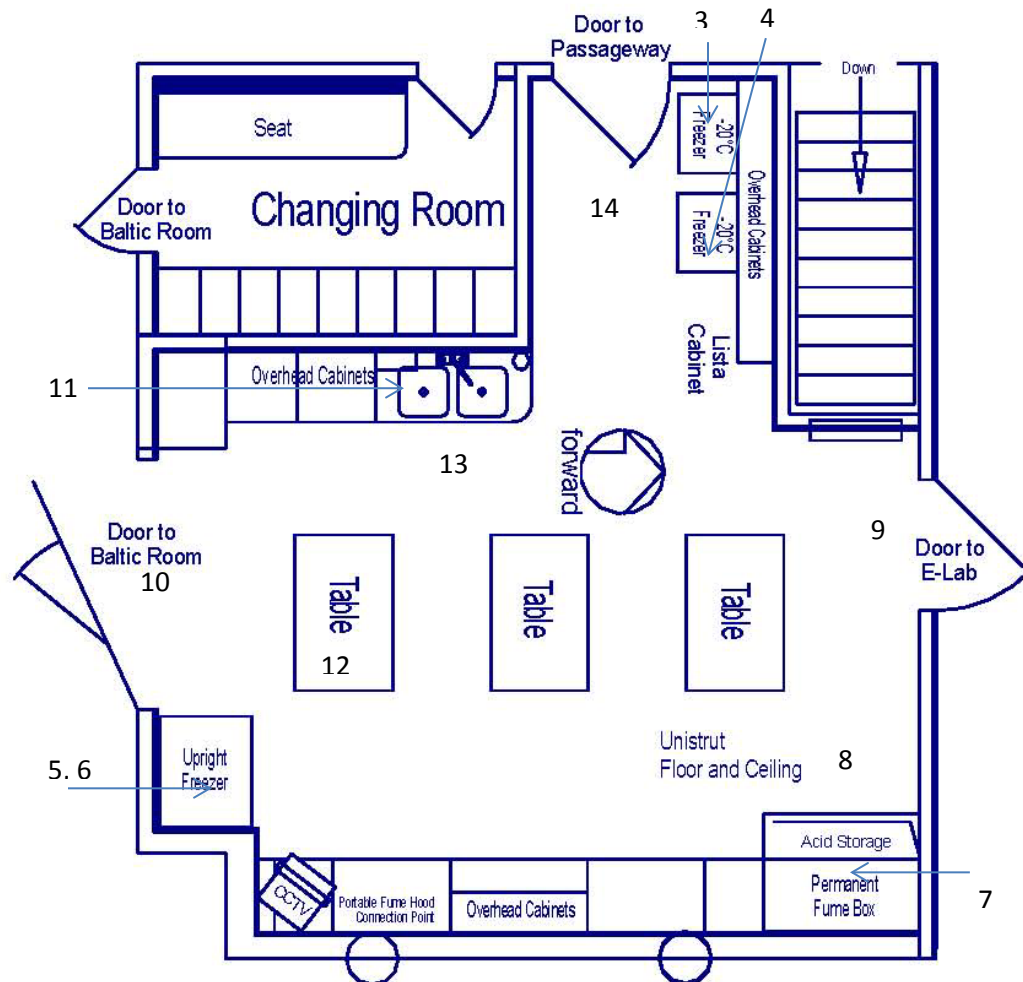
Please note that the error reported for each isotope is the two-standard deviation counting error.

All areas tested in the ship were free from ³H or ¹⁴C contamination, except for one sample taken in the Hydro Lab. The deck area in front of the forward sink in the Hydro Lab tested positive for minor ¹⁴C contamination, this area requires cleaning before any natural tracer work.

SWAB# 654
Figure 1
1 November 2012

Dry Lab

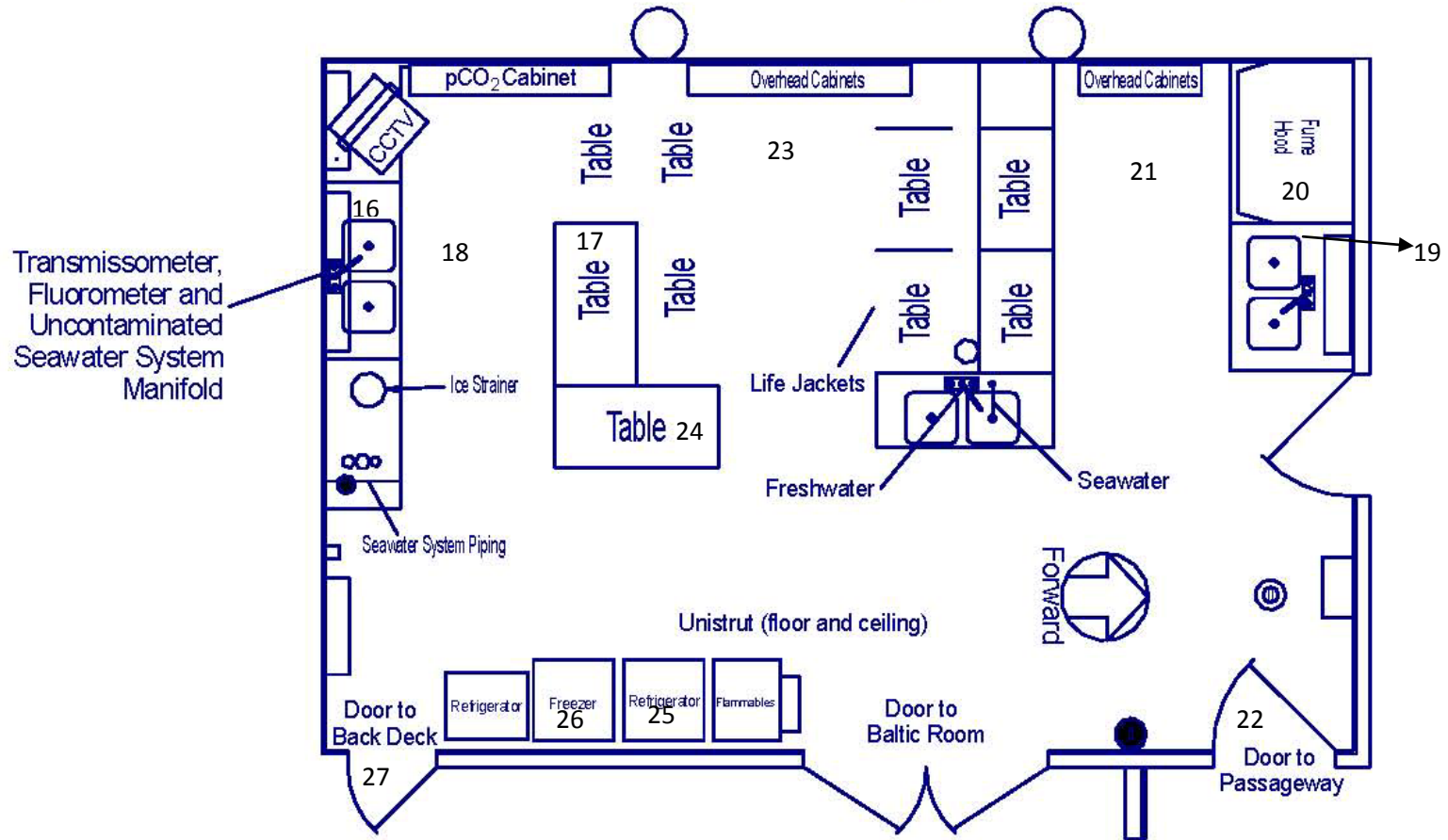
356 sq. ft.



SWAB# 654
Figure 2

Wet Lab

425 sq. ft.



SWAB# 654
Figure 3
1 November 2012

Hydro Lab

526 sq. ft.

