



5 March 2012

SWAB REPORT # 707

SWAB DATE: 24 October 2013

R/V L. M. Gould

James D. Happell

Distribution:
SWAB Committee
Ethan Norris

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 # 707

LOCATION: Punta Arenas, Chile
VESSEL/LAB: R/V L. M. Gould

DATE: 24 October 2013
TECHNICIAN: Amy Westman

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	9	± 0	0	± 0
<u>Dry Lab (Figure 1)</u>					
3	Inside Kenmore 00010415	31	± 84	0	± 0
4	Inside Isotemp 00010622	43	± 51	0	± 0
5	Inside Consul top	23	± 86	0	± 0
6	Inside Consul bottom	17	± 100	0	± 0
7	Inside Fume Hood	11	± 128	0	± 0
8	Benchtop aft of hood	11	± 108	0	± 0
9	Deck inside door to Electronic Lab	21	± 38	8	± 32
10	Deck inside aft door	41	± 62	0	± 0
11	Sink area	23	± 79	0	± 0
12	Benchtop across hood	0	± 0	0	± 0
13	Deck in front of sink	43	± 56	0	± 0
14	Deck inside port entrance	53	± 65	0	± 0
15	Intermediate bucket blank C.O. # 1	39	± 71	0	± 0
<u>Wet Lab (Figure 2)</u>					
16	Aft sink area	0	± 0	0	± 0
17	Benchtop across aft sink	29	± 56	0	± 0
18	Deck in front of aft sink	54	± 63	0	± 0
19	Forward sink area	121	± 58	0	± 0
20	Inside fume hood	45	± 69	0	± 0
21	Deck in front of forward sink	100	± 56	0	± 0
22	Deck inside starboard forward entrance	57	± 52	0	± 0
23	Deck between port work benches	2	± 1	0	± 0
24	Inside Fisher 00010559	54	± 60	0	± 0
25	Inside Percival 00010565	36	± 62	0	± 0
26	Inside -80 Thermo	32	± 80	0	± 0
27	Inside starboard aft door	37	± 48	3	± 22
28	Intermediate bucket blank C.O. # 1	27	± 67	0	± 0
<u>Hydro Lab (Figure 3)</u>					
29	Deck aft of -80 freezer	27	± 85	0	± 0
30	Inside Fisher 00010558	43	± 73	0	± 0
31	Inside Revco 00010117	46	± 58	0	± 0

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
32	Initial bucket blank C.O. # 2	23	± 88	0	± 0
33	Forward sink area	43	± 57	0	± 0
34	Benchtop aft of forward sink	38	± 77	0	± 0
35	Deck in front of forward sink	36	± 74	0	± 0
36	Inside fume hood	37	± 58	0	± 0
37	Deck in front of aft sink	12	± 119	0	± 0
38	Benchtop forward of freezers	34	± 50	0	± 0
39	Inside starboard door	19	± 125	0	± 0
40	Aft starboard benchtop	38	± 78	0	± 0
41	Benchtop across hood (C.O. # 1)	20	± 117	0	± 0
42	Benchtop after of freezers (C.O. # 1)	16	± 84	0	± 0
	<u>Miscellaneous Areas (Figure 3)</u>				
43	Deck inside Dark Room	43	± 58	0	± 0
44	Deck inside Environmental Room	0	± 0	0	± 0
45	Final bucket blank C.O. # 2	15	± 169	0	± 0

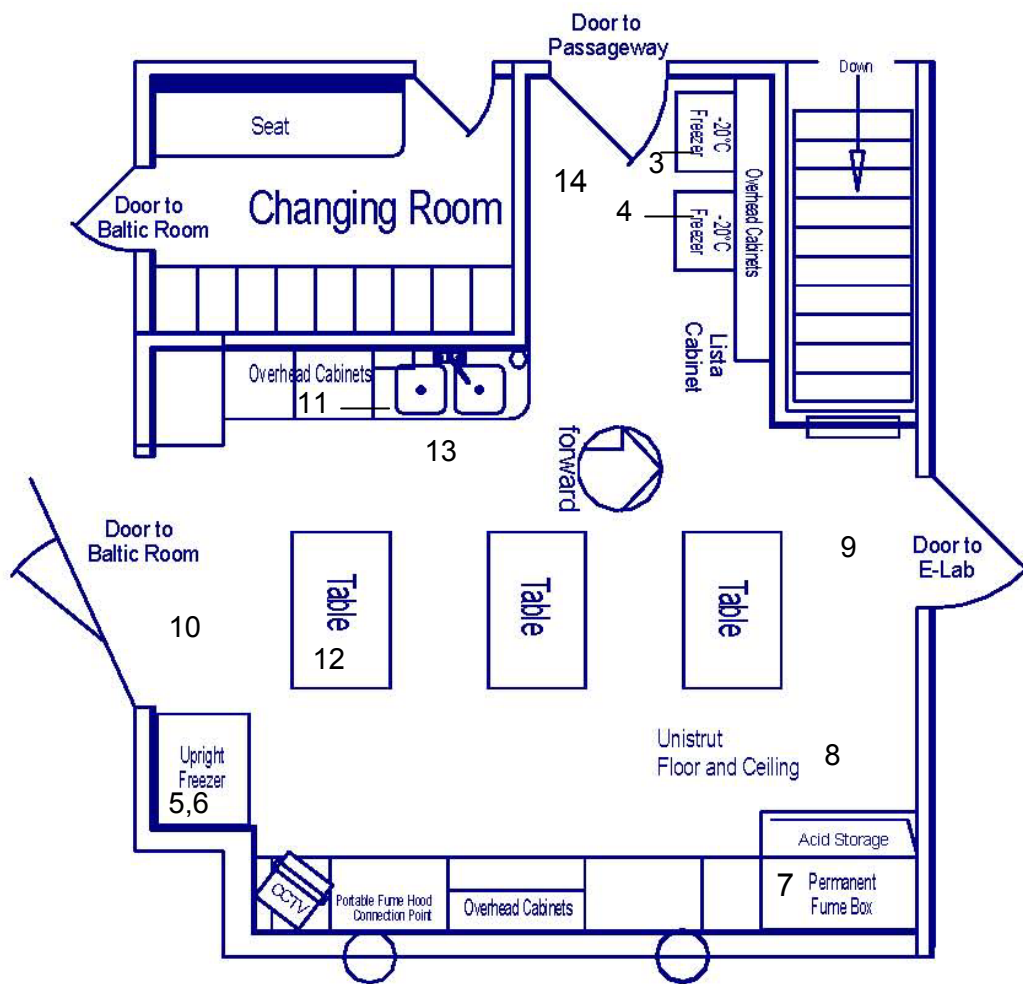
Comments

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 contamination that requires cleaning.

SWAB# 707
Laurence M. Gould
24 October 2013
Figure 1

Dry Lab

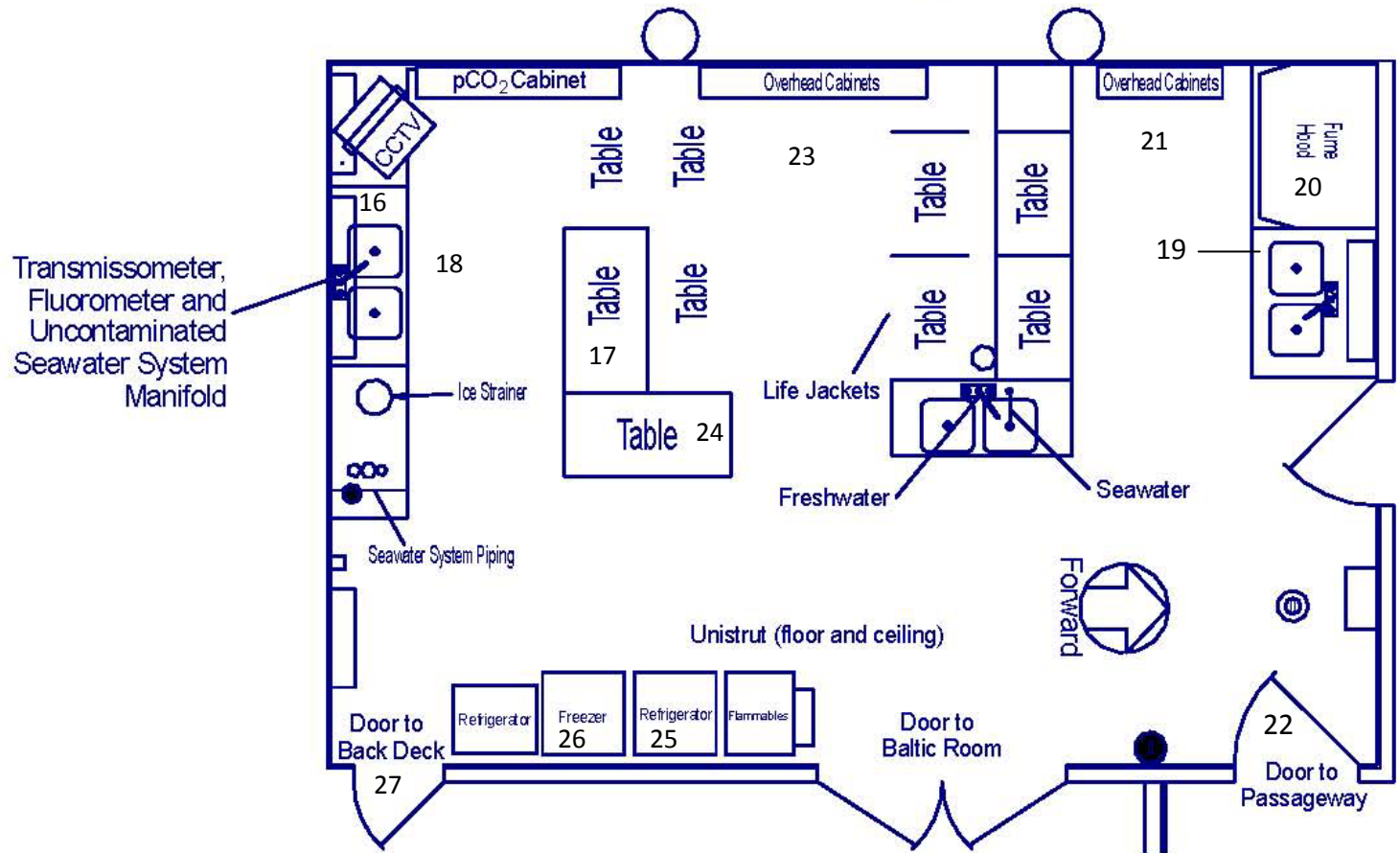
356 sq. ft.



SWAB #707
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Figure 2

Wet Lab

425 sq. ft.



SWAB #770
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Figure 3

Hydro Lab

526 sq. ft.

