

UNIVERSITY OF MIAMI  
ROSENSTIEL  
SCHOOL of MARINE &  
ATMOSPHERIC SCIENCE



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16 November 2011

SWAB REPORT # 608

SWAB DATE: 1 November 2011

*R/V L. M. Gould*

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James D. Happell

Distribution:  
SWAB Committee  
Ethan Norris

## COMMENTS TO SWAB REPORTS

23 November 2010

Typical LSC instrument background values for  $^3\text{H}$  and  $^{14}\text{C}$  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  $\text{dpm}/\text{m}^2$ . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in  $\text{dpm}/\text{m}^2$ . An error larger than the activity indicates that the activity is not significantly different from zero.

### Criteria for SWAB Results

Category	$^3\text{H}$ ( $\text{dpm}/\text{m}^2$ )	$^{14}\text{C}$ ( $\text{dpm}/\text{m}^2$ )	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 $\text{dpm}/\text{m}^2$ 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:  $^{14}\text{C}$  and  $^{35}\text{S}$  have peak energies of 156 and 167 KeV, respectively; thus  $^{35}\text{S}$  will be registered as  $^{14}\text{C}$  by our counting techniques. Categories A, B and C are not a health hazard.

### Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

$^3\text{H}$ : 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.

$^{14}\text{C}$ : 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  $^3\text{H}$ .

### 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 # 608

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

DATE: 1 November 2011  
TECHNICIAN: Cecilia Roig

Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank	21	± 100	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	0	± 0	20	± 37
6	Inside Consul bottom	0	± 0	15	± 39
7	Inside fume hood	25	± 71	0	± 0
8	Deck in front of fume hood	0	± 0	2	± 79
9	Deck inside Electronic Lab	49	± 61	0	± 0
10	Deck inside aft door	0	± 0	4	± 53
11	Sink area	5	± 79	0	± 0
12	Fwd. center bench top	223	± 131	2	± 6
13	Deck in front of sink	8	± 91	0	± 0
14	Deck inside port entrance	6	± 21	16	± 35
15	Intermediate bucket blank	9	± 31	10	± 34
	<u>Wet Lab (Figure 2)</u>				
16	Aft sink area	0	± 0	13	± 40
17	Bench top across aft sink	0	± 0	0	± 0
18	Deck in front of aft sink	0	± 0	6	± 37
19	Fwd. sink area	13	± 58	0	± 0
20	Inside fume hood	17	± 45	14	± 34
21	Deck in front of fwd. sink	0	± 0	6	± 44
22	Deck inside stbd. fwd. entrance	12	± 43	4	± 30
23	Deck between port work benches	11	± 43	4	± 30
24	Inside Fisher 00010559	0	± 0	0	± 0
25	Inside Percival 00010565	0	± 0	0	± 0
26	Inside Revco	3	± 0	0	± 0
27	Inside stbd. aft door	0	± 0	5	± 47
28	Intermediate bucket blank	25	± 41	11	± 31

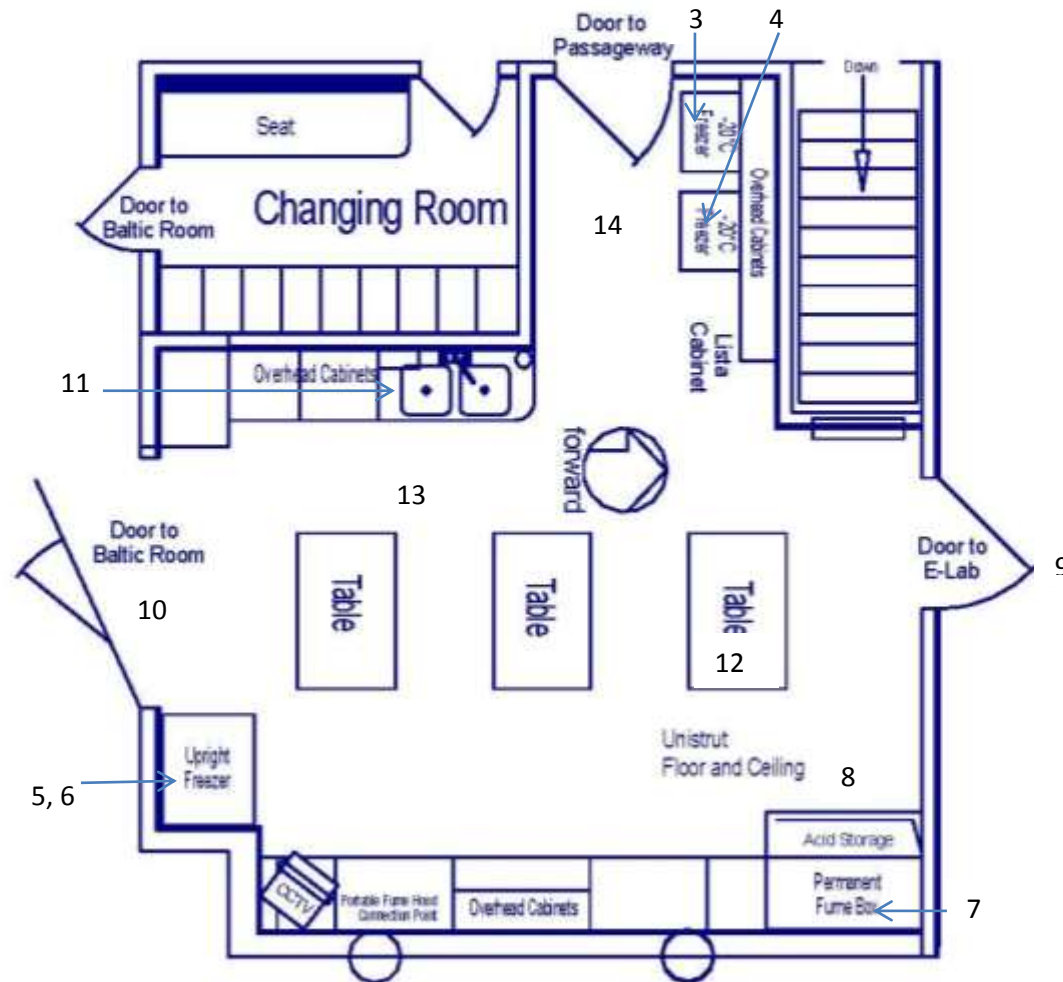
Sample #	Sample Identification	<sup>3</sup> H dpm/m <sup>2</sup>		<sup>14</sup> C dpm/m <sup>2</sup>	
		activity	error	activity	error
<u>Hydro Lab (Figure 3)</u>					
29	Inside Kenmore 4860-W072	3	± 27	6	± 34
30	Inside Fisher 00010558	0	± 0	12	± 36
31	Inside Revco 00010117	26	± 64	0	± 0
32	Deck in front of Revco	0	± 0	0	± 0
33	Fwd. bench top	210	± 141	4	± 13
34	Bench top aft of fwd. sink	358	± 198	2	± 6
35	Deck in front of fwd. sink	0	± 0	1	± 80
36	Inside fume hood	51	± 62	0	± 0
37	Deck in front of hood	28	± 44	10	± 31
38	Center sink area	2	± 0	0	± 0
39	Inside stbd. door	22	± 78	0	± 0
40	Bench top aft of freezers	299	± 179	0	± 0
41	Deck center of lab	0	± 0	11	± 40
42	Aft stbd. bench top	0	± 0	10	± 41
<u>Miscellaneous Areas (Figure 3)</u>					
43	Deck inside Dark Room	14	± 31	19	± 34
44	Deck inside Enviro Room	0	± 0	2	± 73
45	Final bucket blank	6	± 0	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.

# Dry Lab

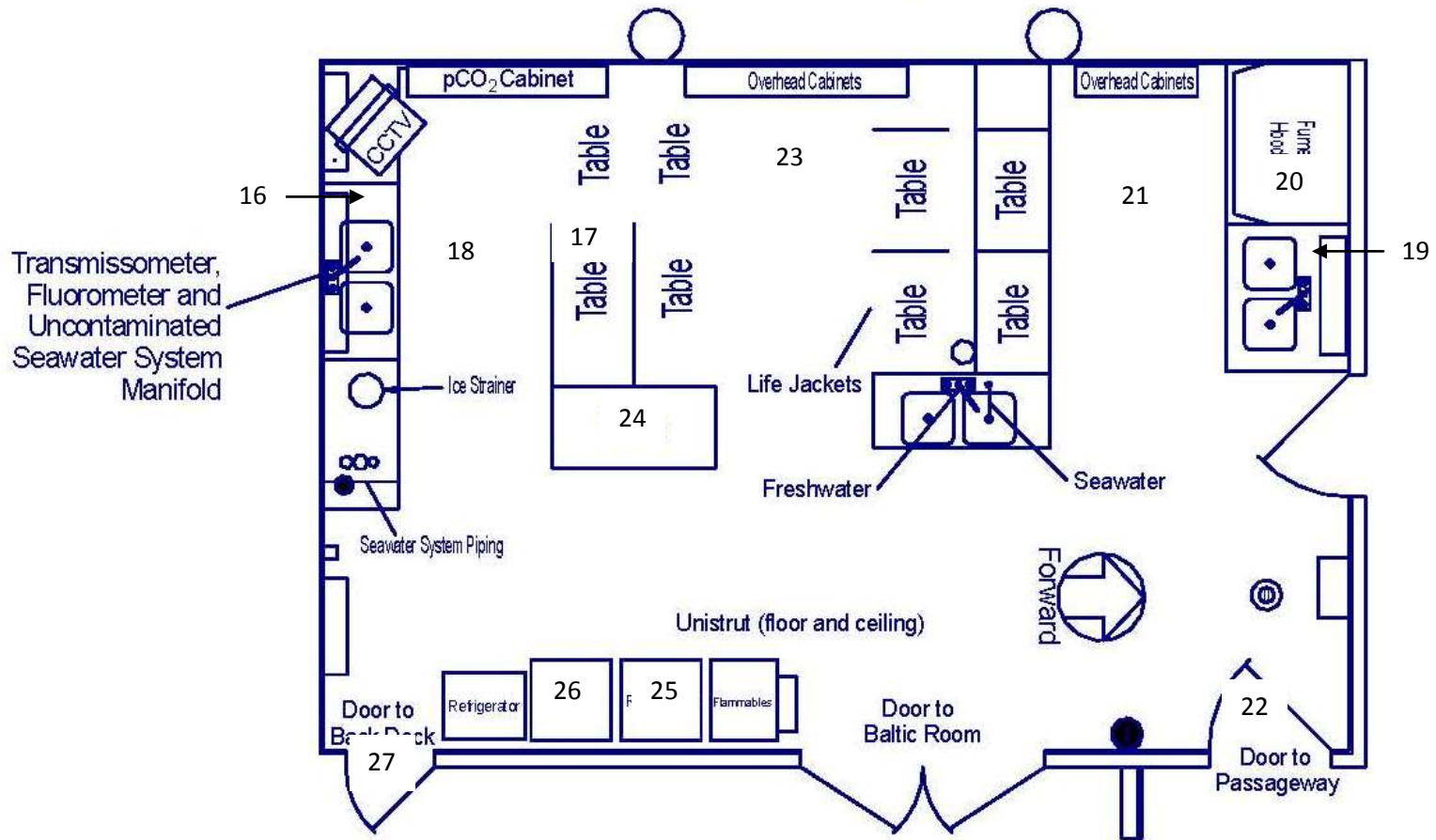
356 sq. ft.



SWAB# 608, Figure 2  
R/V LM Gould, 1 November 2011

# Wet Lab

425 sq. ft.



SWAB # 608, Figure 3  
R/V LM Gould, 1 November 2011

# Hydro Lab

526 sq. ft.

