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22 August 2011

SWAB REPORT # 593

SWAB DATE: 16 August 2011

R/V New Horizon and Calcofi Van

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Distribution:
SWAB Committee
Gary Lain

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/m². Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m². 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.

REPORT FOR SWAB # 593

LOCATION: Point Loma, CA
VESSEL/LAB: R/V New Horizon

DATE: 16 August 2011
TECHNICIAN: Charlene Grall

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	0	±	0	0	±	0
<u>Main Lab (See Figure 1)</u>							
3	Top of Torrey freezer	0	±	0	0	±	0
4	Inside Kenmore freezer	3	±	7	35	±	39
5	Inside Kenmore refrigerator	2	±	0	0	±	0
6	Sink area	100	±	67	0	±	0
7	Deck in front of sink	9	±	27	19	±	37
8	Starboard forward bench top	0	±	0	0	±	0
9	Forward bench top	21	±	523	0	±	0
10	Port aft bench top	37	±	59	0	±	0
11	Deck between bench tops near electronics	18	±	94	0	±	0
12	Bench top aft of electronic equipment	0	±	0	0	±	0
13	Bench top forward of electronic equipmen	0	±	0	0	±	0
<u>Ocean Lab (See Figure 1)</u>							
14	Bench top middle	94	±	73	0	±	0
15	Aft sink area	23	±	69	0	±	0
16	Deck at entrance to stairwell	26	±	69	0	±	0
17	Port forward sink area	14	±	135	0	±	0
18	Bench top aft of port forward sink	35	±	60	0	±	0
19	Benchtop starboard of aft sink	178	±	75	0	±	0
20	Aft port sink area	26	±	47	10	±	34
21	Inside fume hood	0	±	0	0	±	0
22	Deck below fume hood and sink	20	±	54	2	±	25
<u>Wet Lab (See Figure 1)</u>							
23	Sink area	31	±	59	8	±	32
24	Forward port bench top	0	±	0	5	±	71
25	Foward starboard bench top	13	±	41	8	±	35
26	Deck at entrance to main lab	25	±	51	8	±	32
<u>Miscellaneous Areas</u>							
27	Deck inside entrance to mess hall	31	±	102	0	±	0
28	Deck at base of starboard stairs	1	±	0	0	±	0

Sample #	Sample Identification	^3H dpm/m ²			^{14}C dpm/m ²		
		activity	error		activity	error	
29	Deck outside passage to mess and wet lab	0	±	0	0	±	0
30	Aft deck forward of port leg of A-frame	12	±	0	0	±	0
<u>01 Deck (See Figure 1)</u>							
31	Deck at stairs to 02 deck	7	±	30	13	±	37
32	Deck inside aft entrance to upper lab	1	±	0	0	±	0
33	Deck outside forward entrance to upper l	0	±	0	0	±	0
34	Intermediate bucket blank	10	±	0	0	±	0
<u>Calcofi Van (See Figure 2)</u>							
35	Sink area	0	±	0	12	±	40
36	Bench top across from sink	0	±	0	0	±	0
37	Bench top right of sink	0	±	0	*566	±	55
38	Inside fridge door	11	±	12	*88	±	40
39	Bench top right of fridge	0	±	0	9	±	42
40	Deck at entrance	107	±	71	0	±	0
41	Final bucket blank	7	±	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 R/V New Horizon were free of radioisotope contamination.

Minor ^{14}C contamination was found on benchtop right of sink and inside the refrigerator in the Calcofi Van. This benchtop needs to be cleaned before any natural tracer work.

R/V NEW HORIZON

Figure 1

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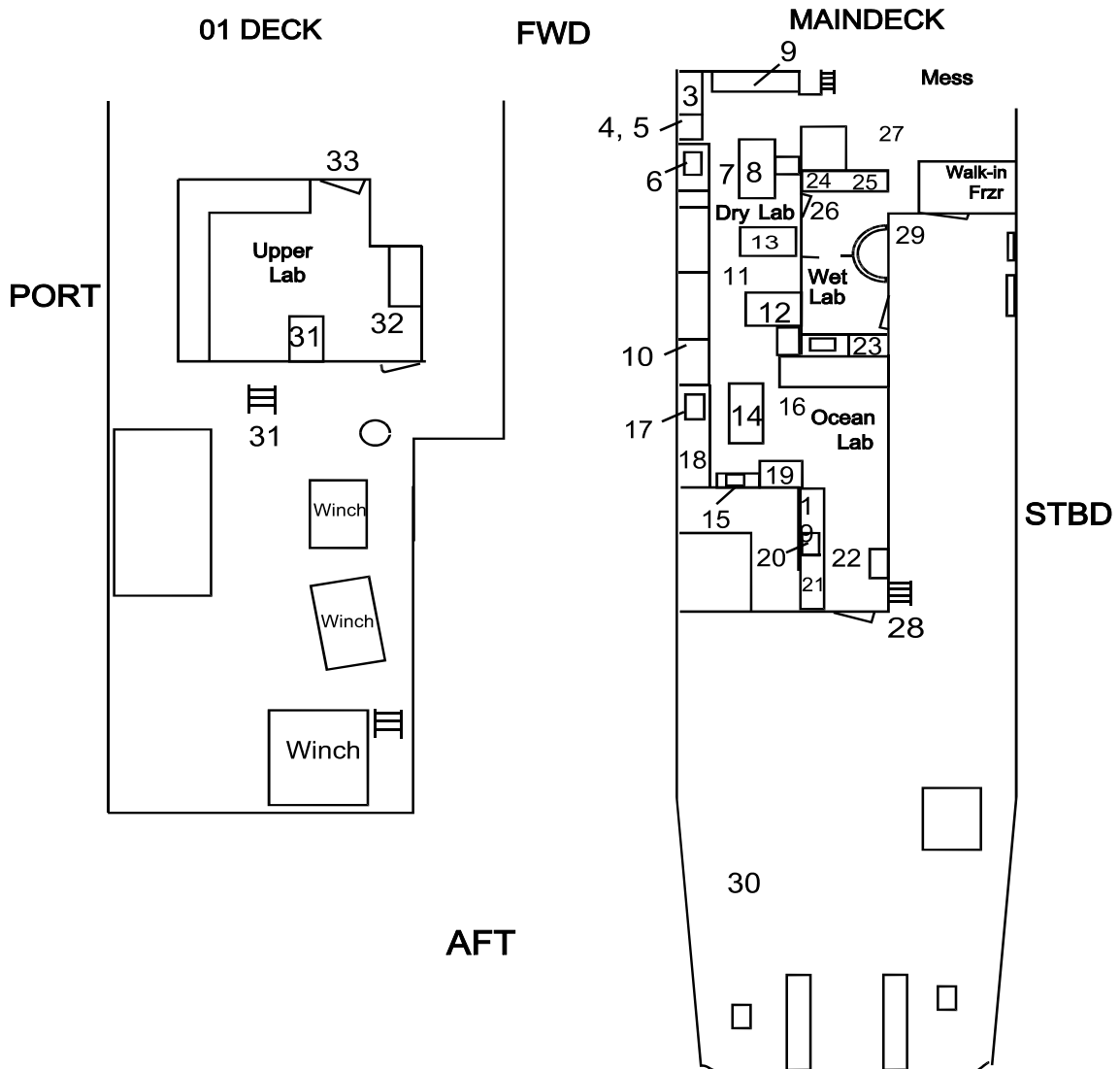


Figure 2.
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CalCOFI Van

