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Tritium Laboratory
22 November 2021

SWAB REPORT # 1018

SWAB DATE: 16 November 2021

R/V Sally Ride & Radioisotope Van 625.1.05-1

James Happell

Digitally signed by James Happell
Date: 2021.11.25 06:56:07 -05'00'

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Gary Lain

COMMENTS TO SWAB REPORTS 12 May 2014

Typical LSC instrument background values for ^{3}H 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	^{3}H (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 Proceedure

Wearing ordinary household rubber gloves:

^{3}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}C: Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}CO_2$). Follow up with wash as if for ^{3}H.

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D contact your institution's radiation safety office.

Note: If category C or D is encountered, we try to notify the insitution promptly by phone or email.

REPORT FOR SWAB # 1018

LOCATION: San Diego, CA
VESSEL: *R/V Sally Ride*

DATE:16 November 2021
TECHNICIAN: Jim Happell

Sample #	Sample Identification	^{3}H dpm/m^{2} activity	±	error	^{14}C dpm/m^{2} activity	±	error
1	1st Vial Bkgnd	0	±	0	0	±	0
2	Initial bucket blank C.O. # 1	6	±	36	3	±	33
	Wet Lab (Figure 1)						
3	Sink area	-4	±	340	-9	±	29
4	Inside fume hood	15	±	46	0	±	0
5	Starboard bench	72	±	34	12	±	27
6	Wooden benchtop forward of starboard benchtop	-20	±	54	16	±	40
7	Benchtop aft of sink	12	±	50	-3	±	21
8	Deck inside aft entrance	9	±	142	-14	±	37
9	Deck inside port entrance	16	±	36	11	±	34
10	Deck in front of Science Freezer	11	±	49	-2	±	19
11	Benchtop opposite of port entrance	-8	±	34	0	±	0
	Main Lab (Figure 2)						
12	Starboard sink area	10	±	46	0	±	159
13	Inside starboard fume hood	8	±	669	-18	±	46
14	Inside port fume hood	20	±	55	-7	±	48
15	Deck in front of port fume hood	26	±	43	4	±	27
16	Deck in front of starboard fume hood	24	±	38	13	±	33
17	Aft section of port benchtop	41	±	53	-12	±	38
18	Forward section of port benchtop	-4	±	362	-7	±	44
19	Aft section of center benchtop	8	±	35	5	±	34
20	Forward section of center benchtop	-66	±	35	13	±	51
21	Deck in front of Science Freezer	-31	±	51	-7	±	45
22	Deck inside forward entrance to lab	22	±	57	-12	±	37
23	Benchtop across from starboard fume hood	11	±	53	-4	±	29
24	Deck at aft entrance between starboard benches	4	±	367	-9	±	29
25	Benchtop opposite of starboard aft entrance	-4	±	311	-5	±	37

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	Main Deck (Figure 3)						
26	Deck in front of lockers in Mud Room	-5	±	420	-18	±	46
27	Starboard working deck outside door to Wet Lab	-21	±	54	-1	±	5
28	Deck between Main Lab and Computer Lab	-1	±	109	-9	±	27
29	Deck where CTD rosette was located	-18	±	47	-10	±	31
30	Forward deck of Staging Bay outside aft entrance	9	±	39	3	±	31
31	Deck below entrance to Radioisotope Van	5	±	378	-16	±	41
	Radioisotope Van 625.1.05-1 (Figure 4)						
32	Benchtop next to sink	321	±	75	*82	±	34
33	Benchtop next to fume hood	130	±	35	*195	±	42
34	Inside fume hood	102	±	39	*85	±	37
35	Benchtop nect to LSC	46	±	48	-2	±	54
36	Benchtop across from sink	286	±	27	*1584	±	76
37	Inside freezer	110	±	6	*6447	±	140
38	Inside refrigerator	68	±	36	*59	±	36
39	Deck between LSC and fume hood	148	±	44	*207	±	43
40	Deck in center of van	102	±	46	*76	±	37
41	Deck near shoe change area	-10	±	43	19	±	38
42	Sink area	21	±	47	-4	±	25
43	Final bucket sample	9	±	37	-2	±	19

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error.
The reports may now contain values less than zero. When decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded the negative values to zero. Values are only significantly above background when they are positive and larger than the error. All areas tested on the ship were free from any isotope contamination that requires cleaning. Minor ^{14}C contamination seen in the rad van; no cleaning necessary.

Figure 1
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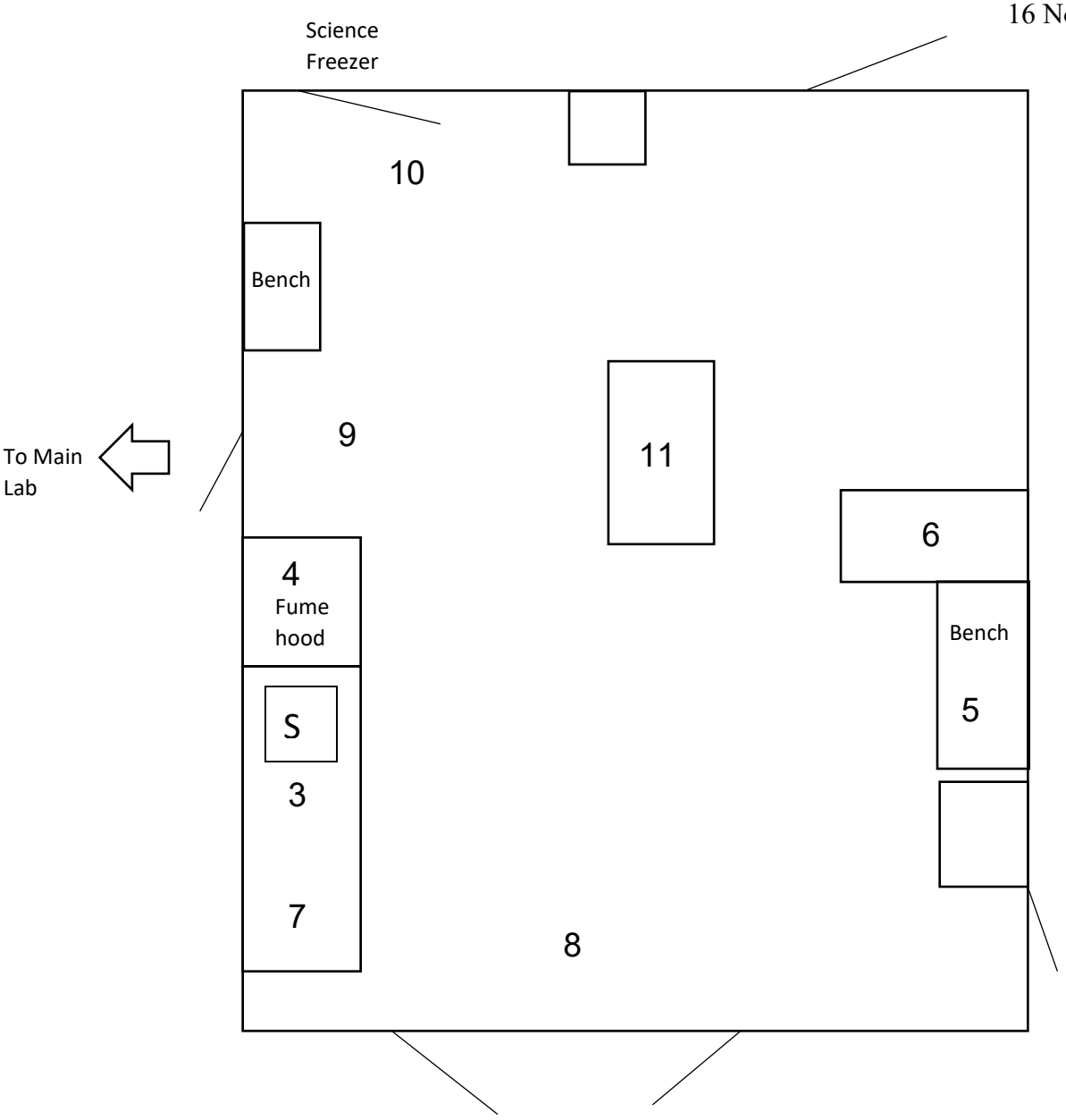

R/V Sally Ride

WET LAB

Figure 2
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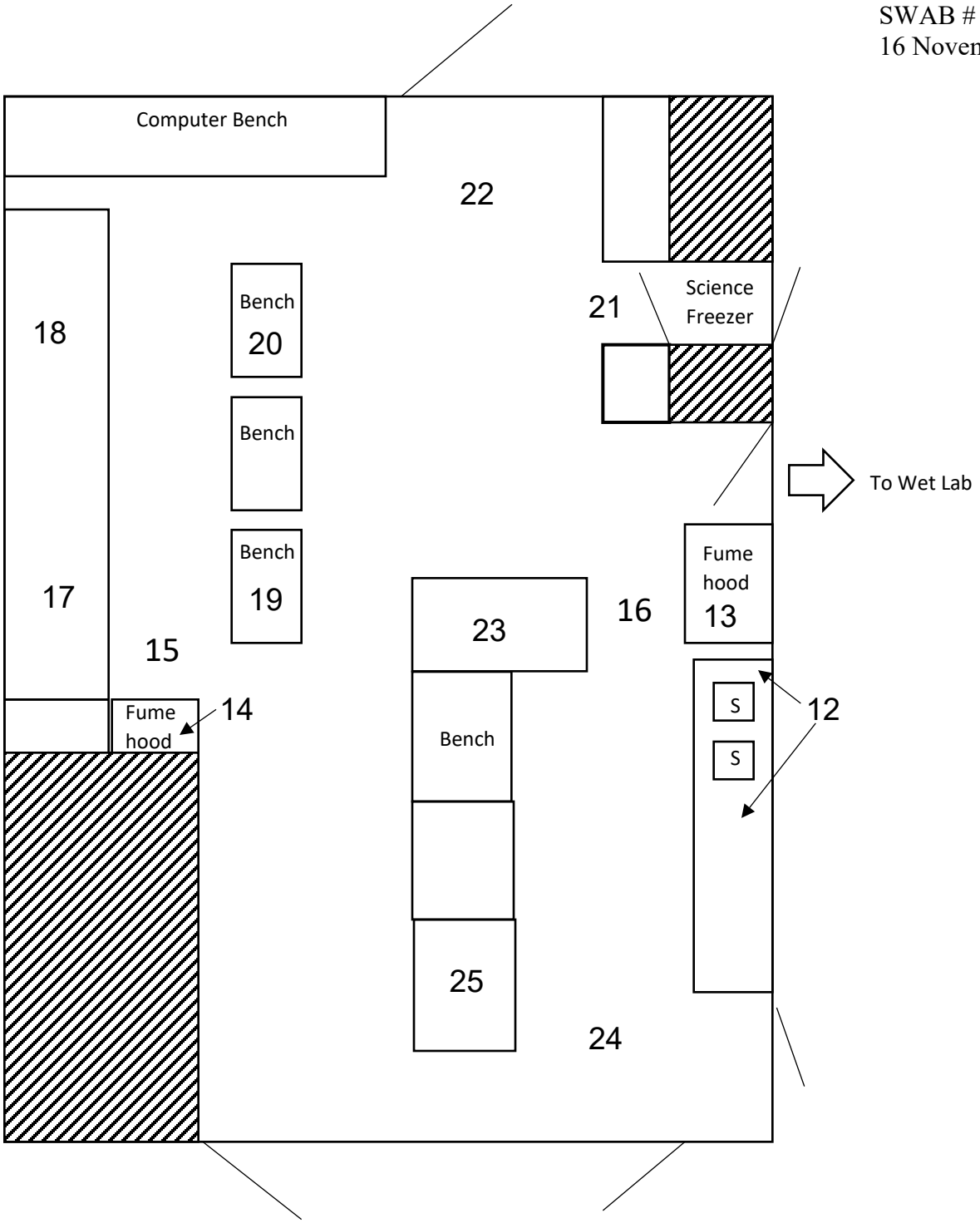
16 November 2021



R/V Sally Ride

MAIN LAB

Figure 3
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REMOVABLE PANAMA SINGLE CHOCK P/S
6"R DECK-SHELL CONNECTION
REMOVABLE BITT P/S
REMOVABLE WEATHER TIGHT VAN VESTIBULE (FOR 1 OR 2 VANS)
15"x23" FDQAWT ESC HATCH
GATE
REMOVABLE PANAMA DOUBLE CHOCK
127"x89" FDWT HATCH
UNOLS/ISO VAN SPACE 8'X20'
UNOLS/ISO VAN SPACE 8'X20'
LKR MD-4 (ELEC)
UPTAKE
COMPUTER LAB
MAIN LAB
ESCAPE ROUTE ONLY
GALLEY
MESS (24 SEATS)
BOSUN'S STORES
DRY STORES MD-1
REMOVABLE LIFELINES & STANCHIONS
AFT WORKING DECK
XDCR TUBE BOLTED HATCH
MMR VENT
MMR VENT
SCIENTIFIC REFR/FRZR MD-2
LKR MD-3 (MECH/ELEC)
LKR MD-2 (CG)
LOUNGE
SCULLERY
LAUNDRY
22"ø FDQAWT LINE LKR HATCH
STAGING BAY
WET LAB
SCIENTIFIC REFR/FRZR MD-1
REMOVABLE BITTS SHORE POWER RECEPTACLES 2X
122"x92" FDWT HATCH
85"x92" FDWT HATCH
STUD WORKING DECK
ET SHOP
HOSPITAL
T/S
SR MD-1 (ADA DBL)
ADA T/S
HEAD MD-1
LKR MD-1 (LINEN)
60"x60" FDQAWT HATCH
LKR MD-3 (DK GR)
HEAD MD-2
REMOVABLE BITT P/S
REMOVABLE PANAMA SINGLE CHOCK P/S
6"R AT DECK-SHELL CONNECTION
GATE
REMOVABLE BULWARKS
116"x77" BERP
80'
FS 10
FS 11
FS 9
FS 8
CL SHIP

MAIN DECK

(1) DOUBLE STATEROOM

PLOT DATE: Thursday November 14 2013
PLOT TIME: 11:29:35 am
PLOT ID:
FILE DIR: 65311_C:\USERS\DC\APPDATA\LOCAL\TEMP\ACPUBLISH_5116\
FILE NAME: DCI 027-04 R6010 REV-D.DWG

HALF SIZE PRINT	DESIGNER: GUIDO PERLA & ASSOCIATES, Inc.	TITLE: GENERAL ARRANGEMENT DRAWINGS
	SHIPBUILDER: DAKOTA CREEK INDUSTRIES, Inc.	D DWG No. 65411-801-01 REV. D
	NAVSEA DWG No. 8565942	SCALE 3/32" = 1'-0" SHEET: 4 OF 7

Figure 4
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UNOLS Rad Van 625.1.05-1
(aka R5)