

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE



Tritium Laboratory

5 October 2017

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SWAB REPORT # 876

SWAB DATE: 17 August 2017

R/V Sally Ride
CalCOFI Van

James

Happell

Dr. James D. Happell

Associate Research Professor

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Miami, ou=RSMAS,
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Date: 2017.10.05 12:17:12 -04'00

Distribution:
SWAB Committee
Gary Lain

COMMENTS TO SWAB REPORTS

12 May 2014

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 $1000 \text{ dpm}/\text{m}^2$ 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}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 contact your institution's radiation safety office.

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

REPORT FOR SWAB # 876

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

DATE: 17 August 2017
TECHNICIAN: Gary Lain

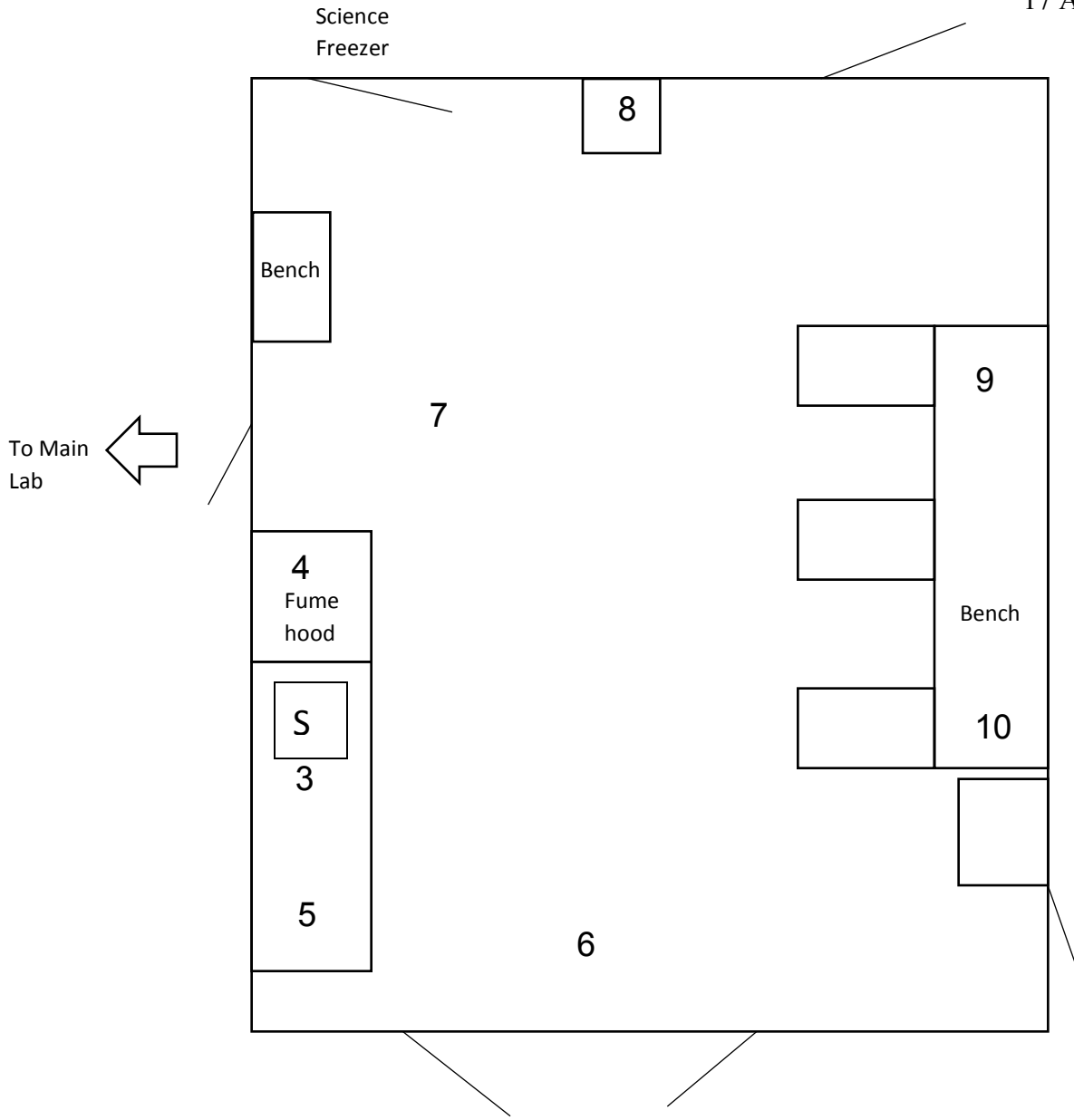
Sample # Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
	activity	error	activity	error
1 1st Vial Bkgnd	0	± 0	0	± 0
2 Initial bucket blank	20	± 35	17	± 36
<u>Wet Lab (Figure 1)</u>				
3 Sink area	30	± 53	-4	± 55
4 Inside fume hood	-1	± 6	15	± 38
5 Benchtop aft of sink	-5	± 35	2	± 42
6 Deck inside aft entrance	1	± 5	-2	± 31
7 Deck inside port entrance	-11	± 83	23	± 39
8 Small benchtop forward	-7	± 166	19	± 39
9 Benchtop forward	10	± 274	-17	± 38
10 Benchtop aft	-26	± 45	17	± 41
<u>Main Lab (Figure 2)</u>				
11 Starboard sink area	-3	± 20	-1	± 19
12 Deck inside starboard entrance to stagin	27	± 53	-4	± 52
13 Deck inside port aft entrance	-7	± 55	3	± 43
14 Inside starboard fume hood	-2	± 15	-6	± 78
15 Inside port fume hood	-3	± 25	-2	± 32
16 Port bench top forward section	-13	± 24	-7	± 85
17 Port benchtop aft section	19	± 150	-29	± 65
18 Middle benchtop forward section	14	± 187	-23	± 51
19 Middle benchtop aft section	-36	± 63	31	± 41
20 Starboard benchtop forward section	10	± 18	-26	± 58
21 Starboard benchtop aft section	-12	± 22	-11	± 71
22 Benchtop aft of starboard section	2	± 13	-5	± 63
23 Benchtop aft of science freezer	-20	± 35	7	± 45
24 Deck in front of computer bench	-5	± 36	-12	± 77

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
<u>Miscellaneous Areas of Main Deck (Figure 3)</u>					
25	Computer lab deck inside	29	± 67	-17	± 39
26	ET shop deck center	3	± 26	5	± 37
27	Laundry room deck center	-7	± 53	3	± 43
28	Staging bay deck center	4	± 28	5	± 36
29	Deck outside port aft entrance to main lab	-18	± 32	-36	± 81
30	Deck outside starboard aft entrance to main lab	24	± 77	-19	± 44
<u>Focsle Deck (Figure 4)</u>					
31	Deck outside passage forward of Haz Mat Locker	2	± 101	-3	± 33
<u>01 Deck (Figure 4)</u>					
32	Deck of Library/Conference Room	2	± 109	-10	± 65
<u>CalCOFI Rad Van (Figure 5)</u>					
33	Intermediate bucket sample	-16	± 28	0	± 3
34	Inside refrigerator	21	± 81	-19	± 42
35	Benchtop adjacent to refrigerator	-22	± 38	18	± 41
36	Benchtop across from sink	9	± 59	-4	± 47
37	Sink area	-24	± 42	-15	± 35
38	Deck in center of van	-40	± 70	13	± 45
39	Final bucket blank	43	± 52	-4	± 55

Comments

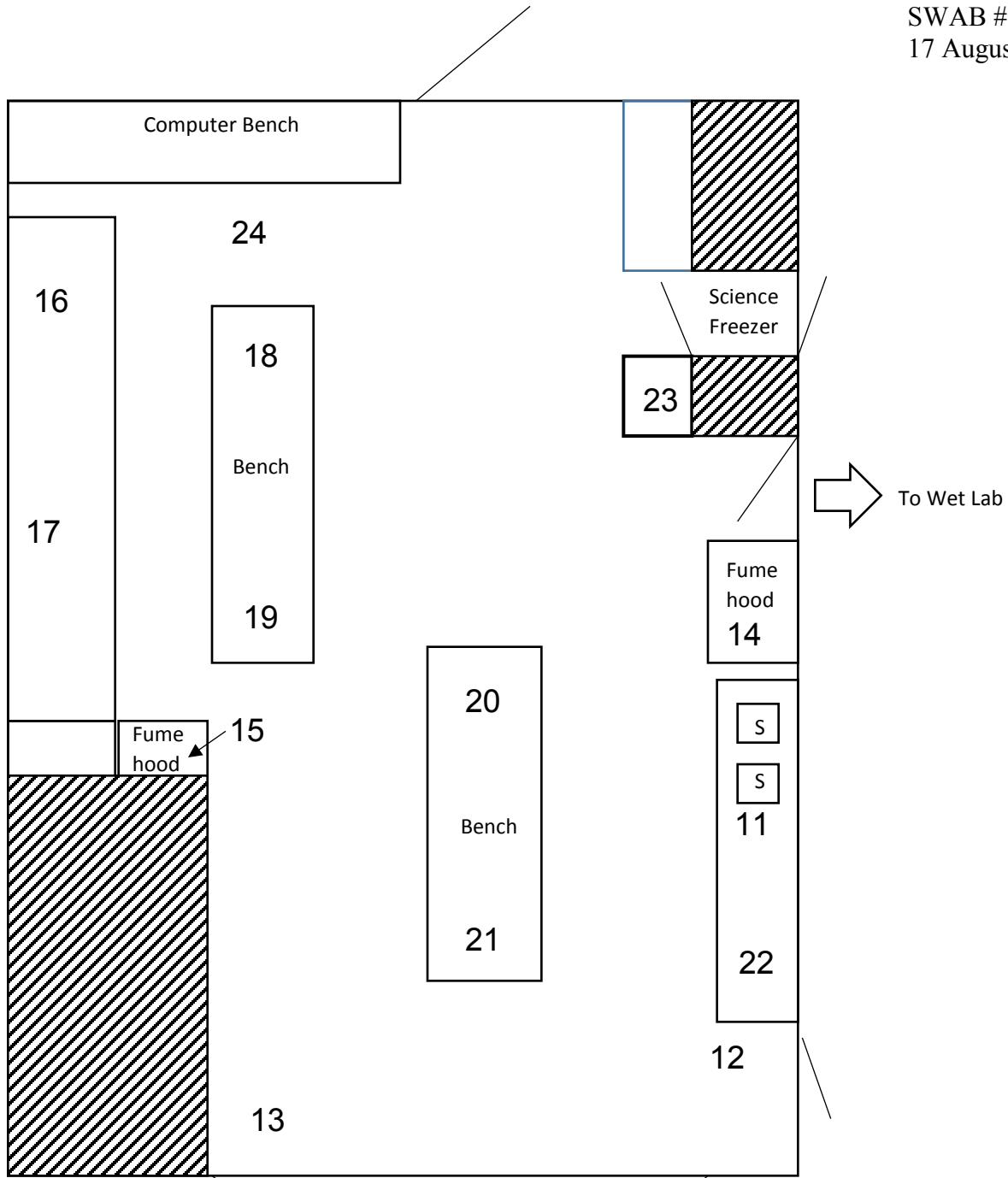
Please note that the error reported for each isotope is the two-standard deviation counting error. The reports may now contain values less than zero. When decay counting background samples will be distributed about the background vial, which means that negative values are possible. In the past we rounded 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 and in the van were free from any isotope contamination that requires cleaning.

Figure 1
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17 August 2017



R/V Sally Ride
WET LAB

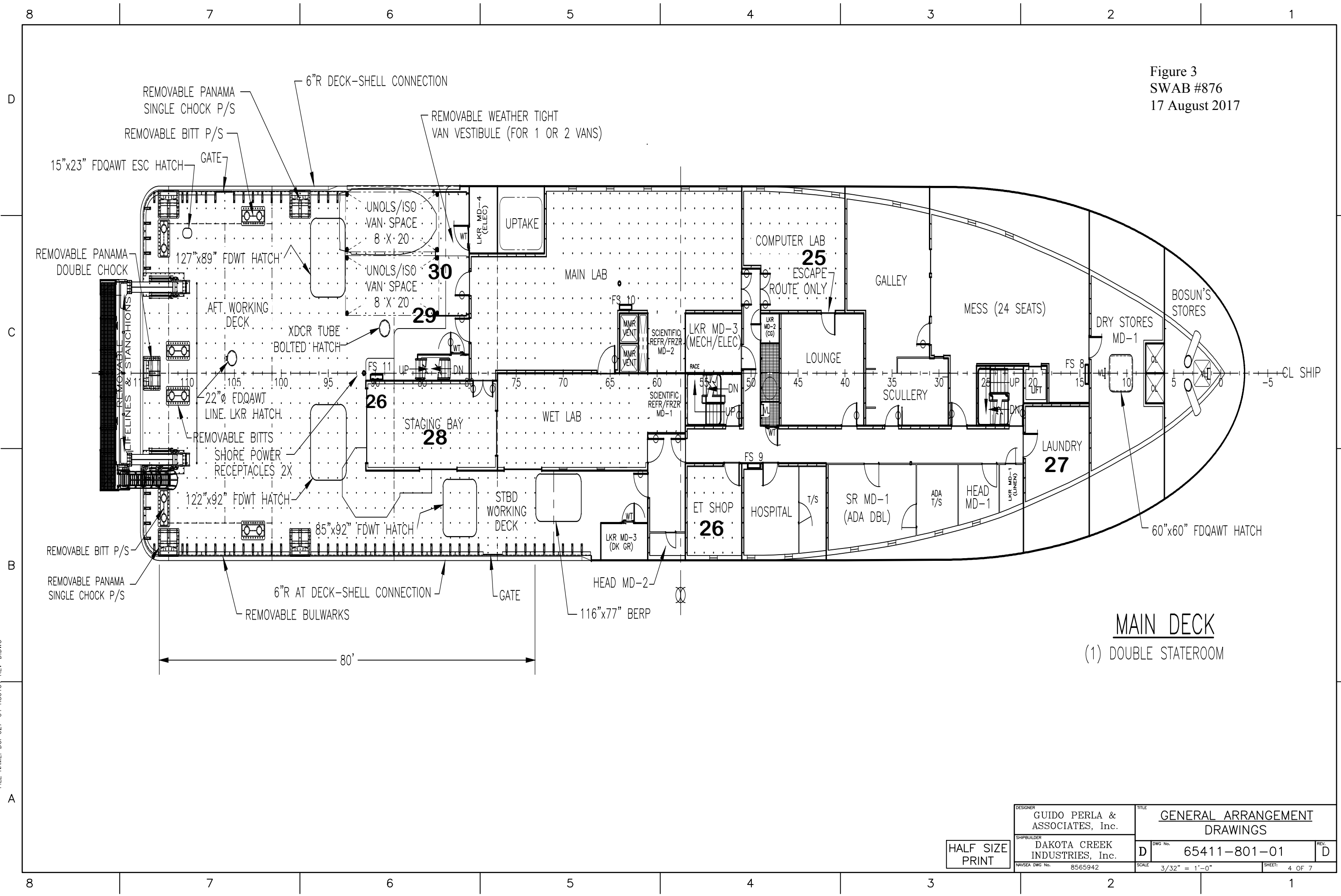
Figure 2
SWAB #876
17 August 2017



R/V Sally Ride

MAIN LAB

Figure 3
SWAB #876
17 August 2017



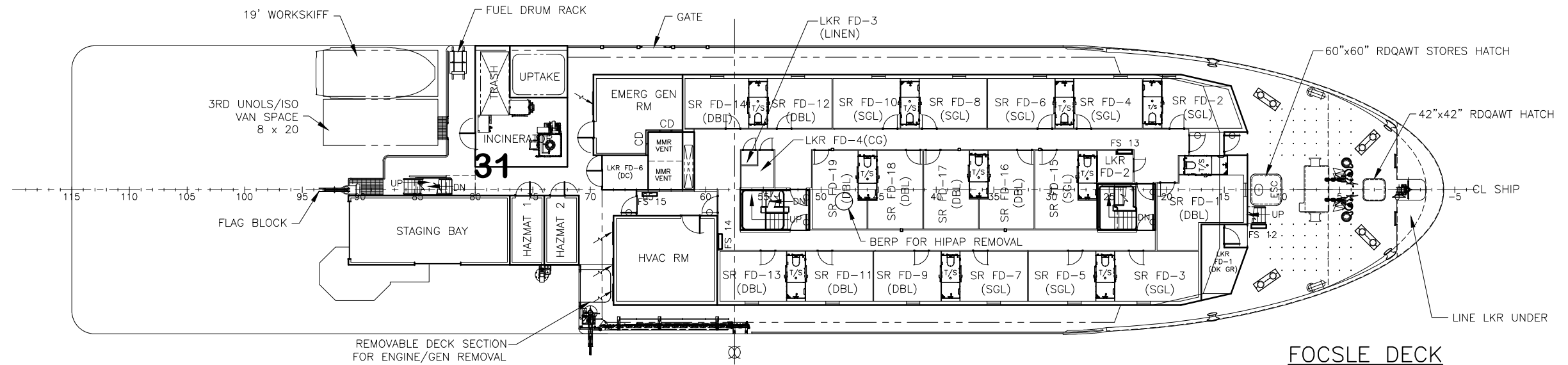
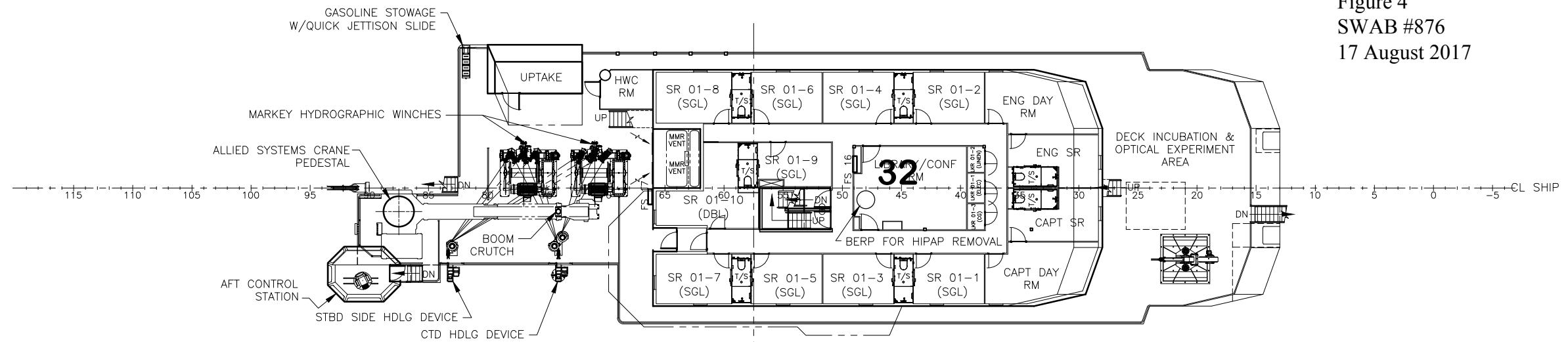
MAIN DECK
(1) DOUBLE STATEROOM

PLOT DATE: Thursday, November 14, 2013
 PLOT TIME: 11:29:35 am
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 FILE NAME: DCI 027-04-R80101-REV-D.DWG

HALF SIZE
PRINT

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SHIPBUILDER DAKOTA CREEK INDUSTRIES, Inc.	DWG No. 65411-801-01
NAVSEA DWG No. 8565942	SCALE 3/32" = 1'-0"
	SHEET: 4 OF 7

Figure 4
SWAB #876
17 August 2017



PLOT DATE: Thursday, November 14, 2013
PLOT TIME: 11:29:38 am
PLOT DR: C:\USERS\DC\APPDATA\LOCAL TEMP\AC PUBLISH_5116\
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HALF SIZE
PRINT

DESIGNER GUIDO PERLA & ASSOCIATES, Inc.	TITLE GENERAL ARRANGEMENT DRAWINGS
SHIPBUILDER DAKOTA CREEK INDUSTRIES, Inc.	DWG No. 65411-801-01
NAVSEA DWG No. 8565942	SCALE 3/32" = 1'-0"
	SHEET: 5 OF 7

Figure 5
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17 August 2017

CalCOFI Van

