UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE

Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149-1031

Ph: 305-421-4100
Fax:305-421-4112
E-mail: Tritium@rsmas.miami.edu

Tritium Laboratory
21 June 2016

SWAB REPORT # 818

SWAB DATE: 1 May 2016

R/V Nathaniel B. Palmer

James Happell

Digitally signed by James Happell
DN: cn=James Happell, o=Univ. of Miami, ou=RSMAS, email=jhappell@rsmas.miami.edu, c=US
Date: 2016.06.22 17:49:49 -04'00'

Dr. James D. Happell
Associate Research Professor

Distribution:
SWAB Committee
Jamee Johnson

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 # 818

LOCATION: Punta Arenas, CHILE
VESSEL: *R/V Nathaniel B. Palmer*

DATE: 1 May 2016
TECHNICIAN: Jamee Johnson

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	-3	±	25	20	±	36
	Rad Van 4 (Figure 1)						
3	Floor by waste station	-59	±	8	*1361	±	71
4	Bench forward of waste	38	±	34	47	±	35
5	Adjacent forward benchtop	67	±	47	23	±	31
6	Bench aft of sink	-74	±	33	-6	±	20
7	Inside fume hood	32	±	42	17	±	32
8	Floor between LSC and fume hood	104	±	43	*88	±	36
9	Bench aft of LSC	-19	±	0	4	±	49
10	Bench aft of computer station	42	±	26	*108	±	38
11	Floor of doorway	103	±	39	*132	±	38
	01 Deck (Figure 2)						
12	Outside Rad Van 4 door	-15	±	29	2	±	71
13	Waste drum collection area	-55	±	35	18	±	42
14	Forward of port incubator	-37	±	29	39	±	38
15	Helo Hangar - doorway to workshop	-4	±	46	16	±	36
16	Floor in front of rad fridge	-20	±	54	24	±	37
17	MLT Office - floor under computer desk	-19	±	41	13	±	38
	Aft Dry Lab (Figure 3)						
18	Aft middle bench	-32	±	33	45	±	38
19	Sink area of aft sink	-7	±	29	-12	±	29
20	Floor aft doorway to main hall	-44	±	26	39	±	38
21	Midship bench forward of aft doorway	-6	±	268	15	±	36
22	Floor of doorway to Dry Lab	-28	±	30	36	±	38
23	Inside Power scientific incubator	-13	±	28	7	±	39
24	Floor in front of forward air unit	11	±	60	-3	±	28
25	Starboard benchtop	-28	±	29	34	±	38
26	Floor of doorway to Baltic Room	-14	±	34	14	±	37
27	Starboard benchtop	-31	±	35	-13	±	27
28	Floor of forward doorway to Main Lab	-51	±	60	23	±	40

Sample #	Sample Identification	^{3}H dpm/m^{2} activity		error	^{14}C dpm/m^{2} activity		error
	Bio Lab (Figure 4)						
29	Middle bench sink area	-53	±	61	3	±	29
30	Floor in front of aft fume hood	-37	±	55	18	±	40
31	Bench forward of port sink	-13	±	29	14	±	37
32	Floor of doorway to ET Lab	-53	±	74	5	±	84
33	Bench forward of port sink	-58	±	83	29	±	40
34	Inside starboard +4 fridge	-23	±	36	10	±	40
35	Floor of doorway to Main Lab	-13	±	29	8	±	38
36	Bench next to door to ET Lab	-31	±	35	1	±	11
37	Floor in main hall btwn Aft Dry Lab & Bi	-54	±	70	31	±	39
	Forward Dry Lab (Figure 4)						
38	Fwd Dry Lab Floor of CTD station	-17	±	30	14	±	38
39	Floor starboard computer station	-8	±	27	18	±	36
40	Floor in front of printer	-14	±	19	25	±	37
41	ET Lab - Floor under phone station	-7	±	22	3	±	39
	Wet Lab (Figure 5)						
42	Bench of forward sink area	11	±	34	12	±	33
43	Floor in front of aft sink	6	±	11	*52	±	37
44	Floor of doorway of double watertight door	-1	±	4	38	±	36
45	Bench aft sink	-32	±	29	27	±	38
	Hydro Lab (Figure 6)						
46	Middle bench fwd stbd side	-13	±	18	23	±	37
47	Inside +4 fridge	-72	±	60	-3	±	16
48	Bench under forward port porthole	-8	±	127	23	±	36
49	Floor of doorway to Hold stair	-56	±	88	34	±	39
50	Floor of vestibule to stair and main hal	-9	±	30	8	±	37
51	Middle bench portside aft	-17	±	47	17	±	37
52	Bench inboard of aft sink next to fluoro	-19	±	29	22	±	37
53	Floor of doorway to Aquarium Room	-37	±	52	41	±	38
54	Hall to Aquarium Room	-96	±	60	*61	±	40
	Maindeck						
55	Deck outside Aquarium Room	-47	±	77	29	±	39
56	Deck aft of starboard A-frame	-12	±	29	18	±	37
57	Final bucket blank	-35	±	40	9	±	44

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. The rad van had some minor ^{14}C contamination on one bench and on the deck.

No action is necessary in the van.

Figure 1
SWAB #818
1 May 2016

R/V Nathaniel B. Palmer

Radioisotope Van #4

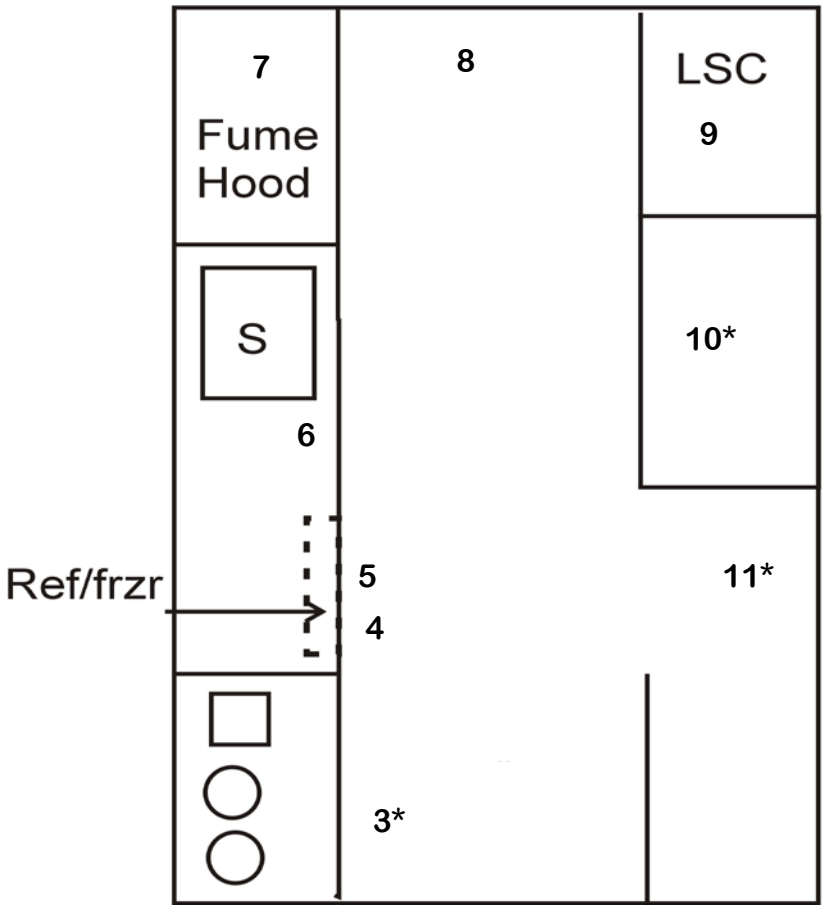
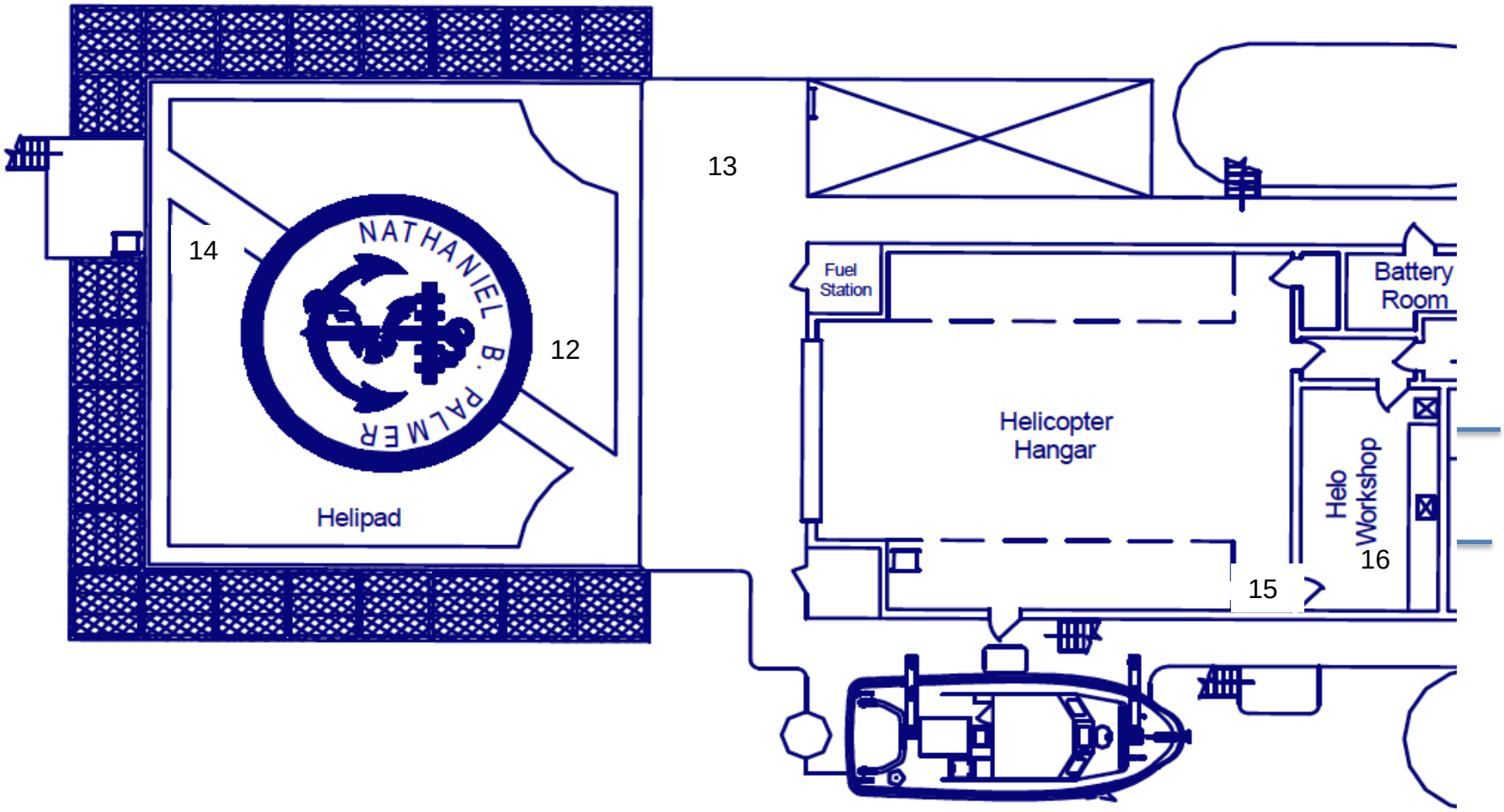


Figure 2
SWAB #818
1 May 2016



SWAB 818
Figure 3
1 May 2016

Aft Dry Lab
1036 sq. ft.

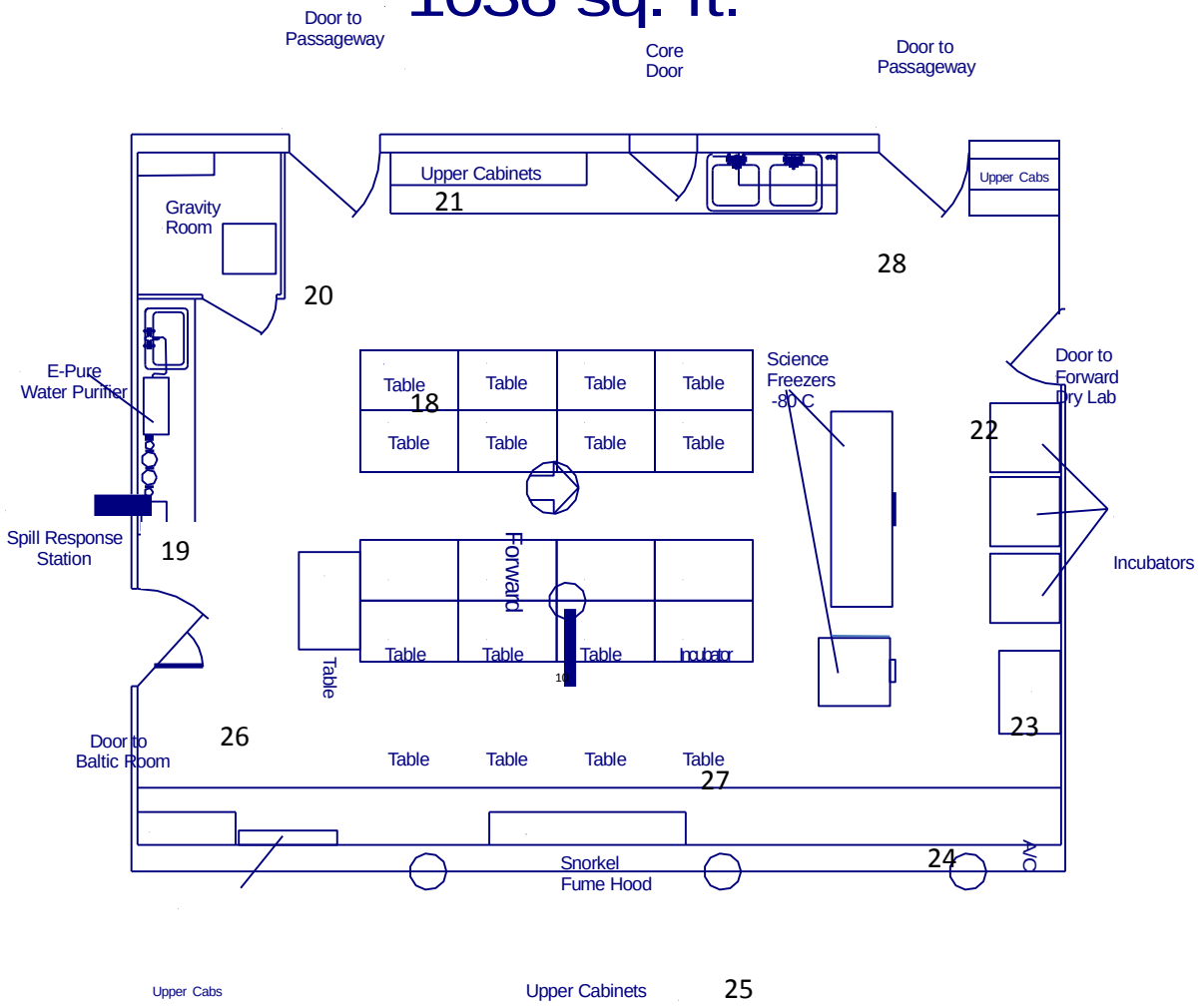


Figure 4
SWAB #818,
1 May 2016

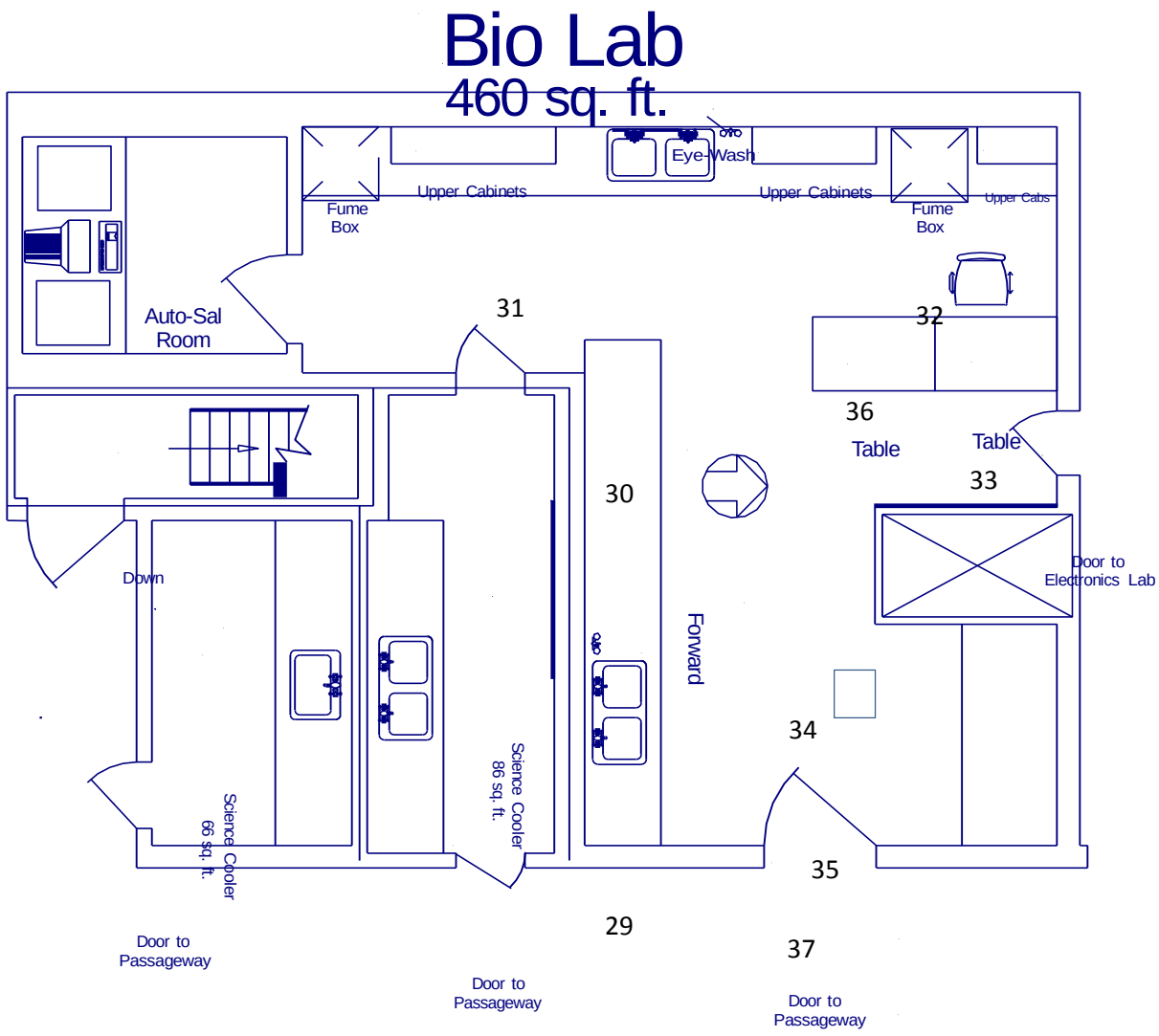


Figure 5
SWAB #818
1 May 2016

Forward Dry Lab

1150 sq. ft.

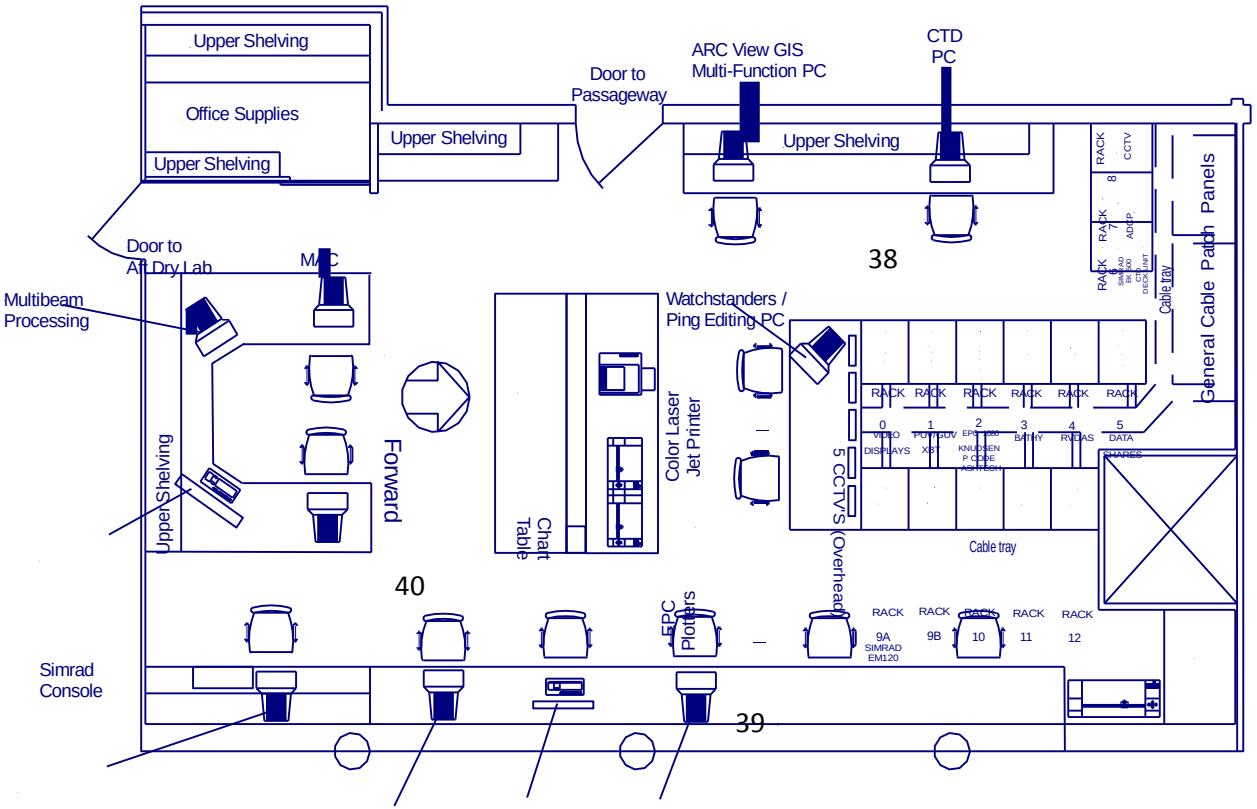


Figure 6
SWAB #818
1 May 2016

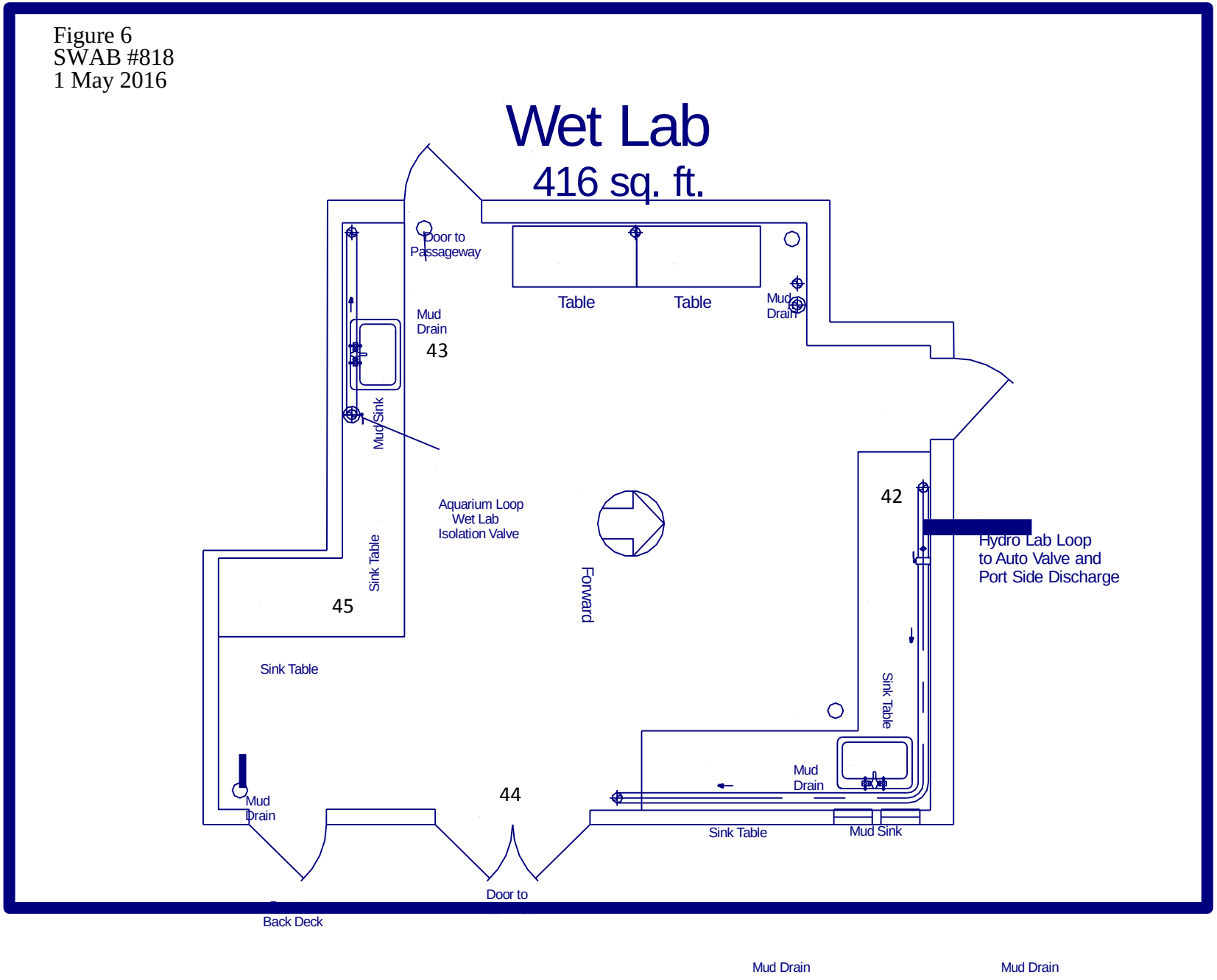


Figure 7
SWAB #818
1 May 2016

Hydro Lab

445 sq. ft.