Dive Plan 4901- May 4, 2017

Port: Jeremy Rich Starboard: Net Charoenpong Pilot: Pat Hickey

On Bottom Target: Crab Spa

Objectives: Deploy Vent-SID at Crab Spa, take majors, pick up Crab Trap, collect Riftia

Basket List

- 1. Large biobox w/ Crab Trap
- 2. 4 majors
- 3. T probe

Locations:	Lat	Long	m	X	У
Pvent	9 50.276	104 17.474	2511	4628	77926
Bio9	9 50.296	104 17.476	2514	4624	77962
Crab Spa MkF	9 50.396	104 17.489	2505	4600	78147
Tica	9 50.406	104 17.490	2505	4598	78165
Teddy Bear	9 50.50	104 17.51	2514		

- 1. On bottom, first proceed to Crab Spa to release LVP:
 - a. Measure T at wand tip
 - b. Take out wand and put in holster
 - c. Release LVP
- 2. Take one major at same spot where wand was
- 3. Transit to Vent-SID landing site
- 4. Pick up Vent-SID and proceed to Crab Spa
- 5. At Crab Spa, position instrument (needs to be positioned w/ wand inserted by 13:45 local time, 19:45 GMT)
- 6. Deploy intake nozzle of Vent-SID
 - a. Insert wand into same spot as for LVP wand
 - b. Stabilize wand
 - c. Measure T at wand tip, should read about 25°C
- 7. Proceed to Bio9
- 8. Check on colonizer CV5, make video observations only
- 9. Take major at second structure next to the one where CV5 is located

- 10. There is a black smoker in the middle of the structure that appears to be very active
- 11. Measure T and proceed with taking a major
- 12. Alternatively, take major at black smoker close to Riftia mound
- 13. Check on Crab Trap at Riftia Mound, but don't pick up
- 14. Move to Biovent all the way to the North and take 2 majors at black smoker
- 15. Try to lure crabs into biobox
- 16. Based on my recollection, there are Riftias at Biovent that can be collected
- 17. If Riftias are present and of correct size, proceed with Riftia sampling
- 18. Before collecting Riftia, proceed with following:
 - a. Measure T at base of Riftia clump,
 - b. Make a T measurements at plume level
- 19. Proceed with collection and put worms in large biobox. Make sure worms fit into biobox and nothing sticks out. Don't fold them!

Alvin Dive# 4901 (May 4, 2017), AT27-12

Pilot: Pat Hickey Port obs: Jeremy Rich

Starboard obs: Net Charoenpong

Descend: 13:56 GMT At seafloor: 15:16 GMT At surface: 20:54 GMT

- Time Event
- 13:56 Descend
- 15:16 At bottom (x4648 y78128 d2502) and proceed to Crab Spa
- 15:36 Fire Green Major; T= 25.2°C, Green 1 did not fire and Green 2 might not be sealed
- 15:49 Fire Yellow Major, T= 23.3°C
- 15:57 Retrieve the Large Volume Pump (LVP) and proceeded to landing site
- 16:02 At landing site (x4504 y78183 d2505); release LVP; locate Vent-SID
- 16:13 Vent-SID found at x4437 v78188 d2506
- 16:18 Remove the weights from Vent-SID
- 16:27 Carry Vent-SID to Crab Spa
- 16:42 At Crab Spa
- 16:45 Place Vent-SID intake nozzle
- 16:48 Temp wand reads 21°C
- 16:53 Photograph the Vent-SID before leaving for Bio9
- 17:00 At Bio9
- 17:02 Inspect the colonizer CV5
- 17:05 Survey the black smoker
- 17:08 Inspect the deployed crab trap (4 crabs at 7 fishes)
- 17:12 Survey north side of the structure; unable to locate the smoker on this side
- 17:20 Leave for Biovent
- 18:00 At Biovent
- 18:06 Black smoker found
- 18:16 Fire Black Major and Red Major (T = 316-320°C)
- 18:31 Sample Riftia and crabs close to the chimney
- 18:52 Leave to Hobbit Hole
- 19:10 At Hobbit Hole and survey the vent field
- 19:19 Take temp at a diffuse flow (x433 y79909) = 10° C
- 19:25 Take temp at a diffuse flow (x433 y79909) = 8.2° C
- 19:29 Ascend (x4382 y79891)
- 20:54 At surface (x4365 y79900)

	AT 37-12 Sample Sheet	
	Alvin Dive# 490/ Date 5/4/17 Logged by Jereny Rick	
	Port Obs. Teremy Rich Starboard Obs. Net Charoenpong Pilot Pat Hickey	
6MT	Descend: 1400 At Seafloor: 15/5 Ascend:	
	FLUID SAMPLES	
	Major# green Time 1530 Temp ICL 24.5 Vent Crab Spa X 4579 Y 78/46 Hdg 37.4 Depth 2506 Alt Marker (type/#) Comments jammed no sample in either chamber Tried 2nd position, one side opening, value is probably still open pobe	
	Major# yellow Time 1543 Temp ICL 335 Vent Crabspa too	
	X 4579 Y 78/46 Hdg 37.4 Depth 2506 Alt Marker (type/#) high	-
	Comments Trying 2nd major at Crass for Fits fore failed. The half to the first one failed.	
sket	Major# black Time 1810 Temp ICL 319,5 Vent Biovent longe enough to	201
	X 4358 Y 79192 Hdg 1.4 Depth 2501 Alt Marker (type/#) Spot.	Bo
8°C	Comments Pat removed top tip to get belter access to orphace too wide to	4
	of Chimney downingthe	
	Major# red Time 1822 Temp ICL 3/6 Vent Biovent In back	0+
	X <u>4358</u> Y <u>79192</u> Hdg <u>1.4</u> Depth <u>2501</u> Alt Marker (type/#)	
	Comments same location as black major	
	Major# Time Temp ICL Vent	
	X Y Hdg Depth Alt Marker (type/#)	
	Comments	
	Major# Time Temp ICL Vent	
	X Y Hdg Depth Alt Marker(type/#)	
	Comments	
	BIOLOGICAL SAMPLES	
	Take photos before collection, in the claw (if possible), and after collection.	
	If needed, make sketches with scales.	
	blume 2.6°C	
	Sample # rifha Time 1830 Temp base 7,4°C Vent Biovent X 4356 Y 79199 Hdg 133,8 Depth 2504 Alt Marker (type/#) Sample type riftia looked pow, moved to another location	
	X 4356 Y 79199 Hdg 133,8 Depth 3504 Alt Marker (type/#)	
	Sample type <u>justia looked pow, mored to another location</u>	
	Basket location biobox on same mound.	
	- A-4 / MAZ WAT IN MINNOV MILMAN TOTAL	

	Assoc. water	sample #	Assoc.	rock sample #		(type)		
	Description o	f associated fauna	&/or type					
				blume	6.20	C		
Sample	#riftia	_ Time <u>1845</u>	Temp _	base	27°C	,	Vent	biovent
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		Sample type _						
		Basket location				•		
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		Basket location						
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		of associated fauna						
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					Basket location _				
	Assoc. water	r sample #		_ Assoc.	biol. sample #		(type)		
		comments							

EXPERIMENT DEPLOYMENTS/RECOVERIES

Take photos before and after deployment or recovery. Make sketches with scales. Description of associated fauna &/or type of venting Additional assoc. samples: type/ID _ Additional descriptive comments Releasing pump off axis at 1607

Deploying vent-sid

Time 1650 Temp 21 E Vent Crab Spa we could get it X <u>4579</u> Y <u>78146</u> Hdg _____ Depth <u>2506</u> Alt ___ Marker ____ (type/#) Description of associated fauna &/or type of venting Temp probe 1-2" to above and right of vent-SID so likely cooler than vent-sid inlet. Additional assoc. samples: type/ID_ Vent-SiD in let looked perfectly placed in 25°C spot. Additional descriptive comments Blodo at Vent-Sid landing site pulling oft weights ib 28 Heading to Crab Spa Expt ID/# _____ Time ____ Temp ____ Vent ____ X _____ Y ___ Hdg ____ Depth ____ Alt ___ Marker ___ (type/#) Description of associated fauna &/or type of venting Additional assoc. samples: type/ID Additional descriptive comments Expt ID/# _____ Time ____ Temp ____ Vent ____ X _____ Y ___ Hdg ____ Depth ____ Alt ___ Marker ____(type/#) Description of associated fauna &/or type of venting Additional assoc. samples: type/ID _____ Additional descriptive comments _____ Expt ID/# _____ Time ____ Temp ____ Vent ____ X _____ Y ___ Hdg ____ Depth ____ Alt ___ Marker ____(type/#) Description of associated fauna &/or type of venting

Additional assoc. samples: type/ID

Additional descriptive comments

MARKERS DEPLOYED

Time	Гime Marker typ			Marker	·#	
X	Y	Hdg	Depth	Alt	Marker	(type/#)
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Commen	ts					
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X	Y	Hdg	Depth	Alt	Marker	(type/#)
Reason/	assoc. sar	mple(s)				
Commen	ts				×	

ADDITIONAL NOTES:

1919 Hobbit Hole T in clump of mussells with 3 dead riftia, the only sign of riftia at the site $T = 98800 / 0^{\circ}C$ × 4333 y 79909 d 2512.4 h 13.9

× 4353 y 79919 d 2513 h 293.1

T 8.2°C

clump of mussells near ledge

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	Alvin Dive#	4901	Date May 4.	2017 Logg	ged by Ne	et Charoenp	ong
	Port Obs. Jeren						
	Descend: 13:5						
				2502 m	A448 4781	28 2500	m × 4382 y79
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0,0	Major# NCA	79192 Ud	1 De	o ICL <u>-010 C</u>	Vent_	DIOVER	// ///\
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Sampl	e #	Time		Temp				Vent	
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13:56 GMT
              Descend
               At bottom ( x 4148 y 78128 d=2502m)
15:16
              Failed at firing Green Mayor ] Crab Spa
15:36
               Fired Yellow Mayor
15:49
               Get Retrieve LVP and more to landing safe
 15:57
              Put LVP at landing site × 4504 y 78183 h304 d = 2505m
 16:02
               Release LVP and transit to Vent-SID
 16:07
               Vent-SID found x 4437 y 78188 d 2506
 16:013
               Romane weight
 16:18
                Proceed to Crab Spa
                Grab intake nossle At Grab Sph
  16:27
  16:42
                Intake nozzle in
  16:45
                Temp probe reads 21°c
  16:48
                 Photograph the Vent-SID and proceed to Bio9
  16:53
                 At Bio 9
  17:00
                 Video the doniza
   17:02
                 Black Smoker #1 .
  17:05
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6-7 fisses
  17:08
                 Survey the north side of Big
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            Black smoken found
 18:06
               Fire Red Major } T=316-320°C
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  18:23
                Bone of Rottia Sample Roftra/Crass #1
  18:31
    18:44
      18:57
                 off to Hobbit Hole
     19:10
                Ambe at Hobbiji Hule
              Take temp. @ × 4333 y 79909 = 10°C
Take temp @ × 4353 y 79919 = 8.2°C
     19:19
      19:25
               Start to ascend x.4382 y = 79891
      19:29
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EXPERIMENT DEPLOYMENTS/RECOVERIES

Take photos before and after deployment or recovery. Make sketches with scales.

Expt ID)/#	Time		Temp	Vent					
	X	Y	Hdg	Depth	Alt	Marker	(type/#)			
	Description	on of associate	d fauna &	d/or type of venting_						
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	Additiona	l assoc. samp	es: type/II	D						
	Additiona	I descriptive co	omments .							
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	Additiona	I descriptive co	omments .							

MARKERS DEPLOYED

Time Marker type		Marker type _		Marker	· #	
X	_ Y	Hdg	Depth	Alt	Marker	(type/#)
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Comments						^

ADDITIONAL NOTES: