Dive Plan 4903– May 6, 2017

Port: Stefan Sievert Starboard: Andrew Babbin Pilot: Phil Forte

On Bottom Target: Vent-SID landing site

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

Basket List

- 1. Large biobox w/ Crab Trap
- 2. 5 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. Transit to Vent-SID landing site
- 2. Pick up Vent-SID and proceed to Crab Spa
- 3. At Crab Spa, position instrument (needs to be positioned w/ wand inserted by 11:00 local time, 17:00 GMT)
- 4. Deploy intake nozzle of Vent-SID
 - a. Insert wand
 - b. Stabilize wand
 - c. Measure T at wand tip, should read about 25°C
- 5. Proceed to Bio9
- 6. Pick up Crab Trap near Bio9
- 7. Deploy new Trap further away on rocky substrate
- 8. Pick up half a dozen mussels
- 9. Move to Teddy Bear
- 10. Take out wand of LVP
- 11. Take 5 majors at same spot
- 12. Reinsert wand of LVP

- 13. Collect Riftia in Riftia colony close by
- 14. Before collecting Riftia, proceed with following:
 - a. Measure T at base of Riftia clump,
 - b. Make a T measurements at plume level
- 15. 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 4903 — AT37-12 06 May 2017

Pilot: Phil Forte Port Observer: Stefan Sievert Starboard Observer: Andrew Babbin

СМТ	Commonte
GMT 1354	Comments Descending
1512	On bottom, neutrally buoyant above seafloor Arrived at Vant SID landing site utilize both arms to grab
1517	Arrived at Vent-SID landing site, utilize both arms to grab
1530	Began to move Vent-SID to Crab Spa
1600	Arrived at Crab Spa and began positioning Vent-SID so that the instrument was stable and safely away from hot vent fluids while the sampling hose was inserted deep into fissure. Temperature at wand tip was 26°C (x 4448, y 78156, hdg 56, d 2506)
1646	Instrument positioning complete
1657	Departed Crab Spa for Bio9
1715	Picked up crab trap with approximately half a dozen fish and one crab (x 4631, y 77975, hdg 115, d 2512)
1720	Deployed new crab trap on nearby rocky substrate
1722	Picked up 10 or so mussels (x 4631, y 77975, hdg 117, d 2512); Temp = 9°C. Moved
	to Teddy Bear.
1750	Arrived at Teddy Bear and removed large volume pump's wand from fissure to allow
	Majors to sample fluid (x 4559, y 78362, hdg 28, d 2516).
1805	Fired Yellow Major. Both chambers fired well. ICL Temperature 18°C but it was high
	for ambient seawater
1814	Fired Black Major. Both chambers fired well. ICL Temperature 12°C
1824	Fired Green Major. Both chambers fired well. ICL Temperature 12°C
1833	Fired Blue Major. Both chambers fired well. ICL Temperature 11°C
1841	Fired Red Major. Both chambers fired well. ICL Temperature 11.5-12°C
1850	Repositioned large volume pump sampling wand into vent, and used rock to stabilize
	the wand and minimize entrainment of bottom seawater when pump samples
1900	Proceeded to nearby Riftia colony
1905	Collected 8 healthy Riftia. Temperature at base = 32° C; Temperature above = 17° C (x
	4556, y 78394, hdg 358, d 2514)
1925–	Attempted to find CV 1 colonizer deployed on first Alvin dive of cruise; unable to
1940	locate
1950	Arrived at Alvinella Mound (Wedding Cake) to check on colonizer (x 4599, y 78164,
	h 137, d 2512); looked good
1955	Arrived at Crab Spa to check on Vent-SID. Chamber did not look engaged and tracer
	bags still appeared inflated. Looks like the Vent-SID did not operate as hoped
2025	Arrived at Bio9 to check on colonizer deployed there; looked good.
2030	Proceeded to pillowed lava plains off axis for ascent
2100	A soonding; and to an ingradible dive

2100 Ascending; end to an incredible dive

Page 1 of 6

AT 37-12 Sample Sheet
vin Dive# 4903 Date 6 May 2017 Logged by Andrew Babbin
ort Obs. Stefan Sievent Starboard Obs. Andrew Babbin Pilot Phil Forte
escend: 1350 GMT At Seafloor: 1512 Ascend: 2100
UID SAMPLES
ajor# Yellow Time 1805 Temp ICL 18°C* Vent Teddy Beau
4559 Y 78362 Hdg 28 Depth 2516 Alt Ø Marker (type/#)
omments I I char high scowater reading, live
ajor#_Black_Time_1814_TempICL_12°C_Vent_Teday Bean_ 4559_Y_78362_Hdg_28_DepthAlt_@Marker(type/#) omments_ICL_ucreased_from 11°C-13°C_during_firing
omments ICL increased from 1100-1300 during firing
ajor# <u>Green</u> Time <u>1824</u> Temp ICL <u>12°C</u> Vent <u>Teddy Bear</u> <u>4559</u> Y <u>78362</u> Hdg <u>28</u> Depth <u>Alt Ø</u> Marker (type/#) pomments
ajor# <u>Blue</u> Time <u>1833</u> Temp ICL <u>11°C</u> Vent <u>Teddy Bear</u> <u>4559</u> Y <u>78362</u> Hdg <u>28</u> Depth <u>Alt Ø</u> Marker (type/#) comments
ajor# Time Temp ICL Vent Vent
ajor# Time Temp ICL Vent
Y Hdg Depth Alt Marker(type/#)
omments

BIOLOGICAL SAMPLES

Take photos before collection, in the claw (if possible), and after collection. If needed, make sketches with scales.

Sample # 1 Time 1715 Temp Ma Vent Bio9 X 4631 Y 77975 Hdg 115 Depth 2512 Alt O Marker (type/#) Sample type half a dozen frih + 1 crab Basket location large biv bix

Assoc. water sample # <u>w</u> Assoc. rock sample # <u>Ma</u> (type)
Description of associated fauna &/or type of venting
Sample # 2 Time 1722 Temp 9°C Vent Bio 9
X <u>4631</u> Y <u>77975</u> Hdg <u>117</u> Depth <u>2512</u> Alt <u>&</u> Marker(type/#)
Sample type ~10 mussels
Basket location <u>large his box</u> Assoc. water sample # <u>Ma</u> Assoc. rock sample # <u>Ma</u> (type)
Description of associated fauna &/or type of venting <u>PiPtra patch</u>
Sample # 3 Time 1905 Temp base= 32°C, above= 17.8°C Vent Teday Bear X 4956 Y 78394 Hdg 358 Depth 2514 Alt @ Marker (type/#)
Sample type <u>8 fuma</u>
Basket location lenge hobox
Assoc. water sample # Assoc. rock sample # (type)
Description of associated fauna &/or type of venting diffuse, active flow
Sample # Time Temp Vent
X Y Hdg Depth Alt Marker(type/#)
Sample type
Basket location
Assoc. water sample # Assoc. rock sample # (type) Description of associated fauna &/or type of venting
Sample # Time Temp Vent
X Y Hdg Depth Alt Marker(type/#)
Sample type
Basket location
Assoc. water sample # Assoc. rock sample # (type)
Description of associated fauna &/or type of venting
Sample # Time Tomp
Sample # Time Temp Vent X Y Hdg Depth Alt Marker (type/#)
Sample type Alt Marker(type/#)
Basket location
Assoc. water sample # Assoc. rock sample # (type)
Description of associated fauna &/or type of venting (0, po)
Sample # Time Temp Vent
X Y Hdg Depth Alt Marker(type/#)

Page 3 of 6

									rage 5
		Sample	type _						
		Basket	locatio	n					
	Assoc. wate	er sample #		Asso	c. rock sample # _		(type)		
	Description	of associate	d fauna	a &/or type	e of venting		(()po)		
ROCK	SAMPLES	NON	E.						
Take p	photos befo	re collecti	on an	d in the	claw. If needeo	l. make	sketches	w/sca	las
						<i>,,</i>	onotones	W/ Sca	163.
Sample	e #	Time		Temp				Vont	
	Χ	Y	Hdg		Depth	Alt	Marker	vent	(tupo/#)
	Sample type				Basket location	_ /			_(type/#)
	Assoc. wate	r sample # _		Assoc	. biol. sample # _		(type)		
/	Descriptive of	comments _					_ (()pc)		
Sample	ə #	Time		Temp				Vont	
	Х	Υ	Hdg		_ Depth	Alt	Marker	_ vent	(1)
	Sample type		_ 0		Basket location	_ /			_(type/#)
	Assoc. water	sample #		Assoc	biol. sample #		(type)		
	Descriptive c	omments		*			_ (()pc)		
Sample	#	Time		Temp				Vont	
	Х	Υ	Hdg		Depth	Alt	Marker	_ vent_	(1)(00/#)
	Sample type	2	- • •		Basket location	_ /			_(type/#)
	Assoc. water	sample #		Assoc.	biol. sample #		(type)		
	Descriptive c	omments					_ (()po)	<u>x</u>	
Sample	#	Time		Temp				Vent	
	Х	Υ	Hdg		Depth	Alt	Marker		(type/#)
	0				Press, and a second				_(-) ~ (-) /

 Sample type ______
 Basket location ______

 Assoc. water sample # ______
 Assoc. biol. sample # ______

 Descriptive comments ______

Sample # Time		Гетр			Vent
X Y Sample type	Hdg	Deptł Baske	n Alt _ et location	Marker	(type/#)
Assoc. water sample Descriptive commen		Assoc. biol. s	the second se	(type)	



EXPERIMENT DEPLOYMENTS/RECOVERIES

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

Expt ID/# Vent-SID Time 1530 Temp No Vent landing site	
X 4448 Y 78201 Hdg 229 Depth 2505 Alt Ø Marker(type/#)
Description of associated fauna &/or type of venting	
moving Vent-SID to Crab Spa.	
Additional assoc. samples: type/ID	_
Additional descriptive comments	_
Expt ID/# Vent-SID Time 1635 Temp 26°C Vent Crab Spa	
X 4595 Y 78156 Hdg 56 Depth 2506 Alt Ø Marker(type/#)
Description of associated fauna &/or type of venting	
Description of associated fauna &/or type of venting pointioned Vent-SID for in site membring to start @ 1730 GI	AT
Additional assoc. samples: type/ID	_
Additional descriptive comments	_
Expt ID/# Crab Trap Time 1730 Temp Ma Vent Bio 9	
X 4633 Y 77969 Hdg 115 Depth 2510 Alt @ Marker (type/#	
Description of associated fauna &/or type of venting Mit Marker(type/#	ł
deployed new Grab Trap on rocky substrate away from Riffic	-
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 Marker(type/#)	8
	-
Additional assoc samples: type/ID	-
Additional assoc. samples: type/ID Additional descriptive comments	-
Expt ID/#	
Expt ID/# Time Temp Vent	
X Y Hdg Depth Alt Marker(type/#)	
Description of associated fauna &/or type of venting	-
Additional again complex two (ID	-
Additional assoc. samples: type/ID	-
Additional descriptive comments	

MARKERS DEPLOYED

Time		Marker type		Marker #	
Х	Y	Hdg	Depth	AltMarker	(tupe/#)
Reason/	assoc. sa	mple(s)			(type/#)
Commen	ts				
Time		Marker type		Marker #	
Х	Y	Hdg	Depth	Alt Marker	(type/#)
Reason/ a	assoc. sar	mple(s)			(type/#)
Comment	is				
Time		Marker type		Marker #	
Х	Y	Hdg	Depth	AltMarker	(type/#)
Reason/ a	assoc. san	nple(s)			(type/#)
Comment	s				

ADDITIONAL NOTES:

AT 37-12 Sample Sheet
Nvin Dive# 4903 Date 5-6-17 Logged by Sievert
Port Obs. Sievert Starboard Obs. Babbin Pilot Forte
Descend_13.54 At seafloor_/S:11Ascend_20:54
LUID SAMPLES
Najor# <u>Jellow</u> Time <u>18:08</u> Temp ICL Were Vent <u>Jeddy Boos</u>
Comments <u>+ Bachgrout jead 10°C; Tis questionable</u>
Comments # Bachgrout read ~ 10°C; T is questionable
Major# <u>Black</u> Time <u>18:14</u> Temp ICL <u>11.5%</u> Vent <u>TB</u> <u>x4559</u> <u>x7836</u> Hdg <u>29</u> Depth <u>2516</u> Alt Marker(type/#)
Comments2 4
Major#TimeTimeTemp ICLTemp ICL ICLSCVentTB XSS9Y_78_36Hdg29Depth2576AltMarker(type/#) Comments
Major#
Major# RedTime8: 41 Temp ICL1.8°C VentTB x 4554 y 7836 Hdg 29 Depth_2516 AltMarker(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.

Sample # Munchs Time $\frac{1720}{1747}$ Temp $\sim 9.5c$ $\times \frac{100}{4629}$ Y $\frac{1717}{1747}$ Hdg $\frac{148}{148}$ Depth $\frac{2513}{2513}$ Alt Marker Sample type $\frac{1000}{1000}$ _ Vent 1/109 - Pultia _____(type/#) moul Basket location _______

	Assoc. wa	ter sample # _	Ass	oc. rock sample #		(type)			
	Descriptio	n of associated	l fauna &/or ty	pe of venting					_
Sampl	le # 12/4 x 4550	ia _{Time} <u>19</u> <u>6</u> y <u>7839</u>	12 Temp Hdg 353	33°C Depth 2579	Alt	Marker _	Vent	<u>Li/fra</u> _(type/#)	nocos
IR 5	01	Sample t	ype <u>Rif 7</u>	lice ,box					
8.5	CAssoc. wat	ter sample #	Asso	oc. rock sample #		(type)			
1+3 0	Descriptior	n of associated	fauna &/or ty	pe of venting					
ese. Je	C		2						
Sampl	e #	Time	Temp				Vent		
	Х	Y	Hdg <u>556</u>	Depth	Alt	Marker _		_(type/#)	
1		Sample ty	ype						
	Assoc. wat	er sample #		oc. rock sample # _		(1)(00)			
	Descriptior	of associated	fauna &/or tvr	be of venting		(type)			
			51	g					
Sample	e #	Time	Temp				Vent		
	Х	Y	Hdg	Depth	Alt	Marker		(type/#)	
		Sample ty	/pe						
		Basket lo	cation						
	Assoc. wat	er sample #	Asso	c. rock sample # _		_ (type)			
	Description	or associated	fauna &/or typ	e of venting					
Sample	e #	Time	Temp				Vont		
	Х	Y	Hdg	Depth	Alt	Marker	_ vent	(typo/#)	
		Sample ty	pe					_(type/#)	
		Basket loo	cation						
	Assoc. wate	er sample #	Asso	c. rock sample # _		_ (type)			
	Description	of associated f	auna &/or typ	e of venting					
Sample	. 44	Time e	-						
Sample	× #	I ime	lemp _	Danith			_ Vent _	<u> </u>	
	Λ	_ ' Sample tv	nuy	_ Depth	_ Alt	Marker		_(type/#)	
		Basket loc	ation						
	Assoc. wate	er sample #	Asso	c. rock sample # _		(type)			
	Description	of associated f	auna &/or typ	e of venting		_ (999)		18 1.0	
Sample	×	I Ime	lemp _	Danth			_ Vent _		
	A	_ (пиу	_ Depth	_ Alt	Marker	den in	(type/#)	

Page	3	of 5	

Sample type		
Basket location _		
Assoc. water sample #	Assoc. rock sample # (type)
Description of associated fauna &	k/or type of venting	

ROCK SAMPLES

ť,

Take photos before collection and in the claw. If needed, make sketches w/ scales.

Sample	#	Time		Temp				_Vent_	
	X	Υ	Hdg _		Depth	Alt	Marker		_(type/#)
	Sample type				Basket location _				
					biol. sample #				
/	Descriptive co	omments							
Sample	#	Time		Temp		N		Vent	
	X	Υ	Hdg_		Depth	Alt	Marker		_(type/#)
	Sample type				Basket location _				
	Assoc. water	sample #		_ Assoc.	biol. sample #		(type)		
	Descriptive co	omments							
Sample	#	Time		Temp _				_ Vent	
	Χ	Υ	Hdg		_ Depth	Alt	Marker		_(type/#)
	Sample type				Basket location _				
	Assoc. water	sample #		Assoc	. biol. sample #		_ (type)		
	Descriptive c	omments						·	
Sample		Time		Temp _				Vent	
	Χ	Υ	Hdg		_ Depth	Alt	Marker		_(type/#)
					Basket location _				
	Assoc. water	sample #		Assoc	. biol. sample #		_ (type)		
	Descriptive c	omments							
Sample	e #	Time		Temp _				Vent	
	Χ	Υ	Hdg		_ Depth	_ Alt	Marker		_(type/#)
	Sample type				Basket location				
	Assoc. water	r sample #		Assoc	. biol. sample # _		_ (type)		
	Descriptive of	comments							

EXPERIMENT DEPLOYMENTS/RECOVERIES

1

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

Expt ID	VentSIP Time 16:40 Temp 26 2 Vent Ctab Spa 4595 x 7815 Hdg 56 Depth 2506 Alt Marker 7 (type/#)									
	Description of associated fauna &/or type of venting									
	Additional assoc. samples: type/ID									
	dditional descriptive comments									
Expt ID	Grab Trop Time 17:12 Temp Vent Bio 9 12:12 Mou 4629 47797 Hdg Hdg 14:48 Depth 2573 Alt Marker (type/#) escription of associated fauna &/or type of venting									
	Roltin, mund, diffuse flow									
	dditional assoc. samples: type/ID dditional descriptive comments/ Cha.b., _⊋ _(i 5hes									
Expt ID/# Gab Trop Time 17:20 Temp Vent Biog-Ruftia Moul x4633 x 1796 Hdg 95 Depth 3500 Alt Marker (type/#)										
	escription of associated fauna &/or type of venting									
Additional assoc. samples: type/ID										
	additional descriptive comments <u>cliployed on prohy substities</u>									
	E Time Temp Vent									
	Y Hdg Depth Alt Marker (type/#) Description of associated fauna &/or type of venting									
	dditional assoc. samples: type/ID									
Expt ID	t Time Temp Vent									
	Y Hdg Depth Alt Marker(type/#)									
Description of associated fauna &/or type of venting										
	Additional assoc. samples: type/ID									
	Additional descriptive comments									

MARKERS DLEPLOYED

Time		Marker type	Marker #			
X	Y	Hdg	_ Depth	Alt	_Marker	_(type/#)
14						
Time		Marker type		_ Marker 7		
Χ	Υ	Hdg	_ Depth	Alt	Marker	_(type/#)
Reason/ ass	soc. sample	(s)				
Time		Marker type		_ Marker a		
X	Υ	Hdg	_ Depth	Alt	_Marker	_(type/#)
Reason/ ass	soc. sample	(s)				
Comments						

ADDITIONAL NOTES:

At Vent-SID: 15:17 Moving Vert-SID: 15:35 Veri-510 at Crub Spa: 15:59 Cleeled on Vint-SID ~ 20:10