Dive Plan 4902– May 5, 2017

Port: Ileana Perez-Rodriguez ***PIT:*** Drew Bewley ***Pilot:*** Jefferson Grau

On Bottom Target: LVP landing site: 9ºN 50.425 104W 17.575

Objectives:

- Bring LVP to Teddy Bear and place wand in crack
- Sample dead Riftia in Riftia colony close by
- Pick up CV 7 Alvinella Mound near Crab Spa
- Release Vent-SID at the earliest at 13:15 (19:15 GMT)!!!
- Take major at Crab Spa
- Take major at small Alvinella mound
- Pick up CV5 at Bio9
- Pick up Crab Trap at Riftia mound near Bio9
- Take major at Pvent

Basket List

1. Biobox
2. 3 Majors
3. 2 small bioboxes
4. T probe

Locations:	**Lat**	**Long**	**m**	**x**	**y**
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, transit to LVP location and pick up instrument

2. Move to Teddy Bear and position instrument near weight stacks of previous deployments

3. Measure T in crack where majors where taken on dive 4900

4. Remove hose from LVP
    a. Insert wand in same spot
    b. Stabilize wand

5. Position wand of LVP in same spot

6. Move to Riftia colony ~50 m away to the North that we sampled on dive 4900
7. Look for dead Riftia in area without flow
8. Verify that there is no flow
9. Proceed with sampling dead Riftia and put in big biobox, around 5
10. Proceed to Alvinella mound near Crab Spa and recover CV8
11. For picking up colonizer, move extremely slowly and gently put in 1st small biobox
12. Measure T at point where colonizer was
13. Move to Crab Spa to release Vent-SID (**note**: Not before 13:15 (19:15 GMT)!!!!
14. Take major at Crab Spa
15. Move to small Alvinella mound close by and measure T
16. Take major
17. Proceed to Bio9 to recover CV5
18. For picking up colonizer, move extremely slowly and gently put in 2nd small biobox
19. Take major at black smoker close by to the right
20. Recover Crab Trap at Riftia mound close to Bio9

Alvin Dive 4902-AT 37-12
May 5, 2017

Pilot: Jefferson Grau
Port: Ileana Pérez-Rodríguez
PIT: Drew Bewley
Notes are from Ileana Pérez-Rodríguez

GMT	Comments
14:01	Descending
15:40	At sea floor
16:04	At LVP landing site. Picked up LVP for deployment at 'Teddy Bear'.
16:37	Deployed LVP at 'Teddy Bear'. Measured temperature at seafloor crack (12.12 °C) and proceeded to place LVP wand (at the crack).
17:17	We moved a bit to the left of 'Teddy Bear' (still at the same site) to collect biofilms in basalts next to a small patch of Riftia tubeworms. We measured the temperature (8.5 °C) at the crack where Riftia were growing, and sampled a rock that looked furry and brownish. We placed rock inside of the small 'leaky' biobox. After, we headed north of 'Teddy Bear' to collect dead Riftia tubes.
17:49	Found a patch of Riftia tubeworms, going from healthy (to our left) to dead (to our right). Measured temperature (3.35 °C) at the base of the pile of dead Riftia tubeworms. Collected ~5-10 Riftia tubes and placed them in large biobox. Next, we headed to general 'Crab Spa' area.
18:50	We went to the Alvinella mound ('Wedding cake') where we collected colonizer CV8, and placed it in the small biobox (nearest to the DSV Alvin).
19:15	At 'Crab Spa'. We prepared the Vent-SID for release by arranging wand and sampling hose of Vent-SID inside of the instrument.
19:23	Picked up yellow major for sampling at 'Crab Spa'. ICL registered ambient temperature as 5 °C (a bit off). Both chambers fired (chamber 2 fired more slowly) and fluid samples were taken at temperatures of 26 °C. Next, we moved off-axis to release Vent-SID.
19:56	Released Vent-SID. One of the legs fell off and was placed inside Vent-SID's basket. After, we headed back to the general 'Crab Spa' area.
20:34	Arrived to the small Alvinella mound (or 'Cupcake') next to the 'Wedding Cake'. We picked up the red major for sampling on a sulfide orifice at the top of the small mound and proceeded to collect fluids. Both chambers fired and fluid samples were taken at temperatures of 26-30 °C. However, the red major started moving a bit off from the sampling location during fluid collection.
20:52	Picked up black major to repeat sampling at 'Cupcake'. Both chambers fired and fluid samples were taken at temperatures of 39 °C. After, we moved off-axis where we waited for the LVP to be secured on deck of

R/V Atlantis. Because we ran out of power we could not complete our final task of picking up the crab trap at Bio9.

21:51 Ascended.

AT 37-12 Sample Sheet

Alvin Dive# 4902 **Date** 05/05/2017 **Logged by** Ileana Pérez-Rodríguez

Port Obs. Ileana Pérez-Rodríguez **~~Starboard Obs.~~** PILOT Jefferson Grau **~~Pilot~~** PIT: Drew Bewley

Descend 14:01 GMT **At seafloor** 15:40 GMT **Ascend** 21:51 GMT

FLUID SAMPLES

Major# Yellow Time 19:23 GMT Temp ICL 26°C Vent Crab Spa
X 4585 Y 7814 Hdg 17 Depth 2506 Alt 0 Marker _____(type/#)
Comments • Ambient ICL registered 5°C (usually 2°C)
• major 2 released slowly

Major# Red Time 20:34 Temp ICL 26°C Vent Small Alvinella mound near Crab Spa
X 4576 Y 7816 Hdg 64 Depth 2515 Alt 0 Marker _____(type/#)
Comments • ICL registered 2°C for ambient temperature / • 30°C for Major Red 2
• Major moved during sampling

Major# Black Time 20:52 Temp ICL 39°C Vent Small Alvinella mound near Crab Spa
X 4576 Y 7816 Hdg 75 Depth 2515 Alt 0 Marker _____(type/#)
Comments • ICL - registered 2°C for Ambient temperatures

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 _____

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 # 2 Time 17:49 Temp 3.35°C (Base of tubeworms) Vent ~~near~~ North of Teddy Bear
X 4545 Y 7838 Hdg 10.7 Depth 2514 Alt 0 Marker _____(type/#)
Sample type Dead Riftia tubes
Basket location collected 5-10 (tried to get hollow ones)

Assoc. water sample # _____ Assoc. rock sample # _____ (type) _____
Description of associated fauna &/or type of venting Patch of Riftia (Alive ones to the left and dead one to the rights)

Sample # 2 Time 18:50 Temp _____ Vent Alvinella mound (Wedding cake)
X 4572 Y 7814 Hdg 53 Depth 2513 Alt 0 Marker _____(type/#)
Sample type colonizer CV8
Basket location front Bio Box (nearest to Alvin)-small one
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 _____ 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 _____ 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_____

ROCK SAMPLES

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

Sample # 1 Time 17:17 Temp 8.5°C at Riftia hole Vent Teddy Bear

X 4450 Y 7835 Hdg 10.7 Depth 2516 Alt 0 Marker _____(type/#)

Sample type Rocks with biofilm Basket location Small Bio Box (leaky one)

Assoc. water sample # _____ Assoc. biol. sample # _____ (type) _____

Descriptive comments _____

Sample # _____ Time _____ Temp _____ Vent _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Sample type _____ Basket location _____

Assoc. water sample # _____ Assoc. biol. sample # _____ (type) _____

Descriptive comments _____

Sample # _____ Time _____ Temp _____ Vent _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Sample type _____ Basket location _____

Assoc. water sample # _____ Assoc. biol. sample # _____ (type) _____

Descriptive comments _____

Sample # _____ Time _____ Temp _____ Vent _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Sample type _____ Basket location _____

Assoc. water sample # _____ Assoc. biol. sample # _____ (type) _____

Descriptive comments _____

Sample # _____ Time _____ Temp _____ Vent _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Sample type _____ Basket location _____

Assoc. water sample # _____ Assoc. biol. sample # _____ (type) _____

Descriptive comments _____

EXPERIMENT DEPLOYMENTS/RECOVERIES

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

Expt ID/# AT37-12 Dive: 4902 Time 16:04 Temp _____ Vent Elevator Landing Site
X 4427 Y 7819 Hdg _____ Depth 2506 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments Moving LVP to Teddy Bear (picked up at elevator landing site)

Expt ID/# AT37-12 Dive: 4902 Time 16:37 Temp 12.12°C Vent Teddy Bear
X 4550 Y 7835 Hdg _____ Depth 2515 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments Deploying LVP at Teddy Bear

Expt ID/# AT37-12 Dive: 4902 Time ~~19:56~~ 19:15 Temp _____ Vent Crab Spa
X 4584 Y 7814 Hdg 17 Depth 2506 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID stopped Vent-SID
Additional descriptive comments Preparing Vent-SID for release (arranging wand of Vent-SID inside the instrument)

Expt ID/# AT37-12 Dive: 4902 Time 19:56 Temp _____ Vent Crab Spa - and off axis
X 4632 Y 7820 Hdg 110 Depth 2502 Alt 0 Marker _____(type/#)
Description of associated fauna &/or type of venting _____
Additional assoc. samples: type/ID _____
Additional descriptive comments Released Vent-SID (one leg inside Basket)

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 _____ Marker type _____ Marker # _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Reason/ assoc. sample(s) _____

Comments _____

Time _____ Marker type _____ Marker # _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Reason/ assoc. sample(s) _____

Comments _____

Time _____ Marker type _____ Marker # _____

X _____ Y _____ Hdg _____ Depth _____ Alt ____ Marker _____(type/#)

Reason/ assoc. sample(s) _____

Comments _____

ADDITIONAL NOTES: