

Dive Plan 4899– May 2, 2017

**Port:** Jeremy Rich    **Starboard:** Ed Hobart

**Pilot:** Jefferson Grau

**On Bottom Target:** Teddy Bear

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

**Basket List**

1. Large biobox w/ Crab Trap
2. 2 small bioboxes, one with colonizers
3. 2 medium bioboxes
4. T probe

**Locations:**

	<b>Lat</b>	<b>Long</b>	<b>m</b>	<b>x</b>	<b>y</b>
<b>Pvent</b>	9 50.276	104 17.474	2511	4628	77926
<b>Bio9</b>	9 50.296	104 17.476	2514	4624	77962
<b>Crab Spa MkF</b>	9 50.396	104 17.489	2505	4600	78147
<b>Tica</b>	9 50.406	104 17.490	2505	4598	78165
<b>Teddy Bear</b>	9 50.50	104 17.51	2514		

1. On bottom, first proceed to Teddy Bear to release LVP:
  - a. Put wand in holster
  - b. Release LVP
2. Transit to Vent-SID landing site
3. Pick up Vent-SID and proceed to Crab Spa
4. At Crab Spa, position instrument
5. Deploy intake nozzle of Vent-SID
  - a. Insert wand into same spot as for LVP wand
  - b. Stabilize wand
  - c. Temperature at intake should read 25°C
  - d. Turn on Vent-SID
6. Pick up both colonizers CV at Alvinella mound. When picking up, move extremely slowly to minimize loss of material
7. Put in right medium biobox
8. Measure T at spot were colonizers were located
9. Deploy new colonizers in hotter fluids of around 80°C

10. Collect CV colonizer at Crab Spa microbial mat area
11. When picking up, move extremely slowly to minimize loss of material
12. Put in front left small biobox
13. Measure T at spot where colonizer was
14. Collect several rocks with microbial mats in the area around CV colonizer
15. Put in medium left biobox
16. Collect Riftia near Alvinella mound
17. Before collecting Riftia, proceed with following:
  - a. Measure T at base of Riftia clump,
  - b. Make a T measurements at plume level
18. Proceed with collection and put worms in large biobox. Make sure worms fit into biobox and nothing sticks out. Don't fold them!
19. Proceed to Bio9
20. Check on colonizer CV
21. Collect piece of chimney with Alvinella and put in front right small biobox
22. Measure T of fluids

**Alvin Dive 4899 – AT37-12**  
**MAY 2, 2017**

**Pilot: Jefferson Grau**

**Port Observer: Jeremy Rich**

**Starboard Observer: Ed Hobart**

**Notes are from Jeremy Rich**

**(NOTE: A copy of framegrabber does not exist for this dive)**

<b>GMT</b>	<b>Comments</b>
14:00	Descending
16:00	At sea floor
16:20	At Teddy Bear taking T at location of large volume pump inlet (x4558 y78350 d2516), T 12.7; The pump was released to the surface.
16:41	Collected crab trap at Teddy Bear (x4563 y78350 d2516). The trap was full of about 30 crabs. We proceeded to Vent-SID landing site.
17:03	Found Vent-SID at landing site.
17:29	Transiting to Crab Spa with Vent-SID
18:05	The Vent-SID was in position at Crab Spa. Attempted communication with Vent-SID via ICL. Communications were noisy and failed. We aborted trying to start the Vent-SID.
19:22	We collected two CV colonizers at the Alvinella mound (“Wedding Cake”; x4595 y78140 d2513). T on marker with long string (east side of mound) was 65°C, marker on west side of mound T 28°C.
19:38	Deployed 2 CV colonizers at Wedding Cake. CV7 was placed but then fell down and was repositioned on subsequent dive 4900. CV8 was placed in T60-100°C at top of Wedding Cake mound.
20:00	Proceeded back to the Vent-SID at Crab Spa. ICL communications not working, no way to start Vent-SID. Placing of Vent-SID inlet into Crab Spa vent fluid was never attempted. Vent-SID was sent back to the surface.
20:39	CV3 colonizer was collected at Fury Rock, near Crab Spa (x4612 y78152 d2505). T 10°C
20:57	Collected 7 small rocks with thick microbial filamentous biofilm at Fury Rock. T 2°C where rocks were collected.
21:30	Collected Riftia in mussel field (x4582 y78167 d2516) near Wedding Cake. 15 Riftia and 4 mussels were collected. At base of Riftia tubes T 13-18°C, at plume of Riftia T 4-5°C.
21:45	Went off axis to park and rest batteries, waiting for Vent-SID to be secured on deck of Atlantis.
22:10	Ascending
23:40	Alvin secured on deck of Atlantis.

AT 37-12 Sample Sheet

Alvin Dive# 4899 Date 5-2-17 Logged by Ed Hobart  
Port Obs. Jeremy Rich Starboard Obs. ED Hobart Pilot Jefferson Grau  
Descend: 8.00 At Seafloor: \_\_\_\_\_ Ascend: \_\_\_\_\_

FLUID SAMPLES

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 \_\_\_\_\_

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 # \_\_\_\_\_ 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 \_\_\_\_\_

**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/#)

**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:**

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 #** \_\_\_\_\_ **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 \_\_\_\_\_

**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/# \_\_\_\_\_ 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 \_\_\_\_\_

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 \_\_\_\_\_

AT 37-12 Sample Sheet

Alvin Dive# 4899 Date 5/2/17 Logged by Jeremy Rich  
 Port Obs. Jeremy Rich Starboard Obs. Ed Hobbart Pilot Jefferson Grau  
 GMT Descend: 1400 At Seafloor: 1600 Ascend: \_\_\_\_\_

FLUID SAMPLES

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 \_\_\_\_\_

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 # \_\_\_\_\_ Time 2/30 Temp plume 4m -5°C Vent northwest of tica  
 X 4582 Y 78167 Hdg 45 Depth 25/6 Alt \_\_\_\_\_ Marker \_\_\_\_\_ (type/#)  
 Sample type riftia + mussels  
 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 \_\_\_\_\_

**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.

*rock samples*  
 Sample # \_\_\_\_\_ Time 2057 Temp 2°C Vent furry rock  
 X 4610 Y 78153 Hdg 79 Depth 2507 Alt \_\_\_\_\_ Marker \_\_\_\_\_ (type/#)  
 Sample type \_\_\_\_\_ Basket location \_\_\_\_\_  
 Assoc. water sample # \_\_\_\_\_ Assoc. biol. sample # \_\_\_\_\_ (type) \_\_\_\_\_  
 Descriptive comments multiple furry rocks

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.

Y coordinates cut off for ~~first~~ on screen for 1st two experiments

Expt ID/# Large volume pump Time 16 20 Temp 12.7 Vent Teddy Bear  
 X 4558 Y 7835 Hdg 14 Depth 2516 Alt      Marker      (type/#)

Description of associated fauna &/or type of venting wand in ~~crack~~ west side of crack next old weight stack, west of riftia clump

Additional assoc. samples: type/ID       
 Additional descriptive comments we released the pump to the surface.

Expt ID/# Crab collection Time 16 41 Temp ambient seawater Vent Teddy Bear  
 X 4563 Y 7835 Hdg 290 Depth 2516 Alt      Marker      (type/#)

Description of associated fauna &/or type of venting Collected crab trap, full of crabs and put out new trap.

Additional assoc. samples: type/ID       
 Additional descriptive comments     

Expt ID/# 2 collectors colonizers CV Time 19 22 Temp      Vent Alvinella mound  
 X 4595 Y 78142 Hdg 46 Depth 2513 Alt      Marker      (type/#)

Description of associated fauna &/or type of venting marker on east side T 65°C ~~at the mound~~

Additional assoc. samples: type/ID marker on west side of mound T 28°C  
 Additional descriptive comments     

Expt ID/# Deploying 2 <sup>colonizers</sup> collectors at Alvinella mound Time 19 38 Temp      Vent       
 X 4595 Y 78142 Hdg 46 Depth 2513 Alt      Marker      (type/#)

Description of associated fauna &/or type of venting CV 7 2017 placed at hot fluid 50-100°C

Additional assoc. samples: type/ID CV 8 2017 placed in hot fluid at top of mound  
 Additional descriptive comments T 60-100°C

Expt ID/# colonizer at furry rock CV3 Time 20 39 Temp 10°C Vent furry rock  
 X 4612 Y 78152 Hdg 22 Depth 2505 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:**