

## Shallow End:

### Collect crustaceans, bacterial mats, and spires

Task #1: A new species of crustacean

Task #2: Bacterial mats

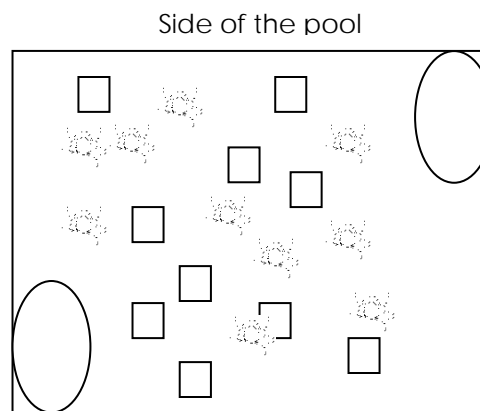
Task #3: Spires

This is a timed event; each team has a maximum of 10 minutes to collect and return to the surface with up to 6 crustaceans, 6 bacterial mats, and 6 spires. Items may be collected one at a time or as many at a time as possible.

10 crustaceans, 10 bacterial mats, and two areas with 5 spires each will be placed within a designated area on the bottom of shallow end of the swimming pool. Teams will receive points for the first 6 crustaceans collected, 6 bacterial mats, and 6 spires collected.

No portion of this area will be more than 3 meters from the side of the pool.

- Place your vehicle in the water up against the side of the pool.
- Once the official says "go" and the timer starts, you will have a total of 10 minutes to retrieve the samples (crustaceans, bacterial mats, and spires). **Teams will receive points for 6 crustaceans, 6 bacterial mats, and 6 spires collected.**
- You may retrieve one item at a time, or more than one item at a time.
- You may only touch your ROV to retrieve the items if your vehicle has surfaced and has touched the side of the pool by the tile line (@ 8 inches).
- Only those items that have been removed from your ROV will count towards your total score. (Items still attached to your vehicle when the time expires do not count.)
- You may not use the side of the pool (perpendicular to the operation area) as leverage to help you retrieve items.
- If you push an item out of bounds, you may not retrieve it.
- In the event of a breakdown, entanglement, or if adjustments need to be made after the clock is started, there will be no "time out;" the time counts as part of your overall timed performance.



10 crustaceans, 10 bacterial mats and two areas of 5 spires each will be placed randomly by divers within the black boundaries of the lane lines on the bottom of the pool. All items are redeemable for points and raffle tickets.

#### Penalty notes:

\_\_\_ Diver assistance – 1 minute added to allotted time

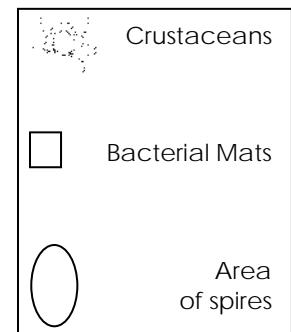
\_\_\_ Pull on tether – 5 minutes added to allotted time (pulling on the tether is not allowed as a method to return to the surface)

\_\_\_ Blown fuse #1 – 1 minute added to allotted time

\_\_\_ Blown fuse #2 – 1 minute added to allotted time, last replacement

\_\_\_ Blown fuse #3 – disqualified

If your team blows a fuse for the 3<sup>rd</sup> time, you are disqualified from the event and earn zero points.



**Shallow End:  
Sample Collecting Score Sheet**

Placing \_\_\_\_\_

Team name \_\_\_\_\_

Team # \_\_\_\_\_

**Vehicle maneuvers under its own power:**

\_\_\_ 2 points

**Items retrieved:\*\*\***

\_\_\_/6 Crustaceans

\_\_\_/6 Bacterial Mats

\_\_\_/6 Spires

**TOTAL POINTS**

\_\_\_ /20 total points

**Time: \_\_\_\_\_/10 minutes (do not add in penalties – see note below)**

**Judge's initials** \_\_\_\_\_

**Penalty notes:**

\_\_\_ Diver assistance – 1 minute added to allotted time

\_\_\_ Pull on tether – 5 minutes added to allotted time

\_\_\_ Blown fuse #1 – 1 minute added to allotted time

\_\_\_ Blown fuse #2 – 1 minute added to allotted time, last replacement

\_\_\_ Blown fuse #3 – disqualified

If the team blows a fuse for the 3<sup>rd</sup> time, they are disqualified from the event and earn zero points.

\_\_\_ **Total Penalty Minutes**

\*\*\*If the time expires, any crustaceans, mats, or spires still attached to the ROV before surfacing do not count.

## Mid-Water: Resurrect Hugo

**Task #1: Deploy a high-rate hydrophone (HRH) to the seafloor.**

**Task #2: Connect the HRH to the HUGO junction box.**

This is a timed event; each team has a maximum of 10 minutes to complete both tasks. You may choose to do the tasks one at a time or do them at the same time.

Both the HUGO junction box and the designated area (the milk crate) will be placed no more than 1.5 meters from the side of the pool in less than 6 feet of water.

- Attach the HRH to your ROV. (You may not alter the HRH in any way in order to attach it to your ROV.)
- You may also attach the HRH connector to your ROV at this time or you can attach it after you complete the first task.
- Place your vehicle in the water against the side of the pool.
- Once the official says “go” and the timer starts, you will have a total of 10 minutes to complete both tasks in this event.
- You must move the HRH from the side of the pool and place it into the milk crate, which is weighed on the bottom of the pool.
- If you are doing the 2 tasks separately, return to the surface.
- You may touch your ROV once it has touched the side of the pool where the tiles begin (@ 8 inches).
- Attach the HRH connector to your ROV.
- You must insert the HRH connector into the HUGO junction box, which is at the bottom of the pool.
- Return to the surface.
- Your time stops when you complete BOTH tasks and your ROV touches the side of the pool.
- In the event of a breakdown, entanglement, or if adjustments need to be made after the clock is started, there will be no “time out;” the time counts as part of your overall timed performance.

### Penalty Notes:

\_\_\_Diver assistance – 1 minute added to allotted time

\_\_\_Pull on tether – 5 minutes added to allotted time (pulling on the tether is not allowed as a method to return to the surface)

\_\_\_Blown fuse #1 – 1 minute added to allotted time

\_\_\_Blown fuse #2 – 1 minute added to allotted time, last replacement

\_\_\_Blown fuse #3 – disqualified

If your team blows a fuse for the 3<sup>rd</sup> time, you are disqualified from the event and earn zero points.

**Mid-Water:  
Resurrect HUGO Score Sheet**

Placing\_\_\_\_\_

Team name\_\_\_\_\_

Team #\_\_\_\_\_

**Deposit the HRH in milk crate:**

\_\_\_\_\_2 points

**Connecting HRH to HUGO junction box:**

\_\_\_\_\_2 points

**TOTAL POINTS**

\_\_\_\_\_/4 total points

**Time:\_\_\_\_\_/10 minutes (do not add in penalties – see note below)**

**Judge's initials\_\_\_\_\_**

**Penalty Notes:**

\_\_\_Diver assistance – 1 minute added to allotted time

\_\_\_Pull on tether – 5 minute added to allotted time (not allowed as a method to return to the surface)

\_\_\_Blown fuse #1 – 1 minute added to allotted time

\_\_\_Blown fuse #2 – 1 minute added to allotted time, last replacement

\_\_\_Blown fuse #3 – disqualified

If the team blows a fuse for the 3<sup>rd</sup> time, they are disqualified from the event and earn zero points.

\_\_\_ Total Penalty Minutes