

***Science & Technology under the Arctic Ice***  
**Score Sheet – Mission #2 Ice Tank**

School/Team: \_\_\_\_\_

Team captain: \_\_\_\_\_

Mission station officials: \_\_\_\_\_

**Set-Up and Safety Check**

- All power cords, power bars, pressurized cylinders, etc. are secured.
- A fuse is present in the vehicle's electrical system.
- No hazardous materials are leaking onto the pool deck.
- Vehicle is hand-launched by team members in a safe manner.
- No team member has entered the water in order to prepare and/or launch vehicle.
- Vehicle is in the water near the control shack at the end of the 5-minute set-up period.

**Note:** Teams may attach the PAS to their ROV on the pool deck or when the ROV is in the water at the side of the pool. The attachment should be completed during the 5-minute set up time.

Mission official's notes: \_\_\_\_\_

- Team is ready for the mission:** \_\_\_\_\_ **(official's initials)**

**Note:** *An official's decision to disqualify a team due to safety concerns is final. If there is a safety concern, please contact the lead official or competition coordinator.*

**Fuses**

**EXPLORER:** If a team blows their 40-amp fuse, their mission performance period is over. The team will receive points for the mission tasks they have completed up to that point, but will not receive a time bonus score.

**RANGER:** The mission time clock does NOT stop in the case of a blown fuse. If a RANGER class team blows MATE's in-line 25-amp fuse, they are allowed one replacement fuse. If the vehicle blows the second MATE fuse, their mission performance period is over. The team will receive points for the mission tasks they have completed up to that point, but will not receive a time bonus score.

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**Mission # 2 involves:**

**Task 1: Collect one benthic jellyfish.**

- **Collecting one jellyfish.**
- **Returning the jellyfish to the surface.**

**Task 2: Collect one sample of algae.**

- **Collecting one sample of algae.**
- **Returning the sample to the surface.**

**Task 3: Deploy a passive acoustic sensor (PAS).**

- **Transporting the PAS to the designated area.**
- **Deploying the PAS within the designated area.**

**Note:** The ROV can return to the surface any time during the mission performance period.

| <b>Mission #2: Ice Tank (time 20 minutes, score 60 points)</b>   |              |
|--|--------------|
| <b>TASK</b>  | <b>SCORE</b> |
| Collect one jellyfish from bottom of pool so that it is under the control of the ROV and no longer in contact with the pool bottom.  | 10 0         |
| Return the jellyfish to the surface under the control of the ROV so that one team member can retrieve the jellyfish from the vehicle.  | 10 0         |
| Collect an algae sample from under the ice sheet under the control of the ROV and is no longer in contact with the ice sheet.  | 10 0         |
| Collect an algae sample from under the ice sheet under the control of the ROV so that one team member can retrieve the sample from the vehicle.  | 10 0         |
| Transport the PAS from the surface to the designated deployment area on the bottom of the pool under the control of the ROV. The ROV cannot use the communication cable as a means of transporting the PAS. The PAS cannot dangle from the communication cable below the ROV during transport. | 10 0         |
| Deploy the PAS within the designated deployment area so that it remains within the designated area once the ROV released it. If the ROV moves the PAS (accidental or intentional) from the designated area once successfully deployed, no points will be awarded.                              | 10 0         |
| <b>Total Score – Mission #2:</b>   |              |
| <b>PENALTY POINT DEDUCTION</b>   |              |
| Illegally pulling tether* _____ infractions X -5   |              |
| Illegal communication* _____ infractions X -5  |              |
| Modifications made to props that remain after performance period   | -5           |
| Exceeded 5-minute demobilization period _____ minutes X -1 =   |              |
| <b>TIME BONUS</b>  |              |
| 1 point for every minute and 0.01 point for every second under 20 minutes  |              |
| Duration of Mission: _____   |              |
| Minutes under 20 remaining: _____ X 1 point = _____  |              |
| Seconds remaining: _____ X 0.01 point = _____  |              |
| <b>Time Bonus – Mission #2:</b>  |              |
| <b>TOTAL MISSION #2 SCORE</b>  |              |

\*Issue a warning for the first infraction. Begin deducting points AFTER the first infraction.

**Mission official's initials:** \_\_\_\_\_ **Team captain's initials:** \_\_\_\_\_