

Company CEO: \_\_\_\_\_

Company Name

Product demonstration station officials: \_\_\_\_\_

**Check here if the company has their PASSED safety inspection card**

Companies without their safety inspection PASSED card cannot participate in the product demonstration.

**Check here if the company presented you with a JSA (Job Safety Analysis)**

Organizational and Operational Effectiveness (up to 10 points)	Points	
<b>Up to 2 points – Organization</b>		
Chain of command evident	0	1
Roles clear and executed well	0	1
<b>Up to 2 points – Task Plan</b>		
Task plan is well thought out to maximize score	0	1
Alternate plans available and all team members are aware of the plan	0	1
<b>Up to 2 points –Time Management</b>		
Awareness of time	0	1
Adjusting timeline to adapt to situations	0	1
<b>Up to 2 points – Team Cooperation</b>		
Composure under pressure	0	1
Supportive of each other and communicate well with each other	0	1
<b>Up to 2 points – ROV Deployment and Control</b>		
ROV deployed by the end of the 5-minute set-up period	0	1
ROV is under control of pilot and prepared to perform tasks	0	1
<b>Total Organizational and Operational Effectiveness (out of 10)</b>		<b>Total</b>

Bonus points for size and weight	Points	
<b>Size bonus (up to 10 points)</b>	0	5
ROV is less than 60 cm – 10 bonus points		10
ROV is within 60.1 cm and 75 cm – 5 bonus points		
ROV is within 75.1 cm and 85 cm – 0 bonus points		
Vehicles larger than 85 cm may not compete		
	Judge initials: _____	
	CEO initials: _____	
	<b>Total</b>	
<b>Weight bonus (up to 10 points)</b>	0	5
ROV is less than 15 kg – 10 bonus points		10
ROV is between 15.01 kg and 20 kg – 5 bonus points		
ROV is between 20.01 kg and 25 kg – 0 bonus points		
Vehicles heavier than 25 kg may not compete		
	Judge initials: _____	
	CEO initials: _____	
	<b>Total</b>	

**Fuses:** ROV systems are allowed one replacement fuse during the product demonstration. In the event that the ROV system blows the second fuse during the demonstration, time will stop, the demonstration run will be over, and no additional points will be earned. Companies should have adequate replacement fuses on hand, MATE will not provide replacements.

Task # 1: The Ubiquitous Problem of Plastic Pollution (up to 90 points)	Points
<b>Judges' Notes:</b> Companies must complete the steps of task 1.1 "Seabin - Cleaning up our ocean one marina at a time" in order. The other tasks may be done in any order.	
<b>1.1 up to 45 points – Seabin - Cleaning up our ocean one marina at a time</b>	
<b>5 points</b> – disconnecting the older power connector to the Seabin	0      5
<b>10 points</b> – removing a previously installed Seabin's mesh catch bag	0      10
<b>10 points</b> – installing a new mesh catch bag into the Seabin	0      10
<b>20 points</b> – reconnecting a new power connector to the Seabin	0      20
<b>1.2 up to 45 points - Remediation: Removing plastic pollution from top to bottom</b>	
o <b>up to 15 points</b> – removing floating plastic debris from the surface	
<b>15 points</b> – remove all 6 pieces of debris	
<b>10 points</b> – remove 3 to 5 pieces of debris	0      5      10      15
<b>5 points</b> – remove 1 to 2 pieces of debris	
<b>0 points</b> – remove 0 pieces of debris	
o <b>up to 20 points</b> – removing a ghost net from midwater	
<b>10 points</b> – pulling a pin to simulate cutting the ghost net free	0      10
<b>10 points</b> – removing the ghost net (and pin) from the water	0      10
o <b>up to 10 points</b> – removing plastic debris from the bottom	
<b>5 points each, 10 points total</b> – removing plastic debris from the bottom	0      5      10
<b>Total Task # 1 (out of 90)</b>	
<b>Total</b>	

Task # 2: The Catastrophic Impact of Climate Change on Coral Reefs (up to 90 points)	Points
<b>Judges' Notes:</b> Companies may complete the steps of this task in any order.	
<b>2.1 up to 25 points</b> – flying a transect line over a coral reef and mapping points of interest	
o <b>up to 20 points</b> – flying a transect line over a coral reef	
<b>20 points</b> – flying the transect autonomously	0      10      20
<b>10 points</b> – flying the transect manually	
<b>5 points</b> – mapping points of interest on the reef	0      5
<b>2.2 up to 20 points</b> – determining the health of a coral colony by comparing its current condition to past data	
o <b>up to 20 points</b> – using image recognition to determine the health of a coral colony	
<b>20 points</b> – all areas of change successfully identified	
<b>10 points</b> – At least one, but not all, areas of change successfully identified	0      10      20
<b>0 points</b> – no areas of change successfully identified	
or	
<b>10 points</b> – using a photo to manually determine the health of a coral colony	

<b>2.3 up to 20 points</b> – propagating corals onto the reef 5 points each, 10 points total – removing coral fragments from the nursery structure 5 points each, 10 points total – outplanting coral fragments to designated locations on the reef	0	5	10
	0	5	10
<b>2.4 5 points each, 10 points total</b> – culling an outbreak of Crown of Thorn sea stars	0	5	10
<b>2.5 up to 15 points</b> – collecting samples of sponge species for pharmaceutical research 10 points – collecting a sample of the sponge 5 points – returning the sample to the surface	0		10
	0		5
<b>Total Task # 2 (out of 90)</b>			<b>Total</b>

<b>Task # 3: Maintaining Healthy Waterways II: Delaware River and Bay (up to 90 points)</b>	Points	
<b>Judges' Notes:</b> Companies may complete the steps of this task in any order.		
<b>3.1 up to 40 points</b> – retrieving a sediment sample from inside a drain pipe to analyze for contaminants 25 points – deploying a device into the pipe to collect a sediment sample 10 points – returning the sample to the surface 5 points – determining the type of contaminant(s) present in the sediment sample	0	25
	0	10
	0	5
<b>3.2 up to 10 points</b> – estimating the number of mussels in a mussel bed 5 points – deploying a quadrat and counting the number of mussels in the quadrat 5 points – estimating the number of mussels and the total water filtered by the mussel bed	0	5
	0	5
<b>3.3 up to 20 points</b> – eel restoration 10 points – removing a trap full of eels from the designated area 10 points – placing an empty eel trap in a designated area	0	10
	0	10
<b>3.4 20 points</b> – photomosaic 20 points – creating a photomosaic of a subway car submerged to create an artificial reef	0	20
<b>Total Task # 3 (out of 90)</b>		<b>Total</b>

<b>Penalty Points (deduct 5 points for each infraction)</b>	No. of Infractions	
<b>Safety:</b> Product demonstration officials may deduct points for safety violations. Minor violations are a 5 point penalty. Major violations may be 10 or more points. Product demonstration officials may also disqualify a company for extreme safety violations. <b>Note: An official's decision to disqualify a company due to safety concerns is final. If there is a safety concern, please contact the lead safety inspector or competition coordinator.</b>		
<b>Tether Pulling:</b> Company members cannot pull on the tether to assist in moving or turning the vehicle. Judges should issue a warning for the first infraction and begin deducting points AFTER the first infraction.	a	
<b>Illegal communication:</b> Company members at the side of the pool may not communicate visual evidence of the ROV status such as location of vehicle, need to turn, that the vehicle is stuck, etc.	b	
<b>Debris:</b> Companies that leave debris (e.g. parts of their ROV, including weights and flotation) in the pool at the end of the product demonstration time, or leave debris that a diver must retrieve will receive penalty points. Product demonstration props are NOT considered debris. A company constructed collection basket is considered debris if it is still in the water when product demonstration time ends.	c	
<b>Diver Assistance:</b> Any diver assistance (if available) must be requested by the company and will result in a 5 point penalty. The clock does not stop during diver assistance.	d	
<b>Total Penalty Points</b>	(total a + b + c + d ) plus safety violations	<b>Total</b>
	X 5 =	

<b>TIME BONUS (1 point for every minute and 0.01 point for every second under 15 minutes)</b>	
Duration of Product Demonstration: _____	
Minutes under 15 remaining: _____ X 1 point = _____	
Seconds remaining: _____ X 0.01 point = _____	
<b>Time bonus</b>	<b>Total</b>

<b>TOTAL PRODUCT DEMONSTRATION SCORE</b>	<b>Grand Total</b>

Official's initials: \_\_\_\_\_

Company CEO's initials: \_\_\_\_\_