

JOB SAFETY ANALYSIS

Safety Information for Warrenton Aquatic Robotics

The Rays

Entering/Exiting the Deck Area

TASK	HAZARDS	CONTROLS
1. Lifting moving ROV, tether and control	1a. Lift injuries 1b. Trip/Fall hazards 1c. Foot injuries (dropped ROV) 1d. Equipment damage 1e. Electrical shock hazards near water	1a.1 Proper lifting techniques for ROV, tether and control 1a.2 Share load 1b.1 Clear pool area of obstacles 1b.2, 1c1 Sturdy, closed toe shoes 1c.2 PPE (hard hat, safety glasses and high visibility clothing) 1d.1 Movement procedures 1e.1 Ensure GFCI/fuses on power
Required Training:	Required Personal Protective Equipment (PPE) Safety glasses, hard hat, safety vest, sturdy closed toe shoes, no loose clothing, hair tied back	

Contributors: On-Deck Operations: Dwayne Wallace. Pilot: Adam Barbic Scientist: Conner Moha

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System Set Up

TASK	HAZARDS	CONTROLS
1.Prepare ROV	1a. Open pressure release floods electrical 1b. Loose connections	1a.1 Ensure pressure release valve is closed. 1b.1 Connections verified before power up
2.Deploy tether	1a. Trip hazard	1a.1 Tether and props laid out per plan
3.Connect Controller	1a. Electrical shock/flash hazards	1a.1 Power supply and controller OFF 1a.2 Safety glasses
Required Training:	Required Personal Protective Equipment (PPE) Safety glasses, hard hat, safety vest, sturdy shoes, no loose clothing and hair tied back.	

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Power Up Checks

TASK	HAZARDS	CONTROLS
1.Power up	1a. Electrical short/shock 1b. Rotating/moving equipment	1a.1 Stand clear procedure 1b.1 No loose clothing/hair tied back
2.Motor Test	1a. Rotating equipment	1a.1 Communication pilot to tether manager per procedure
3. Gripper Test	1a. Opening/closing gripper (pinch)	1a.1 Communication pilot to tether manager per procedure
Required Training: Startup procedures and communication plan	Required Personal Protective Equipment (PPE) Safety glasses, hard hats, safety vests,	

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Pool Side Operations

TASK	HAZARDS	CONTROLS
1.Launch/Recover	1a. Lifting 1b. Rotating/Moving equipment	1a.1 Design < 15kg 1a.2 Lift training 1b.1 Danger areas marked 1b.2 Procedures defined 1b.3 Communication training tether manager, pilot and assistants
2.Grab/Release props at surface	1a. Pinch/Crush in gripper	1a.1 Communication/safety training
Required Training: Safety/communication procedures	Required Personal Protective Equipment (PPE) Safety glasses, hard hat, safety vest	

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System Breakdown

TASK	HAZARDS	CONTROLS
1. Power Off	1a. Electrical shock	1.a.1 Dry hands 1a.2 Control power/Supply power off
2. Lifting ROV, controller and tether	1a. Lifting strain 1b. Foot injuries (dropped components) 1c. Equipment damage	1a.1 Components designed < 15kg 1a.2, 1b.1,1c.1 Proper lifting techniques for ROV, controller and tether 1b.2 PPE - sturdy closed toe shoes
Required Training: Lifting and transport.	Required Personal Protective Equipment (PPE) Safety glasses, hard hats, safety vests, sturdy closed toe shoes, no loose clothing and hair tied back.	

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