

Boat Measurements for Lake Sites Generic Job Hazard Analyses

Required Protective Clothing and Safety Equipment: throwable floatation device, tagline flags, marine radio, air horn, boat flags, fire extinguisher, oars

Sequence of Basic Job Steps	Potential Accidents/Hazards	Recommended Safe Job Procedures
Prior to deploying boat, check maintenance and user records	Not returning safely and on time.	File written or verbal float plan with supervisor. If float plan changes due to factors in the field be sure to notify supervisor. Ensure call will be made. Only employees who have completed the "over water" training program will participate
Prior to entering lake	Boat Sinking, mechanical trouble, USGS and Coast Guard Safety Requirements	Check boat safety supplies before launching/use checklist. Make sure the drain plug is in the Boat. A PFD is REQUIRED to be worn when working in, on, or over ANY body of water. PFD's will be international orange in color and equipped with retroreflective tape in accordance with 46 CFR 25.25-15.
Prior to entering lake: Use good ramp etiquette, perform all equipment loading in parking area, not the ramp	Drowning, ramp traffic, parking areas, close contact with public	Boat operator must be a USGS certified Motorboat operator. All sampling activities require a minimum crew of two. Use caution, be aware of hand placement, use proper lifting techniques (i.e. lift with legs not back, get assistance as necessary). Wear gloves, steel-toed shoes, and back support. Use trailer jack to lift tongue. Work together to launch and recover watercraft.
Loading and Unloading equipment	Pinching fingers, mashing toes, back strain	Use caution, be aware of hand placement, use proper lifting techniques (i.e. lift with legs not back, get assistance as necessary). Wear gloves, steel-toed shoes, and back support. Use good ramp etiquette, perform all equipment loading in parking area, not the ramp
Deploying weighted sample hose, meters, monitors, corers or sounding weights	Submerged trees and rocks	Be careful not to hang up weighted sample hose. Sample hose or cable can be cut with a knife or side cutters if needed. Retrofit all "B" reels (and modified A reels) for a break-a-way cable. Be alert to debris, have cutters ready.
Deploying weighted sample hose, meters, monitors, corers or sounding weights	Infectious water born diseases and contaminated water source	Wear appropriate gloves. Prevent water from contacting your skin. Work in well-ventilated area. Use good hygiene practices. Wash before consuming food.
Deploying weighted sample hose, meters, monitors, corers or sounding weights	Flying projectiles (pump tubing may come off because of clogged sample filter)	Watch filter for clogging. Change filters often on water sample with high sediment content. Wear safety goggles and safety clothing to prevent water contact with skin.
Sampling at individual sites	Boat traffic	Keep a good watch. Contact appropriate officials if working in navigation lanes. Be aware of surroundings, have method to warn oncoming boats if needed (i.e. marine radio, air horn).

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Working in winter and cold water (<70 degrees F)	Hypothermia	Wear float coat suit when performing winter Lake surveys. Select appropriate PFD's for the job and weather.
Navigation	Crashing into trees, running into islands, dry docking on submerged obstacles and flats	Use lake top-spot map located in field folder for approximate channel locations. Do not use the map for the sole purpose of navigation. Map will also add insight on where points, islands and submerged tree locations are located.
Fluctuating Lake levels	Grounding and ramp access	Use caution and good lookout when operating in shallow or unfamiliar areas
Refueling	Explosion, fire, hazardous vapors, splashing fuel in eyes, spills.	Wear eye protection, shut off engine, refuel in well ventilated area, keep fuel away from sparks or open flame, transport fuel in approved containers, have spill kit ready in case of fuel spill. Remove portable fuel tanks from the boat before filling
Medical Emergencies	Time and distance to medical services.	All field crewmembers will be responsible for necessary medications and personal requirements. Watercraft operators are required to be current in CPR and First Aid. It's a good idea for all field crews to be aware of any potential medical conditions or treatments for existing medical conditions of the field party members. Examples of these conditions would include severe allergic reactions, Diabetes, coronary problems, etc. Field crews will be prepared for unexpected or extended periods of bivouac. Consider the need for up to three days of emergency supplies (shelter, food and water). Protect yourself from sun. Use sunblock, wear light protective clothing, sunglasses, and hat.
Electrical appliances and generators	Electrocution	A Ground Fault Circuit Interrupter device must protect all AC electrical circuits. Make sure the electrical cords from generators and power tools are not allowed to be in contact with water. Do not stand in a wet area while operating power equipment
Responsibilities		Watercraft Operators. (1) The operator will complete a float plan and file the plan with their supervisor or someone knowledgeable of their intent to operate a watercraft. (2) The operator will routinely conduct weather checks, aborting activity anytime weather or sea conditions affect the operator's ability to pilot the watercraft in a safe manner. (3) The operator has absolute final authority over operation of the watercraft. (4) The operator must perform no tasks while underway other than operating the watercraft. (5) The operator will not operate a watercraft continuously for more than 2-hours without an appropriate break. (6) The operator will brief passengers on the location and use of all emergency equipment on the watercraft including PFD's.

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Chemical Hygiene: Infectious water born diseases. USGS immunizations programs are available for work where the potential for exposure to contaminated water is possible	Collection of WQ samples: Contamination of samples, Preservation of precipitation samples: Chemical use, chemical transportation, and hazardous waste. The project chief is responsible to supply appropriate training for chemical hygiene, and lab safety.	All chemical uses will meet the standards of the WSC Chemical Hygiene Plan (CHP). Vehicles that transport chemicals shall be equipped with the CHP and applicable Material Data Safety Sheets (MSDS's). Chemicals will be transported in compliance with DOT regulations. Waste will be returned to the operation office for storage and disposal. PPE will include appropriate gloves, and safety glasses. Chemicals transported by any means into Federal, State, BIA, shall be appropriately labeled, containerized in a manner to eliminate accidental release, and be accompanied by MSDS information.
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For additional information about Job Hazard Analyses visit <http://1stop.usgs.gov/safety/topic/jha/index.html>