# APPENDIX J

# Safety Audit Checklist

**NOTES:**

Diving Safety Plan and Dive Plan

The Diving Safety Plan and Dive Plan can be two separate documents or they may be combined. The dive plan is specific to the proposed dive operation, and the safety plan can be either a generic plan developed by the dive unit or simply a copy of the Diving Safety Policy, the U.S. Navy Decompression Tables, and area specific emergency information. The elements of each plan are combined in the following checklist.

A. EMERGENCY INFORMATION

1. Was the nearest medical facility (i.e., hospital or clinic) identified?
**9** YES **9** NO **9** N/A; Comments:

2. Was a method of communication with the nearest medical facility established?
**9** YES **9** NO **9** N/A; Comments:

3. Was the nearest operational recompression chamber identified?
**9** YES **9** NO **9** N/A; Comments:

4. Was a method of communication with the recompression chamber established?
**9** YES **9** NO **9** N/A; Comments:

5. Was a method of emergency evacuation identified?
**9** YES **9** NO **9** N/A; Comments:

6. Was a method of communication with the means of emergency transportation established?
**9** YES **9** NO **9** N/A; Comments:

7. Are the Divers Alert Network (DAN) telephone numbers, (919) 684-2948 or (919) 684-8111, for medical advice and locations of recompression chambers listed?
**9** YES **9** NO **9** N/A; Comments:

8 Is a copy of the EPA's Diving Safety Policy readily available at the dive site to address unanticipated events or procedural issues?
**9** YES **9** NO **9** N/A; Comments:

B. PROJECT SPECIFIC INFORMATION

1. Did the dive plan describe the proposed dive project?
**9** YES **9** NO **9** N/A; Comments:

2. Were the objectives of the proposed dive project clearly identified?
**9** YES **9** NO **9** N/A; Comments:

3. Were the potential hazards identified?
**9** YES **9** NO **9** N/A; Comments:

4. Were the potential sources of pollution identified?
**9** YES **9** NO **9** N/A; Comments:

5. Were other environmental conditions identified and discussed in the dive plan?

| | | |
|---|---|---|
| a. | tidal heights | **9** YES **9** NO **9** N/A; Comments: |
| b. | water currents | **9** YES **9** NO **9** N/A; Comments: |
| c. | max. dive depth | **9** YES **9** NO **9** N/A; Comments: |
| d. | in-water visibility | **9** YES **9** NO **9** N/A; Comments: |
| e. | weather | **9** YES **9** NO **9** N/A; Comments: |
| f. | boat/vessel traffic | **9** YES **9** NO **9** N/A; Comments: |

6. Were the divers, boat operators, and support personnel identified in the plan?
**9** YES **9** NO **9** N/A; Comments:

7. Has the dive plan been approved by the Unit Diving Officer?
**9** YES **9** NO **9** N/A; Comments:

II. PREDIVE BRIEFING AND ACTIVITIES

The project leader and divemaster for the dive should gather all project personnel together just before diving operations are to start and review the following topics.

1. Was there a review of emergency evacuation procedures?
**9** YES **9** NO **9** N/A; Comments:

2. Was there a review of diving accident management and emergency equipment (e.g., first aid and oxygen kits)?
**9** YES **9** NO **9** N/A; Comments:

3. Were any safety protocols for the dive reviewed (e.g., a safety stop at 15 ft. for dives deeper than 60 ft., buoy line descent/ascent, low air supply procedures/alternate air source use)?
**9** YES **9** NO **9** N/A; Comments:

4. Were the diver-to-diver and tender-to-diver communication procedures reviewed?
**9** YES **9** NO **9** N/A; Comments:

5. Was there a review of the project description and objectives?
**9** YES **9** NO **9** N/A; Comments:

6. Was there a review of the potential hazards:
   a. Pollution sources?
   **9** YES **9** NO **9** N/A; Comments:
   b. Environmental conditions: waves/strong currents/visibility?
   **9** YES **9** NO **9** N/A; Comments:

7. Were decontamination materials available and decontamination procedures reviewed for polluted water diving operations?
**9** YES **9** NO **9** N/A; Comments:

8. Was there a review of any specialized equipment for the dive (e.g., pinger, pinger locator, current meters, ROVs, dive sleds, oxygen meters for Nitrox )?
**9** YES **9** NO **9** N/A; Comments:

9. Were the dive team roles identified (i.e., divemaster, alternate divemaster, tender, and if needed, standby diver)?
**9** YES **9** NO **9** N/A; Comments:

10. Did the divers check all of their dive equipment prior to each dive?
**9** YES **9** NO **9** N/A; Comments:

11. Were the tank pressures checked and recorded before each diver entered the water and subsequent dive start times by the divemaster or tender?
**9** YES **9** NO **9** N/A; Comments:

12. Was the personal emergency information available for each diver (e.g., medical history, family notification)?
**9** YES **9** NO **9** N/A; Comments:

13. Was vessel traffic control notified, if necessary?
**9** YES **9** NO **9** N/A; Comments:

III. OPERATIONS DURING THE DIVE

During the dive it is important to observe the position of the support vessel(s), operation of the equipment, and the topside diving personnel.

1. Was the tender monitoring the divers and not performing another function that could interfere with tending responsibilities?
   **9** YES **9** NO **9** N/A; Comments:

2. Was the support vessel clear of the diving area?
   **9** YES **9** NO **9** N/A; Comments:

3. Were the appropriate dive flags displayed on the vessel tending the divers?
   a. red/white "diver down" flag on inland/coastal waters?
   **9** YES **9** NO **9** N/A; Comments:
   b. r/w flag and blue/white code alpha flag in waters with international vessel traffic?
   **9** YES **9** NO **9** N/A; Comments:

4. Were the size of the dive flags appropriate for the diving operation?
   **9** YES **9** NO **9** N/A; Comments:

5. Was a standby diver equipped and ready to provide immediate assistance?
   **9** YES **9** NO **9** N/A; Comments:

6. Was a tender-to-diver communication system deployed (i.e., diver recall unit)?
   **9** YES **9** NO **9** N/A; Comments:

7. Were the emergency first aid and oxygen kits readily available to the diving personnel?
   **9** YES **9** NO **9** N/A; Comments:

IV. POST-DIVE PROCEDURES

Monitoring post-dive diving operations is important to ensure that divers are taking the necessary precautions to avoid injury, protect themselves from environmental conditions, and maintain their equipment.

1. Did the divemaster and/or tender monitor each diver exiting the water for signs and symptoms of "bubble trouble".
   **9** YES **9** NO **9** N/A; Comments:

2. Were the divers protecting themselves from hypothermia or hyperthermia?
   **9** YES **9** NO **9** N/A; Comments:

3. Was freshwater (or other appropriate fluids) available to prevent dehydration?
   **9** YES **9** NO **9** N/A; Comments:

4. Were the water depths, bottom time, and tank pressures of each diver recorded after each dive?
   **9** YES **9** NO **9** N/A; Comments:

5. Was a dive report prepared that included appropriate information specific to the diving operation (e.g., water depths and bottom times for the dives, tank pressures, achievement of objectives, hazards encountered, malfunctions and lost equipment)?
   **9** YES **9** NO **9** N/A; Comments:

6. Were appropriate decontamination procedures followed when diving in polluted waters?
   **9** YES **9** NO **9** N/A; Comments:

7. Did the divers properly clean and store their equipment when they were not diving or after they had completed the diving operations?
   **9** YES **9** NO **9** N/A; Comments:

V. DIVING PERSONNEL

An evaluation of the training, background, and capabilities of each diver involved in the diving operation is of primary importance.

1. Were all divers current with diving physical examinations (within one year)?
**9** YES **9** NO **9** N/A; Comments:

2. Were all divers current with CPR certification (within one year)?
**9** YES **9** NO **9** N/A; Comments:

3 Were all divers current with first aid training (within 3 years)?
**9** YES **9** NO **9** N/A; Comments:

4. Were all divers trained in oxygen administration (initial training only required, 2 yr. refresher recommended)?
**9** YES **9** NO **9** N/A; Comments:

5. Were all divers certified for their respective levels of responsibility (i.e., as Working Divers or Divemasters)?
**9** YES **9** NO **9** N/A; Comments:

6. Had all divers maintained their proficiency (i.e., dived within the last three months)?
**9** YES **9** NO **9** N/A; Comments:

7. Were all divers experienced with the working conditions that were expected during the project?
**9** YES **9** NO **9** N/A; Comments:

8. If the answer to nos. 4 or 5, above, is negative, what provisions and preparations has the divemaster undertaken to prepare the diver for the new situation?
**9** YES **9** NO **9** N/A; Comments:

9. Were all divers using the air compressor, trained in its operation, if one was at the dive site?
**9** YES **9** NO **9** N/A; Comments:

VI. DIVE EQUIPMENT

Diving equipment must be maintained according to the requirements in the Diving Safety Policy, the manufacturers specifications, whichever are the most conservative.

A. SCUBA EQUIPMENT

1. Were all SCUBA cylinders tested within the 5-year hydrostatic test date?
**9** YES **9** NO **9** N/A; Comments:

2. Had all SCUBA cylinders been visually inspected within the past 12 months?
**9** YES **9** NO **9** N/A; Comments:

3. Were all regulators critically examined, calibrated, or overhauled within the past 18 months?
**9** YES **9** NO **9** N/A; Comments:

4. Had all of the diver's gauges (e.g., pressure, depth, compass, bottom timers, and watches) been critically examined and calibrated or replaced within the past 18 months?
**9** YES **9** NO **9** N/A; Comments:

5. Had all valves and hoses been critically examined and replaced or overhauled as needed?
**9** YES **9** NO **9** N/A; Comments:

6. Were all belts and buckles in good condition?
**9** YES **9** NO **9** N/A; Comments:

7. For polluted water diving, were all dry suits leak-free?
**9** YES **9** NO **9** N/A; Comments:

8. For wet suit diving, were all buoyancy compensators in good condition and maintained in accordance with manufacturers specifications?
**9** YES **9** NO **9** N/A; Comments:

9. Were all buoyancy compensators capable of being inflated by two methods (one other than oral)?
**9** YES **9** NO **9** N/A; Comments:

10. Had the diver communication equipment been checked prior to use?
**9** YES **9** NO **9** N/A; Comments:

11. Was a dive ladder available for the divers to enter the tending vessel? (Some boats are low to the water or have swim step and do not require a dive ladder.)
**9** YES **9** NO **9** N/A; Comments:

12. Was hygienic maintenance performed on all full-face masks?

**9** YES **9** NO **9** N/A; Comments:

13. Were all full-face masks free of corrosion and in good operating condition?
**9** YES **9** NO **9** N/A; Comments:

14. Were the head harness and buckles in good condition?
**9** YES **9** NO **9** N/A; Comments:

15. Were the manufacturers repair and maintenance manuals available for the specialized dive equipment (e.g., the communication equipment, and full-face masks)?
**9** YES **9** NO **9** N/A; Comments:

16. Was the dive equipment, in general, free of corrosion and in good working condition?
**9** YES **9** NO **9** N/A; Comments:

17. Were adequate spare parts and repair materials available at the dive site?
**9** YES **9** NO **9** N/A; Comments:

B. FIRST AID EQUIPMENT

1. Was the emergency oxygen kit capable of servicing two divers with demand second stage regulators at the same time?
**9** YES **9** NO **9** N/A; Comments:

2. Did the emergency oxygen kit have an oxygen cylinder that was size "E" (626 liters) or larger?
**9** YES **9** NO **9** N/A; Comments:

3. Had the regulator on the oxygen cylinder been maintained according to the manufacturers specifications?
**9** YES **9** NO **9** N/A; Comments:

4. Did the oxygen kit contain a cylinder wrench (or wheel) for opening and closing the tank valve?
**9** YES **9** NO **9** N/A; Comments:

5. Were the hoses, valves, and regulators in the oxygen kit in good condition and clean, particularly of oil and grease?
**9** YES **9** NO **9** N/A; Comments:

6. Were the oxygen cylinders within 5-year hydrostatic test date?
**9** YES **9** NO **9** N/A; Comments:

7. Were the valve seats and [washer seal(s)] (on the valve) in good condition?
**9** YES **9** NO **9** N/A; Comments:

8. Was the oxygen cylinder stored in an area where the temperature may exceed 125 degrees Fahrenheit?
   **9** YES **9** NO **9** N/A; Comments:

9. Was there a fully equipped medical (first aid) kit for divers?
   **9** YES **9** NO **9** N/A; Comments:

10. Were spare oxygen [washer seals] available?
    **9** YES **9** NO **9** N/A; Comments:

11. Was there a backboard for emergency use on board the survey vessel?
    **9** YES **9** NO **9** N/A; Comments: