

December 1, 2010 comments submitted via ADCI Consensus Standards 6<sup>th</sup> edition (DRAFT) web page:  
<http://www.underwatermagazine.com/consensus.asp>

To whom it may concern,

This polluted water standard is quite helpful/useful to the dive community as a whole as well as ADCI contractors. EPA applauds ADCI in moving forward with this standard as our work sites are becoming more, not less contaminated. Please see the following EPA comments from our dive units conducting polluted water dive operations nationally (Region 10, Seattle, Washington, Environmental Response Team, Edison New Jersey).

1. Details should be included on recommended training for divers before engaging in polluted water diving activities (40 hour hazwoper and annual refresher).
2. "Freshwater rinse" should be "Potable water" rinse. "Freshwater rinse" implies that ambient river or lake water is an acceptable decon. solution.
3. Details should be included in chemical and biological medical monitoring for divers that engage in polluted water diving more than 30 days per year (per OSHA 1910.120). EPA can get you examples of blood work undertaken as part of hazwoper medical monitoring, as needed.
4. Discussion should be provided regarding recommended immunizations for typical sewer overflow constituents present at many harbor dive sites.
5. More emphasis should be provided regarding upgrading PPE and decon. absent definitive testing. It is simply not possible to test for all contaminants, and certain sites are contaminated with a reoccurring list of contaminants that can be readily predicted (e.g. harbors).
6. For post flood-work, it's estimated some 5000 chemicals are present that pose a risk to the diver--it's simply not possible to test for all of these, all the time. Many chemicals cannot be tested in anything less than weeks to months. Some manufacturers recommend a positive pressure full face mask to minimize droplet inhalation (e.g. Interspiro) and this is also recommended in literature (Barsky 2007).
7. It should be more definitively stated that neck dams of any kind are not acceptable for polluted water diving--as they can leak and render the helmet less protective (Barsky 2007, EPA, 1985) More detail should be provided based on available literature on selection of PPE, e.g. a slick material drysuit is more amenable to decontamination than those with absorbent exteriors, such as neoprene. (EPA, 1985)
8. Emphasis should be added that dryglove protection is necessary for the diver to avoid dermal exposure/burns and that chafing gloves may be necessary over these. Chafing gloves (e.g. gardening type gloves) must be treated as contaminated and disposed of after a dive series to avoid transferring contaminants from site to site.
9. Discussion should be added that other equipment that cannot be decontaminated will be specially handled as "dirty" or thrown away, such as an EGS harness comprised of nylon denier.
10. A "For more information" section could be added with online resources (see example below).  
available.

More details and complete references: <http://yosemite.epa.gov/r10/OEA.NSF/investigations/divepubs>

In addition, if any outreach articles would be appropriate for your industry magazine "Underwater" we would be happy to provide submissions for consideration on these issues.

Sincerely,

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## Polluted Water Diving: Online Dive Planning Tools

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Figure: EPA diver assessing a drum at a former manufactured gas plant site in Seattle

There are several online tools available for planning a polluted water dive or to ensure that a dive you are planning is not a likely polluted water dive. Concerns over pollution exposure lead the U.S. Environmental Protection Agency (EPA) to upgrade protective measures, such as keeping the diver completely dry, use of decontamination, and medical/monitoring/immunizations for divers.

In waters near metropolitan areas, bacteria in the water column can be a problem from a variety of sources, including pet waste and sewage overflows. [EPA's](#) Beach Environmental Assessment and Coastal Health Program ([BEACH](#)) provides regular bacterial counts at popular marine (and Great Lakes) recreational sites. Information on sewer discharge location, overflow frequency, and publicly available bacterial count information can be a valuable dive planning tool. In addition, chemical and biological contaminant trends in the water column and sediment are available through [NOAA's Mussel Watch Program](#). Outfalls can also discharge a variety of harmful chemicals to the dive site. EPA's [Envirofacts](#) database presents outfall location and data that can be of use in planning for worst case water quality at a particular dive site. In addition, a list of chemically impaired water bodies can be obtained from [EPA's 303d list](#). Even use of up to date navigation charts can inform a dive plan with some level of outfall information. Many [Superfund Sites](#) are near or include bodies of water, which typically must be treated as polluted water dives. Most Superfund sites have some online chemical data available on the water

column and/or sediment. Internet searches on fish advisories are also typically indicative of a polluted water body.

If specific chemical contaminants are known or suspected on a site, a hazard analysis should be included in the dive plan to address potential exposure pathways and identify specific equipment or procedures to minimize risk factors. Several online chemical data bases, such as [www.epa.gov/iris](http://www.epa.gov/iris), [www.cameochemicals.noaa.gov](http://www.cameochemicals.noaa.gov), [www.cdc.gov/niosh/npg/](http://www.cdc.gov/niosh/npg/), or [www.atsdr.cdc.gov](http://www.atsdr.cdc.gov), contain useful information on chemical properties and human health hazards posed by chemicals. In addition, drysuit manufacturers can be consulted to obtain permeation data for known or suspected contaminants (e.g., <http://www.vikingdiving.com/?id=1851>). If decontamination solutions (soaps, detergents, biocides) are necessary, the Material Data Safety Sheets (MSDS) at [www.hazard.com/msds/](http://www.hazard.com/msds/) or the manufacturer's web site should be consulted to assess toxicity and biodegradability.

EPA often uses protective gear and protocols when diving known or suspected contaminated areas (e.g., hazardous waste sites, urban areas, ports/harbors, proximity of outfalls) rather than relying on real-time water analyses. To safely dive in chemically or biologically polluted water, divers must receive proper training to recognize and mitigate hazards. Online tools will help divers assess what contaminants may be present at the dive site, what effect these contaminants may have on the diver or the diver's equipment, and what equipment and/or decontamination procedures may be necessary to protect the diver.

Papers on polluted water diving available from EPA:

<http://yosemite.epa.gov/r10/OEA.NSF/investigations/divepubs>

SOPs for polluted water diving:

<http://yosemite.epa.gov/r10/oea.nsf/Investigations/Dive+Team+Safety>

Useful links for polluted water diving:

<http://yosemite.epa.gov/R10/OEA.NSF/Investigations/Dive+Team+Links>