

Appendix 11

Sampling Procedures Chemical Spills

Caution

The identity of all chemicals involved in a spill event must be determined prior to any personnel being deployed to sample the spill. The properties, flammability, toxicity and health effects of the chemicals must be evaluated and appropriate PPE provided to sampling personnel.

Special safety requirements such as static earthing of equipment is necessary when sampling chemicals in potentially explosive vapour environments.

Expert advice must be sought prior to sampling to determine the correct sampling equipment. Some chemicals may be incompatible with sampling equipment e.g. Hydrofluoric acid (HF) will attack glass equipment, some acids will dissolve metal devices evolving hydrogen gas. Some light volatile chemicals can escape from screw top containers or dissolve internal Teflon liners. Such chemicals will require specialised crimped septum vials.

The road, rail or air transport of certain hazardous or noxious substances requires State/Territory EPA permits and specialised transport requirements. These requirements will be based upon the type and quantity of chemical(s) being transported.

It is recommended that expert chemical advice and the services of specialised chemical transport organisation or laboratories be sought in the development of chemical sampling and transport procedures.

Collection of Samples

Samples of chemical spills from the marine environment (water and foreshore areas) and all potential sources should be taken with the minimum of delay before a chemical spill dissipates. All samples should be contained in clean glass jars (preferably sterilized glass jars if available) and information about where the samples were taken should be recorded. This information should be provided to the laboratory to assist with the analysis of the samples. All samples should be kept in a cool, dark, secure location (i.e. within an insulated container, an esky or a refrigerator if available) prior to secure transport to the laboratory or other.

Marine environment - Every effort should be made to obtain representative samples of the pollutant from the water and foreshore areas or other polluted areas (including wildlife). A number of samples should be taken from various locations within the spill. Note that any drains or outfalls in the area should also be sampled so they can be eliminated as a potential source of the spill. Blanks or clean water samples should also be taken upstream/outside the spill area and provided to the laboratory.

Ships – Sampling ships should only be undertaken with the assistance of an authorized officer with relevant shipping and chemical expertise. All potential ships that could have been responsible for the spill must be obtained. It is just as important to be able to eliminate ships

as well as identifying the ship responsible. Samples should be taken from all potential tank sources onboard the ship, particularly if prosecution is envisaged. Information on how the sample was obtained should also be recorded and provided to the laboratory.

Continuity of Samples

To be admissible as evidence, samples taken must be proved conclusively to be in an appropriate person's possession until delivery to the laboratory. This requires that rigid controls be instituted and maintained to establish continuity for the samples from the time of initial sampling.

Delivery of Samples

Where samples are collected for the purpose of prosecution appropriate safeguards need to be ensured during their transport. AMSA has identified that TNT Failsafe Couriers can provide transport of samples from the person responsible for its collection and/or custody to the designated analyst, incorporating rigid controls and security.

Transport of samples is organised for all State/NT locations by the TNT Failsafe's Sydney office.

Analysis of Samples

AMSA has arrangements in place whereby analysts appointed under the provisions of the Commonwealth Protection of the Sea (Prevention of Pollution from Ships) Act 1983 will carry out testing of all samples for the purposes of prosecutions under that Act. State/NT legislation may also have similar provisions.

Further Details

AMSA and State/Territory agencies have dedicated sampling kits including documentation to be used for these purposes. Further details concerning sampling procedures and appointed analysts are available from AMSA Environment Protection Unit.