GENERAL FIELD SAMPLING GUIDE FOR CONTAINERS AND HOLDING TIME BY AUSTRALIAN STANDARD (WATERS) AND NEPM (SOILS)

Approved: P. Ching

SGS Australia Pty Ltd: I&E, Environmental

Alexandria NSW	Malaga WA	Cairns QLD	Notting Hill VIC	Perth Airport WA	Morwell Vic	Shepparton Vic
(02) 8594 0400	(08) 9475 0099	(07) 4035 5111	(03) 9574 3200	(08) 9373 3500	(03) 5172 1555	(03) 5821 1708

P&T - Purge and Trap 40 mL screw top, **P** = High Density Polyethylene, **G** = Glass, **TLS** = Teflon Lined Septum, **TLC** = Teflon Lined Cap, **AW**=Acid Washed.

Water and Wastewater

Analysis	Nominal Volume	Container Type	Colour	Preservation	Hold Time
Acidity/ Alkalinity (HCO_3, CO_3)	125mL	P, G	Green	Cool 4±2°C Exclude Air	14 days (ISO 5667-3)
Algae	250/500mL	PET	Blue/Grey	Cool 5±3°C, Lugol's Iodine, air gap	48 hours
Amoeba	500mL	PET	Blue	Ambient Temperature, sterile	4 days
Asbestos Identification in water	1L	P	Green	N/A	N/A
Aldehyde/Ketones	100mL	G	Green	Cool 4±2°C	7 days
Amines	100mL	G	Green	Cool 4±2°C	14 days
Alcohols	2x40mL	G-TLS	Green	Cool 4±2°C	7 days
Bromide	60mL	P, G amber	Green	Cool 4±2°C, Exclude light	28 days
BOD	500mL	P, G	Green	Cool 4±2°C, Exclude Air	24 hours (48h, USEPA)
Carbon Dioxide	125mL	P, G	Green	Cool 4±2°C, Exclude Air	24 hours
Chloride	60mL	P, G	Green	Cool 4±2°C	28 days
Chlorine; Total, Free	250mL	P, G	Green	None	Immediate
Haloacetic Acids (HAA) **[Note 6]** (Chloroacetic Acid)	2 x 40mL	G-TLS	White	Cool 4±2°C, Ammonium Chloride	14 days
Chlorophyll; a, b, c	1000mL	G amber	Green	Cool 4±2°C, Exclude light (Filter on site and freeze)	Filter within 24 hours (30 days frozen on filter)
Chromium VI (Hexavalent)	60mL	P, G	Green White	Cool 4±2°C (buffered to pH 9.3-9.7)	24 hours (28 days – APHA)
COD	60/250mL	P, G	Orange	Cool 4±2°C H_2SO_4 to pH< 2	28 days
Colour	60mL	P, G	Green	Cool 4±2°C	48 hours
Conductivity	60mL	P, G	Green	Cool 4±2°C	28 days
Cyanide; Free, Total, WAD	125/250mL	P black, G amber	Purple	Cool 4±2°C NaOH to pH > 12, PbAcO if S^{2-} present. Exclude light	14 days, APHA
Thiocyanate, SCN	60mL	P	Orange	Cool 4±2°C, H_2SO_4 to pH< 2	7 days
Dust (Deposited Solids)	2.5/4 Litre	G	White	$CuSO_4$, Alternative preservatives are available upon request	28 days
EDTA/NTA	40mL	G-TLS	White	Cool 4±2°C	7 days
Explosives	500mL	G	Green	Cool 4±2°C	7 days
Fluoride	60mL	P	Green	Cool 4±2°C	28 days
Glyphosate	125mL	P	Green	Cool 4±2°C	7 days
Gross alpha and beta	1000mL	P	Green	Cool 4±2°C HNO_3 to pH< 2	180 days
Haloacetonitriles (HAN) **[Note 6]**	2x40mL	G-TLS	White	Cool 4±2°C, Phosphate buffer & Ammonium Chloride	14 days
Iodide	60mL	P, G	Green	Cool 4±2°C	28 days
Iron, Ferrous	60/125mL	P	Brown	Cool < 4°C / HCl to pH<2 exclude Air	7 days (ISO 5667-3)
Mercury (Hg) **[Note 1]** APHA states only HNO_3 is required as for metals	125mL	G (AW)	White	Cool 4±2°C / HNO_3 to pH < 2	28 days
Metals **[Note 1]** excluding Cr (VI), Fe (II)	60/125mL	P (AW)	Red	Total: Cool 4±2°C exclude air Soluble: Field Filter Cool 4±2°C exclude air - then Lab HNO_3 to pH<2	6 months
Mercaptans	2x20mL	G-TLS	Green	Cool 4±2°C	7 days
Methane (dissolved gases)	2x40mL (Syd) 2x20mL (Melb)	G-TLS	Brown	Cool 4°C	7 days
Microbiological (e.g. E. coli)	500mL	G, PET	Blue	Cool 5±3°C, sterile	24 hours
Nutrients (FRP)	60mL	P, G	Green	Cool 4±2°C	48 hours (28 days freeze<-18°C)
Nutrients (NO_x-N, NH_3-N)	60mL	P, G	Green Orange	Cool 4±2°C Frozen	4 days (unpreserved) 28 days (acid preserved) 28 days (frozen)
Nutrients (NO_2-N, NO_3-N)	60mL	P, G	Green	Cool 4±2°C	4 days (ISO 5667-3)
Nutrients (TKN, TP)	125/250mL	P, G	Green Orange	Cool 4±2°C Frozen	4 days (unpreserved) 28 days (acid preserved) 28 days (frozen)

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Water and Wastewater

Analysis	Nominal Volume	Container Type	Colour	Preservation	Hold Time
Oil and Grease (Total)	500mL/1L	G	Orange	Cool 4±2°C, H_2SO_4 to pH< 2 (**A separate bottle MUST be provided**)	28 days
Organometallics (TBT, methyl Hg)	500mL	G-TLC	Green	Cool 4±2°C	28 days
Oxygen, Dissolved	250/500mL	G	Green	Exclude Air	Immediate (8h indicative)
PFAS (Standard/Low level) **[Note 5]**	2x50mL	P	Green	Cool 4±2°C	28 days
PFAS (Ultra-Low Level), **[Note 5]**	2x250mL	P	Green	Cool 4±2°C	28 days
pH	60mL	P, G	Green	Cool 4±2°C, exclude air	(0 hrs Vic EPA) 6 hours APHA (indic. 24h)
Total Phenolics (colourimetric)	60mL	P, G	Orange	Cool 4±2°C, H_2SO_4 to pH< 2	21 days
Gamma Spectroscopy	1000mL	P	Green	Cool 4±2°C HNO_3 to pH< 2	180 days
Radon 222	100mL	G	Green	Cool 4±2°C, exclude air	4 days
Radium 226-228 by LSC	1000mL	P	Green	Cool 4±2°C, HNO_3 to pH< 2	180 days
Silica, Reactive	60mL	P	Green	Cool 4±2°C	28 days
Solids; Total	125/250mL	P, G	Green	Cool 4±2°C	7 days
Solids; Volatile	125/250mL	P, G	Green	Cool 4±2°C	7 days
Sulfate	60mL	P, G	Green	Cool 4±2°C	28 days
Total Sulfide	250mL	P, G	Yellow	Cool 4±2°C, Zn AcO & NaOH to pH>9	7 days
Dissolved / Un-ionised Sulfide **(Pre-treatment required)**	250mL	P, G	Purple & Yellow	$AlCl_3$ & NaOH flocculation, settle, decant into Zn AcO & NaOH bottle	7 days
Sulfite	200mL	P, G	Green	Cool 4±2°C, exclude air	2 Days
Surfactants-MBAS	100ml	P, G	Green	Cool 4±2°C	48 hours
SVOC Routine OC/OP/PCB/TRH/PAH/phenols/ herbicides, Phlates, Nitrosamines, Analines, 8270 etc. **[Note 3 & 5]**	2x100mL	G-TLC	Green	Cool 4±2°C	7 days
SVOC Low Level OC/OP/PCB/TRH/PAH/phenols/ herbicides, 8270 etc. **[Note 3 & 5]**	2x500mL	G-TLC	Green	Cool 4±2°C	7 days
TOC/Carbon Forms	2x40 mL	G	White	Cool 4±2°C (also H_2SO_4 to pH< 2 if TOC/DOC only)	7 days
Total Dissolved Solids	250mL	P, G	Green	Cool 4±2°C	7 days (APHA)
Total Suspended Solids	500mL	P, G	Green	Cool 4±2°C	7 days (APHA)
Turbidity	60mL	P, G	Green	Cool 4±2°C	24 hours
VOCs / BTEX **[Note 4 & 5]**	2x40mL	G-TLS	White	Cool 4±2°C, exclude air, if Free Cl present, Sodium Thiosulfate: Cool 4±2°C, dechlorinate if required, Acidify HCl to pH< 2:	7 days 14 days
Volatile Fatty Acids	100mL	G	Green	Cool 4±2°C	7 days

Note:

1. For dissolved metals, samples should be filtered through 0.45 µm immediately on site, prior to laboratory preservation.
2. There is no documented value for this parameter. SGS analyse within 7 days; scientific references may exist but are contradictory or not explicit.
3. An absolute minimum volume of 100mL for SVOC (water) analysis is required.
4. An absolute minimum volume of 40mL for VOC (water) analysis is required.
5. SVOC/VOC/BTEX/PFAS (water) – A third vial/bottle is recommended on the 1st, 11th, 21st, 31st etc for lab QC (duplicates & matrix spikes).
6. HAA/HAN (water) – A third vial is needed if QC is required

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Soil and Sludge

Analysis	Nominal Container Size	Container	Colour	Preservation	Hold Time
Acid Sulphate Soils	300g	HDPE bag	Green	Cool 4±2°C Exclude Air	24 h @ <4°C 90 days frozen
Asbestos Identification	100g	HDPE bag (double)	Green	N/A	N/A
Asbestos Identification (Gravimetric)	500mL (Approx 1kg)	HDPE bag (double)	Green	N/A	N/A
Boron	250mL	N/A [Note 2]	Green	None	N/A [Note 2]
Cation Exchange Capacity (CEC)	125/250mL	HDPE Bag, G	Green	Cool 4±2°C	28 days
Chloride	125/250mL	HDPE Bag, G	Green	Cool 4±2°C	7 days
Chromium VI (Hexavalent)	125/250mL	P, G USEPA1636	Green	Cool 4±2°C	28 days
Conductivity	125/250mL	P, G	Green	Cool 4±2°C	7 days
Cyanide; Free, Total, WAD	125/250mL	P, G	Green	Cool 4±2°C	14 days
Explosives	125mL	G	Green	Cool 4±2°C	7 days
Fluoride	125/250mL	P	Green	Cool 4±2°C	7 days
Foreign material	2kg	HDPE bag	Green	None	None
Glyphosate	125/250mL	G	Green	Cool 4±2°C	14 days
Gross alpha and beta	250mL	G	Green	Cool 4±2°C	180 days
Mercury (Hg) APHA states only HNO_3 is required as for metals	125mL/250mL	P, G	Green	Cool 4±2°C	28 days
Metals excluding Cr (VI), Fe (II)	125/250mL	HDPE Bag, G	Green	Total: Cool 4±2°C exclude air	6 months
Microbiological (e.g. E. coli)	125/250mL	P	Green	Cool 5±3°C, sterile	24 hours
Nutrients (FRP, TKN, TP, NO_2-N, NO_3-N NO_x-N, NH_3-N)	125/250mL	P, G	Green	Cool 4±2°C	7 days
Oil and Grease (Total)	125/250mL	G	Green	Cool 4±2°C,	28 days
Organometallics (TBT, methyl Hg)	250mL	G-TLC	Green	Cool 4±2°C	14 days
Metals in Paint	0.5g	HDPE bag	Green	N/A	N/A
PFAS (Standard/Low Level)	100mL	P	Green	Cool 4±2°C	90 days
pH	125/250mL	HDPE Bag, G	Green	Cool 4±2°C, exclude air	7 days
Total Phenolics (colourimetric)	125/250mL	G-TLC	Green	Cool 4±2°C,	14 days
Gamma Spectroscopy	250mL	G	Green	Cool 4±2°C	180 days
Sulfate	125/250mL	HDPE Bag, G	Green	Cool 4±2°C	7 days
Sulfide	125/250mL	P, G	Green	Cool 4±2°C	7 days
SVOC OC/OP/PCB/TRH PAH/phenols/herbicides, 8270 etc	2x100mL	G	Green	Cool 4±2°C	14 days
TOC	250mL	HDPE Bag, G	Green	Cool 4±2°C	7 days
VOCs / BTEX	125/250mL	G-TLC	Green	Cool 4±2°C, exclude air	14 days

SGS, I&E, Environmental is not responsible for the accuracy of the information contained in this table. Users are encouraged to refer to the current regulations from which this information is obtained. The hold time listed is the suggested time that samples may be held before analysis and still be considered valid. Sources: AS/NZS 5667.1:1998, ISO 5667-3 - 2024, Vic EPA IWRG701, AS 2031:2025, Standard Methods for the Examination of Water and Wastewater, Current Edition, USEPA SW 846, 3rd Edition 1986 plus updates. NEPM 1999 repealed and re-issued 2013, schB3 Table 1 guidelines for soil. Holding times may be met or extended after laboratory extraction, for some analytes.

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General Water Sampling Guide

- Fill all sample bottles provided for each sample/sampling location.
- Where a cooler and ice bricks have been provided, please ensure the ice bricks have been frozen prior to sampling such that samples are cooled on collection and during transport to the laboratory.
- Some bottles will contain preservatives – do not wash out or overflow bottle while filling.
- Ensure sample labels are legibly completed and Chain of Custody form completed to include all information relevant to the sampling event.
- Where filtering equipment (syringes and disposable filter cartridges) has been provided to sample for soluble metals or nutrients for example, fill syringe with sample, affix filter cartridge, then discharge the sample through the cartridge directly into the sample bottle.

Sample Types

Trade wastes

Trade wastes should only be sampled when there is a flow, and a grab sample is suitable in most instances. An auto-sampler may be used for a 24-hour composite. Preservation or cooling may be required and should be arranged prior to setting the auto-sampler up. Most auto-samplers have provision for the addition of ice or frozen cooler blocks.

Groundwaters

Samples may be taken by two methods:

a) Pumping - Use a suction pump for shallow bores and pump out at least two bore volumes (preferably three if the bore replenishes quickly) to clear stagnant water. For deep bores a submersible type of pump is required.
b) Bailing - This method is used for small diameter bores (<6 cm) however stagnant water may not be completely removed from the bore. A teflon bailer is suited for sampling volatile organic compounds.

Surface waters

Well mixed waters may be sampled using a bottle placed upside down in the water at a depth of 10-15 cm by the sampler wearing polyethylene gloves. The bottle is inverted to fill, then capped. Difficult locations may be sampled with a bucket fixed to a long pole.

Tap waters

Collect samples at faucets which are free of contaminating devices such as screens, hoses and purification devices. Thoroughly flush the spigot for thirty to sixty seconds to clear the service line.

Filling Bottles

Multiple bottles

When multiple sample bottles are required to be filled to ensure correct preservation, a 4L beaker or bucket of well mixed sample is used to fill the individual bottles. Exceptions to this procedure are detailed below. Non preserved containers should be rinsed with sample and filled completely so as to exclude air. Pre-dosed containers should be filled to the neck. Do not empty out the preservative.

Volatiles

When sampling for volatiles, fill two 40mL glass sample vials completely (per sample) leaving no headspace from a grab sample. Seal the bottle immediately with a teflon lined lid.

Microbiology

Wear new sterile gloves hold the lid in the same hand as the sterile bottle. Fill the bottle to the neck and avoid touching the inside of the lid or thread of the bottle with the hands. Do not place the lid down on any surface. Do not rinse the container with the sample. Note in the sampling record if the water body is chlorinated. If sampling tap water, it may be necessary to remove the aeration screen/device. Disinfection of the tap may be performed by swabbing the tap with a 10% solution of sodium hypochlorite, or flame the spout using a portable butane burner, before flushing the tap for thirty to sixty seconds. Sample directly into the sterile container.

Other organics

Mix the sample well but avoid unnecessary disturbance and avoid contact with any equipment made from plastics apart from teflon. Sample into a 4L glass beaker and then fill amber glass bottles with the collected sample. If any items of sampling equipment are contaminated by petroleum products, they can be cleaned with a 10% solution of Decon 90 followed by thorough rinsing with deionised water.

Has anything changed from your original sampling plan?

Your Chain of Custody is a legal document which tells us what you want tested. If you have a pre-printed COC and sample points were not collected, record this. If you want to add or change testing, ensure that your COC accurately reflects each & every sample you are submitting to the laboratory.

Make sure your contact details are with the paperwork in your esky. If we have any questions regarding your samples, the answer is often urgently required to ensure your testing starts within its holding times.

If you have any questions, please do not hesitate to contact us.