



Model Code



**Australasian Bottled Water Institute
(ABWI)**

A Division of the
Australian Beverages Council Limited

Contents

SECTION 1	4
1.1 Interpretation	4
1.2 Definitions	4
1.3 Application	8
1.4 Documentation and Records	10
SECTION 2	11
2.1 Food Safety Programs	11
2.1.1 HACCP Team	12
2.1.2 Product Description and Intended Use	12
2.1.3 Flow Diagram	12
2.1.5 Hazard Analysis	12
2.1.6 Critical Control Point	12
2.1.7 Critical Limits	12
2.1.8 Monitoring	12
2.1.9 Corrective Actions	12
2.2 Verification	13
2.2.1 Internal Audit	13
2.2.2 External Audit	13
2.2.3 Food Defence Program	13
2.2.4 Other Verification Activities	15
2.2.5 Testing Requirements	15
2.2.5.1 Testing Summary	15
2.2.5.2 Physical Testing	18
2.2.5.3 Radionuclide Testing	18
2.2.5.4 Inorganic Compounds in Source or Bottled Water	19
2.2.5.5 Organic Compounds in Bottled or Source Water	20
2.2.5.6 Volatile Organic Compounds in Bottled or Source Water	21
2.2.5.7 Additional Volatile Organic Compound Screening in Source or Bottled Water	22
2.2.5.8 Additional Volatile Organic Compound Screening in Source or Bottled Water	24
SECTION 3	25
3.1 Content of Food Safety Programs - Good Manufacturing Practices	25
3.1.1 Interpretation	25
3.1.2 Food Handling – Skills and Knowledge	25
3.1.3 Notification	26
3.2 Food Handling Controls	26
3.2.1 Approved Supplier	26
3.2.2 Water	26
3.2.3 Transport of Water from Source	28
3.2.4 Food Receipt	29
3.2.5 Food Storage	29
3.2.6 Food Processing	29
3.2.7 Multi-Service Containers	30
3.2.8 Onsite Blow Moulding	31
3.2.9 Air	31
3.2.10 Filling and Capping	31
3.2.11 Food Packaging	32
3.2.11.1 Use of ABWI Logo	33
3.2.12 Food Transportation - Dispatch and Delivery	34

3.2.13	Food Disposal	34
3.2.14	Food Recall	34
3.3	Health and Hygiene Requirements	35
3.3.1	Requirements for Food Handlers.....	35
3.3.2	Health of Food Handlers.....	35
3.3.3	Hygiene of Food Handlers	35
3.4	Cleaning, Sanitising and Maintenance.....	36
3.4.1	Cleanliness	36
3.4.2	Cleaning and Sanitising of Specific Equipment	37
3.4.2.1	Water Coolers	37
3.4.2.2	Maintenance.....	38
3.5	Miscellaneous.....	38
3.5.1	Measuring Devices	38
3.5.2	Single Use Items.....	38
3.5.3	Animals and Pests	38
3.5.4	Food Testing including Laboratory	39
3.5.5	Alternative Methods of Compliance	39
3.6	Design and Construction of Food Premises	40
3.6.1	Water Supply	41
3.6.2	Sewage and Waste Water Disposal	41
3.7	Facility Design and Construction	41
3.7.1	Hand Washing Facilities	41
3.7.2	Non-Food Storage Facilities	42
3.7.3	Toilet Facilities	42
3.7.4	Food Transport Vehicles.....	42
SECTION 4	43
4.1	Water Stewardship.....	45
4.2	Operations Efficiency.....	45
4.2.1	Water Usage.....	43
4.2.2	Energy Usage	43
4.3	Environmental Responsibility.....	44
4.4	Packaging	44
4.5	Water Coolers.....	44

SECTION 1

1.1 Interpretation

Bottled waters may be produced and labelled as follows:

- a) bottled water with 'added fluoride'
- b) drinking water,
- c) glacier water,
- d) mineral water,
- e) mineralised water,
- f) packaged water,
- g) purified water,
- h) rain water,
- i) spring water,
- j) table water,
- k) or other appropriately designated water, consistent with the Australia New Zealand Food Standards Code (FSC) and/or Australian Competition and Consumer Commission (ACCC) or equivalent regulations.

1.2 Definitions

ABWI Members are **REQUIRED** to comply with the definitions described below:

Adequate - is that which accomplishes the intended purpose in keeping with good health practices.

Alkaline Water – water with a minimum pH of 8.5 and a maximum pH of 10.5.

Approved method - a methodology approved by the National Accreditation Testing Association (NATA) or certified by a third-party organisation acceptable to ABWI.

Approved Source - a source for which approval has been obtained and maintained in accordance with chemical, physical and microbiological testing requirements (See Section 2.2.5 Testing Requirements). The bottlers are **REQUIRED** to maintain in the plant a current license or certificate of approval of the source where issued (by state or department).

Bottled Water - water that is intended for human consumption and that is sealed in bottles or other containers with no added ingredients except that it may optionally contain safe and suitable antimicrobial agents. Firms may manufacture non-standardised bottled water products with ingredients such as minerals for flavour. The common or usual name of the resultant product reflects these additions.

Bulk Water - water intended for potable use which is transported via tanker truck or equivalent means from one area to another for the purpose of treatment, packaging and human consumption.

Closure – container lid.

Community Engagement Plan – framework that demonstrates stakeholder engagement with the public to inform, consult and collaborate in project planning and decision-making that is commensurate with IAP2's Public Participation Spectrum or similar standard.

Demineralised water - bottled water which is produced by distillation, deionisation, reverse osmosis, or other suitable process.

Drinking water - water that is intended for human consumption and that is sealed in bottles or other containers with no added ingredients except that it may optionally contain safe and suitable antimicrobial agents. Firms may manufacture non-standardised drinking water products with ingredients such as minerals for flavour. The common or usual name of the resultant product reflects these additions.

Food-contact surfaces - are those surfaces that contact human food and those surfaces from which drainage onto the food or onto surfaces that contact the food ordinarily occurs during the normal course of operations. "Food-contact surfaces" include utensils and food-contact surface of equipment.

Fluoridated bottled water – any still, bottled water, to which fluoride has been added, in accordance with the provisions set out in the Australia New Zealand Food Standards Code.

Ground water - water from a subsurface saturated zone that is under a pressure equal to or greater than atmospheric pressure. Ground water is **REQUIRED** to not be under the direct influence of surface water.

Lot - a collection of primary containers or unit packages of the same size, type and style produced under conditions as nearly uniform as possible and designated by a common container code, batch code or marking.

Microorganisms - yeast, mould, bacteria and viruses and includes, but is not limited to, species having public health significance. The term "undesirable microorganisms" includes those microorganisms that are of public health significance, that subject food to decomposition, that indicate that food is contaminated with filth, or that otherwise may cause food to be adulterated. Occasionally in these regulations, the adjective "microbial" is used instead of an adjectival phrase containing the word microorganism.

Mineral Water - ground water obtained from a subterranean water-bearing strata that, in its natural state, contains soluble matter. It is a **REQUIREMENT** that mineral water have a level of total dissolved solids of greater than 250 ppm. No minerals may be added to such water.

Multi-service containers - containers intended for use more than one time.

Natural Water - bottled spring, mineral or well water which is derived from an underground formation or water from surface water that only requires minimal processing, is not derived from a municipal system or public water supply, and is unmodified except for limited treatment (e.g., filtration, ozonation or other proven disinfection processes).

Nontoxic materials - materials for product water contact surfaces utilised in the transporting, processing storing and packaging of bottled water, which are free of substances which may render the water injurious to health or which may adversely affect the flavour, colour, odour, or bacteriological quality of the water.

Operations water - water that is delivered under pressure to a plant for container washing, hand washing, plant and equipment, clean-up and for other sanitary purposes.

Pest - refers to any objectionable animals or insects including, but not limited to, birds, rodents, flies and larvae.

Plant Operator - any person who owns or operates a bottled water plant. A certified plant operator is one who has met the requirements of the ABWI Quality Assurance Certificate Course, and has passed refresher examination every three years hence.

Potable Water – water that meets the Australian Drinking Water Guidelines, such as municipal water.

Primary container - the immediate container in which the product water is packaged.

Product water - water that has been fully processed ready for final product formulation.

Purified Water - bottled water produced by distillation, deionisation, reverse osmosis.

Recommended - is used to identify conditions that which requires full compliance of ABWI bottlers, however an alternative means of compliance can be determined through formal risk assessment which must be approved by the Certification Body.

REQUIRED / REQUIREMENT - is used to state a process or procedure which requires full compliance of ABWI bottlers.

Sanitise - to adequately treat food-contact surfaces by a process that is effective in destroying vegetative cells of microorganisms of public health significance, and in substantially reducing numbers of other undesirable microorganisms, but without adversely affecting the product or its safety for the consumer.

Shipping case or shipper - container in which one or more primary containers of the product are held.

Single-service container - container intended for one-time usage only.

Source - when used in reference to a bottled water plant's product water, means the original source of the water, prior to any transportation, processing or treatment.

Spring water - ground water obtained from subterranean a water-bearing stratum that, in its natural state, contains soluble matter. No minerals may be added to such water.

Sustainability statement – a publicly available, annually reviewed statement or report on successful completion of a sustainability assessment.

Unit package - standard commercial package of bottled water, which may consist of one or more containers.

Water dealer - any person who imports bottled water or causes bulk water to be transported for bottling for human consumption or other consumer uses.

Well water - water from a hole bored, drilled, or otherwise constructed in the ground which taps the water of an aquifer.

Acronyms

ABWI	Australasian Bottled Water Institute
ACCC	Australian Competition and Consumer Commission
ADWG	Australian Drinking Water Guidelines
CAR	Corrective Action Report
CCP	Critical Control Point
CP	Control Point
FSANZ	Food Standards Australia New Zealand
FSC	Food Standards Code of Australia and New Zealand
GMP	Good Manufacturing Processes
HACCP	Hazard Analysis and Critical Control Point
HEPA	High Efficiency Particulate Air
HPC	Heterotrophic Plate Count
IAP2	International Association for Public Participation.
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
NTU	Nephelometric Turbidity Units
pCi/L	picocurie per litre
ppb	parts per billion
ppm	parts per million
QAC	Quality Assurance Certificate
TACCP	Threat Assessment and Critical Control Points
TDS	Total Dissolved Solids
TON	Threshold Odour Number
TPC	Total Plate Count
VACCP	Vulnerability Assessment and Critical Control Points
WHO	World Health Organisation

1.3 Application

The ABWI Model Code (The Code) has been developed as a Standard of Excellence for the production of bottled waters for the protection of consumers, bottlers and other participants of the industry.

This Code for Bottled Water has been prepared by the Australasian Bottled Water Institute, its membership, Board of Directors and Committees.

The Code has been adopted by the bottler members of ABWI.

The Code is based on quality systems combined with Good Manufacturing Practices (GMP).

The intent of the Code and the accompanying Plant Inspection Program is to assist bottler and source owner members in their endeavours to produce a quality product, providing information and direction with technical procedures and quality systems and standards. As a result, the requirements of the Code exceed those of mandatory food law as set out in the Australia New Zealand Food Standards Code (FSC).

The ABWI's Plant Inspection Program has been developed to assist members to achieve a standard whereby they are considered '*bottlers of excellence*'.

Bottler members are **REQUIRED** to comply with the Plant Inspection Program based on the requirements of the Code.

Regardless of where the water may be sourced, fully documented procedures with all check results recorded and in conjunction with quality systems are **REQUIRED** to be maintained.

The Code requires members to undertake a rigorous and onerous testing regime. This includes scheduled daily, weekly and annual testing. ABWI considers this test regime to be essential.

This program is supported by the use of a registered logo that is only available for use by Certified Bottlers and Source Owners.

It is a **REQUIREMENT** that where applicable, ABWI members do NOT operate a bottled water plant or bottle water for the purpose of sale or distribution without passing the ABWI Plant Inspection Program within 12 months of joining ABWI.

If you are a bottler supplying to a supermarket, you may be **REQUIRED** to conform retail audit standards where additional requirements to that of the ABWI requirements need to be fulfilled.

The scope of the audit is the Code. Where a site is not certified to an ABWI approved third party Hazard Analysis and Critical Control Point (HACCP) certification against an international standard, all clauses within the Code are auditable.

Where a site has an ABWI approved third party HACCP certification against an international standard AND both the international standard audit and the ABWI audit are conducted by third party. A site may apply to ABWI for the scope of the audit to be only the ABWI specific clauses within the Code (*italicised* within the Code). It is **REQUIRED** that evidence of certification is available during the ABWI third party audit.

Bottlers are **REQUIRED** to submit to document review and annual audit as **REQUIRED** by ABWI.

The ABWI Technical, Scientific and Regulatory Affairs Manager has the discretion to extend the period of certification upon request by the bottler.

Bottlers may either be audited to the full Code, or where the bottler is certified to an ABWI recognised certification standard, be audited additionally to the italicised requirements within the Code.

The Code is designed around a series of compliance points that a bottler is **REQUIRED** to comply with, supported by processes and procedures that are **REQUIRED** or **recommended**.

To attain a pass, bottlers need to comply with all **REQUIRED** points.

In addition to attain a pass, bottlers need to comply with 90% of all **recommended** points.

Where a bottler does not achieve a score of 90% or higher, but has complied with all **REQUIRED** points, they have 60 days to attend to the necessary points, identified by the auditor, and to have their plant or documentation re-evaluated to achieve full conformance with the Code.

Where a bottler does NOT comply with all **REQUIRED** points, they have 30 days to complete corrective actions and have these approved by the auditor or as arranged. Where the non-compliance relates to the annual water testing for organic and volatiles then the bottler is allowed a maximum of 60 days to have the test results returned.

Bottlers may apply to ABWI for a concession of a given period of time, where it is not possible for the non-compliance to be closed within the time period stated above. This concession is given at the discretion of the ABWI Technical, Scientific and Regulatory Affairs Manager. In this case a document review may be requested.

The ABWI Technical, Scientific and Regulatory Affairs Manager has the discretion to grant variants and exemptions to clauses and points within the Code upon request by the bottler.

Source owners may seek separate Source Certification. In this event they are **REQUIRED** to meet the compliance points for an approved source for chemical and microbiological testing. Certified sources are **REQUIRED** to also carry out the annual testing regime.

*A bottled water plant is **REQUIRED** to be operated under the supervision of at least one person during each hour of production. This person must be qualified by experience, education, and training to operate and maintain the plant's facilities and hold a current ABWI Quality Assurance Certificate (QAC).*

It is a **REQUIREMENT** that this document is used in combination with the Recommended International Code of Practice – General Principles of Food Hygiene of Codex Alimentarius (CXC 1-1969) and the Principles for the Establishment of and Application of Microbiological Criteria for Foods.

For questions about the Code contact: Australasian Bottled Water Institute, 2/2 Allen Street, Waterloo, NSW 2017, or info@ausbev.org

1.4 Documentation and Records

The objectives and rationale is to maintain sufficient records to comply with requirements and to ensure that records are on hand to respond to authorities when required.

*It is a **REQUIREMENT** that all records be retained at the plant for not less than 7 years.*

Various regulations exist across Australia, New Zealand and elsewhere. Hence ABWI is recommending that all records be maintained for a minimum of 7 years. This includes records for HACCP verification, monitoring and validation, process controls, production, cleaning and sanitising, training, customer complaints and any other records.

Regulation may require some records being kept longer than 7 years.

SECTION 2

2.1 Management commitment and food safety culture

Management commitment to Food Safety is fundamental to the successful functioning of any food hygiene system, as is the establishment and maintenance of a positive food safety culture acknowledging the importance of human behaviour in providing safe and suitable food.

The following elements are important in cultivating a positive food safety culture:

- commitment of the management and all personnel to the production and handling of safe food;
- leadership to set the right direction and to engage all personnel in food safety practices;
- awareness of the importance of food hygiene by all personnel in the food business;
- open and clear communication among all personnel in the food business, including communication of deviations and expectations;
- and the availability of sufficient resources to ensure the effective functioning of the food hygiene system.

Management should ensure the effectiveness of the food hygiene systems in place by:

- ensuring that roles, responsibilities, and authorities are clearly communicated in the food business;
- maintaining the integrity of the food hygiene system when changes are planned and implemented;
- verifying that controls are carried out and working, and that documentation is up to date;
- ensuring that the appropriate training and supervision are in place for personnel;
- ensuring compliance with relevant regulatory requirements; and,
- encouraging continual improvement by, where appropriate, taking into account developments in science, technology and best practice.

2.1.1 Quality Policy

The organisation is **REQUIRED** to have a documented quality statement or statements demonstrating commitment to: food safety and quality; to compliance with regulation, to customer standards and the ABWI Model Code; and, the operation of an organisation working in an environment of food safety culture and continuous improvement.

The policy is **REQUIRED** to be signed by the most senior member of staff onsite, or a more senior manager offsite in a multi-site organisation.

2.1.2 Management Commitment

The organisation is **REQUIRED** to have a policy demonstrating the methods and means by which senior management demonstrate their commitment to the Quality Policy's stated aims.

2.1.3 Food Safety Culture

The organisation is **REQUIRED** to have a policy on food safety culture within the organisation and how it is implemented, communicated, monitored and reviewed.

2.2 Food Safety Programs

Bottlers are **REQUIRED** to have a food safety program, covering a HACCP program for production processes, and for supporting programs in their plants.

ABWI members are **REQUIRED** to participate in the Plant Inspection Program to maintain their membership with ABWI and they are **REQUIRED** to be audited annually by a third party, independent auditor operating in compliance with guidelines for systems auditing, ISO 19011.

2.1.1 HACCP Team

It is **REQUIRED** that the organisation has a multidisciplinary HACCP team, including representation by production.

It is **REQUIRED** in jurisdictions where a “food safety supervisor” is legally required, that this requirement is met.

2.1.2 Product Description and Intended Use

It is **REQUIRED** that all products under scope of the ABWI audit be covered under product descriptions or specifications meeting Codex HACCP minimum requirements, including the intended use.

2.1.3 Flow Diagram

It is **REQUIRED** that all processes under the scope of the ABWI audit be detailed within a flow diagram(s). All steps are **REQUIRED** to be covered within the flow diagram(s), including alternate processes.

2.1.4 Verify Flow Diagram

It is **REQUIRED** that the flow diagram(s) be verified by the HACCP team or their nominee by comparison to actual process conditions.

2.1.5 Hazard Analysis

It is **REQUIRED** that a Hazard Analysis be conducted for each step on the flow diagram(s). This Hazard Analysis is **REQUIRED** to:

- Identify biological, chemical, physical, and quality hazards;
- Assess the significance of each identified hazard;
- Implement control measures, as the minimum for each significant hazard.

2.1.6 Critical Control Point

It is **REQUIRED** that significant hazards are controlled via identified Critical Control Points (CCP).

2.1.7 Critical Limits

It is **REQUIRED** that validated critical limits are set for the control of significant hazards at CCP.

Validation may be from external sources or from internal testing and research.

2.1.8 Monitoring

It is **REQUIRED** as a minimum that all control measures for significant hazards be routinely monitored during production. As an alternate, positive release systems maybe used instead of monitoring during production.

It is *recommended* that control measures for hazards NOT assessed as significant be routinely monitored during production.

When continuous monitoring is not feasible, frequencies are **REQUIRED** to be sufficient to ensure that the CCP is under control.

It is **REQUIRED** that personnel assigned to monitoring activities be properly trained and assessed for competence to report all results. This includes any unusual occurrences, so that adjustments can be made and any processes or products that do not meet critical limits are identified and immediate corrective actions be taken.

2.1.9 Corrective Actions

It is **REQUIRED** that effective corrective action(s) be put in place to control any non-conforming product or process.

It is **REQUIRED** that the root cause of the non-conformance is identified and effective preventive action is put in place to prevent recurrence of the non-conforming product or process.

2.3 Verification

2.3.1 Internal Audit

It is **REQUIRED** that organisation's fully review the food safety program internally at least annually. This includes review of their HACCP plan, verification that the HACCP plan is being correctly followed, review of CCP records and determinations that appropriate management decisions and product dispositions are made when deviations occur.

It is **REQUIRED** that such reviews include an on-site review and verification of all flow diagrams.

2.3.2 External Audit

Sites are **REQUIRED** to have a HACCP food safety program in their plants which is audited and certified by accredited third party *at a minimum annually*.

*Bottlers are **REQUIRED** to have had their audit conducted and passed prior to their anniversary date each year.*

*Surveillance and certification audits **REQUIRED** to be conducted by ABWI approved registered auditors.*

ABWI accredited auditors are **REQUIRED** to provide the bottler with a copy of the completed audit checklist, along with any corrective action reports (CARs) that are issued on the day of audit, or as agreed with the auditee. The 30 / 60 days permitted to fulfil non-compliances commences from the last day of the onsite audit.

Observers or technical advisors may be present on the day of certification audits. Others that may be present include translators which would be recorded as such on any audit report.

If any conflict is noted by auditor or auditee an exemption may be sought from the ABWI Technical Scientific and Regulatory Affairs Manager for circumstances, such as where there may be problems of communication for the bottler, e.g., English is their second language, where consultants could act as a translator.

Bottlers are **REQUIRED** to obtain and maintain "Certified Bottlers" status through passing their annual audit.

2.3.3 Food Defence Program

A comprehensive Food Safety Management System should include not only Food Safety, but also consider Food Defence and Food Fraud.

*The Code **REQUIRES** the organisation to consider the potential and vulnerabilities involved in the manufacturing of their products. It is **recommended** that organisations assess these threats and vulnerabilities to determine if a control measure is necessary through Threat Assessment and Critical Control Points (TACCP) and Vulnerability Assessment and Critical Control Points (VACCP).*

TACCP deals with Food Defence and encompasses intentional adulteration of product due to behaviourally or ideological motivation.

VACCP deals with Food Fraud and encompasses the deliberate and intentional tampering of a product for economic gains.

Some areas to consider are:

1. Dilution - Mixing a liquid ingredient of high value with a liquid of lower value.
2. Substitution – Mixing or replacement of a liquid ingredient of high value with a liquid of lower value. For bottled water, this could mean replacing spring or mineral water with tap water.
3. Concealment – No disclosing all information to hide the low quality/priced food ingredients or product.
4. Mislabelling – Labelling incorrect information for economic gain such as false claims.
5. Unapproved Enhancement - Adding unknown, undeclared and/or unapproved materials to food products to enhance the quality attributes.
6. Counterfeiting - Copying the brand name, packaging concept, recipe, processing method etc. of food products for economic gain.
7. Grey market/theft/diversion - Unauthorised company selling, such as sale of excess unreported product.

Please refer to GFSI Position on Mitigating the Public Health Risk of Food Fraud, PAS 96:2014 Guide to protecting and defending food and drink from deliberate attack, PWC Food Fraud Vulnerability Assessment and Mitigation Are you doing enough to prevent food fraud? and/or refer to the Safe Food website.

2.3.4 Other Verification Activities

It is **REQUIRED** that the HACCP system includes a set of verification tasks to be performed by establishment personnel.

It is **recommended** that documented procedures exist for all verification activities.

2.3.5 Testing Requirements

The testing requirements in ABWI Model Code seek to ensure that the source water and finished product meet criteria that minimise the risk of hazard from biological, chemical or physical contaminants in the finished product. The Code also includes hydrogeological testing & a sustainability assessment as a requirement for bottlers to uphold water stewardship as best practice.

All bottled water is **recommended** to be from an Approved Source, however is **REQUIRED** to meet the Standard for source testing. If any source does not comply as Approved, the bottler is **REQUIRED** to show by analysis that the treatment reduces the contaminant(s) below the Standard in the finished product.

All Approved and non-approved Sources are **REQUIRED** to have completed a hydrogeological assessment at initial establishment and a hydrogeological review every 5 years thereafter. It is **REQUIRED** that all sources, Approved and non-approved, have completed a sustainability assessment on an annual basis.

Note regarding testing summary below -

1. Members that provide source water need to perform all **REQUIRED** tests on source water used for all types of finished products.
2. Members who own a bottling plant need complete to all **REQUIRED** tests in testing summary on finished product.
3. Those members owning both a source and bottling plant need to complete all **REQUIRED** tests in testing summary on finished product.

2.2.5.1 Testing Summary

Table 1. Testing Summary

Test Requirements	Source*	Tanker	Finished Product
Hydrogeology**			
Hydrogeological Assessment (points a – h)	Initial establishment, external		
Hydrogeological Review (points a through d)	Every 5 years, external		
Sustainability assessment (points e through h)	Every year, external		
Microbiology			
Total Plate Count		Weekly in house, or with each delivery if deliveries are less often than weekly	

Coliforms AND/OR Escherichia coli	Weekly, external, or with each load taken, if taken less often than weekly or Monthly external, in conjunction with daily in-house	Weekly in house, or with each delivery if deliveries are less often than weekly	Daily in-house, in conjunction with monthly external
Yeasts and Moulds			Weekly in-house recommended
Pseudomonas aeruginosa OR Heterotrophic Plate Count			Weekly in-house recommended
Chemistry			
Physical	Annual, external		Annual, external
Radiological	Every four years, external		
Inorganics	Annual, external		Annual, external
Organics and Volatile Organics	Every four years once a history of two years compliance has been established		Every four years once a history of two years compliance has been established

* Source testing only necessary when finished product testing is not being undertaken, and source certification is required.

** Section 2.2.5.9 provides details on what is to be assessed.

Daily in-house total coliform monitoring on finished product is **REQUIRED** to be done on each product type.

All containers and closures are **REQUIRED** to be inspected to ascertain that they are free from contamination. At least once each 3 months, it is **recommended** that a bacteriological swab and/or rinse count be made from at least four containers and closures selected just prior to filling and sealing. No more than one of the four samples may exceed more than one bacteria per millilitre of capacity or one colony per square centimetre of surface area.

All samples are **REQUIRED** to be free of E. coli AND/OR coliform organisms. Refer to Section 2.2.5.2 Microbiology.

2.2.5.2 Microbiology

Members that bottle source water need only perform required tests on finished product, however source water supplier members are **REQUIRED** to undertake microbiological tests if they distribute their product by tanker directly to customers or require independent source certification.

Testing at the source is **REQUIRED** to be undertaken at regular intervals and utilising representative samples. A representative sample may be identified by that which reflects characteristics of each entire batch, and takes into consideration appropriate sample size and frequency.

Coliforms is **REQUIRED** to be tested:

- a) weekly, external, or with each load taken if taken less often than weekly or
- b) monthly external in conjunction with daily in- house.

Tabulated below,

- n means the minimum number of sample units.
- c means the maximum allowable number of defective sample units; defective sample unit

means a sample unit in which a microorganism is detected in a sample unit of a food at a level greater than *m*.

- *m* means the acceptable microbiological level and
- *M* means the level when exceeded in one or more samples would cause the lot to be rejected.

Table 2. Microbiological Testing Requirements for Source Water*

	Organism	<i>n</i>	<i>c</i>	<i>m</i>	<i>M</i> *
REQUIRED	<i>E. coli</i> AND/OR coliforms	3	0	0	0

*Note: On occasion of external analysis being positive the bottler is **REQUIRED** to revert to weekly external testing until four consecutive absence results are achieved. The bottler is **REQUIRED** to continue daily in-house coliform tests.

Table 3. Microbiological Testing Requirements for Tanker Water

	Organism	<i>n</i>	<i>c</i>	<i>m</i>	<i>M</i> *
REQUIRED	Total Plate Count	3	0	0	0
REQUIRED	<i>E. coli</i> AND/OR coliforms	3	0	0	0

*Note: On occasion of external analysis being positive the bottler is **REQUIRED** to revert to weekly external testing until four consecutive absence results are achieved. The bottler is **REQUIRED** to continue daily in-house coliform tests.

Representative samples are **REQUIRED** for testing daily in-house, in conjunction with monthly external testing. Two additional tests, being yeasts and moulds and *P. aeruginosa* or heterotrophic plate count are **recommended** subject to validation and verification procedures in house.

Table 4. Microbiological Testing Requirements for Bottled Water*

	Organism	<i>n</i>	<i>c</i>	<i>m</i>	<i>M</i> *
REQUIRED	<i>E. coli</i> AND/OR coliforms	3	0	0	0
recommended	Yeasts and moulds	3	-	-	-
recommended	<i>Pseudomonas</i> <i>aeruginosa</i> OR Heterotrophic Plate Count	3	-	-	-

*Note: On occasion of external analysis being positive the bottler is **REQUIRED** to revert to weekly external testing until four consecutive absence results are achieved. The bottler is **REQUIRED** to continue daily in-house coliform tests.

2.2.5.3 Physical Testing

These physical parameters are for aesthetic values.

Table 5. Physical Properties

Attribute	Maximum Indicative
Colour	< 5 units
Turbidity	< 0.5 NTU
pH	3.5 - 8.5
	8.5 – 10.5 (Alkaline Water)
Odour	3 T.O.N.
TDS	minimum of 250 ppm for mineral water

2.2.5.4 Radionuclide Testing

Table 6. Standard for Radionuclide Testing of Source Water

Attribute	Limit
*Gross Alpha	15 pCi/L
**Gross Beta	50 pCi/L

Please note the below conversion method to convert **pCi/L** to **mBq/L**

pCi/L (picocurie per litre) multiply (X) 0.037 to obtain = Bq/L (becquerel per litre)

* If Gross Alpha is greater than 5, analyse for Radium 226 and Radium 228. Their total is **recommended** not to exceed 5 pCi/L.

** If Gross Beta is greater than 8 pCi/L, analyse for Strontium 90. If Gross Beta is greater than 50 pCi/L, analyse for Tritium and other man-made nuclides.

Radionuclide testing for source water is **REQUIRED** every four years.

2.2.5.5 Inorganic Compounds in Source or Bottled Water

Table 7. Maximum Contaminant Level Inorganic Compounds (mg/L)

ANALYTE	CAS Number	ABWILIMIT ***	4 th Ed WHO DWG + FSANZ
Antimony	7440-36-0	0.006	0.02
Arsenic	7440-38-2	0.01	0.01
Barium	7440-39-3	0.7*	0.7
Beryllium	7440-41-7	0.004	NA
Borate (calculated as H ₃ BO ₃)	7440-42-8	30	NA
Bromate	7789-38-0 (Na) 7758-01-2 (K)	0.01 *	0.01
Cadmium	7440-43-9	0.003*	0.003
Chloramine	10599-90-3		NA
Chloride **	16887-00-6	250.0	NA
Chlorine (free)	NA	<0.1	NA
Chlorite	14998-27-7		0.7
Chromium	7440-47-3	0.05	0.05
Copper **	7440-50-8	1.0	2.0
Cyanide	57-12-5	0.1	NA
Fluoride (Calculated as F)	16984-48-8	1.0*	1.0*****
Iron **	8053-60-9	0.3	0.3
Lead	7439-92-1	0.005	0.01
Manganese **	7439-96-5	0.05	0.05
Mercury	7439-97-6	0.0005*	0.006
Molybdenum	7439-98-7		NA
Nickel	8049-31-8	0.1	NA
Nitrate	122019-28-7	10.0 (as N)	50
Nitrite	14797-65-0	1.0 (as N)	3
Organic matter (KMnO ₃ digested as O ₂)	NA	3.0	3.0
Selenium	7782-49-2	0.01	0.04
Silver ****	97161-97-2	0.025	NA
Sulphate **	18785-72-3	250.0	NA
Sulphide (calculated as H ₂ S)	18496-25-8	0.05	0.05
Thallium	82870-81-3	0.002	NA
Zinc **	7440-66-6	5.0	NA

*Revised ABWI Limits, 2014

** These compounds are classified as aesthetic, non-health related.

***The ABWI limit listed is the lowest limit of either the ABWI and FSANZ regulations.

**** As per WHO guidelines there is inadequate data to permit derivation of health- based guideline value

*****As per FSANZ adopted level (not official level for WHO)

Table 8. Maximum Contaminant Level Inorganic Compounds (mg/L) – where added onsite

ANALYTE	CAS Number	ABWI LIMIT/ FSANZ ***	4 th Ed WHO DWG
Fluoride	16984-48-8	0.6 – 1.0*	0.6 – 1.0*
Silver ion	14701-21-4	0.01**	0.1

* Fluoride from onsite fluoridation as per FSANZ Standard 2.6.2.

**Silver Ion as per FSANZ Standard 1.3.3 Processing Aids

***The ABWI limit listed is the lowest limit of either the ABWI/FSANZ and WHO DWG regulations.

2.2.5.6 Organic Compounds in Bottled or Source Water

Table 9. Maximum Contaminant Level Organic Compounds (mg/L)

ANALYTE	CAS NUMBER	ABWI LIMIT	FSANZ LIMIT
Di(2-ethylhexyl)adipate	70147-21-6	0.4	NA
Alachlor	15972-60-8	0.002	0.02
Atrazine	1912-24-9	0.003	0.1
Benzo(a)pyrene	50-32-8	0.0002	0.0007
Carbofuran	1563-66-2	0.007*	0.007
Chlordane	57-47-9 or 12789-03-6	0.0002*	0.0002
Dalapon (2,2-dichloropropanoic acid)	75-99-0	0.2	NA
Dibromochloropropane	96-12-8	0.0002	0.001
Dinoseb (2-butan-2-yl-4,6-dinitrophenol)	89396-94-1	0.007	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD, dioxin)	1746-01-6	3x10 ⁻⁸	
Diquat	2764-72-9 or 85-007	0.02	NA
Endothall	145-73-3	0.1	NA
Endrin	72-20-8	0.0002	0.0006

Glyphosate	1071-836	0.7	NA
Hexachlorobenzene	118-74-1	0.001	NA
Hexachlorocyclopentadiene	77-47-4	0.05	NA
Lindane	58-89-9	0.0002	0.002
Methoxychlor	72-43-5	0.02*	0.02
Oxamyl (vydate)	23135-220	0.2	NA
Pentachlorophenol	87-86-5	0.001	0.009
Di(ethylhexyl)phthalate	82208-43-3	0.006	0.008
Picloram	1918-02-1	0.5	NA
Simazine	122-34-9	0.002*	0.002
Toxaphene	101053-41-2	0.003	
2,4-D (dichlorophenoxy acetic acid)	120-365 or 15165-670	0.03*	0.03
Ethylene dibromide	80-97-7	0.00005	
Heptachlor	76-44-8	0.0004	NA
Heptachlor epoxide	1024-57-3	0.0002	
(PCB) polychlorinated biphenyls		0.0005	
2,4,5-TP (silvex)	93-72-1	0.009*	0.009
Phenolics		0.001	

*Revised ABWI Limits, 2013

2.2.5.7 Volatile Organic Compounds in Bottled or Source Water

Table 10. Maximum Contaminant Level Volatile Organic Compounds (mg/L)

ANALYTE	CAS Number	ABWI LIMIT	FSANZ LIMIT
Trichloroethylene	79-01-6	0.005	0.02
Carbon tetrachloride		0.004*	0.004
Vinyl chloride		0.0003*	0.0003
1,2-Dichloroethane	107-06-2	0.005	0.05
Benzene		0.005	0.01
1,1,-Dichloroethylene		0.007	NA
1,1,1,-Trichloroethane	71-55-6	0.200	
1,2,4-Trichlorobenzene	120-82-1	0.07	NA
1,1,2-Trichloroethane	79-00-5	0.005	
o-Dichlorobenzene		0.600	
p-Dichlorobenzene		0.075	0.3

<i>Cis-1,2-Dichloroethylene</i>	540-59-0	0.050*	0.05
<i>trans-1,2-Dichloroethylene</i>		0.100	
<i>1,2-Dichloropropane</i>	78-87-5	0.005	0.04
<i>Ethylbenzene</i>	100-41-4	0.3*	0.3
<i>Dichloromethane</i>	75-09-2	0.005	0.02
<i>Monochlorobenzene</i>		0.100	
<i>Styrene</i>	100-42-5	0.02*	0.02
<i>Tetrachloroethylene</i>	127-18-4	0.005	0.04
<i>Trihalomethane</i>		0.010	
<i>Toluene</i>	108-88-3	0.7*	0.7
<i>Xylene</i>	1330-20-7	0.5*	0.5

*Revised ABWI Limits, 2013

2.2.5.8 Additional Volatile Organic Compound Screening in Source or Bottled Water

The following compounds are also detected as part of the screening test for Volatile Organic Compound analysis. These chemicals are part of the audit code in addition to the FSANZ adopted limits in the WHO Drinking Water Guidelines 4th Edition.

Table 11. Additional Volatile Organic Compound Screening

Compound	CAS Number
<i>Bromobenzene</i>	108-86-1
<i>Bromochloromethane</i>	83847-49-8
<i>Bromodichloromethane</i>	75-27-4
<i>Bromoform</i>	75-25-2
<i>Bromomethane</i>	74-83-9
<i>Butylbenzene,n-</i>	
<i>Butylbenzene,sec-</i>	68411-44-9
<i>Butylbenzene,tert-</i>	
<i>Chlorodibromomethane</i>	124-48-1
<i>Chloroethane</i>	77792-41-7
<i>Chloromethane</i>	74-87-3
<i>Chlorotoluene,o-</i>	27987-13-9
<i>Chlorotoluene,p-</i>	
<i>Dibromomethane</i>	74-95-3
<i>Dichlorodifluoromethane</i>	75-71-8

<i>Dichloroethane, 1,1-</i>	75-34-3
<i>Dichloropropane, 1,3-</i>	142-28-9
<i>Dichloropropane, 2,2-</i>	594-20-7
<i>Dichloropropene, 1,1-</i>	
<i>Dichloropropene, cis-1,3-</i>	
<i>Dichloropropene, trans-1,3-</i>	99614-02-5, 542-75-6
<i>Fluorotrichloromethane</i>	91315-61-6, 75-69-4
<i>Hexachlorobutadiene</i>	87-68-3
<i>Isopropyltoluene, p-</i>	99-87-6
<i>Methyl-Ethyl-Ketone</i>	
<i>Naphthalene</i>	91-20-3
<i>Propylbenzene, iso-</i>	
<i>Propylbenzene, n-</i>	103-651
<i>Tetrachloroethane, 1,1,1,2-</i>	
<i>Tetrachloroethane, 1,1,2,2-</i>	
<i>Trichlorobenzene, 1,2,3-</i>	87-61-6
<i>Dichlorobenzene, m-</i>	
<i>Trichloropropane, 1,2,3-</i>	
<i>Trichlorotrifluoroethane</i>	76-13-1
<i>Trimethylbenzene, 1,2,4-</i>	95-63-6
<i>Trimethylbenzene, 1,3,5-</i>	108-67-8

CAS obtained from chemindustry.com and commonchemistry.org.

2.2.5.9 Hydrogeological Assessment Testing Requirements

The Hydrogeological Assessment is **REQUIRED** to be conducted by an appropriately qualified scientist/engineer e.g. hydrogeologist, to assess the following:

- a) The identification of the water basin size and boundaries and other major water users within it.
- b) An evaluation of the baseline, as well as future water stress in the basin using the WRI Aqueduct 3.0 tool or suitable equivalent.
- c) Identification of events (past and present) that have or may have impacted water availability.
- d) A list of relevant stakeholders that have or may potentially have interest in water for that basin.
- e) Collation and tabulation of local water level monitoring data and trend analysis that must be included.
- f) Collation and tabulation of local rainfall data and groundwater extraction volumes in relation to the site and calculation of monthly and annual totals, including an estimate of aquifer recharge rates.
- g) Comment on potential risks from a hydrogeological perspective and sustainability of the current extraction rates and in relation to the licence limits.
- h) Groundwater level trending in production and monitoring that must be included.

The information obtained in points a) through h) is **REQUIRED** to be submitted to ABCL. This information may be subject to a public disclosure request.

SECTION 3

3.1 Content of Food Safety Programs - Good Manufacturing Practices

3.1.1 Interpretation

GMP is an integral part of the Code. GMP assists bottlers in producing water of the required standard of safety and suitability for consumption through design, implementation, monitoring and review of effective control systems.

Attention to GMP ensures that the best practices are implemented, to reduce risk by adopting preventative measures to avoid unnecessary and costly practices.

When a bottled water plant is utilising a treatment technology to reduce the level of any constituent in its source water below the requirements in Section 2.2.5, or to prevent a contaminant from entering the product water in amounts that exceed the requirements in Section 2.2.5, said treatment is to be operated in accordance with the GMP set out in this section.

3.1.2 Food Handling – Skills and Knowledge

It is a **REQUIREMENT** that tests be performed either by trained plant personnel or by a laboratory using approved methodologies.

It is **REQUIRED** that any staff member entering the facility is trained and assessed for competence for the skills and knowledge pertaining to GMP for the site.

It is **REQUIRED** that any staff member or person supervising a process be trained and assessed for competence for the skills and knowledge pertaining to that process.

It is **REQUIRED** that on an annual basis a review of training is conducted.

*Said person operating the plant is **REQUIRED** to hold a certificate demonstrating that he or she has successfully completed the ABWI QAC course and at least one qualified person is present at every hour of processing or packing. The person supervising a plant is the person responsible for the maintenance of processes and procedures.*

The ABWI QAC course may be conducted by ABWI or by a third-party organisation that is acceptable to ABWI. This course covers periodic instruction and testing in plant, source and product sanitation, operation and maintenance of water treatment technology, and the maintenance and monitoring of source and product water quality in accordance with these bottled water standards.

*Successful refresher examination of ABWI QAC qualifications is **REQUIRED** to be revisited no later than three years post previous review, by approved ABWI examination.*

Please also refer to Recommended International Code of Practice: General Principles of Food Hygiene and FSC or equivalent national regulations.

3.1.3 Notification

It is **REQUIRED** that the facility including the source as applicable is registered and/or licensed with the appropriate local regulatory authority.

It is **REQUIRED** that sites notify the appropriate enforcement agency of the following information:

- a) Contact details including name, and business address of the proprietor;
- b) The nature of the business;
- c) The location of the food premise.

Evidence of currently registration and/or license is **REQUIRED** to be onsite at all times and available for external audit.

It is **REQUIRED** that sites notify the appropriate enforcement agency of any changes to the above clause prior to that change occurring.

3.2 Food Handling Controls

3.2.1 Approved Supplier

It is **REQUIRED** that there is a documented procedure for the approval of suppliers of all goods is in place, including removal of suppliers and the use of emergency suppliers.

It is **recommended** that there is a documented procedure for the approval of suppliers of all services is in place, including removal of suppliers and the use of emergency suppliers.

Raw materials, other ingredients, and rework susceptible to contamination from pests, undesirable microorganisms, or extraneous material are **REQUIRED** to comply with applicable FSANZ regulations or equivalent requirements, guidelines and defect action levels for natural or unavoidable defects if a manufacturer wishes to use the materials in manufacturing food.

It is **REQUIRED** that all plant equipment and utensils be suitable for their intended use. This includes all collection and storage tanks, piping, fittings, connections. Bottle washers, fillers, cappers and other equipment which may be used to store, handle, process, package or transport product water.

It is **REQUIRED** that evidence is available demonstrating that all packaging, equipment and processing aids comply.

3.2.2 Water

Approval of the source water product derived from a source other than a public water supply is **REQUIRED** to be based upon a field inspection of the source, and a review of information prepared by a professionally qualified hydrogeologist. This review is **REQUIRED** to demonstrate the integrity of the source and safety of the catchment operations, and that is **REQUIRED** to include:

- a) An evaluation of the chemical, physical, microbiological, and radiological characteristics of the source.
- b) A report on the regional geology surrounding the site and the specific site geology. A description of the vertical and horizontal extent of the source aquifer, using existing data. The information is used to define the recharge area of the aquifer, or in the case of regional aquifers, the zone of influence of the subject source.

- c) A report detailing the development of the source; the method of construction including spring design, well installation, surface catchment, and intake structures; and transmission facilities as appropriate.
- d) A watershed survey of the recharge area or zone of influence of subject source that identifies and evaluates actual and potential sources of contamination, including any reported discharge that may affect the source.
- e) Based on the findings in item (d), a plan for special monitoring of any significant contaminant source and for taking restrictive preventive or corrective measures as appropriate to protect the source water.

It is a **REQUIREMENT** that a hydrogeological review be conducted every 5 years by an appropriately trained person, to assess changes in local land-use that may impact on an underground source, where the water is sourced from an underground source.

It is a **REQUIREMENT** that the plant operator be responsible for sampling of all approved sources for the contaminants specified in Section 2.2.5 Testing Requirements. Such monitoring is **REQUIRED** to be at the frequencies specified.

In lieu of source monitoring required by this Section, a plant operator using a public water system as its water supply is **REQUIRED** to obtain and display a certificate from said system demonstrating that the public water system conducts the monitoring required.

Where a bottled water organisation, water dealer, or regulatory agency knows or has reason to believe that a contaminant not otherwise monitored is present in the source water, because of a spill, release of a hazardous substance, or otherwise, and its presence would create a potential health hazard to consumers. The organisation or water dealer upon receipt of such information is **REQUIRED** to monitor the source water for said contaminant.

Detection of contaminant(s) in source monitoring required pursuant of Section 2.2.5 Testing Requirements is **REQUIRED** to be followed immediately by a program of periodic monitoring to confirm the presence in the source water of said contaminant(s).

If such listed unregulated contaminant(s) is confirmed to be present in the source water at a concentration that exceeds FSANZ or equivalent requirements for bottled water. The organisation is **REQUIRED** to employ appropriate treatment techniques to remove or reduce said contaminant in the product water below said concentration. The organisation is also **REQUIRED** to employ a program of periodic monitoring for said contaminant in the source water until said contaminant is not detectable in the source water.

To assure that bottled water complies with Section 2, the testing requirements for coliform, inorganics, physical, radiological, organics and volatile organics of the Code is **REQUIRED** to be followed, using representative samples derived from the source.

For compliance purposes bottlers are **REQUIRED** to maintain documentation confirming the location of the source.

Water source owners who have established a history of compliance with the requirements for testing and meeting the limits set for organics and volatile organics of a representative sample of source water, over 2 consecutive years, may then carry out tests for organics and volatile organics every 4 years.

When a non-compliant result (including where a test is not conducted) for any one of the analytes, the bottler is **REQUIRED** to conduct annual tests to re-establish a history of 2 consecutive years with no non-compliances before returning to testing every 4 years, for that analyte(s).

Approval of the source water product derived from a source other than a public water supply is **REQUIRED** to be based upon a field inspection of the source and a review of information prepared by a professionally qualified hydrogeologist.

3.2.3 Transport of Water from Source

It is a **REQUIREMENT** that bulk water be loaded, transported and unloaded in a sanitary manner to ensure the overall safety and quality of the finished bottled water product.

It is a **REQUIREMENT** that bulk water tankers, storage tanks, hoses, pumps and connections used for loading, transporting and unloading of bulk water be constructed of materials that are approved food-grade, smooth, non-absorbent and easily cleanable such as stainless steel (300 series).

*It is **recommended** that tankers used for the hauling of bulk water bottling purposes be solely dedicated for that purpose.* If the tanker is used for transporting other foods, it is a **REQUIREMENT** that the tanker be properly cleaned and sanitised in accordance with the GMP regulations before the loading of a bulk shipment of potable water intended for human consumption.

It is a **REQUIREMENT** that tankers be cleaned, sanitised and inspected internally for tank integrity on a routine basis.

Tankers that have been previously used to haul non-food commodities, such as toxic materials, petroleum products, or other harmful substances are **REQUIRED** to **NOT** be used to haul bottled water for human consumption.

*It is a **REQUIREMENT** that tankers used for the transporting of potable water be properly secured with manhole cover gaskets and safety seals.*

It is **REQUIREMENT** that connections, hoses and pumps used for the loading and unloading of bulk water be properly maintained and stored to prevent contamination.

When not in use, pumps, hoses, connections and fittings are **REQUIRED** to be *properly capped*, securely stored and protected from possible contamination.

*Representative samples are **REQUIRED** to be taken from shipments of bulk water for the analyses of coliform bacteria and Heterotrophic Plate Count (HPC), in compliance with Section 2.2.5 Testing Requirements.*

*It is a **REQUIREMENT** that the minimum frequency of sampling is one sample from each tanker on a weekly basis or from each delivery if the delivery frequency is less than weekly. This data is collected and used to identify a gradual or sudden increase in HPC, indicating some form of contamination is taking place to allow the bottler to investigate.*

Records are **REQUIRED** to be maintained that include but are not limited to:

- a. *Name of the transporter and/or driver;*
- b. *Tanker number;*
- c. *Date of shipment;*
- d. *Vendor and location of the source water;*
- e. *Name of the receiver and the location to which the water was shipped;*
- f. *Date of delivery;*
- g. *Date of tanker cleaning and sanitisation (includes name of operator);*
- h. *The concentration of the disinfectant residual (if used) at the time of loading and unloading;*
- i. *Results of all microbiological testing as specified.*

*It is **REQUIRED** that the water source owners or bottlers have in place processes that allow operators to demonstrate compliance with conditions as set by local councils e.g. truck movements, hours of access and tonnage limits.*

3.2.4 Food Receipt

Containers and carriers of raw materials are **recommended** to be inspected on receipt to ensure that their condition has not contributed to the contamination or deterioration of food.

It is **recommended** that raw materials that are contaminated or deteriorated be rejected where identified at receipt.

3.2.5 Food Storage

Storage tanks are **REQUIRED** to be of the type that can be closed to exclude all foreign matter.

*Storage tanks are **REQUIRED** to be adequately vented.*

*It is **recommended** that HEPA filtration be installed, however care is essential to ensure sufficient capacity of the filter to prevent tanks from being sucked in during discharge. Safety devices, designed to prevent tanks from sucking in, may be used.*

It is **REQUIRED** that process lines, including storage tanks and associated equipment, be used exclusively for the production of bottled water, except for filling equipment, which may be used also for filling, other food products.

*It is a **REQUIREMENT** that packaging or wrapping material or other processing supplies are stored safely so they cannot be contaminated and **NOT** stored in locker or lunchrooms.*

It is a **REQUIREMENT** that raw materials, other ingredients, and rework be held in bulk, or in containers designed and constructed to protect against contamination. It is a **REQUIREMENT** that they be held at such temperature, relative humidity and in such a manner as to prevent the food from becoming adulterated.

*It is **recommended** that raw materials, apart from water, follow first in, first out stock rotation principles.*

*It is **recommended** that all raw materials, other ingredients, rework and packaging be effectively identified for traceability at all times during storage.*

It is **REQUIRED** that non-food items, such as cleaning chemicals, cleaning supplies, maintenance chemicals, pest control chemicals, and processing aids be stored so as NOT to contaminate bottled water.

3.2.6 Food Processing

*It is **recommended** that all food processing steps follow documented procedures.*

It is a **REQUIREMENT** that raw materials be washed or cleaned as necessary to remove soil or other contamination.

It is a **REQUIREMENT** that food transported by conveyor be protected against contamination as necessary.

*It is **recommended** that the bottling room separated from other plant operations or storage areas by tight walls, ceilings and self-closing doors to protect against contamination.*

*If processing operations are conducted in other than a sealed system under pressure, adequate protection is **REQUIRED** to be provided to preclude contamination of the water and the system.*

Adequate ventilation is **REQUIRED** to minimise condensation in processing rooms, bottling rooms and in container washing and sanitising areas.

It is **recommended** that the washing and sanitising of containers for bottled water be performed in an enclosed room. It is **REQUIRED** that the washing and sanitising operations be positioned within the room to minimise any possible post-sanitising contamination of the containers before they enter the bottling room.

It is **recommended** that bottled water be produced in an enclosed filling room/chamber that is under positive pressure of filtered air and using facilities that comply with the requirements of GMP and be properly maintained with supporting records.

It is **REQUIRED** that conveyor openings **NOT** exceed the size required to permit passage of containers.

Bottled water is to be produced under one of the following conditions: bottled water is **REQUIRED** to be subjected to adequate filtration (to a minimum rating of at least 1 micron or lower) and effective germicidal treatment by ozonation, carbonation at a minimum of three volumes of carbon dioxide, or other proven disinfection regimes;

OR

Bottled water is **REQUIRED** to be subjected to adequate filtration (to a minimum rating of at least 1 micron or lower, or another effective process which removes or destroys the cysts of the parasites *Giardia lamblia* and *Cryptosporidium*) and be produced in an enclosed fill room/chamber that is under positive pressure, HEPA filtered air and using facilities that comply with the requirements for GMP, set out in this Section.

It is a **REQUIREMENT** that all treatment of product water by ozonation, distillation, ion-exchanging, filtration, ultra-violet treatment, reverse osmosis, carbonation, mineral addition, silver ion, fluoridation or any other process is done in a manner to be effective in accomplishing its intended purpose.

All such processes are **REQUIRED** to be performed in and by equipment with substances that is not adulterate the bottled product.

It is **REQUIRED** that a record of the type and date of physical inspections of such equipment, conditions found and the performance and effectiveness of such equipment be maintained by the plant.

Product water samples are **REQUIRED** to be taken after processing and prior to bottling by the plant and analysed as often as is necessary to assure uniformity and effectiveness of the processes performed by the plant.

It is a **REQUIREMENT** that the methods of analysis be those approved by the government agency or agencies having jurisdiction.

3.2.7 Multi-Service Containers

Multi-service primary containers are **REQUIRED** to be adequately cleaned, sanitised and inspected just prior to being filled, capped and sealed.

Containers found to be unsanitary or defective by the inspection are **REQUIRED** to be reprocessed or discarded.

All multi-service primary containers are **REQUIRED** to be washed, rinsed and sanitised by mechanical washers or by any other method giving adequate sanitary results.

Mechanical washers are **REQUIRED** to be inspected as often as is necessary to assure adequate performance.

It is **REQUIRED** that records of physical maintenance, inspections and conditions found, and performance of the mechanical washer be maintained by the plant.

Multi-service shipping cases are **REQUIRED** to be maintained in such condition as to assure they do not contaminate the primary container or the product water.

Adequate dry or wet cleaning procedures are **REQUIRED** to be performed as often as necessary to maintain the cases in satisfactory condition.

3.2.8 Onsite Blow Moulding

It is **REQUIRED** that whenever blow moulding operations are conducted onsite, the bottle produced does not contaminate the water including by physical hazards, taints or odours, biological hazards or chemicals, including oils and lubricants.

3.2.9 Air

*Whenever air under pressure is directed at product water or a product water-contact surface, it is a **REQUIREMENT** that it be free of oil, dust, rust, excessive moisture and extraneous materials.*

*It is **REQUIRED** that air **NOT** affect the bacteriological quality of the water.*

*It is **recommended** that air **NOT** adversely affect the flavour, colour or odour of the water.*

3.2.10 Filling and Capping

The product water-contact surfaces of all multi-service containers, utensils, pipes and equipment used in the transportation, processing, handling and storage of product water are **REQUIRED** to be clean and adequately sanitised.

During the process of filling, capping or sealing either single-service or multi-service containers, it is a **REQUIREMENT** that the performance of the filler, capper or sealer be monitored and the filled containers visually or electronically inspected to assure they are sound, properly capped or sealed, and coded and labelled.

Containers that are NOT satisfactory are **REQUIRED** to be reprocessed or rejected.

Bottled water may be processed through lines or equipment used also for other food products under the following conditions:

- a) It is **REQUIRED** that process lines, including storage tanks and associated equipment, be used exclusively for the production of bottled water, except for filling equipment, which may be used also for filling, other food products.
- b) Before being used for the bottling of water, it is a **REQUIREMENT** that filling equipment which is designed to be cleaned in-place and which is used for filling other food products be thoroughly cleansed and sanitised in-place in accordance with the manufacturer's specifications and in compliance with GMP and the supplementary procedures that follow in this section.

It is **recommended** that the plant maintain a record of the intensity of the sanitising agent and the time duration that the agent was in contact with the surface being sanitised. The following procedures are **REQUIRED** to be followed:

If using an alkaline cleaning solution, the appropriate strength is **REQUIRED** to be re-circulated through the filler to provide effective cleaning of all product contact surfaces, with a minimum re-circulation time of 20 minutes at a temperature between 60 and 75°C. Alternatively, a proven acid cleaning solution with an appropriate method as recommended by the supplier, may be used.

The cleaning solution is **REQUIRED** to be drained and followed with a potable water rinse-to-drain; or otherwise removed from the system; for the removal of all residual cleaner alkalinity. This step may be supplemented by the application of an acidified rinse prior to the potable water rinse to neutralise any residual alkalinity on product contact surfaces.

It is **REQUIRED** that all surfaces of the filler that do not contact food products be cleaned to render all surfaces clean and free of any residues.

It is a **REQUIREMENT** that the filler be prepared and all appropriate connections made in accordance with the filler manufacturer's instructions to place the filler in the clean-in-place mode where undertaken.

Following reassembly of all parts to place the filler into the product mode and just prior to bottling water, the filler is **REQUIRED** to be sanitised in-place in accordance with procedures in this section.

- a. Immediately following completion of filling operations for any other food product other than water, it is **REQUIRED** that the filler be thoroughly rinsed internally and externally with potable water meeting Australian Drinking Water Guidelines (ADWG) (N.B. Chlorinated water, at 1-3 ppm, is NOT potable).
- b. It is a **REQUIREMENT** that in accordance with filler manufacturer's instructions, any parts that are not designed to be cleaned in-place be disassembled and removed. All of these parts are **REQUIRED** to be cleansed and sanitised prior to reassembly using appropriate cleaning and sanitising procedures, as specified below.
- c. Sanitising operations, including those performed by chemical means or by any other means such as circulation of live steam or hot water, parts are **REQUIRED** to be adequate to effect sanitisation of the intended product water-contact surfaces and any other critical area.
- d. Alternate cleaning, rinsing, or sanitising operations or processes not described in this Section parts are **REQUIRED** to be consistent with Australian or equivalent regulatory requirements.

It is **REQUIRED** that after cleaning, all multi-service containers, utensils and disassembled piping and equipment be transported and stored in such a manner as to assure drainage and it is **REQUIRED** that they be protected from contamination.

All product water-contact surface parts are **REQUIRED** to be inspected by plant personnel as often as necessary to maintain the sanitary condition of such surfaces and to assure they are kept free of scale, evidence of oxidation and other residue.

It is a **REQUIREMENT** that the presence of any unsanitary condition, scale, residue or oxidation be immediately remedied by adequate cleaning and sanitising of that product water-contact surface prior to use.

3.2.11 Food Packaging

Bottled water product labelling, both the container and any secondary packaging are **REQUIRED** to comply with all applicable provisions under the FSC and/or ACCC or equivalent regulations.

Each container is **REQUIRED** to be labelled as a minimum with:

- Name of product;
- Organisation name;
- Capacity;
- Date code.

Each container is **REQUIRED** to be compliant the FSC and/or ACCC or equivalent regulations where claims are made about:

- Nutrient claims;
- Potential allergen or warning statements.

Secondary packaging is **REQUIRED** to be labelled as a minimum with an identifying traceability code.

Bottled water product labelling is **REQUIRED** to also comply with applicable provisions set out in National Trade Measures Regulations 2009 administered by the National Measurement Institute (NMI) or equivalent regulations.

For information on the current requirements of the Food Standards Code, bottlers may contact FSANZ at:

Food Standards Australia New Zealand (FSANZ)
55 Blackall Street
Barton ACT 2600
Canberra MC ACT 2610
Ph. 02 6271 2222
Fax 02 6271 2278

Note: company websites, and advertising media including print, radio, and television are required to fully comply with the FSC and/or ACCC or equivalent regulations.

Secondary packaging including multi-service shipping cases are **REQUIRED** to be maintained in such condition as to assure they do not contaminate the primary container or the product water.

Please refer to Recommended International Code of Practice: General Principles of Food Hygiene.

3.2.12 Use of ABWI Logo

*The use of the ABWI logo and other reference to ABWI in advertising material is only permitted by **Certified Bottlers and Source Owners**.*

*The use of the ABWI logo and other reference to ABWI in advertising material is **REQUIRED** to be adhere to the Rules of Use and have written approval by ABWI.*

*The Certified Bottlers are **REQUIRED** to have a copy of the Contract of Use that is signed by the bottler and ABWI, to enable them to use the ABWI Certified Bottler logo.*

3.2.13 Food Transportation - Dispatch and Delivery

It is a **REQUIREMENT** that transportation of finished food be under conditions that protect food against physical, chemical and microbial contamination as well as against deterioration of the food and the container. This **REQUIREMENT** includes both outside transport organisations and vehicles owned by the bottler.

3.2.14 Food Disposal

All food that has become contaminated to the extent that it is adulterated is **REQUIRED** to be rejected, or if permissible, treated or processed to eliminate the contamination.

It is a **REQUIREMENT** that raw materials, other ingredients, and rework be held in bulk, or in containers designed and constructed to protect against contamination and it is a **REQUIREMENT** that they be held at such temperature and relative humidity and in such a manner as to prevent the food from becoming adulterated.

Material scheduled for rework is **REQUIRED** to be identified as such.

Work-in-process is **REQUIRED** to be handled in a manner that protects against contamination.

Food, raw materials, and other ingredients that are adulterated are **REQUIRED** to be disposed of in a manner that protects against the contamination of other food.

If the adulterated food is capable of being reconditioned, it is a **REQUIREMENT** to be reconditioned using a method that has been proven to be effective **OR** it is a **REQUIREMENT** that it be re-examined and found not to be adulterated before being incorporated into other food.

It is **REQUIRED** that the bottler has a documented waste management program, potentially including, but not limited to, solid waste, recyclables, sewage, liquid waste. This is **REQUIRED** to include corrective action procedures.

It is **REQUIRED** that all waste is stored, removed or disposed of according to relevant regulation.

It is **REQUIRED** that external waste contractors are certified or approved as per relevant regulation.

It is **REQUIRED** that sites have a documented and implemented procedure for quarantine of non-conforming product and/or raw materials.

It is **REQUIRED** that items for disposal are held and kept separate.

It is **REQUIRED** that food handlers cannot engage in any handling of food where there is a reasonable likelihood of food contamination.

Please also refer to Recommended International Code of Practice: General Principles of Food Hygiene.

3.2.15 Food Recall

It is **REQUIRED** that bottlers have a recall procedure that relates to their site(s), meeting the requirements of the FSANZ food industry recall protocol or equivalent requirements.

It is **REQUIRED** that bottlers maintain a current list of recall contacts, both internal and external.

*It is **REQUIRED** that bottlers contact ABWI within 24 hours of initiating a recall.*

Where it is determined, based upon representative samples, risk analysis, information provided by the bottled water supplier, and other information available that the circumstances present an imminent hazard to the public health and that a form of consumer notice or product recall can effectively avoid or significantly minimise the threat to public health. The bottler is **REQUIRED** to initiate a product recall to be conducted in accordance with the FSANZ food industry food recall protocol or equivalent requirements.

3.3 Health and Hygiene Requirements

3.3.1 Requirements for Food Handlers

It is **REQUIRED** that bottlers have documented personal hygiene procedures.

3.3.2 Health of Food Handlers

It is **REQUIRED** that staff working within bottling facilities who are suffering from a contagious foodborne disease, or are suffering from issues such as cuts, sores, or boils cannot work where they may contaminate food, food containers or food preparation equipment.

It is **REQUIRED** that staff suffering from the above notify site management of the issue prior to commencing work.

Please refer to FSC 3.2.2, Division 4 and Recommended International Code of Practice: General Principles of Food Hygiene.

3.3.3 Hygiene of Food Handlers

A food handler is **REQUIRED** when engaging in any food handling operation to take all practicable measures to ensure their body, anything from their body, and anything their wearing does not contaminate food or surfaces likely to come into contact with food.

A food handler is **REQUIRED** to wash their hands:

- a. whenever their hands are likely to be a source of contamination of food;
- b. immediately after using the toilet;
- c. before commencing or re-commencing handling food;
- d. immediately after smoking, vaping, coughing, sneezing, using a handkerchief or disposable tissue, eating, drinking or using tobacco or similar substances; and
- e. after touching their hair, scalp or a body opening.

A food handler is **REQUIRED** to, whenever washing their hands use the hand washing facilities provided:

- a) thoroughly clean their hands using soap or other effective means, and warm running water; and
- b) thoroughly dry their hands on a single use towel or in another way that is not likely to transfer pathogenic microorganisms to the hands.

It is **REQUIRED** that staff personal items including, but not limited to, jewellery, phones, tools of trade (e.g. tools, clipboards, calculators) do not contaminate food, food containers or food preparation equipment.

It is **REQUIRED** to only use on exposed parts of the body, bandages and dressings that are completely covered with a waterproofed covering.

It is **REQUIRED** to **NOT** eat or drink over unprotected food or surfaces likely to come into contact

with food.

It is **REQUIRED** to **NOT** sneeze, blow, cough, spit, vape, smoke or use tobacco or similar preparations in areas in which food is handled.

It is **REQUIRED** to only urinate or defecate except in designated toilets.

It is **REQUIRED** that all visitors comply with all GMP procedures while on site.

Visitors may include administration staff, maintenance staff, transport staff, as well as people external to the organisation.

It is **recommended** that all visitors undergo training in site GMP prior to entering processing storage, or packing areas. Otherwise, visitors may be escorted at all times while on site by a trained staff member.

Please refer to FSC 3.2.2, 3.2.3, Division 4 and Recommended International Code of Practice: General Principles of Food Hygiene.

3.4 Cleaning, Sanitising and Maintenance

3.4.1 Cleanliness

Cleaning and sanitation are important activities in a bottled water plant, involving all areas of production. Effective cleaning and sanitising to prevent contamination of products and maintain a clean and hygienic plant. Effective and efficient cleaning and sanitising procedures ensures that process equipment and factory environments are clean and free of contaminants to ensure products meet the required standards.

Site is **REQUIRED** to be compliant with FSC 3.2.2 or equivalent requirements in relation to Food Safety Practices and General Requirements and FSC 3.2.3. Food Premises and Equipment or equivalent requirements.

It is a **REQUIREMENT** that running water at a suitable temperature, and under pressure as needed, is to be provided in all areas where needed for the processing of food, for the cleaning of equipment, utensils and food-packaging materials, or for employee sanitary facilities.

It is a **REQUIREMENT** that overall sanitation of the plant be under the supervision of one or more competent individuals assigned responsibility for this function.

Cleaning compounds and sanitising agents used in cleaning and sanitising procedures are **REQUIRED** to be free from undesirable microorganisms and are **REQUIRED** to be safe and adequate under the conditions of use.

Compliance with these requirements may be verified by any effective means including purchase of these substances under a supplier's guarantee or certification, or examination of these substances for contamination. Only the following toxic materials may be used or stored in a plant where food is processed or exposed those necessary:

- a. to maintain clean sanitary conditions;
- b. for use in laboratory testing procedures;
- c. for plant and equipment maintenance and operation; and
- d. for use in the plant operations.

Toxic cleaning compounds, sanitising agents, and pesticide chemicals are **REQUIRED** to be identified, held and stored in a manner that protects against contamination of food, food-contact

surfaces or food-packaging materials. It is **REQUIRED** that all relevant regulations from Federal, State and local government agencies for the application, use or holding of these products be followed.

All food-contact surfaces including utensils and food-contact surfaces of equipment are **REQUIRED** to be cleaned as frequently as necessary to protect against contamination of food.

*When the surfaces are wet-cleaned, it is a **REQUIREMENT** that, when necessary, they be sanitised and thoroughly dried before subsequent use.*

Where equipment and utensils are used in a continuous production operation, the utensils and food-contact surfaces of the equipment are **REQUIRED** to be cleaned and sanitised as necessary.

It is a **REQUIREMENT** that sanitising agents be adequate and safe under conditions of use. Any facility, procedure or machine is acceptable for cleaning and sanitising equipment and utensils if it is established that the facility, procedure or machine routinely render equipment and utensils clean and provide adequate cleaning and sanitising treatment.

Current Safety Data Sheets are **REQUIRED** to be kept for each cleaning and sanitising chemical onsite.

Bottled water manufacturers who clean and/or refurbish coolers for re-sale or re-hire are **REQUIRED** to have a cleaning and sanitising procedure in place.

It is **REQUIRED** that these procedures include: isolate returned coolers from new or sanitised coolers, clean and sanitise away from process areas where there can be no contamination of raw materials, process lines or finished product, check, clean and sanitise the coolers, repair as required, when completed the coolers are bagged or boxed in a manner that minimises the risk of recontamination, store in an appropriate manner.

It is **recommended** that the washing and sanitising of containers for bottled water be performed in an enclosed room.

*It is **REQUIRED** that the washing and sanitising operations be positioned within the room to minimise any possible post-sanitising contamination of the containers before they enter the bottling room.*

Alternate cleaning, rinsing, or sanitising operations or processes not described in this Section is **REQUIRED** to be consistent with Australian or equivalent regulatory requirements.

3.4.2 Cleaning and Sanitising of Specific Equipment

It is **REQUIRED** that cleaning and sanitising equipment (e.g. mops, brooms, buckets, sponges) are effectively cleaned and maintained to not directly or indirectly contaminate food contact surfaces.

3.4.2.1 Water Coolers

*Bottled water manufacturers who clean and/or refurbish coolers for re-sale or re-hire are **REQUIRED** to have a cleaning and sanitising procedure in place.*

*It is **REQUIRED** that this procedure includes the following:*

- a. isolate returned coolers from new or sanitised coolers;*
- b. clean and sanitise away from process areas where there can be no contamination of raw materials, process lines or finished product;*
- c. check, clean and sanitise the coolers;*
- d. repair as required;*

- e. *when completed the coolers are bagged or boxed in a manner that minimises the risk of recontamination;*
- f. *store in an appropriate manner.*

3.4.2.2 Maintenance

It is **REQUIRED** that the organisation will have documented procedures for maintenance, including corrective action for breakdowns and preventive maintenance programs, such as routine servicing of equipment.

It is **REQUIRED** that all maintenance chemicals onsite have Current Safety Data Sheets.

It is **REQUIRED** that all maintenance chemicals that can make direct or indirect contact with food comply with FSC 3.3.1 Processing Aids or equivalent requirements.

It is **REQUIRED** that all maintenance staff including external contractors comply with site GMP.

Please refer to Recommended International Code of Practice: General Principles of Food Hygiene.

3.5 Miscellaneous

3.5.1 Measuring Devices

It is **REQUIRED** that there are documented procedures for the calibration of measuring devices.

Instruments and controls used for measuring, regulating or recording temperatures, pH, acidity, or other conditions that control or prevent the growth of undesirable microorganisms in food are **REQUIRED** to be accurate and adequately maintained, and adequate in number for their designated uses.

Bottlers that monitor temperature as part of their process are **REQUIRED** to have at least one temperature measuring device accurate to at least +/- 1 degree, as per FSC 3.2.2 or equivalent requirements.

3.5.2 Single Use Items

It is **REQUIRED** that single service items as described are handled, dispensed, used and disposed of in a manner that protects against contamination of food or food-contact surfaces.

It is **REQUIRED** that single-service containers, caps and single-use items such as hair nets, paper towels and gloves are to be purchased and stored in sanitary closures and kept clean therein in a clean, dry place until used.

3.5.3 Animals and Pests

Effective measures are **REQUIRED** to be taken to exclude pests from the processing areas and to protect against the contamination of food on the premises by pests.

Bottlers are **REQUIRED** to have a documented pest control program.

Where **REQUIRED** by legislation, chemical application of pest chemicals is to be undertaken only by approved, licensed, external pest contractors.

Records are **REQUIRED** to be kept for all internal and external pest control treatments.

A dated bait map or equivalent is **REQUIRED** to be kept.

Corrective action procedures are **REQUIRED** to be documented and implemented whenever pest issues occur.

Current Safety Data Sheets are **REQUIRED** to be maintained for all pest chemicals used on site, as a minimum for at least since the last external audit.

Please also refer to Recommended International Code of Practice: General Principles of Food Hygiene.

3.5.4 Food Testing including Laboratory

Many bottled water companies conduct in-house testing, including microbiological tests. It is important that in-house laboratories are maintained in a clean, sanitary manner, so that no contamination is introduced into water samples from the laboratory environment. This aims to guarantee the validity of the results obtained from tests conducted in-house.

In-house laboratories are **REQUIRED** to be maintained in a clean and appropriate manner for the activities to be conducted without causing contamination by handling or an unsuitable environment.

Laboratory procedures are **REQUIRED** to ensure:

- a. The construction, space, lighting and ventilation has been designed to conduct the required activities;
- b. *All laboratory equipment is adequately sanitised and maintained in proper working order;*
- c. *Appropriate sanitisation of the laboratory is maintained;*
- d. *Quality control monitoring is conducted to ensure the reliability and efficacy of tests, test results and laboratory personnel;*
- e. *Calibration of equipment is carried out as required for each piece of equipment;*
- f. *Access is restricted to authorised personnel;*
- g. *Staff may only enter wearing clean outer clothing;*
- h. *Rubbish is kept covered and removed daily;*
- i. *Procedures are documented and document control established for all laboratory operations and records.*

It is **REQUIRED** that documented procedures exist for laboratory methods including disposal.

*The procedure and apparatus for these bacteriological tests are **REQUIRED** to be in conformance with those recognised by the government agency or agencies having jurisdiction.*

*It is a **REQUIREMENT** that tests be performed either by trained plant personnel or by a laboratory using approved methodologies.*

*Microbiologically contaminated materials are **REQUIRED** to be sterilised prior to disposal.*

*Chemical waste and chemical contamination materials are **REQUIRED** to be disposed of following regulations.*

*Where microbiological, chemical and physical wastes (e.g. broken glass) are stored for future disposal within a laboratory or elsewhere on site, it is **REQUIRED** that the wastes be stored so that they are not a contaminating source.*

3.5.5 Alternative Methods of Compliance

Where a site cannot comply with a required or recommended clause within the Code, the site can request an exemption to that clause from ABWI Technical and Regulatory Affairs Manager. The evidence of alternate method of compliance is **REQUIRED** to be supplied to the ABWI Technical, Scientific and Regulatory Affairs Manager.

This request may be via an approved ABWI auditor.

3.6 Design and Construction of Food Premises

It is **REQUIRED** that plumbing be of adequate size and design and adequately installed and maintained to:

- a. Carry sufficient quantities of water to required locations throughout the plant;
- b. Properly convey sewage and liquid disposable waste from the plant;
- c. Avoid constituting a source of contamination to food, water supplies, equipment or utensils or creating an unsanitary condition;
- d. Provide adequate floor drainage in all areas where floors are subject to flooding-type cleaning or where normal operations release or discharge water or other liquid waste on the floor;
- e. Ensure that there is not backflow from, or cross-connection between, piping systems that discharge waste water or sewage and piping systems that carry water for food or food manufacturing.

If the plant is bordered by grounds not under the operator's control and not maintained in the manner described below, care is **REQUIRED** to be exercised in the plant by inspection, extermination, or other means to exclude, dirt and filth that may be a source of food contamination.

- a. Plant buildings and structures are **REQUIRED** to be suitable in size, construction and design to facilitate maintenance and sanitary operations for food-manufacturing purposes.
- b. The plant and facilities are **REQUIRED** to be:
 - i. Provide sufficient space for such placement of equipment and storage of materials as is necessary for the maintenance of sanitary operations and the production of safe food.
 - ii. Permit the taking of proper precautions to reduce the potential for contamination of food, food-contact surface, or food-packaging materials with microorganisms, chemicals, filth or other extraneous material. The potential for contamination may be reduced by adequate food safety controls and operating practices or effective design, including the separation of operations in which contamination is likely to occur, by one or more of the following means: location, time, partition, air flow, enclosed systems or other effective means.
 - iii. Permit the taking of proper precautions to protect food in outdoor bulk storage vessels by any effective means, including:
 1. Using protective coverings.
 2. Controlling areas over and around the vessels to eliminate harbourage for pests.
 3. Checking on a regular basis for pests and pest infestation.
 4. Be constructed in such a manner that floors, walls and ceilings may be adequately cleaned and kept clean and in good repair; that drip or condensate from fixtures, ducts and pipes does not contaminate food, food-contact surfaces, or food-packaging materials; and that aisles or working spaces are provided between equipment and walls and are adequately unobstructed and of adequate width to permit employees to perform their duties and to protect against contaminating food or food-contact surfaces with clothing or personal contact.

- iv. Provide adequate lighting in hand-washing areas, dressing and locker rooms and toilet rooms and in all areas where food is examined, processed or stored and where equipment or utensils are cleaned; and provide safety-type light bulbs, fixtures, skylights or other glass suspended over exposed food in any step of preparation or otherwise protect against food contamination in case of glass breakage.
- v. Provide adequate ventilation or control equipment to minimise odours and vapours (including steam and noxious fumes) in areas where they may contaminate food; and locate and operate fans and other air-blowing equipment in a manner that minimise the potential for contaminating food, food-packing materials, and food-contact surfaces.
- vi. Provide, where necessary, adequate screening or other protection against pests.

3.6.1 Water Supply

It is a **REQUIREMENT** that running water at a suitable temperature, and under pressure as needed, is to be provided in all areas where needed for the processing of food, for the cleaning of equipment, utensils and food-packing materials, or for employee sanitary facilities.

If different from the product water supply, the operations water supply is **REQUIRED** to be obtained from an approved source properly located, protected, and operated and is **REQUIRED** to be easily accessible, adequate, and of a safe, sanitary quality which is **REQUIRED** to be in conformance at all times with the applicable laws and regulations of the government agency or agencies having jurisdiction.

3.6.2 Sewage and Waste Water Disposal

It is **REQUIRED** that the disposal of sewage and waste water meets local regulatory requirements.

Sewage disposal is **REQUIRED** to be made into an adequate sewerage system or disposed of through other adequate means.

It is a **REQUIREMENT** that rubbish be so conveyed, stored and disposed of as to minimise the development of odour, minimise the potential for the waste becoming an attractant and harbourage or breeding place for pests, and protect against contamination of food, food-contact surfaces, water supplies and ground surfaces.

3.7 Facility Design and Construction

It is **REQUIRED** that the design and construction of the facility is compliant with building standards including FSC 3.2.3 and AS4674 as applicable, or equivalent requirements. This includes:

- a) Ventilation;
- b) Lighting;
- c) Floors, walls and ceilings;
- d) Fixtures, fittings and equipment.

3.7.1 Hand Washing Facilities

Hand washing facilities are **REQUIRED** to be adequate and convenient and be furnished with running water at a suitable temperature.

The bottler is **REQUIRED** to have hand washing facilities that are located where they can be easily accessed by food handlers within areas where food handlers work if their hands are likely to be a source of contamination of food and if there are toilets on the food premises – immediately adjacent to the toilets or toilet cubicles.

It is **REQUIRED** that hand washing facilities are permanent fixtures; connected to, or otherwise provided with, a supply of warm running potable water; of a size that allows easy and effective hand

washing; a clearly designated for the sole purpose of washing hands, arms and face.

It is **REQUIRED** that handwashing facilities are provided with liquid soap, single use hand drying facilities and a lidded garbage receptacle.

3.7.2 Non-Food Storage Facilities

Food premises are **REQUIRED** to have adequate storage facilities for the storage of items that are likely to be the source of contamination of food, including chemicals, clothing, cleaning equipment, maintenance equipment and personal belongings.

Storage facilities must be located where there is no likelihood of stored items contaminating food or food contact surfaces.

When employee locker and lunchrooms are provided, they are **REQUIRED** to be separate from plant operations and storage areas and it is a **REQUIREMENT** that they be equipped with self-closing doors.

*It is a **REQUIREMENT** that the rooms be maintained in a clean and sanitary condition and it is **recommended** that refuse containers be provided.*

3.7.3 Toilet Facilities

Each plant is **REQUIRED** to provide its employees with adequate, well lit, ventilated, clean, sanitary, readily accessible, compliant with Australian Standards or equivalent standards, toilet facilities.

Rooms in which product water is handled, processed or held or in which containers, utensils or equipment are washed or held are **REQUIRED** to **NOT** open directly into any room used for domestic household purposes.

*It is a **REQUIREMENT** that the rooms be maintained in a clean and sanitary condition and it is **REQUIRED** that refuse containers be provided.*

3.7.4 Food Transport Vehicles

Where an organisation owns the vehicles used to transport packaged food, the vehicles are **REQUIRED** to be designed and constructed to protect food if there is a likelihood of food being contaminated during transport.

It is **REQUIRED** that the parts of vehicles used to transport food are designed and constructed so that they are able to be effectively cleaned and where necessary sanitised.

It is **recommended** where an organisation uses contractors to transport packaged food, that the contractor's vehicle complies with the above clauses within this section of the Code.

SECTION 4

4.1. Water Stewardship

Sustainability of the water product derived from a source other than a public water supply is **REQUIRED** to be demonstrated prior to commencing commercial operations and annually thereafter by source owners. All non-approved sources are expected to comply with ABWI hydrogeological land sustainability testing requirements.

A comprehensive Hydrogeological Assessment is **REQUIRED** at the establishment phase for a groundwater source (See Section 2.2.5.9 Hydrogeological Testing).

Consideration should be given to updating the Hydrogeological Assessment in the following instances:

- Installation and operation of new groundwater extraction bores;
- Increase in extraction volume above that contemplated by the baseline Hydrogeological Assessment;
- Any identified material changes in water quality or water level that may indicate unsustainable extraction;
- Any evidence of water quality deterioration that is linked to extraction rates;
- Where an unexpected contaminant is identified in the water quality monitoring that requires or may require corrective action and therefore should be recharacterised to understand that root cause and implications.

Thereafter, an updated Hydrogeological Review is **REQUIRED** every five years (See Table 1, Section 2.2.5.1 Testing Requirements).

All water source owners and bottlers are **REQUIRED** to have a sustainability statement.

All water source owners are **REQUIRED** to have a community engagement plan in place prior to initial establishment of a groundwater source and must be reviewed if an increase in extraction volume above that contemplated by the initial Hydrogeological Assessment is implemented.

4.2 Operations Efficiency

4.2.1 Water Usage

*Bottlers are **recommended** to set operations water efficiency targets for the bottling sites and regularly review performance against those targets.*

*Targets are **recommended** to be set at least annually and approved by management.*

*It is **recommended** that operations water targets are reflective of best practice for similar operations e.g. refillable, one-way, etc. and that cleaning and sanitation operations are optimised to use the minimum amount of operations water to maintain food safety and quality standards.*

*It is **recommended** to install suitable metering to qualify and quantify potential savings opportunities.*

4.2.2 Energy Usage

*Bottlers are **recommended** to set energy efficiency targets for the bottling sites and regularly review performance against those targets.*

*It is **recommended** that energy efficiency targets are reflective of best practice for similar operations and that bottling operations are optimised to use the minimum amount of energy.*

*It is **recommended** to install suitable metering to qualify and quantify potential savings opportunities.*

4.3 Environmental Responsibility

Bottlers are **recommended** to establish an achievable emissions reduction target(s) with their operations.

Bottlers are **recommended** to develop a suitable action plan to address the most material aspects of their operations on emissions attributable to their business.

It is **recommended** that bottlers consider the potential for integration of renewable energy such as on-site solar PV to reduce direct carbon emissions

4.4 Packaging

Primary and secondary packaging is **REQUIRED** to be reusable, recyclable or compostable to meet the 2025 National Packaging Targets or local equivalent.

All recyclable scrap packaging materials from the production process are **REQUIRED** to be consigned to a suitable and qualified vendor for recycling.

It is **recommended** that primary packaging be assessed using the APCO PREP tool or local equivalent, to determine recyclability of components and total pack in market.

It is **recommended** that all packaging used, whether placed in market or not, be constructed of as much recycled content as safe and practicable.

It is **recommended** that all packaging sent for recycling where possible, be source separated into individual waste streams to enable improved recycling outcomes.

4.5 Water Coolers

Bottled water manufacturers who procure, supply, refurbish and or dispose of coolers are **REQUIRED** to demonstrate that they comply with local legislation or in the absence of any, the relevant Australian legislation, i.e. the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 and the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995.

All businesses who de-gas coolers are **REQUIRED** to demonstrate they comply with local legislation or in the absence of any, the equivalent of an Australian Refrigerant Council (ARC) refrigerant handling licence and refrigerant trading authorisation approved under the Regulations.

All businesses who consign decommissioned coolers are **REQUIRED** to only consign them to a legally authorised receiving facility or sub-contractor under local legislation.

It is **recommended** that all businesses seeking to procure new coolers consider sustainability requirements. This includes use of natural refrigerants (e.g. R-744, R-600, etc.) where deemed safe and efficient to do so.