AQIS Notice Meat: 98/12	**NFS:**
Title: Water, Ice testing at export registered establishments	
Contact Officer: Kiran Johar, Principal Veterinary Officers, Technical Services Branch Ph (02) 6272 4535 Fax (02) 6272 4112	
Date of effect: 1 June 1998	**Date of Expiry: UFN**
CO File No:	
* Central & Regional Office Last Notice 98/11 *OIC Inspection Staff Meat Establishments Last Notice 98/10 *Meat Inspection Staff Last Notice * Managers, AQA Establishments Last Notice 98/7 * State/Territory Departments Responsible for Agriculture	*Managers, Export Meat Establishments Last Notice 98/8 *Licensed Meat Exporters Last Notice * Managers, Domestic Meat Establishments Last Notice * Export Meat Industry Organisations Last Notice * AUS-MEAT Last Notice

Purpose

To advise industry and AQIS staff on devolvement to industry of the requirement for monthly water testing at export registered establishments.

Background

- AQIS legislation requires potable water used at export registered meat establishments to comply with the provisions of the *Export Meat Orders* (EMO) and be assessed against the potability standards specified in Schedules 2, 3, 4 and 5 to the National Health & Medical Research Council (NHMRC) and Australian Water Resources Council publication *Guidelines for Drinking Water Quality in Australia - 1987.*

  - a registered establishment must meet the potability standard of *EMO's* 95.1 and 98 at all times while it is registered to produce/process meat and meat products

  - this is verified by regular testing of water, usually on a monthly basis

- Traditionally, AQIS has performed the task of sampling, transporting and testing the water. This requires considerable AQIS resources

  - industry's adoption of the HACCP based QA program replaces traditional ancillary monitoring and supervision by AQIS with placement of responsibility for an establishment's operational needs with the management.

Scope

The scope of this notice applies to all export meat establishments.

Action and Responsibility

Industry

- Effective from 1 June 1998 AQIS will stop collecting the monthly water (and ice) samples for potability testing at all export registered meat and meat processing establishments:

- the frequency for water testing for each plant shall be as outlined in Attachment 1.d

- the operator of an export meat establishment is required to ensure that potable water (and ice) used in the establishment meets the required potability standard as provided under the EMOs and any additional overseas country requirements. This shall include sampling, transportation and testing of the water (and ice) sample (refer to the Attachment 1.a for guidelines for water sampling)

- an authorised signatory included in the Ex 26 form shall be identified as the person having responsibility for management of the program.

- Industry testing of its water is an important component for an establishments':

  - verification of its HACCP based sanitation program, and

  - continuity of registration and its capability to produce/process safe and wholesome meat and meat products.

- The water testing program must be incorporated into an establishment's SOP that is to be audited by AQIS

  - the QA manager or authorised person in cooperation with the AQIS officer-in-charge of the establishment will select a date/day for sampling of water (& ice)

  - the SOP shall include the regime for monitoring water clarity, the chemical treatment including the alarm system used, the maintenance of the water reticulation system and the internal back syphonage controls.

- The water (and ice) sample must be tested at a NATA accredited laboratory which is accredited for the appropriate class of test for water testing

  - establishments are permitted to use on-plant NATA accredited laboratories where the laboratories are accredited for the appropriate class of test for water testing.

- Establishments must provide a clean copy of the testing report from the laboratory to the AQIS officer-in-charge, as and when received.

- The AQIS Area office must receive immediate notification of an establishment's failure to meet the required potability standard by fax from the testing laboratory and the AQIS officer-in-charge must be informed as soon as practical

  - the AQIS officer-in-charge at an unmanned establishment is the supervisory Area Technical Manager.

- The establishment must institute corrective action when the potability results are unsatisfactory. This will include

  - an immediate retest of the water from the same point where the previous unsatisfactory sample was taken which must be undertaken with AQIS supervision

- investigate the possible causes of the unsatisfactory result and keep records of any remedial action

- take whatever steps are necessary, in agreement with AQIS, to prevent the production or release of possibly contaminated product.

- Where water fails to meet the potability standard, operations utilising potable water may be required to stop until potable water is restored

  - in addition to rectifying the cause of water failing to meet this standard, corrective action may include tracing, holding and testing product produced from the last satisfactory test for water potability should the water be confirmed as being non potable.

AQIS Staff

The officer-in-charge in association with the establishment-person, identified as having responsibility for the water program will select a date/day for sampling of water (& ice)

- Oversight the integrity of the company's sampling by monitoring the collection of water (and ice) samples and auditing the water program,

- Receive laboratory results from the company management, as and when received from the testing laboratory,

- Supervise sampling for the retest after an unsatisfactory result,

- In cooperation with company management, investigate any unsatisfactory result and monitor the corrective action,

- In consultation with the ATM suspend the operations where the result of retest of an unsatisfactory result fails to meet the requirement of order 95.1 and 98 of the *EMOs*,

- In consultation with the Area Technical Manager, determine the disposition of product affected by use of non potable water being exported.

Brian Macdonald
Director
Meat Inspection Division

References:

. *Export Meat Orders* order 95, 98, 99
. *Export Meat Regulation* sixth schedule 6.(4)
. *Export Meat Volume 3* chapter 19.4
. *Export Meat Volume 2 Essential Requirements for the European Union.*
. *EEC Water Directive* 80/778/EEC.
. NHMRC *Guidelines for Drinking Water Quality in Australia – 1987.*

. NHMRC *Australian Drinking Water Guidelines – 1996.*

Attachment 1.a

Guidelines for Water and Ice Sampling Plans

The following details must be incorporated in an establishment's QA manual for water testing.

1) Details of the water source - town or private supply.
2) Details of in-plant chlorination system or other approved chemical treatment (if applicable) including the monitoring of the system.
3) On-plant water reticulation map.
4) Records of microbiological water testing results.
5) Annual physio-chemical water test results.
6) Collect potable water samples: from various taps/areas, according to sampling plan in Attachment 1.d.
7) Details of the water reticulation including maintenance and cleaning of storage tanks and type of pipes used and if in or above ground.
8) Authorise signatory responsible for the program.

Collect pre-chlorination water samples — where in-plant chlorination is installed, collect one sample every six months from the source water prior to chlorination for coliforms and *E coli*.

Water - Sampling Technique

Select sampling points from cold water taps which are located in edible production departments and which are normally used during production.

Gather items needed for sampling and dispatch:

- sample bottle containing sodium thiosulphate to inactivate residual chlorine (see Attachment 1.b)
- gas burner
- submission form (see Attachment 1.c)
- labels, pen
- insulated container
- freezer bricks
- plastic bags
- plastic disposable gloves.

Label sample bottles. Include

- date
- time
- establishment number/name
- sampler's name.

Wash hands.

Test the level of residual chlorine at the sample point and record in the submission form.

Wipe or otherwise clean the faucet outlet to remove contamination.

Turn tap on and let water flow for 2 minutes to clear the water standing in the service pipe.

Turn tap off.

Flame tap mouth from below so that the outside and inside of the tap mouth is sterilised (steam should be emitted). Do not touch the sterilised tap during sampling.

Run tap at a gentle flow rate (to avoid splash) for 2 minutes. This cools the tap and delivers unsterilised water for sampling.

Put on disposable gloves.

Immediately before sampling remove lid from the sterile bottle supplied by the testing laboratory using a sterile technique eg lift aluminium foil carefully away from the neck of the bottle - hold the bottle near the base, grasp the lid/stopper still covered by the foil and remove lid/stopper - take care that the neck, mouth and stopper do not touch anything and become contaminated. Do not flush the sterile bottle.

Collect sample of at least 120 mls, immediately after the lid/stopper is removed by holding the bottle under the gentle stream of water avoiding splash.

Do not fill the bottle completely (only fill to the bottle's shoulder). This leaves an air space.

Replace the lid/stopper and foil quickly.

Seal bottle in a plastic bag.

Complete submission form according to laboratory requirements and seal in a plastic bag.

Pack and dispatch samples:

- pack bottles securely to avoid breakage
- include freezer bricks
- include submission form
- attach dispatch information label, and
- samples must be maintained at refrigerator temperatures until shipped — **samples must not be frozen** and**,**
- the samples must be dispatched on the day of collection and analysed no later than 24 hours after collection

Ice – Sampling Technique

Ice used in the preparation of edible products must be monitored to determine compliance with required microbial standards.

Select sampling points from reservoirs of ice.

Gather items needed for sampling and dispatch:

- glass sample bottle containing sodium thiosulphate to inactivate residual chlorine a sterile 750 ml effluent jar obtained from the Water Laboratory is appropriate
- sterile spoon depending on collection method
- labels, pen, submission form
- insulated container
- freezer bricks
- plastic bags
- submission forms (Attachment 1.c)

Label sample bottles. Include

- date
- time
- establishment number/name
- sampler's name.

Wash hands.

Immediately before sampling, remove lid from sterile bottle supplied by testing laboratory using a sterile technique eg- lift aluminium foil carefully away from the neck of the bottle - hold the bottle near the base, grasp the lid/stopper still covered by the foil and remove lid/stopper - take care that the neck, mouth and stopper do not touch anything and become contaminated.

Collect sample — use sterile sample bottle as a scoop, taking one sweep along the surface of the ice, or – collect ice with a sterile spoon and fill the sample jar to about 3/4 full.

Replace the lid/stopper and foil quickly

Seal bottle in plastic bag

Complete submission form (Attachment 1.c)

Pack and dispatch samples:

- pack bottles (Attachment 1.b) securely to avoid breakage
- include freezer bricks
- include submission form. Attach dispatch information label. Sample should reach laboratory within 24 hours of collection.

Work Instruction Water & Ice - Evaluation of test results

Assess results for health risk:

1) Classify samples as satisfactory, suspicious or unsatisfactory according to the following criteria:

Coliforms/100mls	E coli type 1 /100ml	Rating
0 to 2	0	Satisfactory
3 to 10	0	Suspicious
> 10	0	Unsatisfactory
Irrespective of number	1 or more	Unsatisfactory

2) Assess potability of establishment water supply —

- If supply is **not chlorinated** on-plant, then rate the supply as non-potable if:
  - successive samples are classified as suspicious
  - two or more samples over a 12 month period are rated unsatisfactory due to coliforms and are confirmed on retesting
  - more than 10% of samples over a 12 month period are positive for coliforms, or
  - any sample positive for E coli type 1 is confirmed on retesting

- If supply is **chlorinated** on-plant, then rate the supply as non-potable if:
  - any sample is positive for coliforms and confirmed on retesting.
  - any sample is positive for E coli type 1 and confirmed on retesting.

For EU **registered establishments**

Assess results for physio-chemical characteristics.

Assess results for background environmental trends.

Assess results for Total Plate Count according to the following table

Sample size	**Incubation**		**Action level suggested by AGAL**
	ToC	**Hours**	
1 ml	37	48	100
1 ml	22	72	1000

Attachment 1.b

WATER (& ICE) SAMPLE BOTTLE GUIDELINES

The bottle used for water and ice sample collection should have sodium thiosulphate to inactivate residual chlorine

Disposable plastic or glass bottles can be used. Care must be taken to see that the bottle is sterilised and that the sterility of the bottle is not compromised at any time prior to collection.

The bottles can be purchased from:

BACTO (please quote the product code SJS 8067 GLT)
310-312 Elizabeth Street
LIVERPOOL NSW 2170
Ph (02) 9602 5499

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Attachment 1.c

WATER (& ICE) SAMPLE SUBMISSION FORM

Attached is the copy of the form used by AQIS in the past for water and ice sampling and testing. It is advisable to use this form so that the water results, submission and reporting forms are nationally consistent.

Department of Primary Industries and Energy

Certigicate of Analysis

Export Control Act 1982

Microbiological ☐		Region	
Chemical ☐		File No:	
Manufacturer		Laboratory to which sample(s) is forwarded:	

Part A - Department of Primary Industries and Energy Use Only

Sample No:				
Product Description:				
Product Identifying Marks:				
Establishment No:				
Date of Manufacture:				
Time and Date of Sampling:				
Free Residual Chlorine:				
Reason(s) for Sampling if other than program:				
Note to Analyst:				

Tests Required * * (For code see reverse)	Part B - Laboratory Use only Results of Analysis			

Date of Receipt: / / am

Time of Receipt:.....pm

Analyst's/Department of Primary Industries and Energy Remarks:		
Above samples submitted for analysis as indicated by- ..... Signature ..... Printed Name For Department of Primary Industries and Energy / /	Laboratory Report (No.(s) / /	Results of anaylsis of above samples are forwarded by- ..... Signature ..... Printed Name For Department of Primary Industries and Energy / /

CODE FOR ANALYTICAL TESTS

MICROBIOLOGICAL EXAMINATION OF FOOD

Code	Test	Code	Test	Code	Test
01	Standard Plate Count	10	Coagulase pos. Staphylococci	19	
02	Psychrophilic Count	11	Salmonella	20	
03	Thermophilic Count	12	Howard Mould Count	21	
04	Yeasts	13	Leak Test	22	
05	Moulds	14	Bacteria (specify type)	23	
06	Coliforms	15	Commercial Sterility	24	
07	E. coli 1	16	Can Sterility	25	
08	Penicillin	17	Faecal Coliforms	26	
09	Faecal Streptococci	18	Antibiotics (specify type)	27	

OTHER: TO BE SPECIFIED

PHYSICAL/CHEMICAL EXAMINATION OF FOOD

Code	Test	Code	Test	Code	Test
41	Moisture	71	Mass, drained	100	
42	Total Milk Solids	72	Odour/Flavour	101	
43	Total Solids	73	Texture	102	
44	Fat	74	Soluble Solids	103	
45	Curd	75	Sulphur Dioxide	104	
46	Solubility index	76	Vacuum	105	
47	Sediment	77	Titratable acidity (free acidity)	106	
48	Salt	78	Total acidity	107	
49	Ash	79	Water Analysis	108	
50	ph	80	Protein Content	109	
51	Colour	81	Sulphite Residue (as SO)	110	
52	Peroxide Value	82	Phosphatase	111	
53	Free Fatty Acids	83	Water/Protein ratio	112	
54	Scorched Particles	84	Nitrosamines	113	
55	Extraneous Matter	85	Colouring (specify type)	114	
56	Sugars, Total	86	Preservatives (specify type)	115	
57	Sugars, Reducing	87	Aflatoxins	116	
58	Glucose	88	H M F	117	
59	Fructose	89	Grit	118	
60	Maltose	90	Headspace	119	
61	Lactose	91	Melting Point	120	
62	Emulsifying Agents	92		121	
63	Pfund value	93		122	
64	Volume of Contents	94		123	
66	Residues (specify particular residues)	95		124	
67	Meat Content	96		125	
68	Filler, Cereal	97		126	
69	Metals (specify type)	98		127	
70	Mass, net	99		128	

OTHER: TO BE SPECIFIED

Attachment 1.d

NB: Each water sample should be at least 120 ml. One of each type of test required can be done on a single sample. If two tests are required then 2 separate samples must be collected from different test sites.

Establishment Type	**Coliforms**	**E coli**	**Total Plate Count: * 22oC for 72 hours &* 37oC for 48 hours**	**Faecal Streptococci**	**Sulphite-reducing Clostridia**
Structurally integrated establishment complexes	2 tests per month	2 tests per month			
*EU listed	2 tests per month	2 tests per month	2 tests per month	1 test per year	1 test per year
Structurally independent establishments (other than coldstore)	2 tests per month	2 tests per month			
* EU listed	2 tests per month	2 tests per month	2 tests per month	1 test per year	1 test per year
Structurally independent coldstores	1 test per quarter	1 test per quarter			
*EU listed	2 tests per month	2 tests per month	1 test per quarter	1 test per year	1 test per year
Cooked meat establishments (whether integrated or independent)	2 tests per month	2 tests per month			
* EU listed	2 tests per month	2 tests per month	2 tests per month	1 test per year	1 test per year
Cooling water at canneries and cooked meat establishments	1 test per month	1 test per month			
* EU listed	1 test per month	1 test per month	2 tests per month	1 test per year	1 test per year
Ice used in edible product	1 test per month	1 test per month			
* EU listed	1 test per month	1 test per month	2 tests per month	1 test per year	1 test per year

Maximum Admissible Concentration: by Membrane Filter Method = 0 & Multiple Tube Method (MPN) = MPN<1

! Maximum Admissible Concentration: by Multiple Tube Method (MPN) = MPN≤1

- *where in line approved chemical treatment of water is used, the testing frequency shall be half the scheduled frequency in Attachment 1.d providing the establishment has a history of satisfactory water results for the previous 6 months and overseas listing requirements (eg. EU requires minimum monthly testing) are met.*