



# Water/Wastewater Incident Notification and Communication Protocol

DHW, SA Water, EPA

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David Cunliffe – Water Incident Coordinator



Government  
of South Australia

SA Health

## Introduction

The Water/Wastewater Incident Notification and Communication Protocol (the Protocol) was established in 1999 between the Department for Health and Wellbeing (DHW), SA Water and EPA to ensure interagency communication and the development of a coordinated response to water and wastewater incidents that could potentially cause public health or environmental harm. The Protocol also includes notification to other relevant bodies such as Natural Resource Management Boards, the Office of the Technical Regulator and local Councils. The Protocol meets regulatory requirements in relation to notification of incidents under the *Safe Drinking Water Act 2011* and in recycled water approvals issued under the South Australian Public Health (Wastewater) Regulations 2013.

In order for a coordinated incident response to be developed within Government (see Figure 1, page 46) a need was identified for:

- a lead Minister to be appointed for each serious incident
- an independent Water Incident Coordinator (WIC) to advise the lead Minister throughout the duration of that incident

Duties of the WIC and lead Minister are provided on page 47

Since its inception in 1999 the Protocol has undergone an annual review process to ensure that the structure and content of the document remains relevant and accurately captures the range and complexity of potential water and wastewater incidents.

Incidents are classified into three types; Priority Type 1, Type 1 or Type 2 incidents:

### **PRIORITY TYPE 1 INCIDENTS**

These incidents are likely to require immediate interagency meetings to consider responses and possible issuing of public advice. Priority Type 1 incidents are to be reported immediately by direct voice contact (phone messages can be used as a prompt but must be followed up within an hour to ensure voice contact) to the WIC.

### **TYPE 1 INCIDENTS**

These are either:

- **Health** - an incident that without appropriate intervention\* could cause serious risk to human health, or
- **Environmental** – an incident that without appropriate intervention\* could cause or threaten to cause serious or material environmental harm.

Type 1 incidents require immediate notification\*\* to defined agencies and will always be reported to the WIC and concerned Ministers or delegate\*\*\*. Notification to the WIC and identified agencies will be immediately by telephone and within 24 hrs by email/hard copy, e.g.

- if an incident occurs at 4.10pm on Tuesday, notification via email/hardcopy must occur by 4.10pm on Wednesday
- if an incident occurs at 2.40pm on Friday, notification via email/hardcopy must occur by 2.40pm on Saturday

There are certain Type 1 incidents that require notification to the EPA as soon as practicable via the SA Water SAAM/fax system and to other agencies within 3 hrs by telephone.- as *indicated* in the tables of criteria. Concerned Ministers (or delegate) will be advised as soon as possible and within 24 hrs in writing.

## TYPE 2 INCIDENTS

These are either:

- **Health** - an incident that without appropriate intervention\* represents a low risk to human health, *or*
- **Environmental** – incidents that without appropriate intervention\* cause or could cause environmental harm but are not of a high impact or on a wide scale.

In the absence of appropriate intervention and remediation, Type 2 incidents have the potential to escalate to Type 1 or Priority Type 1 incidents. Type 2 incidents require notification to defined agencies but will not be routinely reported to the WIC and concerned Ministers. Type 2 incidents will be reported within 24 hrs. Where this is not practicable, i.e. incident occurs late Friday afternoon, on a weekend or public holiday, notification must occur by no later than 12 noon the next business day, e.g.

- if an incident occurs at 9.10am on Wednesday, notification via telephone or email/hardcopy must occur by 9.10am the next day (Thursday)
- if an incident occurs at 3pm on Friday notification via telephone or email/hardcopy on the same day is preferable, but in any case no later than 12 noon the following Monday (unless it is a public holiday in which case notification is due by 12 noon Tuesday)
- if an incident occurs at 10.30am on a Saturday, notification via telephone or email/hardcopy must occur by 12 noon the following Monday (unless it is a public holiday in which case notification is due by 12 noon Tuesday)

NOTE: An allowance for notifying Type 2 incidents by 12 noon the next business day is included to eliminate notification requirements over a weekend or on a public holiday

\* Appropriateness of intervention can only be determined after notification of the incident, i.e. normally by DHW for health incidents and EPA for environmental incidents.

\*\* Incidents detected through SCADA should be notified within 1 hour. In the event that further time is required to verify the incident in the field, this should be specified as part of the initial notification. Exceedances notified by the Australian Water Quality Centre (AWQC) should be notified within 2 hours (e.g. 1 hour for AWQC to report to SA Water and a further hour for SA Water to notify the WIC and defined agencies).

\*\*\* Internal agency protocol may include notification of Priority Type 1/Type 1 incidents to a delegate particularly out of office hours and weekends, e.g. the Minister for Health and Wellbeing can delegate notification of incidents that do not represent a serious public health risk to DHW. Where incidents occur out of office hours or after 5pm on Friday, the ministerial briefing is prepared and forwarded to the relevant Minister the following business day. Phone contact will be made with the Minister's delegate (i.e. Director, Public Health) where the incident is considered to represent a significant public health risk or where media interest is likely.

NOTE: For SA Water, the Minister for Environment and Water's Office is advised in writing by 3 pm next business day for all Priority Type 1 incidents and any other incidents where the SA Water delegate makes a business decision to brief. If an incident poses a potential immediate high consequence (i.e. considered to represent a significant public health risk, risk of significant environment harm or where public interest is likely), the Minister for Environment and Water's Office is advised verbally as soon as possible, and in writing by 3 pm next business day.

## NOTIFICATIONS SUMMARY

A summary of general notification requirements and timeframes for various agencies is listed below.

<b>Priority Type 1 and Type 1 incidents</b>	<b>EPA (where indicated), DHW, SAW</b>	Immediately by telephone and within 24 hrs by email/hard copy
	<b>EPA (where indicated)</b>	As soon as practicable via the SA Water SAAM/fax system
	<b>OTR (where indicated)</b>	As soon as practicable by telephone or by email/hard copy
	<b>LC, NRM, DEW, URE</b>	Within 3 hrs by telephone where public notification required
	<b>QEH (aluminium only)</b>	Advised by DHW as soon as practicable by telephone
<b>Type 2 incidents</b>	<b>EPA, DHW, OTR, SAW,</b>	Within 24 hrs by email/hard copy

## DEFINED INCIDENT CRITERIA

Health and environmental incident criteria that align with the 3 incident categories, Priority Type 1, Type 1 or Type 2 are defined in this Protocol. The defined incident criteria are contained in Section 1 for Water Incident Criteria (TABLE 1 – TABLE 6) and Section 2 for Wastewater Incident Criteria (TABLE 7 – TABLE 17).

When comparing chemical sample results to the defined health incident criteria, results are rounded following guidance in the Australian Drinking Water Guidelines (ADWG). See WQ\_T08 for further information.

## UNDEFINED INCIDENT CRITERIA

Any other health or environmental incident that does not appear in the defined incident criteria (TABLE 1- TABLE 17) but appears to align with one of the general incident classifications or any incident that could be of public concern/interest shall be classified as a Priority Type 1, Type 1 or Type 2 according to its risk. Where there is uncertainty in categorising an incident, the default should be for the higher risk category. Incidents may be downgraded at a later stage. All incidents shall be reported in the timeframe of a Type 1 incident. This includes any event or situation where there is evidence/suspicion of external contamination, interference with infrastructure or any pollution incident in drinking water source catchments (surface and groundwater) that gives rise to concern about risks to public or environmental health.

## RAISING INCIDENTS

Incidents at outlets from treatment plants (TABLE 5(A) and (B)) and secondary chlorinators (TABLE 6) triggered from on-line monitoring and SCADA alarms may require further investigation by operators to determine whether they represent actual events that require notification. Operators are expected to use their experience and knowledge to establish whether there is evidence of analyser faults, unrepresentative results or other circumstances that mean there is a high likelihood that an incident has not occurred. However, if there is uncertainty the incident should be notified in accord with set procedures identified in the Protocol.

## **DOWNGRADING INCIDENTS**

Downgrading of Priority Type 1, Type1 and Type 2 incidents as defined by the protocol requires DHW approval, and EPA approval in the case of Environmental incidents. This can be initiated by telephoning the WIC, followed by a formal communication process in line with the relevant authorised agency representatives.

## **ONGOING INCIDENTS**

Generally incidents will be followed by remedial action and subsequent clear evidence of recovery. However where there is uncertainty about control being re-established an incident will remain ongoing. In regards to drinking water supplies this decision will be made in consultation with the WIC and the Senior Manager Water Expertise at SA Water. For public health wastewater incidents consultation will involve the WIC and the Senior Manager Production and Treatment. The incident will remain ongoing until sufficient information is available to demonstrate to the WIC that control has been re-established. In regards to environmental incidents this decision will be made in consultation with the WIC, the Senior Manager Wastewater and Environmental Expertise at SA Water and the EPA. The incident will remain ongoing until sufficient information is available to demonstrate to the WIC that incident impacts have been mitigated and regulatory authority requirements have been met.

## **EXPLANATORY NOTES CONTAINED IN WQ\_T08**

SA Water maintains an incident notification table (WQ\_T08) which in addition to the Protocol criteria contains information for water/wastewater treatment plant operators and incident managers on correctly interpreting and applying these criteria and providing further advice on appropriate responses following incidents (e.g. notification requirements, correct sampling protocols, raising and closing out incidents, response to SCADA alarms). It is intended that the explanatory notes in WQ\_T08 be used in conjunction with the Protocol criteria by SA Water and their contractors including Allwater and Trility. The explanatory notes in WQ\_T08 will be updated on an annual basis in line with reviews of the Protocol. Other updates will occur where required to reflect any interim arrangements made between DHW and SA Water.

<b>KEY TO AGENCIES / ACRONYMS</b>	
<b>ADWG</b>	Australian Drinking Water Guidelines
<b>AWQC</b>	Australian Water Quality Centre
<b>DEW</b>	Department for Environment and Water
<b>DHW</b>	Department for Health and Wellbeing
<b>EPA</b>	Environment Protection Authority
<b>LC</b>	Local Council
<b>NRM</b>	Natural Resource Management Board
<b>OTR</b>	Office of the Technical Regulator
<b>PIRSA</b>	Primary Industries and Resources
<b>QEH</b>	Queen Elizabeth Hospital Renal Dialysis Unit
<b>SAW</b>	SA Water
<b>URE</b>	Users of Recycled Water

## Non-drinking water supplies

A small number of rural water supply systems deliver non-drinking water or water that cannot be guaranteed as being compliant with the ADWG. Customers are advised that the water is not of drinking quality and of suitable uses, e.g. where a non-drinking classification exists on the basis of microbial quality, customers are advised that the water can be used for drinking purposes provided that the water is boiled prior to use.

A listing of agreed DHW and SA Water non-drinking water supplies is included as an attachment to the Memorandum of Administrative Arrangement document which has been signed by the Chief Executives of both agencies. The non-drinking water supplies are categorised based on the either microbiological quality only or microbiological and chemical quality.

### **NON-DRINKING WATER – MICROBIOLOGICAL CLASSIFICATION:**

The following water supplies are classified as non-drinking on the basis of microbial quality. Customers have been advised that the water can be used for drinking provided it is boiled prior to use.

- Cockburn
- Mannahill
- Mannum-Adelaide P/L
- Murray Bridge-Onkaparinga P/L
- Olary
- Oodlawirra
- South Creek
- Terowie
- Woolundunga/Horricks
- Yunta

### **NON-DRINKING WATER - MICROBIOLOGICAL AND CHEMICAL CLASSIFICATION:**

The following water supplies are classified as non-drinking on the basis of microbial and chemical quality. Customers have been advised that the water cannot be used for drinking even after boiling.

- Blinman
- Dutchman's/Fosters Creek
- Hammond/Willowie
- Maree
- Marla
- Oodnadatta
- Peak Spring
- Saltia Creek
- Woolshed Flat

### **NON-DRINKING ZONES WITHIN DRINKING SYSTEMS**

Water supplied to any customer connected to a drinking water supply prior to the disinfection plant is also classified as non-drinking on the basis of compromised microbial quality. Specifically this applies to customers connected prior to the disinfection plant in the following systems:

- Baroota
- Bordertown
- Cowirra WTP
- Mt Bold (SA Water Depot only)
- Quorn
- Uley Wanilla
- Warooka
- Wilmington

## REMOTE COMMUNITIES DUAL SUPPLIES – (NON-DRINKING SUPPLY)

A number of Remote Communities have dual supplies, and include distribution system sampling points both in the non-drinking supply and the drinking water supply. The table below applies only to sampling points connected to the non-drinking supply in the following Remote Communities.

- Indulkana (Iwantja)—aesthetic parameters only.
- Kaltjiti (Fregon)—aesthetic parameters only.
- Mimili (Everard Park)—high fluoride.
- Nepabunna (Nipapanha)—aesthetic parameters and microbial (no disinfection).
- Oak Valley—nitrates

In each of these remote communities there is a separate, dedicated drinking water reticulation system supplying drinking water to a household tap and in some cases the hot water service. All other Remote Communities' sampling point locations (in drinking water supplies) follow TABLE 1-TABLE 6 of this protocol.

## INCIDENTS FOR NON-DRINKING WATER SUPPLIES

For water supplies classified as non-drinking on the basis of unassured microbiological quality, a Type 1 incident is triggered by an exceedance of ADWG values for health-related inorganic chemicals, pesticides, radionuclides, detection of *Naegleria fowleri* ( $\geq 50/L$ ) or an exceedance of the existing pH or algal toxin criteria (see Table A).

For supplies classified as non-drinking on the basis of both microbiological and chemical quality, a Type 1 incident is triggered by parameters that raise potential concern over using water for bathing (See Table A) .

Type 1 incidents for non-drinking supplies must be reported as per existing notification mechanisms defined in the Protocol.

The only Type 2 criteria that apply to non-drinking water supplies are detection of  $> 100$  *Naegleria/L* and detection of *Naegleria fowleri* (Table A).

## TABLE A: NON-DRINKING WATER SUPPLIES

Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator, DHW** immediately by telephone and 24 hrs by email/hard copy.
- **PIRSA** by telephone within 3 hrs where the water supply is known to be or suspected of being used for stock watering, excluding *N.fowleri* detections.

Type 2 incidents are to be notified and reported to the agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 INCIDENTS		TYPE 2 INCIDENTS
	MICRO SUPPLIES	MICRO/CHEM SUPPLIES	ALL NON-DRINKING SUPPLIES
<b>Microcystin</b> <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	> 1.3 µg/L toxin ≥ 6,500 cells/mL (in the absence of toxicity data)	> 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data)	
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 1.3 µg/L toxin ≥ 40,000 cells/mL (in the absence of toxicity data)	> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data)	
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )	> 1 µg/L toxin ≥ 2,000 cells/mL (in the absence of toxicity data)	> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data)	
<b>Cylindrospermopsin</b> <i>Cylindrospermopsis raciborskii</i> <i>Chrysochloris ovalisporum</i>	> 1 µg/L toxin ≥ 15,000 cells/mL (in the absence of toxicity data)	> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data)	
<b>Health-related inorganic chemicals</b>	Any exceedance of health values prescribed in the ADWG	> 10 times the health values prescribed in the ADWG	
<b>Pesticides</b>	Any exceedance of health values prescribed in the ADWG	> 10 times the health values prescribed in the ADWG	
<b>Radionuclides</b>	Any exceedance of health values prescribed in the ADWG	> 10 times the health values prescribed in the ADWG	
<b>pH</b>	< 5.5 or > 10		
<b>Naegleria</b>			Detection of ≥ 100 organisms / L
<b>Naegleria fowleri</b>	≥ 50 <i>Naegleria fowleri</i> detected		Any detection of <i>Naegleria fowleri</i>



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# **SECTION 1**

## **WATER NOTIFICATION CRITERIA**

**TABLE B: BLUE GREEN ALGAE AND TOXIN INCIDENT SUMMARY**

PARAMETER	LEVEL	Surface Water Catchments Table 1	Reservoirs		Treatment Plants			Distribution System Table 6
			Indirect Supply Table 2	Filtered Direct Supply Table 3	Inlets Table 4	Outlets Table 5		
					All supplies	Filtration Plants	Disinfection Stations	
<b>Microcystin</b>	>13 µg/L	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	>1.3 µg/L	Type 2	-	Type 2	Type 1	Priority Type 1	Priority Type 1	Priority Type 1
<i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	≥65,000 cells/mL#	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	≥6,500 cells/mL#	Type 2	-	Type 2	Type 1	-	-	-
<b>Nodularin</b>	>13 µg/L	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	>1.3 µg/L	Type 2	-	Type 2	Type 1	Priority Type 1	Priority Type 1	Priority Type 1
<i>Nodularia spumigena</i>	≥400,000 cells/mL#	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	≥40,000 cells/mL#	Type 2	-	Type 2	Type 1	-	-	-
<b>Saxitoxin(s)</b>	>3 µg/L	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	>1 µg/L	Type 2	-	Type 2	Type 1	Priority Type 1	Priority Type 1	Priority Type 1
<i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )	≥20,000 cells/mL#	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	≥2,000 cells/mL#	Type 2	-	Type 2	Type 1	-	-	-
<b>Cylindrospermopsin(s)</b>	>10 µg/L	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	>1 µg/L	Type 2	-	Type 2	Type 1	Priority Type 1	Priority Type 1	Priority Type 1
<i>Cylindrospermopsis raciborskii</i> <i>Chrysochloris ovalisporum</i>	≥150,000 cells/mL#	Type 1	Type 2	Type 1	Priority Type 1	-	-	-
	≥15,000 cells/mL#	Type 2	-	Type 2	Type 1	-	-	-

# in the absence of toxicity data

**TABLE C: CRYPTOSPORIDIUM AND GIARDIA INCIDENT SUMMARY**

PARAMETER		Surface Water Catchment Table 1	Reservoirs		Treatment Plants				Distribution system	
			Indirect Supply Table 2	Filtered Direct Supply Table 3	Inlets Table 4		Outlets Table 5		Table 6	
					Filtered supplies	Unfiltered supplies	Filtration Plants	Disinfection Stations	Unfiltered supplies	Filtered supplies
<i>Cryptosporidium</i>	<i>parvum</i> group/ <i>hominis</i> detected	-	-	-	Type 1	-	-	-		
	≥ 500 confirmed	Type 1	Type 1	-	-	-	-	-		
	≥ 50 confirmed	Type 2	Type 2	Type 1	Type 1	-	-	-		
	any confirmed	-	-	Type 2	Type 2	Priority Type 1	Priority Type 1	Priority Type 1	Priority Type 1	Priority Type 1
	any presumptive	-	-			Type 1	Type 1	Type 1	Type 1	Priority Type 1
<i>Giardia</i>	≥ 500 confirmed	Type 1	Type 1							
	≥ 50 confirmed	Type 2	Type 2	Type 1	Type 1					
	any confirmed	-	-	Type 2	Type 2	Priority Type 1	Priority Type 1	Priority Type 1	Priority Type 1	Priority Type 1
	any presumptive	-	-			Type 1	Type 1	Type 1	Type 1	Priority Type 1

**TABLE D: CRYPTOSPORIDIUM INFECTIVITY ASSAY – RESULT REPORTING AND INCIDENT SUMMARY**

Applies to samples taken at the WTP outlet for Adelaide Metropolitan WTPs; Anstey Hill WTP, Barossa WTP, Happy Valley WTP, Hope Valley WTP, Little Para WTP, Myponga WTP.

Results obtained from emergency processing (where presumptive *Cryptosporidium* count is  $n \geq 2$ ) are to be reported to DHW as an update to the existing Type 1 incident (by telephone and email/hard copy). Final classification of the incident will occur once *Cryptosporidium* infectivity assay results are obtained.

Wednesday pm/ Thursday am		Thursday			Friday					
		Emergency processing of duplicate sample								
Presumptive <i>Cryptosporidium</i> count (no of oocysts detected)	Incident	Duplicate sample (10L)	Confirmed <i>Cryptosporidium</i> count (FITC/ DAPI)	Speciation <i>C.parvum</i> / <i>C.hominis</i> FISH Probe + 3hrs	<i>Cryptosporidium</i> infectivity assay result (+ /- foci)	Incident	Genotyping <i>C.parvum</i> / <i>C.hominis</i> +3-6 hrs	Incident		
n = 0	No incident				Non-infectious	No incident				
					Infectious	Type 1	Negative	Type 1		
					Infectious	Type 1	<i>C.hominis</i> or <i>C.parvum</i>	Priority Type 1		
n = 1	Type 1	/	/	/	Non-infectious	Type 1	/	/		
					Infectious	Update DHW	Negative	Type 1		
					Infectious	Update DHW	<i>C.hominis</i> or <i>C.parvum</i>	Priority Type 1		
n ≥ 2	Type 1	yes	Presumptive or none detected	n/a	Non-infectious	Type 1	/	/		
					Infectious	Update DHW	Negative	Type 1		
					Infectious	Update DHW	<i>C.hominis</i> or <i>C.parvum</i>	Priority Type 1		
			confirmed		Not detected	Non-infectious	Type 1	/	/	
						Infectious	Update DHW	Negative	Type 1	
						Infectious	Update DHW	<i>C.hominis</i> or <i>C.parvum</i>	Priority Type 1	
			confirmed			<i>C.parvum</i> or <i>C.hominis</i> detected	Non-infectious	Type 1	/	/
							Infectious	Priority Type 1	Negative	Priority Type 1
							Infectious	Priority Type 1	<i>C.hominis</i> or <i>C.parvum</i>	Priority Type 1

**TABLE 1: SURFACE WATER CATCHMENTS**

**Applies to general River Murray and other rivers and streams eg Onkaparinga River, Snake Gully Creek. Applies to inlets to direct supply reservoirs.**

**Type 1 incidents will be notified and reported to agencies as indicated below:**

- **Water Incident Coordinator, DHW and EPA** (for chemicals and pesticides only) immediately by telephone and within 24 hrs by email/hard copy.
- **EPA** via the SA Water SAAM/fax system (as soon as practicable)
- **DEW and NRM (SA Murray Darling Basin)** for Algae immediately by telephone and within 24 hrs by email/hard copy and **LC** notified by WIC as required.

**Type 2 incidents are to be notified and reported to agencies as indicated below:**

- **EPA, DHW and SAW** within 24 hrs by telephone or email/hard copy

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Microcystin</b> <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	> 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data)	> 1.3 µg/L toxin ≥ 6,500 cells/mL (in the absence of toxicity data)
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data)	> 1.3 µg/L toxin ≥ 40,000 cells/mL (in the absence of toxicity data)
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )	> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data)	>1 µg/L toxin ≥2,000 cells/mL (in the absence of toxicity data)
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i> <i>Chrysochlorum ovalisporum</i>	> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data)	> 1 µg/L toxin ≥ 15,000 cells/mL (in the absence of toxicity data)
<b>Cryptosporidium or Giardia</b>	≥500 confirmed organisms / 10L in supply weirs and stream inlets to reservoirs#	≥50 confirmed organisms / 10L in supply weirs and stream inlets to reservoirs#
<b>Health-related organic chemicals</b>	Any exceedance of health values prescribed in the ADWG	Any detection
<b>Pesticides</b>	Any exceedance of health values prescribed in the ADWG	Detection equivalent to > 10% of the health values prescribed in the ADWG
<b>Health-related inorganic chemicals and Radionuclides</b>	Any exceedance of health values prescribed in the ADWG	

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 2: INDIRECT SUPPLY RESERVOIRS**

**Applies to water storages that are remote from a direct supply reservoir, e.g. South Para, Warren, Mt Bold, Kangaroo Creek**

**Type 1 incidents will be notified and reported to agencies as indicated below:**

- **Water Incident Coordinator** and **DHW** immediately by telephone and within 24 hrs by email/hard copy.
- **EPA** via the SA Water SAAM/fax system (as soon as practicable)

**Type 2 incidents are to be notified and reported to agencies as indicated below:**

- EPA and DHW within 24 hrs by telephone or email/hard copy

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Microcystin</b> <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>		> 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data)
<b>Nodularin</b> <i>Nodularia spumigena</i>		> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data)
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )		> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data)
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i> <i>Chrysoosporum ovalisporum</i>		> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data)
<b>Cryptosporidium or Giardia</b>	≥500 confirmed organisms / 10 L#	≥50 confirmed organisms / 10 L#
<b>Health-related organic chemicals</b>		Any exceedance of health values prescribed in the ADWG
<b>Health-related inorganic chemicals and Radionuclides</b>		Any exceedance of health values prescribed in the ADWG

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 3: FILTERED DIRECT SUPPLY RESERVOIRS**

Applies to reservoirs that supply water directly to water treatment plants, e.g. Millbrook, Hope Valley, Barossa, Myponga, Mannum Summit, Onkaparinga Summit Storage, Happy Valley

**Type 1 incidents will be notified and reported to agencies as indicated below:**

- **Water Incident Coordinator**, and **DHW** immediately by telephone and within 24 hrs by email/hard copy.
- **EPA** via the SA Water SAAM/fax system (as soon as practicable)

**Type 2 incidents are to be notified and reported to agencies as indicated below:**

- **EPA** and **DHW** within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Microcystin</b> <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	> 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data) #	> 1.3 µg/L toxin ≥ 6,500 cells/mL (in the absence of toxicity data) #
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data) #	> 1.3 µg/L toxin ≥ 40,000 cells/mL (in the absence of toxicity data) #
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )	> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data) #	>1 µg/L toxin ≥2,000 cells/mL (in the absence of toxicity data) #
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i> <i>Chrysochloris ovalisporum</i>	> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data) #	> 1 µg/L toxin ≥ 15,000 cells/mL (in the absence of toxicity data) #
<b>Naegleria</b>	Any detection of <i>Naegleria fowleri</i>	
<b>Cryptosporidium or Giardia</b>	Detection of ≥ 50 confirmed organisms / 10 L#	Any detection of confirmed organisms / 10 L#
<b>Health-related organic chemicals</b>	Any exceedance of health values prescribed in the ADWG	Any detection
<b>Pesticides</b>	Any exceedance of health values prescribed in the ADWG	Detection equivalent to > 10% of the health values prescribed in the ADWG
<b>Health-related inorganic chemicals and Radionuclides</b>	Any exceedance of health values prescribed in the ADWG	

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria



**TABLE 4: TREATMENT PLANT INLETS**

- Applies to surface water or groundwater entering treatment plants and prior to any processes
- Includes unfiltered direct supply reservoirs ( e.g. Blue Lake and Lincoln Gap) and groundwater supplies (e.g. Bordertown, Millicent) that supply water which is disinfected only
- Includes inlets to desalination plants. Note Type 1 and 2 criteria for algae, *Cryptosporidium* and *Giardia* do not apply to desalination plants (due to source of water)
- Includes results obtained prior to disinfection, eg. samples at chlorination station inlet

Priority Type 1 and Type 1 incidents will be notified and reported to agencies indicated below:

- Water Incident Coordinator and DHW immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- EPA via the SA Water SAAM/fax system (as soon as practicable)

Type 2 incidents are to be notified and reported to agencies as indicated below:

- EPA and DHW within 24 hrs by telephone or email/hard copy.

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<b>Microcystin</b> <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	> 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data) #	
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data) #	
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )	> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data) #	
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i> <i>Chrysochloris ovalisporum</i>	> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data) #	
<b><i>Cryptosporidium</i> or <i>Giardia</i></b>	Any detection of confirmed organisms / 10 L at the plant inlet of unfiltered supplies#	
<b>Pesticides</b>	Any exceedance of health values prescribed in the ADWG	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Microcystin</b> <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	> 1.3 µg/L toxin ≥ 6,500 cells/mL (in the absence of toxicity data) #	
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 1.3 µg/L toxin ≥ 40,000 cells/mL (in the absence of toxicity data) #	
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> ( <i>Anabaena circinalis</i> )	>1 µg/L toxin ≥ 2,000 cells/mL (in the absence of toxicity data) #	
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i> <i>Chrysochloris ovalisporum</i>	> 1 µg/L toxin ≥ 15,000 cells/mL (in the absence of toxicity data) #	

**TABLE 4. TREATMENT PLANT INLETS continued**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Naegleria</b>	Any detection of <i>Naegleria fowleri</i>	
<b>Cryptosporidium or Giardia</b>	<p>Detection of <math>\geq 50</math> confirmed organisms per 10 L at the plant inlet of filtered supplies#</p> <p>Any detection of confirmed and speciated <i>C.parvum</i> group / <i>C. parvum</i> /<i>C.hominis</i> per 10 L at the plant inlet of filtered supplies#</p> <p>Any detection of presumptive organisms per 10 L at the plant inlet of unfiltered supplies</p>	Any detection of confirmed organisms per 10 L at the plant inlet of filtered supplies#
<b>Health-related organic chemicals</b>	Any exceedance of health values prescribed in the ADWG	
<b>Health-related inorganic chemicals</b>	Any exceedance of health values prescribed in the ADWG (refer to exemptions below)#	
<b>Radionuclides</b>	Any exceedance of health values prescribed in the ADWG	
<b>Pesticides</b>		Detection equivalent to > 10% of the health values prescribed in the ADWG
<b>Total petroleum hydrocarbons</b>	Any exceedance of WHO health-based values (refer to # for link to relevant document)	
<b>EXEMPTIONS</b>		
<b>Health-related inorganic chemicals</b>	<p>For naturally occurring chemicals where paired samples taken after treatment comply with ADWG (eg. iodine, selenium, cadmium, arsenic at Lameroo, Pinnaroo, or Warooka).</p> <p>Also applies to the exceedance of copper at the plant inlet during copper sulphate dosing of a direct supply reservoir where paired samples taken after treatment comply with ADWG#</p> <p>Exceedance of ADWG values after treatment are Type 1 incidents – refer to TABLE 6.</p>	

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

## TABLE 5: TREATMENT PLANT OUTLETS

For treatment plant outlet sampling locations where there is a filtration and a disinfection plant, criteria for both TABLE 5(A) and TABLE 5(B) apply

### (A) Filtration Plants

- Applies to plants with media filtration
- Does not include iron/arsenic removal plants
- Applies to results obtained after filtered water storages, with the exception of turbidity which may also apply prior to filtered water storage

### (B) Primary Disinfection Stations

- Applies to primary disinfection stations
- Includes disinfection at iron/arsenic removal stations
- Applies to disinfection failures/faults and results obtained after disinfection, e.g. chlorination, chloramination or UV station outlet

Note: Criteria listed in TABLE 6 also apply for Water Treatment Outlets when tested.i.e. health related chemicals (including aluminium & monochloramine), pesticides, algal toxins, radionuclides.

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy
- **EPA** for discharge of treated water immediately by telephone and within 24 hrs by email/hard copy
- **OTR** as soon as practicable by telephone or email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy (with the exception of water main bursts)
- **OTR** within 24 hrs by telephone or email/hard copy
- **EPA, LC** and **NRM** for water main bursts within 24 hrs by telephone or email/hard copy

### (A) FILTRATION PLANT

PARAMETER	PRIORITY TYPE 1 CRITERIA
<b><i>Cryptosporidium</i> or <i>Giardia</i></b>	Any detection of confirmed organisms per 10 L, <b>unless</b> DHW verified UV in operation <b>or</b> , in the case of <i>Cryptosporidium</i> , speciation tests for both <i>C. parvum</i> <b>and</b> <i>C. hominis</i> are negative. #  Positive result in <i>Cryptosporidium</i> infectivity assay where <i>C.parvum</i> or <i>C.hominis</i> is also detected #
<b><i>Naegleria fowleri</i></b>	Any detection

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**(A) FILTRATION PLANT continued**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Turbidity</b> <i>plants with dedicated individual filter turbidimeters#</i>	>0.5 NTU for 15 consecutive minutes <i>unless it can be verified that the minimum UV dose was achieved at all times</i>	> 0.5 NTU for 15 consecutive minutes, <i>subject to verification of the minimum UV dose being achieved</i>  > 0.2 NTU for 30 consecutive minutes (combined filtrate as measured through online measurements) <i>unless it can be verified that the minimum UV dose was achieved at all times</i>
<b>Turbidity</b> <i>plants with shared filter turbidimeters #</i>	> 0.5 NTU for 2 consecutive sampling cycles# of an individual filter <i>unless it can be verified that the minimum UV dose was achieved at all times</i>  > 0.5 NTU for consecutive sampling cycles# of different filters <i>unless it can be verified that the minimum UV dose was achieved at all times</i>	> 0.5 NTU for 2 consecutive sampling cycles of an individual filter, <i>subject to verification of the minimum UV dose being achieved</i>  > 0.5 NTU for consecutive sampling cycles of different filters, <i>subject to verification of the minimum UV dose being achieved</i>  > 0.2 NTU for 2 consecutive sampling cycles of combined filtrate <i>unless it can be verified that the minimum UV dose was achieved at all times</i>
<b>Cryptosporidium or Giardia</b>	Any detection of presumptive organisms per 10 L  Positive result in <i>Cryptosporidium</i> infectivity assay where <i>C.parvum</i> or <i>C.hominis</i> are not detected#	
<b>Algal toxins or treatment chemicals</b>	Discharge of ≥ 50 KL process water containing concentrated algal toxins or treatment chemicals to the River Murray	Discharge of <50 KL process water containing concentrated algal toxins or treatment chemicals to the River Murray
<b>Treated water# discharges<sup>E</sup></b>	Discharge of ≥ 1 ML treated# water to a natural or modified watercourse# either directly or through the local stormwater system	Discharge of >50 KL <1 ML treated# water to a natural or modified watercourse# either directly or through the local stormwater system

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

## (B) PRIMARY DISINFECTION STATIONS

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<i>Cryptosporidium or Giardia</i>	Any detection of confirmed organisms per 10 L	
<i>Naegleria fowleri</i>	Any detection	
Chlorination or chloramination	Disinfection plant failure including underdosing that leads to consumers receiving undisinfecting water (determined by loss of chlorine residual) sourced from a groundwater supply known to be microbiologically contaminated or surface water supply **	
Chlorine/ammonia gas leak	Any uncontrolled leak that causes chlorine or ammonia gas to be released outside of any enclosure that could cause exposure to the public	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
Chlorination or chloramination	Disinfection plant failure including underdosing that leads to consumers receiving undisinfecting water (determined by loss of chlorine residual) sourced from a ground water supply **	Disinfection plant failure leading to interruption to disinfection dosing for more than 1 hr (and is not a Type 1 incident).
Chlorine	Residual > 5.0 mg/L for >15 consecutive minutes as measured via online analyser.	
Monochloramine	Residual > 5.0 mg/L for >30 consecutive minutes as measured via online analyser	
UV	Any failure including substantial underdosing (<50% of the normal dosing applied at the station) for ≥ 10 minutes	
Fluoride	>1.5 mg/L for > 15 consecutive minutes as measured by on-line analyser.	
<i>Cryptosporidium or Giardia</i>	Any detection of presumptive organisms per 10 L	

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

\*\* If a disinfection failure at Mt Gambier (i.e. surface water supply) results in the supply of undisinfecting water to customers for a period < 30 minutes, the incident can be raised as a Type 1 incident. If the disinfection failure occurs for a period ≥ 30 minutes, then the incident must be raised as a Priority Type 1 incident.

**TABLE 6: DISTRIBUTION SYSTEMS**

- Applies to drinking water which is being distributed to customers, e.g. pipelines and customer taps
- Includes after-chlorination secondary disinfection locations

**Priority Type 1 and Type 1 incidents will be notified and reported to agencies indicated below:**

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **EPA, LC** and **NRM** for discharge of treated water immediately by telephone and within 24 hrs by email/hard copy
- **OTR** as soon as practicable by telephone or email/hard copy
- **QEH** (for Aluminium) advised by **DHW** as soon as practicable by telephone.

**Type 2 incidents are to be notified and reported to agencies as indicated below:**

- **DHW** within 24 hrs by telephone or email/hard copy (with the exception of water main bursts)
- **EPA, LC** and **NRM** for water main bursts within 24 hrs by telephone or email/hard copy
- **OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	PRIORITY TYPE 1 CRITERIA	
Microcystin	> 1.3 µg/L toxin	
Nodularin	> 1.3 µg/L toxin	
Saxitoxin(s)	> 1 µg/L toxin	
Cylindrospermopsin(s)	> 1 µg/L toxin	
Viruses, <i>Naegleria fowleri</i>	Any detection	
<i>Cryptosporidium, Giardia</i>	Any detection of presumptive or confirmed organisms/10L in filtered supplies.  Any detection of confirmed organisms/10L in unfiltered supplies	
Pesticides#	Any exceedance of health values prescribed in the ADWG#	
Chlorine/ammonia gas leak from secondary chlorinators	Any uncontrolled leak that causes chlorine or ammonia gas to be released outside of any enclosure that could cause exposure to the public	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
pH	<5.5 or >10	
THMs#	>250 µg/L for a period ≥ 12 weeks  Or >300 µg/L	>250 µg/L
Chloral hydrate	> 100 µg/L	

**TABLE 6: DISTRIBUTION SYSTEMS continued.**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Acid soluble aluminium</b>	> 0.2 mg/L	
<b>Chlorine</b> at secondary disinfection stations	Residual > 5.0 mg/L for > 15 consecutive minutes as measured via online analyser	
<b>Monochloramine</b> at secondary disinfection stations	Residual > 5.0 mg/L for >30 consecutive minutes as measured via online analyser	
<b>Health-related organic chemicals #</b>	Any exceedance of health values prescribed in the ADWG	Any detection
<b>Health-related inorganic chemicals #</b>	Any exceedance of health values prescribed in the ADWG	
<b>Radionuclides</b>	Any exceedance of health values prescribed in the ADWG	
<b>Pesticides#</b>		Detection equivalent to > 10% of the health values prescribed in the ADWG
<b><i>E.coli</i></b>	Any detection of <i>E.coli</i> per 100mL in consecutive samples from a specific location	Any detection
<b><i>Cryptosporidium</i> or <i>Giardia</i></b>	Any detection of presumptive organisms per 10 L in unfiltered supplies.	
<b>Treated water# discharges<sup>E</sup></b>	Discharge of ≥ 1 ML treated# water to a natural or modified watercourse# either directly or through the local stormwater system	Discharge of > 50 KL < 1 ML treated# water to a natural or modified watercourse# either directly or through the local stormwater system
<b>Cross connection</b>	Detection of a cross connection, with confirmed backflow from a non-mains source to the drinking water network #	
<b>Contamination of a drinking water supply</b>	Direct contamination of a mains supply#  Direct contamination of a treated water storage#	
<b>Public complaints</b>		Evidence of clustered complaints (5 or more within a 48hr period for a specific zone) regarding a single water quality issue #

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

## **SECTION 2**

# **WASTEWATER INCIDENT CRITERIA - METRO**

**Metropolitan wastewater and recycled water  
treatment plants and networks**

*(excluding Myponga)*



**TABLE 7: METROPOLITAN WASTEWATER AND RECYCLED WATER TREATMENT PLANTS**

Discharge is identified as any uncontrolled escape from a SA Water system due to burst, overflow or infrastructure/equipment failure.

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator, EPA and DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **NRM & LC** for effluent disinfection where discharge is to fresh or estuarine water, sewage discharges and sludge discharges within 3 hrs by telephone.
- **PIRSA** for release of effluent containing cyanobacteria which may impact on animal health within 3 hrs by telephone
- **URE** for effluent disinfection and turbidity within 3 hrs by telephone.
- **OTR** as soon as practicable by telephone or email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **EPA** within 24 hrs by telephone or email/hard copy
- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.
- **LC** for odours, sewage discharges, treated effluent discharges and sludge discharges within 24 hrs by telephone or email/hard copy. No report required for *E. coli*
- **NRM** for sewage discharges treated effluent discharges and sludge discharges within 24 hrs by telephone or email/hard copy. No report required for *E. coli* or odours

PARAMETER	PRIORITY TYPE 1 CRITERIA	
Effluent disinfection <sup>PH</sup>	When the disinfection system fails and there is continual release (> 1 hr Glenelg or Christies Beach,) of undisinfecting effluent	
Chlorine/methane leak <sup>E</sup>	Uncontrolled chlorine or methane gas leakage or significant chemical spills that cause exposure to the public	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
Effluent turbidity <sup>E</sup>	When plant effluent is highly turbid beyond the normal process range, sufficient to cause marked discolouration above normal levels in receiving waters	
<i>E.coli</i> (or enterococci) <sup>PH</sup>		When numbers of <i>E.coli</i> or enterococci in the plant effluent discharge to receiving waters exceed <ul style="list-style-type: none"> <li>• 400 / 100mL (Glenelg, Christies Beach)</li> </ul>

**TABLE 7: METROPOLITAN WASTEWATER AND RECYCLED WATER TREATMENT PLANTS - continued**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Toxic cyanobacteria</b> <sup>PH</sup>  <b>Microcystin</b> ** <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	Detection of cyanobacteria (as per criteria below) in final product water which could impact on public health#:  > 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data)	Detection of cyanobacteria (as per criteria below) in final product water which could impact on public health#:  > 1.3 µg/L toxin ≥ 6,500 cells/mL (in the absence of toxicity data)
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data)	> 1.3 µg/L toxin ≥ 40,000 cells/mL (in the absence of toxicity data)
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> <i>(Anabaena circinalis)</i>	> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data)	> 1 µg/L toxin ≥ 2,000 cells/mL (in the absence of toxicity data)
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i>	> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data)	> 1 µg/L toxin ≥ 15,000 cells/mL (in the absence of toxicity data)
<b>Wastewater discharges</b>	Discharge of ≥ 1 ML of wastewater (treated or untreated) not contained by the drainage systems in the plant#	Discharge of < 1 ML of wastewater (treated or untreated) to a natural watercourse# either directly or through the stormwater system#
<b>Sludge discharges</b>	Discharge of ≥ 100 KL of sludge not contained by the drainage systems in the plant  Discharges of ≥ 10 KL of sludge not contained by the drainage systems in the plant and discharged to a natural watercourse# either directly or through the stormwater system#	Discharge of < 100 KL of sludge to the environment not contained by the drainage systems in the plant (if enters stormwater system or natural watercourse# and ≥10 KL, Type 1 applies)
<b>Odours</b> <sup>E</sup>		Release of odours from a wastewater treatment plant causing greater than 2 customer complaints within 48 hrs.

<sup>PH</sup> Public health wastewater incident

<sup>E</sup> Environmental wastewater incident

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 8: METROPOLITAN WASTEWATER AND RECYCLED WATER NETWORKS**

Discharge is identified as any uncontrolled escape from a SA Water system due to burst, overflow or infrastructure/equipment failure.

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator, EPA and DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **NRM and LC** within 3 hrs by telephone.
- **DPTI** within 3 hrs by telephone for wastewater or sludge discharges that may impact on water quality at West Lakes
- **OTR** as soon as practicable by telephone or email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **EPA** within 24 hrs by telephone or email/hard copy.
- **DHW, LC, NRM and OTR** within 24 hrs -by telephone or email/hard copy.
- **DPTI** within 48 hrs by email for wastewater or sludge discharges that may impact on water quality at West Lakes

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<b>Untreated wastewater or sludge discharge</b> <sup>E/PH</sup>	Any untreated wastewater or sludge discharge to an area with general public access and potential for high risk exposure (i.e. childcare facility, schools, aged care facilities, markets, commercial food preparation areas and recreational areas e.g. bathing areas) or where public access cannot be easily controlled # <sup>E/PH</sup>	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Wastewater discharges</b>	Discharge of ≥1 ML of wastewater (treated or untreated) as a result of failure within a wastewater network system #	Discharge of <1ML of wastewater (treated or untreated) to a natural watercourse# either directly or through the stormwater system#
<b>Sludge discharges</b>	Discharge of ≥100 KL of sludge due to failure in the sludge main.  Discharge of ≥10 KL of sludge to a natural watercourse# either directly or through the stormwater system	Discharge of <100 KL of sludge due to failure in the sludge main.  <i>(if enters stormwater system or natural watercourse# and ≥10 KL, Type 1 applies)</i>
<b>Odours</b> <sup>E</sup>		Release of odours from one network location causing greater than 2 customer complaints within 48 hrs.

<sup>E</sup> Environmental wastewater incident

<sup>PH</sup> Public health wastewater incident

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 9: BOLIVAR DAFF PLANT AND HIGH SALINITY PLANT**

Type 1 incidents will be notified and reported to agencies as indicated below:

- Water Incident Coordinator, DHW and immediately by telephone and within 24 hrs by email/hard copy.
- OTR as soon as practicable by telephone or email/hard copy.

Type 2 incidents are to be notified and reported to agencies as indicated below:

- DHW, and OTR within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>STABILISATION LAGOONS</b>		
Primary effluent		Primary effluent from activated sludge plant diverted to stabilisation lagoons
Lagoon area		Lagoon areas less than 210 Ha
<i>E.coli</i>	>10,000 organisms/100mL in lagoon effluent	>4,000 organisms/ 100 mL in lagoon effluent
<b>DAFF PLANT</b>		
Turbidity <sup>PH</sup>	Daily average turbidity exceeds 1 NTU <i>or</i>  On-line turbidity exceeds 5NTU continuously for more than 60 minutes and production is not stopped	Production stopped due to high filtered water turbidity# (other than a Type 1 incident)
Chlorination <sup>PH</sup>	Chlorination fails for a period exceeding 30 minutes and production is not stopped <i>or</i>  Free chlorine C.t < 10 mg.min/L continuously for a period exceeding 60 minutes and production is not stopped	Production stopped due to either interruption to chlorination or low C.t (< 10 mg.min/L)
Cryptosporidium <sup>PH</sup>	Any detection / 50 L in product water	Any detection > 50 confirmed oocysts/L in lagoon influent water
<i>E.coli</i> <sup>PH</sup>	>10 organisms / 100 mL at the chlorine contact tank outlet	> 4 organisms / 100 mL at the chlorine contact tank outlet

<sup>PH</sup> Public health wastewater incident

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 9: BOLIVAR DAFF PLANT AND HIGH SALINITY PLANT continued**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
Chemical quality <sup>PH</sup>		Any exceedance of chemical criteria defined in approval
Toxic cyanobacteria <sup>PH</sup>	Refer to additional criteria in Table 7 for detection of cyanobacteria in product water	>500,000 cells/mL of Microcystis or other potentially toxic cyanobacteria at the DAFF inlet  Refer to additional criteria in Table 7 for detection of cyanobacteria in product water
<b>HIGH SALINITY PLANT</b>		
<i>E.coli</i>	>1000 organisms / 100mL in product water supplied to reuse	

<sup>PH</sup> Public health wastewater incident

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 10: MAWSON LAKES RECYCLING SCHEME**

**Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:**

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **EPA** for sewage spills immediately by telephone and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone or email/hard copy.

**Type 2 incidents are to be notified and reported to agencies as indicated below:**

- **EPA** for sewage spills and chemical/physical quality within 24 hrs by telephone or email/hard copy.
- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<b>Cross-connection</b> <sup>PH</sup> Mawson Lakes	Detection of any cross connection with potential to contaminate the drinking water network or drinking water supply of a third party	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Chlorination</b> <sup>PH</sup> Reclaimed stormwater	Chlorination fails for more than 30 minutes before flow to the Greenfields Mixing Tank is stopped  Free chlorine residual in the stormwater < 0.2 mg/L for more than 60 minutes before flow to the Greenfields Mixing Tank is stopped	Flow to the tank stopped due to interruption to chlorination or low free chlorine residual detected on the stormwater line
<b>E.coli</b> <sup>PH</sup> Reclaimed stormwater prior to chlorination	> 1000 organisms / 100 mL	> 100 organisms / 100 mL
<b>Sewage spills</b> <sup>PH</sup> Parafield Stormwater Catchment	Sewage spills of ≥ 100 KL discharged to a natural watercourse or wetland either directly or through Parafield stormwater catchment	Sewage spills of < 100 KL discharged to a natural watercourse or wetland either directly or through Parafield stormwater catchment
<b>E.coli</b> <sup>PH</sup> Mawson Lakes		Any detection of <i>E.coli</i> /100 mL in consecutive samples
<b>Chemical and physical quality</b> <sup>PH</sup> Reclaimed stormwater		Any exceedance of requirements specified by EPA for the ASR scheme
<b>Public complaints</b> <sup>PH</sup>	Evidence of clustered complaints (5 or more within a 48 hr period) regarding recycled water quality	

<sup>PH</sup> Public health wastewater incident

**TABLE 11: GLENELG – ADELAIDE RECYCLED WATER SCHEME (GARWS)**

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone or email/hard copy.

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<b>Cross-connection</b> <sup>PH</sup> GARWS	Detection of any cross connection with potential to contaminate the drinking water network or drinking water supply of a third party	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Membrane Pressure Decay Rate Test (PDRT)</b> <sup>PH</sup>	Any membrane skid that fails the PDRT (> 4.8 kPa/min) and is not automatically and immediately taken out of service	
<b>Post-membrane Turbidity</b> <sup>PH</sup>	Daily average turbidity <sup>o</sup> exceeds 0.15 NTU; <i>or</i> On-line turbidity exceeds 0.3 NTU continuously for more than 30 minutes and production is not stopped.	Production stopped due to high filtered water turbidity (other than a type 1 incident).
<b>UV Transmission</b> <sup>PH</sup>		Daily average <sup>o</sup> UVT < 50%
<b>UV Irradiation Disinfection</b> <sup>PH</sup>	UV light system fails for a period exceeding 30 minutes and production is not stopped; <i>or</i> UV Reduction Equivalent Dose (RED) < 10 mJ/cm <sup>2</sup> continuously on an individual train for a period exceeding 60 minutes and offending train is not replaced or production not stopped.	Daily average <sup>o</sup> UV RED on an individual train < 10 mJ/cm <sup>2</sup> .
<b>Chlorination</b> <sup>PH</sup>	Chlorination fails for a period exceeding 30 minutes and production is not stopped; <i>or</i> Free chlorine C.t < 16 mg.min/L continuously for a period exceeding 60 minutes and production is not stopped.	Production stopped due to either interruption to chlorination or low C.t (< 16 mg.min/L)
<b>E.coli</b> <sup>PH</sup>	> 10 organisms / 100 mL at the chlorine contact pipe outlet.	> 4 organisms / 100 mL at the chlorine contact pipe outlet.

<sup>PH</sup> Public health wastewater incident

<sup>o</sup> The criteria based on daily averages for turbidity, UV dose and UV transmission only apply if the relevant process unit/train has been operated for a period greater than one continuous hour in a given day.

**TABLE 11: GLENELG – ADELAIDE RECYCLED WATER SCHEME (GARWS)  
continued**

RECYCLED WATER – DUAL RETICULATION NETWORK		
<i>E.coli</i> <sup>PH</sup>		Any detection of <i>E.coli</i> /100 mL in consecutive samples

<sup>PH</sup> Public health wastewater incident



**TABLE 12: SOUTHERN URBAN REUSE SCHEME (SURS)**

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy
- **OTR** as soon as practicable by telephone or email/hard copy.

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hardcopy
- **OTR** within 24 hrs by telephone or email/hard copy

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<b>Cross-connection<sup>PH</sup></b>	Detection of any cross connection with potential to contaminate the drinking water network or drinking water supply of a third party.	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Membrane Pressure Decay Test (PDT)<sup>PH</sup></b>	Any membrane skid that fails the PDT (> 13.4 kPa/min) and is not automatically and immediately taken out of service	
<b>Post-membrane Turbidity<sup>PH</sup></b>	Daily average turbidity <sup>δ</sup> exceeds 0.15 NTU; <i>or</i> On-line turbidity exceeds 0.3 NTU continuously for more than 30 minutes and production is not stopped.	Production stopped due to high filtered water turbidity (other than a Type 1 incident).
<b>UV Transmission<sup>PH</sup></b>		Daily average <sup>δ</sup> UVT < 50%
<b>UV Irradiation Disinfection<sup>PH</sup></b>	UV light system fails for a period exceeding 30 minutes and production is not stopped or the problem train is not taken off-line; <i>or</i> UV Reduction Equivalent Dose (RED) < 55 mJ/cm <sup>2</sup> continuously on an individual train for a period exceeding 60 minutes and the offending train is not replaced or production not stopped.	Daily average <sup>δ</sup> UV RED on an individual train < 55 mJ/cm <sup>2</sup> .

<sup>PH</sup> Public health wastewater incident

<sup>δ</sup> The criteria based on daily averages for turbidity, UV dose and UV transmission only apply if the relevant process unit/train has been operated for a period greater than one hour in a given day.

**TABLE 12: SOUTHERN URBAN REUSE SCHEME (SURS) continued**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Chlorination</b> <sup>PH</sup>	Chlorination fails for a period exceeding 30 minutes and production is not stopped; <i>or</i> Free chlorine C.t < 20 mg.min/L continuously for a period exceeding 60 minutes and production is not stopped.	Production stopped due to either interruption to chlorination or low C.t (< 20 mg.min/L)
<b>Chloramination</b> <sup>PH</sup>	Chloramination fails for a period exceeding 30 minutes and flow is not stopped; <i>or</i> Chloramine C.t < 428 mg.min/L continuously for a period exceeding 60 minutes and production is not stopped.	Production stopped due to either interruption to chloramination or low chloramine C.t (< 428 mg.min/L)
<b><i>E.coli</i></b> <sup>PH</sup>	> 10 organisms / 100 mL at the chlorine contact tank outlet	> 4 organisms / 100 mL at the chlorine contact tank outlet.
<b>Public complaints</b> <sup>PH</sup>	Evidence of clustered complaints (5 or more within a 48 hr period) regarding recycled water quality	
<b>RECYCLED WATER – DUAL RETICULATION NETWORK</b>		
<b><i>E.coli</i></b> <sup>PH</sup>		Any detection of <i>E.coli</i> /100 mL in consecutive samples

<sup>PH</sup> Public health wastewater incident

**TABLE 13: METROPOLITAN REUSE SCHEMES – RESTRICTED USE**

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator and DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone or email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>CHRISTIES BEACH - A AND B PLANT (ON-SITE, WBWC, CITY OF ONKAPARINGA)# GLENELG (ON-SITE, ADELAIDE SHORES- restricted uses portion)#</b>		
<b>Chlorination</b> <sup>PH</sup> Recycled wastewater	Chlorination fails for more than 60 continuous minutes before supply is stopped to consumers	
<b>E.coli</b> <sup>PH</sup>	>1,000 organisms / 100 mL after chlorination	
<b>CHRISTIES BEACH – C PLANT (WBWC)#</b>		
<b>Membrane permeate turbidity</b> <sup>PH</sup>	> 0.5NTU continuously for a period exceeding 60 minutes for any train	Daily average turbidity >0.2NTU from any train, providing the train has operated for a period greater than 60 continuous minutes  Recycled water supply stopped due to high filtered water turbidity (other than a type 1 incident)
<b>UV disinfection</b> <sup>PH</sup>	UV irradiation in any channel fails for a period exceeding 60 minutes	Daily average <sup>§</sup> UV RED <15 mJ/cm <sup>2</sup> on any channel providing UV irradiation has been operating for a period greater than 60 minutes
<b>E. coli in product water</b> <sup>PH</sup>	>1,000 <i>E.coli</i> / 100 mL	> 400 <i>E.coli</i> / 100mL
<b>ALDINGA WWTP FINAL EFFLUENT AC #</b>		
<b>Chlorination</b> <sup>PH</sup> Recycled wastewater	Chlorination fails for more than 60 continuous minutes before supply is stopped to consumers	
<b>E.coli</b> <sup>PH</sup>	> 1,000 organisms / 100 mL after chlorination	

**TABLE 13: METROPOLITAN REUSE SCHEMES – RESTRICTED USE cont**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>ALDINGA MAR</b>		
<b><i>E.coli</i><sup>PH</sup></b>	Any detection of <i>E.coli</i> / 100mL in the observation bore (Site 8).  >1,000 <i>E.coli</i> / 100 mL in extraction bore water samples when water is being extracted	>400 <i>E. coli</i> / 100mL in extraction bore water samples
<b>Salinity (EC)<sup>PH</sup></b>		10% reduction in salinity in the observation bore (Site 8) during injection <sup>#</sup>

<sup>#</sup> see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

<sup>ø</sup> The criteria based on daily averages for turbidity and UV dose only apply if the relevant process unit has been operated for a period greater than one continuous hour in a given day.

**TABLE 14: GENERAL STORMWATER SCHEMES**

**Type 1 incidents will be notified and reported to agencies as indicated below:**

- **Water Incident Coordinator, EPA and DHW** immediately by telephone and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone or email/hard copy.

**Type 2 incidents are to be notified and reported to agencies as indicated below:**

- **DHW and EPA** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Chlorination</b> <sup>PH</sup>	Chlorination fails for a period exceeding 60 minutes and production is not stopped	
<b>UV Irradiation Disinfection</b> <sup>PH</sup>	UV light system fails for a period exceeding 60 minutes and production is not stopped	
<b><i>E.coli</i></b>	> 1000 organisms / 100 mL in product water	> 100 organisms / 100 mL in product water

<sup>PH</sup> Public health wastewater incident

## **SECTION 3**

# **WASTEWATER INCIDENT CRITERIA -REGIONAL**

**Regional wastewater and recycled water  
treatment plants and networks**

*(includes Myponga)*

**TABLE 15: REGIONAL WASTEWATER AND RECYCLED WATER TREATMENT PLANTS**

Discharge is identified as any uncontrolled escape from a SA Water system due to burst, overflow or infrastructure/equipment failure.

INCIDENT reporting to DHW call 1300 043 215

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator, EPA and DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **NRM & LC** for effluent disinfection where discharge is to fresh or estuarine water, sewage discharges and sludge discharges within 3 hrs by telephone.
- **PIRSA** for release of effluent containing cyanobacteria which may impact on animal health within 3 hrs by telephone
- **URE** for effluent disinfection and turbidity within 3 hrs by telephone.
- **OTR** as soon as practicable by telephone or email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **EPA** within 24 hrs by telephone or email/hard copy
- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.
- **LC** for odours, sewage discharges, treated effluent discharges and sludge discharges within 24 hrs by telephone or email/hard copy. No report required for *E. coli*
- **NRM** for sewage discharges treated effluent discharges and sludge discharges within 24 hrs by telephone or email/hard copy. No report required for *E. coli* or odours

PARAMETER	PRIORITY TYPE 1 CRITERIA	
Effluent disinfection <sup>PH</sup>	When the disinfection system fails and there is continual release (> 2 hrs, Hahndorf, or Finger Point) of undisinfected effluent to receiving waters.	
Chlorine/methane leak <sup>E</sup>	Uncontrolled chlorine or methane gas leakage or significant chemical spills that cause exposure to the public	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
Effluent disinfection <sup>PH</sup>	When the disinfection system fails and there is continual release (> 2 hrs regional plants) of undisinfected effluent to receiving waters	
Effluent turbidity <sup>E</sup>	When plant effluent is highly turbid beyond the normal process range, sufficient to cause marked discolouration above normal levels in receiving waters	
<i>E.coli</i> (or enterococci) <sup>PH</sup>		When numbers of <i>E.coli</i> or enterococci in the plant effluent discharge to receiving waters exceed <ul style="list-style-type: none"> <li>• 400 / 100mL (Finger Point, Hahndorf, Heathfield, Victor Harbour, Bird in Hand)</li> <li>• 2000 / 100mL (Angaston)</li> </ul>

**TABLE 15: REGIONAL WASTEWATER AND RECYCLED WATER TREATMENT PLANTS - continued**

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Toxic cyanobacteria</b> <sup>PH †</sup>  <b>Microcystin</b> ** <i>Microcystis aeruginosa</i> <i>Microcystis flos-aquae</i>	Detection of cyanobacteria (as per criteria below) in final product water which could impact on public health#:  > 13 µg/L toxin ≥ 65,000 cells/mL (in the absence of toxicity data)	Detection of cyanobacteria (as per criteria below) in final product water which could impact on public health#:  > 1.3 µg/L toxin ≥ 6,500 cells/mL (in the absence of toxicity data)
<b>Nodularin</b> <i>Nodularia spumigena</i>	> 13 µg/L toxin ≥ 400,000 cells/mL (in the absence of toxicity data)	> 1.3 µg/L toxin ≥ 40,000 cells/mL (in the absence of toxicity data)
<b>Saxitoxin(s)</b> <i>Dolichospermum circinale</i> <i>(Anabaena circinalis)</i>	> 3 µg/L toxin ≥ 20,000 cells/mL (in the absence of toxicity data)	> 1 µg/L toxin ≥ 2,000 cells/mL (in the absence of toxicity data)
<b>Cylindrospermopsin(s)</b> <i>Cylindrospermopsis raciborskii</i>	> 10 µg/L toxin ≥ 150,000 cells/mL (in the absence of toxicity data)	> 1 µg/L toxin ≥ 15,000 cells/mL (in the absence of toxicity data)
<b>Wastewater discharges</b>	Discharge of ≥ 100 KL of wastewater (treated or untreated) not contained by the drainage systems in the plant#	Discharge of < 100KL of wastewater (treated or untreated) to a natural watercourse# either directly or through the stormwater system#
<b>Sludge discharges</b>	Discharge of ≥ 100 KL of sludge not contained by the drainage systems in the plant  Discharges of ≥ 10 KL of sludge not contained by the drainage systems in the plant and discharged to a natural watercourse# either directly or through the stormwater system#	Discharge of < 100 KL of sludge to the environment not contained by the drainage systems in the plant (if enters stormwater system or natural watercourse# and ≥10 KL, Type 1 applies)
<b>Odours</b> <sup>E</sup>		Release of odours from a wastewater treatment plant causing greater than 2 customer complaints within 48 hrs.

<sup>PH</sup> Public health wastewater incident

<sup>E</sup> Environmental wastewater incident

† note different cyanobacterial toxin levels may apply dependent on the end use. Refer to WQ\_T08

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria



**TABLE 16: REGIONAL WASTEWATER AND RECYCLED WATER NETWORKS**

**Discharge is identified as any uncontrolled escape from a SA Water system due to burst, overflow or infrastructure/equipment failure.**

INCIDENT reporting to DHW call 1300 043 215

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator, EPA and DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **NRM** and **LC** within 3 hrs by telephone.
- **DPTI** within 3 hrs by telephone for wastewater or sludge discharges that may impact on water quality at West Lakes
- **OTR** as soon as practicable by telephone or email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **EPA** within 24 hrs by telephone or email/hard copy.
- **DHW, LC, NRM** and **OTR** within 24 hrs -by telephone or email/hard copy.
- **DPTI** within 48 hrs by email for wastewater or sludge discharges that may impact on water quality at West Lakes

PARAMETER	PRIORITY TYPE 1 CRITERIA	
<b>Untreated wastewater or sludge discharge</b> <sup>E/PH</sup>	Any untreated wastewater or sludge discharge to an area with general public access and potential for high risk exposure (i.e. childcare facility, schools, aged care facilities, markets, commercial food preparation areas and recreational areas e.g. bathing areas) or where public access cannot be easily controlled # <sup>E/PH</sup>	
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Wastewater discharges</b>	Discharge of ≥100 KL of wastewater (treated or untreated) as a result of failure within a wastewater network system #	Discharge of <100 KL of wastewater (treated or untreated) to a natural watercourse# either directly or through the stormwater system#
<b>Sludge discharges</b>	Discharge of ≥100 KL of sludge due to failure in the sludge main.  Discharge of ≥10 KL of sludge to a natural watercourse# either directly or through the stormwater system	Discharge of <100 KL of sludge due to failure in the sludge main.  <i>(if enters stormwater system or natural watercourse# and ≥10 KL, Type 1 applies)</i>
<b>Odours</b> <sup>E</sup>		Release of odours from one network location causing greater than 2 customer complaints within 48 hrs.

<sup>E</sup> Environmental wastewater incident

<sup>PH</sup> Public health wastewater incident

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

## TABLE 17: PORT LINCOLN SCHEME

INCIDENT reporting to DHW call 1300 043 215

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone or email/hard copy
- **EPA** for storage tank overflow immediately by telephone and within 24 hrs by email/hard copy

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.
- **EPA** for storage tank overflow within 24 hrs by telephone or email/hard copy

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>Filtered water turbidity</b> <sup>PH</sup>	Turbidity exceeds 2 NTU for more than 60 minutes and flow from the raw water pumps into the reuse plant is not stopped	Flow from the raw water pumps into the reuse plant stopped due to high filtered water turbidity (other than Type 1 incident)
<b>UV Irradiation Disinfection</b> <sup>PH</sup> Recycled wastewater	Transmissivity falls below 43% for more than 60 continuous minutes and flow from the raw water pumps into the reuse plant is not stopped  or > 10% of UV lamps (7 out of 60) fail and flow from the raw water pumps into the reuse plant is not stopped.	
<b>Chlorine Disinfection</b> <sup>PH</sup>	Chlorinator fails for more than 60 continuous minutes and flow from the raw water pumps into the reuse plant is not stopped  When recycled water is being produced, the chlorine residual entering the 300 KL tank falls below 0.2 mg/L for 60 minutes and flow from the raw water pumps into the reuse plant is not stopped or the chlorine dose is not increased	
<b>E.coli</b> <sup>PH</sup>	> 10 organisms / 100 mL after UV light irradiation and chlorine disinfection	>4 organisms / 100 mL after UV light irradiation and chlorine disinfection
<b>Storage tank overflow</b> <sup>E</sup>	Tank overflows for a period of greater than 60 minutes	Tank overflows for a period of less than 60 minutes

<sup>PH</sup> Public health wastewater incident

<sup>E</sup> Environmental wastewater incident

**TABLE 18: VICTOR HARBOR SCHEME**

INCIDENT reporting to DHW call 1300 043 215

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator and DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone by email/hard copy.

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy.
- **OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
Post-membrane filtered water turbidity <sup>PH</sup>	Average 24-hour turbidity exceeds 0.5 NTU; <i>Or</i> Turbidity exceeds 1.0 NTU continuously for more than 60 minutes	High# filtered water turbidity (other than a Type 1 incident)
Turbidity at WWTP Balancing Storage Outlet <sup>PH</sup>		Turbidity > 20 NTU
UV Transmission <sup>PH</sup>	Daily average UVT < 50%	Daily average UVT < 60%
UV Disinfection <sup>PH</sup>	UV irradiation fails for a period exceeding 60 minutes and production is not stopped	Production is stopped due to low dose# (other than a type 1 incident).
Chlorine Disinfection (except during start-up of the chlorinator) <sup>PH</sup>	Chlorination fails for a period exceeding 30 minutes and production is not stopped; <i>or</i> Free chlorine C.t < 17 mg.min/L continuously for a period exceeding 60 minutes and production is not stopped;	Production is stopped due to chlorination failure or low C.t # (other than a type 1 incident).
<i>E. coli</i> after chlorination <sup>PH</sup>	> 10 organisms / 100 mL at the chlorine contact tank outlet	> 4 organisms / 100 mL at the chlorine contact tank outlet.

<sup>PH</sup> Public health wastewater incident

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 19: REGIONAL RECYCLED WATER SCHEMES-RESTRICTED USE**

INCIDENT reporting to DHW call 1300 043 215

Priority Type 1 and Type 1 incidents will be notified and reported to agencies as indicated below:

- **Water Incident Coordinator** and **DHW** immediately by telephone (Priority Type 1's are to be reported by direct voice contact and not via phone message) and within 24 hrs by email/hard copy.
- **OTR** as soon as practicable by telephone or email/hard copy.

Type 2 incidents are to be notified and reported to agencies as indicated below:

- **DHW** within 24 hrs by telephone or email/hard copy.

**OTR** within 24 hrs by telephone or email/hard copy.

PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>MYPONGA</b>		
<i>E.coli</i> <sup>PH</sup>	> 10,000 organisms / 100 mL in final product water	> 4,000 organisms / 100 mL in final product water
<b>HAHNDORF MANNUM PORT AUGUSTA WEST WHYALLA WRP</b>		
<b>Chlorination</b> <sup>PH</sup> Recycled wastewater	Chlorination fails for more than 60 continuous minutes before supply is stopped to consumers	
<i>E.coli</i> <sup>PH</sup>	> 1,000 organisms / 100 mL after chlorination	>400 organisms/100 mL after chlorination
<b>LEIGH CREEK</b>		
<i>E.coli</i>	>10,000 organisms/100mL after disinfection	>4,000 organisms/100mL after disinfection
<b>WHYALLA WWTP</b>		
<i>E.coli</i>	>100,000 organisms/100mL in final product water	>40,000 organisms/100mL in final product water

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

**TABLE 19: REGIONAL REUSE SCHEMES – RESTRICTED USE continued**

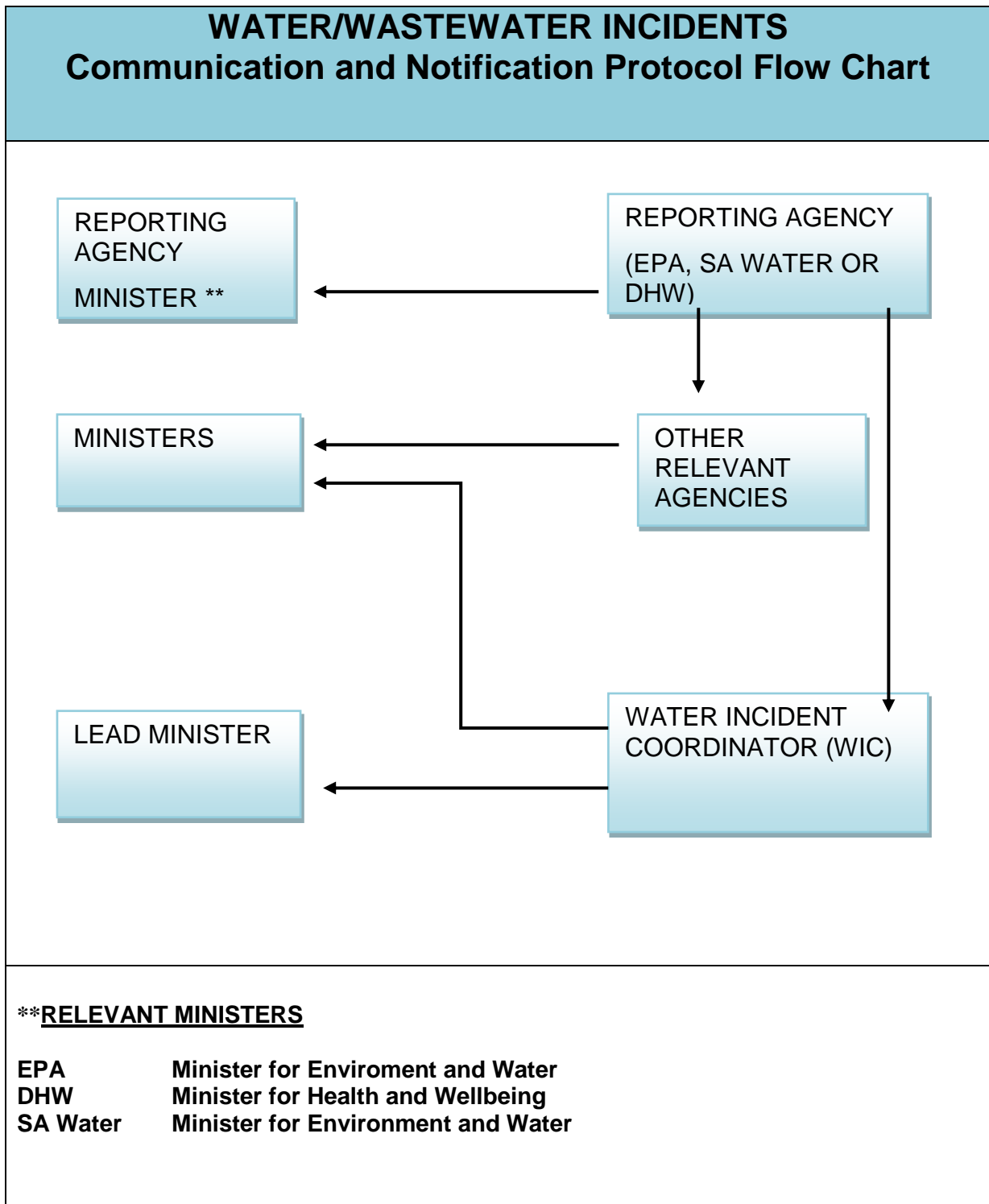
PARAMETER	TYPE 1 CRITERIA	TYPE 2 CRITERIA
<b>BIRD IN HAND</b>		
<b>UV irradiation for disinfection</b> <i>PH</i>	UV light system fails for a period exceeding 30 minutes and the recycled water storage is not isolated;  UV Reduction Equivalent Dose (RED) <58 mJ/cm <sup>2</sup> continuously for a period exceeding 60 minutes and the offending reactor train is not taken off-line or the recycled water storage is not isolated	Daily average <sup>δ</sup> UV RED < 58 mJ/cm <sup>2</sup> for any reactor
<b><i>E. coli</i> (or thermotolerant coliforms) after disinfection</b> <i>PH</i>	> 1,000 organisms / 100 mL at the UV reactor outlet	> 400 organisms/ 100 mL at the UV reactor outlet
<b>ANGASTON GUMERACHA MILLICENT MURRAY BRIDGE</b>		
<b><i>E.coli</i></b> <i>PH</i>	> 10,000 organisms / 100 mL in final product water	>4,000 organisms/ 100 mL in final product water

# see Protocol Explanatory Notes (in WQ\_T08) for additional information on this parameter/ criteria

*PH* Public health wastewater incident

<sup>δ</sup> The criteria based on daily averages for turbidity and UV dose only apply if the relevant process unit has been operated for a period greater than one continuous hour in a given day.

FIGURE 1:



**FIGURE 2:**

### **Duties of the Water Incident Coordinator (WIC)**

**Provide a single point of contact for the communication of water/wastewater incidents within the government and to ensure that the Minister for Health and Wellbeing and the Minister for Environment and Water are notified of serious (Priority Type 1 and Type 1) incidents.**

Duties include:

- Receive incident reports and ensure that the required agencies and the Minister for Health and Wellbeing and the Minister for Environment and Water have been reported in accordance with the Water/Wastewater Incident Notification and Communication Protocol.
- Following receipt of an incident report of a serious nature
  - Liaise with the three Ministers and confirm the lead Minister
  - Liaise with the relevant agencies to ensure that accurate and up to date reports are received on the management and status of incidents
  - Keep the lead Minister informed and in conjunction with the lead Minister liaise with the Premier's Office
  - Assist the lead Minister with the communication of incidents to the public as required
- Be responsible for administration of the Water/Wastewater Incident Notification and Communication Protocol including emergency contact lists, to ensure its ongoing effectiveness.

### **Duties of the Lead Minister**

**Manage the communication of water/wastewater incidents to the Premier, Cabinet and the Public**

Duties include:

- Liaise with other Agency Ministers
- Ensure that the Premier and Cabinet are provided with accurate and up to date reports on the management and status of incidents
- Evaluate the incident and determine whether the public should be advised
- Manage the communication of incidents to the public as required

**TABLE 20: EMERGENCY CONTACTS**

<b>DEPARTMENT FOR HEALTH AND WELLBEING</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>WATER QUALITY</b>				
Email notifications to <a href="mailto:waterquality@health.sa.gov.au">waterquality@health.sa.gov.au</a>				
<b>Incident reporting to water quality on-call (24 hrs)</b>				<b>0421 618 311</b>
David Cunliffe	Principal Water Quality Adviser	8226 7153 8264 2393 A/H		0401 124 829
Renay Cooke	Senior Water Quality Advisor	8226 6867		
Suzanne Froscio	Senior Scientific Officer (Water Quality)	8207 2398		
Natalie Bolton	Senior Scientific Officer (Water Quality)	8226 8469		
<b>WASTEWATER –all incidents for regional wastewater and recycled water treatment plants and networks</b>				
Email notifications to <a href="mailto:HealthWastewaterManagement@sa.gov.au">HealthWastewaterManagement@sa.gov.au</a>				
<b>Incident reporting to wastewater on call (24 hrs)</b>				<b>1300 043 215</b>
Michelle Wittholz	Manager, Wastewater Management	8226 7105		0434 654 364
<b>ENVIRONMENTAL PROTECTION AGENCY</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>PRIORITY TYPE 1 AND TYPE 1 INCIDENTS</b>				
EPA First Point of Contact- <b>Emergency Response Team</b>	Emergency response for all Priority Type 1 and Type 1 incidents (except where indicated under Tables 1 & 5)	1800 100 833 or 8204 2004 (only if no response from 1800 number)		
EPA Second Point of Contact – <b>Wastewater Incidents</b>	Kevin Rowley, Team Leader & ERT Coordinator	8204 1986  0409 580 148		
<b>TYPE 2 INCIDENTS</b>				
Treated water incidents	Water Quality Science, Water Quality Branch	Fax notification via SAAM		
Wastewater incidents	Wastewater Sector, EPA Compliance Branch	Fax notification via SAAM		
River Murray	Water Quality Science, Water Quality Branch	<a href="mailto:david.palmer@sa.gov.au">david.palmer@sa.gov.au</a> <a href="mailto:andrew.solomon@sa.gov.au">andrew.solomon@sa.gov.au</a>		
<b>SOUTH AUSTRALIAN WATER CORPORATION</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>SENIOR LEADERSHIP TEAM</b>				
Roch Cheroux	Chief Executive	7424 1821	7003 1821	
Mark Gobbie	General Manager Asset Operations & Delivery	7424 3194	7003 3194	0412 879 145
Jamie Hollamby	General Manager Business Services	7424 1900	7003 1900	0414 995 647
Kerry Rowlands	General Manager Customer Delivery	7424 1377	7003 1377	0419 851 395
<b>ASSET OPERATIONS AND DELIVERY</b>				
<b>Production and Treatment</b>				
Lisa Hannant	Snr Mgr Production and Treatment	7424 1885	7003 1885	0428 111 832
Greg Dworak	Mgr Water Sourcing, Storage & Quality	7424 1991	7003 1991	0427 604 485
Maree Shephard	Mgr Water Treatment & Quality (Groundwater)	7424 3110		0418 841 205
Gavin Ralston	Mgr Water Treatment & Quality (Central)	8399 9914	8399 9800	0417 873 791
Andrew Prosser	Mgr Water Treatment & Quality (N&W)			0477 364 542
Nick Swain	Mgr Production and Treatment Support	7424 1343	7003 1343	0457 522 521
Ben Tattersall	Mgr Wastewater Treatment (N&W)	8638 5422		0475 837 463
Eddie Brooks	Mgr Wastewater Treatment (C&E)	7424 3111		0437 628 644
Shannon Uern	Mgr Trade Waste & Networks	7424 1320	7003 1320	0458 184 101



<b>SOUTH AUSTRALIAN WATER CORPORATION continued</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>Technical and Commercial Operations</b>				
Mauro Farinola	Snr Manager Technology & Commercial Ops	7424 1145	7003 1145	0438 066 560
Chris Gouletsas	Mgr Contract Operations	7424 3803	7003 3803	0477 744 354
Daniel Bonini	Contract Manager (Trility/ADP)	7424 1831	70031831	0466 658 351
Vanessa Loveder	Contract Manager (Trility/ADP)	7424 2093	7003 2093	0477 349 545
<b>Remote Communities / Capital Delivery Projects</b>				
Randall Bonner	Snr Mgr Capital Delivery Projects	7424 1818	7003 1818	0409 448 135
Simon Wurst	Manager Remote Communities	7424 1330	7003 1330	0401 120 265
Arne Mortimer	Remote CommunitiesTech Support Officer	7424 1665	7003 1665	0477 374 856
Daniel Brown	Project Engineer	7424 1926	7003 1926	0476 811 250
<b>Australian Water Quality Centre/Lab Services</b>				
AWQC Emergency Response (24 hrs)				0417 863 575
Karen Simpson	Snr Mgr Lab Services	7424 2065		0417 852 480
Adam Williams	A/Mgr Chemistry	7424 2153		0409 846 114
Thorsten Mosisch	Mgr Life Sciences	7424 1984		0423 841 394
Maz Ghamrawi	A/Mgr Field Services	7424 1914		0428 110 782
Lorraine Bulbeck	Mgr Customer & Business Development	7424 2123		0417 894 399
<b>BUSINESS SERVICES</b>				
<b>Water Expertise</b>				
Daniel Hoefel	Snr Mgr Water Expertise	7424 1889	7003 1889	0467 780 239
Amber Lang	Mgr WQ Improvement & Compliance	7424 1301	7003 1301	0455 083 993
Raf Nicdao	DHW Liaison Officer	7424 2022	7003 2022	0419 199 711
John Winter	Monitoring and Assurance Officer	7424 1089	7003 1089	0418 609 421
Jason West	Manager Water Process Design & Stds	7424 1866	7003 1866	0428 115 981
<b>Wastewater, Environmental and Research Expertise</b>				
James Crocker	Snr Mgr WW, Envir and Research Expertise	7424 1978	7003 1978	0419 834 464
Alex Donald	Mgr Environmental Regulation and Sustainability	7424 2428	7003 2428	0417 832 728
Angela Dewdney	Snr Environmental Management Officer	7424 1420	7003 1420	0405 388 719
Gretchen Marshall	Recycled Water Specialist	7424 2194	8339 9800	0459 824 301
<b>CUSTOMER SERVICES</b>				
<b>Field Services</b>				
Colin Bell	Snr Mgr Customer Field Services	7424 1940	7003 1940	0403 268 022
John Carr	Mgr Customer Field Services	8399 9907	7003 2459	0419 805 523
Darren Walker	Mgr Customer Field Services	8626 1006	8626 1197	0457 566 758
Borjana Stazic-Mandic	Mgr Customer Field Services	7424 2091	7003 2091	0407 407 240
Paul Zanelli	Mgr Customer Field Services	8623 0021	8621 4507	0427 714 117
Richard Mann	Mgr Customer Field Services Response	7424 3268	7003 3268	0428 114 035
Joe Lazzaro	Mgr Technical Services	7424 1379	7003 1379	0458 162 002

<b>TRILITY</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
Robran Cock	Regional Operations Manager SA / WA	8408 6576	8408 6599	0407 226 130
Adam Medlock	Operations Manager Riverland Region	8408 6505	8408 6599	0419 850 889
Nicole Hughes	Operations Manager Fleurieu Region	8408 6589	8408 6599	0488 921 459
<b>ALLWATER</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>WATER SUPPLY</b>				
Olivier Taudou	Water Supply Manager			0419 429 479
Daniel Ford	Network Water Supply Manager			0419 805 041
Phil Wootton	Water Treatment Manager			0407 793 693
Todd Lowe	Southern Water Treatment Manager			0418 815 051
<b>WASTEWATER AND REUSE</b>				
Peter Down	Wastewater and Reuse Manager			0418 694 628
Steve Nettle	Southern Plants Manager			0448 672 261
Aude Fumex	Bolivar Plant Manager			0427 844 588
Ian Mackenzie	Plant Supervisor – Glenelg			0419 805 509
Ian Dayman	Plant Supervisor – Christies Beach			0488 708 056
Adam James	Plant Supervisor – Aldinga/Myponga			0407 724 196
Mark Mancini	Plant Supervisor – Bolivar ASR			0408 673 281
Stuart Walsh	Plant Supervisor – Bolivar DAFF/SBR			0400 435 355
Ian Smith	Network Pump Station Manager			0459 859 611
<b>CUSTOMER FIELD SERVICES</b>				
Paddy Atkinson	Customer Field Services Manager			0458 038 897
Darren Francis	Dispatch and Planning Manager			0419 805 531
Kym Holloway	Northern Networks Regional Manager			0419 805 526
Lachlan Keller	Southern Networks Regional Manager			0417 880 907
<b>CUSTOMER AND BUSINESS SYSTEMS</b>				
Jeremy Lucas	Customer and Business Systems Manager			0419 863 899
Uwe Kaeding	WQ and Environment Manager			0457 715 703
James Ryan	Business Systems Coordinator			0408 789 919
Water Quality Group	On-Call 24hr WQ and Environment Group			0438 669 714
Denise Spry	Lead Water Quality Coordinator			0418 826 861
Peter Quinlivan	Water Quality Coordinator			0419 805 584
Trevor Gray	Water Quality Coordinator			0419 805 707
Grant Sharp	Water Quality Coordinator			0419 805 601
Dominic Montatore	Quality Control Technician			0419 805 643
<b>ADELAIDE AQUA</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
Javier Artal	Plant Manager			0418 801 152
Rimon Gergawy	Process Manager			0437 252 661
<b>OFFICE OF THE TECHNICAL REGULATOR</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
Niki Robinson	Manager Water and Sewerage Infrastructure Regulation	8463 3209	8226 5866	0475 826 663
Trevor Tucker	Manager Infrastructure	8226 5863	8226 5866	0437 716 090
Yannick Monrolin	Energy Project Officer	8226 7768	8226 5866	0423 294 989
Rob Faunt	Technical Regulator	8226 5519	8226 5866	0419 763 546

<b>DEPARTMENT OF PLANNING, TRANSPORT &amp; INFRASTRUCTURE</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<i>Contact in response to oil or hydrocarbon spills:</i>				
Brian Hemming	Director, Transport Safety Regulation	8343 2288	8343 2497	0407 065 522
<i>For wastewater and sludge discharges impacting West Lakes:</i>				
Stepanka Halik (primary contact)	Environment Officer <a href="mailto:stepanka.halik@sa.gov.au">stepanka.halik@sa.gov.au</a>	8343 2339		0429 120 374
Leon Mase (secondary contact)	Asset Maintenance Engineer leon.mase@sa.gov.au	8402 1809		0429 450 926
<b>SA COUNTRY FIRE SERVICE / SA METROPOLITAN FIRE SERVICE</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<i>Contact for hazardous or dangerous materials</i>		000		
<b>DEPARTMENT FOR ENVIRONMENT AND WATER</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
Jarrold Eaton	Manager Water Resource Operations (River Murray cyanobacteria etc)	8463 7927	8463 6900	0439 868 232
<b>QUEEN ELIZABETH HOSPITAL</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>RENAL DIALYSIS UNIT</b>				
Michael Connors	Technical Manager	8222 6721	8222 8066	0417 885 143
Home Training Nursing Staff	To be contacted if Michael Connors is unavailable	8222 6700		
<b>DEPARTMENT OF PRIMARY INDUSTRIES &amp; REGIONS SA</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
Alex Chalupa	Manager, Aquatic Pest Response	8303 9687		0401 122 207
Clinton Wilkinson	Program Leader SA Shellfish Quality Assurance Program	8683 2533	8683 2560	0428 105 649
Jack Van Wijk	Manager Animal Health (for incidents impacting on animal)	8429 0886		0401 122 083
<b>NATURAL RESOURCE MANAGEMENT BOARDS</b>				
		<b>Telephone</b>	<b>Facsimile</b>	<b>Mobile</b>
<b>ADELAIDE AND MT LOFTY RANGES</b>				
Sam Phillips	Senior Water Projects Engineer	8273 9114	8271 9585	0408 721 871
<b>SA MURRAY DARLING BASIN</b>				
Mike Williams	Regional Director	8391 7500		0418 818 522
<b>NORTHERN AND YORKE</b>				
Stephen Quatermain	NRM Officer – Water			0429 362 008
Trevor Naismith	Regional Manager	8841 3403	8841 3411	0409 648 424
<b>SOUTH EAST</b>				
Tim Collins	Regional Director	8735 1118		0428 102 581
Wendy Telfer	Manager Planning & Evaluation	8735 1352		0418 672 790
<b>EYRE PENINSULA</b>				
Jonathon Clarke	Regional Manager	8688 3108	8688 3110	0429 676 870
Grant Lomman	Landscapes Program Manager	8688 3122		
David Cunningham	Water Resources Assessment Officer	8688 3226	8682 5644	0428 815 487