

## Risk management information

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A business activity that discharges trade waste to sewer, but is not effectively controlled, can have serious negative impacts on our operations, the community and the environment.

An effective risk management process can keep the likelihood or severity of any negative outcomes from any such incidents to an acceptable level. While our role includes accepting and treating trade waste, we will only do so if risks posed by individual dischargers' operations are at an acceptable level.

This information is offered to assist businesses that are required to undertake a formal risk management process relating to trade waste discharges to sewer. Of course, your business may choose a different method, providing it delivers comparable outcomes.

### Risk assessment

Risk assessment is part of the overall risk management process. It is the systematic process of identifying all the risks from an activity and assessing the potential impact of each risk. Strategies for minimising and controlling risks can then be developed.

**Step 1:** The first step in risk assessment is to identify potential hazards to good trade waste discharge performance. That is: sources of danger or factors that could have a negative impact.

**Step 2:** Then decide what harm or negative outcome these hazards could bring about and to who/what.

**Step 3:** Analyse the risk by considering both the magnitude of the hazard and the likelihood or potential of a negative outcome occurring. This identifies the relative magnitude of each risk, *if no controls are in place*. Appendix B gives a sample risk matrix tool that can be used in the analysis.

**Step 4:** Identify the means by which each risk is controlled or minimised to arrive at a residual risk level that we accept and satisfies your own needs.

All this information can be summarised in a table format called an *Aspects and Impacts Register*. There's an example in Appendix A. Together with a record of how the risk analysis was conducted, this forms the risk assessment record.

The final step is to review and revise the risk assessment from time to time so that it remains up-to-date.

### Risk minimisation strategy

Evaluation of the *Aspects and Impacts Register* may identify areas where improved control/minimisation measures are needed to arrive at an acceptable residual risk, or where control /minimisation measures could be reasonably enhanced to further reduce the residual risk level. This provides the foundation of a strategy to minimise risk.

The strategy identifies improved control/minimisation measures, sets priorities and deadlines for actions, defines roles and responsibilities, identifies the resources needed and so on. A typical hierarchy of risk control/minimisation is (from highest to lowest preference):

- Elimination of the risk (e.g. change of process to remove a hazardous substance).
- Reduction of the hazard (e.g. safer alternative chemicals or use smaller quantities, modify plant or equipment to make it fail safe, effective treatment process, monitoring/alarm system, backup systems).
- Blocking pathway to sewer (e.g. bunding, shut-off valves, spill kits).
- Administrative controls (e.g. standard operating procedures, scheduled maintenance programs, restricted access protocols, training of staff-including back-up operators).

The strategy therefore leads to a stepwise plan of actions addressing risks in order of severity and the ability to take actions.

## Contingency Plan

The need for a contingency plan will always exist where there is any significant residual risk from business operations. That is: a clear plan of actions to be undertaken in the event of foreseeable emergencies that would involve harm to the sewerage system, associated people and its environmental outputs.

Effective use of a contingency plan can minimise the adverse impact of an incident (such as a chemical spill or loss of effective used water treatment control). This allows your business to recover in the minimum time, at minimum cost and minimum disruption.

Typical areas covered by a contingency plan are:

- The company's internal procedures for reporting incidents and invoking an appropriate response.
- Who has responsibility for implementing all or part of the plan.
- What actions are to be taken and their order of priority.
- What resources will be used and where to obtain them.
- The protocol for informing our Trade Waste team and other relevant emergency authorities such as Metropolitan Fire Service, EPA etc.
- Contact details for external assistance providers.

As with the risk assessment, the contingency plan is reviewed and amended so that it remains current.

Overall planning for risk management also includes a formal process that investigates the cause(s) of an incident, the effectiveness of the response and recommends steps to be taken to prevent a recurrence.

## Appendix A – example *Aspects and Impacts Register*

This table is a brief example of an *Aspects and Impacts Register*, more to illustrate the concept than to give specific information regarding hazards and their management. An additional column may be added to show residual risk level after considering the risk minimisation actions that are in place.

Aspect	Aspect details	Impact	Risk analysis	Risk minimisation action
Power failure/interruption	Wastewater sump pumps inoperative	Overflow of wastewater to ground and stormwater drains. Flooding of internal floor drains.	A risk analysis is carried out for each aspect using a defined methodology. Appendix B shows an example of a risk analysis tool. The results are used to aide decision making for prioritising risk management actions.	Provision of back-up diesel pump. Solenoid operated valve cuts mains water flow to process. Manual SOP to control wastewater.
Power failure/interruption	Wastewater treatment system inoperative	Untreated wastewater not complying with Authorisation conditions discharges to sewer.  Overflow of wastewater treatment system into bund – overflow to ground and stormwater drains.		Automatic cut-off/prevention if discharge quality cannot be confirmed as acceptable.  Contingency response plan.
Failure of pumps, valves, sensors, dosing equipment etc.	Wastewater treatment system inoperative or ineffective	Untreated wastewater not complying with Authorisation conditions discharges to sewer.		Preventive maintenance/replacement schedule. Critical spares in store. Arrangements in place for emergency service/supply. Contingency response plan (e.g. manual adjustment if auto system fails). Alarms for system failure to on-site personnel/ off-site contact via SMS etc.
Rupture of wastewater/chemical holding tanks.	Escape/ loss of material	Pollution of ground or stormwater system. Flooding within building.		Bunding in accordance with EPA and SA Water requirements Routine checks of infrastructure soundness, including bund wall integrity.  Contingency response plan for material recovery, treatment or disposal and clean-up.
Temporary unavailability of trained wastewater plant operator	Inability to troubleshoot leading to reduced plant efficiency or plant shutdown	Untreated wastewater not complying with Authorisation conditions discharges to sewer. OR Inability to discharge wastewater.		Training of back-up staff. Contingency arrangement with external service provider. Documented procedures. Automated treatment process.
Vandalism or accidental damage	Damage to equipment/tanks	Spills to stormwater system/bund. Treatment function impaired/failure		Security systems – fencing, locks, bollards, bund walls. Protective guarding, bracing fixtures.

# Appendix B – Risk Analysis Tool

## Qualitative assessment matrix

IMPACT	Level 5 catastrophic	H	H	H	H	H
	Level 4 major	M	H	H	H	H
	Level 3 moderate	M	M	M	H	H
	Level 2 minor	L	L	L	M	M
	Level 1 insignificant	L	L	L	L	M
		Rare Once every ten years or less often	Unlikely Yearly to once every ten years	Moderate Once a month to yearly	Likely Weekly to once a month	Almost certain Weekly or more often
		<b>LIKELIHOOD</b>				

### Level 5: catastrophic impact

Authorisation to discharge probably suspended/revoked. Production halted. Major loss of material to sewer resulting in danger to public health or safety. Major impact on SA Water operations, potentially leading to breach of its EPA license conditions. High likelihood of court action/fines. Long-term negative publicity and disrupted relations with SA Water and other stakeholders.

### Level 4: major impact

Discharge breaches authorisation conditions. Ability to discharge trade waste or continue production is impaired or temporarily halted. Significant impact on SA Water operations, but can be effectively managed. Extensive remedial actions needed. Significant economic impact. Negative media attention. Formal review. Authorisation conditions and risk management protocols altered as necessary to achieve acceptable residual risk level.

### Level 3: moderate impact

Discharge quality impacts significantly on compliance with authorisation conditions. Maintenance/housekeeping significantly increased. Specialist assistance needed. Some negative impact on receiving sewers, sewerage treatment plant. Moderate public nuisance e.g. odours. Remedial actions to prevent recurrence will be required by SA Water. Moderate economic impact. Review and amend risk management protocols.

### Level 2: minor impact

Discharge limits slightly exceeded, or unusual short-term "spike". Investigated and corrected using in-house management protocols/resources. Very low adverse impact on SA Water operations.

## Level 1: insignificant impact

Discharge performance is within authorisation conditions, but above normal levels. Requires additional maintenance, housekeeping and manual intervention. Minor cost increase. Impacts are contained on-site and with minimal OHS implications.

### Importance derived from assessment

<b>H</b>	<b>High risk</b>	Intolerable – immediate management attention required, action plans and management responsibility specified.
<b>M</b>	<b>Medium risk</b>	Significant – manage within operational plans and procedures. Include specific monitoring or response procedures, management responsibilities.
<b>L</b>	<b>Low risk</b>	Acceptable – manage by routine procedures and systems.