BR09-GU02

Incident Investigation Guideline

Let's all work together and take an active, diligent and competent approach to the conduct of our business every day. Use this guideline to help you manage specific tasks and hazards to identify and mitigate risks.

VEOLIA

Your quick guide to Incident Investigation Guideline

What type of investigation?

- Report Only is used for hazard reports, opportunities for improvement and low level risk incidents e.g. First Aid injuries
- Standard Investigations are used for medium risk incidents such as medical treatment injures, near misses, minor leaks and spills, minor property damage and equipment failures
- Detailed Investigations are completed for high and extreme risk incidents including Lost Time Injuries, complaints, pollution incidents and dangerous occurances

Tools and Forms

Online reporting system, BR09-GU02-TOOL02 Detailed Investigation Report Template, BR09-GU02-TOOL03 Standard Investigation Report Template

Where to for more information?

Sections 5.1 & 5.2

How do I conduct an investigation?

- Nominate an investigator
- Render the site safe
- Isolate the scene
- Preserve the evidence
- Gather the facts of the events leading up to the incident, the incident itself and post incident
- Organise the data to determine the root causes
- Summarise the root causes based on the findings
- Make recommendations

Tools and Forms

Nil

Where to for more information?

Sections 5.3, 5.4, 5.5, and Appendix 1

How do I report the investigation?

- Report Only - complete all fields of the online reporting database
- Standard Investigation - complete BR09-GU02-TOOL03 and the online reporting system
- Detailed Investigation - complete the online reporting system and Detailed Investigation Report Template. Supporting documentation such as photos, diagrams, charts and technical information should be added as attachments

Tools and Forms

BR09-GU02-TOOL02 Detailed Investigation Report Template, BR09-GU02-TOOL03 Standard Investigation Report Template

Where to for more information?

Section 5.6, and Appendix 2 & 3

What happens after an investigation?

- Management review and approval of the investigation report and recommended corrective actions
- Updates to the online reporting system with agreed actions
- Review of effectiveness through audits, WHSEQ monthly reports and Key Performance Indicators
- Quality checks of investigations
- Communication of lessons learnt through the distribution of WHSEQ Alerts

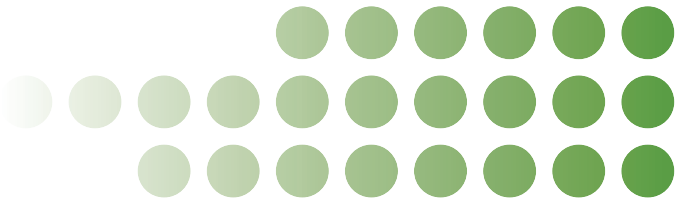
Tools and Forms

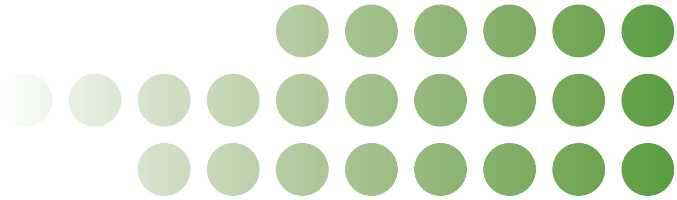
Online reporting system, BR09-GU02-TOOL03 Investigation Quality Checklist

Where to for more information?

Sections 5.7, 5.8, and 5.9

Contents

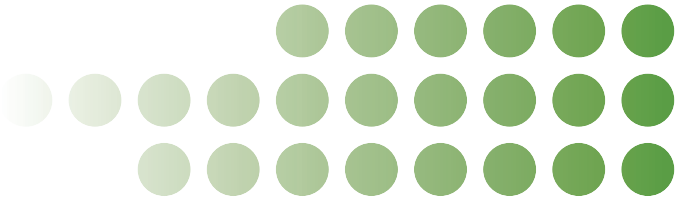




1. Key Compliance Requirements

The following table provides a summary of the key compliance requirements for this Guideline. Refer to the Guideline in full for all requirements.

Topic Title	Relevant compliance statement	Page #
Investigation level	An appropriate level of investigation must be completed based on the seriousness of the incident. Veolia Water Technologies uses a three tier approach: 1. Report Only 2. Standard Investigation 3. Detailed Investigation	8
Gathering of facts	All workers involved in the investigation shall ensure the investigation is carried out in a fair and objective manner, taking into account the factual evidence obtained.	9
Analysis	Investigators shall ensure that investigations establish the contributing and causal factors of an incident.	13
Reporting	The online reporting system must be completed with findings from all Report Only and Standard Investigations. For Detailed Investigations the Detailed Investigation Report templates shall be completed, approved and attached to the online reporting system.	15
Corrective and Preventative actions	Corrective and preventative actions must be approved and recorded in the online reporting system. Actions must be addressed by the assigned responsible persons within the agreed timeframe.	16
Communications	Findings from investigations and lessons learnt shall be communicated via WHSEQ Alerts.	17



2. Purpose

This guideline:

- Establishes a process for classification of incidents that provides for a timely investigative response
- Provides a three tier investigation approach that ranges from Report Only to Standard to Detailed, with increasing requirements for root cause analysis and reporting
- Provides a process for approval and tracking of corrective actions arising from investigations
- Provides process for communication of key learnings from investigations

3. Scope

The requirement to investigate incidents applies to any place where work is carried out by Veolia Water Technologies.

Investigations are not limited to injury events, but also:

- Near miss events
- Damage to equipment / property
- Customer or community complaints
- Pollution
- Non-conformances and / or other quality related issues

This Guideline specifically excludes disciplinary investigations and criminal investigations.

The requirements of this Guideline may not apply to contractors where Veolia Water Technologies has an agreement or arrangement with the contractor to include incident investigation as part of their management plans. Veolia Water Technologies conduct a concurrent investigation into any incident relating to a Contractor to prevent a re-occurrence or to investigate any failures in the contractor management processes.

4. Background

The investigation of unwanted events is a crucial process within Veolia Water Technologies.

If the investigative process is not thorough it can lead to actions that address symptoms and not the actual underlying cause. This increases the potential for the same type of incident to re-occur because of a failure to learn.

Investigations that do not find underlying causes often only touch on surface issues and not the 'root cause'. Failures can occur before, during or after the actual investigation. This is summarised below:

Failing to identify the lessons	Failing to the learn the lessons	Failing to pass on the lessons
⮟	⮟	⮟
None or inadequate investigation	None or inadequate analysis	None or inadequate communication

Table 1: Potential outcome of failures in the investigation process

If investigation process is not clearly undertaken, communicated or understood then the likely outcomes will be:

- Not systematic
- Shallow
- Biased
- Not based on facts
- Poorly reported
- Non-effective (actions)

Application of this guideline enables:

- Facts to be established
- Identification of contributing factors and latent hazards
- Review of the adequacy of existing controls and procedures
- Reporting
- Recommendations for corrective actions that improve efficiency, reduce risk and prevent recurrence
- Detection of developing trends that can be analysed to identify specific or recurring problems
- Identification and sharing of any key learnings for our organisation

5. Process

The principal objective of incident investigation is to prevent recurrence, reduce risk and improve quality, health, safety and environmental performance. The investigation steps are shown in Figure 1.

5.1 When to investigate

All incidents must be reported and investigated.

The investigation must commence as soon as possible after notification has been received.

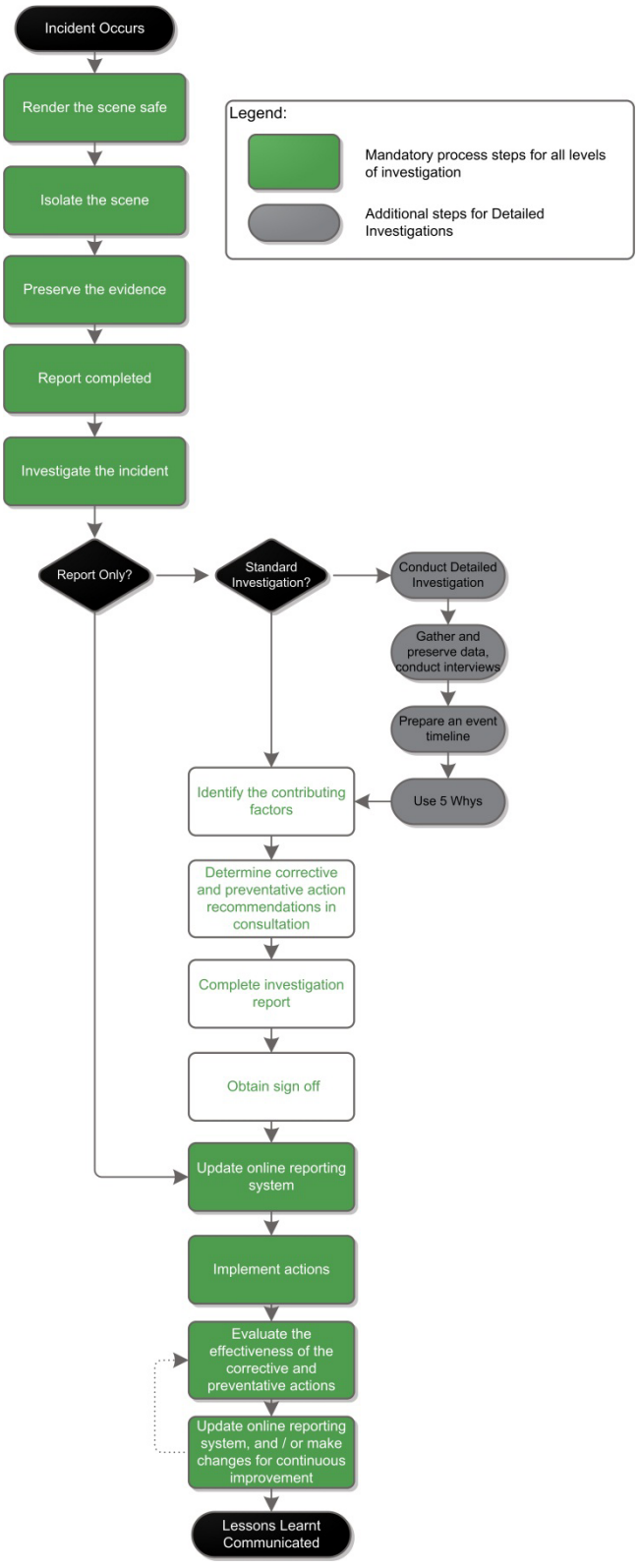


Figure 1: Investigation process steps

5.2 Investigation Level

Veolia Water Technologies use a three tier approach to classify investigations to ensure an appropriate investigative response and resource allocation (refer Table 2).

REPORT ONLY	STANDARD	DETAILED
Use for Low risk incidents	Used for Medium risk incidents	Used for High / Extreme risk incidents
First Aid injuries	Near Miss	Lost Time Injuries and Restricted Work Cases
Hazards	Minor leaks and spills	Client complaints
Opportunities for improvement	Minor property damages	Notifiable /Serious Harm Incidents
	Equipment failures	Major non-conformances
	Minor non-conformances	Damage to heritage items
	Medical Treatment Injuries	Significant property damage
		Community disruption and / or impact
		Pollution incidents of: • An oil or chemical spill in a sensitive areas, drain or waterway • An oil or chemical spills of >20L

Table 2: Investigation levels and examples

To determine the appropriate level of investigation:

- Use the risk matrix as per *BR03 Risk Management Procedure* to determine the range of outcomes (low, medium, high or extreme). Seek assistance from the WHSEQ Team where clarification is needed
- Based on the outcome select the most appropriate level of investigation:
  a) Report Only for incidents with Low risk
  b) Standard Investigation is completed for incidents with Medium risk
  c) Detailed Investigation is conducted for risk outcomes that are High or Extreme
- Where there is potential for legal proceedings (including prosecutions), advise the Legal Team

5.3 Nominate Investigators

Investigators are responsible for the overall management of the investigation and ensuring:

- Impacted workers and witnesses are interviewed in a timely manner (with consideration given to Employee Assistance Program (EAP) arrangements)
- Appropriate workers are involved in fact gathering and analysis of facts
- A high level of independence and impartiality are maintained during the investigation
- Objectiveness and diligence in basing findings on factual evidence
- Updates on progress are provided to relevant Managers
- Investigation reports are submitted and stored as per *BR06 Records Management Procedure*
- Agreed corrective and preventative actions are loaded to the online reporting system for communication and tracking

Table 3 outlines the arrangements for appointing an investigator.

INVESTIGATION LEVEL	LINE MANAGEMENT ASSIGNED TO INVESTIGATE
Report Only	• Direct Supervisor with participation from: o Involved workers
Standard	• Site / Project Manager with participation from: o Involved workers o Worker representatives (Health and Safety Representatives or Committee Members)
Detailed	• Operations Manager with support from WHSEQ Team and participation of: o Direct Supervisor o Worker representatives (Health and Safety Representatives or Committee Members) o Technical experts / Specialists (if required)

Table 3: Investigation level and investigators

The General Counsel will appoint an Incident Investigator for notifiable incidents. The Incident Investigator must ensure non-disturbance requirements are adhered to.

5.4 Facts Gathering

Prior to entering or disturbing an incident site, ensure the scene is secured, declared safe and that it is not subject to non-disturbance requirements by state regulators.

For 'Notifiable or Serious Harm Incidents' a legal requirement of site non-disturbance applies. This does not prevent taking action to make safe or respond to trapped or injured persons. Refer to *BR09 Incident Management Procedure* for further information on managing Notifiable Incidents and non-disturbance.

Factual evidence comes from a variety of sources shown in Figure 2 and as described in Appendix 1.

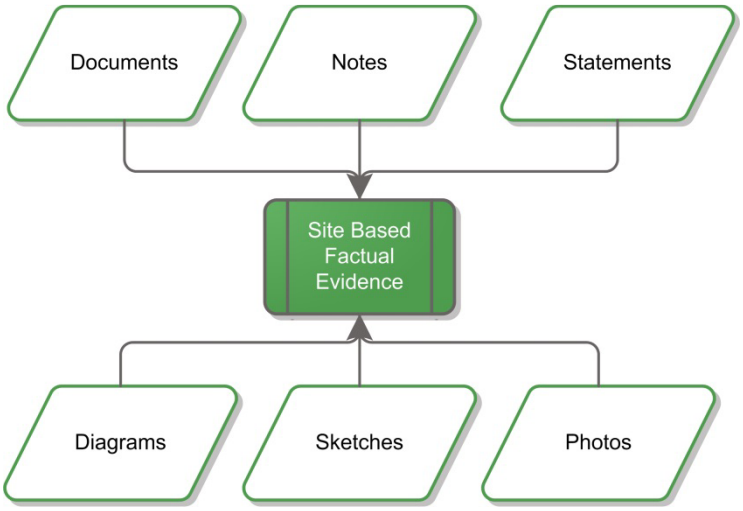


Figure 2: The sources of site based factual evidence

The collection of this data can be divided into five main areas:

1. People - to determine:
    - What experience in the task those involved have
    - What training they received, when and if it is still valid / current
    - What physical limitations may have affected the way they conducted the task
    - What was the status of their health
    - The period of time they had been at work or previously had off
    - Any stress or time pressures that may have affected them
2. Environment - to understand:
    - Weather conditions
    - Housekeeping issues involved
    - Workplace conditions
    - The presence of toxic or hazardous materials
3. Equipment - examining:
    - How the equipment functioned
    - How the equipment was being used
    - Identification labels on equipment / materials

- The state or condition of the equipment
- The use of PPE
- If regular maintenance of equipment have been carried out

4. Procedures - identifying:
   - What work procedure was available and used
   - What risk assessments (SWMS, SSRA etc.) was conducted as part of the planning prior to the task
   - What tools and materials were available and were they used?
   - How safety devices worked
   - What lockout or isolation procedures were used
5. Organisation - to understand:
   - What applicable site rules / requirements were communicated to workers and when
   - How procedures and site rules / requirements where enforced
   - What supervision was in place
   - How hazards were identified then managed
   - If regular workplace inspections were carried out
   - If any changes to equipment, environment, people had been introduced

Actions or deficiencies in each of the five main areas may be identified as contributing factors.

The scope of data gathering is shown in Figure 3.

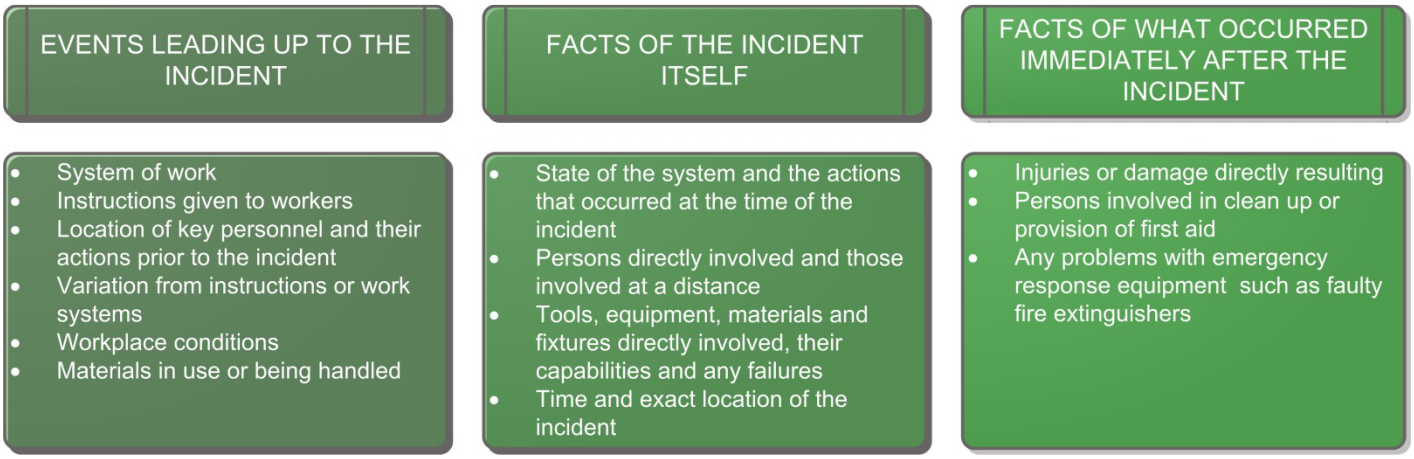


Figure 3: Scope of investigation - leading up the incident, the incident itself and post incident

IMMEDIATELY FOLLOWING AN INCIDENT

Actions at the scene are:

RENDER THE SITE SAFE	• Do not enter a site until it is declared safe • Carefully assess the site for dangers / hazards and tag-out / isolate equipment involved (including vehicles)
ISOLATE THE SCENE	• Ensure that the area around the incident is preserved until it is released by regulatory authorities if a notifiable incident
PRESERVE THE EVIDENCE	• Prevent items from being tampered with, contaminated or removed without authorisation • Document items taken away by statutory authorities and obtain receipts (where possible) • Seek management / legal support
DOCUMENT / RECORD	• Take notes of initial observations, photos, video of items in situ, sketch diagrams and preliminary statements

Table 4: Initial actions of the investigation

Through observations and questioning of persons on site obtain:

- Brief description of the circumstances, activity and the incident
- Brief description of the actual consequences and severity ranking
- Brief description of the potential consequences
- Description of notifications and any action taken by authorities
- Immediate corrective action undertaken by line management
- Contributing factors (if known at this stage)

INTERACTING WITH INJURED WORKERS AND WITNESSES

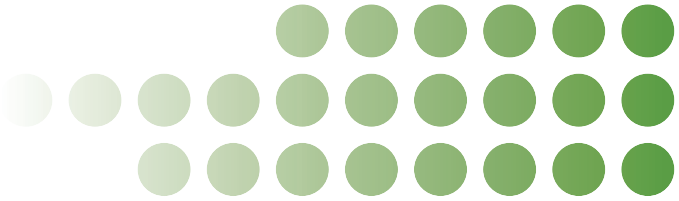
Workers and witnesses involved in an unwanted event may be physically or psychologically impacted. Do not threaten, intimidate or otherwise mistreat any person during the course of the investigation. Keep your questioning clear, concise and relevant to the establishment of facts for the specific incident.

Investigations are not a 'witch hunt' but a search for underlying system failures and recommendations to prevent a re-occurrence.

Ensure the services of EAP are offered and notifications to next of kin are made.

STATEMENTS

BR09-GU02-TOOL01 Witness Statement may be used for Detailed Investigations.



It is advisable to take preliminary notes from witnesses and the injured worker (if medically fit), so that the circumstances of the incident can be established as soon as possible.

Tips for taking statements include:

- Ensure you have a list of the workers who were at the scene / or of any other direct witnesses
- Do not speculate – obtain direct information in terms of what workers and witnesses saw, heard etc.
- Keep note taking direct to evidence about what happened – specific to the incident in question
- If possible take statements at the first available opportunity whilst their recollection of the incident is fresh
- Let the witness describe what happened in their own words (do not put your interpretation on the statement being made). Then commence your questioning to clarify the statement
- Do not take group statements – as the tendency will be for the group to form a consensus about what happened rather than an independent recollection of events
- Offer and if requested, ensure that union representation or support persons are present during the taking of the statement
- Monitor the witnesses state of mind and physical characteristics during the investigation as recollection of some events may cause distress

FITNESS FOR WORK

When interviewing persons involved in incidents consider fitness for work requirements (including fatigue, drug and alcohol).

Where any concerns arise or are reported refer to the requirements of *BR03-GU07 Fit for Duty Guideline* regarding causal testing.

Where workers have been at an incident site for an extended period, you will also need to consider how they are getting home or back to their respective work locations, bearing in mind the potential for fatigue.

5.5 Root Cause Analysis

An incident may have several events that can be causes. Analysis will reveal these as contributing factors and root causes:

- Contributing factors exist prior to the incident and include the characteristics of the task being performed, the work situation, the physical or social environment and the workers mental, physical and emotional state
- The error or unsafe act and /or organisational factors are root causes. A description of organisational factors are provided in Appendix 3 and must be included in the Detailed Investigation Report

The Investigator is responsible for deciding the type of causal analysis process to be applied e.g. Incident Cause Analysis Methodology (ICAM).

BUILDING THE SEQUENCE OF EVENTS

After the collection and data and analysis, data should be organised to provide the sequence of events leading up to the incident, the incident itself and events post incident. Sequencing events:

- Provides a framework to organise data

- Assists in ensuring the investigation follows a logical path
- Aids in the resolution of conflicting information and identification of missing data
- Provides a graphic summary of the investigative process for management

Veolia Water Technologies' method for preparing a timeline is using Event and Condition Charts. Event and Condition Charts provides a visual and logical process that assists in the formation of a timeline and root causes and recommendations. The Event and Condition Chart methodology is detailed in Appendix 2.

USING FIVE WHYS

The Five Whys technique is a proven system to quickly identify the root cause of a problem.

Keep asking: What caused or allowed this circumstance / practice to occur?

Benefits of this technique:

- Simplicity: It is easy to use and requires no advanced tools or systems
- Effectiveness: It is a proven system to quickly separate symptoms from causes and identify the root cause of a problem
- Comprehensiveness: It aids in determining the relationships between various causes
- Flexibility: It works well alone and when combined with other quality improvement and troubleshooting techniques
- Engaging: By its very nature, it fosters discussion, teamwork and interaction between the team
- Inexpensive: It is a guided, team focused exercise. There are no additional costs

The process is:

- Ask why the event happened or a condition was present
- Continue asking why until the question can no longer be answered

Questioning can go further - to a sixth, seventh or greater levels but it is generally accepted that five iterations of asking why is sufficient to get to a root cause.

Preparing a Five Whys chart involves:

- Selecting the key events from the sequence of events
- Asking why an event happened or a condition was present and write the answer
- Continue asking why until the question can no longer be answered

ANALYSIS

The objective of the analysis is to extract the factual information and root causes from the investigation and classify them into causal factors for the investigation report.

Causal factors include:

- Individual / Team actions - the errors or unsafe act that directly led to the incident. These are typically associated with workers having direct contact with equipment such as operators or maintenance personnel

- Missing controls - the measured designed to prevent the consequences such as equipment manuals, PPE, warning devices that failed to detect and protect
- Task / Environmental Conditions - the conditions in existence immediately prior to the incident that directly influence performance in the workplace. These are the circumstances under which the errors or unsafe act took place and can be embedded in task demands, the work environment and individual capabilities. These circumstances may also stem from organisational factors as detailed in Appendix 3
- Organisational Factors - these are the underlying organisational factors that produce the conditions that affect performance. We use the following categorisation of organisational factors :
    - Hardware
    - Training
    - Organisation
    - Communication
    - Incompatible goals
    - Procedures
    - Risk management
    - Management of change
    - Contractor management
    - Design
    - Organisational culture
    - Organisational learning
    - Vehicle management
    - Management systems

These factors are further detailed in Appendix 3 and include an explanation of the potential causes and outcomes.

CONCLUSIONS

Conclusions are a summary, drawing together the evidence and analysis as to the what, how and why of the incident. Conclusions should be linked to supporting evidence.

5.6 Report Preparation

All fields of the online reporting database must be completed for Report Only incidents.

Once the facts have been gathered and analysed a Standard Investigation can be completed by recording data:

1. Directly to the investigation section of the online reporting system

2. Using *BR09-GU02-TOOL03 Standard Investigation Report Template* then arranging for this to be added to the online reporting system

BR09-GU02-TOOL02 Detailed Investigation Report Template includes the ability to identify the contributing factors and causes and must be completed for all Detailed Investigations.

Specialist technical reports and other associated documents should be included and referenced as an addendum to the investigation report.

A summary of the reporting requirements is set out below:

REPORT ONLY	STANDARD INVESTIGATION	DETAILED INVESTIGATION
• Online reporting system	• Online reporting system and *BR09-GU02-TOOL03 Standard Investigation Report Template* • Data fields include: o Basic investigation findings o Root causes	• Online reporting system • Event Charts / Five Whys • *BR09-GU02-TOOL02 Detailed Investigation Report Template*

Table 5: Data requirements for investigations

RECOMMENDATIONS

The aim of the recommendations is to identify areas of improvement that would reduce or eliminate the potential for the incident to re-occur, reduce risk and improve performance.

Recommendations must be relevant to the incident being investigated.

The actions recommended should be SMART:

S Specific

M Measurable

A Accountable

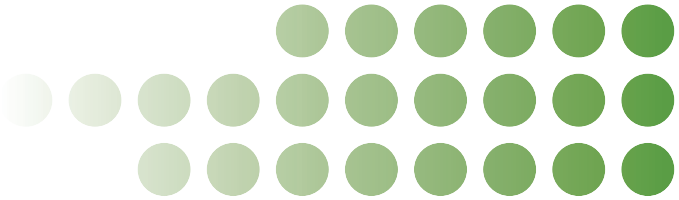
R Reasonable

T Timely

5.7 Review of Reports, Recommendations and Actions

The following review process is used for investigation reports, recommendations and actions:

- Report Only - review of data recorded in the online reporting database by Site / Project Manager
- Standard Investigation - review of report and recommendations / actions is to be managed at the local level in consultation with the Operations Manager and WHSEQ Team where required



- Detailed Investigation - review of report and recommendations / actions is via the General Manager in consultation with the WHSEQ and Legal teams if required

When developing and approving recommendations ensure action items address the recommendations and are consulted before being correctly assigned and distributed.

Where significant changes to systems are identified, a document amendment request (refer *BR12 Document Control Procedure*) and / or corrective and preventative action (refer *BR13 Corrective and Preventative Action Procedure)* must be submitted as management system documentation will need to be updated and training / re-training may be required.

Where issues are reported about the conduct or findings of an investigation report, an independent review can be mediated / facilitated by the General Counsel. The General Counsel must also authorise any investigation report that is submitted to external organisations such as Regulators or clients.

Prior to sign off, the review checklist provided in *BR09-GU02-TOOL04 Investigation Quality Checklist* may be used to ensure completeness of the report and quality of the investigation. Once completed any issues should be raised with the investigator.

5.8 Action Tracking and Escalation

Approved corrective and preventative actions are to be managed via the online reporting system workflows.

The investigator is responsible for ensuring approved actions from recommendations are recorded into the system with the assistance of WHSEQ team members where required.

The General Counsel can also escalate overdue actions to the relevant General Manager where required.

Overdue / outstanding actions or investigations arising from Detailed Investigation will be included as an agenda item for the Executive Management Team meeting for further discussion, action and escalation as required.

Detailed investigation will require individual worker and manager presentations at the monthly EMT meeting to assist exercising due diligence and Executive Management Team assistance to prevent recurrence.

EFFECTIVENESS

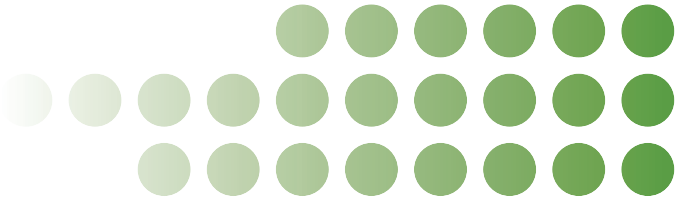
The effectiveness of the corrective and preventatives actions is evaluated through the following methods:

- Audits
- Key Performance Indicators
- Monitoring through the monthly WHSEQ Report
- Executive Management Team meetings
- Observations

5.9 WHSEQ Alerts

A WHSEQ Alert using *BR09-TOOL01 WHSEQ Alert Template* may be issued for Detailed Investigations once the report is complete and recommendations have been approved.

The Investigator should draft the Alert and submit it to the WHSEQ Team for review, approval and publication.



For information relating to WHSEQ Alerts refer to *BR09 Incident Management*.

5.10 Records Management

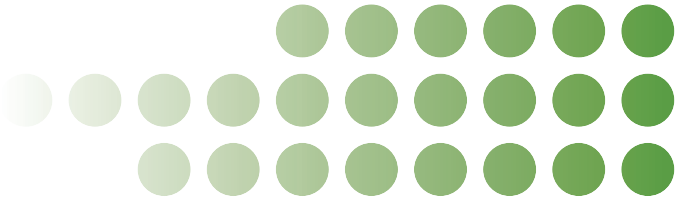
The requirements for storage and retention of investigation documentation are set out in *BR06 Records Management Procedure*.

Investigation reports and associated statements and other documents are confidential and care should be taken with data security and when releasing information. Veolia Water Technologies workers and contractors shall ensure:

- Investigation documents (electronic and hard copy) are retained in a secure location;
- Investigation documents (in particular medical records or personal information) are not distributed to unauthorised persons; and
- Only approved documents are released to authorised persons.

6. Responsible, Accountable, Consulted and Informed

		General Managers	General Counsel	WHSEQ Team	Supervisory staff	Investigators	Workers	HSC members
R	The person **RESPONSIBLE** for doing or delegating the action							
A	The person who has ultimate responsibility and will be held **ACCOUNTABLE** for the action							
C	The person who must be **CONSULTED** during the action							
I	The person who must be **INFORMED** of the action and / or outcomes							
Report incidents		R	I	I	C	I	A	C
Determine investigative response level		A	R	C	I	I	I	I
Ensure all incidents are suitably investigated		A	C	C	I	R	I	C
Ensure corrective actions are put in place to prevent recurrence		A	C	C	R	C	I	C
Obtain advice from WHSEQ Team in the case of a detailed investigation.		A	R	C	I	R	I	I
Participate in investigation where required		R	C	C	R	A	I	R
Prepare and submit investigation reports and recommendations		R	I	I	C	A	I	C
Approve reports and actions		A	R	C	I	I	I	I
Record actions into the online reporting system		R	I	I	C	A	I	C
Issue WHSEQ Alerts		R	A	R	I	C	I	I



7. Training, Skills and Competency

Investigators should have the appropriate level of training, skills, experience and impartiality to undertake the investigation.

The investigation team should include an appropriate mix of workers with technical and specialist investigation skills to allow for identification of causes or likely causes of the incident.

ICAM investigations shall be conducted by trained ICAM Investigators or Lead Investigators.

8. Acronyms, Definitions and Abbreviations

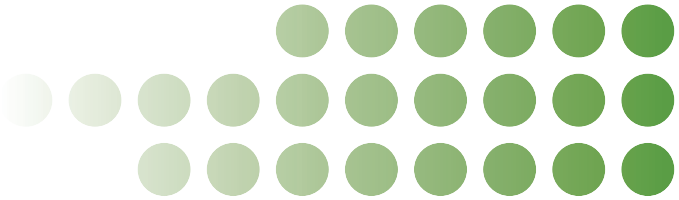
TERM	DEFINITION
ALARP	As Low As Reasonably Practicable means that everything practical to reduce the risk and make the situation safe has been implemented. ALARP also means: • All practical barriers and controls are in place to minimise the risk • Likelihood is so remote that risk is acceptable without further action • The level of risk is considered acceptable by the business and the community, not just the work team • Further risk reduction is either impracticable or the cost is grossly disproportionate to the improvement gained
Causal Analysis	Identification of factors or events that contributed to an incident.
Causal Factor	Those factors that lead to an occurrence which are systemic in nature. Causal factors include: • Individual / Team actions • Missing controls • Task / Environmental conditions • Organisational factors
Condition	The outcomes of an event or action expressed qualitatively or quantitatively, being a: • Loss • Injury • Damage • Disadvantage
Contributing Factors	Actions or inactions that are directly linked to an incident and if removed would prevent or reduce the severity of an incident.
Corrective Action	Action or actions taken in response to incidents to prevent recurrence
EAP	Employee Assistance Program.
Event	A situation that happened during the incident sequence.
Hazard	A "source" with a potential for harm in terms of human injury or ill-health, damage to property, damage to the environment, or a combination of these.

TERM	DEFINITION
Incident	An unplanned and unexpected event with undesirable or unfortunate consequences or an unintentional act, results in injury or property damage or near miss. An incident may be immediately preceded by an unsafe act or condition, which triggers the event.
Investigator	Person tasked with the overall responsibility for completion of the investigation.
Near Miss	Any unplanned incidents that occurred at the workplace which, although not resulting in any injury or disease, had the potential to do so.
Preventative Action	An action implemented to eliminate the cause of a potential incident or other undesirable potential situation
Root Cause	A root cause is an initiating cause of a causal chain which leads to an outcome or effect of interest. Commonly, root cause is used to describe the depth in the causal chain where an intervention could reasonably be implemented to change performance and prevent an undesirable outcome.

9. References

LEGISLATION

- Work Health and Safety (WHS) Act 2011 and Regulation 2011 (QLD);
- Work Health and Safety (National Uniform Legislation) Act and Regulations (NT);
- Work Health and Safety (WHS) Act 2011 and Regulation 2017 (NSW);
- Occupational Health and Safety (OHS) Act 2004 and Regulations 2017 (VIC);
- Work Health and Safety (WHS) 2012 and Regulations 2012 (SA & TAS);
- Occupational Safety and Health (OSH) Act 1984 and Regulation 1996 (WA);
- Health and Safety at Work Act 2015 and (General Risk and Workplace Management) Regulations 2016 (NZ);
- Environment Protection and Biodiversity Conservation Act 1999 and Regulations 2000 (Commonwealth);
- Protection of the Environment Operations Act 1997 (NSW);
- Environmental Assessment Act 1982 (NT);
- Environment Protection Act 1994 and Regulation 2008 (QLD);
- Environmental Protection Act 1986 and Regulations 1987 (WA);
- Environment Protection Act 1993 and Regulations 2009 (SA);
- Environment Protection Act 1970 (VIC);
- Environment Act 1986 (NZ); and



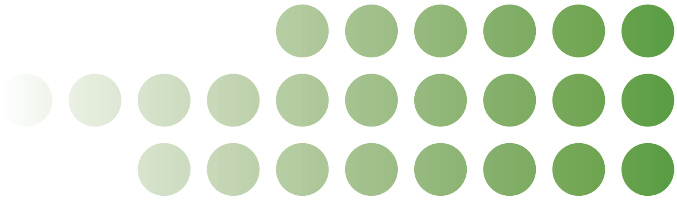
- Conservation Act 1987 (NZ).

STANDARDS

- ISO 31000 Risk Management - Principles and Guidelines
- ISO 14001 Environmental Management Systems
- ISO 9001 Quality Management Systems
- AS/NZS 4801 Occupational Health and Safety Management Systems

BMS DOCUMENTATION

- BR03 Risk Management Procedure
- BR18-GU10 Fit For Duty Guideline
- BR06 Records Management Procedure
- BR12 Document Control Procedure
- BR13 Corrective and Preventative Action Procedure
- BR18 Hazard Management Procedure
- BR19 Aspects and Impacts of the Environment Procedure



10. Version History

DOCUMENT CONTROL	
Document Custodian:	National WHSEQ Manager
Document Authoriser:	General Manager Network Services

REVISION HISTORY		
#	Date	Amendment
0.1	July 2014	Draft for consultation
0.2	July 2014	Updated based on Document Custodian and Document Authorisers feedback
1.0	March 2015	Clarifications made throughout following incident investigation training. New tools included for standard investigations and investigation quality checks.
1.1	July 2015	Incorporated Report Only as an investigation level for low risk incidents.
1.2	June 2018	Document Review Cycle

11. Tools

NUMBER	NAME
BR09-GU02-TOOL01	Witness Statement
BR09-GU02-TOOL02	Detailed Investigation Report Template
BR09-GU02-TOOL03	Standard Investigation Report Template

12. Appendix

12.1 Appendix 1: Fact Gathering Guide

The list below provides a guide to key considerations when obtaining factual information.

INVESTIGATION ACTIVITY	GUIDANCE	SCOPE
Incident Details	Notes	• Site location • Time, date, weather or other environmental conditions • Name / position and location of persons who were on site at time of the incident or witnesses the incident • Details of injury, treatment or property damage • Emergency response (who attended, name, from where), what hospital taken to etc.
Obtaining Statements	Notes Formal statements - use *BR09-GU02-TOOL01 Witness Statement* if required	• Ensure that injured workers or witnesses are treated in an appropriate manner and that EAP is provided where required or requested • Do not take group statements • Ensure that where requested union representation or support persons are present • For notifiable incidents it is recommended to consult legal branch prior to taking formal signed statements
Diagrams	Sketch of the incident site Technical diagrams	• Sketch of area – with relative position of equipment etc. – this sketch can be later turned into an electronic copy • Consider overhead images / maps • Measure distances and note on plan • System diagrams • Schematic diagrams • Network Test Reports • Other technical reports
Photographs / Videos	Camera / Phone	• Take close up photos including the work area, plant, equipment, permits, paperwork, tags etc. • Keep notes of what each photo is and what it relates to – use reference of direction to keep photos in perspective. • Where safe to do so, re-enact the task being undertaken • Link your photos to your site plan with descriptions
Documentation	Incident reports Risk assessments	Obtain copies of: • Risk assessments relating to the task or activities being undertaken • Relevant management system documentation,

INVESTIGATION ACTIVITY	GUIDANCE	SCOPE
	Procedures	SWMS • Access permits or tags relating to the task or activity being undertaken • Safety Data Sheets
Training	Training records	• Training records relating to the task or activity being undertaken should be available for review • Details of certificates and licenses - currency and relevance to the work or activity being undertaken
Equipment records	Records	• Maintenance requirements • Maintenance history • SCADA event logs • Operation logs • OEM (Original Equipment Manufacturer) instruction manuals / operating manuals

12.2 Appendix 2: Event and Conditions Charts

Incidents are the result of a chain of successive events that result in unintentional injury to persons or damage to property.

Criteria of events and conditions are:

EVENT

- An event is something that happened during the incident sequence
- Events should have a time of occurrence
- Events should be quantified
- Events should be based on validated evidence
- Events should range prior to the incident, the incident itself and post incident
- Each event should derive from the preceding event

CONDITION

- Conditions as a result of an event

STEPS TO PREPARING AN EVENT AND CONDITION CHART

- Construct the chart - use a whiteboard or butchers paper
- Enter each event - use a post-it note and include the date and time the event occurred
- Link the event with information collected during fact findings
- Start the chart with a note that describes the incident. This should be a single line statement
- Progressing backwards in time, identify the pre-incident sequences of events from information collected through interviews, document reviews
- If each event in the sequence is not derived logically from the one preceding it, leave space to capture missing information
- Add notes that describe any specific conditions under which a particular event occurred above or below the event description note
- Progress forward in time from the incident and identify the post incident event sequence and conditions
- Show the interrelationships between events and condition with lines or arrows
- Identify questions that still need to be answered and place these notes in appropriate locations on the chart
- Number each event and condition so the timeline can be reconstructed - a flow chart is recommended to record the timeline
- Those involved in the incident should be consulted to verify the timeline is correct and the findings are accurate

12.3 Appendix 3: Organisational Factors

1. HARDWARE	
The quality, availability and position in the life-cycle of tools, equipment or components.	
Inadequate hardware can be caused by:	• Poor stock or ordering systems • Poor quality due to availability • Poor state of existing equipment • Equipment not fit for purpose • Lack of resources available to buy, maintain or improve equipment • Theft
Inadequate hardware can lead to:	• Inappropriate use of tools or equipment • Absence or unavailability of tools or equipment • Using tools unsuitable for the job

2. TRAINING	
The provision of the correct knowledge and skills of workers which are necessary for them to do their job safely. Failures may involve insufficient training, lack of resources or mismatch of abilities.	
Inadequate training can be caused by:	• Training not directed to all the job skill requirements • Ineffective pre-employment selection process • No assessment of training effectiveness • Differing standards of training • Making assumptions about a workers knowledge or skills
Inadequate training can lead to:	• Workers unable to perform their jobs safely • Excessive time spent in training • Excessive supervision needed • Increased numbers of people required for the job • Jobs: o Taking longer o Of poor quality o Wasting materials

3. ORGANISATION	
Deficiencies in the structure of responsibility and accountability which are not appropriate to current work. May involve co-ordination, supervision and provision of communication and feedback.	
Inadequate organisation can be caused by:	• Poorly defined departments or sections • Unclear accountability, responsibility or delegation • Lack of definition of objectives • No structure to coordinate different activities • Poor planning • Frequent re-organisations
Inadequate organisation can lead to:	• Multi-layer hierarchy, slow response to changes • Wrong person or nobody takes responsibility • Decisions delayed or deferred • People only held responsible and not accountable for their actions / decision • Poor control or management of events • Rules and procedures not enforced / followed

4. COMMUNICATION

Failure to communicate - the messages fails to get through or is late. Failure to validate reception of the message.

Inadequate communication can be caused by:	• Language problems or cultural barriers • Lack of clear line of communication • Poor feedback • No standard communication format • Missing or excessive information • Inability to make contact with the correct individuals • Unreceptive or hostile individuals
Inadequate communication can lead to:	• Misunderstanding or incorrect interpretations • Doing the wrong thing at the wrong time or place • Missing information - workers not informed or do not report • Workers not knowing who to inform or report to • Not knowing where information is located

5. INCOMPATIBLE GOALS

The presence of conflict between operations, safety, planning and financial targets as well as conflicts between groups and peer pressure and personal goals. Incompatible goals become a problem when management give no guidelines on priorities.

Incompatible goals can be caused by:	• Conflict between safe work and operating priorities • Imbalance between safety, quality and environmental requirement and budget constraints • Taking shortcuts
Incompatible goals can lead to:	• Supressing information about hazards or incidents • Shortcutting procedures • Overruling or relaxing procedures • Putting people under pressure

6. PROCEDURES

The presence of accurate, understandable procedures which are known and used. Relates to the way in which procedures are written, tested, documented and controlled.

Inadequate procedures can be caused by:	• Poor knowledge of the author of the document • Poor feedback on practicality • Poor indexing or retrieval methods • Failure to have a revision control system
Inadequate procedures can lead to:	• Ambiguous, non-comprehensive, incorrect and outdated documents • Difficult access for the users • No procedures for some specific tasks • Too many overlapping or conflicting procedures • Failure to communicate existing or new procedures • Difficult procedures which encourage shortcuts • Toleration of violations

6. MAINTENANCE MANAGEMENT

The appropriateness of the management of the maintenance system, involving planning, resourcing and type of maintenance rather than the execution of maintenance jobs.

Inadequate maintenance management can be caused by:	• Poor planning, controlling, execution and recording of maintenance • State of equipment not communicated to relevant workers • Shortage of specialised maintenance workers • Absent / inadequate manuals and documents • Incorrect maintenance strategy
Inadequate maintenance management can lead to:	• Defective or malfunctioning equipment • Makeshift or unplanned maintenance • Breakdown before life expectancy • Unexpected deterioration

7. DESIGN

The way in which equipment is constructed to make certain operations difficult or allow unexpected usage. Poor design may require extra effort and unusual maintenance. Inadequate design capacity may lead to extending the equipment beyond limits.

Inadequate design can be caused by:	• No standardisation of equipment or usage • Time or financial constraints • Lack of system status information
Inadequate design can lead to:	• Extra effort to do the job • Inability to operate equipment properly • Inability / difficulty in controlling processes • Long or repeated training requirements

8. RISK MANAGEMENT

The systematic application of management policies, processes and procedures to the tasks of identifying, analysing , assessing, reducing to As Low As Reasonably Practical (ALARP) and ongoing monitoring or risk that contain the potential to have an adverse effect on people, the environment, equipment or the community.

Inadequate risk management can be caused by:	• Inadequate or poorly conducted risk management processes • Goals, objectives or scope not clearly determined • Inappropriate level of risk analysis • Hazard identification processes not being systematic or covering all operations and equipment • Risk assessment conducted without the appropriate competencies and experiences • Inappropriate selection or poor implementation of risk control measures • Inadequate monitoring of risk control effectiveness
Inadequate risk management can lead to:	• Risks levels above ALARP • Uncontrolled hazards • Higher incident rate • Inappropriate risk ranking and allocation of risk control measures • Incomplete, inadequate or out of date risk registers • Breach of regulatory requirements

9. MANAGEMENT OF CHANGE

The systematic assessment of change to operations, processes, equipment, services and personnel for potential risk and the application of appropriate action to ensure performance levels are not compromised.

Inadequate management of change can be caused by:	• Inadequate or poorly conducted management of change process • Objectives and scope of change activity not clearly determined • Inadequate assessment of the impact of change • Poor change implementation plan • Poor communication of change • Speed of change (too fast or too slow) • Inadequate approvals process for the proposed change • Inadequate monitoring of the effectiveness of change to existing performance levels
Inadequate management of change can lead to:	• Adverse impact on performance • Gaps in organisational structures and responsibilities • Confusion • Low moral

10. CONTRACTOR MANAGEMENT

The evaluation, selection and retention of contracted services, equipment, workers and materials to ensure risks to people, the environment, equipment or property are reduced to a level which is ALARP.

Inadequate contractor management can be caused by:	• Inadequate or poorly conducted contract management process • Lack of consideration of risk associated with the contract • Poorly defined selection criteria • Lack of formal contractor evaluation procedure • Lack of a clearly defined work scope • Unclear obligation for WHSEQ, performance and reporting requirements • Unclear reporting relationships, lines of communication, roles and responsibilities • Inadequate or poorly conducted compliance and performance monitoring or review
Inadequate contract management can lead to:	• Deterioration in performance • Requirements for additional supervision • Lack of competency • Conflicting procedures and systems of work • Poor relations, high turnover • Lack of reporting of near misses / hazards and incidents

11. ORGANISATIONAL CULTURE

Culture reflects the set of beliefs and values that define the organisation and how they interact with the organisation structures and control systems to govern behaviours and conduct.

Inadequate organisational culture can be caused by:	• Competing company policy • Ineffective management decisions about policy • Diverse and conflicting values and beliefs of the people within an organisation • Poor organisational reporting and relationships • Factions and politics • Unaddressed fears and anxieties • Low levels of trust • Poor leadership

11. ORGANISATIONAL CULTURE

	• Lack of compliance, performance monitoring and review
Inadequate organisational culture can lead to:	• Poor communication between divisions • Failure to complete tasks • Non-adherence to rules / procedures • Poor commitment to safety, environment and community issues • Slow acceptance of change • Unsafe work conditions • Low levels of reporting

12. ORGANISATIONAL LEARNING

The strategies that organisations have in place for ensuring lessons are learnt from occurrences, investigations, corrective action implementation, audit findings, risk management processes and reviews.

Inadequate organisational learning can be caused by:	• Failure to communicate lesson to the workforce • Poor evaluation of effectiveness or corrective actions • Failure to appreciate the risk exposure or vulnerability • Failure to investigate and rectify non-compliance findings from audits • Lack of leadership / commitment to learning • Ineffective sharing of lessons • Inadequate incident reporting • Lack of resources • Lack of trend analysis
Inadequate organisational learning can lead to:	• Poor communication between division • Failure to complete tasks • Non-adherence to procedures • Poor commitment to quality, safety, environment and community issues

13. VEHICLE MANAGEMENT

A system to manage the procurement, maintenance and operation of vehicles within a defined environment. If the system is poorly managed vehicles may cause unnecessary risk to workers and customers as well as effect efficiency.

Inadequate vehicle management can be caused by:	• Poor commitment from management to provide adequate resources to source, procure and maintain fit for purpose vehicles • Lack of formalised vehicle management standards that includes risk management plans, accountabilities or responsible persons and defined roles • Vehicle users that do not operate and maintain vehicles with care and respect
Inadequate vehicle management can lead to:	• Increased incidents involving vehicles • Development of a culture of routine violations such as speeding, non-use of seatbelts, use of mobile phones • Reactive maintenance • Vehicle users that fail to report defects or damage • Vehicles that are not equipped with suitable emergency equipment such as first aid kits, spills kits or extinguishers

14. MANAGEMENT SYSTEM

An integrated set of work practices, beliefs and procedures for monitoring and improving the safety and health of all aspects of the organisation. Ineffective application of the system may lead to safety and environmental deficiencies and increased risks.

Inadequate management system can be caused by:	• No alignment with recognised standards • Lack of systematic, explicit and comprehensive processes for managing risks • Lack of goal setting, planning, documentation and measuring performance • Lack of commitment from management • Lack of systems to encourage open reporting and communications
Inadequate management systems can lead to:	• Increased errors • Increased financial consequences • Poor communication • Poor safety culture • Non-compliance with legal responsibilities

www.veoliawatertechnologies.com.au