Handling Of Raw Sewage

Business Name:	ABN:	
Business Address:		
Contact Person:	Phone:	Email:

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT

Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.

Full Name:		
Signature:	Title:	Date:

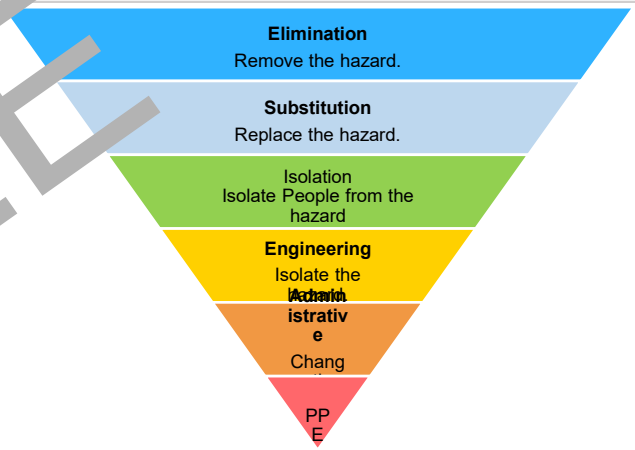
CLIENT OR PRINCIPAL CONTRACTOR DETAILS

Client:	SCOPE OF WORKS
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. Governance, Legal Compliance and Duty of Care	• Failure to understand and implement primary duties under WHS Act 2011 and WHS Regulation in relation to handling of raw sewage • Absence of a documented WHS management system specific to sewage handling operations • Unclear roles, responsibilities and accountabilities for officers, managers, supervisors and workers • Inadequate consultation, cooperation and coordination between PCBUs (e.g. water utility, contractors, facility owner) • No formal process to monitor changes in legislation, standards or industry guidance (e.g. Safe Work Australia, WSAA, state regulators) • Lack of due diligence by officers to verify that resources and processes ar in place to manage sewage-related ris	High	• Establish and maintain a documented WHS manag ent system that explicitly covers handling of raw sewage, aligned with WHS Act 2011, WHS Reg tion and relevant codes of practice • Define and document WHS roles, respon ities and del gations for executives, line management, HSRs, contractors and workers involved in s age han ng activities • Implement a legal and other requirements reg that captures pplicable WHS legislation, environmental laws, public he th requirements, stralian St ards and industry guidelines related to sewage • Introduce a formal s for r lar compliance re ews and audits (internal and, where appropriate, external) to verif herenc to WH and enviro mental obligations • Ensure offic exercise d diligenc by ceiving periodic WHS performance reports specific to sewag operat s, inclu g incident t ds, exposure data and audit outcomes • Esta s docum d PCBU-to-PCBU agreements and interfaces (e.g. service level agreements, contra WH claus joint risk assessments) for shared sewage infrastructure and tasks • Imple nt c sultati arrangements in line with WHS Act 2011, including HSR involvement in evelop ent a review of sewage-specific procedures and controls • Int te sewage handling risk management into organisational planning, budgeting and hange agement processes to ensure adequate resources and consideration of WHS implications	Medium
2. Risk Management and Planning for Sewage Handling Systems	• Absence of a structured, documented risk management proces aw sewage systems an ssociated plant • Infrequent or ad- c risk asses ents that do not conside ort or non-routine conditions (e.g. blockage bypasses, storm events, confined s ce entries) • Failure to consider cumulative and overlapping risks (biological, chemical, physical, psychosocial) when planning sewage handling operations • Inadequate planning for emergency conditions such as pump failures, overflow events, odour complaints or major spills • Poor integration of WHS risk controls with environmental and public health risk controls, leading to conflicting priorities	High	• Implement a formal WHS risk management procedure (identify, assess, control, review) specifically addressing raw sewage collection, transfer, storage and treatment systems • Maintain a risk register for sewage handling that captures system-level hazards, existing controls, responsible persons and review dates • Use structured assessment methods (e.g. bow-tie analysis, HAZOP-style reviews) for complex or high-hazard sewage assets such as pump stations, screening plants and wet wells • Incorporate non-routine, upset and emergency operating conditions into all system risk assessments, including simultaneous operations and contractor activities • Ensure WHS, environmental and public health teams jointly review sewage risk assessments so that controls are compatible and prioritised on a risk basis • Define organisational risk criteria (likelihood and consequence) and apply consistently across all sewage handling risk assessments • Schedule periodic review of sewage risk assessments, and trigger out-of-cycle reviews following incidents, system changes, new technologies or regulatory updates • Integrate risk information into asset planning, capital works programs and maintenance strategies so that higher-order controls are preferred over administrative and PPE controls	Medium

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Lack of documented risk criteria and risk appetite for sewage operations, resulting in inconsistent decision-making			
3. Design, Engineering and Asset Management of Sewage Infrastructure	• Legacy infrastructure not designed to modern safety standards (e.g. poor access, inadequate ventilation, non-compliant confined spaces) • Insufficient engineering controls to minimise worker exposure to raw sewage, aerosols and gases • Inadequate separation between sewage handling systems and other services (electrical, traffic routes, public access) • Poorly designed sampling points, valves and inspection hatches that necessitate hazardous manual handling or unsafe access • Lack of consideration of maintenance access during design, resulting in increased exposure to sewage and associated hazards • Failure to incorporate f[illegible]e and redundancy features (e.g. pump redundancy, overfl[illegible]v alarms, backflow prevention) increa[illegible]g risk of uncontrolled sewag[illegible]s	High	• Adopt a formal safe-by-design process for all [illegible]or modified se[illegible]vage infrastructure, involving WHS professionals, engineers, ope[illegible]tors and maintain[illegible] • Apply relevant Australian Sta[illegible]rds and industry g[illegible]es for sewage system design, including requirements for saf[illegible]s, wo[illegible]g platforms, gua[illegible]rails, ventilation and lifting points • Prioritise eng[illegible]ering con[illegible]s that [illegible]nimise d[illegible]ct human contact with raw sewage, such as enclosed systems, aut[illegible]ated cleani[illegible], remote [illegible]v[illegible]peration and fixed sampling systems • Ens[illegible]all con[illegible]d sp[illegible]es associated with sewage (e.g. wet wells, sewer manholes, balance tanks) are desig[illegible]r upgra[illegible]or safe entry, isolation, ventilation and rescue in accordance with WHS Regulation • Incorp[illegible]rat[illegible]hysica[illegible]eparation and barriers between sewage handling areas and public/administrative spaces, [illegible]clu[illegible]g cont[illegible]ed access, signage and secure fencing • [illegible]esign[illegible]r mai[illegible]inability by providing permanent access solutions (stairs, platforms, davit sockets, anch[illegible]points) that reduce the need for temporary, higher-risk access equipment • [illegible]ntegrate[illegible]obust alarm, monitoring and control systems (SCADA, level sensors, gas detection in key a[illegible]s) with redundancy to prevent overflows and uncontrolled discharges • Include backflow prevention, overflow containment and spill control features in system design to reduce environmental and worker exposure during failures	Medium
4. Biological, Chemical and Atmospheric Exposure Management	• Exposure to pathogenic micro-organisms (bacteria, virus[illegible] parasites) present in raw s[illegible]ge • Generation of sewage aerosols during pumping, screening, spraying or agitation, increasing inhalation risks • Release and accumulation of hazardous gases such as hydrogen sulphide, methane, ammonia and carbon dioxide in confined or poorly ventilated spaces • Presence of chemical contaminants in sewage from industrial discharges, trade waste or illicit dumping • Secondary contamination of vehicles, tools, clothing and workplaces leading to	High	[redacted]	Medium

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	cross-exposure of other workers or the public • Lack of systematic health monitoring for workers regularly exposed to sewage		[redacted]	
5. Confined Space and Restricted Access Management	• Uncontrolled entry into sewer manholes, wet wells, tanks and pits that meet the definition of a confined space • Inadequate identification and labelling of confined spaces in sewage systems • Absence of a formal confined space entry permit system and supporting procedures • Failure to manage atmospheric, engulfment and configuration hazards associated with sewage confined space • Insufficient plannin nd equipment for emergency rescue om sewage confined spaces • Multiple PCBUs accessing the sam sewage confined space without coordination	igh	[redacted]	Medium
6. Plant, Equipment and Isolation Systems	• Use of unsuitable or poorly maintained plant for pumping, screening, lifting or transporting raw sewage • Failure of pumps, valves or automated controls leading to sudden releases, splashing or overflows • Inadequate lock-out, tag-out and isolation procedures for sewage plant during maintenance or blockage clearing	High	[redacted]	Medium

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Lack of guarding or interlocks on moving parts associated with sewage handling equipment • Incompatible materials of construction resulting in corrosion, leakage or structural failure in sewage systems • Incomplete integration of plant safety functions with sewage system control and monitoring infrastructure		[redacted]	
7. Contractor, Supplier and Labour Hire Management	• Contractors performing high-risk sewage work without adequate WHS systems or sewage-specific experience • Poor communication of sewage system hazards, contamination risks and emergency arrangements to contractors and labour hire workers • Misalignment of responsibilities between principal PCBU and contracto regarding sewage risk co ols, permits and supervision • Pressure on cont ctors to prioritise productivity over c trols (e of procedures to quick blockage or overflows) • Inconsistent competency stand as across multiple contractors engaged in sewage handling tasks • Inadequate verification of contractor compliance with confined space, biological hazard and PPE requirements	igh	[redacted]	Medium
8. Training, Competency and Information	• Workers involved in sewage handling lacking understanding of biological hazards, chemical exposures and safe systems of work • Inadequate competency in the use of gas detection, PPE, decontamination	High	[redacted]	Medium

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	equipment and emergency systems related to sewage • Out-of-date or inconsistent training materials for sewage procedures across different sites or regions • Limited awareness of early signs and symptoms of exposure to sewage-related illnesses or hazardous gases • Failure to train supervisors and managers in their WHS responsibilities for sewage operations • Insufficient literacy, language or cultural considerations in the delivery of sewage safety information		[redacted]	
9. Personal Protective Equipment and Hygiene Systems	• Inadequate provision, selection or management of PPE for sewage exposure (e.g. gloves, respiratory protection, eye and face protection, protective clothing) • Inconsistent PPE use [redacted] sites or work groups due to [redacted] clear requirements or po[redacted] supervision • Lack of systems [redacted] decontaminating or replacing contaminated PPE and work clothin[redacted] • Insufficient facilities for [redacted] shing, showering and changing after sewage exposure • Secondary exposure to families or the public due to contaminated work clothes being taken home • PPE reliance substituting for higher-order controls in sewage system design and engineering	High	[redacted]	Medium
10. Incident Management, Health Monitoring and Reporting	• Delayed or incomplete reporting of sewage-related exposures, near misses, illnesses or system failures	High	[redacted]	Medium

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Lack of specific procedures for managing sewage contact incidents, needle-stick injuries or suspected gas exposure • Inadequate investigation of sewage-related events, leading to missed systemic issues • Absence of structured health monitoring for workers with regular sewage exposure as required under WHS Regulation and public health guidance • Insufficient linkage between incident data, asset data and maintenance plans for sewage infrastructure • Failure to notify regulators where sewage incidents meet notifiable incident thresholds		[redacted]	
11. Emergency Preparedness and Response for Sewage Events	• Lack of coordinated emergency response plans for sewage spills, overflows, plant failures, gas releases o worker contamination • Insufficient integr on between WHS, environmental and ublic he responses during mi wage incidents • Inadequate emergency equipm (spill kits, containment bo decontamination materials, rescue gear) for sewage scenarios • Poor communication protocols with emergency services, regulators and the public during significant sewage events • Limited testing and exercising of sewage emergency plans, leading to confusion and delays in real events • No arrangements for psychological support for workers involved in serious or traumatic sewage incidents	High	[redacted]	Medium

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
			[redacted]	
12. Monitoring, Audit, Review and Continuous Improvement	• No systematic monitoring of WHS performance indicators for sewage handling operations • Failure to detect deteriorating controls, emerging risks or non-compliance in sewage systems • Infrequent or superficial audits of sewage procedures, training and plant • Limited worker involvement in reviewing sewage safety measures and suggesting improvements • Data from incidents, inspections and health monitoring not being analysed or acted upon at a system level • Change in sewage system configuration, loads or inputs without re-assessing WHS risks	Medium	[redacted]	Low

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work