

Irrigation Installation

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

THIS RISK ASSESSMENT IS APPROVED BY THE PCBU ON THIS 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	HIERARCHY OF CONTROLS	
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE			Elimination Remove the hazard.	
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED	Substitution Replace the hazard.	
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Review before work starts.	Isolation Isolate People from the hazard	
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	2M MODERATE	Ensure control measures in place.	Engineering Isolate the hazard	
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 HIGH	1L LOW	Monitor and keep records.	Administrative Change	
								PPE	

Risk Rating & Required Action:	
4A	Stop work. The risk is intolerable. Eliminate the hazard or redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or higher-level authorisation is required.
3H	Review and approve additional controls before task starts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in place and effective. 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. WHS Governance, Roles and Consultation	<ul style="list-style-type: none"> Lack of clearly defined WHS responsibilities for irrigation projects Inadequate consultation with workers and subcontractors on site-specific irrigation risks Insufficient WHS planning for simultaneous landscaping and irrigation works Failure to integrate WHS Act 2011 due diligence duties into project decision-making Poor communication of WHS expectations to small contractors and seasonal workers No formal process for raising and resolving WHS concerns related to irrigation works 	4A	<ul style="list-style-type: none"> Establish a WHS governance framework that assigns clear duties, authorities and accountabilities for irrigation installation, ditch construction and repair activities in line with WHS Act 2011 Implement a documented WHS consultation process including toolbox talks, pre-start briefings and regular worker feedback specifically addressing irrigation and trenching risks Develop a project WHS plan that integrates irrigation and landscaping activities, clarifies interfaces between trades and manages overlapping duties of workers Require senior management to demonstrate due diligence through regular WHS performance reviews, field visits and documented follow-up actions Include WHS responsibilities and performance expectations in subcontractor agreements for irrigation and landscaping work Maintain a simple, well-publicised process for reporting WHS issues, hazards and near misses (e.g. hotline or app) and ensure timely communication of corrective actions 	2M
2. Project Planning, Design and Engineering of Irrigation Systems	<ul style="list-style-type: none"> Irrigation system design not considering WHS implications (e.g. unsafe access, high-pressure lines, manual handling loads) Poor coordination between designers, engineers and installers leading to unsafe construction methods Inadequate consideration of soil stability and trench design for ditches and pipe runs Failure to identify existing services in design stage, increasing risk of strike during excavation Design choices that necessitate ongoing high-risk maintenance activities (e.g. valves in confined or unstable locations) 	4A	<ul style="list-style-type: none"> Implement a formal design risk management process requiring designers to identify, eliminate or minimise WHS risks in irrigation layouts, ditch profiles and component selection Require pre-construction design reviews involving WHS personnel, site supervisors and installers to verify buildability and safety of installation methods Incorporate geotechnical information and soil classification into trench and ditch design, specifying maximum depths, batter angles and shoring requirements Mandate dial-before-you-dig and services mapping at design stage and document no-go zones and protective measures in design drawings Specify engineering controls that reduce ongoing exposure, such as accessible valve boxes, isolation points above ground where practicable and minimised need for work in unstable excavations Maintain version-controlled design documentation and a change-management process for any field modifications impacting WHS risk 	2M
3. Contractor, Subcontractor and Labour Hire Management	<ul style="list-style-type: none"> Engagement of irrigation contractors without verification of WHS competency or licences Poor coordination between multiple subcontractors (irrigation, landscaping, 	4A	<ul style="list-style-type: none"> Implement a contractor prequalification process requiring evidence of WHS management systems, training records, insurances and relevant trade licences for irrigation and excavation works Use formal subcontractor agreements that specify WHS obligations, reporting requirements and compliance with principal contractor procedures 	2M

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
	<ul style="list-style-type: none"> civil works) leading to uncontrolled interaction risks Inadequate supervision of inexperienced labourers during ditching and repair works Labour hire workers not inducted into site-specific irrigation and excavation hazards Inconsistent safety standards across different contractors on the same project 		<ul style="list-style-type: none"> Develop a site-specific coordination plan for overlapping irrigation, landscaping and building activities, including designated work zones and scheduling controls Require all labour hire and subcontractor personnel to complete site and task-specific inductions before commencing irrigation works Assign competent supervisors to oversee high-risk activities such as trenching, live service work and pressurised system testing Conduct regular WHS performance reviews of contractors including audits, inspections and leading indicator monitoring (e.g. pre-start participation, close-out of jobs) 	
4. Training, Competency and Supervision for Irrigation Works	<ul style="list-style-type: none"> Workers performing irrigation installation or repairs without adequate training in WHS requirements Insufficient competency in trenching, shoring and working around underground services Lack of understanding of hydraulic hazards (pressure, stored energy, water hammer) Inadequate supervision of apprentice and new starters on landscaping irrigation projects No verification of plant operator competencies for trenchers, excavators or compactors 	4A	[REDACTED]	2M
5. Plant, Equipment and Tool Management for Irrigation and Ditching	<ul style="list-style-type: none"> Use of uninspected or poorly maintained trenchers, excavators, compactors and pumps Failure of hoses, couplings or fittings under pressure during irrigation testing Uncontrolled interaction of mobile plant with workers in excavation areas Inappropriate tools used for cutting pipes or fittings, increasing risk of lacerations and eye injuries Lack of system for managing defective equipment and removing it from service 	4A	[REDACTED]	2M

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]	
6. Excavation, Trenching and Ground Stability Management	<ul style="list-style-type: none"> • Collapse of irrigation ditches and trenches due to unstable or waterlogged soils • Uncontrolled access to open excavations by workers or public (especially in landscaped public areas) • Inadequate systems for assessing trench depth, battering and shoring requirements • Failure to manage spoil placement leading to surcharge on trench edges • Ingress of surface water increasing risk of slip, trip and drowning in deeper excavations 	4A	[REDACTED]	2M
7. Underground and Overhead Services Management	<ul style="list-style-type: none"> • Striking underground electrical, gas, water, communications or sewer lines during ditching • Contact of plant or equipment with overhead powerlines during installation • Inaccurate or outdated service plans leading to false sense of security • Lack of a systematic approach to locating and positively identifying services • Uncontrolled work in easements with multiple third-party asset owners 	4A	[REDACTED]	2M
8. Water, Pressure and Pump System Safety	<ul style="list-style-type: none"> • Uncontrolled release of high-pressure water during testing, flushing or commissioning of irrigation lines 	4A	[REDACTED]	2M

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
	<ul style="list-style-type: none"> • Failure of pumps, valves or fittings resulting in hose whip or component ejection • Backflow contamination into potable water supplies due to inadequate backflow prevention systems • Working on live or partially isolated irrigation systems • Stored energy hazards in pressure vessels, accumulators or elevated storage tanks 		[REDACTED]	
9. Environmental Conditions, Site Layout and Public Interface	<ul style="list-style-type: none"> • Heat stress, UV exposure and dehydration during outdoor irrigation and landscaping works • Slips, trips and falls due to uneven ground, open ditches and temporary irrigation lines • Uncontrolled access by members of the public to active irrigation installation areas, particularly in parks or commercial landscapes • Adverse weather (heavy storms, flooding) affecting trench stability and electrical safety of pumps • Poor site layout leading to vehicle-pedestrian conflict around material laydowns and watering equipment 		[REDACTED]	2M
10. Manual Handling, Ergonomics and Repetitive Work	<ul style="list-style-type: none"> • Musculoskeletal strain from handling long runs of pipe, sprinklers, valves and concrete products • Repetitive digging, raking and shovelling during ditch building and backfilling • Working in awkward postures within narrow trenches or confined valve boxes • Improvised manual lifting of pumps, control boxes and heavy fittings due to lack of mechanical aids 	3H	[REDACTED]	1L

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
	<ul style="list-style-type: none"> Insufficient planning of deliveries leading to excessive double-handling of irrigation materials 		[REDACTED]	
11. Chemicals, Fuels and Biological Hazards in Irrigation Work	<ul style="list-style-type: none"> Exposure to fertilisers, soil amendments and water treatment chemicals used with irrigation systems Diesel, petrol and oil handling for pumps and small plant without adequate controls Biological contaminants in reclaimed water or stagnant irrigation lines (e.g. leptospirosis, legionella risk in aerosols) Contact with contaminated soils, animal waste or sharps when trenching in landscaped or urban areas Inadequate storage and labelling of chemicals leading to misuse or incompatible mixing 	3H	[REDACTED]	1L
12. Electrical and Control Systems for Irrigation	<ul style="list-style-type: none"> Electric shock from poorly installed or maintained irrigation controllers, pumps and underground cabling Unauthorised modification of electrical components by unlicensed workers during repairs Water ingress into electrical enclosures due to poor system design or maintenance Inadequate segregation between low-voltage power and control/communication circuits Lack of safe systems for testing, fault-finding and isolation of electrically operated irrigation equipment 	4A	[REDACTED]	2M
13. Traffic, Mobile Plant and Journey Management	<ul style="list-style-type: none"> Vehicle and plant movements around landscaping and irrigation sites creating crush or strike risks 	3H	[REDACTED]	2M

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
	<ul style="list-style-type: none"> Towing of trailers carrying irrigation plant and materials without systematic safety checks Unmanaged worker travel to remote irrigation locations, farms or large estates Poor visibility during early morning or evening work when setting out irrigation lines Inadequate controls for reversing and manoeuvring in tight landscape spaces 		[REDACTED]	
14. Emergency Preparedness and Incident Management	<ul style="list-style-type: none"> Delayed response to trench collapse, service strike or high-pressure release incidents Lack of suitable rescue plans for work in deeper irrigation ditches or confined valve chambers Inadequate first aid resources for outdoor and remote irrigation sites Poor incident reporting and investigation processes leading to repeat events Workers unaware of procedures for dealing with chemical spills or fuel leaks 	3H	[REDACTED]	1L
15. Documentation, Records, Audits and Continuous Improvement	<ul style="list-style-type: none"> Inadequate documentation of WHS procedures for irrigation and landscaping projects Outdated or inaccessible risk assessments, permits and inspection records Lack of systematic auditing of WHS practices on irrigation work sites 	3H	[REDACTED]	1L

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
	<ul style="list-style-type: none"> • Failure to learn from incidents, near misses and industry alerts relevant to trenching and irrigation • Non-compliance with legislative and client WHS requirements due to poor record keeping 		<div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div> <div style="background-color: black; height: 15px; width: 100%;"></div>	

SAMPLE

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>

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>

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-codes-of-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>

Northern Territory

Work Health and Safety (National Uniform Legislation) Act 2011
 Work Health and Safety (National Uniform Legislation) Regulation 2011
 Legislation NT: <https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws>
 Codes of Practice NT: <https://worksafe.nt.gov.au/laws-and-compliance/codes-of-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>

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>

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

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.