

Water Truck

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 for the task parts. 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. Vehicle Procurement and Design Selection	<ul style="list-style-type: none"> • Purchase of water truck (water cart / water tanker) that is not fit-for-purpose for site conditions, road grades, or load requirements • Inadequate engineering verification of tank capacity, baffling and load distribution leading to instability or rollover risk • Lack of compliance with Australian Design Rules (ADRs), Heavy Vehicle National Law (HVNL) and relevant Australian Standards for road-going and off-road plant • Inadequate consideration of visibility (blind spots), access, egress and operator ergonomics in procurement specifications • Failure to specify suitable braking systems, retarder controls and traction systems for steep, unsealed or wet haul roads • Omission of engineering controls for dust suppression systems (spray bar design, nozzle placement and control interfaces) creating uncontrolled spray patterns • Vehicle modifications (e.g. retrofit of tanks, spray systems, remote controls) without engineering certification or change management • Insufficient capacity or rating of ROPS/FOPS (where applicable) or cabin structure for operating environment • Lack of standardisation across fleet leading to inconsistent controls, labelling and training requirements • Failure to consider maintenance access and isolation requirements during design and purchase phase 	High	<ul style="list-style-type: none"> • Develop and implement a documented water truck procurement standard that references WHS Act 2011, WHS Regulations and applicable Australian Standards (e.g. for mobile plant, pressure equipment where relevant, and design strain) • Require written confirmation of compliance with relevant Australian Design Rules (ADRs) and Heavy Vehicle National Law (HVNL) from supplier for all road-registered water tankers • Specify engineering design requirements including tank capacity limits, baffles, centre of gravity, axle load distribution, rollover threshold and braking performance suitable for intended haul road gradients and conditions • Engage a competent engineer to review and sign off any custom tank builds or modifications including spray systems, pump installations and structural mounts prior to commissioning • Include mandatory safety features in procurement specifications such as: compliant ROPS/FOPS where required, high-visibility lighting, reversing cameras, proximity alarms, emergency stop devices, and in-cab fire extinguisher locations • Specify design features that support safe access and egress (non-slip steps, handrails, three-point contact), safe maintenance access (platforms, anchor points) and clear visibility (mirrors, cameras) at the procurement stage • Standardise controls, switch layouts, labelling conventions and in-cab displays across the water truck fleet as far as reasonably practicable to reduce human error • Include dust suppression system requirements in specifications, including adjustable spray zones, lockouts to prevent water application on unsafe gradients and integration with vehicle speed controls where practicable • Implement a formal management of change (MoC) procedure for all proposed modifications to water trucks, requiring documented risk assessment and engineering review before work proceeds • Include lifecycle considerations (whole-of-life cost, availability of parts, service requirements, and OEM support) in procurement decisions to support ongoing safe operation and maintenance 	Medium

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2. Governance, WHS Management System and Legal Compliance	<ul style="list-style-type: none"> Lack of clear organisational accountability for water truck fleet safety and compliance under the WHS Act 2011 and WHS Regulations Inadequate integration of water truck operations into the overall WHS management system and risk management framework Failure to identify and monitor legal and other requirements relevant to heavy vehicles, mobile plant, fatigue and roadworthiness Insufficient consultation with workers, health and safety representatives and contractors involved with water carts and tankers Poor documentation and control of procedures leading to inconsistent practices between shifts, sites and contractors Inadequate processes for monitoring, reviewing and continuously improving the safety management system as it relates to water trucks Failure to incorporate learning from incidents, near misses and injury alerts into system controls and training Lack of integration between WHS systems and fleet / asset management systems creating gaps in implementation Inconsistent application of risk assessment processes when introducing new water truck types, routes or tasks Insufficient oversight of contractor-supplied water trucks, including verification of their safety management systems 	High	<ul style="list-style-type: none"> Assign clear responsibilities within the WHS management system for water truck safety, including a designated senior manager accountable for mobile plant and heavy vehicle risks Embed water truck risk management into the organisation's documented WHS risk management procedure, ensuring hazards are identified, risks assessed, and controls implemented and reviewed in line with the WHS Regulations Maintain a legal and other requirements register that covers WHS Act 2011, WHS Regulations, Heavy Vehicle National Law, road traffic legislation, environmental licence conditions (dust and water use) and relevant Australian Standards Establish formal consultation mechanism (e.g. WHS committees, toolbox talks, safety forums) that includes water truck operators, maintenance personnel and supervisors in decisions affecting their health and safety Develop, approve and control key procedures for water truck management (e.g. fatigue management, load and route restrictions, speed management, maintenance and defect reporting, emergency response) under a document control system Implement periodic internal audits and inspections specifically targeted at water truck operations, checking compliance with WHS policies, procedures and legislative requirements Introduce a structured process for incident and near-miss investigation involving water trucks, using root cause analysis and ensuring corrective and preventive actions are tracked to completion Integrate fleet management software and WHS reporting systems so that defects, incidents, training status and fatigue data can be monitored and analysed together Require pre-implementation risk assessments for all new water truck types, major route changes or significant operational changes, documenting risk controls and sign-offs Include contractor management arrangements that require verification of contractor WHS systems for water truck operations, including evidence of licences, maintenance programs, training and incident management processes 	Medium
3. Driver Competency, Licensing and Training Systems	<ul style="list-style-type: none"> Drivers operating water trucks without the appropriate driver's licence class or plant competency for vehicle size and configuration 	High	<ul style="list-style-type: none"> Develop a competency matrix for water truck operations that sets minimum licence, training and experience requirements for each vehicle size, configuration and operating environment 	Medium

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	<ul style="list-style-type: none"> Inconsistent or inadequate training in water truck-specific hazards such as surge, rollover risk, spray use, braking behaviour and off-road driving No formal verification of competency (VOC) processes or reliance on informal on-the-job learning Insufficient training in site rules, traffic management plans, communication protocols and emergency procedures Lack of training in recognition and reporting of mechanical defects, fatigue symptoms and environmental risks (e.g. soft edges, sinkholes) Failure to provide refresher training, particularly when incidents occur, conditions change or new equipment is introduced Inadequate literacy, language or numeracy support leading to misunderstanding of procedures, signage and gauges No documented induction process for new or agency drivers using water carts / tankers Over-reliance on single experienced operator leading to key person risk and limited cross-skilling Insufficient supervisor capability to assess and coach driver behaviours and adherence to safe systems of work 		<ul style="list-style-type: none"> Require verification and recording of current, appropriate driver's licence class and any high-risk work licences (if applicable) before authorising drivers to operate water carts or tankers Implement a formal training program covering water truck-specific risks such as load dynamics, surge, rollover thresholds, gradient limits, braking characteristics, spray system use, and operating on unsealed or wet roads Introduce a structured verification of competency (VOC) process for all water truck operators using a standardised assessment tool conducted by approved competent assessors Provide site-specific induction training for water truck drivers that covers traffic management plans, speed limits, right-of-way rules, radio protocols, waste fill limits, exclusion zones and emergency response arrangements Deliver targeted training on hazard identification, defect recognition, pre-start processes, fatigue management and incident reporting requirements for drivers and supervisors Make training materials accessible and suitable for the workforce, including plain-English procedures, visual aids and translation or interpreter support where required Establish refresher training intervals for water truck operators based on risk (e.g. every 2–3 years, or following incidents, serious near misses, or major changes to plant or routes) Cross-skill multiple operators to reduce dependency on single individuals and ensure consistent coverage across all shifts and rosters Train supervisors in effective safety leadership, behavioural observation, feedback techniques and how to use training and VOC records when allocating work 	
4. Fatigue Management and Scheduling	<ul style="list-style-type: none"> Extended shifts and irregular rosters for water truck drivers leading to fatigue-related impairment and reduced vigilance Inadequate fatigue management policy or lack of alignment with Heavy Vehicle National Law fatigue requirements (where applicable) Pressure to meet production or dust suppression targets resulting in reduced rest breaks or unsafe driving behaviours 	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	<ul style="list-style-type: none"> Poorly designed rosters that do not account for circadian rhythms, travel time to and from site, and cumulative fatigue over successive days Drivers working multiple jobs or being called in at short notice without sufficient rest periods Insufficient education for drivers and supervisors about fatigue risks, signs and reporting processes Lack of monitoring tools for fatigue indicators (e.g. work hours, near misses, inattention events) across the water truck fleet Inadequate control of overtime and unplanned work for water cart operations during peak demand or emergency events No clear process to allow drivers to stop work if fatigued without fear of reprisal Limited integration of fatigue data into incident investigations and reviews 		<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	
5. Maintenance, Inspection and Defect Management Systems	<ul style="list-style-type: none"> Inadequate preventative maintenance scheduling for water trucks, pumps and spray systems leading to mechanical failures Lack of systematic pre-start and post-use inspection processes to allow to act on identified defects Use of non-genuine or unsuitable parts that compromise braking, suspension, steering or structural integrity Deferred maintenance due to production pressures, lack of parts or budget constraints resulting in unsafe vehicles remaining in service Poor communication between operators, maintenance personnel and supervisors about known or suspected defects 	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	<ul style="list-style-type: none"> • Incomplete service records and maintenance histories, limiting ability to identify recurring issues or systemic problems • Insufficient testing and inspection of critical systems such as brakes, tyres, steering, lights, ROPS/FOPS, load restraints and emergency stops • Uncontrolled modifications or repairs performed by non-competent persons or without reference to OEM specifications • Failure to isolate and tag out unsafe water trucks, allowing them to be used while defective • Limited verification that contractor-owned water carts / water tankers are maintained to equivalent standards 		<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	
6. Traffic Management, Routing and Site Interface	<ul style="list-style-type: none"> • Poorly designed traffic management plans leading to interactions between water trucks and light vehicles, pedestrians or other mobile plant • Inadequate separation of haul roads, access tracks and pedestrian walkways within work sites • Uncontrolled interface between on-road and off-road environments, including public roads, site access points and laydown areas • Lack of clear signage, line marking and speed control measures on routes used by water carts and tankers • Water spray on haul roads or public roads creating slippery surfaces, loss of traction and increased stopping distances • Unmanaged use of water trucks on steep or unstable haul roads increasing rollover and brake failure risks • Poor visibility due to dust, topography, lighting or weather increasing collision risks 	High	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	Medium

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	<ul style="list-style-type: none"> • Insufficient communication protocols (e.g. UHF channels, call points) among road users, particularly on single-lane or one-way routes • No formal route risk assessment considering gradients, edge protection, turning circles, overtaking and escape routes • Failure to adjust traffic controls during changed conditions, such as wet weather, construction work, blasting or road maintenance 		[REDACTED]	
7. Load Management, Tank Operation and Stability Controls	<ul style="list-style-type: none"> • Overfilling or uneven filling of water tanks leading to excessive surge, high centre of gravity and increased rollover risk • Lack of controls on fill volumes relative to route gradients, speed limits and ground conditions • Inadequate baffling or internal tank design control increasing dynamic load movement during braking or cornering • Uncontrolled discharge of water (e.g. incorrect spray settings, valve failures) causing sudden wet patches on road surface hazards • Failure to verify tank, mounting or chassis ratings when changing tank size or vehicle type • Insufficient procedures for operating with partial loads where load dynamics can be more unstable • No documented restrictions on operating water trucks on certain gradients, cambers or road surfaces when fully loaded • Lack of driver understanding of how surge and partial loads affect braking distance, cornering and rollover thresholds 	High	[REDACTED]	Medium

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10. Contractor and Third-Party Water Truck Management	<ul style="list-style-type: none"> • Use of contractor-supplied water carts or tankers that do not meet the organisation's safety standards or legislative requirements • Lack of visibility over contractor driver competency, training, fatigue management and maintenance systems • Inconsistent communication of site rules, traffic management plans and emergency procedures to contractors • Commercial pressures leading contractors to prioritise productivity over safety and compliance • Inadequate pre-qualification and ongoing monitoring of contractor WHS performance for water truck operations • Poor interface management where multiple contractors and principal contractor water trucks share the same roads and work areas • Unclear allocation of responsibilities between PCBU(s) regarding management of WHS associated with contractor water trucks under the WHS Act 2011 • Insufficient induction or supervision of short-term or casual contractor drivers • Inconsistent incident reporting and investigation processes across contractor organisations • Inability to access or verify contractor records (e.g. licences, inspections, training, fatigue data) when required 	High	[REDACTED]	Medium
11. Information, Communication and Reporting Systems	<ul style="list-style-type: none"> • Critical safety information about water truck risks, route changes or incidents not reaching drivers and supervisors in a timely and understandable way • Inconsistent use of radios, phones or digital platforms leading to missed instructions or misunderstandings • Complex or bureaucratic reporting systems discouraging drivers from 	Medium	[REDACTED]	Low

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	<p>raising hazards, near misses or improvement ideas</p> <ul style="list-style-type: none"> • Failure to maintain up-to-date documentation (procedures, maps, emergency contacts) accessible to drivers in cab or at depots • Poor handover communication between shifts or between different crews and contractors • Insufficient feedback loops where drivers are not informed about the outcomes of issues they have reported • Over-reliance on verbal instructions without written confirmation for critical changes to routes, loads or operational limits • Language and literacy barriers preventing some drivers from fully understanding written communications and procedures • No systematic analysis of water truck related data (incidents, defects, fuel use, near misses) to identify trends and systemic risks • Inadequate use of technology (e.g. GPS, telematics, digital assistants) that could support safer and more efficient communication and monitoring 		<p>[REDACTED]</p>	

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.