| E-Waste Recycling Operations | | | |
|---|---|---|---|
| Business Name: | | ABN: | |
| Business Address: | | | |
| Contact Person: | Phone: | Email: | |

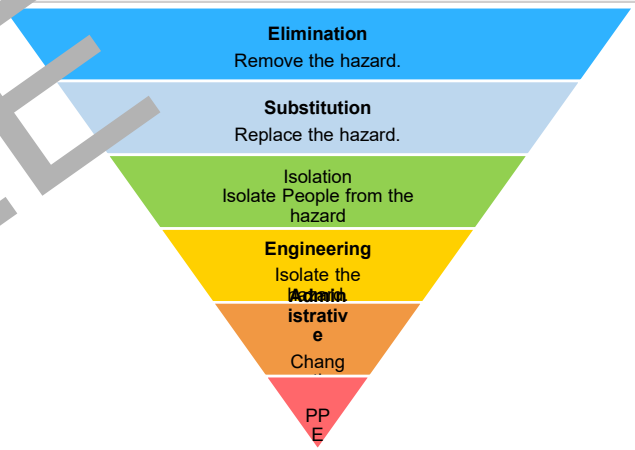
| THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT | | |
|---|---|---|
| Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts. | | |
| Full Name: | | |
| Signature: | Title: | Date: |

| CLIENT OR PRINCIPAL CONTRACTOR DETAILS | SCOPE OF WORKS |
|---|---|
| Client: | |
| 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, PCBU Duties and WHS Leadership | • Lack of clear allocation of WHS duties across officers, managers and supervisors, leading to gaps in control of e-waste recycling risks<br>• Inadequate due diligence by officers under WHS Act 2011 resulting in insufficient resources, poor oversight and unmanaged high-risk activities (e.g. PCB removal and handling of hazardous components)<br>• Failure to integrate WHS obligations into business planning, procurement and contract management for e-waste recycling operations<br>• No formal process to review compliance with WHS Act, WHS Regulation and relevant Codes of Practice (e.g. Hazardous Chemicals, Managing Electrical Risks at the Workplace)<br>• Inadequate consultation with workers about changes to systems for e-waste handling, segregation and disposal of electrical components<br>• Poor change management when introducing new dismantling tools, technologies or service providers for e-waste and PCB processing | High | • Establish a WHS governance framework that defines roles, responsibilities and accountabilities for PCBUs, officers, managers, supervisors, HSRs and workers specifically for e-waste recycling operations<br>• Ensure officers meet due diligence obligations under WHS Act 2011 by systematically acquiring WHS knowledge related to hazardous chemicals, electrical risks and e-waste specific hazards (e.g. lead, mercury, brominated flame retardants, PCBs)<br>• Integrate WHS requirements into strategic and operational planning, including budgeting for engineering controls, safe dismantling equipment and compliant storage/disposal systems for electrical components and PCBs<br>• Develop and maintain a documented WHS management system aligned with ISO 45001 (or equivalent) that explicitly covers e-waste activities, PCB removal processes and hazardous component streams<br>• Implement a formal WHS legal compliance register that includes WHS Act 2011, WHS Regulation 2011, dangerous goods and hazardous waste requirements, and regularly review it at management meetings<br>• Establish a structured consultation and communication procedure (e.g. WHS committee, toolbox meetings, HSR engagement) focused on system changes affecting e-waste dismantling, separation and disposal processes<br>• Implement a documented change management procedure to assess WHS risks before introducing new technologies, dismantling methods, contractors or recycling streams (including changes in PCB removal techniques or new electrical component categories)<br>• Schedule regular management reviews of WHS performance, incident trends and audit findings related to e-waste recycling, with recorded actions, responsibilities and due dates | Medium |
| 2. Risk Management, Planning and System Design | • Absence of a structured WHS risk management process for e-waste operations, leading to inconsistent identification and control of hazards<br>• Failure to consider upstream and downstream risks associated with receiving, processing and disposing of electrical and electronic components, including hazardous wastes and PCBs<br>• Poor segregation of waste streams in system design, resulting in cross-contamination (e.g. mixing PCB-containing materials with general recyclable metals or plastics) | High | • Implement a documented risk management procedure consistent with WHS Regulation 2011, requiring identification, assessment, control and review of risks across all e-waste recycling system elements<br>• Conduct high-level risk assessments for each major process stream (e.g. receipt, sorting, dismantling, PCB removal, storage, dispatch, off-site treatment) focusing on system and management controls rather than task detail<br>• Design the facility layout to segregate clean, low-risk streams from high-risk activities such as PCB removal, CRT handling and battery processing, with controlled access and dedicated ventilation where required<br>• Standardise waste stream classification and labelling systems so that PCB-containing materials, hazardous electronic components and general recyclables are clearly identified and tracked from receipt to disposal<br>• Require formal pre-implementation risk assessments (including consultation with workers and HSRs) for new plant, changes in process flow, and introduction of new dismantling or PCB removal technologies | 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 |
| | • No formal risk assessments for new or modified equipment used in dismantling, crushing or shredding e-waste, including PCB removal tools and negative-pressure extraction systems<br>• Inadequate consideration of cumulative exposure to hazardous substances (e.g. heavy metals, fibres, fumes) in planning of plant layout and ventilation systems<br>• Lack of planning for emergency scenarios relating to fire, chemical spills, gas release or loss of containment of hazardous electrical components | | • Incorporate hierarchy of control principles into system design, prioritising elimination, substitution and engineering controls before administrative controls and PPE<br>• Develop documented emergency planning scenari and response strategies specific to e-waste operations, such as electrical fires, hazardous d releases, chemical spills from capacitors or batteries and PCB-contaminated waste incidents<br>• Schedule periodic reviews of risk assessm s and ning documents following incidents, near misses or significant process changes | |
| 3. Procurement, Contractor and Supply Chain Management | • Procurement of plant, tools and equipment that are not fit for purpose or do not meet Australian WHS and electrical safety standards for e-waste dismantling and PCB handling<br>• Engagement of contractors (e.g. specialist PCB removal, hazardous waste transport, downstream recycler without adequate WHS prequalificatio or clear definition of safety responsibilities<br>• Supply chain arra ements that incentivise throug t over safety encouraging unsa hort handling and disposi of electrical components and printed circuit boar<br>• Inadequate verification t downstream recyclers and disposal facilities manage hazardous electronic components and PCB-containing wastes in compliance with relevant legislation and environmental requirements<br>• Lack of WHS criteria in procurement of PPE, ventilation systems, dust extraction, fume cupboards and other controls critical for safe handling of hazardous electronic components<br>• Poor communication of known hazards and control expectations to suppliers and contractors providing plant or services related to e-waste recycling | High | • bed HS pe ormance and compliance requirements into procurement policies for all plant, equip and services associated with e-waste and PCB removal operations<br>mplement a contractor management system that includes WHS prequalification, review of safety do mentation, and assessment of capability in hazardous waste, electrical and PCB handling<br>Include explicit WHS clauses in contracts and service agreements specifying roles, responsibilities, incident reporting, training expectations and minimum control standards for handling and transport of electrical components and PCB-containing wastes<br>• Develop supplier evaluation criteria that prioritise provision of compliant, low-risk plant (e.g. guarded dismantling equipment, enclosed PCB removal benches, local exhaust ventilation systems)<br>• Require written confirmation that downstream recyclers and disposal facilities hold relevant licences and have systems to safely manage hazardous e-waste fractions, including PCBs and other persistent organic pollutants<br>• Standardise safety specifications for PPE, spill kits, containment vessels and specialised containers for electrical components and PCB-containing materials, and ensure procurement complies with these specifications<br>• Establish formal communication channels with key suppliers and contractors to share safety information, changes in procedures and lessons learned from incidents<br>• Review contractor performance regularly through audits, site inspections and performance meetings, including checks on safe management of electrical and PCB waste streams | 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 |
| 4. Plant, Equipment and Facility Infrastructure Management | • Inadequate design, guarding or interlocking of shredders, crushers, conveyors and dismantling benches used for e-waste processing<br>• Poorly maintained ventilation, dust and fume extraction systems leading to accumulation of hazardous airborne contaminants from electronic components and PCB processing<br>• Lack of dedicated, engineered containment for hazardous electrical components (e.g. PCB-containing capacitors, mercury switches, batteries) resulting in leaks, spills or cross-contamination<br>• Uncontrolled energy sources (electrical, hydraulic, pneumatic) due to absence of robust isolation and lock-out systems on plant used in e-waste recycling<br>• Ineffective facility infrastructure for segregation of pedestrian and vehicle movements, increasing collision risks in areas where e-waste is d…ed, store… or dispatched<br>• Insufficient fixed …orage for segregated waste …eams …d… PCB wastes) causing… ad hoc stackin… overloading of racking and potential structural failures | High | [redacted] | Medium |
| 5. Hazardous Substances, PCB and Dangerous Goods Management | • Inadequate identification and classification of hazardous substances present in e-waste, including PCBs, lead, mercury, cadmium, brominated flame retardants and other persistent organic pollutants<br>• Lack of a formal system for safe PCB removal from components such as capacitors and transformers, resulting in leaks, contamination and worker exposure<br>• Poor inventory control and record-keeping for PCB-containing wastes and other regulated hazardous | 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 |
| | components, hindering traceability and compliance<br>• Failure to maintain current Safety Data Sheets and clear labelling for hazardous chemicals generated or used in e-waste recycling processes<br>• Inappropriate storage conditions (e.g. incompatible substances, no bunding, inadequate ventilation) for hazardous electronic components and chemical by-products<br>• Insufficient procedures for safe transport, manifesting and disposal of PCB-containing wastes and other hazardous electronic fractions in accordance with state and Commonwealth requirements | | [redacted] | |
| 6. Information, Instruction, Training and Competency | • Workers and supervisors lacking competency in recognising hazardous electrical components and PCB-containing items within mixed e-waste streams<br>• Insufficient training on health effects and exposure pathways for hazardous substances present in electronic components and PCBs, leading to poor risk perception<br>• Inadequate instruction on systems segregation, labelling and documentation of hazardous e-waste and PCB-containing components<br>• No formal verification of competency for roles requiring higher-level skills, such as PCB removal, operation of specialised dismantling plant or supervision of hazardous waste areas<br>• Failure to provide refresher training or updates when procedures, technologies or legislative requirements change<br>• Over-reliance on informal, on-the-job training that is not documented or standardised across shifts and sites | 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 |
| 7. Safe Systems of Work, Procedures and Documentation | • Absence of clear written procedures for key e-waste processes such as receipt, sorting, dismantling, PCB removal and segregation of hazardous electrical components<br>• Procedures that focus solely on manual actions without adequately addressing management responsibilities, escalation pathways and system-level controls<br>• Documented procedures not reflecting actual practice, creating confusion and encouraging informal work-arounds<br>• Overly complex or inaccessible documentation that workers do not read, understand or apply in day-to-day e-waste operations<br>• Failure to integrate safe disposal requirements for electrical components and PCB-containing wastes into broader work instructions and operational manuals<br>• No formal process for periodic review and updating of procedures following incidents, audits or process changes | High | [redacted] | Medium |
| 8. Health Monitoring, Exposure Control and Hygiene Systems | • Lack of systematic assessment of worker exposure to hazardous substances present in e-waste and PCBs, leading to undetected chronic health risks<br>• No formal health monitoring program for workers at risk of exposure to lead, mercury or other relevant hazardous substances where required by WHS Regulation<br>• Inadequate workplace hygiene systems (e.g. no clean/dirty change areas, poor washing facilities) increasing risk of ingestion and take-home contamination from processing of electronic components and PCBs | 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 |
| | • Insufficient control of airborne contaminants due to lack of monitoring and maintenance of engineering controls<br>• Failure to establish clear criteria for fitness for work and management of workers with health conditions that may be worsened by exposure to e-waste hazards | | [redacted] | |
| 9. Emergency Preparedness, Incident Management and Spill Response | • Insufficient planning for emergencies related to fires, explosions or releases arising from damaged batteries, capacitors, PCBs and other hazardous electrical components<br>• Lack of specific procedures for managing spills or leaks of PCB-containing substances or other hazardous chemical releases from e-waste operations<br>• Inadequate onsite emergency equipment (e.g. spill kits, fire extinguishers, containment devices) or equipment that is not appropriate for the types of materials handled<br>• Poor incident reporting and investigation systems resulting in repeated events and unaddressed systemic failures<br>• No coordination with local emergency services regarding the nature and quantities of hazardous e-waste and PCB-containing materials stored onsite | High | [redacted] | Medium |
| 10. Monitoring, Audit, Reporting and Continuous Improvement | • Lack of systematic WHS performance monitoring for e-waste recycling operations, leading to undetected trends in incidents, exposures or non-compliance<br>• No formal audit program to verify implementation and effectiveness of WHS controls related to PCB removal, | Medium | [redacted] | Low |

| 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 |
| | hazardous electronic component handling and waste segregation<br>• Inadequate reporting to officers and senior management on key WHS risks and control status for e-waste activities<br>• Failure to learn from incidents, near misses, regulatory inspections and industry best practice, resulting in stagnation of safety performance<br>• Data collection systems that focus only on lag indicators (e.g. injuries) and ignore leading indicators (e.g. inspections, training completion, procedure compliance) | | [redacted] | |
| | | | | |
| | | | | |

## 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