

Critical Control Handbook

Safe for Life! Everyday, Always!

MAN-00313 I Version 13 | August 2026

seqwater WATER FOR LIFE

Contents

Background **3**
What are critical controls 3
Critical Control Specifications 3
Contractor Expectations 3
Critical Controls for Emergency Response **4**
Confined Spaces **5**
Cranes and Lifting **6**
Driving **8**
Electricity **10**
Excavation **15**
Fire and Explosion **18**
Hazardous Energy **19**
Hazardous Substances **21**
Plant (Mobile and Fixed) **22**
Working at Heights **24**
Working On In or Near Water **26**

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Background

What are critical controls

At Seqwater we have identified 11 risks that have the potential to cause a fatality if no controls are applied. A Critical Control is a control related to one of these risks that is crucial to preventing this fatality occurring (i.e. its absence would significantly increase the likelihood of a fatality occur).

Critical Control Specifications

For each Critical Control identified by Seqwater a detailed specification was developed that includes:

1. **Control Objective** – why the control is required to prevent a fatality.
2. **Performance Standards** – the expected performance of the control for it to be considered effective.
3. **Trigger Points** – expected actions required should a critical control be identified as not in place or working effectively. There are three levels of action specific for each critical control:

Continue	Work may continue – the risk to be fixed in the future. Seqwater employees should report these as a hazard in Protecht.
Pause	Stop work temporarily - the risk to be resolved before progressing - can be managed locally.
Stop	Work must be stopped - investigation required - risk cannot be managed without further action. Seqwater employees should report these as an incident or near miss in Protecht.

Contractor Expectations

This handbook is designed to be a communication tool which outlines the minimum set of safety controls for Seqwater's Fatality Risks.

While contractor's will be operating under their own safety management system, it is expected that contractor's procedures/processes will meet or exceed the objective of Seqwater's critical controls, and ensure there is a system in place which supports the identification and interaction with the critical controls.

Seqwater workers may use this handbook to review contractor's documentation to ensure minimum standards are included in their risk management documents.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Controls for Emergency Response

The following critical controls are applicable to all fatality risks. They are key to minimising the potential impact of any incident where a preventative critical control has failed or is not fully effective.

Critical Control	Performance Standards	Trigger Points	
Site response to an incident is planned and prepared *Objective: Initiate initial rescue and first response by workers in the case of an incident (including skilled rescue and associated equipment)*	• Rescue plan defined for activities involving high risk work – e.g. confined space, working at heights, working on, in or near water, diving, and excavation. • Specific requirements for rescue and retrieval are identified in rescue plan – e.g. Confined spaces - Worker at risk must have continuous connection to rescue harness possible for vertical winch rescue (no obstructions) • High-risk work team (confined space, work at heights) are trained and authorised for the relevant high-risk work and rescue. • Winch, harness, anchor points, and any other relevant rescue equipment are legislatively and OEM compliant for intended use, inspected and in test date where relevant, in good condition and readily available at worksite. • Emergency plan developed and tested. • Site emergency exercises and drills. First aider and kit readily available for high-risk work. • Defibrillator readily available in signed locations, brought to work area for all electrical work that has determined a spotter is required, and for any other activities as identified in risk assessment.	Continue	Issues or risks of rescue plan are identified during practice (e.g. obstructions to lift or extraction path, communication failure, etc) but can be safely managed
		Pause	Rescue equipment is available but is not set up in preparation for rescue. Rescue equipment is in poor condition or unavailable, but other equipment is available on site. Rescue plan is practiced, but cannot safely be conducted (e.g. confined spaces rescue specialist to be contracted prior to work)
		Stop	No rescue plan in place, however workers are conducting high risk work. Issues or risks of rescue plan are identified during practice (e.g. obstructions to lift, communication failure, etc) but cannot be safely managed; external rescue contractors will be required. Rescue equipment required is not available, or in poor condition and no alternatives available.
Emergency Services Assistance can be coordinated for emergency *Objective: Enable early access to emergency services (i.e. 000) so experts can attend site to commence potentially life-saving rescue and care.*	• An operable communication device and/or reliable mechanism to raise the alarm and facilitate emergency services assistance on site. • Remote workers maintain at least 2 communication methods (satellite phone, duress alarms/EPIRB/PLBs, man-down alarm, mobile phone, radio). • The specific location of work is identified, and can be communicated to emergency services (GPS, EPIRB, PLBs, man-down alarm, the National Response Centre (NRC) TraXu app, Emergency Plus App – what3words).	Continue	N/A
		Pause	Emergency services may not be able to attend the site due to flood or road closure. Specific work location cannot be identified – alternative method of location determined. Worker identifies their current location is remote or out of range of mobile coverage and they have not logged job with NRC; retreat to non-remote area to register location.
		Stop	Emergency services are unable to be contacted when needed, or communication equipment is not operable.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Confined Spaces

Critical Control	Performance Standards	Trigger Points	
Confined Spaces are secured against inadvertent or unauthorised entry. *Objective: To prevent inadvertent / unauthorised entry to confined space and subsequent injury*	• Confined spaces are secured to prevent inadvertent or unauthorised entry (e.g. covered, locked or secured behind a barrier). • Standby person when conducting work within confined space or the Confined Space is not secured through other means.	Continue	Permanent Confined Space identified that is not included in Confined Space Register – treat it as a confined space and the Site Owner to organise for this to be assessed.
		Pause	Confined space with fall risk found uncovered or with damaged cover but can be immediately fixed. Confined Space is found unsecured against inadvertent or unauthorised entry but can be immediately re-secured.
		Stop	Confined space is found unsecured and is unable to be immediately secured. Site conditions change – unauthorised persons are in close proximity to open confined space and unauthorised access cannot be controlled.
A safe atmosphere is verified prior to Confined Space entry and continuously monitored with calibrated equipment *Objective: To maintain a safe atmosphere in confined spaces where workers are present.*	• Air quality within confined space is prepared for breathing prior to entry. This includes emptying, cleaning and ventilating the space. • Gas monitor is calibrated and in good condition. • Competent person conducts testing of confined space prior to entry. • Continuous monitoring is conducted for duration of entry into confined space.	Continue	N/A
		Pause	Gas monitor found out of date calibration, or otherwise not in working order, prior to beginning work, but second, calibrated and fully functioning, gas detector is available for use. Gas levels increase detected; risk to be re-assessed. Gas monitor stops working after entering Confined Space, but a second monitor is available.
		Stop	Gas levels exceeding requirement detected. No working gas detector available. Controls listed in permit breached, including: • number of workers entering confined space (air quality) • ventilation requirements • continuous monitoring of atmosphere
Isolations of all gases, liquids and solids with potential to enter the Confined Space have been verified prior to entry. *Objective: To prevent introduction of gases, liquids or solids into confined spaces where workers are present.*	• Energy sources have been verified as isolated, locked and tagged prior to entry to the Confined Space. • Any built-up stored energy has been demonstrably released prior to entry to the confined space (i.e. any pressure is run-off).	Continue	N/A
		Pause	Other energy sources with local isolation points identified at site. Isolation tag and/or lock is found unattached during work (but isolation is still maintained). Worker leaves site without removing personal lock
		Stop	Isolation of all gas, liquid or solid with potential to enter the Confined Space cannot be verified prior to entry Person identified within confined space without their lock on isolation board Isolation is not maintained, either by failure of isolation point or re-energisation of isolation point while team remain within confined space

Seqwater employees should refer to Seqwater's Confined Space Procedure (PRO-00443) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Cranes and Lifting

Critical Control	Performance Standards	Trigger Points	
The maximum rated Working Load Limit (WLL) of Cranes & Lifting equipment is not exceeded, *Objective: To prevent a mechanical failure and resulting loss of control of load or lifting equipment (cranes, excavator, etc).*	• Fit for purpose crane / lifting equipment in test date, and set up correctly (footing, outrigger pads). • WLL displayed and legible on the lifting equipment, and load mass is less than the verified maximum rated Working Load Limit (WLL). • Safety devices, alarms and movement limiting and indicating devices are functional,	Continue	N/A
		Pause	Load mass labelling is illegible or not present on equipment, but limits can be verified through other means. Equipment has superficial damage or deterioration, following assessment is deemed fit for purpose.
		Stop	Load mass cannot be verified as less than the maximum rated Working Load Limit (WLL). Safety devices / alarms / movement limiting devices are observed as tampered with or overridden, or otherwise non-functional.

Loads must be rigged, lifted, suspended and moved in a way that ensures that the load remains under control at all times.
Objective: Manage load movement to prevent the suspended load from falling or shifting.
	• Rated and certified equipment in test date, in good condition.
	• Slinging method is appropriate for load
	  ○ Tag line used
	  ○ Double wrapped chains on metal load
	  ○ No slings around sharp corners
	  ○ Reeve angle less than 120 degrees
	  ○ Hooks around the right way
	  ○ No stretched chains
	  ○ Consideration of dynamic load forces (sudden stopping, wind)
	• Positive and undistracted communication maintained between the Operator, person/s in control of the load, and any spotters (visual, vocal, radio, whistle)
		Continue	N/A

		Pause	Load begins to move in uncontrolled manner but can be effectively managed to regain control and reassess. Communication between spotter and operator is inadequate – reassess prior to continuing work. Equipment not in test date or functional condition, but other equipment can be sourced on site Slinging has been observed as unsafe, but can be re-evaluated and re-slung.
		Stop	Equipment not in test date or functional condition and no other equipment available. Slinging has been observed as unsafe, and cannot be re-evaluated and re-slung. Load is dropped. Lifting lug or point fails.
Cranes that use a workbox to elevate people have an anti-free fall device or secondary independent brake on all winches. *Objective: To prevent rapid, uncontrolled descent to ground of a workbox elevating people.*	• Risk assessment is undertaken and recorded, demonstrating that other means of access (e.g. scaffolding or EWP) are impractical for the intended use. • Wind levels must be less than lowered wind rating of 7m/s instead of 10m/s. • Anti-free fall device / secondary independent brake installed on all winches and in service date. • Derated capacity of crane identified (no more than 30%).	Continue	N/A
		Pause	Anti-freefall device maintenance is out of service date Wind speed exceeds 7m/s
		Stop	De-rated capacity of crane (wight capacity considering degraded conditions) cannot be identified No anti-free fall device installed or identified as non-operational

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
No persons positioned under a suspended load. *Objective: To prevent a person being struck by a falling or suspended load*	• Lift height managed to reduce risk of persons under load i.e. kept low. • Only authorised persons in the slew radius exclusion zone and path of travel during operation to direct small accurate movements of a load. • Well defined and established exclusion zone (e.g. expanding barriers, tape, barrier mesh) that considers path of travel, load spilling, bounce, and other uncontrolled movement • Where reasonable, tag line(s) tied to the front of the crane to eliminate the need for the dogger to hold the end of the tag line. • Positive and undistracted communication maintained between dedicated spotter and the machine operator where required. • The dogger, dedicated spotter and other workers in work zone maintain distance from the travel path of the crane or between the crane and the suspended load.	Continue	Demarcation and/or signage is in poor condition but legible and effective at communicating exclusion zone or preventing entry.
		Pause	Signage or barrier is identified as insufficient, but can be made adequate with equipment/material on site. Unauthorised person has breached exclusion zone. Communication between spotter and operator is inadequate – reassess prior to continuing work. Visibility of load and area under load is lost; reassess position of operator and spotter.
		Stop	Appropriate exclusion zone could not be established. Controlled lift not possible under conditions without person beneath suspended load. Person observed under suspended load. Dedicated spotter not available. Reassessment of task required.
No persons in the path of travel of moving load. *Objective: To prevent interaction between mobile plant or equipment and workers*	• Where reasonable, tag line(s) tied to the front of the crane to eliminate the need for the dogger to hold the end of the tag line. • The dogger and dedicated spotter maintain distance from the travel path of the crane or between the crane and the suspended load. • Bucket grounded and controls de-activated before person enters the slew radius exclusion zone. • Only authorised person in the slew radius exclusion zone during operation to direct small accurate movements of a load. • Well defined marking of exclusion zones for shifting load - No persons within 3m of operating mobile plant. • Positive and undistracted communication maintained between dedicated spotter and the machine operator and any additional lifting party members where required.	Continue	Site signage, barriers or lines in poor but functional condition.
		Pause	The crane operator stops the crane if they lose sight of the dogger. Communication between spotter and operator is inadequate – reassess prior to continuing work. Site permanent barriers in non-functional condition, but temporary barrier or other solution can be implemented. Dedicated potter not available. Reassessment of task required.
		Stop	Site exclusion signage, vehicle flashing lights, or lines absent or illegible. Person identified as entering exclusion zone.

Seqwater employees should refer to Seqwater's Cranes and Lifting Procedure (PRO-00861) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Driving

Critical Control	Performance Standards	Trigger Points	

Fit for purpose vehicles for task.
Objective: Ensure vehicles/mobile plant are appropriate for work being performed to prevent incidents.
	• Procurement specifications in place on vehicle including:
	  ○ 5-star ANCAP rating
	  ○ ABS
	  ○ Functional protections fitted to identified vehicles e.g. Bull bar, 4WD
	  ○ Specific vehicle requirements – e.g. Fire unit (ROPS, FOPS), ATV etc.
	• Designs, bypasses or modifications are certified
	• Prestart of vehicles conducted prior to driving (including review of loose objects within cabin) – ensure vehicle is appropriate for task and working correctly
		Continue	Vehicle has minor exterior damage or uncleanliness.
			Vehicle is having unusual sounds, but appears to be driving safely – contact fleet, advised to continue
			Prestart triggers call to SME (Fleet), advised to continue work
			Vehicle is out of service, but within 1 month of service date.

		Pause	Vehicle has moderate exterior damage but can be driven back to a fleet base. Vehicle tyres are slightly flat (inflate at fuel stop) Vehicle alert has occurred; prestart triggers call to SME (Fleet) advised to stop driving Vehicle is out of service by more than 1 month – vehicle to be booked in for service
		Stop	Vehicle condition unsafe to drive. e.g. bald tyres, safety device bypassed, nonfunctional, or overridden.
Drivers to drive to conditions dictated by work activity, load, road, weather, time of day and speed limits. *Objective: To ensure drivers comply with road rules and consider dynamic conditions that may affect operation of vehicles*	• Driver has current class c drivers licence • Driver complies with legal requirements • Assessment conducted / exemption form for emergency access through submerged roads • Seat Belts must be worn when operating a vehicle	Continue	Weather is raining, dusty, or smoky, but visibility remains, and the intended path of travel is clear and in good condition. For flooded roads, the depth of water to be driven through is less than 150 mm (around the height of the tyre of the vehicle) and the water is still, or the flow is less than 0.5 m/s, with no signs of erosion or instability of the road base.
		Pause	Weather or conditions impacts visibility, but will pass when weather or conditions return to normal. Emergency access is required through submerged water, but a risk assessment and exemption form have been conducted
		Stop	Weather or conditions impacts intended path of travel or affects vehicle to the extent the road cannot be safely driven.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	

Loads are restrained, positioned and within mass limits
Objective: To prevent the loss of control of a load, preventing injury to other workers or members of the public, and in accordance with the Department of Traffic and Main Roads (DTMR) restraining laws.
	• Mass limits displayed on vehicles.
	• Rated tie down equipment.
	• Correct loading and restraint techniques used, including:
	  ○ Load distribution (e.g. loads over axle and not front or rear heavy)
	  ○ Loads covered
	  ○ Loose objects considered (including within cabin)
	  ○ Vehicle cage or cabin as cargo barrier
	  ○ Consideration of stored item incompatibility
	• Maintenance vehicles alarm for toolboxes
		Continue	Tie down equipment is unclean or untidy, but fully functional.
			Mass limit is illegible or not displayed, but no load is being moved or load is minor (>100kg).

		Pause	Vehicle exceeds weight or height limits of intended path of travel (seek alternative route). Weather or road conditions unsuitable (seek alternative route or delay). Incorrect tie down equipment or method identified prior to driving, and can be rectified.
		Stop	Load exceeds mass limit. Load shifts or becomes unsafe during transit and cannot be safely managed. Vehicle or trailer identified as unsuitable for task and no alternative method available.

Seqwater employees should refer to Seqwater's Fleet and Mobile Plant Policy and Procedure (PRO-01864) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Electricity

Critical Control	Performance Standards	Trigger Points	
Excluding testing, no 'Live' High Voltage work will be conducted by Seqwater workers. *Objective: To prevent Seqwater workers interacting with HV equipment, installation or assets e.g. Energex live line work. Excluding testing (HV prescribed testing under a test permit, HV isolation)*	• HV work by Seqwater staff is carried out only on de-energised equipment, with the exception of test for dead and prescribed testing under a testing permit. • Overhead lines have been identified to prevent accidental contact with live conductors. • Test for dead testing equipment correctly rated for live voltage, tested in date, free from damage and will maintain minimum approach distance.	Continue	Live high-voltage (HV) work is not conducted on Seqwater equipment. However, exceptions may apply including test for dead which is considered live work under the electrical safety Act, and deviations for prescribed testing under a testing permit. Interfacing with external networks, such as Energex, will have deviations managed in accordance with their procedures, without implying live HV work on Seqwater assets.
		Pause	Records of deviation when required to work within overhead line exclusion zones. Records of deviation when required to conduct live HV prescribed testing. HV testing equipment fails operator checks, but can be replaced with working equipment.
		Stop	Records of deviation when required to work within overhead line exclusion zones. Records of deviation when required to conduct live HV prescribed testing. HV testing equipment fails operator checks, but can be replaced with working equipment.
Worker is separated from HV switching. *Objective: To prevent a worker being in close proximity to a HV arc flash or blast during switching activities.*	• Remote switching is conducted where possible. • Portable remote switching. • Energy Provider shutdown of supply prior to HV Switching. • Arc-fault containment on new HV switchboards, and fully closed and latched. • HV switching assistant has considered approach distance and associated controls. • The HV switching assistant is as far away as practicable from the operator while maintaining good communication. • The switching operator is on the hinged side of the cabinet door (if practicable)	Continue	Remote switching cannot be conducted but risk-assessed alternative method in place.
		Pause	Isolation is not effective; alternate method of isolation to be assessed with authorisation from supervisor. Communication between operator and assistant is not maintained.
		Stop	Electrical incident occurs. Isolation is not effective and is reportable to ESO. Remote switching cannot be conducted and risk assessment identifies external isolation by supply authority (e.g. Energex).

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Isolation of all low voltage electrical sources of energy *Objective: To ensure all sources of electrical energy have been de-energised, and positively isolated*	• The number of locks described in the isolation instruction matches the number of locks used in practice. • Energy sources have been isolated, including valves, switches, handles, doors, circuit breakers, cabinets etc locked in position defined in isolation instructions, with isolation hardware, padlocks and tags in place. • Energy sources have been tested for dead. • Functional testing equipment is calibrated and in service date • Secondary power and LV sources been identified and isolated to prevent back feed (including Isolated VT circuits, if applicable). • Signage indicating secondary power supply is in place where relevant • Items of faulty or damaged plant / equipment isolated, locked and tagged 'Out of Service' (and earthed if HV) • Out of service lock key is stored in relevant secure key cabinet within control room/maintenance depot with a completed information tag • Complex and tiered isolations are approved by an authorised isolator and documented.	Continue	N/A
		Pause	Secondary isolation requirements have been identified prior to beginning work - add to plan. Fault current/incident energy level (Arc flash label) cannot be determined. A minimum working distance of 455mm must be maintained if test for dead or other live work is approved to continue. Functional testing equipment is out of calibration date but alternative equipment can be used.
		Stop	Area is identified as energised after beginning work. Positive isolation cannot be confirmed; further assessment required.
Isolation of all High Voltage electrical sources of energy *Objective: To ensure all sources of HV electrical energy have been de-energised, and positively isolated.*	• Earthing of HV parts and proving earthing is successful • Energy sources have been isolated, including valves, switches, handles, doors, circuit breakers, cabinets etc locked in position defined in isolation instructions, with isolation hardware, padlocks and tags in place • Energy sources have been tested for dead • Functional testing equipment is calibrated and in service date • HV isolations are approved by an Authorised Seqwater HV switching Coordinator and documented • HV switchboards / equipment only opened when isolated, locked, confirmed de-energised and earthed • Items of faulty or damaged plant / equipment isolated, locked and tagged 'Out of Service' (and earthed if HV) • Out of service lock key is stored in relevant secure key cabinet within control room/maintenance depot with a completed information tag • Secondary power and LV sources been identified and isolated to prevent back feed (including Isolated VT circuits, if applicable) • Signage indicating secondary power supply is in place where relevant • The number of locks described in the isolation instruction matches the number of locks used in practice	Continue	N/A
		Pause	Secondary isolation requirements have been identified prior to beginning work - require Coordinator involvement for amendments to HV switching plan; may require coordinator to attend site prior to recommencing work. Functional testing equipment is out of calibration date but alternative equipment can be used.
		Stop	Area is identified as energised after beginning work. Positive earth cannot be confirmed; further assessment required. Positive isolation cannot be confirmed; further assessment required.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
HV Category-4 rated electrical PPE is donned and in good condition *Objectives: To mitigate the effects of exposure to HV electricity and arc flash/blast.*	• Electrical PPE equipment is category rated for purpose, inspected to verify good condition, and in test date where relevant. • Flame retardant clothing and non-conductive footwear are worn. • Category-rated gloves are insulated to the highest potential voltage expected for the work to be undertaken. • Mandatory HV CAT 4 bomb suit in good condition, including Cat 4 40Cal cat-rated arc flash gloves and electrically rated safety boots.	Continue	N/A
		Pause	PPE initially identified is not appropriate for task, but can be replaced by appropriate PPE. PPE is damaged or in poor condition, but there are replacements on site. PPE that requires in-date test is out of date, but there are replacements on site.
		Stop	Correct PPE cannot be found on site. PPE is damaged or in poor condition and there are no replacements on site. PPE that requires in-date test is out of date and there are no replacements on site.
Category-rated Low Voltage electrical PPE is donned and in good condition. *Objective: To mitigate the effects of exposure to LV electricity and arc flash.*	• Electrical PPE equipment is category rated for purpose, inspected to verify good condition, and in test date where relevant. • Flame retardant clothing and non-conductive footwear are worn. • Mandatory minimum Category 2 PPE for energised work or testing, or work in vicinity of exposed live parts • Arc-flash PPE that meets or exceeds arc flash label requirements • LV rescue kit, inspected to verify good condition, and in test date where relevant. • Other potential PPE is on hand for use if required e.g. insulated mats, BUS mats.	Continue	N/A
		Pause	PPE initially identified is not appropriate for task, but can be replaced by appropriate PPE. Fault current/incident energy level (arc flash label) is unknown, and therefore minimum cat 2 rated PPE must be worn if work is still approved to continue. PPE is damaged or in poor condition and there are replacements on site. PPE that requires in-date test is out of date, but there are replacements on site.
		Stop	Correct PPE cannot be found on site. PPE is damaged or in poor condition and there are no replacements on site. PPE that requires in-date test is out of date and there are no replacements on site.
Secure area (room/yard/enclosure/switchboards) for HV equipment *Objective: Prevent unauthorised persons from accessing HV electrical installations or parts*	• High voltage equipment is secured with dedicated HV access locking system • High voltage operator process in place to limit access of high voltage keys to approved and competent HV operators • Signage and yard fencing in place • Pad-mounted transformer / Ring Main Unit (RMU) locked but not mandatorily fenced	Continue	HV room/yard/enclosure is third-party owned and has been found unlocked Unlocked switchboards in public have a worker in attendance
		Pause	No applicable High voltage operator locks in place – assess area for damage or risk prior to work Signage or secure perimeter is not in place or ineffective – assess area for damage or risk prior to work Unauthorised worker in close proximity to open live switchboards Open unattended switchboard found that can be verified as de-energised
		Stop	Signage or secure perimeter cannot be made effective in preventing unauthorised members of the public from entering.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Secure area (room/yard/enclosure/switchboards) LV live equipment *Objective: Prevent unauthorised persons from accessing live electrical installations or parts*	• All LV switchboards within public areas are secured with locks • All LV switchboards within non-public Seqwater sites are secured to prevent unauthorised access to live parts • Signage and yard fencing in place	Continue	N/A
		Pause	Signage or secure perimeter is not in place or ineffective – assess area for damage or risk prior to work Open unattended switchboard found that can be verified as de-energised Unauthorised worker in close proximity to open live switchboards
		Stop	N/A
Effective earthing and/or equipotential bonding is in place *Objective: To ensure protective devices operate correctly to dissipate energy sources.*	• Main Earth Neutral link in place • Equipotential bonding in place • Earth continuity check	Continue	N/A
		Pause	Part of electrical infrastructure identified without equipotential bonding – temporary rectification where possible. Electrical infrastructure identified with non-compliant equipotential bonding – risk assessed safe to work.
		Stop	Earth neutral link identified to be ineffective or not in place. Part of electrical infrastructure identified without equipotential bonding – temporary rectification to make safe, where repair not possible. Earth continuity check fails. Isolation until repair.
No unauthorised person, plant or equipment is permitted to enter an overhead power exclusion zone. *Objective: To prevent person, plant or equipment arcing or contacting with live overhead powerlines (including excavation or work around poles)*	• No unauthorised person, plant or equipment/tools closer than 3m to overhead power lines – demarcation of exclusion zone. • No persons within minimum approach distance of uninsulated power line. • Some plant and equipment have portable overhead power proximity sensors, and restrictors fitted on crane booms • Trained and authorised spotter in place to prevent people or equipment entering overhead power exclusion zones • Only non-conductive tools utilised within exclusion zone. • Isolation of overhead power has been assessed and documented prior to entry to an exclusion zone	Continue	N/A
		Pause	The plant operator stops the plant if they lose communication with spotter. Work needs to be conducted within 3m of overhead lines. Deviation process required. Signage or secure perimeter is not in place or ineffective, but alternatives can be arranged. Spotter not available, but is required by supply authority advice. Task cannot continue until spotter present.
		Stop	Unauthorised person identified as entering exclusion zone

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Are portable electrical equipment and leads in good condition? *Objective: To prevent the use of damaged / faulty or non-protected portable electrical equipment that may cause electrocution, including, tested and tagged, fit for purpose and protected from exposure to water unless specifically rated for that purpose.*	• Extension lead and equipment tested, tagged and in good condition. • Hanging poles/stands for leads off ground with insulated hangers. • Only wet weather/submersible IP rated electrical equipment in use in wet conditions. • RCD power pack (tested/tagged) in place.	Continue	N/A
		Pause	Non-compliant equipment identified - reassess similar equipment on site. Portable electrical equipment in poor condition but other equipment available. Leads aren't run correctly (on ground, tied to uninsulated metal – rectify prior to work Equipment is not fit for purpose or not rated for intended work – e.g. non-submersible pump in water – but appropriate equipment is available. Fixed or portable RCD not connected. Submersible pump has no earth pin, but alternative, compliant, pump can be sourced. Earth reading cannot be obtained for submersible pump. Check for manufacturer exemptions, and written verification obtained.
		Stop	Equipment has exposed electrical wires or other evident damage, and no alternative equipment available Equipment is not fit for purpose or not rated for intended work – e.g. non-submersible pump in water – and appropriate equipment not available. Earth reading cannot be obtained for submersible pump. Manufacturer cannot provide exemption, so new, compliant, pump is required. Submersible pump has no earth pin, and no alternative pump is available.
Effective Residual Current Device is in place. *Objective: To ensure protective devices operate correctly to dissipate energy sources*	• Residual Current Device (RCD) label in date, RCD records • All portable electrical equipment is protected by a fixed or portable RCD • All General Purpose Outlet (GPO) circuits and lighting circuits have RCD protection • Fixed wiring below 32 amps is assessed to identify if RCD protection required • Injection testing	Continue	Label deteriorating but still legible
		Pause	RCD is identified out of maintenance date but tested to be effective. RCD not in place for circuit, but portable RCD available. RCD is tripped, but issue is identified and RCD can be reset.
		Stop	RCD are identified to be ineffective or not in place. GPO circuit identified without RCD with the exception of a Special Purpose Outlet (SPO). RCD is tripped, but issue cannot be identified. RCD is repeatedly tripping.

Seqwater employees should refer to Seqwater's Electrical – High and Low Voltage Procedure (PRO-00006) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.



Excavation

Critical Control	Performance Standards	Trigger Points	
Edge protection is in place and compliant for work areas with a drop of greater than 1.5m *Objective: To prevent a person from falling into an open excavation*	• Hard barricading that meets standards required (minimum 900mm above surrounding ground level, durable to withstand potential impacts of persons) is implemented on the edge of excavation OR soft barricading at least 2 metres from the edge of the excavation. • All excavations should be backfilled overnight where practicable, if not practicable, hard barricading (i.e. fencing, suitable trafficable plates or other trafficable cover) is fixed in place to stop people accessing the excavation. • Signage to warn people approaching the excavation (e.g. "Danger, Deep Excavation")	Continue	Signage is faded or damaged but still legible.
		Pause	No edge protection/adequate trench covers in place for excavations deeper than 1.5m but can be addressed with equipment on site. Soft barricades located closer than 2m to unprotected excavation edge deeper than 1.5m.
		Stop	Implemented barriers do not withstand force from impact with person. No edge protection/adequate trench covers in place for excavations deeper than 1.5m and cannot be addressed with equipment on site.
Excavations exceeding 1.5m depth are benched, battered, shored or verified stable by RPEQ engineer *Objective: To prevent excavation collapse*	• 1:1 benching (not exceeding 1,5m) • 45 degree battering • Shoring device in place • Registered Professional Engineer Queensland (RPEQ) written approval confirming excavation stability	Continue	N/A
		Pause	Ground conditions have changed, requiring re-assessment. Benching has deteriorated, requiring re-assessment. Benching angle is inadequate, but can have shoring box implemented.
		Stop	Shoring device has failed. Excavation/trench wall has collapsed.
Positively identify all services within planned excavation area. *Objective: To prevent mechanical disturbance of known and unknown underground services*	• Proof of dial-before-you-dig within the 28 days prior of the commencement of the excavation. • GPR and / or EMF (cable locator) used to verify location of all known services within 5m of the planned excavation. • Spray paint on ground (colour coded) indicating where service is; depth, direction and Mechanical No Dig Zone. (5m) • Pot-hole markers every 5 metres (depth and direction) 5m • Any service encroaching within 300 mm verified by potholing (vacuum excavation or hand digging) with pot-hole markers every 3 metres (depth and direction) • Further precautions inside the boundary of a WTP / Network site as identified in permit withhold point for precautionary measures.	Continue	N/A
		Pause	Required to dig deeper than initial slit trench, but can be managed locally. If within boundary of WTP, perimeter slit trench has been attempted and/or conditions not practicable to proceed, permit hold point exemption approved by engaging officer's supervisor. Service is identified to be wrapped with asbestos containing material. Service can be effectively isolated. Markers are moved or shifted; services locations to be reassessed.
		Stop	Area is excavated without services located. Service is identified to be wrapped with asbestos containing material. Service cannot be effectively isolated. Service struck.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Isolate all identified HV electrical within 500mm of the planned excavation. *Objective: To de-energise identified HV within the planned excavation*	• Energy sources have been verified as isolated (with Isolation hardware / lock board / locks & tags in place) and entry team have locked on as per isolation instruction. • Any built-up stored energy has been demonstrably released. • Approved exemption and deviation for non-isolated HV (Voltages in excess of 1000 volts AC or 1500 volts ripple-free DC) - maintain Minimum approach distances (MAD) • Positive and undistracted communication maintained with dedicated spotter is in place for all mechanical excavation on a brownfield site (Scrapping sediment/sludge is exempt)	Continue	N/A
		Pause	Positive and undistracted communication unable to be maintained with dedicated spotter for all mechanical excavation on a brownfield site (Scrapping sediment/sludge is exempt)
		Stop	Area is identified as energised after beginning work. Incorrect services isolated resulting in live services within excavation zone. Isolation fails or is inadequate within excavation zone. Services can't be confirmed isolated.
Minimum separation distances are maintained from all underground services. *Objective: To prevent contact with known services within the planned excavation*	• 500mm separation of ground penetrations from known live High Voltage services, with delineation/demarcation of no-dig zone marking both sides of the service • 300mm separation of ground penetrations from all other known services (including high pressure water blasting services), with delineation/demarcation of no-dig zone marking both sides of the service • Positive and undistracted communication maintained with dedicated spotter is in place for all mechanical excavation on a brownfield site (Scrapping sediment/sludge is exempt) • If planned excavation is 'vacuum excavation', local knowledge inspection and discussion on whether sandwich construction PVC electrical conduit is potentially present.	Continue	N/A
		Pause	While vacuum excavating around PVC electrical conduits – stop work if orange PVC discolours, turns white or becomes damaged. Minimum separation distance is not maintained during dig; stop and reassess. Delineation shifts, no longer clearly identifying location of service, and must be reassessed. Delineation markers are not adequate or not visible – reassess prior to continuing work. Communication between spotter and operator is inadequate – reassess prior to continuing work.
		Stop	Unidentified service located. Minimum separation distance exceeded, with damage to services.
No entry to an excavation with high pressure mains unless it is isolated, or a risk assessment is approved by the HSQ Team *Objective: To prevent worker exposure to high pressure or volume of ingressing water due to high pressure mains rupture.*	• High Pressure Mains positively identified and pressure of main verified • Air Gap of at least 500mm around High Pressure Mains • Isolation of high pressure mains verified prior to workers entering trench. • Controls approved by HSQ Team are fully implemented and verified as effective prior to workers entering trench if mains has not been isolated.	Continue	N/A
		Pause	Pressure of the mains is unknown. Work should be stopped until pressure of mains is confirmed. Controls approved by the HSQ are not implemented. Work should be stopped until controls are implemented.
		Stop	Workers have entered an excavation where mains pressure is greater than 6 bars, but there is no isolation in place or no risk assessment approved by the HSQ.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Heavy loads and non-tracked plant are stable and positioned outside the 'zone of influence' of the excavation *Objective: To prevent loads or machines falling into an excavation.*	• Ground conditions assessed prior to moving plant and equipment toward unsupported excavation • Loads or equipment must be set a minimum distance away from the edge equal to the depth of the unsupported excavation/trench wall, unless a shoring box is in place. • Excavation machine's tracks should not be in the zone of influence and must be orientated 90 degrees to the edge. • Excavations are clear of persons when there is risk of plant or loads falling into the excavation (no persons in the line of fire). • Mobile plant, loads or equipment with rolling or slipping risk are chocked or fundamentally stable.	Continue	N/A
		Pause	Excavating mobile plant tracks are not 90 degrees to excavation edge – rectify before continuing. Loads or equipment other than the tracked excavating machine are within the zone of influence. Person identified within excavation or trench when there is risk of plant or loads falling into the excavation Equipment for chocking or other fundamentally stable methods is not functional or adequate, but alternatives are present on site
		Stop	Mobile plant, load or equipment has fallen into excavation. Excavation has collapsed from weight of mobile plant, load or equipment.

Seqwater employees should refer to Seqwater's Excavation, Trenching and Penetrations Procedure (PRO-00302) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Fire and Explosion

Critical Control	Performance Standards	Trigger Points	
Critical Controls relating to Catchment Fire (including Planned Burns) – Seqwater employees should refer to the Tactical Fire Management Procedure (PRO-01936) for further guidance on managing this risk.			
Fire-fighting PPE / RPE is fit for purpose, donned and in good condition *Objective: To create a protective barrier between the worker and excessive fire, heat and smoke*	• Respiratory equipment is available for expected exposure • Fire rated hi visibility clothing, boots, gloves and fire rated helmet with face shield (AS 4967-2019) • Under garments for radiant heat protection. • RPE/PPE clean and in serviceable condition and within defined expiration date (where applicable), with critical spares and parts available. • Workers are competent in using the required PPE / RPE	Continue	Fit testing expired but no need to wear of tight-fitting respiratory protection.
		Pause	Fit for purpose equipment is not available but acquired elsewhere. Equipment found not maintained, but acquired new one from elsewhere. PPE damaged during work or the protection from the PPE used is not adequate but alternative RPE / PPE available
		Stop	PPE / RPE is no longer adequate for task conditions and no alternative RPE / PPE available
Fire vehicle fit for purpose to manage or control fires. *Objective: To protect fire trained personnel in the event of exposure to uncontrolled fire*	• Fire vehicles meet requirements of managing planned and bush fire conditions, e.g.: • Fire vehicles are maintained and associated features are in good conditions. • Fire vehicles are operated to conditions	Continue	Fire vehicle operable yet with minor damage
		Pause	Vehicle bogged or cannot be started
		Stop	Damage to fire vehicle which impacts on the key safety features
Critical Controls relating to Hazardous Areas – Seqwater employees should refer to the Hazardous Areas Procedure (PRO-02617) for further guidance on managing this risk.			
No ignition source is introduced into a Hazardous Area *Objective: To prevent the introduction of actual or potential ignition sources into classified hazardous areas, thereby reducing the likelihood of ignition of a flammable or explosive atmosphere and protecting personnel, assets, and the environment.*	• Hazardous Areas are identified and clearly signed. • Hazardous Area is secured to prevent unauthorised entry. • Only intrinsically safe electrical equipment is installed in hazardous area. • Only intrinsically safe equipment and tools are used in a hazardous area • No hot work to be performed in a hazardous area. • Any person performing work in a Hazardous Area is suitably trained and competent. • Hazardous Area Verification Dossier is developed, maintained, accurate and available.	Continue	Signage is faded.
		Pause	Ignition source in the surrounding area but not within 3 meters of the hazardous area Unauthorised person enters hazardous area. Dossier not maintained - verify area is safe prior to work continuing
		Stop	Uncompliant equipment installed in a hazardous area Ignition source taken into a hazardous area

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Hazardous Energy

Critical Control	Performance Standards	Trigger Points	
Isolation of energy sources (excluding electrical) *Objective: To ensure all sources of hazardous energy have been de-energised and effectively isolated, secured and verified to allow related work to be done safely*	• Energy sources have been isolated (including valves, switches, handles, doors, circuit breakers, cabinets) locked in position defined in isolation permits, with isolation hardware, padlocks and tags securely in place. • Secondary energy sources have been identified and isolated to prevent back feed (including stored pressure, water, mechanical, batteries, backup power supplies and isolated VT circuits if applicable). • All isolations are documented and approved by an authorised isolator or Seqwater HV Switching Coordinator. • Functional testing equipment is calibrated and in service/inspection date. • Signage indicating secondary energy supply is in place where relevant. • Energy sources, including stored energy, have been dissipated and verified using the correct proving method for the energy type. • The number of isolation points and locks described in the Isolation Permit matches the number of isolation points and locks used in practice. • Items of faulty or damaged plant / equipment isolated, locked and tagged 'Out of Service'.	Continue	Minor errors or illegibility identified on labelling or diagrams/ P&ID
		Pause	Secondary isolation requirements have been identified prior to beginning work - add to plan. Functional testing equipment is out of inspection/calibration date but alternative equipment can be used. Tags on locks have faded or are illegible, or do not contain relevant information – replace prior to continuing. Labelling on plant and equipment, or diagrams/P&ID identifying isolation points, are not accurate. Equipment is unable to be identified as no label, unidentifiable label or no unique identifiers Incorrect isolation point has been isolated, identified during test for dead, can be rectified prior to beginning work Isolation point has been incorrectly isolated, identified during test for dead, can be rectified prior to beginning work
		Stop	Area is identified as energised after beginning work. Isolation cannot be completed or cannot be proven effective.
Isolation of all low voltage electrical sources of energy *Objective: To ensure all sources of LV electrical energy have been de-energised, and positively isolated*	• The number of locks described in the isolation instruction matches the number of locks used in practice. • Energy sources have been isolated, including valves, switches, handles, doors, circuit breakers, cabinets etc locked in position defined in isolation instructions, with isolation hardware, padlocks and tags in place. • Energy sources have been tested for dead. • Functional testing equipment is calibrated and in service date • Secondary power and LV sources been identified and isolated to prevent back feed (including Isolated VT circuits, if applicable). • Signage indicating secondary power supply is in place where relevant • Items of faulty or damaged plant / equipment isolated, locked and tagged 'Out of Service' (and earthed if HV) • Out of service lock key is stored in relevant secure key cabinet within control room/maintenance depot with a completed information tag • Complex and tiered isolations are approved by an authorised isolator and documented.	Continue	N/A
		Pause	Secondary isolation requirements have been identified prior to beginning work - add to plan. Fault current/incident energy level (Arc flash label) cannot be determined. A minimum working distance of 455mm must be maintained if test for dead or other live work is approved to continue. Functional testing equipment is out of calibration date but alternative equipment can be used.
		Stop	Area is identified as energised after beginning work. Positive isolation cannot be confirmed; further assessment required.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Isolation of all High Voltage electrical sources of energy *Objective: To ensure all sources of HV electrical energy have been de-energised, and positively isolated.*	• Earthing of HV parts and proving earthing is successful • Energy sources have been isolated, including valves, switches, handles, doors, circuit breakers, cabinets etc locked in position defined in isolation instructions, with isolation hardware, padlocks and tags in place • Energy sources have been tested for dead • Functional testing equipment is calibrated and in service date • HV isolations are approved by an Authorised Seqwater HV switching Coordinator and documented • HV switchboards / equipment only opened when isolated, locked, confirmed de-energised and earthed • Items of faulty or damaged plant / equipment isolated, locked and tagged 'Out of Service' (and earthed if HV) • Out of service lock key is stored in relevant secure key cabinet within control room/maintenance depot with a completed information tag • Secondary power and LV sources been identified and isolated to prevent back feed (including Isolated VT circuits, if applicable) • Signage indicating secondary power supply is in place where relevant • The number of locks described in the isolation instruction matches the number of locks used in practice	Continue	N/A
		Pause	Secondary isolation requirements have been identified prior to beginning work - require Coordinator involvement for amendments to HV switching plan; may require coordinator to attend site prior to recommencing work. Functional testing equipment is out of calibration date but alternative equipment can be used.
		Stop	Area is identified as energised after beginning work. Positive earth cannot be confirmed; further assessment required. Positive isolation cannot be confirmed; further assessment required.
		Pause	Secondary isolation requirements have been identified prior to beginning work - add to plan Functional testing equipment is out of calibration date but alternative equipment can be used Tags on locks have faded or are illegible, or do not contain relevant information – replace prior to continuing Labelling on plant and equipment, or diagrams/P&ID identifying isolation points, are not accurate Equipment is unable to be identified to no label or unidentifiable label or no unique identifiers Incorrect isolation point has been isolated, identified during test for dead, can be rectified prior to beginning work Isolation point has been incorrectly isolated, identified during test for dead, can be rectified prior to beginning work
		Stop	Area is identified as energised after beginning work Isolation cannot be completed or cannot be proven effective

See also **Electricity** and **Plant (Mobile and Fixed)** for additional critical controls specific to these risks.

Seqwater employees should refer to Seqwater's Energy Tag and Lockout Procedure (PRO-00014) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Hazardous Substances

Critical Control	Performance Standards	Trigger Points	
Fit for purpose Respiratory Protective Equipment. *Objective: To prevent inhalation exposure to hazardous substances*	• Respiratory equipment used is acceptable for exposure to specific chemical (e.g. tight-fitting respirator mask with correct cartridge, or loose PAPR hood, with continuous air supply where need identified, and with appropriate filter cartridge for specific chemical). • All workers who opt to wear tight-fitting RPE instead of loose-fit RPE must have passed a fit-test (for every make and model they wear) within the last 12 months and have no facial hair where the mask seal meets their face. • Workers are competent in using the required PPE.	Continue	N/A
		Pause	The worker's Fit testing has expired – Wear PAPR, or swap tasks with other worker, or undertake fit-testing prior to beginning work. Equipment found in non-functional condition, but other equipment is available.
		Stop	Fit-for purpose equipment is not available, or levels of chemical exposure exceed capability of PPE (e.g. major chemical leak).
Automatic emergency shutdown of Chlorine Gas and Ozone Gas *Objective: To prevent large scale leaks of Chlorine Gas and Ozone Gas*	• Fit for purpose, operational system that detects leaks and automatically shuts down the system at a pre-determined leak level • Automatic shutdown systems are maintained and within service date. • Workers are competent in response to alarms and system shut down and troubleshooting causes. • For new facility or modification to existing facility or system, process of Design/commission/testing is followed.	Continue	N/A
		Pause	Alarm is confirmed a fault alarm. Service is up-to-date, but bump testing has not been conducted. A leak is detected, but managed effectively.
		Stop	Detection and ASO system are out of date. Detection, alarm and ASO identified as not working. A major chemical leak is detected. A leak is detected, but response from workers is not adequate (e.g. several hours prior to identification that alarm triggered).
Detection and alarm systems for Chlorine Gas, Ozone and Ammonia *Objective: To prevent large scale leaks of Chlorine Gas, Ozone Gas and Ammonia*	• Fit for purpose, operational system that detects leaks and alarms at a pre-determined leak level • Detection and alarm systems are maintained and within service date. • Workers are competent in response to alarms, how to shut system down, and troubleshooting causes.	Continue	N/A
		Pause	Alarm is confirmed a fault alarm. Service is up-to-date, but bump testing has not been conducted. A leak is detected, but managed effectively.
		Stop	Detection system is out of date. Detection and/or alarm identified as not working. A major chemical leak is detected. A leak is detected, but response from workers is not adequate (e.g. several hours prior to identification that alarm triggered).

Seqwater employees should refer to Seqwater's Hazardous Chemicals Procedure (PRO-00008) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Plant (Mobile and Fixed)

Critical Control	Performance Standards	Trigger Points	
Fit for purpose plant *Objective: To prevent the use of unsuitable or unsafe plant.*	• Selected plant is suitable for the task. • An inspection of the plant (e.g. pre-start) is completed prior to commencing work to verify the plant has been maintained and safety devices are working as designed.	Continue	N/A
		Pause	Plant is identified as unsuitable for task, but there are alternatives available on site. Inspection identifies plant is damaged, but damage does not impact safe operation of the plant. A change in conditions makes plant no longer suitable for purpose, but alternative is available on site.
		Stop	Safety devices are identified as non-functioning, bypassed, or damaged. Plant is identified as unsuitable for task, and there are no alternatives available on site.
Safe operation of plant *Objective: To ensure plant is operated to conditions, manufacturer's instructions and within specified limits.*	• Worker is fit for work and has the required training, competency and license to operate the plant. • Personal hand-held devices (including mobile phones and music devices) must not be used while operating mobile plant. • Plant is operated to conditions within manufacturer's specifications. • Plant not in operation is safely parked-up and adequately de-energised e.g. bucket, counterweight and tines lowered to ground. • All safety devices required to operate the plant are used e.g. seatbelts	Continue	N/A
		Pause	Conditions of task change – task to be re-assessed. Alarms on plant indicate exceedance of capability of vehicle. Reassess task. Plant operator using hand-held device (e.g. mobile) – plant must be stopped while device is in use. Safety device is non-functioning, bypassed, or damaged(e.g. seat belt, proximity alarm) but alternative equipment
		Stop	Safety device is non-functioning, bypassed, or damaged (e.g. seat belt, proximity alarm). Plant operator is not fit for work or does not have the required training, competency or license.
E-stops present on relevant plant/equipment *Objective: To mitigate injury after a worker interacts with moving parts of operating fixed plant / equipment*	• E-stops are present on required machinery, plant or equipment, compliant with manufacturer's instructions, legislation and Australian standards. • E-stops observed and tested to verify functionality	Continue	N/A
		Pause	E-stop is non-compliant with Australian standards, but is legislatively compliant and has been assessed as safe. No e-stop in place, but plant or equipment has been risk assessed to allow work with additional controls.
		Stop	E-stop has an unapproved modification. No e-stop observed in place on required plant or equipment.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Guarding and screens (e.g. permanently fixed, interlocked, or self-closing) *Objective: To prevent a worker contacting moving parts of operating fixed plant / equipment*	• Required guards, screens and enclosures are observed in place and functional, compliant with manufacturer's instructions, legislation and Australian standards. • Interlocks observed and tested to verify functionality. • Fixed guarding is not removed until approved isolations are in place and site access is activated. • Guards effectively ensure that body parts and clothing are kept clear from entanglement.	Continue	N/A
		Pause	Guard, screen, interlock or barrier is non-compliant with Australian standards, but is legislatively compliant and has been assessed as safe. No guard, screen, interlock or barrier observed in place where required but can be implemented with equipment on site (i.e. temporary guarding). Removal of guard has been identified to have preceded isolation.
		Stop	Guard, screen, interlock or barrier has an unapproved modification. No guard, screen, interlock or barrier observed in place. Guard, screen, interlock or barrier is damaged or is otherwise ineffective.

Workers must not operate plant if there is an unauthorised person within the exclusion zone of the plant.
Objective: To prevent workers being struck or crushed by mobile plant or moving parts of plant
	• Exclusion zones are clearly identified and communicated e.g. floor markings, barriers, demarcation tape, signage, pre-start briefings. Refer to the Barriers and Demarcation Procedure (PRO-02644) for further information where barriers or demarcation tape is used.
	• Where a plant operator cannot maintain visibility of worker activities or would not be able to safely stop the plant should workers enter the exclusion zone:
	  ○ barricading must be erected to prevent access to the exclusion zone; or
	  ○ a competent spotter must be in place to monitor for worker activity, prevent access to the exclusion zone and communicate to the operator that the work must be stopped.
	• Positive and undistracted communication maintained between spotter, other personnel in work zone, and the machine operator where a spotter is required.
	• A spotter is only authorised to enter the exclusion zone if the operator:
	  ○ has authorised the entry
	  ○ has continuous line of sight of the spotter whilst the plant is being operated
	  ○ has continuous communication with the spotter whilst the plant is operating
		Continue	Minor damage or deterioration of site signage, barriers, lines or other demarcation but still in legible and effective condition

		Pause	Exclusion zone not clearly identified, but actions can be taken to clearly identify exclusion zones. Required barriers are damaged or ineffective, but alternatives barriers can be implemented. Communication between spotter and operator is inadequate – reassess prior to continuing work. Unauthorised person enters exclusion zone (3m of mobile plant) – operation of plant must stop until the worker leaves the exclusion zone. Task conditions change requiring re-assessment of exclusion zone position.
		Stop	Exclusion zone are unable to be clearly identified and communicated. Spotter required, but not available.

Seqwater employees should refer to Seqwater's Safe Work with Plant Procedure (PRO-00867) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Working at Heights

Critical Control	Performance Standards	Trigger Points	
Edge protection is in place where there is a reasonable risk of falling from heights. *Objective: To prevent exposure to an unprotected edge at height*	• All edges with a permanent drop of greater than 2m have compliant edge protection, including toe-boards for areas that are standard work areas. • Portable barriers and toe boards are compliant and in place for temporary work at heights areas • Scaffold tags in date / handover certificates • Any Gaps between structures and Scaffolds >225mm have edge protection in place • Gates to areas at heights are self-closing, inward opening gates • Connection/tie off to transfer from EWP to roof has no gap exceeding >225mm	Continue	Edge protection or toeboards in poor but functional condition
		Pause	Worker found standing on rails including scaffold rungs, standing on workbox, or otherwise reducing effectiveness of edge protection Workers body mass (other than arms and/or head) is leaning out over edge protection Permanent edge protection not in place or not to standard, but temporary edge protection available to be installed.
		Stop	No edge protection in place where workers are closer than 2m to unprotected edges where a fall risk exists Out of date scaffold certificate No toe boards in place where objects or workers or objects could slip through No tie-off, or significant gap between EWP and roof
Secondary protection on Elevated Work Platforms (EWP)'s to prevent inadvertent activation of controls *Objective: To prevent accidental activation of EWP control levers and/or to supply a safe zone to prevent crush injuries*	• Foot pedal requiring full time pressure to activate controls • Controls protected from inadvertent activation by guard rails • Controls protected from inadvertent activation by recessed buttons • Protective structure: a device attached or fixed to the existing guardrails that provides a protective barrier around the operator • Sensing device: a device activated by force or pressure that stops the movement of the EWP to minimise harm • Dedicated spotter (mandatory requirement for all working on EWP)	Continue	At least 2 of the performance standards are in place and tested to be functional, as well as a spotter.
		Pause	At least 2 of the performance standards are in place, as well as spotter, but require minor maintenance or repair prior to beginning work.
		Stop	Less than 2 of the performance standards are in place. One or more of the performance standards are not functioning correctly. No spotter, or spotter identified as distracted (on phone, completing other tasks, etc)
Stable ground and floor conditions *Objective: To prevent uncontrolled movement of surfaces including ground, floor, ladders, scaffolding, platforms, etc*	• Stable and even surface for temporary platform, ladder, scaffolding or other foot stand, suitable for required weight bearing and footings of equipment used in task • Use of boards / stabilising equipment e.g. scaffold bracing where surface is uneven or is too soft • Conditions inspected and checked for pits / holes / non-trafficable lids or other non-trafficable surface • Access points (cage/gate) to unstable roof or other platform at height locked with danger signage • Delineated walkways on fragile roof or other unstable ground or platform at height	Continue	Ground or floor conditions are in poor condition but stable. Pits, holes, or non-trafficable areas are identified, but have been made safe, covered or barricaded.
		Pause	Weather conditions require a delay of work (lighting, rain and wind). Unstable ground can be made stable for work with locally available and compliant equipment/material.
		Stop	Work will require traversing unstable ground or floor conditions- alternative work arrangement to be determined. Delineation of safe walkway is not clear.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
			Work conducted in area that has been identified as a fragile roof or unstable ground, without authorisation, risk assessment, or other supporting documentation.
Grid Mesh and flooring is adequate and securely fastened *Objective: To prevent uncontrolled movement of grid mesh and flooring*	• Grid raised flooring or platform mesh is secured in place on all side by clamps or welds (does not tip or move under load) • Gaps between grid panels <=15mm • Grid flooring is in satisfactory condition (limited rust, no damage) • A grid mesh and flooring removal permit is conducted for works where it is removed • Gaps between Scaffold boards no greater than 10mm	Continue	Grid mesh is rusted but otherwise functional.
		Pause	Gaps between grid panels is greater than 15mm, but can be adequately covered prior to work. Gaps between scaffold boards greater than 10mm but can be adequately covered prior to work. Grid mesh or panels is loose or tips, but can be secured and is otherwise fully secured and functional – to be assessed for hazard to work. Grid mesh and flooring removal permit is incomplete (complete prior to work).
		Stop	Grid mesh panels or flooring is damaged or missing exposing a heights hazard. Grid mesh panels can't be fully reinstalled following removal.
Fall restraint systems prevent access within 2m of unprotected edge with fall risk *Objective: To prevent a person falling from height.*	• Fall restraint system prevents a worker at height from being able to move closer than 2m to an unprotected edge • Workers at height are connected to the fall restraint system at all times e.g. double lanyard or second connection to enable transfer • Fit for purpose equipment, in good condition, has in date inspection tags, inspected before use (no damage, no fall indicator exposed) • Worker wearing suitable harness correctly adjusted to fit • Certified / engineer approved anchor points	Continue	Some equipment tags are identified as out of date, but in-date equipment is available for use.
		Pause	Weather conditions require a delay of work (lighting, rain and wind). Equipment is in poor condition, but after assessment by competent person is deemed safe for work until it can be replaced. Work must be conducted within 2m of unprotected edge with fall risk – further controls required.
		Stop	Equipment is in poor condition and cannot be used. Anchor point is in poor condition (requires external inspection).
Fall restraint and arrest systems – within 2m of edge that is working at height *Objective: To minimise the impact of a person falling from height.*	• Where available, workers at height are connected to a fall restraint system at all times e.g. static line, double lanyard or second connection to enable transfer • Fit for purpose equipment, in good condition, has in date inspection tags, inspected before use (no damage, no fall indicator exposed) • Worker wearing suitable harness correctly adjusted to fit • Fall arrest full body harness incorporates shock absorbing lanyards or inertia reels, and anti-trauma leg strap pouches • Certified / engineer approved anchor points and static lines • Pendulum risk and fall height considered and controlled	Continue	Some equipment tags are identified as out of date, but in-date equipment is available for use.
		Pause	Weather conditions require a delay of work (lighting, rain and wind). Equipment is in poor condition, but after assessment by competent person, is deemed safe for work until it can be replaced (e.g. if leg straps are damaged, it may be determined that rescue plan is sufficient to manage risk). Pendulum risk exists, but can be resolved with extra lanyards attached to other counter-balancing certified anchor points, or other control. Hard-hat cannot be strapped, and must be replaced.
		Stop	Equipment is in poor condition and cannot be used. Anchor point is in poor condition (requires external inspection). Pendulum risk cannot be adequately controlled.

Seqwater employees should refer to Seqwater's Working at Height Procedure (PRO-00015) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Working On In or Near Water

Critical Control	Performance Standards	Trigger Points	
Edge protection is in place on built structures where there is a reasonable risk of falling into water and drowning. *Objective: To prevent a person from falling into water where there is a reasonably foreseeable risk of drowning.*	• Edge protection e.g. hand rial and guards are in place and complying with relevant standards. • Grid mesh and flooring are in place and secured. • Temporary edge protection and barriers are set up where needed and comply with relevant standards	Continue	No edge protection present, but fall restraint or Life Jackets are worn. Consideration of permanent edge protection in future as required. Edge protection doesn't meet the current AS (as the standard has changed since construction has occurred), however risks assessments have been completed that allow us to continue working.
		Pause	Loose or unstable edge protection, which can be fixed before work proceeds. Edge protection e.g. handrail and barrier are not adequate but temporary edge protection is available on site. Temporary edge protection is not set up properly. but can be corrected before work proceeds.
		Stop	Edge protection is severely damaged during work and cannot be fixed with available material.
Life Jackets worn by persons closer than 2m to an unprotected edge where there is a risk of drowning. *Objective: To prevent a person from drowning if they fall to water where there is a reasonably foreseeable risk of drowning.*	• Life jackets appropriate for the task are donned correctly when working within 2 metres of unprotected edge where there is a risk of drowning or required to operate a vessel. • Life jackets are in serviceable condition and within defined expiration date (where applicable).	Continue	N/A
		Pause	Life jacket is in poor condition, damaged or not in test date, but alternative life jacket is available. Fit for purpose life jacket is not available but alternative protection can be implemented. Life jacket not worn correctly or not worn in required areas but can be corrected.
		Stop	Life jacket is not available where required.
Fit for purpose vessels/kayaks. *Objective: To ensure vessels do not put workers at risk of drowning.*	• Fit for purpose vessel/kayaks are identified and in place for the work to be conducted. • Vessel/Kayaks are maintained and in good condition. • Safety features and safety equipment are in place and good condition e.g. EPIRB, Distress Signal flares, Torches communication devices.	Continue	Vessel is functional for work but has minor damage / issues
		Pause	Safety equipment / documentation (e.g. log book/safety manual) is missing or out of date Unfavourable weather/environmental conditions delay work or effect vessel selection
		Stop	Damage to vessel which impacts on the key safety features. Severe weather condition e.g. heavy fog, wind and storm.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.

Critical Control	Performance Standards	Trigger Points	
Vessels are operated to conditions and manufacturers specifications. *Objective: To prevent unsafe use of vessels that may lead to capsizing or persons falling into water.*	• One Vessel master and a minimum of one crew members allocated to the vessel operation. • Vessels / kayaks operated in accordance with speed limits and conditions e.g. fog, wind, chop. • Loads are evenly distributed and secured where practical. • Workers are qualified and competent in operating the vessel. • Appropriate additional controls are put in place when operating the vessel at abnormal conditions e.g. weather, night-time, shallow water.	Continue	Crew member does not have licence but the vessel master does.
		Pause	Do not have adequate crew members for vessel – adequate crew can be arranged Changes to weather condition e.g. weather or low visibility – master's assessment determines safe to proceed Crew members have not been inducted – induction conducted
		Stop	Vessel master does not hold appropriate or current qualification to operate commercial vessel. Severe weather event– master's assessment determines unsafe to proceed
Exclusion zone around a spillway when dam is spilling. *Objective: To prevent a vessel being swept over a spillway.*	• Vessel operators are aware of any Dam spills occurring or may occur on the route or the area of vessel operation. • Obtain PASS application/approval from relevant Dam Operator when need to access and work within 100m of a dam wall (not spilling or overflowing). • Clearly identified exclusion zones (buoy line and signage visible). • Operate vessel away from dam spilling. • Effective communication between vessel master/crew with site access officer and NRC – welfare monitoring.	Continue	N/A
		Pause	Dam is expected to start spilling while vessel is operating out of exclusion zone; vessel can move outside exclusion zone and continue work.
		Stop	Unsafe to operate the vessel due to spilling. Dam is spilling or overflowing but buoy line and signage are not visible. Advised by Dam operator to leave the area.
Mobile plant in proximity to water is operated to conditions and manufacturers specifications *Objective: To prevent mobile plant falling into water*	• The need of operating a mobile plant in the proximity to water is assessed and a fit for purpose mobile plant for the task is identified and in place. • Mobile plant operated in accordance with speed limits, conditions and manufacturers specifications (slope, ground stability) • Exclusion zone is identified and set up where practical • Mobile plant operator and spotter operate to conditions and do not distracted e.g. do not use mobile phone while operating.	Continue	Observer/spotter not available, however risk managed with other method e.g. clear tag line or signs Edge to water body not visible – identified and marked before work
		Pause	Key safety features of mobile plant e.g. ROP OR Reverse alarm on the mobile plant not working Exclusion zone not set up – where practical Operator / spotter are observed using mobile phone while operating
		Stop	Multiple issues found at Tier 2 level. The ground condition is unsafe to operate

Seqwater employees should refer to Seqwater's Safe Vessel Use Procedure (PRO-00865) and Working On, In or Near Water Procedure (PRO-00714) for further guidance on management this risk.

This document is the property of Seqwater. It must not be copied or reproduced in any way whatsoever without the authority of Seqwater. This document is uncontrolled when printed. An electronic database manages and stores the controlled version.