

Life Saving Controls

A quick reference guide to controlling our critical hazards.



Electrical safety



Confined space entry



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Isolation of hazardous energy



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Remote and isolated work

Important note: This publication is intended as a quick reference guide only and does not contain exhaustive detail of all WHS requirements. For further information refer to Seqwater procedures referenced in this publication or contact your Seqwater supervisor or safety team at safety@seqwater.com.au.

Life Saving Controls

In line with our Golden Rules below, these Life Saving Controls are an important tool to help you 'Follow the procedure' when it comes to controlling our critical hazards.

Our Golden Rules

Speak up about any unsafe activity or hazard

Assess, control and monitor risks

Follow the procedure

Ensure all hazards, near misses, incidents and injuries are reported

Turn up fit for work

You check and wear your PPE

Any questions? Contact safety@seqwater.com.au



Introduction to Life Saving Controls

At Seqwater, safety is a core value that underpins our everyday choices and actions. We want every employee, contractor and visitor to embrace our Safe for life commitment and complete every task without harm.

To help achieve this, we have developed our **Life Saving Controls**, which serve as a quick reference guide to controlling 10 critical safety hazards associated with Seqwater operations.

These Life Saving Controls are an important tool to help you meet our Golden Rule of **Follow the procedure** and must be fully applied as a minimum standard by every employee, contractor and visitor.

Importantly, before starting any task which may expose you or others to these critical hazards you must first:

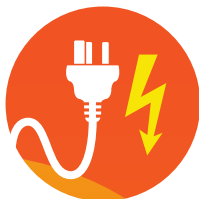
- consider whether the job can be planned to eliminate or avoid these hazards
- prepare and document a risk assessment for the task and apply the hierarchy of control
- ensure you have the required skills, training and qualifications for the task.

Each of our Life Saving Controls is supported by detailed procedures, which are referenced in this guide. Please refer to these procedures if you need further information or contact your Seqwater supervisor or safety team at safety@seqwater.com.au.

Finally, all workers are reminded that you are fully empowered to stop any activity that does not conform to our Life Saving Controls or is otherwise unsafe. Please join us in living our 'Safe for Life' commitment and protecting what matters most to us all.

Executive Leadership Team

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Electrical safety

1. Electrical work must only be performed by licensed electrical workers.
2. Unless specifically authorised, persons are not permitted to access electrical switchboards and high voltage areas.
3. Seqwater personnel are not permitted to perform live high voltage work (authorised electrical contractors must be engaged for this work).
4. Portable electrical equipment and extension leads must be tested, tagged and protected by a Residual Current Device (RCD) while in use. A portable RCD should be used if unsure.
5. Electrical services must be identified, and where practicable isolated, before any penetration into a wall, ceiling, roof or other structure.
6. Live electrical work is not permitted unless there is no other reasonable alternative and approved via an Energised Work Permit (or equivalent approval process for Principal Contractors).¹
7. Electrical equipment and leads must be protected from exposure to water unless specifically rated for that purpose.
8. No person, plant or equipment is permitted to enter an overhead electrical exclusion zone as shown below.¹
9. A trained spotter is mandatory where there is a risk of entering an overhead electrical exclusion zone as shown below.²

Table 1: Exclusion zones for working near overhead electric lines

Voltage	Exclusion Zone ²
Voltage up to 132kV	3m
Above 132kV up to 330kV	6m
Above 330kV up to 500kV	8m

1 Work is not permitted within an overhead electrical exclusion zone shown in Table 1 without prior approval from the relevant Seqwater General Manager and consultation with the electrical asset owner.

2 A trained spotter is a person who has completed accredited training in overhead electrical awareness and emergency response approved by the electrical supply authority (e.g. Energex).

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Confined space entry

1. A Confined Space Entry Permit must be completed before entry.
2. A documented rescue plan must be developed and reviewed by all members of the confined space team. All emergency equipment must remain immediately accessible at the work area while work is performed.
3. All members of the confined space team¹, including a dedicated standby person, must hold current certification in confined space entry and the use of specialised equipment for the task (e.g. gas monitors, BA, rescue equipment etc.).
4. All hazardous energy sources associated with the confined space must be isolated and tested for dead.²
5. Gas monitoring must be conducted by a certified person before entry and on a continuous basis during occupancy.³
6. All confined space entry and rescue equipment must be checked before entry and maintained within prescribed inspection/calibration dates.

1 A team of at least three (3) people is required for any confined space entry conducted under the control of Seqwater.

2 Double isolations must be applied where practicable.

3 Gas detection devices must be within calibration date and bump-tested prior to use. When assessing atmospheric risks, consideration must also be given to proposed substances and exhaust/fume emitting equipment to be used in the confined space.



Refer to Seqwater

Confined Space Entry Procedure (PRO-00443)

for further information.

Safe for
Everyday,
Always! **Life!**

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Excavation

1. An Excavation Permit must be completed before commencing any:
 - mechanical excavation on a brownfield site¹
 - excavation to a depth of 300 mm or more on any greenfield or brownfield site.
2. Buried services must first be identified via site inspection and review of all relevant plans/drawings (including Dial Before You Dig information).
3. Unless the entire planned excavation will be completed by non-destructive methods (e.g. vacuum excavation), all buried services must be located and marked as follows:
 - Services with potential to encroach within minimum **5 m** of the planned excavation must be **positively identified** and clearly marked on the ground.²
 - Services encroaching within **300 mm** of the planned excavation must be visually verified by potholing (vacuum excavation or hand digging).³
 - For Seqwater high risk sites such as Water Treatment Plants, one or more of the following extra precautions must be applied before mechanical excavation:⁴
 - Precautionary slit trench around the perimeter of the planned excavation using non-destructive methods.
 - Precautionary investigation using ground penetrating radar/technology.
4. Where practicable, isolate buried services before excavation.
5. Maximum pressure setting for vacuum excavation must not exceed 2000psi.
6. A minimum separation distance of **300 mm** must be maintained between any live buried service and mechanical digging components such as buckets, augers or similar attachments.⁵
7. A spotter must be used at all times when performing mechanical excavation on a brownfield site.¹

8. Persons must not be positioned in an excavation/trench where there is a risk of plant falling into the occupied area.
9. Persons must not enter an excavation ≥ 1.5 m deep without all of the following:
 - Use of benching, battering, shoring, trench box or a written assessment from an RPEQ engineer.
 - A documented rescue plan and spotter positioned outside of the excavation.
 - A safe means of access and egress at least every 9 m along the excavation/trench.
 - Controls for the use of chemicals or exhaust-emitting plant that could create an unsafe atmosphere within the excavation.
10. Controls must be in place to prevent persons or objects falling into open excavations (e.g. physical barriers and/or exclusion zones enforced by spotters).
11. Heavy loads (including large spoil piles) must not be positioned within the zone of influence of an excavation (set back distance should at least be equal to the depth of the unsupported excavation/trench wall).

1 Brownfield sites include land currently or previously used for residential, industrial or commercial purposes and includes any land that is not a greenfield site. Greenfield sites include undeveloped land in a city or rural area either used for agriculture, landscape designs, or left to evolve naturally and which is free of underground services or contaminated soils.

Where there is uncertainty over the classification of a worksite, it should be treated as a brownfield site.

2 Positive identification includes the use of non-destructive methods to verify the depth and direction of buried services, such as vacuum excavation, ground penetrating radar/technology, insulated prodder, cable locators and hand digging.

3 Multiple potholes must be dug to confirm depth and direction of each service.

Max distance between potholes (and pothole markers) must not exceed 3m in high risk areas (such as WTPs) and 5m in other areas.

The exact point where services change direction or intersect must be visually verified by potholing.

4 High risk sites include WTPs and other Seqwater sites/areas where the type or complexity of underground services presents a serious risk to safety or supply of essential services.

These additional precautions apply irrespective of whether plans/drawings have identified buried services near the planned excavation and are necessary to safeguard against potentially inaccurate or incomplete plans/drawings.

5 A greater separation distance and additional controls may be prescribed by asset owners.



Refer to Seqwater **Excavation, Trenching & Penetrations Procedure (PRO-00302)** for further information.



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Work at heights

These requirements apply to any task where there is a risk a person could fall 2 m or more, including:

- Work within 2 m of an edge that is not protected by a compliant physical barrier such as a guard rail.
- Use of specialised height access equipment such as work boxes and elevated work platforms (EWPs).
- Where persons are exposed to other fall hazards, such as working on fragile roofs or in high wind.

Refer to **Prevention of Falls Procedure (PRO-00015)** for specific guidance around use of ladders.

1. A Work at Height Permit must be completed before commencement of the task.
2. One or more of the following controls must be implemented at all times:
 - Installation of compliant temporary edge protection.
 - Use of a personal fall arrest/restraint device (mandatory when working from a work box or EWP).
3. Persons must be certified in working at heights and competent in the use of equipment specific to the task.
4. A documented rescue plan must be developed for any task involving use of a personal fall arrest/restraint device. All necessary rescue equipment must be immediately available at the work area.
5. Equipment for working at heights (including personal fall arrest/restraint devices and anchor points) must be checked before each use and have a current inspection/test tag issued by a competent person.
6. Exclusion zones and signage must be established beneath work areas where there is a risk of injury from falling objects.

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Hazardous substances

These apply to any person who works with a high-risk substance.

This includes but is not limited to chlorine, ammonia, ozone, fluoride, sulphuric/hydrochloric acid, sodium hydroxide, potassium permanganate, herbicides, sodium hypochlorite, arsenic and Asbestos Containing Material (ACM).

1. The chemical Safety Data Sheet (SDS) must be current, readily accessible and understood before handling.
2. Persons must be familiar with safe handling methods, including PPE and emergency response.
3. PPE must be worn as required by the SDS or relevant safe work procedure/chemical risk assessment.
4. Containers for storing or decanting chemicals must be fit for purpose and properly labeled.
5. Incompatible substances must not be stored together.
6. Bulk chemical containers must be properly banded.
7. A chemical risk assessment must be approved before introducing any new chemical to an Seqwater site.
8. The following requirements apply for any task involving potential interaction or disturbance of Asbestos Containing Material (ACM):
 - Always consult the site asbestos register and thoroughly inspect the work area before proceeding with any destructive work on an Seqwater site.¹
 - Seqwater personnel are not permitted to handle or remove ACM – a properly licensed contractor must be engaged for this work.

¹ Destructive work may include, but is not limited to demolition, cutting, drilling, sanding, high pressure cleaning or other tasks that could disturb ACM.



Refer to Seqwater **Hazardous Chemicals Procedure (PRO-00008)** and **Asbestos Management Procedure (PRO-01752)** for further information.





Vehicles, plant and equipment

1. Drivers/operators must be licensed as required by law and competent in the safe operation of the item before use.¹
2. Items must be fit for purpose with all guards and safety/warning devices fully operational during use.²
3. Persons must maintain a minimum exclusion zone of 3 m around operating mobile plant. If it is absolutely necessary to enter this area, the following controls must be applied before approaching:
 - Positive communication must be exchanged and the person must remain in clear view of the operator at all times.
 - The plant must cease or restrict operation to prevent accidental contact.
4. Roll-over hazards must be assessed before operating on inclines and embankments. Manufacturer specifications must be reviewed if unsure of safe operating angles.
5. Personal hand-held devices (including mobile phones and music devices) must not be used:
 - while operating mobile plant
 - while in control of a vehicle unless via a hands-free device in compliance with the law.
6. Seat belts must be worn where fitted and persons must only ride in designated seating.
7. Loads must be safely stored and restrained while in motion.
8. Purchase of new plant or modifications outside of manufacturer specifications are not permitted without prior risk assessment and approval.
9. Use of 9 inch angle grinders are not permitted on Seqwater sites.

1 Operators of mobile plant must successfully complete a Verification of Competency (VOC) assessment before independently operating the machine.

2 All items of plant must be visually inspected prior to use. Mobile plant must also be subject to a documented pre-start inspection prior to first use each day.

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Lifting operations

1. Crane operators must be licensed as required by law and deemed competent to operate the crane before use.
2. Slinging of loads must be controlled by a qualified person such as a dogman or rigger.
3. A documented Lift Plan must be prepared by a qualified rigger or competent engineer prior to any critical lift.¹
4. Exclusion zones must be established before any lift. Under no circumstances can:
 - loads pass over a person or occupied area
 - a person position themselves under a suspended load.
5. Direct communication must be maintained at all times between the crane operator and person controlling the lift.
6. The Safe Working Limit (SWL) and Load Chart must be reviewed/understood before operating any lifting plant.
7. Lifting plant must be subject to a documented inspection before use each day. All safety/warning devices must be fully operational during use.
8. Chains, slings and other lifting equipment must be checked before each use and have a current inspection/test tag affixed.
9. Environmental factors, including ground stability and weather conditions must be assessed before any lift. Consult manufacturer specifications or a competent engineer if unsure of safe operating limits.

¹ Examples of Critical Lifts include: Lifts exceeding 80% of the cranes load chart capacity (this does not apply to gantry cranes which may lift up to 100% of the rated capacity without requiring a Lift Plan) / multiple crane lift / lifts from a suspended or floating structure / lifts where outriggers cannot be fully extended / lifts requiring complex crane manoeuvres / lifting of concrete tilt and precast panels / lifting of personnel via man cage or similar / lifting of complex loads such as vessels containing more than 1000 L of liquid or loads with a large sail area in proportion to weight.



Refer to Seqwater **Cranes & Lifting Equipment Procedure (PRO-00861)** for further information.





Isolation lock

Isolation locks are used to physically lock a device that is isolating an energy source.

An isolation tag must be attached to all isolation locks to identify why the equipment is isolated and who isolated the equipment.

Isolation locks should only be attached to a lock board when the lock board forms part of a tiered isolation.



Personal lock

Personal locks are attached to a lock board to prevent the lock board being opened while a worker is performing a work activity under the control of the isolation.

A personal danger tag must be attached to all personal locks to identify who the blue lock belongs to.

Personal locks may only be removed by the person who attached the lock.



Out of service lock

Out of service locks are used to prevent the operation of unsafe, defective, damaged or otherwise out of service plant or equipment. They may be attached directly to an isolation device or a lock board.

Out of service locks are also used on lock boards when handing over an item of isolated plant. This prevents unauthorised removal of isolation locks for the duration of the work activity.

An out of service tag must be attached to all out of service locks to identify what plant or equipment is out of service, why the plant or equipment is out of service and who placed the plant or equipment out of service.

Above: Standard equipment for isolations performed under the control of Seqwater

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Isolation of hazardous energy

1. Isolation of energy must be conducted before any interaction with plant/equipment that could expose a worker to a hazardous energy source.^{1, 2}
2. Isolations must only be performed by persons who are qualified to carry out the required isolation.
3. An Authorised Isolator must be consulted when planning any isolation at an Seqwater operational workplace.
4. The Access Officer and other persons involved in, or impacted by, a planned isolation must be notified/consulted before proceeding.
5. Complex or tiered isolations performed under the control of Seqwater must be documented and approved via an Isolation Instruction.
6. All isolation point/s must be secured by an isolation lock and tag. An isolation tag must be attached as a minimum where it is not reasonably practicable to physically secure/lock an isolation point.
7. Following an isolation, stored energy must be dissipated and a 'test for dead' conducted before starting work.
8. Each person working under the protection of an isolation must affix their personal isolation lock and personal danger tag to the corresponding lockout device/lock board.
9. Personal isolation locks and personal danger tags can only be removed by the person who placed them.³

1 Examples of hazardous energies include: electrical, mechanical, pressure, gravitational, thermal, radiation, potential and stored energy such as springs.

2 Exceptions may apply where it is necessary for an authorised and competent person to perform live electrical work or dynamic work such as greasing, minor adjustments or fault finding. These activities must be subject to a documented risk assessment and specific approval/permit requirements apply for live electrical work. Refer to Energy Tag and Lockout Procedure below for further guidance.

3 In the event an individual has forgotten to remove their personal lock and tag and is not available to attend site, specific approval processes must be applied by an authorised and competent person before removing the person's lock/tag. Refer to Energy Tag and Lockout Procedure below for further guidance.



Refer to Seqwater **Energy Tag and Lockout Procedure (PRO-00014)** for further information.





Working on or near water

1. Operators of powered water craft must be licensed as required by law and competent in the safe operation of the craft.
2. A personal flotation device (PFD) must be worn at all times in the following circumstances:
 - when onboard any water craft
 - unless a personal fall arrest/restraint device is used, when working within 2 m of an unprotected edge:
 - over/near swift water¹
 - over/near a body of water into which a person could fall and reasonably drown while carrying out the intended work.²
3. A safe means of egress or retrieval from water must be readily available at work areas where there is a risk a person could fall into water.
4. Diving work must only be performed by certified persons in accordance with legislation. Seqwater personnel are not permitted to perform diving work (licensed contractors must be engaged for this purpose).

1 Swift water includes any water with a flow exceeding 0.5 metres/second.

2 A body of water refers to any man-made or natural collection of water that presents a potential drowning hazard such as tanks, dams, reservoirs, rivers and lakes.

Exceptions for the use of a PFD may apply for low risk tasks where a second person is in visual contact at all times and emergency rescue provisions are in place for the task.

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Remote and isolated work

1. Careful planning for potential emergency situations and hazards must be conducted before commencing any remote or isolated work.¹
2. Persons working alone or remotely must be equipped with the following minimum provisions:
 - An operable communication device and/or a reliable mechanism to raise the alarm in the event of emergency.
 - Details of their work location, including how to direct emergency personnel to their location.
 - Ready access to first aid supplies.
 - Ready access to potable water.
3. The following activities must not be performed alone:
 - Work requiring a high-risk work permit, including confined space entry, work at heights, hot work and excavation.
 - Live electrical work.
 - Work involving the use of water craft.²
 - Work where there is a risk of falling into swift water.³
 - Diving work.
 - Work involving a significant risk of harmful exposure to a hazardous substance.
 - Controlled burns.
 - Interactions where a significant risk to personal security has been identified.
 - Where a risk assessment has determined the need for more than one person to safely perform the task.

1 Remote or isolated work is work that is isolated from the emergency assistance of other people due to the location, time or nature of work performed.

2 For non-powered water craft such as canoes, a second land-based person may be used provided constant visual contact is maintained and emergency rescue provisions are in place for the task.

3 Swift water includes any water with a flow exceeding 0.5 metres/second.



Refer to Seqwater **Remote and Isolated Procedure (PRO-00018)** for further information.



For help and advice:

Contact your Manager or the
Work Health and Safety Team
safety@seqwater.com.au