



**Excavation**

**Warning**

You cannot undertake this activity in the rail corridor unless you have completed a pre work brief and work site protection plan.

Reference should also be made to the [Protocol for Entering the ARTC Rail Corridor](#) and the [Business Rules for Working in the ARTC Rail Corridor](#)

Minimum Personal Protective Equipment (PPE) requirements must also be met in line with the [Personal Protective Equipment \(PPE\) Work Instruction](#).

<b>Work Activity:</b>	Excavation		<b>WMS No:</b> WHS-WI-012
<b>Coverage:</b>	ARTC employees, and contractors directly managed by ARTC		<b>Version No:</b> 2.0
<b>Developed by:</b>	Corporate WHS Manager Corporate WHS Coordinator	<b>Approved by:</b>	Group Executive Manager Corporate Services and Safety <b>Date Approved:</b> 2 March 2018

<i>What are the tasks involved?</i>	<i>What are the hazards and risks?</i>	<i>What are the control measures?</i>	<i>Related Documents</i>
Plan the work	<p>Excavating contaminated land</p> <p>Lack of technical knowledge</p> <p>Hitting underground / overhead services (for example electricity, gas, water)</p> <p>Falls into the excavation</p> <p>Excavation collapse</p>	<p>Determine whether contaminated land exists. Where contamination is identified, seek health and safety advice.</p> <p>Seek geotechnical advice, before conducting excavation works near structures, on steep land and after substantial rain.</p> <p>Limit the size of an excavation where able to do so.</p> <p>Identify underground / overhead services.</p> <p>Where possible, isolate and/or physically mark key locations.</p> <p>Determine a suitable exclusion zone to help prevent unauthorised access, and persons or mobile plant falling into the excavation.</p> <p>For example, install warning signs, warning tape, witches hats, fencing, place suitable covers over excavations and/or fill in excavations.</p>	<p><a href="#">ARTC GIS</a> (contaminated land information)</p> <p><a href="#">Code of Practice Excavation Work</a></p> <p><a href="#">Underground / Overhead Services Work Method Statement</a></p>



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		<p>Plan to protect the excavation sides from collapse where:</p> <ul style="list-style-type: none"> <li>-a risk of collapse may exist and/or</li> <li>-the excavation is expected to be at least 1.5 metres deep, by:                             <ul style="list-style-type: none"> <li>• Supporting the sides of the excavation (shoring), and/or</li> <li>• Stepping the sides of the excavation (benching), and/or</li> <li>• Reducing the gradient along the sides of the excavation (battering)</li> </ul> </li> </ul> <p>Ensure mobile plant is fitted with- roll over protective structures.</p>	
<p>When working (generally)</p>	<p>Falls into the excavation</p> <p>Excavation collapse</p> <p>Engulfment in the excavation</p> <p>Inability to get help if needed</p> <p>People, trains, equipment and vehicles struck by slewing excavators</p>	<p>Ensure / maintain a separation distance between the sides of the excavation and heavy loads (such as mobile plant, materials and stockpiles).</p> <p>Protect excavation sides from collapse, where required.</p> <p>Keep the number of workers in the excavation, and the length of time that they are in the excavation, to a minimum.</p> <p>Continually monitor the excavation depth and condition.</p> <p>Ensure safe access to the excavation (for example, ladders, ramps).</p> <p>Drain liquids in the excavation and divert expected stormwater flows.</p> <p>Do not operate a mobile plant boom over a person located in an excavation.</p>	<p><a href="#">Code of Practice Excavation Work</a></p> <p><a href="#">Confined Spaces Work Method Statement</a></p> <p><a href="#">Underground / Overhead Services Work Method Statement</a></p> <p><a href="#">Working at Height Work Method Statement</a></p>



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		<p>Use excavator slew locks, where an excavator could slew into the pathway of moving trains, vehicles, equipment and/or pedestrians.</p> <p>When working in the excavation, remain in regular contact with a person located outside the excavation.</p> <p>Prevent unauthorised access to unattended excavations. For example, install warning signs, warning tape, witches hats, fencing, place suitable covers over excavations and/or fill in excavations.</p> <p>Where there is a risk of children accessing unattended excavations, install secure worksite fencing or control the risk by more effective means.</p>	
<p>When working (dust generating activities)</p>	<p>Workers and members of the public breathing Crystalline Silica containing dusts, such as those related to soil, ballast and other rocks</p> <p>Workers and members of the public breathing in dusts containing other harmful contaminants</p> <p>Foreign material in eyes</p>	<p>Prevent or minimise the generation of dust. For example:</p> <ul style="list-style-type: none"> <li>• Avoid excavation activities during dry and windy conditions</li> <li>• Spray water onto potentially dusty materials before and during excavation activities</li> <li>• Cover, or spray water onto, stockpiles of dusty materials</li> <li>• Before transport, cover, or spray water onto, dusty materials stored within rail and road vehicles</li> <li>• Hose down dusty equipment before transport or storage.</li> </ul> <p>Stand upwind of dust generating activities, whenever possible.</p> <p>Where a worker is directly exposed to visible dust:</p> <ul style="list-style-type: none"> <li>• Wear disposable coveralls</li> <li>• Wear goggles or other suitable eye protection</li> <li>• Wear suitable respiratory protection, such as a P2 respirator (with a clean shaven face)</li> </ul>	



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		<ul style="list-style-type: none"> <li>• Consider showering and putting on clean clothes and shoes before returning home (showering facilities are available at ARTC provisioning centres and some offices).</li> <li>• Wash hands and face with soap and water before eating, drinking, smoking and/or chewing gum.</li> </ul>	
<p>Excavation works on, or immediately adjacent to, live rail lines.</p>	<p>Track stability risks, including track closure and derailment</p>	<p>Consult with local maintenance and project stakeholders to assess risks of the planned excavation works.</p> <p>Consider track stability risks for the type and duration of the planned excavation work adjacent to live rail lines.</p> <p>Consider the risk for potential slip failure.</p> <p>Consider the need for developing and implementing a track survey monitoring program, which may include:</p> <ul style="list-style-type: none"> <li>• Baseline condition of the adjacent track prior to work.</li> <li>• Frequency of track top, line and twist surveys.</li> <li>• Existing or additional track patrols.</li> </ul> <p>Develop and implement an Action Response Plan to manage track movements during excavation works, including any track certification requirements. Seek expert advice as required or if in doubt.</p>	<p><a href="#">Underground / Overhead Services Work Method Statement</a></p>



References	
<p><b>Standards, Codes of Practice, Guidance:</b></p> <p><a href="#">Commonwealth Work Health and Safety Regulation</a> (Regulations 304, 305, 306)</p> <p><a href="#">Code of Practice Excavation Work</a></p> <p><a href="#">ARTC Engineering (Track and Civil) Code of Practice - Section 8 Earthworks</a></p> <p><a href="#">ARTC Standard - Earthworks Materials Specification</a></p> <p><a href="#">ARTC Standard - Earthworks, Formation and Capping Material</a></p> <p><a href="#">ARTC Standard - Railway Earthworks</a></p>	<p><b>Plant / Equipment / Tools:</b></p> <p>Equipment to protect sides of an excavation from collapse.</p> <p>Exclusion zone equipment. For example, warning signs, warning tape, witches hats, fencing.</p> <p>Excavation covers (where required).</p> <p>Excavator slew locks (where required).</p> <p>Excavation equipment.</p>
<p><b>Training Requirements:</b></p> <p>Check whether high-risk work and other licenses are required and if so, confirm that workers have these.</p> <p>Confirm that appropriate information, training and/or instruction has been provided to workers in relation to:</p> <ul style="list-style-type: none"> <li>-the work to be carried out</li> <li>-the correct selection, fitting, use, care, inspection, maintenance and storage of PPE (as applicable).</li> </ul>	<p><b>Inspection / Testing requirements:</b></p> <p>Conduct pre-start inspections on equipment.</p>