



## VUL-SWP-020-Plumbing

| STANDARD WORK PROCEDURE (SWP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                       |
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| Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | General Plumbing Works                                                                                                                                                                                                                                                                |
| Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Vulcan Mine                                                                                                                                                                                                                                                                           |
| Department                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Construction                                                                                                                                                                                                                                                                          |
| Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | The purpose of this SWP is to provide a documented way of working to achieve an acceptable level of risk. The steps outlined pertain to the titled task only. All other SHMS requirements such as SOPs must be followed e.g.: VUL-SOP-065-PPE, VUL-SOP-089-Dust etc.                  |
| PPE Required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                       |
| <br>HEAD PROTECTION<br>(HARD HAT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <br>EYE PROTECTION<br>(SAFETY GLASSES)                                                                                                                                                               |
| <br>BODY PROTECTION<br>(HIGH VIS - LONG SLEEVE / PANTS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <br>FOOT PROTECTION<br>(SAFETY BOOTS)                                                                                                                                                                |
| <br>HAND PROTECTION<br>(GLOVES)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                       |
| Job Step Analysis Reference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                       |
| Other Relevant Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                       |
| Task Specific PPE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                       |
| <br>FACE PROTECTION<br>(FULL FACE SHIELD)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <br>LUNG PROTECTION<br>(P2 MASK MINIMUM)                                                                                                                                                           |
| <br>EAR PROTECTION<br>(EAR PLUGS / EAR MUFFS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                       |
| ERT resources available on-site during operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                       |
| Personnel performing plumbing tasks shall be fully inducted, hold the relevant training & competencies to complete the work and adhere to site fitness for work requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                       |
| Work Instruction is based on working in a controlled environment. If the environment, tools, equipment changes and or a deviation from this Work Instruction, a new JHA must be created and approved by all workers conducting the task.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                       |
| Critical (Hazard) Risks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                       |
| Ensure controls are in place for critical risks associated with this task. These include:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"><li>• Hazardous Substances</li><li>• Working Alone</li><li>• Uncontrolled Movement</li><li>• Heat</li><li>• Exposure to Biological Hazards</li><li>• Vehicle/Pedestrian Contact</li><li>• Lifting &amp; Moving of loads</li><li>• Weather</li></ul> |
| 1. PLANNING AND PREPARATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                       |
| 1.1 Plan & Prepare for Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"><li>• Conduct pre-start meeting to discuss tasks, hazards and controls</li><li>• Wear required site PPE including hard hat, safety glasses, long sleeved high-vis shirt, sleeves down, long pants, high ankle zip and/or laced up steel capped boots, Cut 5 rated safety gloves on person and personal isolation lock</li><li>• Ensure fundamental stability of vehicle during loading</li><li>• Ensure all sharp edges are protected and suitable gloves are worn when handling equipment</li><li>• Secure all loads to vehicle in an approved manner</li><li>• Coordination for the communication of isolation, commissioning, and testing</li></ul> |                                                                                                                                                                                                                                                                                       |



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| <b>2. GENERAL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>2.1 Travel and transport materials around site</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Conduct a Take 5 to identify hazards and controls before commencing travel</li> <li>• Trained, Assessed and Authorised operator of vehicle</li> <li>• Ensure Positive communications when interacting with other equipment</li> <li>• Abide by speed limits and give way to fauna.</li> <li>• All persons must comply with site traffic rules</li> <li>• Drive to conditions</li> <li>• Monitor weather and adhere to <b>VUL-TAR-004- Weather</b></li> </ul>                                                                                                                                                                                                                                                     |
| <b>2.2 Manual Handling</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• Risk assess before lifting to assess the weight, shape, size of loads as well as distance loads need to be carried</li> <li>• Use correct manual handling and lifting techniques, including two-person lifts or mechanical aids for heavy items or work in awkward positions</li> <li>• Appropriate gloves for task</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>2.3 Work Area Housekeeping</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <ul style="list-style-type: none"> <li>• Maintain cleanliness of worksite</li> <li>• Clean up as the job progresses</li> <li>• Remove all excess material from the worksite</li> <li>• Use correct receptacles for rubbish</li> <li>• Ensure no loose objects are stored/placed where they can fall</li> <li>• Conduct regular inspection/cleanup of work area</li> <li>• Store all materials in an orderly manner</li> <li>• Remove all barricading and signage after job complete</li> <li>• Correct segregation of waste in bins provided</li> </ul>                                                                                                                                                                                                   |
| <b>2.3 Working Outdoors</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• Ensure regular rest breaks/utilisation of shaded areas provided</li> <li>• Keep hydrated-ensure regular fluid intake</li> <li>• Utilise temporary shades, if needed</li> <li>• Wear hard had brims, if needed</li> <li>• Use sunscreen SPF 30 and above</li> <li>• Keep alert for snakes, spiders, and other biting insects/fauna. Report to the environmental department</li> <li>• Monitor weather and adhere to <b>VUL-TAR-004- Weather</b></li> <li>• Apply insect barrier sprays/creams</li> <li>• Maintain correct PPE and wear correctly</li> <li>• Dust suppression as required</li> <li>• If possible, work outside in cooler parts of the day and inside during the hotter parts of the day</li> </ul> |
| <b>2.4 Working Alone</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• If working alone, <b>VUL-FRM19-14- Working Remotely or Alone Permit</b> and complete a JHA</li> <li>• OCE or Supervisor to check in with worker at least every two hours</li> <li>• Handheld radio to be carried by worker at all times</li> <li>• Up to date map of location of person working alone and/or SPOT device or similar</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   |



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| <b>2.6 Access the Work Areas</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>• Spotter to communicate and direct light vehicle operator and control area around plant</li> <li>• Ensure the work access and egress routes are free of obstacles and slip and trip hazards</li> <li>• Set up Entry/Exit point signage and/or barricading for areas of high-risk work areas, if required</li> <li>• Monitor weather and adhere to VUL-TAR-004-Weather</li> </ul>                                                        |
| <b>3. PLUMBING WORKS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>3.1 Sewer Blockages</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>3.1.1 Locate fault and set up work area</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Delineation, appropriate barricading and signage as required</li> <li>• Spill kit as required</li> <li>• Mop up wet surfaces as required</li> </ul>                                                                                                                                                                                                                                                                                    |
| <b>3.1.2 Clear blockage using hand tools/plunger</b>                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Spill kit as required</li> <li>• Rubber gloves as required</li> <li>• Ensure personnel have up to date immunisations</li> <li>• Chlorine spray / bleach where required</li> <li>• Read and follow SDS</li> </ul>                                                                                                                                                                                                                       |
| <b>3.1.3 Clear blockage using electric drain machine equipment</b>                                                                                                                                                                                                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• Spill kit as required</li> <li>• Mop up wet surfaces</li> <li>• Correct PPE for the task and tools being used</li> <li>• Tagged and tested electrical equipment</li> <li>• Ensure personnel have up to date immunisations</li> </ul>                                                                                                                                                                                                   |
| <b>3.1.4 Excavate to remove blockage</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>• Correct PPE for the task and tools being used</li> <li>• Chlorine spray / bleach where required</li> <li>• Read and follow SDS</li> <li>• VUL-FRM-19-12-Penetration Excavation Permit completed and approved – services are located, marked, and isolated as required</li> <li>• JHA to be developed</li> <li>• Spotter in place</li> <li>• Spill kit as required</li> <li>• Ensure personnel have up to date immunisations</li> </ul> |
| <b>4.1 Water Leaks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>4.1.1 Locate fault and set up work area</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>• Delineation, appropriate barricading and signage as required</li> <li>• Mop up wet surfaces</li> <li>• Positive communication</li> <li>• Spotter in place</li> </ul>                                                                                                                                                                                                                                                                   |



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| <b>4.1.2 Isolate faulty water line</b>                                                                                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Isolate - Follow VUL-SOP-078-Isolation and Tagging</li> <li>Lock out and tagged where required</li> <li>Test and try for dead before commencing work</li> </ul>                                                                                                                                                                                                                             |
| <b>4.1.3 Repair leak</b>                                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Only qualified trades people for potable water repairs</li> <li>Clean work area, remove mud and water from work area as required</li> <li>Correct use of PPE</li> </ul>                                                                                                                                                                                                                     |
| <b>4.1.4 De-isolate and re-pressurise</b>                                                                                                                                                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>Communication between workers so water can be quickly isolated again if blowout occurs</li> <li>Visual inspection of pipe work to confirm correct fix</li> <li>Flush line at closest outlet to remove all debris</li> <li>Positive radio communications between workers</li> </ul>                                                                                                          |
| <b>5.1 Installation &amp; Maintenance of Water Filters</b>                                                                                                                                                                                                                                                                                                                                                                         |
| <b>5.1.1 Isolate water supply to filter and depressurise</b>                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Isolate - Follow <b>VUL-SOP-078-Isolation and Tagging</b></li> <li>Lock out and tagged where required</li> <li>Test and try for dead before commencing work</li> <li>Slowly release pressure from the line to test for correct isolation</li> <li>Clean up any water spillage before continuing</li> <li>Remove any items from the area that could be affected by water spillage</li> </ul> |
| <b>5.1.2 Remove and replace filter</b>                                                                                                                                                                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>Clean up any spillages before continuing</li> <li>Use correct PPE (gloves), when unscrewing filter</li> </ul>                                                                                                                                                                                                                                                                               |
| <b>5.1.3 Turn water back on and test</b>                                                                                                                                                                                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Turn water back on slowly and check all fittings</li> <li>Clean up any spillages and leave work area clean</li> </ul>                                                                                                                                                                                                                                                                       |
| <b>6.1 Valve Maintenance</b>                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>6.1.1 Isolate</b>                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>Prior notification for isolation</li> <li>Isolate - Follow <b>VUL-SOP-078-Isolation and Tagging</b></li> <li>Lock out and tagged where required</li> <li>Test and try for dead before commencing work</li> <li>Where possible minimize water isolation time frame to minimise interruption to mining and VMO</li> </ul>                                                                     |
| <b>6.1.2 Testing</b>                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>Ensure valve correctly isolates intended area</li> <li>Re-pressurise slowly</li> <li>Visually inspect work</li> <li>Pressure test if required</li> </ul>                                                                                                                                                                                                                                    |



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| <b>7.1 Installation and maintenance of water services</b>                                                                                                                                                                                                                                                                                                                                                                    |
| <b>7.1.1 Isolate water supply, depressurise and disconnect where required</b>                                                                                                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Isolate - Follow VUL-SOP-078-Isolation and Tagging</li> <li>Lock out and tagged where required</li> <li>Test and try for dead before commencing work</li> <li>Slowly release pressure from the line to test for correct isolation</li> <li>Clean up and water spillages before continuing</li> <li>Remove any items from the area that could be affected by water spillage</li> </ul> |
| <b>7.1.2 Cutting pipe</b>                                                                                                                                                                                                                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Correct gloves for the task</li> <li>Knee pads where required</li> <li>Correct tooling for the task</li> <li>Trained and competent</li> <li>Fatigue breaks</li> </ul>                                                                                                                                                                                                                 |
| <b>7.1.3 Join and install pipe fittings</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>Correct tools for the task</li> <li>Correct gloves for the task</li> <li>Read and follow SDS</li> <li>Trained and competent</li> <li>Spill kit readily available</li> </ul>                                                                                                                                                                                                           |
| <b>7.1.4 Fixing supports to pipework</b>                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>Correct tools for the task</li> <li>Correct gloves for the task</li> <li>Correct eye protection for the task</li> <li>VUL-FRM-19-12-Penetration Excavation Permit completed and approved – services are located, marked, and isolated as required</li> </ul>                                                                                                                          |
| <b>9.1 Transport potable water to water tanks</b>                                                                                                                                                                                                                                                                                                                                                                            |
| <b>9.1.1 Load potable water tank onto truck</b>                                                                                                                                                                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>Pre-start machinery</li> <li>Trained, assessed and authorised in tele-handler/HR truck</li> <li>Use correct machine for lifting potable tank</li> <li>Use correct tie-downs for securing load</li> <li>Spotter in place</li> <li>Positive communication</li> </ul>                                                                                                                    |
| <b>9.1.2 Transport potable tank to treatment plant</b>                                                                                                                                                                                                                                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>Positive communication</li> <li>Site authorised truck or move under escort</li> <li>Follow site road speeds and procedures</li> <li>Drive to conditions</li> <li>Monitor weather and adhere to VUL-TAR-004-Weather</li> </ul>                                                                                                                                                         |



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| <b>9.1.3 Fill potable water tank</b>                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• Only use designated potable water tank, and make sure all caps are in place or valves shut</li> <li>• Truck to be parked fundamentally stable</li> <li>• Maintain three points of contact</li> <li>• Make sure filling hose is secure and turn on water slowly</li> </ul>                                                 |
| <b>9.1.4 Transport full tank to crib hut tanks</b>                                                                                                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>• Positive communication</li> <li>• Site authorised truck or move under escort</li> <li>• Follow site road speeds and procedures</li> <li>• Drive to conditions</li> <li>• Monitor weather and adhere to <a href="#">VUL-TAR-004-Weather</a></li> </ul>                                                                     |
| <b>9.1.5 Fill crib hut tanks</b>                                                                                                                                                                                                                                                                                                                                   |
| <ul style="list-style-type: none"> <li>• Only use designated potable water tank, and make sure all caps are in place or valves shut</li> <li>• Maintain three points of contact</li> <li>• Make sure filling hose is secure and turn on water slowly</li> <li>• Positive communication</li> <li>• Correct PPE</li> <li>• Maintain situational awareness</li> </ul> |
| <b>10. Clean-Up Work Area</b>                                                                                                                                                                                                                                                                                                                                      |
| <b>10.1 Clean Work Area and Removal of Equipment</b>                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>• Regular assessment of ground conditions</li> <li>• Monitor weather and adhere to <a href="#">VUL-TAR-004-Weather</a></li> <li>• Maintain communication between personnel and plant</li> <li>• Utilisation of skip bins</li> </ul>                                                                                         |