JOB HAZARD ANALYSIS (JHA)

Business name

Document: JHA-001 Rev 1
Prepared: Nov 9, 2026
Review by: Dec 9, 2026
Highest risk after controls: Medium

1. BUSINESS AND JOB DETAILS

Job	Replace a water heater	**Start date**	Nov 9, 2026
Working hours	7:00 am to 3:30 pm	**Trade**	Plumbing

2. JOB STEPS, HAZARDS AND CONTROLS

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
1	Check access to the unit and plan the removal route through stairs, roof spaces or tight cupboards	Tight spaces: attics and crawl spaces Lifting and carrying heavy loads	**High Likely / Recordable / lost time**	1.1 Do as much of the work as you can from outside the tight space. [Elimination] 1.2 Turn the power off at the panel before entering where you can, as damaged wiring may be live. [Engineering (guarding)] 1.3 Lay crawl boards across the joists so you cannot step through the ceiling. [Engineering] 1.4 Set up ventilation and lighting in the space. [Engineering] 1.5 Limit time in hot attics and take breaks somewhere cool. [Administrative] 1.6 Tell someone when you go in and when you are out. [Administrative] 1.7 Wear a dust mask, knee pads, gloves and a bump cap. [PPE] 1.8 Plan to avoid carrying: have materials delivered, and old items picked up, as close as possible to where they are used. [Elimination] 1.9 Use lighter or smaller loads: order smaller bags and shorter lengths, and drain or break down old items before moving them. [Substitution] 1.10 Use trolleys, pallet jacks, hoists, vacuum lifters or plant instead of carrying by hand. [Engineering] 1.11 Use a two-person lift for anything heavy, long or awkward. Plan the route first and clear it. [Administrative] 1.12 Keep the load close, back straight and no twisting. Turn with your feet. [Administrative] 1.13 Rotate tasks and take breaks on long lifting jobs. [Administrative] 1.14 Wear gloves for grip and safety boots to protect your feet. [PPE]	**Medium Unlikely / Recordable / lost time**	Site supervisor
2	Isolate power at the electrical panel and gas or water at the meter, apply lockout/tagout	Electric shock from live wiring Gas and fuel lines Stored energy Rules: 29 CFR 1926 Subpart K	**Critical Possible / Fatality**	2.1 Isolate the power before any work. Do not work live. [Elimination] 2.2 Lock out and tag the disconnecting means with your own personal lock and tag so the circuit cannot be energized (29 CFR 1926.417). [Engineering (guarding)]	**Medium Rare / Fatality**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
				2.3 Test before you touch: prove dead at the point of work with a tested voltage tester. [Engineering] 2.4 Only qualified persons work on or near exposed energized parts. [Administrative] 2.5 Check for back feeds from solar, batteries and generators that can keep a circuit live after the main switch is off. [Administrative] 2.6 Isolate and purge the line before work, with the owner's approval. [Elimination] 2.7 Lock off and tag the isolation valve. [Engineering (guarding)] 2.8 Gas and fuel lines: see step 8 for the full controls [Administrative] 2.9 Release or block all stored energy before work: release the pressure in pipes, tanks and hoses, bleed hydraulics, release springs, lower loads. [Elimination] 2.10 Lock out and tag all energy sources with personal locks. [Engineering (guarding)] 2.11 Put mechanical blocks or props under raised parts like buckets, tipper bodies and doors. [Engineering] 2.12 Test that the system is dead and nothing can move before you start. [Administrative] 2.13 Follow the maker's procedure, for example for garage door and roller door springs. [Administrative]		
3	Drain the old unit, watching for scalding water and steam	Hot water and steam Burns from hot surfaces Slips and trips	**Medium Likely / Minor injury**	3.1 Turn the system off and let it cool before work. [Elimination] 3.2 Isolate and lock off the heat source and valves, and release the pressure. [Engineering (guarding)] 3.3 Hot water and steam: see step 9 for the full controls [Administrative] 3.4 Isolate heating systems and let parts cool before you touch them. [Elimination] 3.5 Fit guards or insulation on hot pipes and equipment. [Engineering] 3.6 Mark hot items with chalk or a "HOT" sign so others know. [Administrative] 3.7 Keep a first aid kit and cool running water nearby for burns. [Administrative] 3.8 Wear heat-resistant gloves and long sleeves. [PPE] 3.9 Plan walkways and keep them clear of materials, hoses and leads. [Elimination] 3.10 Run cords and hoses overhead on hooks or stands, or along walls, not across walkways. [Engineering] 3.11 Fill or cover holes, and lay boards or mats on muddy access paths. [Engineering] 3.12 Clean up offcuts, packaging and spills as you go, not at the end of the day. [Administrative] 3.13 Keep work areas, stairs and access paths well lit. [Administrative]	**Low Unlikely / Minor injury**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
4	Disconnect pipes, flue and wiring, and cap the gas line	Gas and fuel lines Electric shock from live wiring Cuts from sharp edges Rules: 29 CFR 1926 Subpart K	**Critical Possible / Fatality**	4.1 Check for leaks with a gas detector before and during work, and ventilate the area. [Engineering] 4.2 Only licensed gas fitters work on gas lines. [Administrative] 4.3 Gas and fuel lines: see step 8 for the full controls [Administrative] 4.4 If energized work cannot be avoided, use an energized work permit, a safety observer and insulated tools, following NFPA 70E. [Administrative] 4.5 Wear insulated gloves, arc-rated clothing and a face shield when testing or working near live parts. [PPE] 4.6 Electric shock from live wiring: see step 2 for the full controls [Administrative] 4.7 Deburr or cover sharp edges, and fit edge protectors on exposed sheet metal. [Engineering] 4.8 Use knives with retractable or self-retracting blades. [Engineering] 4.9 Cuts from sharp edges: see step 5 for the full controls [Administrative]	**Medium Rare / Fatality**	Site supervisor
5	Remove the old unit using a trolley and two people	Lifting and carrying heavy loads Cuts from sharp edges	**High Likely / Recordable / lost time**	5.1 Lifting and carrying heavy loads: see step 1 for the full controls [Administrative] 5.2 Deburr or cover sharp edges, and fit edge protectors on exposed sheet metal. [Engineering] 5.3 Use knives with retractable or self-retracting blades. [Engineering] 5.4 Cut away from your body and keep your other hand clear. [Administrative] 5.5 Put used blades in a blade bin or sharps container. [Administrative] 5.6 Use two people to handle large sheets of metal or glass. [Administrative] 5.7 Wear cut-resistant gloves and long sleeves. [PPE]	**Medium Unlikely / Recordable / lost time**	Site supervisor
6	Position and secure the new unit on a level base	Lifting and carrying heavy loads Tight spaces: attics and crawl spaces	**High Likely / Recordable / lost time**	6.1 Lifting and carrying heavy loads: see step 1 for the full controls [Administrative] 6.2 Tight spaces: attics and crawl spaces: see step 1 for the full controls [Administrative]	**Medium Unlikely / Recordable / lost time**	Site supervisor
7	Make pipe joins, with a hot work permit and an extinguisher at hand if soldering or brazing	Fire from hot works Burns from hot surfaces Rules: 29 CFR 1926.352 and NFPA 51B (35 ft rule also in 1910.252(a))	**Critical Possible / Fatality**	7.1 Use cold work methods where you can, such as bolting, press fittings or cutting with a saw instead of a torch. [Elimination] 7.2 Move anything that can burn at least 35 feet away, or cover it with fire blankets. [Engineering (guarding)] 7.3 Use fire-resistant screens to stop sparks reaching people or gaps in walls and floors. [Engineering] 7.4 Get a hot work permit before starting. [Administrative] 7.5 Keep a charged fire extinguisher and fire blanket at the work spot. [Administrative] 7.6 Keep a fire watch during the work and for at least 60	**Medium Rare / Fatality**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
				minutes after you finish (NFPA 51B), longer if the permit says so. [Administrative] 7.7 Check for smoldering behind walls, in ceilings and under floors before you leave. [Administrative] 7.8 Wear flame-resistant clothing, welding gloves and eye or face protection. [PPE] 7.9 Burns from hot surfaces: see step 3 for the full controls [Administrative]		
8	Reconnect gas (by a licensed gas fitter) and power (by a licensed electrician), then leak test	Gas and fuel lines Pressure testing Electric shock from live wiring Rules: 29 CFR 1926 Subpart K	**Critical Possible / Fatality**	8.1 Isolate and purge the line before work, with the owner's approval. [Elimination] 8.2 Lock off and tag the isolation valve. [Engineering (guarding)] 8.3 Check for leaks with a gas detector before and during work, and ventilate the area. [Engineering] 8.4 Only licensed gas fitters work on gas lines. [Administrative] 8.5 Remove ignition sources: no smoking, no hot work and no sparking tools near the line. [Administrative] 8.6 Test with water instead of air or gas where the system allows it. Never put water in refrigerant pipework, which is tested with dry nitrogen. [Substitution] 8.7 Keep people out of the test area with signs and barriers. [Engineering (guarding)] 8.8 Pressure testing: see step 9 for the full controls [Administrative] 8.9 Electric shock from live wiring: see step 2 for the full controls [Administrative]	**Medium Rare / Fatality**	Site supervisor
9	Fill and purge air, check the relief valve, commission and set the temperature	Hot water and steam Pressure testing	**Medium Unlikely / Serious injury**	9.1 Turn the system off and let it cool before work. [Elimination] 9.2 Isolate and lock off the heat source and valves, and release the pressure. [Engineering (guarding)] 9.3 Check the temperature, and open fittings slowly while facing away. [Administrative] 9.4 Keep a first aid kit and cool water ready for burns. [Administrative] 9.5 Wear heat-resistant gloves, long sleeves and a face shield. [PPE] 9.6 Test with water instead of air or gas where the system allows it. Never put water in refrigerant pipework, which is tested with dry nitrogen. [Substitution] 9.7 Keep people out of the test area with signs and barriers. [Engineering (guarding)] 9.8 Use a calibrated gauge and a relief valve set to protect the system. [Engineering] 9.9 Test to the pressure the system calls for and hold it for the set time. Never go over. [Administrative] 9.10 Release the pressure fully before tightening anything or fixing leaks. [Administrative]	**Low Rare / Serious injury**	Site supervisor

#	Job step	Hazards	Risk before	Controls	Risk after	Responsible
				9.11 Wear safety glasses or a face shield. [PPE]		
10	Take the old unit off site and clean up	Lifting and carrying heavy loads Poor housekeeping and waste	**High Likely / Recordable / lost time**	10.1 Lifting and carrying heavy loads: see step 1 for the full controls [Administrative] 10.2 Order materials to size and send packaging back where you can. [Elimination] 10.3 Put dumpsters and waste chutes close to the work. [Engineering] 10.4 Clean as you go, and do a full clean up at the end of each day. [Administrative] 10.5 Keep exits, stairs and walkways clear at all times. [Administrative] 10.6 Stack materials neatly on level ground, away from edges. [Administrative] 10.7 Wear gloves when handling waste. [PPE]	**Medium Unlikely / Recordable / lost time**	Site supervisor

Risk key: risk = likelihood x consequence on a 5 x 5 matrix. Low, Medium, High, Critical. Work must not start while the risk after controls is high or above. Controls are listed in order of the hierarchy of controls: Elimination, Substitution, Engineering (guarding), Engineering, Administrative, PPE.

3. PPE AND PERMITS

Required PPE	Permits and plans
Safety-toe boots (ASTM F2413) Work gloves Safety glasses (ANSI Z87.1) N95 respirator Knee pads Hard hat (ANSI Z89.1) Face shield (ANSI Z87.1) Coveralls Welding gloves Cut-resistant gloves	Lockout/tagout (1926.417) Hot work permit (fire watch at least 60 minutes after, NFPA 51B)

4. PLANT AND EQUIPMENT

Plant / equipment	License or training needed	Inspection needed	Rego / ID	Last inspected	Certificate / report
Hand tools					
ProPress tool					
Propane torch					
Trailer					

5. TRAINING REQUIRED FOR THIS WORK

- Qualified person training for work on or near exposed energized parts (29 CFR 1926.416, NFPA 70E)

6. CREW TRAINING AND CERTIFICATIONS

Crew listed at sign-on below, with ticket and licence numbers.

7. EMERGENCY ARRANGEMENTS

Emergency number	911	**First aid kit**	In the work vehicle
Fire extinguisher	In the work vehicle	**Alarm and evacuation**	Shout for help and stop work. Make the area safe and go to the assembly point. Call the emergency number and send someone to meet the ambulance.
Reporting incidents	Report a fatality to OSHA within 8 hours, and an in-patient hospitalization, amputation or eye loss within 24 hours.		

8. MONITORING, REVIEW AND LEGAL BASIS

A competent person inspects the job site, materials and equipment before work each day and as conditions change (29 CFR 1926.20(b)(2)). Any time this JHA is revised, the affected crew is re-briefed and signs again.

Legal basis: OSH Act Section 5(a)(1) and 29 CFR 1926, Safety and Health Regulations for Construction (incl. 1926.20 and 1926.21). OSHA requires employers to find and fix hazards and to train workers on them. A JHA breaks the job into steps, lists the hazards in each step and the controls that protect the crew. General contractors often require one before you start.

Keep this JHA on site during the job, and keep it with the training and inspection records for at least 1 year after the job (longer if your state plan or general contractor requires it). OSHA does not set a retention period for JHAs themselves.

9. REVISION HISTORY

Rev	Date	By	What changed
1	Nov 9, 2026		First issue

10. SIGN-OFF

	Name	Signature	Date	
Prepared by				
Supervisor				
General contractor review				Accepted for use: Yes / No

By signing below, each crew member confirms they were trained on the hazards and controls in this JHA before work started, and will follow it. Stop work and tell the supervisor if conditions change.

Name	Role / company	Tickets / licences	Signature	Date

Name	Role / company	Tickets / licences	Signature	Date