Job hazard analysis (JHA): Excavator operation

Task: Excavator operation	**Site or job:**
Crew:	**Date:**
Supervisor:	

No.	Job step	Hazard	Controls (most effective first)
1	Walk around and inspect the machine	Defective brakes, alarm, seat belt or hydraulics	**Administrative control:** Confirm the seat belt is provided and works. As good practice, also check brakes, horn, backup alarm, lights and hydraulic hoses at the start of each shift. (29 CFR 1926.602(a)(2)(i)) **Administrative control:** Make sure the cab glass is safety glass with no visible distortion that affects safe operation. Keep mirrors and cameras working as good practice. (29 CFR 1926.600(a)(5)) **Administrative control:** Remove a defective machine from service and tag it.
2	Plan the dig and locate utilities	Striking a buried line	**Eliminate:** Reroute the dig or de-energize and relocate the line where the owner agrees. **Administrative control:** Determine the estimated location of underground utilities before the excavation is opened. (29 CFR 1926.651(b)(1)) **Administrative control:** Find the exact location by safe means when the dig approaches the estimated location. (29 CFR 1926.651(b)(3)) **Administrative control:** Protect, support or remove underground installations while the excavation is open. (29 CFR 1926.651(b)(4))
3	Set up the machine and the work zone	Overhead line contact	**Eliminate:** Have lines de-energized or moved before any work near them. **Administrative control:** Keep the minimum clearance from lines, and designate a person to watch clearance when the operator cannot judge it. (29 CFR 1926.600(a)(6)(iv)) **Administrative control:** Treat any overhead wire as energized until the owner says otherwise and it is visibly grounded. (29 CFR 1926.600(a)(6)(vi))
4	Set up the machine and the work zone	Machine rolls or slides on a slope or soft edge	**Engineering control:** Keep the machine back from the edge, and keep spoil and equipment at least 2 feet from the edge of an excavation. (29 CFR 1926.651(j)(2)) **Administrative control:** Plan the machine position so the tracks sit on firm, level ground.

No.	Job step	Hazard	Controls (most effective first)
5	Dig and load	Struck by the bucket, boom or swing	**Eliminate:** Keep all workers out of the swing radius; use barricades or cones to mark it. **Administrative control:** Do not permit anyone underneath loads handled by lifting or digging equipment. (29 CFR 1926.651(e)) **Administrative control:** Agree on hand signals, and keep eye contact with the signal person. **PPE:** Wear hard hat, hi-vis vest and safety glasses when outside the cab.
6	Dig and load	Overturning from side-slope loads or high-sitting loads	**Engineering control:** Use the rated capacity chart or load rating, and do not exceed it. **Administrative control:** Wear the seat belt whenever you are in the seat.
7	Work around trenches and traffic	Cave-in or machine falls into the trench	**Engineering control:** Make sure a protective system is in place before anyone enters the trench. (29 CFR 1926.652(a)(1)) **Administrative control:** Keep spoil and equipment at least 2 feet from the edge, or use retaining devices. (29 CFR 1926.651(j)(2)) **Administrative control:** Have a competent person inspect the excavation daily. (29 CFR 1926.651(k)(1))
8	Work around trenches and traffic	Struck by vehicles or backing hazard	**Engineering control:** Use the reverse alarm on equipment that has an obstructed view to the rear, or use an observer. (29 CFR 1926.602(a)(9)(ii)) **PPE:** Wear high-visibility clothing when exposed to traffic. (29 CFR 1926.651(d))
9	Lift and place pipe or material	Dropped pipe or load	**Administrative control:** Inspect rigging before use on each shift and remove defective rigging from service. Use rigging rated for the load. (29 CFR 1926.251(a)(1)) **Administrative control:** Follow the lift plan and keep all workers out from under the load. (29 CFR 1926.651(e))
10	Park, shut down and secure	Machine moves or is tampered with when parked	**Administrative control:** Set the parking brake, and chock the wheels when parked on an incline. Fully lower the bucket when the machine is not in use. (29 CFR 1926.600(a)(3)(ii)) **Administrative control:** Remove the key and lock the cab.

Required PPE

- Hard hat
- High-visibility vest
- Safety glasses
- Hearing protection
- Steel-toe boots
- Seat belt (29 CFR 1926.602(a)(2)(i))

OSHA sections

29 CFR 1926.602 Material handling equipment; 29 CFR 1926.600 Equipment; 29 CFR 1926.651 Specific excavation requirements; 29 CFR 1926.652 Requirements for protective systems; 29 CFR 1926.251 Rigging equipment for material handling; 29 CFR 1926.21 Safety training and education

Reviewed with the crew. Names and signatures

Free JHA template from ToolboxKits, toolboxkits.com. Check it against your site and your employer's program before use. This is not legal advice.