TASK RISK ASSESSMENT WORKSHEET

CONTRACT NO	REF	DATE	REV
190707	RA-2026-P8aKOmWD	04.09.2026	A

PROJECT 132 kv cable works

CLIENT	CONSULTANT	MAIN CONTRACTOR	SUBCONTRACTOR
Taqa	Green	El Sewdy	Heliopolis

ACTIVITY excvation

ASSESSORS	— PROJECT MANAGER *signature*	— HSE ENGINEER *signature*	— PROJECT MANAGER *signature*	— CIVIL ENGINEER *signature*	— HSE ENGINEER *signature*

SN	Activity	Hazard / Aspect	Consequence	Groups Exposed	Existing Controls	Initial Risk P × S = R	Additional Controls	Residual Risk P × S = R
1	**Pre-excavation site survey, utility detection (CAT & Genny), and trial pit hand excavation for underground electrical cable routes**	1. Inaccurate as-built drawings leading to unmapped utility strikes 2. Blind spots and electromagnetic interference during cable locater scanning 3. Accidental contact with energized buried High Voltage/Medium Voltage (HV/MV) cables during hand digging 4. Striking underground pressurized gas, potable water, or district cooling mains 5. Ergonomic strain and manual handling injuries during trial pitting	Catastrophic arc flash, electrocution, severe thermal burns, gas explosion, flooding of trench, localized utility outages, and potential fatalities.	Surveyors, civil chargehands, manual laborers, banksmen, and nearby site personnel.	1. Obtain approved No Objection Certificates (NOC) from relevant UAE authorities (e.g., ADDC, AADC, DEWA, Etisalat, du). 2. Implement a strict Permit to Work (PTW) and Excavation Clearance Procedure in accordance with OSHAD-SF CoP 29.0. 3. Conduct comprehensive Ground Penetrating Radar (GPR) and calibrated cable locator (CAT4 & Genny) scans across the alignment. 4. Mark all identified utilities on the ground with standard color codes and cross-reference with approved as-built drawings. 5. Authorize only manual trial pitting using non-conductive, insulated digging hand tools (BS 8020 certified) within 1.5 meters of suspected utilities. 6. Wear mandatory PPE: arc-rated flame-resistant coveralls, safety boots with composite toe/dielectric soles, high-visibility vests, safety glasses, and class 0/1 electrical gloves where appropriate.	**P 4 × S 5** **20**	1. Deploy trained and ADOSH-certified Banksmen and Utility Spotters during all trial pitting. 2. Continuous recalibration and bump testing of utility detectors prior to each shift.	**P 2 × S 3** **6**
2	**Mechanical excavation using heavy plant (excavators/backhoes) for HV/LV cable trenches and duct banks**	1. Heavy plant striking overhead power lines during boom swing or tracking 2. Mechanical boom striking marked/unmarked buried electrical conduits 3. Equipment rollover, slewing into adjacent traffic, or tipping into open excavations 4. Banksman or pedestrian workers trapped/crushed in excavator swing radius 5. Excessive noise, vibration, and dust emissions in arid UAE conditions	Fatal crushing injuries, machine overturn, electrocution from overhead/underground lines, structural damage, and irreversible hearing loss.	Plant operators, banksmen, ground workers, site engineers, and third-party road users.	1. Ensure all heavy plant possesses valid third-party inspection certificates and is operated by ADOSH/UAE-licensed operators. 2. Maintain minimum safe clearance distances from overhead power lines as per OSHAD CoP 15.0 and install goalpost height limiters with warning flags. 3. Strictly prohibit mechanical excavation within 1 meter of marked live services; hand excavation only in exclusion zones. 4. Establish a 360-degree exclusion zone around the excavator swing radius demarcated with rigid barriers. 5. Deploy a dedicated, trained banksman wearing high-visibility attire equipped with a whistle/two-way radio for plant movement control. 6. Apply water misting suppression techniques to control dust emissions in accordance with UAE environmental standards.	**P 4 × S 5** **20**	1. Fit excavators with audible travel alarms, beacon lights, and rear/side-view cameras or proximity detection sensors. 2. Daily pre-operational checklist signed off by plant operator and verified by Plant Inspector.	**P 2 × S 3** **6**

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3	**Installation of trench shoring, trench boxes, and soil stabilization in deep electrical excavations (>1.2m depth)**	1. Sudden trench wall collapse, cave-in, or slumping in loose sandy UAE soil 2. Falling shoring components, hydraulic jacks, or trench sheets during hoisting 3. Structural failure of overloaded shoring systems due to surcharge loads 4. Workers struck by suspended trench box modules during installation 5. Inadequate soil assessment failing to identify cohesionless or reclaimed sand	Asphyxiation, crush syndrome, catastrophic internal injuries, or burial-related fatalities from trench wall collapse.	Excavation crew, shoring installation riggers, pipe/cable layers, and civil foremen.	1. Comply strictly with OSHAD-SF CoP 29.0 requirements mandating protection for all excavations deeper than 1.2 meters. 2. Engage an ADOSH-competent geotechnical engineer to design and approve proprietary trench boxes or shoring systems suited to UAE soil profiles. 3. Use certified hydraulic shoring or sheet piling driven ahead of excavation depth where feasible to avoid unsupported soil faces. 4. Prohibit personnel from entering any un-shored or un-battered trench at any time during installation. 5. Install shoring progressively from top down and remove from bottom up without worker exposure to unsupported cuts. 6. Rigging of shoring boxes must use certified lifting gear inspected under thorough examination protocols by certified third parties.	**P 4 × S 5** **20**	1. Conduct daily pre-shift geotechnical inspections of shoring systems by an ADOSH-certified Excavation Competent Person. 2. Re-inspect shoring immediately following seismic activity, nearby heavy compaction, or rainfall events.	**P 2 × S 3** **6**
4	**Safe access, egress, and rigid perimeter edge protection around electrical cable excavations**	1. Personnel falling from height into open cable trenches or manholes 2. Slips, trips, and falls when climbing spoil piles to enter trenches 3. Defective, unsecured, or improperly pitched access ladders 4. Lack of rapid emergency egress routes during collapses or flash flooding 5. Third-party or unauthorized worker falling into unlit trenches at night	Fractures, head injuries, spinal trauma, multiple contusions, and delayed emergency rescue.	All excavation workers, cable pullers, inspectors, and pedestrian public (if adjacent to public roads).	1. Provide proprietary edge protection comprising top rails (0.95m - 1.15m), intermediate rails, and toeboards along all open edges deeper than 1.2m. 2. Install secured, industrial heavy-duty ladders (BS EN 131) secured at top and bottom, extending at least 1 meter above the trench landing point. 3. Position ladders at an angle of 4:1 (75 degrees) with maximum spacing of 7.5 meters lateral travel distance for any worker inside the trench. 4. Keep ladder landing points clear of loose debris, soil, tools, and electrical conduits. 5. Erect 2-meter high rigid hoarding or chain-link fencing with reflective warning signage and flashing amber beacon lights for roadside excavations. 6. Maintain dedicated, clear pedestrian walkways segregated from vehicle routes and trench perimeters.	**P 4 × S 4** **16**	1. Tag all ladders with Scafftag-style inspection tags; conduct weekly documented ladder and edge protection checks. 2. Provide bridging structures with guardrails across trenches engineered to carry pedestrian and tool loads.	**P 2 × S 2** **4**

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5	**Dewatering operations within high-water-table electrical trenches and joint bays**	1. Submersible pump electrical leakage causing trench water electrification 2. Soil undermining, hydraulic boiling, and sudden trench wall collapse due to uncontrolled dewatering 3. Trip hazards from flexible lay-flat dewatering hoses and high-voltage pump cables 4. Fuel spills and carbon monoxide emissions from diesel-driven dewatering pumps 5. Discharge of contaminated saline/brackish water into unauthorized storm drains	Electrocution in standing water, equipment drowning, collapse of adjacent foundations, structural destabilization, and environmental fines.	Dewatering technicians, trench workers, plant operators, and environmental compliance staff.	1. Power all electric submersible pumps through 30mA Residual Current Devices (RCDs) and industrial weatherproof 110V/230V IEC 60309 connections. 2. Ensure dewatering designs are calculated by a qualified engineer to prevent soil boiling, settlement, or undermining of trench shoring. 3. Route discharge hoses overhead or through protected trench crossings to prevent pedestrian tripping and vehicular pinching. 4. House diesel pumps within 110% capacity containment drip trays and locate them at least 3 meters away from excavation edges in well-ventilated zones. 5. Obtain environmental discharge permits from the local municipality (e.g., Abu Dhabi Municipality / Tadweer) before discharging ground water. 6. Ground all metal pump casings and electrical generators in accordance with ADDC/DEWA earthing regulations.	**P 3 × S 4** **12**	1. Install automatic low-water shutoff controls on all continuous pumping stations. 2. Perform daily RCD trip tests using calibrated testers and maintain a dedicated inspection log.	**P 1 × S 3** **3**
6	**Spoil bank management, excavated soil handling, and tipper truck loading adjacent to trenches**	1. Soil surcharge load causing shear failure and sudden collapse of trench walls 2. Loose boulders, rocks, or hard debris rolling back into the trench onto workers 3. Tipper trucks backing into the excavation or crushing ground spotters 4. Airborne silica dust generated during spoil dumping and tipping 5. Spoil pile encroaching on emergency egress ladders and walkways	Crush fatalities from falling boulders or trench collapse, vehicle rollover, dust inhalation, and acute eye trauma.	Trench laborers, tipper truck drivers, banksmen, and site personnel.	1. Maintain spoil piles at an absolute minimum distance of 1.0 meter (or equivalent to trench depth in sandy soil) from the excavation crest. 2. Limit spoil pile slope to its natural angle of repose (maximum 45 degrees in cohesive soil, flatter in granular soil) or retain with toe-boards. 3. Fit stop-blocks or heavy wheel berms along tipper truck tipping edges to prevent reverse vehicle overrun into trenches. 4. Mandatory deployment of dedicated, high-visibility Banksmen to guide all tipper truck movements and reversing actions. 5. Prohibit any personnel from standing inside the trench or between the truck and spoil heap during dumping/loading operations. 6. Dampen spoil piles using dedicated water bowsers to suppress airborne dust in accordance with ADOSH dust exposure thresholds.	**P 4 × S 4** **16**	1. Implement wheel-wash systems or rumble grids at site egress gates to prevent soil carryover onto UAE public highways. 2. Hard-hat chin straps mandatory for all personnel working below the spoil level to maintain head protection during rock roll-downs.	**P 2 × S 2** **4**

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7	**Thermal sand bedding placement, MV/HV electrical cable laying, and cable pulling in open excavations**	1. High tension cable winch failure and cable snap-back during mechanical pulling 2. Manual handling injuries from lifting, dragging, and shifting heavy armored cables 3. Entrapment of limbs, fingers, and hands in cable rollers, capstan winches, and conduit mouths 4. Heat stress, thermal exhaustion, and heat stroke due to extreme UAE summer ambient temperatures 5. Damage to cable insulation jackets on sharp trench rocks or un-shored trench edges	Traumatic amputations, catastrophic tension-strike fractures, musculoskeletal disorders, heat stroke, and latent electrical insulation breakdown.	Cable pulling crew, winch operators, cable drum minders, and site rigging supervisors.	1. Anchor all cable winches securely and verify calibration of the automated pulling tension limiter/recorder to prevent over-tensioning. 2. Install safety mesh cages around winching drums and keep all workers outside the recoil path of pulling ropes (Dyneema/steel wires). 3. Use certified cable jacks and drum spindle bars to lift drums; secure drum jacks on firm, level timber sleeper platforms. 4. Implement mechanical cable-pushing machines and properly lubricated heavy-duty cable rollers spaced every 2 to 3 meters. 5. Enforce UAE Ministry of Human Resources and Emiratisation (MOHRE) Midday Work Ban regulations during summer months. 6. Provide shaded rest shelters, cool drinking water, electrolyte supplements, and conduct mandatory Thermal Work Limit (TWL) monitoring.	**P 4 × S 4** **16**	1. Utilize wireless communication headsets between drum crew, intermediate trench watchmen, and winch operator. 2. Provide anti-pinch impact-resistant gloves to all operatives handling cable positioning along roller tracks.	**P 2 × S 2** **4**

LIKELIHOOD / FREQUENCY

Descriptor	Likely Frequency	Probability
Frequent	Occurs frequently	5
Often	Occurs several times per year	4
Likely	Has occurred more than once	3
Possible	Has occurred	2
Rare	Never occurred	1

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RISK MATRIX — PROBABILITY × CONSEQUENCE

Probability	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Rare (1)	1	2	3	4	5
Possible (2)	2	4	6	8	10
Likely (3)	3	6	9	12	15
Often (4)	4	8	12	16	20
Frequent / Almost Certain (5)	5	10	15	20	25

15 - 25	Extreme Risk	Activity or industry should not proceed in current form.
8 - 12	High Risk	Activity or industry should be modified to include remedial planning and action and be subject to detailed EHS assessment.
4 - 6	Moderate Risk	Activity or industry can operate subject to management and/or modification.
1 - 3	Low Risk	No action required, unless escalation of risk is possible.