مركز أبوظبي للسلامة والصحة المهنية
ABU DHABI OCCUPATIONAL SAFETY AND HEALTH CENTER

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Abu Dhabi Occupational Safety and Health System Framework

(OSHAD-SF)

Code of Practice

CoP 46.1 – Construction of Water Wells

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ABU DHABI PUBLIC HEALTH CENTRE | مركز أبوظبي للصحة العامة

Important Note:

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1. Introduction

(a) This Code of Practice (CoP), prepared in consultation with the concerned authorities, applies to all employers within the Emirate of Abu Dhabi.

(b) This CoP provides the minimum OSH requirements for the construction of water wells in Abu Dhabi for licensed drilling contractors (entities).

(c) This CoP establishes the requirements and standards so that the risks associated with the construction of wells are assessed, and that control measures in accordance with the hierarchy of controls are implemented to prevent injury, illness and disease to persons who might be exposed to risks arising from well construction activities.

(d) This CoP does not include specific requirements for water quality sampling, yield testing and final utilization of the well water, which shall be as established by concerned local and federal authorities.

(e) "Principal Contractor" when used in this CoP refers to the main contractor overseeing the operation and responsible for activities undertaken on the site within the Building and Construction Sector. Refer *to OSHAD-SF – CoP 53.0 – OSH Management during "Construction Work".*

(f) In prescribing the minimum acceptable OSH requirements for well construction, this CoP is not intended to be viewed as a substitute for formal training.

(g) Definitions applicable to this CoP:

(i) Alignment – the horizontal deviation between the actual well centre line and a straight line representing the ideal center line.

(ii) Annular Space – the ring-like space between the well casing and the outer well casing or well hole.

(iii) Aquifer – a geological formation, group of formations, or part of a formation, capable of transmitting and yielding quantities of water.

(iv) Artesian Well – a well in an aquifer where the groundwater is confined under pressure, so that the water level in the bore will rise above the top of the aquifer and ground level (a flowing well).

(v) Casing – a tube used as a temporary or permanent lining for a well.

(vi) Cement Grout – a fluid mixture of Portland cement and water of a consistency that can be forced through a pipe and placed as required.

(vii) Centralizer – a tool used to centre the casing in the hole.

(viii) Construction - the entire process of creating a well, from initial drilling and inserting the surface casing through to insertion of a screen and developing the aquifer prior to installing a pump.

(ix) Decommissioned Well - a well, the purpose and use of which have been permanently discontinued.

(x) Development – the removal of sand and other fines (including drilling mud) from the aquifer immediately surrounding the well and creating a filter zone around the well that prevents further movement of aquifer particles into the well.

(xi) Drilling Fluid - a medium used to lubricate the drill bit and stabilise the formation, control groundwater, and remove the drill cuttings from the hole as drilling takes place.

(xii) Drilling Operations - the drilling, construction, development, maintenance and rehabilitation, and decommissioning of a well.

(xiii) Free Flowing Well - a well from which groundwater is discharged at the ground surface without the aid of pumping.

(xiv) Formation - a bed or deposit composed throughout of substantially the same kind of rock; a lithologic unit. Each different formation is given a name.

(xv) Formation Pressure (Head) - energy contained in a water mass, produced by elevation, pressure, or velocity.

(xvi) FRE – Fibreglass-reinforced epoxy — a composite material composed of glass fibres and epoxy resin.

(xvii) FRP – Fibreglass-reinforced plastic — a composite used for well casing or riser pipe that is inert to most naturally occurring substances.

(xviii) Gravel Pack - granular material introduced into the annulus between the well hole and a casing or perforated lining to prevent or control the movement of finer particles from the aquifer into the well.

(xix) Groundwater – (underground water) water that is held in the ground.

(xx) Grout – a fluid mixture of cement and water of a consistency that can be pumped through a pipe, to which other additives (eg. bentonite) may be added to enhance its properties. Sometimes called “cement grout” or “cement slurry”.

(xxi) Grouting - the operation of placing or pumping a grout into an annular space or cavity.

(xxii) Head - see formation pressure.

(xxiii) Headwork’s - An assembly bolted to the casing to control the well, to provide access and protection.

(xxiv) Hydrogeological Properties - the properties of formations that control the movement and storage of groundwater.

(xxv) Permeability - the capacity of a porous medium for transmitting water.

(xxvi) Plumbness – the horizontal deviation (drift) of the well center line from true vertical.

(xxvii) Production Zone - the zone within the target formation that produces the water supply requirements for the well.

(xxviii) Pumping Level - the water level in the well when pumping is in progress.

(xxix) Rehabilitation – the restoration of a well to its most efficient condition using a variety of chemical or mechanical techniques, which may include replacing the production casing and/or screens.

(xxx) Screen - a special form of well liner used to stabilise the aquifer or gravel pack while allowing the flow of water through the well into the casing and permitting development of the screened formation by an appropriate process.

(xxxi) Shoe – an extension fitted to the end of the casing, commonly a drive shoe (for advancing the casing) or a float shoe (use for grouting).

(xxxii) Test Well - completed well for pumping to obtain information on capacity, groundwater quality, geological and hydrological conditions, and related information.

(xxxiii) Test Hole - a hole used only to obtain information on groundwater quality and/or geological and hydrological conditions.

(xxxiv) Transmissivity - the rate at which water of the prevailing kinematic viscosity is transmitted through a unit width of an aquifer under a unit hydraulic gradient, expressed in square meters per day. Note: Transmissivity is equal to the hydraulic conductivity multiplied by the thickness of the aquifer.

(xxxv) Water Table – the surface of saturation in an unconfined aquifer at which the pressure of the water is equal to that of the atmosphere.

(xxxvi) Well – a hole sunk into the ground and completed for the abstraction of water or for water observation purposes.

2. Training and Competency

(a) Employers shall ensure that OSH training complies with the requirements of:

(i) OSHAD-SF – Element 5 – Training, Awareness and Competency;

(ii) OSHAD-SF – Mechanism 7.0 – OSH Professional Entity Registration; and

(iii) *OSHAD-SF – Mechanism 8.0 – OSH Practitioner Registration.*

(b) Employers shall ensure personnel required to implement the requirements of this CoP are trained in construction of wells and understand the risks associated and the control measures implemented by the employer.

(c) Employers shall ensure all employees involved in the construction of water wells shall be trained to recognise and respond to hazards associated with this type of work.

(d) Training shall be tailored to the specific requirements of the jobsite and include any unique issues or requirements and the following subjects shall be part of the employee training program:

(i) identified hazards and risks;

(ii) site rules and prohibited activities;

(iii) specific plant and equipment operations;

(iv) devised safe methods of working;

(v) site access and egress;

(vi) lighting requirements (if applicable);

(vii) work in remote areas and communications;

(viii) personal protective equipment;

(ix) emergency procedures; and

(x) fire prevention and protection.

(e) Employers shall maintain a record of the required training that contains the following information:

(i) trainee name and ID number;

(ii) trainee Emirates ID number;

(iii) subject(s) of training;

(iv) training provider;

(v) date(s) of training; and

(vi) person(s) providing the training.

3. Requirements

3.1 Roles and Responsibilities

3.1.1 Employers

(a) Employers shall undertake their roles and responsibilities in accordance with the general requirements of

(i) *OSHAD-SF – Element 1 – Roles, Responsibilities and Self-Regulation Section 3.2.5; and*

(ii) *OSHAD-SF – Element 2 – Risk Management.*

(iii) *Law No. (5) of 2016 Concerning Control of Groundwater in Abu Dhabi, and its bylaws;*

(b) Employers shall undertake their specific roles and responsibilities in accordance with the following:

(i) prior to the commencement of any construction work, an assessment is carried out by a competent person, and appropriate control measures in line with this CoP are undertaken;

(ii) documented safe systems of work are prepared which are designed to ensure that the construction works are systematically planned and appropriate work methods and procedures are in place;

(iii) all underground services searches are initiated and validated (including through securing drawings from utility services providers);

(iv) any historical, archaeological or geological items are safeguarded and/or documented as per requirements of the relevant authorities;

(v) providing accurate and competent technical advice on the work;

(vi) deciding the most appropriate drilling and construction method to be used;

(vii) ensuring that the quantity and quality of materials used are appropriate for the job;

(viii) leaving the site in a safe, clean and tidy manner and free from contamination;

(ix) securing all relevant information on the work areas to be drilled. This includes site surveys, plans of services and information on the nature and location of hazardous materials;

(x) obtaining all necessary work permits, no objection certificates, authorizations and providing all necessary notifications concerning the work;

(xi) nominating a person to supervise the work at all times and implement the construction safety operations. This person shall be competent in the type of drilling and well construction work needed for the particular project and experienced in the implementation of safe work procedures;

(xii) providing appropriate amenities for employees, in compliance with OSHAD-SF – CoP – 8.0 – General Workplace Amenities;

(xiii) providing appropriate first aid and emergency procedures / services;

(xiv) ensuring all persons employed are physically fit and that all persons and all plant operators and banksmen are at least 18 years old; and

(xv) taking all reasonably practicable precautions at all times during the progress of the work to prevent tampering with the well or the of foreign material.

3.1.2 Principal Contractors

(a) In the case the project is controlled by the Building and Construction Sector, Principal Contractors shall undertake their roles and responsibilities in accordance with the general requirements of *OSHAD-SF – CoP 53.0 – OSH Management during "Construction Work".*

(b) Principal Contractors shall undertake their specific roles and responsibilities in accordance with the following:

(i) the well drilling contractors (entities) are licensed by the authorities responsible for permitting of wells in the emirate and have the competent / qualified staff;

(ii) the well drilling contractors (entities) have been provided with all available descriptions of the site, including drawings, site surveys, other existing wells and information on the nature and location of hazardous materials;

(iii) all relevant authorities are notified and all necessary NOC's and consents are obtained before work commences;

(iv) the location of all utility services is known and protected;

(v) appropriate control measures are implemented; and

(vi) the workplace is secured.

3.1.3 Employees

(a) Employees shall undertake their roles and responsibilities in accordance with the general requirements of *OSHAD-SF – Element 1 – Roles, Responsibilities and Self-Regulation* Section 3.2.7.

(b) Employees shall undertake their specific roles and responsibilities in accordance with the following:

(i) carry out their work in accordance with the drilling and construction procedures;

(ii) report identified hazards and risks; and

(iii) use equipment in accordance with the instruction and training provided.

3.2 Planning and Assessment

3.2.1 Planning

(a) Employers shall ensure that:

(i) an assessment of the various risks is undertaken and systems of work are established which are safe to all parties involved or affected including the public;

(ii) appropriate control measures are implemented in order to manage activities safely and without risk to health; and

(iii) in case the project is controlled by the Building and Construction Sector, associated safe systems of work and site rules are included in the Safety and Health Construction Management Plan (OSH-CMP) in accordance with *OSHAD-SF – CoP 53.0 – OSH Management during "Construction Work"*.

3.2.2 Assess Site's Work Requirements

(a) Before any drilling and construction work is carried out employers shall ensure a competent person assesses the work requirements for the site.

(b) Following the assessment, the competent person shall prepare documented safe systems of work.

3.2.3 Documented Safe Systems of Work

(a) Employers shall ensure the documented safe systems of work are designed to ensure that:

(i) drilling operations and construction works are systematically planned; and

(ii) appropriate safe work practices and control measures are in place.

3.3 General Construction Requirements

3.3.1 Permits and other Requirements

(a) The employer / drilling contractor shall comply with all Federal and Local requirements, including but not limited to the requirements of authorities responsible for permitting of wells in the emirate.

(b) Only drilling contractors (entities) licensed for the class of work proposed and for the drilling method to be used shall carry out work on water wells.

(c) An appropriately qualified driller shall be on site at all times to supervise well construction activities.

(d) The owner or legal occupier of the land on which a well is to be constructed shall obtain all the permits from authorities responsible for permitting of wells in the emirate. Work shall not commence on a well until such approval(s) has been obtained.

(e) The driller shall be in possession of the well permit(s) before commencing any work and comply with the conditions relating to the particular well. The well permit(s) will stipulate the nature of the work and the reporting requirements.

3.3.2 Well Design and Drilling Method

(a) The well design shall consider:

(i) intended purpose of the well;

(ii) geological and hydrogeological conditions, including the groundwater quality;

(iii) being appropriate to protect the aquifer; and

(iv) drilling methods and construction methods.

(b) The drilling methods and techniques utilized shall consider the expected hydrogeological conditions.

(c) Drillers shall not contract or attempt works that could be reasonably expected to exceed the capabilities of the drill plant and equipment to be used.

(d) If required by a relevant authority, representative formation samples shall be taken to determine the nature and type of strata encountered. Information gained from formation samples influences the:

(i) casing size and length;

(ii) selection of casing and screen material;

(iii) aperture of the well screen, and the gradation of the gravel pack; and

(iv) well construction methods.

3.3.3 Protection of the Well and Groundwater Supply

(a) Positioning, construction and operation of wells shall consider:

(i) possible sources of contamination;

(ii) protection of the headwork's from natural and accidental damage;

(iii) underground and overhead services and utilities; and

(iv) minimizing damage to property, infrastructure, roads, ground water quality and the environment.

(b) All drilling equipment shall be disinfected to prevent the transfer of microbiological organisms (bacteria) between sites.

(c) Groundwater samples shall be taken to provide a guide to water quality encountered during drilling operations. Determining water quality shall impact on the:

(i) suitability of the well for the intended purpose and position;

(ii) construction methods;

(iii) selection of materials; and

(iv) aquifer separation methods.

(d) Drilling fluids shall be selected and managed to:

(i) protect ground water quality;

(ii) facilitate the drilling process;

(iii) ensure the removal of cuttings from the well; and

(iv) minimize the damage to the formations and the environment.

(e) The use of drilling fluid additives shall be in accordance with the manufacturer's recommendations and any international standards prescribed by Federal / Local relevant authorities.

(f) Material Safety Data Sheet (MSDS) shall be available on the drill site for all materials and products used.

(g) Chemicals or other substances that could leave a residual toxicity shall not be added to the drilling fluid.

(h) Fresh non-polluted water (or if this is not possible the best quality water that is reasonably available) shall be used as the base fluid / make-up water for all water well drilling fluid preparations.

(i) The conductivity and pH values of all make-up waters shall be measured and recorded.

(j) A well completion report shall be developed and submitted to authorities responsible for permitting of wells in the emirate, as per the well permit requirements.

3.3.4 Well Characteristics

(a) Wells shall be sufficiently plumb and straight to ensure that there will be no interference with the installation, alignment, operation or removal of the pump.

(b) Well screens shall comply with relevant Federal and Local requirements.

(c) Well casings and joints shall:

(i) prevent the collapse of the strata penetrated;

(ii) prevent backflow;

(iii) assist in construction and sealing, and prevent intermixing;

(iv) be strong enough to withstand installation, construction and operational pressures;

(v) provide access to the water-producing zone;

(vi) be of sufficient size to act as a safe housing for the pump selected for the hole; and

(vii) provide an adequate operational life.

(d) Casing joints shall be watertight and have at least the same structural integrity as the casing.

(e) The selected casing material and overall diameter of the well casing shall be sufficient to accommodate the size of the pump that has been selected. It shall consider:

(i) the efficiency of the pumping unit;

(ii) the expected pump life;

(iii) the extra clearance required in the event that the casing is not sufficiently straight;

(iv) the possibility of welds and other fasteners projecting inside the joints of the casing; and

(v) any potential corrosion issues.

(f) The casing and casing joints shall withstand the pressures imposed during the installation and operation of a well.

(g) All casing joints shall be aligned, secure and leak-proof.

(h) The casing material used shall comply with the manufacturer's requirements and any international standards prescribed by Federal / Local relevant authorities.

3.3.5 Well Sealing

(a) All wells shall be sealed to protect the production zone against contamination. This also includes the annular space between the casings and the well hole. In multiple aquifer wells there shall also be a seal between the aquifers and permeable zones to prevent intermixing,

(b) All wells shall be sealed from the surface to not less than 5 meters deep or, where the 'production zone' is less than 5 meters below ground level, the sealing shall be from 1 meter above the production zone to the surface.

(c) When sealing the surface control casing in artesian wells, the casing shall be:

(i) seated at least 10 meters into impermeable strata, and grouted from the shoe to the surface; and

(ii) sealed with cement grout having a minimum annular thickness of 20 mm above the maximum diameter of the casing (e.g., a coupling or shoe). This can be obtained using centralisers.

(d) Wells drilled to provide access to aquifers for the injection of water shall be sealed with cement grout from the top of the production zone to the surface.

(e) Multi-port monitoring wells intersecting more than one aquifer shall be cased and sealed with cement grout from the top of the lowest aquifer system back to the surface.

(f) There shall be a minimum thickness of 15 mm of grout seal around the outside of the production casing.

3.3.6 Well Completion, Headwork's and Site Restoration

(a) All flowing wells shall be fitted with appropriate headwork to control the flow of water.

(b) All flowing wells shall be fitted with an appropriate identification / code plate, as per requirement of authorities responsible for permitting of wells in the emirates.

(c) Flowing wells shall be fitted with a full diameter main isolating valve to assist future well maintenance and rehabilitation.

(d) Headwork components shall comply with the manufacturer's requirements and any international standards prescribed by Federal / Local relevant authorities.

(e) The protruding casing shall be completed so that it:

(i) is protected from accidental damage;

(ii) is protected from environmental conditions; and

(iii) prevents surface run-off potentially contaminated fluids from entering the well.

(f) Well casings shall be capped with an appropriately threaded, flanged or welded cap, or a compression seal.

(g) After completion of drilling operations and well construction the site shall be restored as close as reasonably practicable to its original condition.

3.3.7 Well Maintenance and Rehabilitation

(a) The rehabilitation of any well shall be carried out in accordance with the requirements of authorities responsible for permitting of wells in the emirate and other relevant authorities' requirements.

(b) The standards set down for constructing new water wells also apply to the rehabilitation of existing water wells.

(c) Owners of wells shall ensure appropriate preventative maintenance is performed on all mechanical components (e.g., headwork's and pumps), as per the manufacturer's requirements.

(d) The structural integrity of the well shall be regularly inspected by a competent person, as part of a preventative maintenance program. Intervals include:

(i) at a minimum of once every 6 months for drinking water supply wells, monitoring / observation wells and government owned well fields;

(ii) at a minimum of once every 12 months for all other wells.

(e) This inspection shall also include a thorough examination of the casing condition to identify any deterioration, damage, holes, etc.

(f) Maintenance tasks shall not result in changes to the physical structure of the well.

(g) Rehabilitation of wells may change the structure of the well. Therefore well rehabilitation shall only be performed by a licenced well drilling contractor (entity), and a permit is obtained to perform the work.

(h) Rehabilitation of wells can include:

(i) relining the well with a new casing;

(ii) in situ repairs;

(iii) deepening / enlarging well;

(iv) repairing the screens;

(v) removing and replacing the casing; and

(vi) sealing a zone.

3.3.8 Well Decommissioning

(a) All wells are to be decommissioned as per the requirements of authorities responsible for permitting of wells in the emirate.

(b) Decommissioning / backfilling report shall be prepared and submitted to the authorities responsible for permitting of wells in the emirate, including returning the well identification / code plates.

(c) All wells and test holes that are to be decommissioned shall be permanently sealed to prevent:

(i) the entry of any surface fluids and contaminants;

(ii) the intermixing of fluids and pressures between aquifers; and

(iii) injury and harm to people, animals and the environment.

(d) Any well or hole that is to be permanently decommissioned shall be sealed and filled in such a manner to prevent vertical movement of water in the well, including water in the annular space surrounding the casing. The water should be permanently confined to the specific zone in which it originally occurred.

(e) All test holes, test wells or failed wells shall be decommissioned by grout sealing as if they were an operational well, as soon as possible after drilling operations are complete.

(f) The sealing material shall consist of one or more of the following:

(i) grout;

(ii) bentonite grout;

(iii) bentonite pellets/chips; and

(iv) concrete.

(g) Fill material shall consist of uncontaminated sand, coarse stone, clay or drill cuttings.

(h) The seals shall be set in impermeable strata immediately above and below each aquifer formation on the well. For non-flowing wells, a minimum of 10 meters of grout plug shall be set for a seal.

(i) At a minimum, a concrete or grout surface seal to a minimum depth of 5 meters shall be installed in all decommissioned wells and/or holes.

3.4 Plant and Equipment

(a) All plant and equipment are to be certified and tested before beginning operations.

(b) Employers shall ensure compliance of all plant / machines / equipment to *OSHAD-SF – CoP – 36.0 – Plant and Equipment* and *OSHAD-SF – CoP 34.0 – Safe Use of Lifting Equipment and Lifting Accessories.*

3.5 Machine Guarding

(a) Employers shall ensure the provision of fixed guards enclosing every dangerous, moving or rotating component of all plant / machinery / equipment to the extent that is reasonably practicable.

(b) Employers shall ensure that all plant / machines / equipment are in line with the requirements of *OSHAD-SF – CoP 47.0 – Machine Guarding.*

3.6 Visual and Hand Signals

(a) Employers shall ensure:

(i) signals to machine operators are given only by competent persons; and

(ii) compliance to *OSHAD-SF – CoP 17.0 – Safety Signage and Signals.*

3.7 Lone Working and/or in Remote Locations

(a) Employers shall ensure that no lone working is permitted. A team with two persons as a minimum with a safe form of communication between them shall be used for the work.

(b) Employers shall ensure that all communication systems are in compliance with the requirements of *OSHAD-SF – CoP 30.0 – Lone Work and/or in Remote Locations.*

3.8 Hazardous Substances

(a) Where hazardous substances are handled, employers shall ensure compliance with the requirements of *OSHAD-SF – CoP 1.0 – Hazardous Substances* and *OSHAD-SF – CoP 2.0 – Personal Protective Equipment.*

3.9 Waste Management

(a) All discharged waste water shall be disposed of in compliance with relevant authorities' requirements, in a manner that will not negatively affect the environment or the community.

(b) Any cement, drilling fluids, containers, and disinfecting chemicals shall be neutralised or disposed of in an appropriate manner in compliance with the manufacturers' recommendations and any standards prescribed by relevant Federal / Local authorities.

(c) Cuttings, spoils and other wastes shall be handled and disposed of in compliance with *OSHAD-SF – CoP 54.0 – Waste Management.*

3.10 Dust and Toxic Gases

(a) Where dust or toxic gases are encountered (e.g., carbon mono oxide or hydrogen sulphide under certain drilling conditions), employers shall ensure compliance with the requirements of *OSHAD-SF - CoP 2.0 – Personal Protective Equipment.*

3.11 Heat Stress and Exhaustion

(a) Mechanisation, ventilation and job rotation shall be arranged to reduce the risk of heat stress and exhaustion.

(b) Appropriate supplies of cold potable water shall be made available.

(c) Employers shall comply with the requirements of *OSHAD-SF – CoP 11.0 – Safety in the Heat*.

3.12 Noise and Vibration

(a) Employers shall ensure all plant / machinery and equipment is selected on the basis of risk assessment to be designed to eliminate or reduce the noise at source with minimum operator exposure.

(b) Thereafter employers shall establish a management system that will:

(i) confirm the appropriateness of the noise and vibration controls;

(ii) continually identify significant residual noise sources; and

(iii) ensure regular maintenance checks and replacement or repair.

(c) Employers shall ensure compliance to *OSHAD-SF – CoP 3.0 – Occupational Noise* and *OSHAD-SF - CoP 3.1 – Vibration*.

3.13 Lighting

(a) Employers shall ensure that:

(i) general lighting levels are such that any hazards can readily be seen. Higher lighting levels shall be provided locally, particularly near machinery and in working areas;

(ii) where machinery with moving parts or edges is used, the lighting source shall not create a stroboscopic effect;

(iii) the lighting scheme shall be designed to minimize glare; and

(iv) where color recognition is an important factor, the type of light source shall be carefully considered to not affect normal color perception.

3.14 First Aid

(a) Employers shall ensure that:

(i) competent persons, trained in first aid and capable of responding rapidly to any incident, are available on each shift during working hours. Refer to *OSHAD-SF – 4.0 – First Aid and Emergency Medical Treatment;*

(ii) all personnel are informed that, in the event of serious injury, a casualty shall be moved only by a trained first-aider, unless there is the immediate risk of further injury; and

(iii) appropriate first aid boxes are provided, designed to protect the contents as far as reasonably practicable from damp and dirt. Boxes shall be clearly identified, readily accessible to working areas and in the charge of designated first-aiders.

3.15 Fire Prevention and Control

(a) Employers shall ensure that:

(i) open flames and fires are prohibited in construction areas except as permitted for welding, cutting, or other hot work operations;

(ii) smoking is prohibited at all times and notices are prominently displayed;

(iii) appropriate fire extinguishers or extinguishing means are available; and

(iv) oil, grease, and diesel fuel stored underground is kept in tightly sealed containers in appropriate areas.

(b) Employers shall ensure compliance to:

(i) *OSHAD-SF – Element 6 – Emergency Management; and*

(ii) *OSHAD-SF – CoP 28.0 – Hot Work Operations.*

3.16 Emergency Management

(a) Employers shall ensure compliance to *OSHAD-SF – Element 6 – Emergency Management* and the applicable local and federal regulations set by relevant authorities.

4. References

- *OSHAD-SF – Element 1 – Roles, Responsibilities and Self-Regulation*
- *OSHAD-SF – Element 2 – Risk Management*
- *OSHAD-SF – Element 6 – Emergency Management*
- *OSHAD-SF – Element 9 – Compliance and Management Review*
- *OSHAD-SF – CoP 1.0 – Hazardous Substances*
- *OSHAD-SF – CoP 2.0 – Personal Protective Equipment*
- *OSHAD-SF – CoP 3.0 – Occupational Noise*
- *OSHAD-SF – CoP 3.1 – Vibration*
- *OSHAD-SF – CoP 4.0 – First Aid and Emergency Medical Treatment*
- *OSHAD-SF – CoP – 8.0 – General Workplace Amenities;*
- *OSHAD-SF – CoP 11.0 – Safety in the Heat*
- *OSHAD-SF – CoP 17.0 – Safety Signage and Signals*
- *OSHAD-SF – CoP 28.0 – Hot Works Operations*
- *OSHAD-SF – CoP 30.0 – Lone Work and/or in Remote Locations*
- *OSHAD-SF – CoP 34.0 – Safe Use of Lifting Equipment and Lifting Accessories*
- *OSHAD-SF – CoP 36.0 – Plant and Equipment*
- *OSHAD-SF – CoP 47.0 – Machine Guarding*
- *OSHAD-SF – CoP 54.0 – Waste Management*
- *Law No. (5) of 2016 Concerning Control of Groundwater in Abu Dhabi.*
- *Minimum Construction Requirements for Water Bores in Australia – February 2012 – Edition 3 – ISBN 978-0-646-56917-8*

5. Document Amendment Record

Version	Revision Date	Description of Amendment	Page/s Affected
3.0	DATE	New Document	N/A