



OCCUPATIONAL HEALTH & SAFETY (OHS) SPECIFICATION: BASELINE RISK ASSESSMENT

PROJECT NUMBER:	JW 14403
PROJECT LOCATION:	Various Locations within CoJ
PROJECT DESCR:	Design, construction, operation and maintenance of alternative non-sewered basic sanitation services for individual households in informal settlements

POSSIBLE RISKS FOR THIS PROJECT

Task	Hazard	Risk	Consequence	Rating	Controls
Delivery of sludge tanks to communities	✓ Unsafe road conditions ✓ Un-road worthy vehicles ✓ Equipment and material not safely secured ✓ Incompetent drivers ✓ Driving under the influence of alcohol ✓ Inclement weather ✓ Speeding ✓ Slippery road	✓ Overturning vehicles ✓ Vehicle collisions	✓ Injuries ✓ Property damages ✓ Third party liability	M	✓ Adherence to the speed limit ✓ Only competent/ authorised drivers should operate the vehicle ✓ Inspection of vehicles ✓ Equipment and material to be properly secured ✓ Alcohol testing to be done ✓ The road to be paved to prevent accidents ✓ Traffic control to be implemented to avoid collisions
Offloading of tanks and material	✓ Faulty lifting machinery & equipment ✓ Suspended load ✓ Poor housekeeping	✓ Malfunctioning ✓ Falling on employees ✓ Obstructed walkways by materials	✓ Injuries ✓ Property damages	M	✓ Inspect lifting equipment prior to use. ✓ Ensure the safe working load prior to use ✓ Train the employees in manual lifting ✓ Ensure proper housekeeping ✓ The correct PPE must be worn ✓ Designate the stacking areas and put signs

					✓ Stacking and storage inspector must be appointed and in charge
Lifting using a crane	✓ Overhead lines	✓ Contact with crane	✓ Electrocution ✓ Property damages	H	✓ All lifting activities to be planned at least 2m away from overhead lines
	✓ Wind / Unfavourable weather	✓ Deflection ✓ Loss of control	✓ Injuries ✓ Property damages	H	✓ Do not use during unfavourable weather conditions
	✓ Incompetent operator	✓ Loss of control ✓ Hitting structures and people	✓ Injuries ✓ Property damages	H	✓ Only trained and competent operators may operate the crane
	✓ Overloading	✓ Collapse of material	✓ Injuries ✓ Property damages	H	✓ Display safe working load on the crane
	✓ Faulty crane	✓ Malfunctioning	✓ Injuries ✓ Property damages	H	✓ Cranes to be inspected by competent persons prior to being used ✓ All faulty cranes to be tagged and locked out
Excavation	✓ Deep excavations	✓ Collapse ✓ Falling ✓ Unsafe entry and exit ✓ Spoil material	✓ Injuries	H	✓ Geotechnical surveys to be conducted prior to construction ✓ Shoring of the excavation ✓ No unauthorised entry into the project site. ✓ Fencing off of the excavation and prompt supervision of the area. ✓ Full time security on site to monitor entry and exit. ✓ Safe method of entry and exit to be provided for employees

					✓ Spoil material to be stored at least 2m away from the excavation ✓ Signage to be displayed indicating deep excavations
	✓ Excavator	✓ Incompetent operator ✓ Faulty excavator ✓ Contact with underground services	✓ Serious injuries ✓ Electrocution	H	✓ Only competent personnel may operate the excavator ✓ All excavators must be inspected prior to use ✓ All underground services to be identified prior to excavation.
Brick laying	✓ Dust from cutting Bricks ✓ Unsecured bricks ✓	✓ Inhalation of dust ✓ Falling on employees	✓ Respiratory problems ✓ Injuries	M	✓ Employees should wear dust masks ✓ Wear hand protection ✓ Employees to exercise caution when handling bricks.
Installation of toilets	✓ Manual handling	✓ Poor ergonomics ✓ Hands stuck between equipment	✓ Back sprains ✓ Pinch point injuries	L	✓ Two employees to carry heavy equipment ✓ Use the correct lifting techniques ✓ Train employees on the correct lifting techniques ✓ Use hand gloves
	✓ Use of hand tools	✓ Usage of the wrong tool for the task ✓ Using damaged tools ✓ Lack of skill	✓ Injuries ✓ Loss of services ✓ Damage to property	L	✓ Damaged tools ✓ All tools are visually inspected before use. ✓ Specific equipment/tools are only used by competent users
Cutting and drilling	✓ Drilling ✓ Drill pit ✓ Drill sharp metal fibres ✓ High Noise Levels	✓ Vibration ✓ Cutting edges ✓ Eye penetration ✓ Finger cuts	✓ Damaged hearing ✓ Carpal tunnel syndrome ✓ Cuts/ injuries	M	✓ Use hearing protection when exposed to excessive noise levels (greater than 85 dB over an 8-hour work period)

	✓ Cutting Grinder/Disc ✓	✓ Expose to high noise level area ✓ Uncontrolled disc ✓ Electrical equipment failure ✓ Sharp window edges	✓ Eye irritation / blindness ✓ Injuries ✓ Eye injuries		✓ Assess noise level with sound level meter if possibility exists that level may exceed 85dB ✓ Rotate drilling tasks to minimize worker exposure to equipment vibration ✓ Use right size of a drill to drill different layers of the ground. ✓ Assess manual guide carefully to ensure correct usage of portable electrical devices.
Desludging	✓ Running engine	✓ Uncontrolled movement	✓ Injuries ✓ Property damages	H	✓ Ensure that the engine is switched off, and the key is removed from ignition.
	✓ Pump under pressure	✓ Uncontrollable movement ✓ Hitting employees / bystanders	✓ Injuries	M	✓ Inspect equipment prior to work ✓ Emergency stop switch to be available
	✓ Pipes malfunctioning	✓ Spillage of sewerage ✓ Splashing employees with sewerage	✓ Soil / water contamination ✓ Faecal oral diseases	M	✓ Develop spillage clean up procedures ✓ Provide employees with proper PPE and washing facilities and resources. ✓ Vaccination of all affected employees ✓ Develop and implement a medical surveillance programme
Chemical treatment of toilets	✓ Hazardous chemicals	✓ Accidental ingestion of chemical ✓ Chemical skin contact	✓ Poisoning ✓ Skin burns ✓ Eye burns	M	✓ Ensure every employee is familiar with the contents of the MSDS

					✓ Provide employees with proper PPE relevant to the chemical used.
Regular usage of toilets	✓ Sludge	✓ Spillage ✓ Contact with employees / residents	✓ Soil / water contamination ✓ Faecal oral diseases	M	✓ Provide overload protection ✓ Desludge promptly and regularly ✓ Educate residents on the use of the toilets
Cleaning of trucks	✓ High pressure ✓ Cleaning chemicals	✓ Hitting employees ✓ Skin contact	✓ Injuries ✓ Skin irritation	M	✓ Develop SOP ✓ Train employees on SOP ✓ Provide employees with PPE
Repairing of truck	✓ Replacing of parts ✓ Use of hazardous material	✓ Incorrect or wrong parts replacement ✓ Spillages ✓ Inhalation Fumes ✓ Skin contact	✓ Malfunction of pump ✓ Pollution ✓ Ill health ✓ Skin irritation	M	✓ Competent person appointed ✓ Proper PPE ✓ Provide spill kit ✓ Develop a procedure ✓ Provide MSDS
Using steps to go up the truck	✓ Slippery steps ✓ Damaged steps	✓ Trip and fall	✓ Injuries	L	✓ Inspect steps prior to use ✓ Remove any materials from steps prior to climbing
Parking	✓ No visibility ✓ Parking on a blind spot	✓ Collision with other vehicles	✓ Fatalities ✓ Property damages	H	✓ Ensure that trucks are parked at safe areas while dispensing water to communities. ✓ Use signage where truck are parked in / near the roads
Working at night / in the dark	✓ Poor visibility	✓ Collisions ✓ Mugging	✓ Fatalities ✓ Serious injuries	H	✓ Use illuminated signage to show motorists that there is a parked car. ✓ Provide sufficient lighting ✓ Obtain escort from JMPD where possible
	✓ Uneven surfaces	✓ Trips and falls	✓ Injuries	L	✓ Provide sufficient lighting, especially when it is dark

General activities	✓ Overhead power lines	✓ Contact with live electricity	✓ Electrocution	M	✓ Provide employees with non-slip safety shoes ✓ Always ensure that trucks are not parked too close to overhead lines
	✓ Site access	✓ Unattended visitors ✓ Not following site rules	✓ Injuries	L	✓ Induction to be conducted when entering site ✓ Personnel to be escorted
	✓ Work temperature	✓ Exposure to temperature extremes	✓ Ill health	L	✓ Staff to take rest breaks ✓ Drinking water must be available
	✓ Using of communal facilities	✓ Exposure to communicable diseases	✓ Ill health	L	✓ Employees to be informed about the risks

RISK ASSESSMENT MATRIX

Likelihood	Consequences				
	Insignificant (minor problem easily handled by normal day to day processes)	Minor (Some disruption possible e.g., damage equal to R150k)	Moderate (significant time / resources required. E.g., damage equal to R500k)	Major (Operations severely damaged. E.g., damages equal to R1m)	Catastrophic (business survival is at risk. Damage equal to R5m – 10m)
Almost certain (90% chance)	High	High	Extreme	Extreme	Extreme
Likely (between 50-90%)	Moderate	High	High	Extreme	Extreme
Moderate (between 10-50%)	Low	Moderate	High	Extreme	Extreme
Unlikely (between 3-10%)	Low	Low	Moderate	High	Extreme
Rare (<3%)	Low	Low	Moderate	High	High

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VOLUME 2

OCCUPATIONAL HEALTH & SAFETY SPECIFICATION

JW 14403

Design, construction, operation and maintenance of alternative non-sewered basic sanitation services for individual households in informal settlements

Prepared by: OHS Department PO Box 61542 Marshalltown 2107 Tel: +27 11 688 1476	PRINCIPAL CONTRACTOR:	
	CEO (16.1 APPOINTEE):	
	TELEPHONE NUMBER:	
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	E-MAIL ADDRESS:	
	SIGNATURE:	

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GENERAL NOTIFICATION

This document forms an integral part of the Contract Specification and, in particular, shall constitute the Client's (Johannesburg Water SOC Ltd.) Occupational Health & Safety & (OHS) Specification, as required by the Construction Regulations, 2014, as promulgated under the Occupational Health and Safety Act (Act no. 85 of 1993). The Specification shall furthermore be applied for the management of Mandatories performing activities for or on behalf of Johannesburg Water SOC Ltd, irrespective whether the contract work constitutes construction work or not.

The Contract Specification is contained in Volume 1 of the contract documents in Part 3: Scope of Work.

Acknowledgements

This Occupational Health & Safety & (OHS) Specification was developed by the internal OHS Department for the sole use by Johannesburg Water SOC Ltd. The issue date of this SHE Specification is September 2016.

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ABBREVIATIONS

ABBREVIATION	DESCRIPTION
CR	Construction Regulations
COID	Compensation for Occupational Injuries and Diseases
DoL	Department of Labour
GAR	General Administrative Regulations
GMR	General Machinery Regulations
GSR	General Safety Regulations
HCS	Hazardous Chemical Substances
HIRA	Hazard Identification and Risk Assessment
JW	Johannesburg Water (SOC) Ltd
MSDS	Material Safety Data Sheet
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
PER	Pressure Equipment Regulations
SANS	South African National Standards
SABS	South African Bureau Standard
SHE	Safety, Health & Environment
SOC	State Owned Company

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DEFINITIONS

WORD / PHRASE	DEFINITION
“WCL 1”, “WCL 2” and “WCL 22”	Means the prescribed forms for reporting of incidents and occupational diseases referred to in the Compensation for Occupational Injuries and Diseases Act.
Competent Person	A person who has in respect of the work or task to be performed the required knowledge, training, experience and, where applicable, qualifications specific to that work or task: provided that where appropriate, qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, (Act 67 of 2000).
Construction work	Any work in connection with: a) The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure b) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work
Contractor (inclusive of Principal Contractor)	Any organization, person, entity performing activities for or on behalf of Johannesburg Water SOC Ltd.
Corrective Action	Action to eliminate the cause of a detected nonconformity or other undesirable situation.
Employee	Any person who is employed by or works for an employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person
Employer	Any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him, but excludes a labour broker as defined in section I (1) of the Labour Relations Act, 1956 (Act No. 28 of 1956)
Hazard	Means a source of or exposure to danger.
Hazard identification	The identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed.
Incident	Means an incident as contemplated in section 24 (1) of the OHS Act 85 of 1993.
Machinery	means any article or combination of articles assembled, arranged or connected and which is used or intended to be used for converting any form of energy to performing work, or which is used or intended to be used, whether incidental thereto or not, for developing, receiving, storing, containing, confining, transforming, transmitting, transferring or controlling any form of energy
Mandatory	Includes an agent, a contractor or a subcontractor for work, but without derogating from his status in his own right as an employer or a user
Medical surveillance	Means a planned programme or periodic examination (which may include clinical examinations, biological monitoring or medical tests) of employees by an occupational health practitioner or, in prescribed cases, by an occupational medicine practitioner.
Method Statement	A document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment.
Principal Contractor	Any employer who performs work and is appointed by the Client to be in overall control and management of the contract work (inclusive of Mandatories).
SHE File	A file or other record in permanent form, containing the information required as contemplated in the S.H.E Specification Document and legal requirements applicable to work activities.
SHE Plan	A documented plan which seeks to address all hazards identified means and ways to control and eliminate such to ensure compliance to the S.H.E Specification.

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Workplace	Any physical location in which work related activities are performed under the control of the organization.
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SECTION 1: OVERVIEW ON SHE SPECIFICATION FRAMEWORK AND CONTRACTOR MANAGEMENT PROCESS

1. INTRODUCTION

1.1 Johannesburg Water SOC Ltd's commitment to Occupational Health & Safety (OHS) Management

Johannesburg Water SOC Ltd is committed to responsible occupational health & safety management. This commitment is essential to protect the environment, employees, Mandatories, visitors and provide a work environment conducive to health and safety. Principal Contractors and their Contractors shall demonstrate their commitment and concern by:

- Ensuring that decisions and practices affecting occupational health, safety and environmental performance are consistent with the issued OHS specification;
- Ensuring adequate resources are made available for the effective implementation of occupational health, safety and environmental control and mitigation measures;
- Participating in hazard identification and risk assessments and design safety reviews;
- Communicating occupational health, safety and environmental management processes, strategies and control measures with all levels of employees, contractor and/or visitors;
- Ensuring visible leadership at all sites;
- Promoting and enforcing the use of correct types of Personal Protective Equipment (PPE);
- Reporting and investigation of incidents and accidents and ensuring actions are identified and implemented to prevent similar types of incidents reoccurring;
- Participating in Client audits and meetings and ensuring required actions are implemented within reasonable time frames on the site/project;
- Recognizing and commending safe work practices and coaching employees who require guidance;
- Applying and enforcing consequence management from deviations and transgressions off/from compliance to this OHS Specification noted and/or observed, where applicable;
- Carrying out safety observations, implement corrective and preventative actions and giving immediate feedback;
- Encouraging employee participation in the formulation of work instructions and safety rules.

1.2 Scope of Occupational Health, Safety and Environmental (SHE) Specification

The scope of this Occupational Health & Safety (OHS) Specification is to address the reasonable and foreseeable aspects of occupational health, safety and environmental management, which will be affected by the contract work.

The specification will provide the requirements that the Principal Contractor and other Contractors shall comply with in order to reduce the risks associated with the contract work, and that may lead to incidents causing injury and/or ill health or degradation of the environment, to a level as low as reasonably practicable and possible.

In particular, Johannesburg Water SOC Ltd will ensure that it shall not appoint any Principal Contractor unless it is reasonably satisfied that the contractor which it intends to appoint has the necessary competencies and resources to carry out the work safely.

1.3 Omissions from OHS Specification

Where any omission from the OHS Specification is identified, applicable legal requirements will constitute the minimum standard for compliance to the relevant omission. The responsibility will be on the Principal Contractor to provide assurance to Johannesburg Water SOC Ltd on compliance to the applicable legal requirements related to the activity / task / process.

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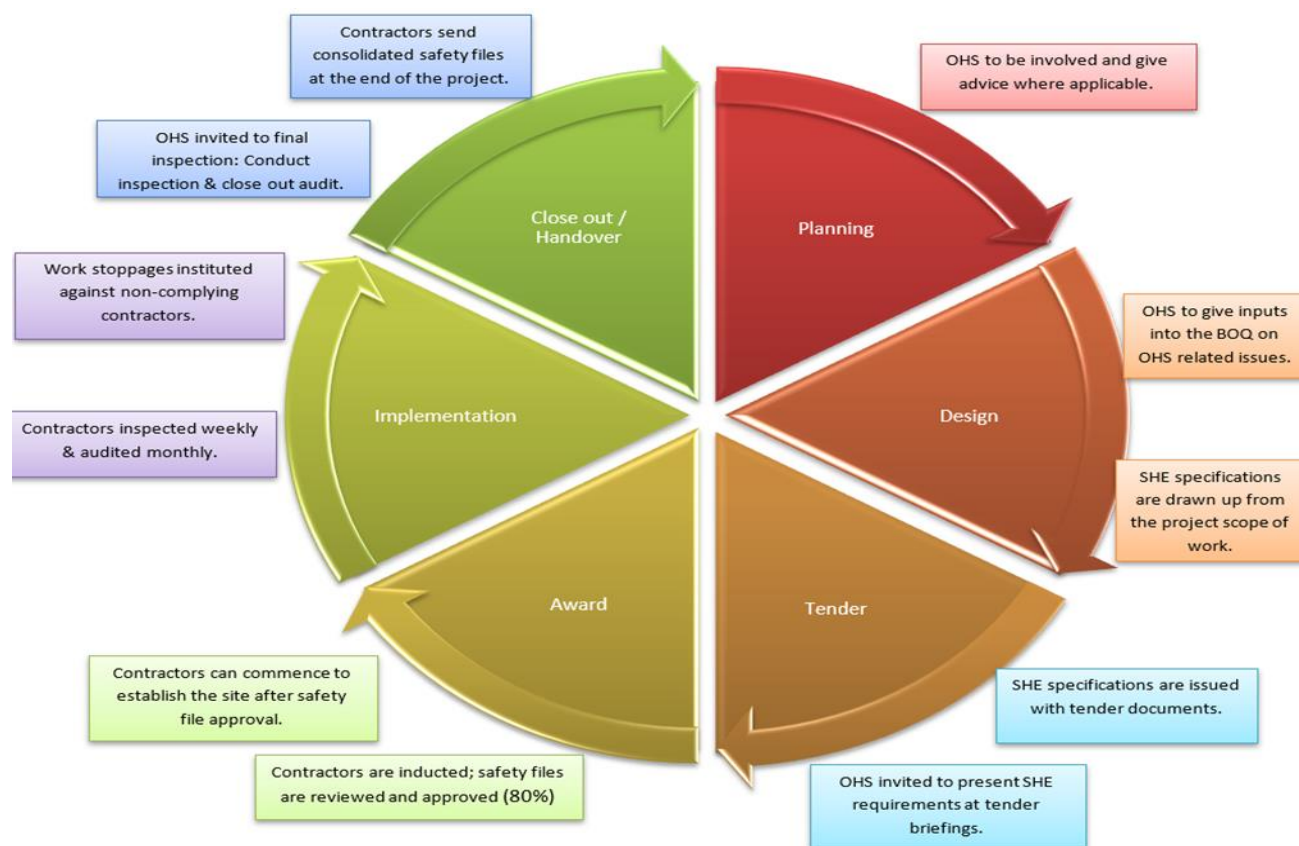
1.4 Change management

Whenever Johannesburg Water SOC Ltd identifies the need to change or review the SHE Specification, approved changes and revisions will be communicated to the Principal Contractor. A cost analysis on the implementation of the proposed changes / revisions will be calculated through a collaborative processes between Johannesburg Water SOC Ltd and the Principal Contractor – where the approved changes and/or revisions has no cost implication for the Principal Contractor the Principal Contractor will be required to accept the approved changes / revisions and ensure implementation within the SHE Plan / File framework.

1.5 Overview of contractor management process

The contractor management process consists of the following phases:

- Tender briefing and tender documentation;
- Competency evaluation of Principal Contractors (integrated into Supply Chain Management processes);
- Appointed contractor to attend OHS system induction;
- Preparation of OHS File by Principal Contractor;
- Evaluation of OHS File;
- Principal Contractor engagement phase;
- Project close-out and submission of consolidated Health & Safety File



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1.6 Tender briefing and tender documentation (inclusive of SHE Requirements)

Prospective tenderers attending tender briefing meetings will receive an overview of the requirements contained in the SHE Specification to enable them to prepare for submission of documentation for tender evaluation purposes. Projects requiring quotation / proposal submission will receive the SHE Specification from the relevant engineer / project manager and should ensure they receive the documentation to prepare themselves for implementation of the requirements.

1.6.1 Appointed Principal Contractor to attend SHE System Induction

Relevant members of the Principal Contractor's site management as well as all the appointed persons responsible for occupational health, safety and environmental management in terms of the Construction Regulations and other legislative requirements, will be required to attend a SHE System Induction training. Johannesburg Water SOC Ltd shall conduct SHE System Induction training to the successful Principal Contractor within 3 (three) days of the appointment of the contractor. This induction is designed to assist the contractor to meet Johannesburg Water SOC Ltd standards on the development of the SHE Plan, File and Risk assessments and also to introduce Johannesburg Water SOC Ltd's structures for the project. The Principal Contractor will ensure that a SHE System Induction training session is scheduled with Johannesburg Water SOC Ltd within 3 days of contract signature

1.7 Preparation and Submission of SHE file

The Principal Contractor will prepare a SHE File containing the processes / procedures and templates to be applied during the project period for the scope of work. The Principal Contractor will be evaluated during the contract period against the submitted SHE File.

The minimum the SHE File will contain the following documentation:

- Notification of construction work to the relevant Department of Labour (stamped on each page / no faxed copies);
- Scope of work to be performed;
- Personnel list (Principal Contractor employees);
- OH&S / SHE Policy and other Policies;
- Updated copy of the Occupational Health and Safety Act (Act no. 85 of 1993) and its Regulations.
- Updated copy of the Compensation for Occupational Injuries and Diseases Act (Act no. 130 of 1993) and its Regulations;
- Proof of valid registration and good standing with the Compensation Commissioner or another licensed Insurer;
- SHE Plan agreed with Johannesburg Water SOC Ltd.
- Approved risk assessments, review and monitoring plans and safe work procedures (method statements);
- A list of contractors (sub-contractors) including copies of the agreements between the parties and the type of work being done by each contractor;
- Designs and/or drawings;
- All written designations and appointments for project scope of work (CV and competency copies);
- Management structure (inclusive of OH&S responsibility & meeting structure);
- Induction training and site SHE rules;
- Occupational health and safety training matrix / plan;
- Arrangements with contractors and/or mandatories;
- Description of security measures;

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- The following registers (as applicable to contract scope of work):
 - Accident and/or incident notifications, investigation & control register;
 - Occupational health and safety representatives inspection register;
 - Construction vehicles and mobile plan inspections;
 - Daily inspections templates of vehicles, plant and other equipment by the operator, driver and/or user;
 - Template for entry into confined space;
 - Toolbox talks pro-forma;
 - First-aid box content template;
 - Record of first-aid treatment template;
 - Fire equipment inspection and maintenance template;
 - Record of hazardous chemical substances template kept and used on site;
 - Ladder inspection template;
 - Machine safety inspections template (including machine guards, lock-outs etcetera);
 - Templates of issuing of Personal Protective Equipment;
 - Monthly reporting and recording of statistics templates;
 - Keeping of any other record in terms of applicable legislation falling within the scope of SHE
 - Legislation applicable to the project and the Principal Contractor / Contractor's activities and organization
- Emergency preparedness and response programmes;
- Medical examination tests
- Vaccination tests

1.8 Evaluation of SHE file

Johannesburg Water SOC Ltd will conduct an initial inspection and evaluation of the Principal Contractor's SHE File for approval purposes to commence work. The Principal Contractor is required to submit the SHE File within 5 days after receiving the induction training from Johannesburg Water SOC Ltd. Johannesburg Water SOC Ltd will allocate 3 days to evaluate the file and to give feedback on the evaluation report of the file to the contractor. If the file has not been approved, the contractor shall ensure that the outstanding documents are submitted in the file for re-evaluation within 3 working days. Failure to do so will result in the contractor being re-inducted, and the process of evaluation to be restarted. The approval letter from Johannesburg Water SOC Ltd must be kept in the SHE File and any letter issued concerning the evaluation of the file.

Principal Contractors are required to achieve at least 80% (Eighty Per cent) compliance on the entire SHE File Documentation to obtain approval by Johannesburg Water SOC Ltd

1.8.1 Principal Contractor engagement phase

The Principal Contractor can commence with the contract work after approval of the SHE File. The following processes

will be applied on the Principal Contractors on a monthly basis for the duration of the contractual period:

- Monthly Compliance Assessments;
- Behavioural Based Safety Assessments;
- Site Inspections;
- Progress meetings;

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- Contractor forum meetings held at Johannesburg Water SOC Ltd.
- Incident Investigations (where applicable).

An initial site assessment and site establishment audit will be conducted by the Client Agent after approval of the SHE File / Plan.

1.8.2 Project close-out and submission of consolidated Health & Safety File.

On completion of each project the Principal Contractor will submit all documentation required for the Consolidated SHE File to Johannesburg Water SOC Ltd in an auditable format within 5 days of project completion. It is the responsibility of the Principal Contractor to deliver the Consolidated SHE File to the relevant Johannesburg Water SOC Ltd. SOC Ltd. offices. At a minimum, the consolidated SHE File will contain the following records:

- Approval letter by Johannesburg Water SOC Ltd. on contents of Health and Safety File / SHE Plan;
- Notification of construction work to the relevant Department of Labour (stamped on each page / no faxed copies);
- Scope of work performed;
- OH&S / SHE Policy and other Policies;
- Copy of the Occupational Health and Safety Act (Act no. 85 of 1993) and its Regulations.
- Copy of the Compensation for Occupational Injuries and Diseases Act (Act no. 130 of 1993) and its Regulations;
- Proof of registration and good standing with the Compensation Commissioner or another licensed Insurer;
- SHE plan agreed with Johannesburg Water SOC Ltd. including the underpinning risk assessment(s) and method statements;
- A list of contractors (sub-contractors) including copies of the agreements between the parties and the type of work done by each contractor;
- Notifications of new projects /extension of scope received;
- Designs and/or drawings;
- Occupational health and safety committee meeting agenda and minutes;
- Copies of written designations and appointments (CV and competency copies);
- Management structure (inclusive of OH&S responsibility & meeting structure);
- Induction training conducted and site SHE rules;
- Occupational health and safety training provided;
- Arrangements with contractors and/or mandatories;
- Description of security measures;
- Occupational health and safety rules and procedures applied during contract period;
- The following registers:
 - Accident and/or incident register;
 - Occupational health and safety representatives inspections;
 - Daily inspections of vehicles, plant and other equipment by the operator, driver and/or user;
 - Inspections for entry into confined space;
 - Toolbox talks conducted;
 - Fall protection inspections;
 - First-aid box content inspections;
 - Record of first-aid treatment;

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- Fire equipment inspection and maintenance records;
- Record of hazardous chemical substances kept and used on site;
- Ladder inspections;
- Issue registers for Personal Protective Equipment;
- Monthly reporting and recording of statistics reports;
- Keeping of any other record in terms of applicable legislation falling within the scope of SHE
- Legislation applicable to the project and the Principal Contractor / Contractor's activities and organization.
- All other applicable records;
- Emergency preparedness and response programmes;
- Investigation and reporting of incidents and/or accidents (internal to Client and Department of Labour / Compensation Commissioner).
- Records of medical examination tests
- Vaccinations

1.9 Hazardous Biological Agents

An employer shall, before any employee is exposed or may be exposed to HBA and after consultation with the health and safety committee established for that section of the workplace, ensure that the employee is adequately and comprehensively informed and trained, on both practical aspects and theoretical knowledge with regard to-

- The contents and scope of the Hazardous Biological Agents Regulations;
- the potential risks to health caused by the exposure;
- the measures to be taken by the employer to protect an employee against any risk of being exposed;
- the importance of good housekeeping at the workplace and personal hygiene requirements;
- the precautions to be taken by an employee to protect him- or herself against the health risks associated with the exposure, including the wearing and use of protective clothing and respiratory protective equipment;
- the necessity, correct use, maintenance and potential of safety equipment, facilities and engineering control measures provided;
- the necessity of medical surveillance;
- the safe working procedures regarding the use, handling, storage, labelling, and disposal of HBA at the workplace;
- the procedures to be followed in the event of exposure, spillage, leakage, injury or any similar emergency situation, and decontaminating or disinfecting contaminated areas; and the potential detrimental effect of exposure on the human reproductive process. The drivers of vehicles carrying HBA must be given instructions in writing on these procedures.
- Health risk assessments should be conducted for all employees within periods not exceeding 2 years

The employer shall introduce appropriate work procedures that employees must follow where materials are used, processes are carried out, or incidents might occur that could give rise to the exposure of an employee to HBA, and such procedures shall include written instructions to ensure-

- the safe handling, use and disposal of HBA;
- the proper use and maintenance of process machinery, installations, equipment, tools and local extraction and
- general ventilation systems;

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- the regular cleaning of machinery and work areas by vacuum cleaners fitted with a suitable filter that prevents
- contamination of the environment; and

If it is not reasonably practicable to ensure that the exposure of an employee is adequately controlled by either engineering or administrative controls, the employer shall in the case of -

- (a) Airborne HBA, provide the employee with suitable respiratory protective equipment and protective clothing; and
- (b) HBA that can be absorbed through the skin, provide the employee with suitable impermeable personal protective equipment.

SECTION 2: SHE SPECIFICATION REQUIREMENTS

2.1 Hazard identification & risk assessment

Annexure 1: List of possible hazards emanating from projects and activities conducted for or on behalf of Johannesburg Water SOC Ltd includes an assessment of site specific health and safety hazards and risks and environmental aspects and impacts that have been identified by Johannesburg Water SOC Ltd as possibly applicable to the contract work for this project. It is by no means exhaustive and is offered as assistance to the tenderers and contractors.

2.1.1 Development of risk assessments

Every Contractor performing construction work shall, before the commencement of any construction work or work associated with the construction work, and during construction work, ensure that a risk assessment is undertaken by a competent person, appointed in writing, and the risk assessment shall form part of the SHE plan to be applied on the site. Risk assessments shall identify occupational health and safety hazards and risks and environmental aspects and impacts emanating from the activity to be performed by the Principal Contractor / Contractor.

- The risk assessment (inclusive of impact assessment) shall include (at a minimum):
- Identification of the relevant Johannesburg Water SOC Ltd Project with regard to JW Number, Project name and area;
- Date on which risk assessments were conducted / reviewed;
- The identification of the risks / hazards and aspects / impacts to which persons may be exposed to per activity;
- The analysis and evaluation of the risks / hazards and aspects / impacts identified;
- Existing control measures and proposed corrective measures;
- A plan to review the risk assessments as the work progresses and changes are introduced;
- Identification of significant risks (e.g. high; exceeding 75%);
- A documented plan of Safe Working Procedures (SWP)', and its relevance to the risk assessment, inclusive of method statements, to mitigate, reduce or control the risks and hazards that have been identified;
- A plan to monitor the application of the Safe Working Procedures (SWP);
- Signature of appointed competent person conducting risk assessment; and
- Signature of approval by Principal Contractor management and employees involved in risk assessment.

Based on the risk assessments, the Principal Contractor must develop a set of site-specific occupational SHE rules that will be applied to regulate the health, safety and environmental hazards/aspects of the construction work. The risk

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assessments, together with the site-specific occupational health and safety rules, must be submitted to Johannesburg Water SOC Ltd before mobilisation on site commences. These will be included in the SHE plan. The Contractor shall ensure through his risk management process the hierarchy of controls stipulated as follows, are implemented:

- **Eliminate** - The complete elimination of the hazard.
- **Substitute** - Replacing the material or process with a less hazardous one.
- **Redesign** - Redesign the equipment or work process.
- **Separate** - Isolating the hazard by guarding or enclosing it.
- **Administrate** - Providing control such as training, procedures etc.
- **Personal Protective Equipment (PPE)** - Use of appropriate and properly fitted PPE where other controls are not practical. (PPE as the last resort)

The Principal Contractor will be required to carry out the following three forms of risk assessment:

- Baseline risk assessment;
- Issue based risk assessment;
- Continuous risk assessments.

2.1.2 Baseline risk assessments

The Principal Contractor is required to develop a baseline risk assessment taking the resources, competency levels, nature and scale of their organization into consideration for submission during SHE File evaluation phase. The hazards and risks to which persons, plant, vehicles and facilities may be exposed during the construction should be identified and evaluated. The aspects and impacts resulting in environmental pollution or degradation should also be identified and evaluated. Measures to reduce or control these risks or hazards should be defined during this assessment. The effectiveness of the measures defined and the baseline risk assessment prepared shall be monitored and reviewed from time to time to ensure that it remains relevant and accurate.

2.1.3 Issue based risk assessments

The Contractor will be required to carry out separate risk assessments during construction of the project when methods and procedures are varied, for example when:

- Designs are amended;
- New machines are introduced;
- Plant is periodically cleaned and maintained;
- Plant is started-up or shut-down;
- Systems of work change or operations alter;
- Indents or near-misses occur; or
- Technological developments invalidate prior risk assessments.

2.1.4 Continuous risk assessments

The Occupational Health and Safety Act (Act no. 85 of 1993) specifically requires that employers shall provide and maintain working environments that are safe and without risk to health. The general awareness of hazards needs to be raised as work ethic to maintain a safe and risk free environment on an on-going basis. This is achieved by continuous risk assessments, a form of risk assessment that takes place as an integral part of day-to-day management. Examples of continuous risk assessments include:

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- Maintaining general hazard awareness, and
- Pre-work risk assessments / Daily Safety Task Instructions.

Occupational health and safety risks or environmental impacts that are identified during the risk assessment process shall be communicated before the commencement of the said activity to every employee whose work is associated with the risk. Each employee shall sign to confirm understanding of the safety, health or environmental risks in the tasks.

2.1.5 Review of risk assessments

The Principal Contractor is required to review the hazards identified, the risk assessments and the Safe Work Procedures as the contract work develops and progresses and each time changes are made to the designs, plans and construction methods and/or processes. Revisions to the approved risk assessments and Safe Work Procedures will be presented at each production planning and progress meeting.

Risk assessments are to be reviewed whenever there is change on the scope of work, process, and accidents or when required by Johannesburg Water SOC Ltd

The Principal Contractor must provide Johannesburg Water SOC Ltd, other contractors and all other concerned or affected parties with copies of any changes, alterations or amendments to risk assessments and Safe Work Procedures within 14 days of such changes.

2.2 Compliance to legal and other requirements

All Contractors entering into a contract with the Johannesburg Water SOC Ltd shall, as a minimum, comply with the -

- Occupational Health and Safety Act (Act no. 85 of 1993) and Regulations. An up-to-date copy of the Occupational Health and Safety Act (Act no. 85 of 1993) and its Regulations will be available on site at all times;
- Compensation for Occupational Injuries and Diseases Act, No 130 of 1993. The Principal Contractor will be required to submit a letter of registration and "good-standing" from the Compensation Commissioner or compensation insurer before being awarded the contract. A current, up-to-date copy of the Compensation for Occupational Injuries and Diseases Act, No 130 of 1993 must be available on site at all times – the Principal Contractor will be required to provide evidence to Johannesburg Water SOC Ltd that all local labourers included in the project are included in the registration and "good-standing" with the Compensation Commissioner or Insurer.
- Local by-laws relevant and applicable to the scope of work to be performed by the Principal Contractor;
- Where work is being carried out on mine premises, the contractor will comply with the Mine Health and Safety Act and Regulations (Act. 29 of 1996) and any other occupational health and safety requirements that the mine may specify. Current, up-to-date copies of the latter act must be available on applicable sites at all times.

2.2.1 3rd Party Assessment

Principal Contractors could be requested to provide assurance on compliance to applicable legislative requirements by an independent 3rd party to Johannesburg Water SOC Ltd. Assurance on compliance to applicable legislative requirements by an independent 3rd party could be requested on the following conditions:

- Lost Time Injury Rate is recorded at a level higher than 3.0;
- 2 (Two) work stoppage orders has been issued to the Principal Contractor due to non-conformances / non compliances noted;

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- Monthly compliance rating of 93% (Ninety Three Percent) is not maintained 3 (three) months in a row;
- Repetitive trends are identified in non-conformances noted during site inspections, monthly compliance audits and behavioural safety inspections 3 (three) months in a row;
- The cost of the independent 3rd party compliance assessment will be to the cost of the Principal Contractor and Johannesburg Water SOC Ltd will not incur any cost whatsoever.

2.2.2 Manufacturer's and supplier's duty for health and safety compliance

Any person who designs, manufactures, repairs, imports or supplies any article for use must ensure, as far as reasonably practicable:

- That the article is safe and without risk to health and safety when used properly; and
- That it complies with all the requirements of relevant legislation;
- Erects or installs any article for use must ensure, as far as reasonably practicable, that nothing about the manner in which it is erected or installed makes it unsafe or creates a risk to health and safety when used properly; or
- Designs, manufactures, erect or install any article for use must ensure, as far as reasonably practicable, that ergonomic principles are considered and implemented during design, manufacture, erection or installation.
- Any person who bears a duty in terms of the above is relieved of that duty to the extent that is reasonable in the circumstances, if-
- That person designs, manufactures, repairs, imports or supplies an article for or to another person; and
- That other person provides a written undertaking to take specified steps sufficient to ensure, as far as reasonably practicable, that the article will be safe and without risk to health and safety when used properly and that it complies with all prescribed requirements.

Any person who designs or constructs a building or structure, including a temporary structure, for use must ensure, as far as reasonably practicable, that the design or construction is safe and without risk to health and safety when used properly.

Every person who manufactures, imports or supplies any hazardous substance for use must:-

- Ensure, as far as reasonably practicable, that the substance is safe and without risk to health and safety when used, handled, processed, stored or transported in accordance with the information provided in terms of paragraph (b);
- Provide adequate information about--
 - The use of the substance;
 - The risks to health and safety associated with the substance,
 - Any restriction or control on the use, transport and storage of the substance, including but not limited to exposure limits;
 - The safety precautions to ensure that the substance is without risk to health or safety;
 - The procedure to be followed in the case of an accident involving excessive exposure to the substance, or any other emergency involving the substance; and
 - The disposal of used containers in which the substance has been stored and any waste involving the substance; and
- Ensure that the information provided in terms of paragraph (b) complies with the provisions of the Hazardous Substances Act, 1973 (Act No. 15 of 1973).

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2.3 Medical screening requirements

- The Principal Contractor shall ensure that a medical surveillance programme is implemented for all employees.
- An initial health evaluation shall be carried out by an occupational health practitioner immediately, before or within 14 days after a person commences employment, where any exposure exists or may exist, which comprises:
 - an evaluation of the employees medical and occupational history;
 - a physical examination; and
 - any other essential examination which in the opinion of the occupational health practitioner is desirable in order to enable the practitioner to do a proper evaluation.
- Medical surveillance and immunisation shall be done accredited at / by institutions or occupational health personnel, including, but not limited to:
 - Audiograms.
 - A cardio-respiratory examination / Lung function test;
 - Chest X-rays
 - Eye/ sight tests.
 - A general physical examination;
 - A review of previous medical history.
 - Glucose levels
 - Blood pressure
 - Vaccinations
- An entry medical certificate shall be obtained for all workers prior to commencing with site activities from approved medical institution. Copies of all medical certificates shall be retained in the SHE File prior to site establishment and before an employee is allowed to come onto site.
- Specific attention shall be given to the physical and psychological fitness of people who will be required to work in elevated positions and operators of mobile machinery.
- An exit medical certificate shall be obtained for all workers at the end of the contract and for all workers who leave the employment of the Contractor before the end of the Project. Copies of all exit medical certificates shall be submitted to the Johannesburg Water SOC Ltd Project Specialist or Appointed OHS Agent.

2.4 OH&S improvement programmes

The Principal Contractor is required to establish Safety Improvement Programmes for all significant (high) risks determined in the baseline risk assessment to improve on risk management performance. Safety Improvement Programmes shall include:

- SHE Objective and targets to be achieved;
- Actions to be taken to reduce potential exposure to risk during the construction period;
- Personnel responsible for implementation of action;
- Target date / Time Frame for action to be completed.

Safety Improvement programmes shall be reviewed whenever there is changes on the scope of work, significant risk profile, process, and incident/accident outcomes or when required by Johannesburg Water SOC Ltd Implementation of Safety Improvement Programmes must be monitored and reported on a monthly basis; records of implementation must be maintained and reviewed / revised as and when necessary.

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2.5 OH&S structure, responsibilities and accountabilities

2.5.1 Overall supervision and responsibility for occupational health and safety

The Principal Contractor is responsible for implementing and maintaining the SHE plan approved by Johannesburg Water SOC Ltd The Principal Contractor's Chief Executive Officer, as appointed in terms of Section 16(1) of the Occupational Health and Safety Act (Act no 85 of 1993), is to ensure that the Employer (as defined in the Occupational Health and Safety Act (Act no. 85 of 1993)) complies with the Occupational Health and Safety Act (Act no 85 of 1993) and all other applicable legislative requirements and regulations.

The Principal Contractor's Chief Executive Officer may appoint any person reporting to him/her as a Designated Person in terms of Section 16(2) of the Occupational Health and Safety Act (Act no. 85 of 1993). The Designated Person is responsible to assist the Chief Executive Officer to ensure that the Employer complies with the requirements of the Occupational Health and Safety Act (Act no. 85 of 1993).

The construction supervisor and assistant construction supervisor(s) appointed in terms of the section 6(1) and 6(2) of the Construction Regulations are responsible for supervising the construction work and especially to ensure that all work undertaken complies with the requirements of the Occupational Health and Safety Act (Act no. 85 of 1993) and all other applicable legislative requirements and regulations, where the scope of contractual work is classified as "construction work" as defined by the Construction Regulations.

No site shall be left without supervision by the appointed persons for the appointed area.

2.5.2 Legal and nominated appointments

These appointments must be in writing and the responsibilities clearly stated together with the period for which each appointment is made. This information must be communicated to and agreed with by the appointees who will sign the appointment letter. Should the relevant appointment letter's responsibilities be defined on an annexure to the appointment letter, the appointee and appointer are required to sign both the appointment letter and annexure.

Copies of appointments must be submitted to Johannesburg Water SOC Ltd together with concise CV's and/or proof of competency of the appointees as part of the Principal Contractor's SHE plan. Johannesburg Water SOC Ltd must approve all appointments and any changes in appointees or appointments must be communicated to Johannesburg Water SOC Ltd and agreed upon before being implemented.

The Principal Contractor must provide Johannesburg Water SOC Ltd with an organogram listing the staff, their designations and their responsibilities for all contractors that he has appointed or intends to appoint and keep this list updated on a weekly basis. The Principal Contractor is furthermore required to compile a SHE Organogram indicating all legislative appointments and/or nominations and their reporting / responsibility structure. This SHE organogram will include composition of statutory OH&S meetings to be conducted. The following table provides guidance to Principal Contractors on potentially applicable appointments to their scope of work.

2.5.3 Training of the legal and nominated appointees

All employees in jobs requiring training in terms of the Occupational Health and Safety Act (Act no 85 of 1993) and any other applicable legislative requirements are to be in possession of valid proof of training. Other occupational health,

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safety and environmental training requirements of the Occupational Health and Safety Act (Act no 85 of 1993) and Construction Regulations can include:

- General induction;
- Site and job specific induction, including visitors;
- Occupational health and safety representatives;
- Training of the legal and nominated appointees;
- Operators and drivers of construction vehicles and mobile plant;
- Basic fire prevention and protection;
- Basic first-aid;
- Storekeeping methods and safe stacking; and
- Emergency planning and coordination
- Incident investigation
- Risk Assessment
- Planned job observations (supervisors)

All operators, drivers and users of construction vehicles, mobile plant and other equipment are to be in possession of valid proof of training and, where applicable, valid licenses

2.5.4 Appointment index

2.5.4 Appointment and functions of the occupational health and safety committee

APPOINTMENT	LEGISLATIVE REF	COMPETENCY REQUIREMENTS (MIN)
Confined Space Supervisor	GSR 5	Certificate + Proven experience
Construction Manager	CR 8.1	N.Dip Eng + 4yrs exp Full time on site
Construction Health, Safety Officer	CR 8.5 JW requirement	N.Dip Safety + 2yrs exp; OR N.Dip Enviro + 3yrs exp; OR NEBOSH / SAMTRAC + 4yrs exp, Register with SACPCMP & Full time on site
Construction supervisor	CR 8.7	3 yrs experience
Risk Assessor	CR 9.1	Certificate
Construction vehicle & mobile plant supervisor	CR 23.1	Certificate
Emergency, security and fire coordinator	CR 29	Certificate
Excavation supervisor (including piling)	CR 13	3yrs exp / N.Dip building
Fall protection supervisor	CR 10.1	Certificate
First-aiders	GSR 3	Certificate
Firefighting equipment inspector	CR 29	Certificate
Hazardous chemical substances supervisor	HCS Regs	Certificate
Incident investigator	GAR 9.2	Certificate
Ladder inspector	GSR 13A	Certificate
Occupational health and safety representatives	OHS Act 17	Certificate
Welding supervisor	GSR 9	Certificate

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The Principal Contractor must establish an occupational health and safety committee consisting of all the designated occupational health and safety representatives together with a number of management representatives. The management representatives shall not exceed the number of occupational health and safety representatives on the committee. The members of the occupational health and safety committee must be appointed in writing. Representatives from Johannesburg Water SOC Ltd will act as co-opted members to the Health and Safety Committee meetings as and when required. The Principal Contractor is required to compile a schedule for the statutory occupational health and safety committees for the duration of the project and supply the proposed schedule to Johannesburg Water SOC Ltd.

2.6 Training, competence and awareness

Management, employees and contractors must have the necessary awareness, commitment and competency to perform their work activities and make operational and business decisions in accordance with Johannesburg Water SOC Ltd

delegated authority levels. The Principal Contractor is therefore required to determine the different training programmes to be provided to various levels of its organization to ensure that all employees and contractors behave in accordance with Johannesburg Water SOC Ltd. Business Principles and Health and Safety Policy commitments. The relevant Johannesburg Water SOC Ltd. engineer and Johannesburg Water SOC Ltd. HSE Department will assist the Principal Contractor to source appropriate training service providers and approval of the identified service provider will be the responsibility of Johannesburg Water SOC Ltd.

Training is to be carried out as required by the Occupational Health and Safety Act (Act no 85 of 1993) and the Regulations. The contents and syllabus of all training courses required and attended are to be included in the Principal Contractor's SHE File.

Occupational health, safety training requirements shall include:

- General induction;
- Site and job specific induction, including visitors;
- Training on safe work procedures and other operational control requirements;
- Occupational health and safety representatives;
- Training of the legal and nominated appointees;
- Operators and drivers of construction vehicles and mobile plant;
- Basic fire prevention and protection;
- Basic first-aid;
- Storekeeping methods and safe stacking; and
- Emergency, security and fire coordinator.

2.6.1 Operational competence training

All operators, drivers and users of construction vehicles, mobile plant and other equipment are to be in possession of valid proof of training and, where applicable, valid licenses.

All employees in jobs requiring training in terms of the Occupational Health and Safety Act (Act no 85 of 1993) and any other applicable legislative requirements are to be in possession of valid proof of training.

2.6.2 Awareness and promotion

The Principal Contractor is required to have a promotion and awareness programme in place to create an occupational health and safety culture within employees. The following are some of the methods that may be used:

- Toolbox talks;
- Posters;
- Videos;
- Competitions;

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- Suggestion schemes;
- Participative employee activities such as “occupational health and safety circles”.

The Principal Contractor is, at a minimum, required to provide awareness programmes to employees on the following:

- General Health and Safety Awareness
- Environmental Awareness;
- HIV / AIDS awareness.

2.6.3 General competence requirement

The Principal Contractor shall ensure that his personnel and other contractors’ personnel are trained and competent to carry out work safely and without risk to health has been completed before work commences. The Principal Contractor shall ensure that follow-up and refresher training is conducted as the work progresses and whenever the scope or nature of the work changes.

A “**competent person**” in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training. It is the responsibility of the Contractor to determine whether any appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act.

Records of all training must be kept in the SHE File. The contents of the file will be audited from time to time.

At a minimum, the Principal Contractor will provide training on Safe Work Procedures / Safe Operating Standards to personnel responsible for performing the related task. Records of training on Safe Work Procedures / Safe Operating Standards will be retained. Competence and skill levels by the employees responsible for performing the task on the implementation of the Safe Work Procedures / Safe Operating Standards will be measured through Planned Job Observations.

2.6.4 Site-specific induction training

The Principal Contractor will be required to develop a project specific induction-training course based on the baseline risk assessment for the contract work. He will ensure that all his employees and other contractors and their employees have received training on the submitted induction-training programme.

All employees of the principal and other contractors are to be in possession of proof (on person) that they have attended a site-specific occupational health and safety induction-training course.

No contractor shall allow or permit any employee, visitor or any other person to enter the site, unless such employee or person has undergone health, safety and environmental induction training pertaining to the hazards prevalent on the site at the time of entry.

Where the Principal Contractor is required to operate within Johannesburg Water SOC Ltd Depot’s the Principal Contractor will ensure that all employees undergo the Johannesburg Water SOC Ltd induction.

2.7 Consultation, communication and participation

2.7.1 Notification of construction work

The Principal Contractor shall, before carrying out any work, notify the relevant Department of Labour of the intention to carry out construction work and use the form (Annexure 2 in the Construction Regulations 2014) for this purpose.

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Only a certified copy stamped (each page) by the Department of Labour will be acceptable. No faxed or emailed notifications will be accepted.

No work shall commence before the Principal Contractor has submitted notification of construction work to the relevant Department of Labour. Johannesburg Water SOC Ltd will not approve the SHE File if no original stamped / certified copy of the notification of construction work has been done.

2.7.2 Consultative forums

At a minimum, representatives of the Principal Contractor will attend the following SHE Meetings

MEETING	FREQUENCY	OBJECTIVE
Project Progress Meeting	Monthly	Reporting of compliance standing to project team
Contractor Meeting	Monthly	Consultative forum between Safety Officers and Johannesburg Water SOC Ltd
Internal OH&S Statutory Meetings	Monthly	Internal to Principal Contractor

The following arrangements with respect to communication and liaison shall apply:

- In addition to the above, communication may be directly to Johannesburg Water SOC Ltd or contractor or their appointed Agents, verbally (followed up in writing within 7 days) or in writing, as and when the need arises.
- Consultation with the workforce on occupational health, safety and environmental matters will be through their supervisors, occupational health and safety representatives, the occupational health and safety committee and their elected trade union representatives, if any. Any such communication will be followed up in writing within 7 days.
- The Principal Contractor will be responsible for the dissemination of all relevant occupational health, safety and environmental information to the other contractors. The transfer of information must take place before the contractor or other contractors commence work, for example, on design changes agreed with Johannesburg Water SOC Ltd and the designer, instructions by Johannesburg Water SOC Ltd and/or his agent, exchange of information between contractors, the reporting of hazardous and/or dangerous conditions and/or situations etc.

2.7.3 Occupational health and safety committee

The occupational health and safety committee must meet at least once per month and will consider, at least, the following agenda items:

- Opening and welcome;
- Members present, apologies and absent;
- Minutes of previous meeting;
- Matters arising from the previous meeting;
- Occupational health and safety representatives' deviation reports;
- Outcomes of previous audit and behavioural based safety inspections;
- Incident and/or accident reports and investigations;
- Incident, accident and/or injury statistics;
- Health and Safety Plan (revisions and new requirements);
- Training (awareness, competence and off-the-job);
- Emergency Preparedness Plan;
- Non-Conformances and notices;

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- Toolbox Talks Program;
- Close and next meeting.

2.7.4 Communication of information through toolbox talks

The Principal Contractor and other contractors will be required to conduct toolbox talks with their employees on a weekly basis and records of these must be kept in the SHE file. The objective of toolbox talks should be to communicate relevant site information to assist in improvement of occupational health and safety performance. Employees must acknowledge the receipt of toolbox talks and this record must also be kept in the SHE file.

2.8 Contractor / Mandatory control

- Whenever the Principal Contractor appoints contractors or sub-contractors, it is a requirement that an Occupational Health and Safety Act (Act no. 85 of 1993) Section 37(2) agreement (i.e. Agreement with Mandatory) is entered into between the Principal Contractor and Contractors.
- The Principal Contractor will ensure that all appointed contractors comply with the Johannesburg Water SOC Ltd SHE Specification requirements.
- The Principal Contractor will establish a procedure on sub-contractor management and assurance on compliance to the established procedure will be provided to Johannesburg Water SOC Ltd on a monthly basis.
- Principal Contractors are required to formally notify Johannesburg Water SOC Ltd before appointing subcontractors.
- Johannesburg Water SOC Ltd shall approve all specialist subcontractors to be appointed and/or engaged by the Principal Contractor.

The Principal Contractor shall:

- Ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
- Appoint each contractor in writing for the part of the project on the construction site;
- Take reasonable steps to ensure that each contractor's health and safety plan is implemented and maintained on the construction site;
- Ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
- Stop any contractor from executing construction work which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
- Include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done; and
- Ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

3. SHE DOCUMENTATION

3.1 Safety file

The Principal Contractor will prepare a OHS File containing the processes / procedures and templates to be applied during the project period for the scope of work. The Principal Contractor will be evaluated during the contract period against the submitted OHS File.

At a minimum the SHE File will contain the following documentation:

- Notification of construction work to the relevant Department of Labour (stamped on each page / no faxed copies);

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- Scope of work to be performed;
- Personnel list (Principal Contractor employees);
- OH&S / SHE Policy and other Policies;
- Updated copy of the Occupational Health and Safety Act (Act no. 85 of 1993) and its Regulations; COID Act.
- Proof of valid registration and good standing with the Compensation Commissioner or another licensed Insurer;
- SHE Plan agreed with Johannesburg Water SOC Ltd.
- Approved risk assessments, review and monitoring plans and safe work procedures (method statements);
- A list of contractors (sub-contractors) including copies of the agreements between the parties and the type of work being done by each contractor;
- All written designations and appointments for project scope of work (CV and competency copies);
- Management structure (inclusive of OH&S responsibility & meeting structure);
- Induction training and site OHS rules;
- Occupational health and safety training matrix / plan;
- Arrangements with contractors and/or mandatories;
- Description of security measures;
- The following registers (as applicable to contract scope of work):
 - Accident and/or incident notifications, investigation & control register;
 - Occupational health and safety representatives inspection register;
 - Template for entry into confined space;
 - Toolbox talks pro-forma;
 - Fall protection inspections template;
 - First-aid box content template;
 - Record of first-aid treatment template;
 - Fire equipment inspection and maintenance template;
 - Ladder inspection template;
 - Machine safety inspections template (including machine guards, lock-outs etcetera);
 - Inspection templates for lifting machines and –tackle (including daily inspections by drivers/operators);
 - Inspection templates of scaffolding;
 - Inspections templates of structures;
 - Templates of issuing of Personal Protective Equipment;
 - Monthly reporting and recording of statistics templates;
 - Keeping of any other record in terms of applicable legislation falling within the scope of SHE Legislation applicable to the project and the Principal Contractor / Contractor's activities and organization.
- Emergency preparedness and response programmes;
- Medical examination tests
- Vaccination records

3.2 Principal contractor appointment

- The principal contractor will be appointed in terms of Construction Regulations 2014, Reg 5(1) k
- All responsibilities imposed on the contractor by the Regulations will be applicable
- The duties will include:
 - a) Prepare a site specific SHE file based on client SHE specification and project scope.
 - b) Have an updated Letter of Good standing.
 - c) Ensure the necessary legal appointment letters are compiled and signed by affected parties.
 - d) Ensure SHE file submitted before work commences to Johannesburg Water for evaluation and approval.
 - e) Must ensure an organizational medical programme for its employees is in place. This must address pre-employment, periodic examination, and exit examinations.

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- f) Ensure all employees undergo medical examination and are declared fit for the job they are employed for by a Medical Practitioner.
- g) All employees undergo his control undergo company specific induction and Johannesburg water induction.
- h) Ensure before work commences employees are trained on the health and safety risks associated with the work they are conducting.
- i) Ensure employees are trained on company procedures, policies, method statements and informed of the Johannesburg Water SHE requirements as per the specification.
- j) Ensure legislative requirements are complied with during the duration of the contract and ensure that their employees comply also.
- k) Sign the 37 (2) Agreement between Johannesburg Water and themselves before any work commences and kept on their SHE file.
- l) Ensure that 37(2) Agreement(s) are signed between themselves and their sub-contractors.
- m) Ensure that sub-contractors have valid Compensation Commissioner Letter of Good Standing.
- n) Have a disciplinary procedure to address those found to be transgressing requirements of SHE specification, SHE plan, site rules or any other OHS act and its Regulation requirement.
- o) Prevent any employee or visitor who is under the influence of any alcohol or drugs (in state of intoxication) from being allowed to site.
- p) Ensure the safety of employees who are taking legal medication.
- q) Must hand over a consolidated SHE file at the end of the contract.
- r) Stop his/her employees who are doing unsafe acts or who are creating an unsafe environment.
- s) Investigate all incidents and report to Johannesburg water and ensure all reportable incidents as per the legislative requirement are complied with.
- t) Ensure work is supervised by competent personnel and that work is done by competent employees.
- u) Ensure pre-task risk assessment is done by a competent person and that employees are informed of the pre-task risks and the risk control measures.
- v) Ensure tool box talks are conducted to communicate SHE issues in connection to the work being done and any other aspects.
- w) Ensure that appointed personnel as per the SHE file are executing their duties as per the legal appointment.
- x) Ensure first aid kit is made available in case of any emergency.
- y) Ensure that housekeeping is maintained in good condition and that materials are store/stacked properly in designated areas.
- z) Have sufficient waste receptacles and ensure the correct disposal of the different wastes.
- aa) Proof of hazardous waste disposal to be requested from disposal site and to be kept inside SHE file.
- bb) Take reasonable steps to ensure that each appointed sub-contractor health and safety plan is implemented and maintained on the site and SHE File documentation is up to date.
- cc) Stop any work from being executed which is not in accordance with the client's health and safety specification and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons.
- dd) Must maintain an up to date list of all the sub-contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done; and
- ee) Ensure that all his or her employees have a valid medical certificate of fitness.

3.3 7.2 Agreement

- Johannesburg Water will enter into a 37(2) Agreement with all the appointed contractors
- A copy of the 37(2) Agreement must be kept in the SHE file of the contractor at all times.
- It is the responsibility of the contractor to ensure that there are 37(2) agreements between themselves and all their appointed sub-contractors.

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3.4 SHE Plan

- The contractor shall prepare a SHE plan to address and manage all applicable sources of risk that are identified during the execution of the project. The SHE plan shall incorporate the requirements as listed in the SHE specification.
- A copy of the SHE plan shall be submitted together with SHE file for review and approval.
- It is the contractor responsibility to ensure they sub-contractor compiles a SHE plan that in line with the SHE specification requirement of Johannesburg Water.

3.5 Legislative framework

All contractors shall comply with legislation pertaining to this contract, including but not limited to:

- Constitution of the Republic of South Africa
- Occupational Health and Safety Act and its associated Regulations
- National Environmental Management Framework Legislation
- National Road Traffic Act
- Applicable South African National Standards (SANS)
- Compensation of Occupational Injuries and Diseases Act (COIDA)
- Local by-laws and provincial ordinances

3.6 SHE Policy

A SHE policy is a statement of intent and a commitment by the organization Chief Executive or Managing Director (OHS Act 16(1) appointee) in relation to requirements applicable to their Safety, Health and Environmental legal obligation, relevant SHE roles and responsibilities, and contractual obligations to the Client.

The contractor and their sub-contractor companies shall each have a documented SHE Policy authorized by their Chief Executive/Managing Director (OHS Act Section 16 (1) Appointee). The SHE Policy must meet the following minimum requirements;

- Organizational Mission and Goal.
- State the overall SHE objectives within the project.
- Show commitment to the prevention of injuries and ill-health.
- Show commitment to the protection of environment and the conservation of natural resources.
- Must be reviewed at predetermined intervals, or when there is change in work process, serious incident occurs.
- The SHE Policy must be in line with OHSAS 18001 and ISO 14001 requirements and guidance documentation.
- Must be authorized by contractor CEO.

3.7 Appointments and competencies

- The contractor and its appointed sub-contractor must make the relevant legislative and non-statutory appointments, which must be maintained valid for the entire contract duration.
- All appointees shall be suitably trained and certified competent for the responsibilities they are assigned for.
- Copies of all relevant appointments and the relevant competence certificates must be kept in the relevant SHE file.

3.8 Supervision of construction work

- The principal contractor shall ensure that the construction manager and construction health and safety officer are appointed for a **single site** on a full time basis.
- JW should be informed in writing of the absence of the above-mentioned on site.

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3.9 Insurances

- The principal contractor and all his appointed contractors shall be registered with an appropriate compensation commissioner and have available a valid letter of good standing at all times.
- The obligation lies with the contractor to ensure that the Letter of Good Standing remains valid throughout the entire duration of the project.
- A copy of the said letter must be filed in all SHE files and made available during inspections and audits.

3.10 Costing for SHE

The contractor is responsible for ensuring that SHE costing is taken into consideration for the entire project/contract as this will ensure they comply with the SHE legislative requirements.

3.11 Sub-contractors

- Whenever the Principal Contractor appoints contractors or sub-contractors, it is a requirement that an Occupational Health and Safety Act (Act no. 85 of 1993) Section 37(2) agreement (i.e. Agreement with Mandatory) is entered into between the Principal Contractor and Contractors.
- The Principal Contractor will ensure that all appointed contractors comply with the Johannesburg Water SOC Ltd SHE Specification requirements.
- The Principal Contractor will establish a procedure on sub-contractor management and assurance on compliance to the established procedure will be provided to Johannesburg Water SOC Ltd on a monthly basis.
- Principal Contractors are required to formally notify Johannesburg Water SOC Ltd before appointing subcontractors.
- Johannesburg Water SOC Ltd shall approve all specialist subcontractors to be appointed and/or engaged by the Principal Contractor.

The Principal Contractor shall:

- Ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
- Appoint each contractor in writing for the part of the project on the construction site;
- Take reasonable steps to ensure that each contractor's health and safety plan is implemented and maintained on the construction site;
- Ensure that the periodic site audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
- Stop any contractor from executing construction work which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
- Include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done; and
- Ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

3.12 Notification of construction work

- The Principal Contractor shall, before carrying out any work, notify the relevant Department of Labour of the intention to carry out construction work and use the form (*Annexure 2 in the Construction Regulations 2014*) for this purpose.

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- Only a certified copy stamped (each page) by the Department of Labour will be acceptable. No faxed or emailed notifications will be accepted.
- No work shall commence before the Principal Contractor has submitted notification of construction work to the relevant Department of Labour.
- Johannesburg Water SOC Ltd will not approve the SHE File if no original stamped / certified copy of the notification of construction work has been done.

3.13 Safe Work Procedures / Method Statements

The Contractor shall, in writing, clearly explain how identified risks will be addressed to eliminate or reduce it to a tolerable level and submit it for approval by Johannesburg Water SOC Ltd before site establishment. This may be through method statements or written operational control procedures.

All method statements shall reflect at least:

- When the activities relating to the method statement will be conducted (timing).
- Materials to be used.
- Equipment and staffing requirements.
- The proposed construction procedure designed to implement the relevant requirements.
- The methodology that will be used to ensure compliance with the method statement.
- Any other information deemed to be necessary by the Johannesburg Water SOC Ltd Project team.
- Associated responsibilities and authorities;
- Authorized staff positions to conduct the relevant activities contained in the Safe Work Procedure;

For significant risks identified after site establishment, method statements shall be submitted to Johannesburg Water SOC Ltd at least two working days before the start of the associated activity. All changes to approved method statements or procedures shall be approved in writing by Johannesburg Water SOC Ltd. The Principal Contractor's Site Manager shall retain records of any amendments and shall ensure that only the most current approved version of any method statement or procedure is used.

3.14 Construction work permit

- There will be no requirement for a construction work permit for this project.

4 SAFE WORK PROCEDURES / METHOD STATEMENTS

Method statements or written safe work procedures shall be documented for all high risk activities:

- Design change or scope change/addition
- Change in job or task
- Introduction of new machinery, equipment or substance.

Method statements or written safe work procedures shall identify following:

- Tasks that are to be undertaken
- The hazards and associated risks of the task(s)
- The control measures for the task(s)
- The equipment and substances that are associated with task(s)
- Any training or qualification needed to do the task
- Personal protective equipment to be worn.

The following SOP / Method Statements should be included:

- Traffic Management Plan
- Drilling / connecting to the pipe

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- PPE
- Incident Management
- Emergency Management
- Working inside excavations
- Shoring
- Operating Construction Vehicles & Mobile plant
- Welding / Hot works

5 INCIDENT MANAGEMENT

5.1 Reporting of accidents and incidents

The Principal Contractor must report all incidents where an employee is injured on duty to the extent that he:

- Dies
- Becomes unconscious
- Loses a limb or part of a limb
- Is injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he was usually employed

Or where -

- A major incident occurred
- The health or safety of any person was endangered
- Where a dangerous substance was spilled
- The uncontrolled release of any substance under pressure took place
- Machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- Machinery ran out of control

to Johannesburg Water SOC Ltd within two days and to the Provincial Director of the Department of Labour within seven days from date of incident (Section 24 of the Occupational Health and Safety Act (Act no. 85 of 1993) and General Administrative Regulations), except that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both Johannesburg Water SOC Ltd and the Provincial Director of the Department of Labour forthwith by telephone, telefax or e-mail.

- All other reports required by this specification must also be completed. Reporting of accidents / incidents to Johannesburg Water SOC Ltd will be on the prescribed format.
- The Principal Contractor is required to provide Johannesburg Water SOC Ltd with copies of all statutory reports required in terms of the Occupational Health and Safety Act (Act no. 85 of 1993) within 7 days of the incident occurring.
- The Principal Contractor is required to provide Johannesburg Water SOC Ltd with copies of all internal and external accident/incident investigation reports, within 7 days of the incident occurring.

6. Accident and incident investigation

- The Principal Contractor is responsible for the investigation of all accidents and/or incidents where employees and non-employees were injured to the extent that they had to receive medical treatment other than first aid.
- The results of the investigation are to be entered into the accident and/or incident register. The Principal Contractor is responsible for the investigation of all incidents, including those described in Section 24 (1) (b) and (c) of the Occupational Health and Safety Act (Act no. 85 of 1993) and for keeping a record of the results of the investigations including the steps taken to prevent similar accidents in future.

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- The Principal Contractor is responsible for the investigation of all road traffic accidents, related to the construction activities, and for keeping a record of the results of the investigations including the steps taken to prevent similar accidents in future.
- Johannesburg Water SOC Ltd reserves the right to hold its own investigation into an incident or call for an independent external investigation.

6.1. Close out

- All incident investigation reports will be closed out once all the recommendations to prevent further incidents have been implemented.
- A copy of the investigation report must be handed to JW Safety Officer conducting the investigation.

7. MEDICAL SCREENING REQUIREMENTS

- The Principal Contractor shall ensure that a medical surveillance programme is implemented for all employees.
- An initial health evaluation shall be carried out by an occupational health practitioner immediately after a person commences employment, where any exposure exists or may exist, which comprises:
 - an evaluation of the employees medical and occupational history;
 - a physical examination; and
 - any other essential examination which in the opinion of the occupational health practitioner is desirable in order to enable the practitioner to do a proper evaluation.
- Medical surveillance and immunisation shall be done accredited at / by institutions or occupational health personnel, including, but not limited to:
 - Audiograms.
 - A cardio-respiratory examination / Lung function test;
 - Chest X-rays
 - Eye/ sight tests.
 - A general physical examination;
 - A review of previous medical history.
 - Glucose levels
 - Blood pressure
- An entry medical certificate shall be obtained for all workers prior to commencing with site activities from approved medical institution. Copies of all medical certificates shall be retained in the SHE File prior to site establishment and before an employee is allowed to come onto site.
- Specific attention shall be given to the physical and psychological fitness of people who will be required to work in elevated positions and operators of mobile machinery.
- An exit medical certificate shall be obtained for all workers at the end of the contract and for all workers who leave the employment of the Contractor before the end of the Project. Copies of all exit medical certificates shall be submitted to the Johannesburg Water SOC Ltd Project Specialist or Appointed OHS Agent.

8. EMERGENCY MANAGEMENT

The Principal Contractor must appoint a competent person to act as emergency controller and/or coordinator.

The Principal Contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that Johannesburg Water SOC Ltd may have in place.

In the event where a contractor incorporates the services of a 3rd party service provider for the provision of Emergency Response Services, the following criteria must be met:

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- Identification of 3rd party emergency response services (organization & contact details);
- Notification of contractor to 3rd party emergency response service of incorporation of services into contractor's emergency response plan (written agreement / signed letter).

The Principal Contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

8.1 First-aid

The Principal Contractor must provide first-aid equipment (including a stretcher) and have qualified first-aiders on site as required by General Safety Regulations promulgated in terms of the Occupational Health and Safety Act (Act no. 85 of 1993).

The contingency plan of the Principal Contractor must include arrangements for the speedy and timeous transporting of injured and/or ill person(s) to a medical facility or of getting emergency medical aid to person(s) who may require it.

The Principal Contractor must have written arrangements in place with his other contractors regarding the responsibility of the other contractors towards their own injured and/or ill employees.

9. SHE TRAINING

- All operators, drivers and users of construction vehicles, mobile plant and other equipment are to be in possession of valid proof of training and, where applicable, valid licenses.
- All employees should receive general induction prior to starting work.
- Toolbox talks should be conducted daily.

9.1 Site-specific induction training

The Principal Contractor will be required to develop a project specific induction-training course based on the baseline risk assessment for the contract work. He will ensure that all his employees and other contractors and their employees have received training on the submitted induction-training programme.

All employees of the principal and other contractors are to be in possession of proof (on person) that they have attended a site-specific occupational health and safety induction-training course.

No contractor shall allow or permit any employee, visitor or any other person to enter the site, unless such employee or person has undergone health, safety and environmental induction training pertaining to the hazards prevalent on the site at the time of entry.

Where the Principal Contractor is required to operate within Johannesburg Water SOC Ltd Depot's the Principal Contractor will ensure that all employees undergo the Johannesburg Water SOC Ltd induction.

10. PPE REQUIREMENTS

- The Principal Contractor is required to continuously identify the hazards in the workplace and deal with them. He must either remove them or, where impracticable take steps to protect workers and make it possible for them to work safely and without risk to health under the hazardous conditions.
- The Principal Contractor will establish a Personal Protective Equipment Policy and a Personal Protective Equipment study will be conducted to determine the types of Personal Protective Equipment (PPE) to be supplied related to the hazards and risks emanating from the tasks.

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- Cognisance shall be given to the gender of individuals required to where PPE; size required by the employee and size issued.
- Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.
- Where it is not possible to create an absolutely safe and healthy workplace the Principal Contractor is required to inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.
- It is a further requirement that the Principal Contractor maintains the equipment, instructs and trains the employees in the use of the equipment and ensures that the employees use the prescribed equipment.
- Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear the prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition(s) for which the equipment was prescribed. An alternative solution has to be found that may include relocating the employee.
- The Principal Contractor may not charge any fee for protective equipment prescribed by him but may charge for equipment under the following conditions:
 - Where the employee requests additional issue in excess of what is prescribed;
 - Where the employee has patently abused or neglected the equipment leading to early failure; and
 - Where the employee has lost the equipment.

All employees shall, as a minimum, be required to wear the following personal protective equipment on any of Johannesburg Water SOC Ltd's projects:

- Protective overalls;
- Protective footwear;
- Protective headwear; and
- Eye, face and ear protection.
- NO SHORTS OR DRESSES WILL BE ALLOWED ON SITE!!!

All Personal Protective Equipment will clearly display the branding components of the Principal Contractor's organization (e.g. Name of Organization, logo).

11. DISCIPLINARY PROCESSES

- The contractor is required to implement disciplinary process in order to enforce compliance with requirements.
- All sub-contractors are required to have the same.

12. SITE RULES

- The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the Health and Safety Plan and associated aspects of the construction.
- When required for a site by law, visitors and non-employees upon entering the site shall be issued with the proper Personal Protective Equipment (PPE) as and when necessary.

13. PUBLIC HEALTH AND SAFETY

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The Principal Contractor is responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from the construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes:

- Non- employees entering the site for whatever reason;
 - The surrounding community; and
 - Passers-by the site.
- The Principal Contractor shall organize the site in such a manner that pedestrians and vehicles can move safely and without risks to health, including sufficient and suitable traffic routes and safe walkways with relevant signage.
 - Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.
 - All non-employees entering the site must receive induction into the hazards and risks of the site and the control measures to be observed.
 - The Principal Contractor shall recognize that the Community Liaison Officer (CLO) is the link between Johannesburg Water SOC Ltd and the community and provide all reasonable support to the Community Liaison Officer to ensure relevant responsibilities are fulfilled and positive relationships with the community are maintained.
 - Where activities are performed close to public routes, the Principal Contractor will establish a traffic management plan incorporating the requirements of relevant by-laws. At a minimum, barricading, warning signage and flagmen will be provided to ensure the protection of workers from vehicles in transit. Where required, the Principal Contractor will interact with the local traffic department to establish minimum requirements to be implemented on public routes.

14. REFUSAL TO WORK

- Section 14 of the OHS Act states that employees shall carry out any lawful orders given to them, suggesting that they have the right to refuse to obey any unlawful order or work instruction.
- In terms of legal and JW requirements, if an employee has reasonable belief that the work to be carried out is likely to endanger themselves or other persons in any way, he/she has the right to refuse to work.
- An employee may also refuse to work in term of Section 29 of NEMA, if the work would result in imminent and serious threat to the environment.
- All contractors shall ensure that their employees are conversant with hazards associated with their work and work environment, and be aware of the precautionary measures to take.
- The contractor must ensure that all refusals to work are investigated promptly and resolved timeously.

15. SECURITY

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include the rule that non-employees will not be allowed on site unaccompanied.

The Principal Contractor must develop a set of security rules and procedures and maintain these throughout the construction period.

The Principal Contractor shall:

- Provide a guardhouse for security personnel. The guardhouse should be in good condition and at-least meet minimum requirements as per Environmental Regulations for Workplaces as promulgated under the Occupational Health and Safety Act (Act no. 85 of 1993).
- Supply an access card containing the name, surname, employee number and photograph for all appointed employees (full or part time) for the site.
- Ensure that no person enters the construction site without wearing the necessary Personal Protective Equipment (PPE).

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- Ensure that no children are allowed on the construction site.
- Ensure that no family members are sleeping over on the construction site.
- Ensure that no pets are allowed on the construction site.
- No firearms are allowed on site.

16. ACCOMMODATION ON SITE

No employees shall be accommodated on site.

17. WELFARE FACILITIES

The provision of toilets for each sex is required in terms of the National Building Regulations and Construction Regulation 28. Chemical toilets are allowed instead of the water borne sewerage type. Toilets have to be provided at a ratio of 1 toilet per 30 workers. The Principal Contractor shall provide flushing toilets on the construction premises.

- At least cold-water showers for each sex have to be provided at a ratio of 1 shower per 15 workers.
- Some form of screened off changing facility must be provided separately for each sex.
- Some form of eating facility sheltered from the sun, wind and rain must be provided.

The employer needs to provide his employees with the following:

- Potable water for drinking;
- Water and soap for hand washing
- Toilet paper

18. COMPLIANCE MONITORING

18.1 Inspections

- Contractors will be inspected at least once per week by the JW Project Inspectors.
- Feedback of the inspections will be issued immediately on work instructions, and a formal report sent within 7 days of conducting the inspection to all relevant stakeholders.
- Johannesburg Water SOC Ltd. reserves the right to conduct other ad-hoc assessments and inspections as deemed necessary.
- This may include, amongst other measures, site safety walks. Corrective actions will be identified by Johannesburg Water SOC Ltd. and the Principal Contractor's representative and implemented by the Principal Contractor (at no cost to Johannesburg Water SOC Ltd.) to ensure SHE Performance improvement.

18.2 Monthly audits

- Monthly audits will be conducted within periods not exceeding 30 days.
- The Principal Contractor is to conduct his own monthly internal audits and inspections to verify compliance with his own occupational health and safety plan and management system as well as compliance with the requirements of the Johannesburg Water SOC Ltd. SHE Specification.
- The Principal Contractor will also assess and inspect the compliance of other contractors under its control. Management members of the Principal Contractor will be involved in the internal assessments and inspections.

18.3 Monthly compliance rating

A monthly compliance rating will be calculated for each Principal Contractor as per a formula determined by Johannesburg Water SOC Ltd focussing on or incorporating outcomes of assurance (e.g. monthly audit), operational (e.g. behavioural based safety inspection) assessments and other requirements, as necessary. Johannesburg Water

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SOC Ltd reserves the right to adjust the monthly compliance calculation formula as and when required – each revision of the monthly compliance calculation formula will be communicated to the Principal Contractor before implementation.

Each Principal Contractor is required to maintain a minimum compliance rating of 93% (Ninety Three Percent).

Scoring	Classification	Classification description
93% -100%	Good	Substantial compliance
80% -92%	Average	Compliance status needs to be improved
60% - 79%	Poor	Methods to ensure compliance require substantial improvement - operations with substantial non-compliance risks
<60%	Very poor	Methods to ensure compliance failed completely - troubled operation with severe non-compliance risks

18.4 Work stoppages

Work stoppages will be identified for 2 (two) types of work stoppages to be implemented:

- Overall work stoppage – the Principal Contractor and its Contractors are not allowed to continue with any type of construction / site work up until the work stoppage has been closed-out;
- Activity work stoppage – The Principal Contractor and its Contractors are not allowed to continue with the specific activity / task / job up until the work stoppage has been closed-out.

Overall work stoppages will be issued where non-conformances are identified against the criteria in the following table.

NO.	DESCRIPTION OF AUDIT NON-CONFORMANCE / NON-COMPLIANCE
1	NOTIFICATION OF CONSTRUCTION WORK
1.1	Local Department of Labour not notified of construction work before commencement of construction activities
1.2	Notification of construction work not stamped by local Department of Labour (no fax copies)
1.3	Copy of notification of construction work not available on site
2	PROOF OF REGISTRATION WITH COMPENSATION COMMISSIONER
2.1	Proof of registration with Compensation Commissioner or other insurer not available
2.2	Registration with Compensation Commissioner or other insurer not valid and up-to-date
3	POLICY COMMITMENT & SHE SPECIFICATION
3.1	SHE Plan not compiled, approved by contractor management and available on site
4	SECTION 37(2) AGREEMENT
4.1	Signed section 37(2) Agreement not signed and available on site
5	RISK ASSESSMENTS

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NO.	DESCRIPTION OF AUDIT NON-CONFORMANCE / NON-COMPLIANCE
5.1	Risk assessments not developed/ not applicable to scope of work issued by Client
6	CONSTRUCTION MANAGER
6.1	No construction manager appointed / on site / Construction Manager not full time on site
6.2	Appointed construction manager does not meet requirements
7	SITE SAFETY OFFICER
7.1	No safety officer appointed/ available on site
7.2	Safety officer does not meet requirements
8	SHE FILE
8.1	No file on site

Activity work stoppages will be issued where non-conformance are identified per activity where the health and safety of employees or the public is compromised.

18.5 Non-compliance management process

The following actions will be instituted where non-conformances are identified in terms of compliance to relevant legislative requirements and the Johannesburg Water SOC Ltd SHE Specification.

CRITERIA	ACTION TO BE INSTITUTED	RESPONSIBLE PARTY
Compliance rating: 93-100%	Non-conformance closure	Principal Contractor / Contractor
Compliance rating: 80-92%	Letter of compliance improvement to Principal Contractor	Johannesburg Water SOC Ltd
	Non-conformance closure	Principal Contractor / Contractor
Compliance rating: 60-79%	Non-compliance hearing	Johannesburg Water SOC Ltd
	Letter of commitment for performance improvement	Principal Contractor / Contractor
	Non-conformance closure	Principal Contractor / Contractor
Compliance rating: <60%	Non-compliance hearing	Johannesburg Water SOC Ltd
	Letter of commitment for performance improvement	Principal Contractor / Contractor
	Non-conformance closure	Principal Contractor / Contractor
	Supply Chain Management to be informed of non-compliance standing	Johannesburg Water SOC Ltd
3 x Work stoppages	Non-compliance hearing	Johannesburg Water SOC Ltd
	Letter of commitment for performance improvement	Principal Contractor / Contractor
	Non-conformance closure	Principal Contractor / Contractor
	Supply Chain Management to be informed of non-compliance standing	Johannesburg Water SOC Ltd

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CRITERIA	ACTION TO BE INSTITUTED	RESPONSIBLE PARTY
3 x Non-conformance to <93% monthly compliance rating	Non-compliance hearing	Johannesburg Water SOC Ltd
	Letter of commitment for performance improvement	Principal Contractor / Contractor
	Non-conformance closure	Principal Contractor / Contractor
	Supply Chain Management to be informed of non-compliance standing	Johannesburg Water SOC Ltd
3 x consecutive repeat findings	Non-compliance hearing	Johannesburg Water SOC Ltd
	Letter of commitment for performance improvement	Principal Contractor / Contractor
	Non-conformance closure	Principal Contractor / Contractor
	Escalation to SCMU & CAPEX	Johannesburg Water SOC Ltd

19. OPERATIONAL REQUIREMENTS

19.1 EXCAVATIONS

- Where excavations will exceed 1.5 m in depth the contractor will be required to submit a method statement to Johannesburg Water SOC Ltd for approval before commencing with the excavation and Johannesburg Water SOC Ltd will issue a permit to proceed once the risk assessment and method statement is approved.
- Excavations must be limited to 100m per day or equated to the amount of work to be done for the day.
- All open excavations shall be closed within 3 days of excavation. No excavation will remain open beyond 3 days or during holidays.
- Excavation work must be carried out under the supervision of a competent person, who has been appointed in writing, with at least two years' experience in excavation work. Before excavation work begins the stability of the ground must be evaluated.
- Whilst excavation work is being performed, the contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.
- No person may be required or permitted to work in an excavation that has not been adequately shored or braced.
- Where the excavation is in stable material and where the sides of the excavation are sloped back to at least the angle of repose of the excavated material, shoring or bracing may be left out but only after written permission has been obtained from the appointed competent person.
- Shoring and bracing must be designed and constructed to safely support the sides of the excavation.
- Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed competent person.
- No load or material may be placed near the edge of an excavation unless suitable shoring has been installed to be able to carry the additional load.
- Neighbouring/adjoining buildings, structures or roads that may be affected or endangered by the excavation must be suitably protected.
- Every excavation must be provided with means of access that must be within 6 metres of any worker within the excavation.

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- The location and nature of any existing services such as water, electricity, gas etc. must be established before any excavation is commenced with and any service that may be affected by the excavation must be protected and made safe for workers in the excavation.
- The appointed competent person must inspect every excavation, including the shoring and bracing or any other method to prevent collapse, as follows:
 - Daily before work commences
 - After every blasting operation
 - After an unexpected collapse of the excavation
 - After substantial damage to any supports
 - After rain
- The results of any inspections must be recorded in a register kept on site and in the safety file.
- Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced to at least one meter high and as close to the excavation as practicable, regardless of the depth of the excavation.
- Every excavation must be provided with warning lights or visible boundary indicators after dark or when visibility is poor.
- Upon entering an excavation the requirements of General Safety Regulation 5, work in confined spaces, must be observed:
- Any confined space may only be entered after the air quality has been tested to ensure that it is safe to breathe and does not contain any flammable or noxious air mixture.
- The confined space must be purged and ventilated of any hazardous or flammable gas, vapour, dust or fumes.
- The safe atmosphere must be maintained and, where necessary.
- Employees are to be provided with breathing apparatus and must wear a safety harness with a rope with the free end of the rope being continuously attended to by a person outside the confined space.
- Furthermore, an additional person, trained in resuscitation, to be in full-time attendance immediately outside the confined space.
- Additional serviceable breathing and rescue apparatus is kept immediately outside the confined space for rescue purposes.
- All pipes, ducts etc. that may leak into the confined space to be blanked off sufficiently to prevent any leakage or seepage.
- The employer must ensure that all employees have left the confined space after the completion of work.
- Where flammable gas is present in a confined space no work may be performed in close proximity to the flammable atmosphere.
- Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into them.
- Excavations left open for extended periods of time (exceeding 48 hours) must be approved the relevant Engineer / Construction Supervisor.

19.1 .1 Excavating in water environment

If excavation works interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water to entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person.

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(1) A contractor must ensure that where construction work is done over or in close proximity to water, provision is made for-

- (a) preventing persons from falling into water; and
- (b) the rescuing of persons in danger of drowning.

(2) A contractor must ensure that where a person is exposed to the risk of drowning by falling into the water, the person is provided with and wears a lifejacket.

19.2 CONFINED SPACE ENTRY

- Enclosed space work necessitates a Confined Space Permit. This may only be obtained from the authorized person nominated in writing.
- The responsibility for safe procedure, both at the time of entry and during the entire operation of entering and working in confined spaces, rests with the Contractor.
- The Contractor shall be sure that adequate steps have been taken to eliminate or control hazards.
- Before working in an area that contains dust, the area is to be ventilated and hosed down to settle and dampen the dust.
- The Contractor shall provide all necessary equipment to manage confined spaces, including all necessary monitoring and rescue equipment (such as tripods, breathing equipment and the like).
- The Contractor shall ensure all persons working in a confined space or managing entry to a confined space are appropriately trained.
- Compulsory - Continuous monitoring, trained rescue teams, radio communication & adequate ventilation.

19.3 BARRICADING

- Barricading plans are to be presented by the Principal Contractor for any major operations involving site works for approval by Johannesburg Water SOC Ltd. Where areas are unsafe, they should be enclosed with barricading. Examples are people working overhead, welding splatter etc.
- Where there is a risk of injury, the area should be barricaded off with secure solid barricades.
- Barricading for the prevention of access into areas with a potential risk of injury shall as a minimum be constructed of a handrail, knee-rail and appropriately supported as to prevent any person from falling into the restricted/risk area.
- Appropriate signage shall be affixed to the barricade indicating the risk associated (i.e. deep excavation, lifting operations etc.) and the responsible Supervisor and contact details shall be displayed. All barricading shall have a "No Entry" signs on all sides and at each change of direction. Signage shall be placed at 20 m intervals where lengths exceed. All signage shall be a minimum size of 290 mm x 290 mm.
- Danger tape shall not be utilised to prevent personnel from entering into areas.
- Where no risk exists of injury to personnel such as stacking and storage areas, the use of wire for hand and knee rails netting shall be acceptable to demarcate the area.
- All barricades will have a dedicated entrance where it is required that personnel enter the areas.
- Appropriate signage shall be placed at the entrance indicating which Contractor has right of entry.
- It is the Contractor's responsibility to remove all redundant barricades directly after use. The Contractor's Safety Officers will maintain a marked-up site plan indicating where barricades are erected.
- It will be a requirement that the contractor protects employees against contact with exposed rebar and poles by the installation of rebar-caps on all exposed areas where there is a potential that an employee could be injured.

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19.4 SYMBOLIC SIGNGAGE

Contractors shall use mandatory and prescribed symbolic safety signs at their lay down and site areas. The display of the following signs is mandatory: the following signs should be made available:

19.5 USE AND STORAGE OF FLAMMABLES

The Principal Contractor to ensure that:

- No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions are taken;
- No flammable material is used or applied e.g. in spray painting, unless in a room or cabinet or other enclosure specially designed and constructed for the purpose unless there is no danger of fire or explosion due to the application of adequate ventilation;
- The workplace is effectively ventilated. Where this cannot be achieved:
 - Employees must wear suitable respiratory equipment
 - No smoking or other source of ignition is allowed in the area
 - The area is conspicuously demarcated as "flammable"
- Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with access control measures in place. Sufficient fire fighting equipment is installed and fire prevention methods practiced. Proper housekeeping may achieve this;
- Flammables stored in a permanent flammable store are stored so that no fire or explosion is caused.
- Stored in a locked and well-ventilated reasonably fire resistant container, cage or room conspicuously demarcated as "Flammable Store – No Smoking or Naked Lights"
- The flammables store to be constructed of two-hour fire retardant walls and roof and separated from adjoining rooms or workplaces by means of a two-hour fire retardant fire wall
- Adequate and suitable fire fighting equipment installed around the flammables store and marked with the prescribed signs
- All electrical switches and fittings to be of a flameproof design
- Any work done with tools in a flammable store or work areas to be of a non-sparking nature
- No Class A combustibles such as paper, cardboard, wood, plastic, straw and the like to be stored together with flammables
- The flammable store to be designed and constructed such that in the event of spillage of liquids the store is able to contain the full quantity + 10% of the liquids stored
- A sign indicating the capacity of the store to be displayed on the door
- Only one day's quantity of flammable is to be kept in the workplace;
- Containers (including empty containers) to be kept closed to prevent fumes/vapours from escaping and accumulating in low lying areas;
- Metal containers to be bonded to earth whilst decanting to prevent build-up of static forces; and
- Welding and other flammable gases to be stored segregated according to the type of gas and empty and full cylinders.

19.6 FIRE PREVENTION AND PROTECTION

The Principal Contractor must ensure that:

- The risk of fire is avoided;
- Sufficient and suitable storage for flammables is provided;
- Sources of ignition are removed wherever flammable or highly combustible material is present in the workplace, for example:
 - Notices prohibiting smoking are displayed and enforced
 - Welding and flame cutting is only allowed under controlled conditions that includes written hot work permits
 - Only spark-free hand and power tools are used

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- No grinding, cutting and shaping of ferrous metals is allowed using electrically driven power tools that produce sparks
- Flameproof switches and fittings are to be used in the flammable atmosphere
- Good housekeeping is maintained to prevent the accumulation of unnecessary combustibles
- Adequate ventilation is maintained
- Adequate and suitable fixed and portable fire fighting equipment is provided and maintained in good working order.
- Maintenance must include:
 - Regular inspection of fire equipment by a competent person appointed in writing and keeping a register
 - Annual inspection and service by an accredited service provider
- All employees are instructed in the use of the fire fighting equipment and know how to attempt to extinguish a fire;
- A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;
- Employees are informed regarding emergency evacuation procedures and escape routes;
- Emergency escape routes are kept clear at all times and clearly marked;
- Evacuation assembly points are demarcated;
- Evacuation is practiced to ensure that all persons are evacuated timeously;
- Roll call is held after evacuation to account for all personnel and ensure that no-one has been left behind; and
- A siren or alarm is fitted which is clearly audible to all persons on site.

20. NOISE INDUCED HEARING LOSS

1. Where noise is identified as a hazard the requirements of the NIHL regulations must be complied with and the following must be included / referred to in the Health and Safety Plan.

The Contractor must be able to:

- (a) Proof of training with regards to these regulations.
- (b) That monitoring carried out by an AIA and done according to SABS 083.
- (c) Medical surveillance programme is established and maintained for the necessary employees.
- (d) Control of noise by means of:
 - I. Engineering methods considered
 - II. Admin control considered
 - III. Personal protective equipment considered/decided on
 - IV. Describe how records are going to be kept for 40 years.

21. HIRED PLANT AND MACHINERY

The contractor will ensure that any hired plant and machinery brought to site is safe for use. The necessary requirements as stipulated by the OHS Act as well as those that are stipulated by this Occupational Health and Safety Specification, will apply. Health and Safety Induction is to be conducted with any hire plant or machinery operators and attendance of appropriate toolbox talks ensured. All operators of hired plant or machinery must be in possession of valid operator's certificates and medical certificates of fitness, as per requirement by the OHS Act.

22.1 General Machinery

The Contractor will comply with the Driven Machinery Regulations, which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE or clothing and training those that use machinery and enforce compliance.

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22. OCCUPATIONAL HEALTH

1. Exposure of workers to occupational health hazards and risks are very common in any work environment, especially in construction. The occupational hazards and risks may enter the body in three ways:
 - a) Inhalation e.g. cement dust;
 - b) Ingestion through swallowing;
 - c) Absorption through the skin (pores) e.g. painting or use of thinners.
2. All contractors are to ensure that where employees are exposed to airborne contaminants, pre-employment medicals should be conducted to ensure fitness to work under such conditions.
3. All contractors will be responsible for the full cost of medical treatment that his staff may require; the contractor is therefore required to ensure that all his personnel are medically fit.
4. All Contractors should ensure that Occupational Hygiene surveys are conducted as per the Occupational Health and Safety Act to ensure employees is not exposed to hazards. Risk Assessments should identify areas where surveys are to be conducted.

23. HOUSEKEEPING

The Principal Contractor to ensure that:

- Housekeeping is continuously implemented and maintained;
- Materials and equipment are properly stored;
- Scrap, waste and debris is removed regularly;
- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free-flow of pedestrians and vehicular traffic;
- Waste and debris not to be removed from heights by throwing but rather by chute or crane;
- Where practicable, construction sites are fenced off to prevent entry of unauthorised persons;
- Catch platforms or nets are erected over entry and exit ways or over places where persons are working to prevent them being struck by falling objects;
- An unimpeded work space is maintained for every employee;
- Every workplace is kept clean, orderly and free of tools, materials and the like that are not required for the work being done;
- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials;
- The walls and roof of every indoors workplace sound and leak-free; and
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fenced, boarded over or provided with protection to prevent persons from falling.

24. PUBLIC SAFETY & TRAFFIC MANAGEMENT

The Principal Contractor is responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from the construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes:

- Non- employees entering the site for whatever reason;
- The surrounding community; and
- Passers-by the site.
- The Principal Contractor shall organize the site in such a manner that pedestrians and vehicles can move safely and without risks to health, including sufficient and suitable traffic routes and safe walkways with relevant signage.
- Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

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- All non-employees entering the site must receive induction into the hazards and risks of the site and the control measures to be observed.
- The Stakeholder Relations Specialist will be the link between Johannesburg Water SOC Ltd and the community to ensure relevant responsibilities are fulfilled and positive relationships with the community are maintained.
- Where activities are performed close to public routes, the Principal Contractor will establish a traffic management plan incorporating the requirements of relevant by-laws. At a minimum, barricading, warning signage and flagmen will be provided to ensure the protection of workers from vehicles in transit. Where required, the Principal Contractor will interact with the local traffic department to establish minimum requirements to be implemented on public routes.
- Where roads will be closed proper signage including the following will be posted:
 - Road closed
 - Detour
 - Keep left / right
 - Slow down
 - Deep excavation
 - Delineator
 - Road work ahead

25. HAND TOOLS

The Principal Contractor must inspect all hand tools before it is brought onto the site.

- As far as possible all hand tools must be numbered and placed on register to be inspected monthly by a person designated to do so.
- Any tools found to be in an unsafe condition must immediately be removed from service and either discarded or rectified.
- No chisels with “mushroomed” heads must be used.
- No hammer shall be used with a cracked or damaged handle.
- All files must be fitted with handles.
- All trolleys, pushcarts, etc. used on site must be identifiable, placed on register and inspected at least once every month.
- Non-sparking tools must be used in areas where the risk of fire or explosion is present.
- No homemade hand tools are allowed on the project.
- All tools shall be attached to a suitable lanyard when utilised in elevated positions

26. PORTABLE ELECTRICAL EQUIPMENT

Portable electrical tools and equipment includes every unit that takes electrical power from a 15 ampere plug point and is moved around for use in the workplace for example; drills, saws, grindstones, portable lights, etcetera. Other electrical appliances such as fridges, hotplates, heaters, and etcetera must be inspected and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment shall be as follows:

- Periodical inspections must be carried out by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment must be worn or used whilst operating portable electrical tools and equipment.

This equipment:

- Must be maintained in good condition at all times to prevent an electrical shock to the user;

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- The main power source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

The following requirements apply to portable lights:

- Must be fitted with a robust non-hygroscopic non-conducting handle;
- Live metal parts or parts which may become live must be protected against contact;
- The lamp must be protected by a strong guard;
- The cable lead-in must withstand rough handling;
- Inspections must be undertaken that concentrate on plug, cord, switch and any obvious faults;
- A register be kept for each piece of equipment with findings of regular inspections undertaken to evaluate the condition of these lights; and
- When used in wet/damp/metal container conditions, the lamp must be protected by the elements or potential damage by surrounding activities.

27. CONSTRUCTION VEHICLES AND MOBILE PLANT

Johannesburg Water SOC Ltd will inspect construction vehicles and mobile plant prior to being allowed on a project site. Suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the Occupational Health and Safety Act (Act no. 85 of 1993) and Regulations.

Construction vehicles and mobile plant to be:

- Of acceptable design and construction;
- Maintained in good working order;
- Used in accordance with their design and intention for which they were designed;
- Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons are to be allowed to drive construction vehicles and mobile plant;
- Provided with safe and suitable means of access;
- Fitted with adequate signalling devices to make movement safe including reversing;
- Provided with roll-over protection (where applicable);
- Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book;
- Fitted with two head and two tail lights that are in good working condition and must be used whilst operating under poor visibility conditions;
- When used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.
- Operators and drivers of construction vehicles and mobile plant must be in possession of a valid medical certificate declaring the operator and/or driver physically and psychologically fit to operate or drive construction vehicles and mobile plant.
- No loose tools, materials etc. are allowed in the driver and/or operators compartment/cabin or in the compartment in which any other persons are transported.
- No person shall ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose. Employees shall only be transported if provision for seating and safety belts has been provided with an adequate canopy or rollover protection.
- All construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, must have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant.

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- Bulldozers, scrapers, loaders, and other similar mobile plant must, when being repaired or when not in use, be fully lowered or blocked with controls in a neutral position, motors stopped and brakes set.

All Drivers/Operators shall be appointed under the applicable legislation prior to operating any type of mobile equipment or machinery:

- If Driver/Operator does not adhere to the rules and regulations his appointment as operator shall be cancelled and he shall not be able to carry on with his duty.
- No Driver/Operator shall be appointed without proof of training, driver's licence or letter of competency.
- No training of Drivers/Operators on Site.
- No passengers on dump truck, Loaders or Excavators.
- No eating or drinking allowed while operating equipment.
- No vehicle shall be left unattended with engine running or key in ignition.
- Drivers may use no cellular phones during operations.

Equipment Approval

Authorization for the use of equipment shall be given in writing only after the following minimum requirements and documentation have been verified and shall as a minimum include the following:

- Minimum two lights in front and rear of vehicle
- Communications system (where required);
- Reflective Taping;
- First-aid kit, fire-fighting equipment and emergency roadside triangles;
- Tyres in good condition;
- Windscreen clear of cracks;
- Safety belts fitted for all occupants;
- Signage for clear identification;
- Windscreen wipers;
- Warning hooter and reverse alarm;
- Rotating warning lights (where applicable);
- Maximum number of persons indicated;
- Equipment free of oil and other leaks;
- Maintenance/Service & Equipment manuals available;

Operator Approval

Authorization for operators for the use of equipment shall be given in writing only after the following minimum requirements and documentation have been verified and shall as a minimum include the following:

- Operator's Certificate (accredited training organisation);
- Operators Licence appropriate to the nature of the Mobile equipment;
- Operator's knowledge tested and familiar with the controls for the vehicle;
- Public driver's permit where required;
- Medical fitness certificate.

28. HORIZONTAL DRILLING

- All HDD work shall be carried out under the supervision of a competent person.
- All employees involved in HDD shall be trained.
- A risk assessment as well as a method statement for the HDD shall be compiled and submitted for approval by the Client.
- Contractor will submit specifications on directional boring equipment to be used to ensure that the equipment will be adequate to complete the project. Spares inventory shall be included

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- The directional boring equipment shall consist of a directional boring rig of sufficient capacity to perform the bore and pullback the pipe, a boring fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations and trained and competent personnel to operate the system.
- All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.
- The directional boring machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head.
- The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing.
- The hydraulic power system shall be self-contained with sufficient pressure and volume to power boring operations.
- Hydraulic system shall be free of leaks.
- Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations.
- The rig shall be grounded during boring and pull-back operations.
- Sufficient spares shall be kept on hand for any break-downs which can be reasonably anticipated.
- The Guidance System shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system.
- The Operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.
- The Engineer must be notified 48 hours in advance of starting work.
- The Directional Bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made.
- The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract.
- It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.

29. LIFTING EQUIPMENT & MACHINERY

Lifting equipment must be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufactures requirements as well as that of the of Driven Machinery Regulations promulgated in terms of the Occupational Health and Safety Act (Act no 85 of 1993).

The Driven Machinery Regulations requires that:

- Lifting equipment is clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use a table showing the maximum mass load with respect to every variable condition shall be posted up by the user in a conspicuous, place easily visible to the operator and the table shall be used by the driver/operator;
- Each winch on a lifting machine must at all times have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit;
- Lifting equipment shall be fitted with a brake or other device capable of holding the MML. This brake or device shall automatically prevent the downward movement of the load when the lifting power is interrupted;
- Lifting equipment shall be fitted with a load limiting device that automatically arrest the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML;
- Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine. Where no standard is available the factor of safety must be:
 - chains – 4 (four)

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- steel wire ropes 5 (five)
- fibre ropes- 10 (ten)
- Every hook or load attaching device must be designed to prevent the load from slipping off or disconnecting;
- Every lifting machine must be inspected and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturer's requirements or to 110% of the MML. In addition, all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;
- All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its own log book; and
- No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by the inspector of the Department of Labour.

General requirements for cranes and lifting equipment

All documentation must be provided to the Johannesburg Water SOC Ltd Project Engineer prior to mobilisation. Failure to do so and the resulting cost of any delays and/or remedial activities will be for the Contractor's account.

All crane operators must be authorised by the relevant Engineer before they may operate a crane or lifting machine. The Load charts must be displayed at the crane.

Daily pre-use inspections of the cranes must be done and be kept on the file. The inspections must be logged in a logbook. The area in which a lift is performed must always be barricaded to prevent employees from entering.

A crane or lifting machine must not be left unattended and the keys may never be left in the ignition when the operator is not present. Properly constructed out rigger pads must be used when soil is uneven or unstable. (Only sleepers or appropriately designed steel plate pads may be used for this purpose).

Only a competent rigger may direct a lift of any kind unless the following requirements are met. Rigger assistants used for performing lifting operations shall be limited to lifts with all of the following requirements:

- Lifts lower than 5 tons
- Easy lifts that does not require the load to be lifted over structures, equipment or machinery
- Equipment that is not critical
- Rigging configuration that requires the attachment of several parts of lifting equipment such as chain blocks to adjust the angle of loads.
- All safety devices on a crane or lifting machine must be functional.

Certification will be required for record purpose, and shall cover the following:

- A Brake or other device capable of holding the maximum mass should the power fail, or which is such that it shall automatically prevent the uncontrolled downward movement of the load when the raising effort is interrupted; and
- A Limiting device which shall automatically arrest the driving effort when:
- The Hook or Load attachment point of the Power Driven lifting machine reaches its highest safe position; and
- In the case of a Winch Operated lifting machine with a lifting capacity of 5000kg or more, the load is greater than the rated mass load of such machine.

The user shall ensure that every lifting machine is operated by an Operator specifically trained for a particular type of lifting machine; the user shall not require or permit a person to operate such lifting machine unless the operator is in possession of a certificate of training, issued by an accredited person or organisation.

No Crane shall be used at arrival on site before copies of all documentation have been handed over to the Johannesburg Water SOC Ltd and the Crane have been checked by a person duly authorised and signed off as acceptable. Copies of all documentation shall be kept in the SHE File at all times.

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No Crane shall be used without a pre-use check and findings entered on an approved checklist. Before any cranes are established on site the following must be inspected and approved:

- Operator's licences
- Training certificates
- Medical fitness certificate.
- The cranes load test certificate.
- Rope test certificates including Mill / Destructive test.
- The lifting gear load test certificates.
- The load limiting device calibration certificate.
- Proof that the hooks have been measured for spreading.
- The service inspection history.
- Monthly comprehensive inspection certificate
- Operation and maintenance Manuals and crane condition.

Cranes and Lifting Machines

A contractor shall ensure that where tower cranes are used:

- Account is taken of the effects of wind forces on the structure;
- Account is taken of the bearing capacity of the ground on which the tower crane is to stand;
- The bases for the tower cranes and tracks for rail-mounted tower cranes are firm and level;
- The tower cranes are erected at a safe distance from excavations;
- There is sufficient clear space available for erection, operation and dismantling;
- The tower crane operators are competent to carry out the work safely; and
- The tower crane operators are physically and psychologically fit to work in such an environment by being in possession of a medical certificate of fitness."

No user shall use or permit any person to use a Jib-Crane with a lifting capacity of 5000kg or more at a minimum Jib radius, unless it is provided with:

- A load indicator that shall indicate to the operator of the Jib-Crane the mass of the load being lifted, provided that such a device shall not require manual adjustment from the application of the load to the Jib-Crane, until the release of the load.
- A Limiting Device, which shall automatically arrest the driving effort whenever the load is lifted, is greater than the rated mass load of the Jib-Crane.

Mobile Crane near Power Lines

No mobile cranes are to be used near overhead power lines until the Johannesburg Water SOC Ltd representative has been notified and provided safe access conditions and a valid permit to work is obtained. Mobile cranes shall be effectively earthed when working in the vicinity of electrical wires. Assume that all electrical equipment and wires are live and avoid them.

Lifting tackle

The following requirements will apply to lifting tackle:

- Manufactured of sound material, well-constructed and free from patent defects;
- Clearly and conspicuously marked with an identity number;
- MML factor of safety:
 - Natural fibre ropes - 10(ten)
 - Man-made fibre ropes and woven webbing - 06(six)
 - Steel wire ropes – single rope - 06(six)
 - Steel wire ropes – combination slings - 08(eight)
 - Mild Steel chains - 05(five)
 - High tensile/alloy steel chains - 04(four)

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- Steel wire ropes must be examined by a competent person every three months and the results recorded in a designated logbook. The ropes must be discarded (not used any further for lifting purposes) when wear and corrosion is evident.

30. LADDERS

The following requirements for ladders will apply:

- All ladders used on the site shall be constructed and used in compliance with the OH&S Act and Regulations.
- Ladders, which provide access to a working platform, shall extend one metre above the platform where it provides access, and shall be secured to prevent slipping.
- Timber ladders shall not be painted other than with clear preserving oils, clear varnishes or clear plastics.
- Ladders, which are in a damaged condition, shall not be used and shall be labelled accordingly and removed from the Premises.
- All Ladders shall be numbered, logged in a register, and inspected monthly.
- A ladder in use shall be held by an assistant and/or properly tied down in position.
- Only ladders that do not conduct electricity shall be used in live electrical sub-stations and switching rooms.
- Ladders shall be removed after use and stored in an appropriate facility as to not expose them unnecessarily to the elements or potential damage by surrounding activities.

31. MONTHLY REPORTING

- The Principal Contractor is required to provide Johannesburg Water SOC Ltd. with a monthly report in the format provided on the last working day of the month.
- The report will include the monthly man-hours, incidents, training, inductions, audits, etc

32. PROJECT CLOSE OUT

- Upon completion of the project, the contractor is required to hand over a consolidated project file to the Client with all the working documents for retention.

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Returnable Annexure A: Acknowledgement of SHE Specification & Annexures

CONTRACTOR:	
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I, the undersigned, hereby acknowledge that I have obtained copies of the following listed documentation and confirm that I fully understand the contents thereof and the consequences of non-compliance. The Contractor furthermore reiterates its commitment to compliance of the requirements contained within the following provided documentation:

- Johannesburg Water SOC Ltd, Safety, Health & Environmental (SHE) Specification, Volume 2;
- Annexure 1: List of possible hazards emanating from projects and activities conducted for or on behalf of Johannesburg Water SOC Ltd;

Signed at on this Day of 20.....

CONTRACT MANAGER			
NAME	DESIGNATION	DATE	SIGNATURE
CONTRACT SUPERVISOR			
NAME	DESIGNATION	DATE	SIGNATURE
WITNESS (1)			
NAME	DESIGNATION	DATE	SIGNATURE
WITNESS (2)			
NAME	DESIGNATION	DATE	SIGNATURE