

INVITATION TO BID TENDER COVER PAGE

YOU ARE HEREBY INVITED TO BID FOR THE REQUIREMENTS OF JOHANNESBURG WATER

BID NUMBER: JW OPS 038/19R CLOSING DATE: 03 FEBRUARY 2023 CLOSING TIME: 10:30

DESCRIPTION: LEASE FOR NORTHERN FARMS FOR A PERIOD OF THREE (3) YEARS

BIDDERS ARE ENCOURAGED TO ATTEND A NON-COMPULSORY TENDER BRIEFING SESSION ON MICROSOFT TEAMS:
19 JANUARY 2023 AT 12:00 TO 13:00 THE LINK WILL BE AVAILABLE ON THE JW WEBSITE ADVERT

THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD 7)

BID DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT GROUND FLOOR

TURBINE HALL

65 NTEMI PILISO STREET

NEWTOWN

JOHANNESBURG

2001

SUPPLIER INFORMATION				
NAME OF BIDDER				
POSTAL ADDRESS				
PHYSICAL ADDRESS				
TELEPHONE NUMBER				
CELLPHONE NUMBER				
E-MAIL ADDRESS				
VAT REGISTRATION NUMBER				
TAX COMPLIANCE STATUS	TCS PIN		CSD No	
A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]				
<i>The 80/20 scoring system will be applicable to this tender, i.e. 80 points for Price and 20 points for Preferential procurement (BBBEE)</i>				
TOTAL BID PRICE (IF APPLICABLE)				R
TOTAL NUMBER OF DOCUMENTS/VOLUMES SUBMITTED				
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:	
DEPARTMENT	Supply Chain Management		DEPARTMENT	Operations Support
CONTACT PERSON	Gcina Ndela		CONTACT PERSON	Clifford Mpofu
TELEPHONE NUMBER	011 688 1796		TELEPHONE NUMBER	011 688 1546
E-MAIL ADDRESS	gcina.ndela@jwater.co.za		E-MAIL ADDRESS	clifford.mpofu@jwater.co.za

TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

- 1.1. BIDS MUST BE DELIVERED TO THE CORRECT ADDRESS BY THE STIPULATED TIME. LATE BIDS WILL NOT BE ACCEPTED
- 1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED– (NOT TO BE RE-TYPED)
- 1.3. TENDERERS ARE REQUIRED TO SUBMIT ONE ORIGINAL HARD COPY PLUS A SOFT COPY IN A USB
- 1.4. THIS BID IS SUBJECT TO JOHANNESBURG WATER SCM POLICY VERSION 12
- 1.5. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
- 1.6. TENDERS WILL BE OPENED IN PUBLIC SOON AFTER CLOSING TIME AND RECORDING OF RECEIVED DOCUMENTS BUT NOT LATER THAN 11:00 AT THE TENDER OFFICE LOCATED TURBINE HALL 65 NTEMI PILISO STREET NEWTOWN JOHANNESBURG 2001, GROUND FLOOR. TENDERERS NAMES AND TOTAL PRICES, WHERE PRACTICAL WILL BE, READ OUT

2. TAX COMPLIANCE REQUIREMENTS

- 2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.
- 2.3 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.
- 2.4 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 2.5 BIDDER MUST BE REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

- 3.1. DOES THE ENTITY HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO
- 3.2. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO
- 3.3. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO
- 3.4. IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

NAME OF CONTACT PERSON:.....

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:

DATE:

ACKNOWLEDGEMENT OF BID CONDITIONS

1. I/We hereby bid to supply all or any of the supplies and/or to render all or any of the services described in the attached documents to Johannesburg Water (SOC) Ltd on the terms and conditions and in accordance with the specifications stipulated in the bid documents (and which shall be taken as part of, and incorporated into, this bid) at the prices and on the terms regarding time for delivery and/or execution inserted therein.
2. I/We agree that -
 - (a) the offer herein shall remain binding upon me/us and open for acceptance by Johannesburg Water (SOC) Ltd during the validity period indicated and calculated from the closing time of the bid;
 - (b) this bid and its acceptance shall be subject to the terms and conditions embodied herein with which I am/we are fully acquainted;
 - (c) if I/we withdraw my/our bid within the period for which I/we have agreed that the bid shall remain open for acceptance, or fail to fulfil the contract when called upon to do so, Johannesburg Water (SOC) Ltd, without prejudice to its other rights, agree to the withdrawal of my/our bid or cancel the contract that may have been entered into between me/us and Johannesburg Water (SOC) Ltd and I/we will then pay to Johannesburg Water (SOC) Ltd any additional expense incurred by having either to accept any less favourable bid or, if fresh bids have to be invited, the additional expenditure incurred by the invitation of fresh bids and by the subsequent acceptance of any less favourable bid; Johannesburg Water (SOC) Ltd shall also have the right to recover such additional expenditure by set-off against moneys which may be due or become due to me/us under this or any other bid or contract or against any guarantee or deposit that may have been furnished by me/us or on my/our behalf for the due fulfilment of this or any other bid or contract and pending the ascertainment of the amount of such additional expenditure to retain such moneys, guarantee or deposit as security for any loss Johannesburg Water (SOC) Ltd may sustain by reason of my/our default;
 - (d) if my/our bid is accepted the acceptance may be communicated to me/us by letter or order by ordinary post or registered post and that SA Post Office Ltd shall be regarded as my/our agent, and delivery of such acceptance to SA Post Office Ltd shall be treated as delivery to me/us;
 - (e) the law of the Republic of South Africa shall govern the contract created by the acceptance of my/our bid.
3. I/We furthermore confirm that I/we have satisfied myself/ourselves as to the correctness and validity of my/our bid; that the price(s) and rate(s) quoted cover all the work/item(s) specified in the bid documents and that the price(s) and rate(s) cover all my/our obligations under a resulting contract and that I/we accept that any mistakes regarding price(s) and calculations will be at my/our risk.
4. I/We hereby accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me/us under this agreement as the Principal(s) liable for the due fulfilment of this contract.
5. I/We agree that any action arising from this contract may in all respects be instituted against me/us and I/we hereby undertake to satisfy fully any sentence or judgement which may be pronounced against me/us as a result of such action.

SIGNATURE(S) OF BIDDER OR ASSIGNEE(S).....

DATE:.....

Capacity and particulars of the authority under which this bid is signed

Name of bidder.....

Postal address (in block letters)

Telephone No.(s)

Facsimile No:

Bid No.

Name of contact person (in block letters).....

INSTRUCTIONS TO BIDDERS

NB: Each bid must be submitted in a separate, sealed envelope on which the NAME AND ADDRESS OF THE BIDDER, THE BID NUMBER, DESCRIPTION OF BID AND THE CLOSING DATE must be clearly endorsed. The bid must be addressed to Supply Chain Management Unit, Johannesburg Water (SOC) Ltd and deposited in the BID BOX situated at the entrance : Turbine Hall, 65 Ntemi Piliso street, Newtown, Johannesburg.

It is the responsibility of the bidder to ensure that their/his / her bid document is submitted in a sealed envelope and placed in the Bid Box in good time so as not to miss the official deadline of 10:30 on the closing date.

Bid documents submitted via courier services will be acceptable provided that the bidder instructs such courier company or its representative to deposit the documents in the bid box. Documents should under no circumstances be handed to an employee of Johannesburg Water as it may not be held accountable in the event of any loss thereafter.

Bid documents may not be submitted via the South African Post Office as only bid documents received in the Bid Box at the time of closing will be taken into account.

IMPORTANT CONDITIONS

1. Bid documents must be completed using non-erasable black ink. Bids that are received contrary to this requirement will be disqualified. This condition applies to bid documents purchased as well as bid documents downloaded from the eTender portal.
2. Bids should be submitted on the official forms provided. Should any conditions of the bid be qualified by the bidder, Johannesburg Water may disqualify the bid.
3. If any of the conditions on this bid form are in conflict with any special conditions, stipulations or provisions incorporated in the bid, such special conditions, stipulations or provisions shall apply.
4. Bids received after the closing time and date will not be accepted and will be returned to the bidder unopened.
5. All bid documents must be in sealed envelopes and deposited in the Official Bid Box situated at Turbine Hall, 65 Ntemi Piliso Street, Newtown. Bidders are required to submit soft copy tender documents in a form of USB.
6. Bids should as far as possible be submitted in their entirety. Such bid documents should also comply with submission requirements as described therein, and should be bound in such a way that pages will not go missing.
7. Tender documents may be completed electronically without altering or tampering with any of the terms, conditions, specifications etc. in the tender documents.
8. It is an absolute requirement that the bidders tax matters are in order. To this effect, the bidder must furnish their Tax Compliance Status Pin or CSD MAAA number for bids as requested elsewhere in the bid document.
9. Tenderers will be afforded a period of three (3) days to complete returnable documents in instances where such forms are incomplete. Except MBD 6.2 and MBD 3.2 in instances where such forms are applicable to a tender.
10. Pricing schedule must be completed and signed. Bids that are received contrary to this requirement will be disqualified.
11. The evaluation on price alteration must be conducted as follows:
 - 11.1. Where the tender award strategy is to evaluate and award per item or category, the following must apply:
 - (i) If there is an alteration on the rate but no alteration on the total for the item or category, the bidder will not be disqualified
 - (ii) If there is an alteration on the total for the item/s without authentication, bidders will only be disqualified for alteration per item or category.
 - 11.2. Where the tender award strategy is to evaluate and award total bid offer, the following must apply:
 - (i) If there is an alteration on the rate, total for the line item, sub-total/ sum brought/carried forward for the section but no alteration on the total bid offer, the bidder will not be disqualified.
 - (ii) If there is an alteration on the total bid offer on form of offer then the amount in words must be considered or vice-versa.
 - (iii) If there is an alteration on the total bid offer and the amount in words without authentication, the bidders will be disqualified for the entire tender.
12. Tenderers are allowed to offer selective items (not all items as per BOQ) where applicable. Items that are left blank will be regarded as non-offered items.

CHECK-LIST FOR TENDER SUBMISSION

Completion of this check-list will assist the Tenderer in ensuring that they have complied with all the requirements for submission of this tender.

#	Description	Complied	
		Yes	No
1 Contact details provided	Name of tenderer		
	Contact person		
	Telephone No.		
	Fax No.		
	Email address		
	Cell No.		
2 Completion of documentation (Forms)	Provide an Authority to sign tender Annexure B		
	Completed and signed (Acknowledgement of conditions)		
	Completed and signed Tender form and Pricing schedule		
	Completed MBD 3..1 - Firm Prices		
	Alterations (if any) authenticated		
	Completion of form MBD 6.1 – (Preference points claim)		
	Complete and sign MBD 4- Declaration of any potential Conflict of Interest		
	Complete and sign MBD 8- past Supply Chain Management Practices Form		
	Complete and sign MBD 5 (Declaration for Procurement above R10m)*		
	Complete and sign MBD 9- Certificate of Independent bid Determination		
	JV Agreement (if Applicable)		
3 Submission of documents	Completed Banking Details		
	Valid Tax Compliance Status Pin/ CSD MAAA number for Tenders		
	Valid BBBEE certificate (SANAS/CIPC) or Sworn affidavit signed by the EME representative and attested by a Commissioner of oaths.		
	Certified copy of a consolidated Valid BBBEE certificate for JV (if applicable)		
	Confirmation that you have no municipal commitments overdue for more than 90 days**(for both the bidder/company and for the directors)		
	Confirmation that suitable arrangements in place for arrear municipal obligations with your local municipality		
	Annual Financial statements for past 3 years (AFS) *		
4 Qualifications	Is your tender subject to any qualifications? If Yes, reference to such qualification/s and must be indicated below: -----		

* for tenders with an estimated total value exceeding R10m (VAT included)

** for all tenders regardless of value

Name of tenderer _____ Signature _____ Date _____



CERTIFICATE OF AUTHORITY

Indicate the status of the Tenderer by ticking the appropriate box hereunder. The Tenderer must complete the certificate set out below for the relevant category.

(I) COMPANY	(II) CLOSE CORPORATION	(III) PARTNERSHIP	(IV) JOINT VENTURE	(V) SOLE PROPRIETOR

(I) Certificate For Company

I,, chairperson of the Board of Directors of, hereby confirm that by resolution of the Board taken on, Mr/Ms, acting in the capacity of, was authorized to sign all documents in connection with tender JW..... and any contract resulting from it on behalf of the company.

Chairman:

As Witnesses: 1.....

2.....

Date:



CERTIFICATE OF AUTHORITY

(II) Certificate For Close Corporation

We, the undersigned, being the key members in the business trading as
..... hereby authorize Mr/Ms , acting in the capacity of
....., to sign all documents in connection with the
tender and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : This certificate is to be completed and signed by all of the key members upon whom rests the direction of the affairs of the Close Corporation as a whole.



(III) Certificate For Partnership

We, the undersigned, being the key partners in the business trading as, , hereby authorize Mr/Ms , acting in the capacity of , to sign all documents in connection with the tender and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

Note : This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Partnership as a whole.



(IV) Certificate For Joint Venture

This Returnable Schedule is to be completed by joint ventures.

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms , authorised signatory of the company , acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORIZED SIGNATORY
Lead partner		Signature. Name Designation
		Signature. Name Designation
		Signature. Name Designation

Note : This certificate is to be completed and signed by all of the key partners upon whom rests the direction of the affairs of the Joint Venture as a whole.



(V) Certificate For Sole Proprietor

I,, hereby confirm that I am the sole owner of the Business
trading asand the person authorised
hereunder is duly authorized to sign all documents related to tender JW.....
and contract resulting therefrom.

Signature of Sole owner:

As Witnesses:

1.....

2.

Date:

EVALUATION CRITERIA

The tender will be evaluated and adjudicated in terms of the Municipal Finance Management Act (MFMA). Preferential Procurement Regulations 2017, Supply Chain Management Policy of Johannesburg Water (JW) and applicable Supply Chain Management Treasury Regulations.

Administrative Returnable document :

1. SARS one-time TAX PIN,
2. municipal statement of account for both Director and Company (not older than three [03] months or a valid lease agreement),
3. Joint Venture / Consortium Agreement signed by all parties.
4. Valid BBBEE Certificate or copy thereof or a valid sworn affidavit
5. A completed and signed Invitation to Bid form MBD 1
6. A completed and signed Declaration of Interest form MBD 4
7. A completed and signed Preference Points Claim Form MBD 6.1
8. A completed and signed Declaration of Bidder's Past Supply Chain Management Practices MBD 8
9. A completed and signed Certificate of Independent Bid Determination (MBD 9)

B-BBEE validation requirements:

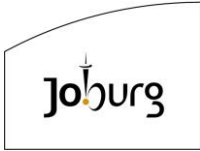
- a) Valid original BBBEE certificate or copy of valid BBBEE certificate (Only Valid BBBEE certificate must be accredited by SANAS) or valid Sworn Affidavit issued by the DTIC or the CIPC or in a similar format complying with commissioner of oath Act.
- b) In case of a JV, the tenderer must provide a joint venture agreement signed by all parties and proof of a consolidated valid original BBBEE Certificate or copy of BBBEE Certificate and scorecard of a joint venture is required. (both the agreement

and the consolidated valid original BBEE Certificate or valid copy of BBEE Certificate must be submitted

- c) A Bidder who qualifies as an Exempted Micro Enterprises (EME's) must submit a valid sworn affidavit.
- d) A Bidder who qualifies as a Qualifying Small Enterprises (QSE's) and is more than 51% black owned must submit a sworn affidavit.
- e) A Bidder who qualifies as a Qualifying Small Enterprises (QSE's) and is less than 51% black owned must submit a B-BBEE verification certificate issued by an Agency accredited by SANAS (South African National Accreditation System) which has to be valid, original or as a true copy of the original or the Bidder must submit an affidavit stipulating that their annual Total Revenue was between R10,000,000.00 (Ten Million Rand) and R50,000,000.00 (Fifty Million Rand) based on their latest Financial Statements/Management Accounts and other information available thereon. A Bidder must submit their latest Annual Financial Statements signed off by the professional Accountant or Auditor.
- f) Bidders who do NOT qualify as EME's and QSE's as outlined in (c) and (d) above, must submit B-BBEE verification certificates that are issued by an Agency accredited by SANAS.
- g) Public entities and tertiary institutions must also submit B-BBEE Status Level Verification Certificates together with their tenders.
- h) Bidders who fail to submit a valid original or copy of their B-BBEE Certificate or Valid Sworn Affidavit will score zero. Valid Sworn Affidavits or certified copy of B-BBEE Certificate must comply with the requirements outlined in the Justices of the Peace and Commissioners of Oaths Act, no 16 of 1963 and its Regulations promulgated in Government Notice GNR 1258 of 21 July 1972 Justices of the Peace and Commissioners of Oaths Act, No. 16 of 1963.

i.e

- (i) The deponent shall sign the declaration in the presence of the commissioner of oaths (COA).
- (ii) Below the deponent's signature the COA shall certify that the deponent has acknowledged that he knows and understands the contents of the



declaration and the COA shall state the manner, place, and date of taking the declaration.

- (iii) The COA shall sign the declaration and print his full name and business address below his signature; and State his designation and the area for which he holds his appointment, or the office held by him if he holds his appointment ex officio.

Mandatory Requirement:

1. Registration with CSD



3. Functionality:

The following aspects will be considered during the Technical evaluation:

Gatekeepers (Technical)

Criteria No.	Criteria	Description	Documentary Evidence	Submission Compliant (Yes/No)
1	Tenderer's Experience	The tenderer must have a minimum of 3 years' experience in farming	<p>The tenderer (company) must submit relevant documentation (i.e. reference letters) where the farming activities</p> <p>Note: Reference Letter</p> <p><i>The contactable reference template must be completed by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the functional criteria requirements. A separate form must be completed for each reference as required in the evaluation criteria. Information provided will be verified and if found to be false or misrepresented, punitive measures will be instituted against the respective party including blacklisting and restriction from participating in any future government tender.</i></p>	Tenderer's Experience Submission Compliant (Yes/No)
2	Key Personnel Experience	<p>The tenderer must have experienced key personnel with experience in farming activities</p> <p>(a) Farm Operator must have a minimum of 2 years' experience in farming</p>	<p>NB: Tenderer to submit CV templates attached in the tender document, indicating experience in farming or submit a CV with returnable documents.</p>	Farm Operator's Experience Submission Compliant (Yes/No)



CONTRACT NO: JW OPS 038/19R
LEASE FOR NORTHERN FARM

EVALUATION CRITERIA



<i>The tenderers submission must be compliant for each criterion in order to be considered for further evaluation</i>				

The tenderer must achieve all requirements in order to be considered for the next stage of Pricing.

4. Financial offer:

The following aspects will be considered in the financial offer:

- 4.1. Costing for all items as described in the Pricing Schedule
- 4.2. Review of financial offer and discrepancies between total and calculations
- 4.3. Identify any parameters that may have a bearing on the financial offer, e.g. contract period, price escalations or adjustments required and life cycle costs.

When the value of the bid is estimated not to exceed R50 000 000 (all applicable taxes included) the 80/20 preference point system shall be applicable,

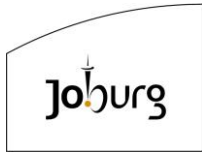
The maximum points for this bid are allocated as follows:

PREFERENCE POINT SYSTEM	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE	100

Points awarded for B-BBEE Status Level of Contribution

In terms of Regulation 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points 80/20 system)
1	20
2	18



EVALUATION CRITERIA



3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

AWARD STRATEGY

The tenderer will be awarded based on the compliance on the evaluation criteria and the highest scoring in terms of Pricing and BBBEE



Curriculum Vitae of Key Personnel

Provide separate forms for each position listed in Form: Key Personnel

FARM OPERATOR

Name:		Date of birth:
Profession:		Nationality:
Qualifications:		
Professional Registration Number: N \ A		
Name of Employer (tendering firm):		
Current position:		Years with firm:
<u>Employment Record:</u>		
Company	Start	End
<u>Experience Record Pertinent to Required service:</u>		

Certification:

I, the undersigned, certify that, to the best of my knowledge and belief, this data correctly describes me, my qualifications and my experience.

.....
Signature of person named in the schedule

.....
Date

CONTACTABLE REFERENCE

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water relative to tender Contract No. **JW OPS 038/19R** for **Lease of Northern Farm for a period of 3 years**.

Name of Tenderer:

Description of Goods / Services provided

.....
.....
.....
.....

Duration: Year-Month-Day when the Goods / Services were provided:

Start date (Year- Month -Day) when the above was provided:

End date (Year- Month -Day) when the above was provided:

Name of authorised person:

Signature:..... **Date**

Telephone/Mobile:

Email:

Completed on behalf (Name of Client)

NB: This document must be completed by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the functional criteria requirements. A separate form must be completed for each reference as required in the evaluation criteria. Information provided will be verified and if found to be false or misrepresented, punitive measures will be instituted against the respective party including blacklisting and restriction from participating in any future government tender.

LEASE FOR NORTHERN FARM

1. INTRODUCTION

Johannesburg Water invites proposals to obtain leasing permission of approximately 640 hectares of the Northern Farm for the provision of farming activities aimed at ensuring utilisation of approximately 10ML – 12ML of substandard effluent and prevention of environmental degradation. The contract will be for a period of 3 years

Property Information

Property Description	Magnitude of the Farm Rietfontein 532 JQ is a portion of land that lies north of the N14 highway and a portion of land south of the N14 highway and north of the R114 road
Locality	Farm Co-ordinates -25,927241; 27,965975
Land Size	640ha
Current Uses on site	Crop & Cattle Farming and Recreational activities
Existing Infrastructure	Internal and Perimeter fencing, Access gravel roads, 1x Farm Manager's Office, 1x Farm Manager's House, 1x Main Warehouse and General equipment maintenance area, 2x Staff Quarters at the Compound, 6x Hay Storage Units, Feedlots, Pastures, 1x Dairy House, 2x Staff Houses only when they become vacant and Paddocks, Laboratory, Cattle Auction Stadium and Yard, Cattle Posts
Water Facility	6 pivots, furrows, pipelines, dam walls, their spillways and valves
Effluent Water Supply	Northern Wastewater Treatment Works

2. PROGRAMME OF OPERATIONS

The principal intention of Johannesburg Water is to fully utilize the substandard effluent from the Northern Works whilst providing rightful access to agricultural opportunities on Northern Farmland. The opportunity to conduct agricultural activities on farms owned by the City also make farmland available to farmers and to further promote sustainable agriculture practices.

Johannesburg Water pursues to maintain and improve the soil fertility of the land, retain and maintain wildlife habitat, and preserve open spaces and vistas important to the aesthetic rural background and character of the area, and promote diversity.

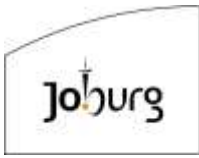
3.1 Services to be provided:

The requirement of any lessee will be that:

- The lessee at his own cost will maintain all access and internal roads to the lands allocated to the lessee. Water supply of both potable water and effluent (furrows, pipelines, dam walls, its spillways and valves) and internal and perimeter fencing etc. must be maintained.
- All equipment already on the farm and required for the operation of the proposed solution, i.e. the centre pivot installations and other agricultural equipment will be leased to the lessee.
- Security to be provided by the lessee at his own cost for any of the equipment leased including the center pivots.
- Security to be provided by the lessee at his own cost of the perimeters, entrances to the farm, secures all buildings and ensures the personal safety of staff and other residents on the farm.
- Existing and future leases will have to be honored e.g. Northern Farm Recreational User Group, which includes Bird Watching, Mountain Biking and Equestrian usage.
- The farm is a declared Nature Reserve and will have to be managed as such. The lessee will ensure the eradication of alien plant species.

The under mentioned fixed assets and property on the farm will be for the use of the successful tenderer:

- 1 x Farm Manager's Office
- 1 x Farm Manager's House
- 1 x Main Warehouse and General equipment maintenance area
- 2 x Staff Quarters at the Compound
- 6 x Hay Storage Units
- Feedlots
- Pastures
- 1 X Dairy House
- 3 x Staff Houses when vacant only



- Padlocks
- Laboratory
- Cattle Auction Stadium and Sale Yard
- Cattle Posts

3. GENERAL LESSEE ACCOUNTABILITIES

The following infrastructure, land use investments and requirements to support urban agriculture are the responsibility of the Farm Operator. Please note that there will be no permanent tenants will be allowed to vacate in the farm apart from the main farm operators and some the Johannesburg Water employees that occupied the farm prior new lease agreement.

Main operators will be subjected to the following conditions;

- The lessee will be required to submit a detailed report at the conclusion of each year that summarizes issues, challenges and accomplishments such as yields, number of jobs created and community empowerment programs
- Obtaining and maintaining water supplies and distribution systems
- Application of soil improvements, alien plants, pest and weed control products in accordance with generally accepted practices that are in line with the Environmental regulations
- Arrangements for the approvals by Johannesburg Water (JW) of all structures and improvements to be constructed on the premises, including future improvements and the timing of all such improvements

5. SAFETY AND ENVIRONMENTAL COMPLIANCE

The tenderer shall submit a safety file with the following:

- Proof of Registration with the Compensation Commissioner
- Letter of “Good Standing” with Compensation Commissioner
- Certified copy of first aid certificate
- Physical address where contract is taking place (on Company letterhead)
- Detailed description of intended work (on Company letterhead)
- List of all Personal Protective Equipment issued to employees (company letterhead)
- List of ALL employees on site (on company letterhead)



- Detailed Health and Safety Plan (on company letterhead)
- Comprehensive Risk Assessment (Qualification and Contact details of Risk Assessor)
- Public Liability and Commercial Insurance Certificate.
- All related statutory appointments.
- Certificates of relevant Training

The tenderer must ensure that he conforms to all safety and environmental regulations, and that the requirements of the Occupational Health and Safety Act No 85 of 1993, Environmental Conservation Act. No.73 of 1989 and the minimum requirements of waste disposal by landfill 2005: Edition 3 is met at all times.

The Maintenance of other Services proposal must contain the following:

NOTE: Existing and future leases will have to be honored e.g. Northern Farm Recreational User Group, which includes Bird Watching, Mountain Biking and Equestrian usage

The following activities are permitted on the Premises:

Hiking, Birding, Picnicking, Activities for Disabled, Kayaking, Canoeing, Horse Riding, Mountain Biking, Outward Bound, Dog Sledding, Social activities incidental to the above recreation. No activities other than those listed are permitted. **Any other new activities to be agreed upon with JW**

The lease will include provisions on operations on the premises, maintenance, reporting, rentals and other matters. The terms and conditions of the lease will be specific to each portion of farm and the operations proposed thereon; however, the lease will be informed by the Johannesburg Water relevant approved policies.

- Refrain from engaging in any construction activity without the prior written approval of JW that will contain specifications.
- Refrain from erecting any signpost without the prior written approval of JW that will contain specifications.
- Refrain from using any of the water sources without the prior written approval of JW that contain specifications.



SPECIAL CONDITIONS

GENERAL

NB The attention of the tenderer is drawn to the fact that General Conditions of Contract shall apply, where applicable, to this contract.

1. DEFINITIONS:

- 1.1 That "Johannesburg Water (Soc) Ltd" shall herein after be referred to as "JW".
- 1.2 The "Managing Director" shall mean the Managing Director: Johannesburg Water (Soc) Ltd or his authorised representative.
- 1.3 "Vat" shall mean Value Added Tax in terms of the Value Added Tax Act 89 of 1991 as amended.

2. PRICE:

- 2.1 All prices shall exclude Value Added Tax at the standard rate as gazetted from time to time by the Minister of Finance in terms of the Value Added Tax Act 89 of 1991 as amended.
- 2.2 All price(s) tendered shall include the cost of all insurances, services, labour, equipment, materials, etc. and be the net price after all discounts and settlement discount have been deducted. The net price/s shall be without any extra or additional charges to JW whatsoever.
- 2.3 A firm price tender will be preferred for the duration of the contract, for tender evaluation and budgeting purposes.

3. SURETY BOND

- 3.1 No surety bond shall be required in terms of this contract.

4. COMPLIANCE WITH LEGISLATION AND SPECIFICATIO N:

- 4.1 The Contractor shall comply with all Municipal By-laws (COJ) and any other Laws, Regulations or Ordinances and shall give all notices and pay all fees required by the provisions of such By-laws and Regulations specified therein.
- 4.2 The Contractor shall comply with the National Environmental Act: Waste Act 59 of 2008
- 4.3 The Contractor shall comply with all the requirements prescribed in the JW 7 specification

5. SAFETY:

- 5.1 Without derogation from the generality of Clause 4.1, or from any other provision of this contract, the Contractor shall at all times during the contract, comply in all respects with the safety and other requirements of the Occupational Health and Safety Act of 1993 and the regulations applicable hereunder.



**6. EMPLOYMENT
OF LABOUR:**

- 6.1 The Contractor must ensure that all relevant legislation is complied with in the employment of labour.

**7.INSURANCE
AND
INDEMNIFI-
CATION:**

- 7.1 In addition to any insurance required to be held by the Contractor in terms of the Contract in terms of the Occupational Injuries and Diseases Act no. 130 of 1993, the Contractor must be fully insured against all accidents, loss or damage arising out of the conditions or operation of the vehicles or execution of any work including all third party risks. The Contractor hereby indemnifies and agrees to keep indemnified throughout the period of the contract JW against all claims by third parties or the Contractor's own employees resulting from the operations carried out by the Contractor under this contract.
- 7.2 A current certificate of good standing in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 must be furnished by the Contractor within 21 days of notification of acceptance of the tender.
- 7.3 The Contractor shall be liable for any damages or injury of whatever nature caused directly or indirectly as a result of his operations, to any of JW's or Municipal Government or Private Property or to his own vehicles and personnel.
- 7.4 Copies of such insurances and indemnifications must be supplied to JW within 21 days of notification of acceptance of the tender.

**8. REMEDIES,
BREACH,
WHOLE
AGREEMENT,
WAIVER,
VARIATION
AND
INDULGENCES**

- 8.1 If the Contractor or any person employed or associated with him or in the case of a Company, a Director or shareholder or person also associated with such Company, either directly or indirectly gives or offers to give any gratuity, reward or commission or other bribe to any person in the employ of JW this contract shall be avoidable at the instance of JW.
- 8.2 If the Contractor has not complied with the Managing Director's requirements or if he is in breach of any of the Conditions of this contract and:
- 8.2.1 fails to remedy such breach within 14 (fourteen) days of receipt of written notice requiring it to do so (or if not reasonably possible to remedy the breach within 14 (fourteen days), within such further period as may be reasonable in the circumstances, provided that the Contractor furnishes evidence within the period of 14 (fourteen) days reasonably satisfactory to JW, that it has taken whatever steps are available to it to commence remedying the breach), then the JW shall be entitled, without notice and in addition to any other remedy available to it at law or under this



agreement, including obtaining an interdict, to cancel this agreement or to claim specific performance of any obligation whether or not the due date for performance has arrived, in either event without prejudice to JW's right to claim damages

8.2.2 Should JW elect to cancel the contract then and in such instance a certificate presented by the Managing Director of JW shall constitute proof of the contractor's indebtedness to JW.

8.3 This agreement constitutes the entire agreement between the parties relating to the matter hereof.

8.4 No amendment or consensual cancellation of this agreement or any provision or term hereof or of any agreement, bill of exchange or other document issued or executed pursuant to or in terms of this agreement and no settlement of any dispute arising under this agreement and no extension of the time, waiver or relaxation or suspension of any of the provisions or terms of this agreement or of any agreement, bill of exchange or other document issued pursuant to or in terms of this agreement shall be binding unless recorded in a written document signed by the parties. Any such extension, waiver or relaxation or suspension, which is so given or made, shall be strictly construed as relating to the matter in respect whereof it was made or given.

9. DISPUTES:

9.1 In the event of any dispute arising between JW and the Contractor in connection with or arising out of the contract, it shall be referred to the Managing Director of JW who shall state his decision in writing and give notice of the same to the Contractor within 28 days of the dispute having been submitted to the Managing Director of JW. Such decision shall be binding upon the Contractor subject to clause 9.2

9.2 Should the Contractor be dissatisfied with the decision of the Managing Director he/she may, within 28 days after receiving notice of such decision, require that the issue or issues be referred to a single arbitrator to be agreed upon between the parties or, failing agreement, to be nominated by the Chairman of the Association of Arbitrators and any such reference shall be deemed to be submission to the arbitration of a single arbitrator in terms of the Arbitration Act, 1965. The award of the arbitrator shall be final and binding on both parties.

9.3 Not later than one week after receipt of notice calling for arbitration, JW may give notice to the Contractor that the dispute or disputes be settled by Court of Law having jurisdiction.

10 SCOPE OF

10.1 The Contractor shall make provision of farming activities aimed at ensuring



<u>CONTRACT:</u>	utilisation of approximately 10ML of substandard effluent and prevention of environmental degradation as specified in the technical specifications of the tender document for the duration of the contract.
	10.2 The Contract shall maintain all access and internal roads to the lands allocated to the operator will be maintained by the operator at his own cost. Water supply of both potable water and effluent (furrows, pipe lines, dam walls, its spill ways and valves) and internal and perimeter fencing
	10.3 The Existing and future leases will have to be honored e.g. Northern Farm Recreational User Group that includes Bird Watching, Mountain Biking and Equestrian usage.
	10.4 Maintenance will be required on any day of the week including Saturdays, Sundays and Public holidays and the contractor must be able to accommodate this requirement at no longer than six hours' notice
<u>11. DURATION:</u>	11.1 The tenure of the contract shall be with effect from the date of signing the contract for a period of three (3) years.
<u>12. SECURITY</u>	12.1 The Security to be provided by the operator at his own cost of the perimeters, entrances to the farm, secures all buildings and ensures the personal safety of staff and other residents on the farm
	12.2 Security to be provided by the operator at his own cost for any of the equipment leased including the centre pivots
	12.3 The ad-hoc requirement cannot be estimated
<u>13.REQUIREMENTS</u>	13.1 The Farm Operator and all third parties will enter into a Service Level Agreement (SLA) with Johannesburg Water for a period of the contract.
<u>14.TENDER VALIDITY:</u>	14.1 The Tender shall be valid for a period of 90 days from the date of closing of Tenders.
<u>15.ADJUDICATION OF TENDERS:</u>	15.1 The highest, lowest or any tender will not necessarily be accepted by JW. JW reserves the right to adjudicate the Tender to JW's best interest and it is not necessarily intended to award the Contract to only one Contractor.
<u>16.ACCEPTANCE OF TENDER:</u>	16.1 A valid and binding contract shall be concluded at the time that the contractor signs an official Contract Document at the offices of JW after the contractor is in possession of the letter of acceptance.
<u>18.METHOD OF</u>	18.1 The Contractor shall be responsible for the maintenance and fuelling of the



WORKING:

vehicles

- 18.2 The Contractor shall have an adequate reserve of vehicles or shall make adequate arrangements for replacements to be available. Should the removal of sludge at inlet works be hampered due the Contractor not being able to supply vehicles, the JW Contract Manager will be authorised to hire a sub-contractor/s to remove the sludge. Any cost associated with hiring of the sub-contractor/s shall be for the account on the Contractor and will be deducted from any money due to him.
- 18.3 Any damage caused by the Contractor due to non-performance shall be reinstated by the Contractor within 14 days of occurrence. Failure to reinstate within the specified period will result in JW repairing the damages at the Contractor's expense, which shall be deducted from any money due to him.

**19.PENALTIES
FOR FAILURE TO
DELIVER**

- 19.1 If the Contractor's vehicles breakdowns or becomes defective so as to be unable to perform the tasks required and so cause delay of work at anytime, such vehicle shall be replaced within 24 hours from the time of such breakdown.
- 19.2 In the event the Contractor being unable to supply the replacement vehicle within the time stipulated by clause 19.1, the following procedure for applying penalties will be adopted:
- 19.2.1 Penalties will be applied for successive 1 day periods or thereof calculated after the end of the one day period stipulated in Clause 19.1,
- 19.3 Penalties will be applied by the Bulk Wastewater Manager. The daily rate in this sub-clause will be taken as the total average daily rate for the proceeding 5 working days.
- 19.4 No liability in terms of Clause 19.1 shall attach to the Contractor if he shall prove to the satisfaction of the Engineer that the delivery has been delayed or become impossible due to fire, war, riot, strikes, natural disaster, lockout, accident or other unforeseen occurrences or circumstances beyond the Contractors control, provided, however, that in all cases the Contractor has notified Johannesburg Water in writing within 24 (Twenty-four) hours of it first coming to the Contractor's notices, that delivery will be delayed or become impossible for the abovementioned reasons.

21.ENQUIRIES

- 21.1 Any enquiries may be obtained from Clifford Mpofu on 011 688 1547 or clifford.mpofu@jwater.co.za



22. NOTICE

- 22.1 Any notice or communication required or permitted to be given in terms of this agreement shall be valid and effective only if in writing and may be given in one or more of the following manners:-
- 22.1.1 Sent by prepaid registered post (by airmail if appropriate) in an envelope correctly addressed to it at an address chosen as its *domicilium citandi et executandi* to which post it is delivered, in which event such notice shall be deemed to have been received on the 7th (seventh) business day after posting (unless the contrary is proved); or
- 22.1.2 Delivered by hand to a responsible person during ordinary business hours at the physical address chosen as its *domicilium citandi et executandi*, in which event such notice shall be deemed to have been received on the day of delivery; or
- 22.1.3 Sent by telefax to its chosen telefax number stipulated in 16.1, in which event such notice shall be deemed to have been received on the date of dispatch (unless the contrary is proved).
- 22.2 notwithstanding anything to the contrary herein contained a written notice or communication actually received by a party shall be adequate written notice or communication to it notwithstanding that it was not sent to or delivered at its *domicilium citandi et executandi*.



CONTRACT NO. JW OPS 038/19R
LEASE FOR NORTHERN FARM



PRICING SCHEDULE

PRICE SCHEDULE

To: **Johannesburg Water (SOC) Ltd.**

Having examined the bidding documents including Addenda Nos. _____ [insert numbers], the receipt of which is hereby duly acknowledged, we, the undersigned, tender for the **Lease for Northern Farm** as specified, in conformity with the said bidding documents and as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to supply this service in accordance with the requirements specified in the tender document.

We agree to abide by this Bid for a period of ninety (90) days from the date fixed for Bid opening, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We understand that JW is not bound to accept the lowest or any bid received or may award the tender in whole or in part.

It is also agreed that the quantities indicated are approximate and may vary either way due to requirements. Should my/our tender be successful, it be understood that a contract will come into existence for a period of three (3) years, which will commence from the date indicated in the letter of appointment.



PRICING SCHEDULE

PRICE SCHEDULE

NB: The evaluation on price alteration will be conducted as follows:

1. Where the tender award strategy is to evaluate and award per item or category, the following must apply:

- i. If there is an alteration on the rate but no alteration on the total for the item or category, the bidder will not be disqualified
- ii. If there is an alteration on the total for the item/s without authentication, bidders will only be disqualified for alteration per item or category.

2. Where the tender award strategy is to evaluate and award total bid offer, the following must apply:

- i. If there is an alteration on the rate, total for the line item, sub-total/ sum brought/carried forward for the section but no alteration on the total bid offer, the bidder will not be disqualified.
- ii. If there is an alteration on the total bid offer on form of offer, then the amount in words must be considered or vice-versa.

If there is an alteration on the total bid offer and the amount in words without authentication, the bidders will be disqualified for the entire tender

**BID DOCUMENTS MUST BE COMPLETED USING NON-ERASABLE BLACK INK.
BIDS THAT ARE RECEIVED CONTRARY TO THIS REQUIREMENT WILL BE
DISQUALIFIED**

Tender documents may be completed electronically without altering or tampering with any of the terms, conditions, specifications etc. in the tender documents. Bids that are received contrary to this requirement will be disqualified.

Also note:

1. All rates offered on the pricing schedule must be **Exclusive of VAT**
2. Tender prices must include all transport, labor and any equipment required to execute the maintenance activities of Northern Farm.
3. Tenderers are to indicate the applicable items and the annual cost relative thereto. These will be costs payable to Johannesburg Water on a monthly basis.



**CONTRACT NO. JW OPS 038/19R
LEASE FOR NORTHERN FARM**



PRICING SCHEDULE

PRICING SCHEDULE:

Rental of Farm		
Period	Rate Per Month (excl. VAT)	Rate Per Annum (excl. VAT)
YEAR 1	R	R
YEAR 2	R	R
YEAR 3	R	R
Total Year 1, Year 2, Year 3 (Excl. VAT)	R	R
15% VAT	R	R
Total VAT Inclusive	R	R

Note: In addition to the above amounts, the lessee will be required to pay all municipal charges including rates and taxes levied on the property. The rates and taxes will be levied by JW in accordance with approved tariffs and will become payable from the date the lessee takes possession of the site

CONTRACT PRICE

This is a firm tender.

Failure to adhere to this requirement will prejudice your tender

Name of tenderer (in full): _____

Telephone number: _____

e-mail: _____

Name of person authorized
to sign this tender: _____
(BLOCK LETTERS)

Signature: _____ Date: _____ 2022

PRICING SCHEDULE – FIRM PRICES (PURCHASES)

NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder.....	Bid Number.....
Closing Time	Closing Date

TENDER TO BE VALID FOR.....90...DAYS FROM THE CLOSING DATE OF BID.

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
----------	----------	-------------	--

-
- Required by:
 - At:
.....
 - Brand and Model
 - Country of Origin
.....
 - Does the offer comply with the specification(s)? *YES/NO
 - If not to specification, indicate deviation(s)
 - Period required for delivery
*Delivery: Firm
 - Delivery basis

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.

** "all applicable taxes" includes value- added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies.

*Delete if not applicable

MBD 4

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

3.1 Full Name of bidder or his or her representative:.....

3.2 Identity Number:

3.3 Position occupied in the Company (director, trustee, hareholder²):.....

3.4 Company Registration Number:

3.5 Tax Reference Number:.....

3.6 VAT Registration Number:

3.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 4 below.

3.8 Are you presently in the service of the state? **YES / NO**

3.8.1 If yes, furnish particulars.

.....

¹MSCM Regulations: "in the service of the state" means to be –

(a) a member of –

- (i) any municipal council;
- (ii) any provincial legislature; or
- (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;

(c) an official of any municipality or municipal entity;

(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);

(e) a member of the accounting authority of any national or provincial public entity; or

(f) an employee of Parliament or a provincial legislature.

² Shareholder" means a person who owns shares in the company and is actively involved in the management of the company or business and exercises control over the company.

3.9 Have you been in the service of the state for the past twelve months? **YES / NO**

3.9.1 If yes, furnish particulars.....

.....

3.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.10.1 If yes, furnish particulars.

.....

.....

3.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

3.11.1 If yes, furnish particulars

.....

.....

3.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.12.1 If yes, furnish particulars.

.....

.....

3.13 Are any spouse, child or parent of the company's directors trustees, managers, principle shareholders or stakeholders in service of the state? **YES / NO**

3.13.1 If yes, furnish particulars.

.....

.....

3.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract. **YES / NO**

3.14.1 If yes, furnish particulars:

.....

.....

4. Full details of directors / trustees / members / shareholders.

Full Name	Identity Number	State Employee Number

.....
Signature

.....
Date

.....
Capacity

.....
Name of Bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2.1.2

- a) The value of this bid is estimated to **not exceed** R50 000 000 (all applicable taxes included) and therefore the **80/20.....** preference point system shall be applicable; or
- b) The 80/20 preference point system will be applicable to this tender (*delete whichever is not applicable for this tender*).

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	100

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“price”** includes all applicable taxes less all unconditional discounts;
- (h) **“proof of B-BBEE status level of contributor”** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (i) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

4. POINTS AWARDED FOR PRICE

4.1 FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME-GENERATING PROCUREMENT

4.2 POINTS AWARDED FOR PRICE

A maximum of 80 is allocated for price on the following basis:

80/20

$$P_s = 80 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right)$$

Where

- P_s = Points scored for price of bid under consideration
- P_t = Price of bid under consideration
- P_{max} = Price of highest acceptable bid

5. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

- 5.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

6. BID DECLARATION

- 6.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

7. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

- 7.1 B-BBEE Status Level of Contributor: . =(maximum of 10 or 20 points)
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.)

8. SUB-CONTRACTING

- 8.1 Will any portion of the contract be sub-contracted?
(*Tick applicable box*)

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

- 8.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted..... %
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE
(Tick applicable box)
- | | | | |
|-----|--|----|--|
| YES | | NO | |
|-----|--|----|--|
- v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

9. DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of company/firm:.....

9.2 VAT registration number:.....

9.3 Company registration number:.....

9.4 TYPE OF COMPANY/ FIRM

- Y Partnership/Joint Venture / Consortium
- Y One person business/sole propriety
- Y Close corporation
- Y Company
- Y (Pty) Limited
- [TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

.....

9.6 COMPANY CLASSIFICATION

- Y Manufacturer
- Y Supplier
- Y Professional service provider

Y Other service providers, e.g. transporter, etc.
 [TICK APPLICABLE BOX]

9.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:.....

9.8 Total number of years the company/firm has been in business:.....

9.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....
 SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - a. abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - b. been convicted for fraud or corruption during the past five years;
 - c. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - d. been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	<p>Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector?</p> <p>(Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p>The Database of Restricted Suppliers now resides on the National Treasury's website(www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	<p>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)?</p> <p>The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

4.3.1	If so, furnish particulars:		
Item	Question	Yes	No
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.7.1	If so, furnish particulars:		

CERTIFICATION

**I, THE UNDERSIGNED (FULL NAME)
CERTIFY THAT THE INFORMATION FURNISHED ON THIS
DECLARATION FORM TRUE AND CORRECT.**

**I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT,
ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION
PROVE TO BE FALSE.**

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Municipal Bidding Document (MBD) must form part of all bids¹ invited.

- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

- 3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - a. take all reasonable steps to prevent such abuse;
 - b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

- 4 This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

- 5 In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

¹ Includes price quotations, advertised competitive bids, limited bids and proposals.

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of:_____that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder



JOHANNESBURG WATER (SOC) LTD

**GENERAL CONDITIONS OF
CONTRACT**

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1. Definitions 1. The following terms shall be interpreted as indicated:

1.1 "Closing time" means the date and hour specified in the bidding documents for the receipt of bids.

1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 "Country of origin" means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 "Day" means calendar day.

1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.

1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.

1.10 "Delivery into consignees store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the goods are so delivered and a valid receipt is obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 "Force majeure" means an event beyond the control of the supplier and not involving the supplier's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 "GCC" means the General Conditions of Contract.

1.15 "Goods" means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 "Imported content" means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the

supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the goods covered by the bid will be manufactured.

1.17 "Local content" means that portion of the bidding price, which is not included in the imported content provided that local manufacture does take place.

1.18 "Manufacture" means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 "Order" means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 "Project site," where applicable, means the place indicated in bidding documents.

1.21 "Purchaser" means the organization purchasing the goods.

1.22 "Republic" means the Republic of South Africa.

1.23 "SCC" means the Special Conditions of Contract.

1.24 "Services" means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 "Supplier" means the successful bidder who is awarded the contract to maintain and administer the required and specified service(s) to the State.

1.26 "Tort" means Delict

1.27 "Turnkey" means a procurement process where one service provider assumes total responsibility for all aspects of the project and delivers the full end product / service required by the contract.

1.28 "Written" or "in writing" means hand-written in ink or any form of electronic or mechanical writing.

2. Application

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services (excluding professional services related to the building and construction industry), sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific goods, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General 3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2 Invitations to bid are usually published in locally distributed news media and on the municipality/municipal entity website.

4. Standards 4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information inspection

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and to have them audited by auditors appointed by the purchaser, if so required by the purchaser.

6. Patent Rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

6.2 When a supplier develops documentation / projects for the municipal owned entity (MOE), the MOE shall retain ownership of any written opinion, advice, presentation or other deliverable that the supplier produces for the MOE in its tangible form on payment of all fees due, owing and payable to the supplier. The ownership of the intellectual property rights in the services, products of the services and the methodology and technology used to perform the services and all its working papers shall be retained by the supplier.

7. Performance security

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

- (a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
- (b) a cashier's or certified cheque.

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's

performance obligations under the contract, including any warranty obligations, unless otherwise specified.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder.

8.2 If it is a bid condition that goods to be produced or services to be rendered should at any stage be subject to inspections, tests and analyses, the bidder or contractor's premises shall be open, at all reasonable hours, for inspection by a representative of the purchaser or organization acting on behalf of the purchaser.

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the goods to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the goods or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such goods or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Goods and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract goods may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected goods shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with goods, which do comply with the requirements of the contract. Failing such removal the rejected goods shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute goods forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected goods, purchase such goods as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 22 of GCC.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods and arrangements for shipping and clearance obligations, shall be made by the supplier in accordance with the terms specified in the contract.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified.

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified.

13. Incidental Services

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any:

(a) performance or supervision of on-site assembly and/or commissioning of the supplied goods;

(b) furnishing of tools required for assembly and/or maintenance of the supplied goods;

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;

(d) performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

(e) training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

14. Spare parts

14.1 As specified, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and

(b) in the event of termination of production of the spare parts:

(i) advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

(ii) following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment 16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.

16.3 Payment shall be made within 30 days of receipt of the supplier statement, provided the statement submitted is correct and submitted to Johannesburg Water before the end of the month. The invoice for which payment is required must be correct, must be reflected on the statement referred to above and also be submitted by no later than the end of the month.

16.4 Payment will be made in Rands unless otherwise stipulated.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized or in the purchaser's request for bid validity extension, as the case may be.

18. Variation in contractual hours

18.1 In the event that work to be performed in terms of this contract be completed in less than the envisaged time, or in the event that the duration of such work exceeds the envisaged time pursuant to the approval by JW of an exception report referred to in clause 8 of the Scope of Work, the rate per hour payable to the contractor shall remain the same.

19. Assignment 19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the goods are required, or the supplier's services are not readily available.

21.4 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of penalties.

21.5 Upon any delay beyond the delivery period in the case of a goods contract, the purchaser shall, without cancelling the contract, be entitled to purchase goods of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) if the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) if the supplier fails to perform any other obligation(s) under the contract; or

(c) if the supplier, in the judgement of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner, as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the supplier as having no objection and proceed with the restriction.

23.5 . Any restriction imposed on any person by the purchaser will, at the discretion of the purchaser, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the purchaser actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

- (i) the name and address of the supplier and / or person restricted by the purchaser;
- (ii) the date of commencement of the restriction
- (iii) the period of restriction; and
- (iv) the reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 . If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters.

When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website

24. Antidumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the supplier to the purchaser or the purchaser may deduct such amounts from moneys (if any) which may otherwise be due to the supplier in regard to goods or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the

purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Notwithstanding any reference to mediation and/or court proceedings herein,
(a) the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and

(b) the purchaser shall pay the supplier any monies due the supplier for goods delivered and / or services rendered according to the prescripts of the contract.

28. Limitation of Liability

28.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6;

(a) the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and

(b) the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified.

31. Notices 31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by

ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid SARS must have certified that the tax matters of the preferred bidder are in order.

32.4 No contract shall be concluded with any bidder whose municipal rates and taxes and municipal services charges are in arrears.

33. Transfer of contracts

33.1 The contractor shall not abandon, transfer, cede assign or sublet a contract or part thereof without the written permission of the purchaser

34. Amendment of contracts


34.1 No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement that the agreement to amend or vary shall be in writing, shall also be in writing.

35. Prohibition of restrictive practices

35.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder(s) is / are or a contractor(s) was / were involved in collusive bidding.

35.2 If a bidder(s) or contractor(s) based on reasonable grounds or evidence obtained by the purchaser has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in section 59 of the Competition Act No 89 Of 1998.

35.3 If a bidder(s) or contractor(s) has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

 Johannesburg Water	SAFETY, HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION	
	TENDER NUMBER:	JW OPS 038/19R
	PROJECT LOCATION:	Northern Farm
	PROJECT DESCRIPTION:	Leasing of Northern Farm

Returnable Annexure A: Acknowledgement of SHE Specification & Annexures

DECLARATION BY CONTRACTOR

I, the undersigned, and representing the tenderer as indicated hereby acknowledge that I have obtained copies of the following listed documentation and confirm that I fully understand the contents thereof and confirm compliance thereto in the event of being successful:

OHS Specification (Volume 2)

- Annexure 1: Baseline Risk Assessment
- Annexure 2: Medical Screening Policy
- Annexure 3: Contractor Competency Evaluation
- Annexure 4: Sign off form
- Annexure 5: Environmental Management Plan
- Annexure 6: Waste Management Plan

We furthermore commit to:

- Comply with all applicable SHE related legal and other requirements.
- Inform all staff of their role in managing environmental impacts and safety hazards on site.

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

Name of tenderer	
Name of Authorized person	
Authorized Signature*	



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 1: BASELINE RISK ASSESSMENT



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 2: MEDICAL SCREENING POLICY



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 3: CONTRACTOR COMPETENCY EVALUATION



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 4:

SIGN OFF FORM



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 5: ENVIRONMENTAL MANAGEMENT PLAN



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 6: WASTE MANAGEMENT PLAN



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 7: COVID-19 GUIDELINES



SAFETY , HEALTH & ENVIRONMENTAL (SHE) SPECIFICATION

PROJECT NUMBER:	JW OPS 038/19R
PROJECT LOCATION:	NORTHERN FARM
PROJECT DESCR:	LEASE FOR NORTHERN FARM

ANNEXURE 8:

COVID-19 RISK ASSESSMENT

Johannesburg Water SOC Ltd



Environmental Management Plan

Prepared By:

OHSE & DM

Environmental Section

PO Box 61542

Marshalltown

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DISCLAIMER

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LIST OF APPENDICES

- Annexure A:** Acknowledgement of Environmental Management Plan (EMP)
- Annexure B:** Contractors Environmental File Evaluation Form
- Annexure C:** Environmental Work Instruction

LIST OF ACRONYMS

Acronym	Description
BA	Basic Assessment
BAR	Basic Assessment Report
CA	Competent Authority
DEA	Department of Environmental Affairs

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DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EO	Environmental Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme Report
GDARD	Gauteng Department of Agriculture and Rural Development
GN	Government Notice
I&AP	Interested and Affected Party
JW	Johannesburg Water
km	Kilometre
m	meter
MSDS	Material Safety Data Sheets
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PHRAG	Provincial Heritage Resources Authority for Gauteng
RE	Resident Engineer
WUL	Water Use License
WULA	Water Use License Application
WWTW	Wastewater Treatment Works

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DEFINITIONS

Environment

The surroundings in which humans exist and which comprise of:

- Land, water and atmosphere of the earth.
- Micro-organisms, plant and animal life.
- Any part or combination of a) and b) and the interrelationships among and between them.
- The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that can influence human health and well-being.

Environmental Aspect

Those components of the company's activities, products and services that is likely to interact with the environment.

Environmental Authorisation

The written statement from the relevant environmental authority in terms of the National Environmental Management Act (Act 107 of 1998), with or without conditions, that records its approval of a planned activity and the implementation thereof and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

Environmental Impact Assessment (EIA)

The decision making process of examining the environmental impacts of a development in terms of the NEMA (107 of 1998) and the EIA Regulations (Government Notice No.R982, R983, R984, R985 and R986).

Environmental Management Programme (EMPR)

An environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced.

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Environmental Management System (EMS)

A set of process and practices that enable an organization to reduce its environmental impacts and increase its operational efficiency. The EMS provides a framework that helps a company achieve its environmental goals through consistent control of its operations.

Auditing

A systematic and objective assessment of an organization's activities and services conducted and documented on a periodic basis internally and externally.

Environmental Objective

An overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable.

Environmental Target

A detailed performance requirement, quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.

Floodplain

A flat expanse of land bordering a river channel, formed through sediment deposition and other alluvial processes, and often characterized by frequent flooding as a result of bank overspill from the river channel.

Groundwater

Sub-surface water in the zone in which permeable rocks, and often the overlying soil, are saturated.

Hazardous waste

Waste that are proven to be toxic, corrosive, explosive, flammable, carcinogenic, radioactive, poisonous or classified as such in legal terms.

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Heritage Resource

Any place or object of cultural significance including buildings, structures, landscapes, graves and geological, archaeological artefacts and paleontological sites.

Landscape

Land modified for human use and occupation, embracing both the natural (wilderness) environment and the urban.

Management actions

Practical actions aimed at achieving management objectives and targets.

Management objectives

Desired outcome of management measures for mitigating negative impacts and enhancing the positive impacts related to project activities and aspects (i.e. risk sources).

Monitoring

A systematic and objective observation of an organization's activities and services conducted and reported on regularly.

Natural Vegetation

All existing vegetation species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on the site.

Pollution

Any change in the environment caused by substances, radioactive or other waves, or noise, odours, dust or heat, emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or

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managed ecosystems, or on materials useful to people, or will have such an effect in the future. Furthermore pollution can also be regarded as an undesirable state of the natural environment being contaminated with harmful substances as a consequence of human activities.

Protected Plants

Plant species officially listed on the Protected Plants List (each province has one), and which may not be removed or transported without a permit to do so from the relevant provincial authority.

Reinstatement

Reinstatement is defined as the return of a disturbed area to a state, which approximates the state (where possible), which it was before disruption.

Riparian Habitat

The physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterised by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent land areas.

Runoff

The total water yield from a catchment including surface and subsurface flow.

Sensitive environmental features

Environmental features protected by legislation (e.g. heritage resources), or identified during the EIA as sensitive through specialists' findings and input received from Interested and Affected Parties.

Subsoil

The soil horizons between the topsoil horizon and the underlying parent rock.

Topsoil

Topsoil can be regarded as the fertile upper part or surface of the soil.

Transplanting

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The removal of plant material and replanting the same plants in another designated position.

Veld

Unimproved areas of natural vegetation

Wastewater

Means water contaminated by the project activities.

Watercourse

A geomorphological feature characterized by the presence of a stream flow channel, a floodplain and a transitional upland fringe seasonally or permanently conveying surface water.

Waterlogged

Soil or land saturated with water long enough for anaerobic conditions to develop.

Weeds and Invader Plants

Weeds and invader plants are defined as undesirable plant growth that shall include, but not be limited to all declared category 1, 2 and 3 listed invader species as set out in the Conservation of Agricultural Resources Act (No 43 of 1983) regulations. Other vegetation deemed to be invasive should be those plant species that show the potential to occupy in number, any area within the defined construction area.

Wetland

Land where a surplus of water (i.e. waterlogging) is the key factor determining the nature of the soil development as well as the types of plants and animals living at the soil surface.

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1. BACKGROUND

The purpose of this document is to provide management measures that will ensure that potential negative impacts associated with the activity are minimized whilst positive impacts are optimised, provided that the EMP is implemented by a suitably qualified Environmental Officer (EO). The proponent developer, the main contractor and the sub- contractor are responsible for the implementation of the EMP throughout the stages. Therefore it is imperative that the EMP is circulated to site managers, contractors and Depots who will perform any work on site which has the potential to cause environmental damage. Any parties responsible for transgression of the underlying management measures outlined in this document will be held liable for non-compliances.

The following is a generic EMP to mitigate against “generally occurring impacts” associated with the construction phase of Johannesburg Water’s activities. "Generally occurring impacts" refers to potential impacts typical of Johannesburg Water’s activities, and are not restricted to a single or specific site. The findings of this EMP will be implemented at all sites.

This section forms an integral part of the **Contract Specification** and, in particular, shall be a part of the

ENVIRONMENTAL MANAGEMENT PLAN FOR DESING, CONSTRUCTION AND OPERATIONAL ACTIVITIES.

PURPOSE

The purpose of this EMP is to ensure that Johannesburg Water conducts all its activities related to the construction and maintenance in accordance with the provisions of NEMA, and other applicable legislations. This EMP has taken into account the provisions of the Constitution and the principles of Integrated Environmental Management.

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2. APPLICABLE LEGISLATIONS

Several laws and regulations apply to the protection of the environment and contain environmental principles and standards that need to be applied and permits and licences that need to be obtained. This EMP will be subject to regulatory control under a range of State, Provincial and Local regulations. Such legislation largely embraces pollution prevention, resource use and conservation, and socio cultural (heritage) protection. This chapter reviews legislation pertaining to this generic EMP.

According to Section 2 (1, 2 & 3) of the National Environmental Management Act No. 107 of 1998 (NEMA), all organs of state have to apply certain principles set out in NEMA when taking decisions that may significantly affect the environment. The key principles of this Act include that all “actions” that they approve must be economically, socially and environmentally sustainable. It further states that “people and their needs” must be at the forefront of “its concern” and their interests must be served equitably.

These legislative requirements include, but are not limited to, the provisions of the legislation represented is described below:

The Constitution of the Republic of South Africa Act No. 108 of 1996)

Section 24 of the Constitution of South Africa (Act 108 of 1996) states that “Everyone has the right (a) to an environment that is not harmful to their health or well-being; and

(b) To have the environment protected, for the benefit of present and future generations through reasonable legislative and other”

Measures that:

- Prevent pollution and ecological degradation;
- Promote conservation; and
- Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.
- Section 152 of the Constitution states that the objectives of local government are to:

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- Ensure that services are provided to communities in a sustainable manner;
- Promote social and economic development; and
- Promote a safe and healthy environment.

National Environmental Management Act, Act No. 107 of 1998 (as amended)

The National Environmental Management Act 107 of 1998 (NEMA) requires that an environmental authorization is obtained before activities, which have been listed in terms of NEMA, are commenced with. The failure to obtain such an environmental authorization, before commencing with listed activities, could result in administrative sanctions, including compliance notices or directives ordering the cessation of the operations until authorized; and fines of up to ZAR10 million for each such contravention.

The Environmental Impact Assessment Regulations (EIA Regulations) set out the process to be followed in applying for an environmental authorization, while the listing notices; list the activities that require authorization (the Listing Notices). National Environmental Management Act (NEMA) 107 of 1998 amended in 07 of April 2017. The following are the listed activities:

- EIA Regulations GNR 326
- Listing Notice 1; Government Notice Number (GNR) 327 (Basic Assessment).
- Listing Notice 2; Government Notice Number (GNR) 325 (Full EIA/ Scoping & Environmental Impact Report).
- Listing Notice 3; GNR 324 (It applies on both Basic Assessment and full EIA).

National Environmental Management: Biodiversity Act, Act No. 10 of 2004

Provides management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act 107 of 1998; the protection of species and ecosystems that warrant national protection and the sustainable use of indigenous biological resources.

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The National Environmental Management Waste Act, Act 59 of 2008

The National Environmental Management Waste Act (NEMWA) reforms the law regulating waste management in order to protect health and the environment providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

The Occupational Health and Safety Act, Act No. 85 of 1993

The Occupational Health and Safety Act make provision in regulation

- Section 8 for the general duties of employers to their employees.
- Section 9 of the Regulations makes provision for general duties of employers and self-employed persons to persons other than their employees.

National Heritage Resources Act (NHRA) 1999 Act No. 25 of 1999

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act. The South African National Heritage Resources Agency (SAHRA) is the responsible authority for implementing the National Heritage Resources Act (NHRA) 1999, (Act 25 of 1999).

Section 38(1) of the NHRA lists development activities that would require authorisation by the responsible heritage resources authority. Activities considered applicable to the proposed project include the following:

- (c) Any development or other activity which will change the character of a site:*
 - (i) Exceeding 5 000 m2 in extent; and*
 - (ii) The rezoning of a site exceeding 10 000 m2 in extent.*

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Water Services Act, Act No. 108 of 1997

This Act provides for the rights of people to amongst others, basic sanitation. It acknowledges that there is a duty on all spheres of government to ensure that sanitation services are provided in a manner which is efficient, equitable and sustainable and that it should be sufficient for subsistence and sustainable economic activity. The provision of sanitation services must be undertaken in a manner consistent with the broader goals of water resource management. This project is in line with the Act as it aims to provide sufficient sanitation services to the region in a sustainable manner.

Conservation of Agricultural Resources (CARA) Act, Act No. 43 of 1983

The CARA aims to ensure the protection of agricultural resources such as land with agricultural potential and water and makes provision for the eradication of alien and invasive species.

NEMA Air Quality Act (AQA), Act No. 39 of 2004

The aim of this law is to regulate air quality and protect the environment in South Africa through reasonable measures to prevent pollution and ecological degradation, while securing sustainable development. The Act also provides national norms and standards for air quality management, monitoring and control. Under this legislation, Priority Air shed Areas can be proclaimed, where specific Air Quality Management Plans are applicable. Regulations are also published under this Act for the format of air quality assessments and what should be included in the assessment. The proposed Sedibeng Regional Sanitation Scheme (SRSS) is located in the Vaal Triangle Air shed Priority Area (VTAPA) as proclaimed under in National Environmental Management: Air Quality Act, Act No. 39 of 2004(NEMAQA) in Government Notice 1241 of November 2008. An Air Quality Management Plan has been compiled for the area and the proposed WwTW should be in line with this Management Plan. This Act may list activities which may result in atmospheric emissions and which may have a significant detrimental effect on the environment.

Government Gazette 32434 of 24 July 2009 listed activities, which require an atmospheric emission license before it commences. Air quality limits and thresholds are fundamental to effective air quality management,

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providing the indicators to safe exposure levels for the majority of the population. The current South African standards have been revised and National Ambient Air Quality Standards were promulgated on the 24th of December 2009 (Government Gazette No. 32816, Notice No. 1210). The newly proposed standards include particulate matter specifically PM10 (particulates with a diameter of less than 10 micrometre), sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), lead, carbon monoxide (CO) and benzene. These revised standards have been adopted as the VTAPA air quality objectives. Any emissions from the proposed WWTW should be within these standards.

National Water Act (NWA), Act 36 of 1998

Water use is controlled by the National Water Act (NWA) Act No. 36 of 1998. The NWA recognises that water is a scarce resource in South Africa and its provisions are aimed at achieving sustainable use of water to the benefit of all users. The provisions of the Act are thus aimed at discouraging pollution and waste of water resources. According to Section 21 of the NWA the following activities require a water use licence (WUL) prior construction:

- “21.(a) taking water from a water resource;
- 21.(b) storing water;
- 21.(c) impeding or diverting the flow of water in a watercourse;
- 21.(d) engaging in a stream flow reduction activity contemplated in section 36;
- 21.(e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
- 21.(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- 21.(g) disposing of waste in a manner which may detrimentally impact on a water resource;
- 21.(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
- 21.(i) altering the bed, banks, course or characteristics of a watercourse;

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- 21.(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
- 21.(k) using water for recreational purposes.”

3. OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME

The purpose of this EMP is to provide an easily interpreted reference document that ensures that the project environmental commitments, safeguards and mitigation measures from the environmental planning documents, project approvals, and Scope of Works are implemented.

The objectives for the EMP are:

- To develop, implement and maintain effective management systems for the environmental aspects ;
- To document details of environmental protection infrastructure and controls so that they are able to provide long term protection for the natural environment;
- To ensure compliance with relevant legislation (National, Provincial and Local), regulatory requirements and environmental documents;
- To maximise the value and outcomes of environmental monitoring activities so that the information can be applied to the planning and implementation of future projects;
- To ensure that all Environmental Management considerations are implemented during the operational and maintenance phases of the project.

All the Environmental specifications and the procedures discussed in this document were also developed in accordance with the relevant legislation applicable to the development.

3.1 Phases of the Project

The EMP deals with the following phases as detailed below:

3.1.1 The Planning and Design Phase

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Overall Goal for Planning and Design: Undertake the planning and design phase of the development in a way that:

- Ensures that the design of the proposed developments responds to the identified environmental constraints and opportunities.
- Ensures that the best environmental options are selected for all components of the project.
- **Ensure that there is sufficient financial provision for environmental assessment, monitoring and rehabilitation.**

The EMP offers an ideal opportunity to incorporate pro-active environmental management measures with the goal of attaining sustainable development.

Pro-active environmental measures minimize the chance of impacts taking place during the construction and operational phase. There is still the chance of accidental impacts taking place; however, through the incorporation of contingency plans (e.g. this EMP) during the planning phase, the necessary corrective action can be taken to further limit potential impacts. In order to meet this goal, actions plans for the planning and design phase have been identified together with monitoring requirements.

3.1.2 The Construction Phase

The bulk of the impacts during this phase will have immediate effect (e.g. noise-, dust- and water pollution etc.) If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from Johannesburg Water.

3.1.3 Rehabilitation / Reinstatement Phase

This phase will involve restoring the land impacted during the construction phase back to its original state. This process will mainly on rectifying the negative impacts that have been caused during construction by the

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removing pollution or contaminants and other dangerous substances from groundwater, sediment, or surface water and improvement of the soil.

3.1.4 The Operational Phase

By taking pro-active measures during the planning and construction phases, potential environmental impacts emanating during the operational phase will be minimised. This, in turn, will minimise the risk and reduce the monitoring effort, but it does not make monitoring obsolete.

4. ROLES AND RESPONSIBILITY

The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during the construction and operational phases. The stakeholders are discussed below.

4.1 Johannesburg Water

Shall:

- Ensure that the EMP is kept on JW's Sites and construction sites.
- Remain ultimately responsible for ensuring that the development is implemented according to the requirements of the EMP.
- **Ensure that the Environmental section attends all project related tender briefing sessions.**
- Although Johannesburg Water appoints specific role players to perform functions on his/her behalf, this responsibility is delegated.
- Be liable for restoring the environment in the event of negligence leading to damage to the environment.
- **Ensure that the EMP is included in the tender documentation so that the contractor who is appointed is bound to the conditions of the EMP, and there's sufficient budget for Environmental assessments and/or assessment during the planning, design, construction, decommissioning (rehabilitation) phases of the project.**
- Ensure that the contractor appointed understands and acknowledges the content of this EMP.

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- Monitor compliance with the conditions of the environmental authorisation and the EMP and compliance audits are undertaken.
- Ensure that the Environmental section signs all close out reports to confirm rehabilitation.

4.2 Appointments and competencies

- The contractor and its appointed sub-contractor must meet 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 Environmental file.

Table 1: Environmental Appointment Index

Appointment	Project Type	Legislative Ref	Competency requirements (Min)
Contractor SHE Officer	Unauthorised Project	JW EMP/ JW Waste Management Procedure	N.Dip Safety & Basic ISO14001:2015/ Basic Environmental Awareness (Introduction or Awareness to ISO14001:2015) + 2yrs exp/ OR N.Dip in Environmental Management + 2yrs exp; OR NEBOSH / SAMTRAC & Basic ISO14001:2015/ Basic Environmental Awareness (Introduction or Awareness to ISO14001:2015) + 4yrs exp Register with SACPCMP
Contractor Environmental Liaison Officer/Environmental Officer	Authorised project	JW EMP and Project Specific approved EMP /Directives/Environmental Authorisation/GA/WUL	N.Dip in Environmental Management/ + 3 years exp; BA/BSc Environmental Management + 3 years exp;
Consultant Environmental Control Officer	Authorised project (as and when required)	JW EMP and Project Specific approved EMP /Directives/Environmental Authorisation/GA/WUL	Reputable Environmental Consulting Company N.Dip or BA/BSc Environmental science or management + 3 years ' experience as an independent ECO

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4.3 The Contractor

Shall:

- Be bound to conform to the EMP conditions through his/her contract with Johannesburg Water, and is responsible for ensuring that he adheres to all the conditions of the EMP.
- Thoroughly familiarise himself/herself with the EMP requirements before construction begins and must request clarification on any aspect of these documents, should they be unclear.
- Ensure adherence to the environmental management specifications.
- Ensure that any instructions (whether verbal or written) issued by the site Manager, project manager, site engineer or EO, in terms of the EMP is adhered to.
- Ensure that a report is tabled at each site meeting, which will document all incidents report that has occurred during the period before the site meeting.
- Ensure that incidents register is kept in the site office.
- Ensure that a register of all public complaints is maintained.
- Ensure that all employees, including those of sub-contractors receive Environmental Induction before the commencement of construction in order that they can constructively contribute towards the successful implementation of the EMP (i.e. ensure their staff are appropriately trained as to the environmental obligations).
- Appoint an Environmental Liaison Officer (ELO) prior Construction for Environmental Authorised Projects.
- Appoint SHE Officer prior Construction for unauthorized projects i.e. the SHE Officer with Environmental Management experience or be trained on Environmental legislation.

4.4 Environmental Liaison Officer (ELO)/ SHE Officer:

Shall:

- Ensure that the project team is involved in all aspects of project planning that can influence environmental conditions on the site.

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- Be permanently on site during the construction phase to oversee the Contractor's internal compliance with the EMP requirements and ensuring that the environmental specifications are adhered to.
- Assist with day-to-day monitoring of the construction activities.
- Ensure that any issues raised by the EO will be routed to the SHE Officer for the contractors' attention.
- The ELO/ SHE Officer shall be permanently on site during the construction phase to oversee the Contractor's internal compliance with the EMP requirements and ensuring that the environmental specifications are adhered to.
- Be responsible for keeping detailed records of all site activities that may pertain to the environment and include all these aspects in an environmental register.
- The ELO/SHE Officer must keep a register of complaints from any community members on environmental issues.
- The ELO /SHE Officer will be required to keep a record of all on-site environmentally related incidents and how these incidents were dealt with.
- Ensure proper rehabilitation is undertaken before site closure.

4.5 Resident Engineer (RE)/ Site Agent

Shall:

- Liaise with the Contractor and Environmental Officer (EO) on environmental matters, as well as any pertinent engineering matters where these may have environmental consequences.
- Oversee the general compliance of the Contractor with the EMP and other pertinent site specifications.
- Familiarise him/herself with the EMP specifications and further monitor the Contractor's compliance with the Environmental Specifications on a daily basis, through the Site Diary, and enforce compliance.
- Ensure that Monthly Audits reach the contractor before Monthly Progress Meeting.
- Ensure proper rehabilitation is undertaken before site closure.

4.6 Project Engineer /Inspectors (PE/PI)

Shall:

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- Ensure that there is a sufficient budget for complying with all EMP conditions at the tender stage.
- Ensure sufficient budget is provided for rehabilitation/ Reinstatement.
- Ensure proper rehabilitation is undertaken before site closure.
- Ensure of all specifications and legal constraints specifically with regards to the environment are highlighted to the Contractor(s) so that they are aware of these.
- Ensure that Contractor(s) are made aware of all stipulations within the EMP.
- Ensure that the EMP is correctly implemented throughout the project by means of site inspections and meetings. This will be documented as part of the site meeting minutes.
- Be fully conversant with the EIA for the project, the EMP, the conditions of the Environmental Authorisation (if applicable), and all relevant environmental legislation.
- Ensure compliance monitoring of contractors on a day to day basis.
- Ensure adherence and implementation of the tender requirements.
- Ensure reference of specific non-compliance/non-conformance issues to the responsible units and/or contractors.

4.7 Environmental Officers

Shall:

- Be responsible for informing the contractors of any decisions that are taken concerning environmental management during the project phase. This would also include informing the contractors of the necessary corrective actions to be taken
- Liaise with environmental authorities where necessary.
- Review all the environmental documents from the Contractor, including sign off.
- Conduct environmental monthly audits of all contractors' work on site where necessary
- Maintain site documentation of related to environmental management (EMP, Method statements, audit reports, monitoring results, receipts of waste removal etc.). Documents to be maintained on the relevant site Documents Control Systems.
- Inspect and report on environmental incidents and check corrective actions.
- Conduct environmental incidents enquiries.

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- Review and sign off method statements prepared by Contractors.
- Ensure that an environmental compliance monitoring strategy/framework is implemented.

4.8 Environmental Control Officer (ECO)

The role of the ECO shall be to:

- Act as site 'custodian' for the implementation, integration and maintenance of the EMPr in accordance with the contractual requirements;
- Ensure successful implementation of the EMPr; and
- Ensure that the Contractor, his employees and/or Subcontractors receive the appropriate environmental awareness training prior to commencing activities.

The responsibilities of the ECO will be to:

- Liaise with the JW Environmental Section and Project Engineer on the level of compliance with the EMPr achieved by the Contractor on a regular basis for the duration of the contract;
- Advise the Project Engineer on the interpretation and enforcement of the Environmental Specifications (ES), including evaluation of non-compliances;
- Supply environmental information as and when required;
- Review and approve Method Statements produced by the Contractor, in conjunction with the PM and EO;
- Monitor any basic physical changes to the environment as a consequence of the construction works according to an audit schedule;
- Attend regular site meetings and project steering committee meetings;
- Undertake regular monthly audits of the construction works and to generate monthly audit reports. These reports are to be forwarded to the JW EO who will communicate the results and conclusions with the principal Contractor;
- Submit a monthly audit report to the authority as per the requirement of issued Environmental Authorisation.

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- Communicate frequently and openly with the Contractor and the Project Engineer to ensure effective, proactive environmental management, with the overall objective of preventing or reducing negative environmental impacts and/or enhancing positive environmental impacts;
- Advise the Project Engineer on remedial actions for the protection of the environment in the event of any accidents or emergencies during construction, and to advise on appropriate clean-up activities;
- Review complaints received and make instructions as necessary; and
- Identify and make recommendations for minor amendments to the EMP as and when required.

5. CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

The following documents must be submitted by the contractor in the Environmental file before Construction commences on site. The file must be submitted to the Environmental Section prior construction for approval. The Contractor should achieve a minimum score of 80% for the file to be approved.

See annexure B : Environmental File Specification

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6. ENVIRONMENTAL SPECIFICATIONS

Table 2: Environmental Management and Mitigation Measures that must be implemented during the Design Phase and Construction Phase

Design Phase Measures						
Aspects	ID	Mitigation Measure/Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance indicators
Project Planning/Design	1	<ul style="list-style-type: none"> Proposed project is submitted to Environmental Section for screening (Project scope/layout/Maps), CAPEX and Ops must ensure that there is budget allocated for environmental management throughout the project life cycle i.e. planned project and Directives. 	Johannesburg Water (CAPEX/Ops)	Before project commences	<ul style="list-style-type: none"> Screening report Tender document 	Keep the records of the project screening report and scope of work as per Directives
Authorisation	2	<ul style="list-style-type: none"> Appoint Consulting Company Ensure that all required licences and permits have been obtained before the start of construction. Ensure that ECO and/or ELO is appointed as per the authorisation and EMP requirement during project execution (as when and required). 	Johannesburg Water (CAPEX/Environmental Section)	Before construction commences	Keep record of all permits, licences and authorisations	Keep record of all permits, licences and authorisations
Project Handover		<ul style="list-style-type: none"> The scope of a project is outlined by CAPEX Engineer during the handover meeting. Environmental Management Requirements are outlined during the handover meeting. 	Johannesburg Water (CAPEX/Environmental Section)	Before construction commences	Meeting invite EA/GA/WUL/Screening report	Keep record of all permits, licences and authorisations
Environmental		<ul style="list-style-type: none"> Environmental awareness training is given to 	Johannesburg	Before	Meeting invite	Meeting records

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Awareness Training/Inductions		<ul style="list-style-type: none"> the Project Team Leaders Environmental File Specification provided to the Contractor. JW Environmental Management Plan and other procedures are provided to the Contractor. 	g Water (CAPEX/ Environmental Section)	construction commences		
Environmental File Evaluation		<ul style="list-style-type: none"> Contractor submits environmental file for approval prior work commences on site. Construction activities/work (including site establishment) should ONLY commence when file is approved. 	Appointed Contractor/Environmental Section	Before construction commences	Environmental evaluation report.	Approval/rejection letter records
Construction Phase Measures						
Aspects	ID	Mitigation Measure/Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance indicators
Site camp establishment	1	<ul style="list-style-type: none"> Invite the Environmental Officer for the site inspection of proposed site camp prior establishment. Submit a method statement for Site Camp establishment for approval by JW Environmental Officer/ECO prior commencement of works. Establish a suitably fenced Site Camp at the start of the contract, which will allow for site offices, vehicle, equipment, material and waste storage areas to be consolidated as much as possible. Locate the Site Camp at a position approved by the JW EO, at least 	All Contractors	Before commencement of Project	<ul style="list-style-type: none"> Visual inspection Site establishment checklist 	Method statements approved by CAPEX and the Environmental Officer <ul style="list-style-type: none"> Position of Site Camp approved by ECO Security and access to Site

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		<p>100m from watercourses and in an area which is not ecologically sensitive.</p> <ul style="list-style-type: none"> • Provide water and/or washing facilities at the Site Camp for personnel. • Limit construction and lay down areas to areas within the development footprint. • Ensure that environmentally friendly on-site sanitation options are selected and these facilities are properly managed and maintained. • Designated eating areas shall be provided on site. • These eating areas shall be clearly demarcated and shall be provided with bins with lids. • Staff will be prohibited from consuming meals anywhere other than at these eating areas and that noise is limited. • All eating areas shall include provision for a water and smoking area. 				<p>Camp controlled</p> <ul style="list-style-type: none"> • Clear demarcation of no-go areas as agreed with JW EO. • Detailed site layout plan • Environmental file approval letter.
Environmental Awareness Training	2	<ul style="list-style-type: none"> • Provide environmental awareness training to all personnel on site at the start of their employment. Training should include discussion of: • Potential impact of construction waste and activities on the environment; • Suitable disposal of construction waste and 	All Contractors	<ul style="list-style-type: none"> • Before workers start working onsite • Before new activities are 	<ul style="list-style-type: none"> • Check training attendance register • Observe whether activities 	<ul style="list-style-type: none"> • Proportion of workers that completed. • Environmental training Compliance of workers

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		litter; <ul style="list-style-type: none"> • Key measures in the EMPr relevant to worker's activities; • How incidences and suggestions for improvement can be reported. • Ensure that all attendees remain for the duration of the training and on completion sign an attendance register that clearly indicates participants' names. 		undertaken	are executed in line with EMPr requirements	with EMP
Plant Search and Rescue/Vegetation clearing	3	<ul style="list-style-type: none"> • From information gathered during the plant marking exercise, establish the size. • Requirements for the plant rescue team workforce, and the methodology to be employed during the rescue to maximise the likelihood of success; Document and motivate which species found on site are considered to be conservation worthy. • Follow a multi-pronged approach to maximise the likelihood of success wherever feasible. In addition to transplanting of whole plants, seed can be collected and sown in situ in suitable habitats and/or in an off-site nursery. • Any plants not suitable for transplantation must be considered for transplanting to existing conservation areas nearby. This could involve growing these plants on in an off-site 	All Contractors	Before commencement of activities	Visual Inspection/ inspection by Botanist/Ecologist	<ul style="list-style-type: none"> • Incidents of harm coming to fauna/flora; • Number of incidents of disturbance of vegetation outside construction site boundary; and • Size of area cleared relative to development

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		<p>nursery for a period of time.</p> <ul style="list-style-type: none"> Depending on the conservation worthy species found, the location of suitable existing conservation areas nearby and the location of the off-site nursery, the most appropriate plant rescue options must be detailed in the search and rescue plan, and could be a combination of the following options: All required permits must be obtained from the appropriate authority covering plants to be affected by the plant rescue operation prior to the removal of the plants. Demarcate the area for construction prior to each phase, and prevent access by construction personnel outside of this area. Appoint a suitably qualified botanist to undertake search and rescue of key plant species in the development footprint where necessary (Where is applicable. Clearly demarcate sensitive areas, including buffers, with appropriate signage. Do not allow personnel to enter calcrete vegetation areas. Do not allow personnel to pick or destroy plants outside of the construction footprint. Limit clearing to those areas within the 				<p>footprint</p> <ul style="list-style-type: none"> Size of area disturbed outside of construction site boundary. Areas of development footprint must be clearly demarcated
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		<p>footprint of construction for each phase.</p> <ul style="list-style-type: none"> • Restrict construction vehicles to designated roadways. • Do not allow the temporary storage of building material within sensitive areas. <p>Aftercare and monitoring</p> <ul style="list-style-type: none"> • Record numbers and diversity of propagated plants and the health of the same, until they can be planted out; • Aftercare of transplanted plants to be done in accordance with the plant search and rescue plan by an appropriate agent (e.g. staff from the commercial nursery or an appropriately trained onsite Contractor), including watering and alien plant control requirements. If done correctly, the frequency of input will decrease with time; • Record numbers and diversity of transplanted plants and the health of the same; • Monitoring must be undertaken as per requirements of the plant search and rescue plan approved by GDARD, including monitoring of alien plants and maintenance of a photographic record; and • Provide a detailed record (including photographic record) that indicates the 				
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DISCLAIMER

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		<p>success of the plant rescue operation. Records of corrective action taken to improve management of transplanted plants, where relevant, must also be completed.</p> <p>Applicable Legislation</p> <ul style="list-style-type: none"> • National Environmental Management Act: Biodiversity Act (Act 10 of 2004) including Threatened or Protected Species Regulations; • National Environmental Management Act (Act 107 of 1998); • Gauteng Nature Conservation Bill, 2014/Transvaal Nature Conservation Ordinance 12 of 1983; and • National Forests Act (Act 30 of 1998). 				
Excavation	4	<ul style="list-style-type: none"> • The process of excavation and back filling must be carried out as a sequential process following one another as quickly as possible. • Excavations must only remain open for a minimum period of time and during this time they must be clearly demarcated. If excavations place the public at risk these sites must be fenced. • The residents directly affected by open trenches must be notified of the dangers. This will be done during the site-specific phase. • Danger tape shall not be utilised to prevent 	All Contractors	Throughout construction	Visual inspection	<ul style="list-style-type: none"> • Daily site inspection. • Damage to the environment (sensitive environment)

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		<p>personnel from open excavations, orange nets should be used for all open excavations on site. Construction vehicles should avoid creating new roads, use existing roads.</p> <ul style="list-style-type: none"> • Topsoil must be cleared and retained as it contains most inorganic matter and nutrients. • Harvested grass should be retained and used as a mulch to combat erosion. • Soil should be exposed for the minimum time possible once cleared of invasive vegetation. • Avoid prolonged exposure of soils to wind and water erosion when clearing and grubbing. • Stockpiled topsoil must be covered with suitable fabric to prevent erosion and weed invasion. • Stockpiled topsoil must be covered with suitable fabric to prevent erosion and weed invasion. • No vehicles are allowed to access onto the stockpiles after they have been placed. • Topsoil and subsoil must be kept separate throughout construction and rehabilitation. • A marsh wire or snow netting shall be erected around the exposed excavations to warn the public. • The contractor must rip and rehabilitate 				
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		temporal roads after project completion.				
		<ul style="list-style-type: none"> The Contractor shall be in possession of an emergency spill kit that must be complete and available at all times on site. 				
Topsoil and subsoil	5	<ul style="list-style-type: none"> The contractor should remove 150mm of topsoil and stockpile at a height of not more than 1m. Topsoil should be temporarily stockpiled, separately from (clay) subsoil and rocky material, when areas are cleared. If mixed with clay sub-soil the usefulness of the topsoil for rehabilitation of the site will be lost. Stockpiled topsoil should not be compacted and should be replaced as the final soil layer. No vehicles are allowed access onto the stockpiles after they have been placed. Stockpiled soil should be protected by erosion-control berms if exposed for a period of greater than 14 days during the wet season. Topsoil stripped from different sites must be stockpiled separately and clearly identified as such. Topsoil obtained from sites with different soil types must not be mixed. Topsoil stockpiles must not be contaminated 	All Contractors	During Vegetation clearance	Visual inspection	<ul style="list-style-type: none"> Incident of incorrect storage and harvesting. Manifestation of alien invasive plants. Incident of erosions.

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		<p>with oil, diesel, petrol, waste or any other foreign matter, which may inhibit the later growth of vegetation and micro-organisms in the soil.</p> <ul style="list-style-type: none"> • Soil must not be stockpiled on drainage lines or near watercourses without prior consent from the Project Manager. • Soil should be exposed for the minimum time possible once cleared of invasive vegetation, that is the timing of clearing and grubbing should be co-ordinated as much as possible to avoid prolonged exposure of soils to wind and water erosion. • Stockpiled topsoil must be either vegetated with indigenous grasses or covered with a suitable fabric to prevent erosion and invasion by weeds. • Limited vehicular access is allowed across rocky outcrops and ridges. • All cut and fill surfaces need to be stabilized with appropriate material or measures when major civil works are complete. • Erosion and donga crossings must be dealt with as river crossings. Appropriate soil erosion and control procedures must be applied to all embankments that are disturbed 				
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		<p>and destabilized as per the Authorisation</p> <ul style="list-style-type: none"> • All equipment must be inspected regularly for oil or fuel leaks before it is operated. Leakages must be repaired on mobile equipment or containment trays placed underneath immobile equipment until such leakage has been repaired. • Soil contaminated with oil must be appropriately treated and disposed of at a permitted landfill site or the soil can be regenerated using bio-remediation methods. • Runoff must be reduced by channelling water into existing surface drainage system. 				
Protection of archaeological and heritage resources	6	<ul style="list-style-type: none"> • Alert the construction workforce of the potential existence of artefacts at the site. • Empower staff to stop works on (chance) discovery of artefacts at the site. • Cease construction on (chance) discovery of archaeological sites of heritage importance, or redirect machinery away from finds until an archaeologist is able to make a site inspection and establish the importance of the find and make recommendations for preservation and/or record keeping. • Report the presence of graves or human remains, fragments of fossil bone, ostrich egg 	All Contractors/Johannesburg Water	<ul style="list-style-type: none"> • Before Construction commences • During earthworks 	Visual inspection	<ul style="list-style-type: none"> • Discovery of possible archaeological material • Rescue and reporting of identified material when discovered

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		<p>and stone fragments to HWC.</p> <ul style="list-style-type: none"> Obtain a permit for the removal of artefacts from the site if any are discovered during construction. 				
Protection of paleontological resources	7	<ul style="list-style-type: none"> Identify a stand-by palaeontologist to inspect fossils if they are discovered during construction activities. Empower staff to stop works on (chance) discovery of fossils at the site. Alert the construction workforce of the potential existence of fossils at the site. Cease construction on (chance) discovery of fossils and artefacts of paleontological importance or direct machinery away from finds until the identified palaeontologist is able to make a site inspection and establish the importance of the find and make recommendations for preservation, collection or record keeping. 	<p>Johannesburg Water</p> <p>All Contractors</p>	<p>Prior commencement</p> <p>During earthworks</p>	Visual inspection	<ul style="list-style-type: none"> Discovery of possible archaeological material. Rescue and reporting of identified material when discovered.
Concrete / Work/Batching plant	8	<ul style="list-style-type: none"> Use Ready-Mix concrete rather than batching where possible. Ensure that no cement truck delivery chutes are cleaned on site. Cleaning operations are to take place off site at a location where wastewater can be disposed of in the correct manner. If this is not possible a suitable 	All Contractors	Throughout construction	Visual inspection and JW EO/ECO approval.	<ul style="list-style-type: none"> Number of incidents of batching outside works footprint; Contaminati

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		<p>washing facility is to be developed on site in consultation with the ECO.</p> <ul style="list-style-type: none"> • Concrete must be mixed only in an area demarcated for this purpose, ideally on an impervious surface (e.g. cement mixing pit). • Batching operations to take place in a designated area, which will be kept clean at all times. • All concrete spilled outside this area, must be promptly removed by the Contractor and taken to a permitted waste disposal site. • After all concrete mixing is complete; all waste concrete must be removed from the batching area and disposed of at an approved dumpsite. • Ensure separation of clean and dirty water from batching plant. • Storm water must not be allowed to flow through the batching area. Water laden with cement must be collected in a retention area for evaporation and not allowed to escape the batching area. • Operators must wear suitable safety clothing. • Wastewater from batching operations to be suitably disposed of. 				<p>on of water and soil; and</p> <ul style="list-style-type: none"> • Visible litter / waste on site.
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		<ul style="list-style-type: none"> • Waste concrete and cement sludge to be removed on a regular basis (to prevent overflowing) and to be disposed of at a suitable facility. • Unused cement bags will be stored in an area not exposed to the weather and packed neatly to prevent hardening or leakage of cement. • Used cement bags will be stored so as to prevent windblown dust and potential water contamination. Used bags will be disposed of adequately at a licenced waste disposal facility. • Limit concrete batching to single sites where possible. • Concrete transportation will not result in spillage. • Cleaning of equipment and flushing of mixers will not result in pollution, with all contaminated wash water entering the waste water collection system. • To prevent spillage onto roads, ready mix trucks will rinse off the delivery shoot into a suitable sump prior to leaving the site. The Contractor shall ensure such designated concrete wash bay area's/ sumps are created and that all concrete trucks delivering 				
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		<p>concrete to site first empty and clean their shoots at this point before leaving the site. The dried waste product shall be handled as construction rubble.</p> <ul style="list-style-type: none"> • Suitable screening and containment will be in place to prevent windblown contamination from cement storage, mixing, loading and batching operations. • All contaminated water and fines from exposed aggregate finishes will be collected and stored in sumps and will be adequately disposed of. • All visible remains of excess concrete will be physically removed on completion of the plastering or concrete pouring and disposed of in an acceptable manner. • Any spilled concrete to be cleaned up immediately. • In practice all wastes arising from construction activities are to be handled; transported and disposed of in accordance with the relevant regulations. All efforts should be made to minimise, reclaim or recycle waste, and failing that, dispose of it in a manner licensed by the government for that purpose. 				
Water	9	• Con serve water wherever possible (e.g.	All	Throughout	Visual	• Incidence of

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Management		<p>ensure that areas are not watered excessively and all leaking pipes are replaced and repaired immediately).</p> <ul style="list-style-type: none"> • Adequate sedimentation control measures must be instituted at any river crossings when excavations or disturbance of a riverbanks or riverbeds takes place. • Adequate sedimentation control measures must be implemented where excavations or disturbance of drainage lines of a wetland may take place. • All fuel, chemical, oil, etc. spills must be confined to areas where the drainage of water can be controlled. Use appropriate structures and methods to confine spillages such as the construction of berms and pans, or through the application of surface treatments that neutralise the toxic effects prior to the entry into a water course. • The drip tray and spill kit must be used to contain oil from spilling into the water. • During construction through a wetland, the majority of the flow of the wetland should be allowed to pass downstream. • Vehicular traffic across wetland areas must be avoided. 	Contractors	construction	inspection	<p>stormwater contamination;</p> <ul style="list-style-type: none"> • Visible leaks/ water wastage; <p>And Visible surface erosion.</p>
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		<ul style="list-style-type: none"> No dumping of foreign material in streams, rivers and/or wetland areas is allowed. The wetland area and/or river must not be drained, filled or altered in any way including alteration of a bed and/or, banks, without prior consent from the DWS. The necessary licenses must be obtained in terms of Section 21 and 22 of the National Water Act, 36 of 1998 from DWS. No fires or open flames are allowed in the vicinity of the wetland, especially during the dry season. No swimming, washing (including vehicles and equipment), fishing or related activity is permitted in a wetland or river. Disturbances to nesting, breeding and roaming sites of animals in or adjacent to wetland areas must be minimized. 				
Air Pollution	10	<ul style="list-style-type: none"> Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution. Dust must be suppressed on access roads and construction sites during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in 	All Contractors	Throughout construction	Visual inspection	<ul style="list-style-type: none"> Visible air pollution.

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		<p>quantities that must not result in the generation of run-off.</p> <ul style="list-style-type: none"> • Where possible the use of potable water should be minimised for dust suppression purposes, preferably recycled or reused water. • The site-specific investigation will quantify the impact of dust on nearby wetlands, rivers and dams in terms of sedimentation. Mitigation measures identified during the site specific study must be implemented. • The Contractor must notify the Principal of all schools within 50m of the site of proposed activities. The Principal must in turn ensure that children with allergies and respiratory ailments take the necessary precautionary measures during the construction period. The Contractor must ensure that construction activities do not disturb school activities e.g. dust clouds may reduce visibility affecting sports activities. • Waste must be disposed of, as soon as possible at a municipal transfer station, skip or on a permitted landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours. 				
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		<ul style="list-style-type: none"> Noise control measures must be implemented. All noise levels must be controlled at the source. All employees must be given the necessary ear protection gear. IAP's must be informed of the excessive noise factors. The Contractor must inform all adjacent landowners of any after-hour construction activities and any other activity that could cause a nuisance e.g. the application of chemicals to the work surface. Normal working hours must be clearly indicated to adjacent land owners. No loud music is allowed on site and in construction camps. No fires are allowed if smoke from such fires will cause a nuisance to IAPs. 				
Social and cultural	11	<ul style="list-style-type: none"> Access by non-construction people onto any construction sites must be restricted. The Contractors activities and movement of staff must be restricted to designated construction areas only. The Contractors crew must be easily identifiable due to clothing, identification cards or other methods. Rapid migration of job seekers could lead to 	All Contractors	Throughout construction	Visual inspection	<ul style="list-style-type: none"> Community complaints. Complaints register. Daily environmental inspection

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		<p>squatting and social conflict with resident communities and increase in social pathologies if not properly addressed. The Contractor must ensure that signs indicating the availability of jobs are installed.</p> <ul style="list-style-type: none"> • Criteria for selection and appointment (by the Contractor) of construction labour must be established to allow for preferential employment of local communities. The Local Authority must be actively involved in the process of appointing temporary labourers. • Sub-Contractors and their employees must comply with all the requirements of this document and supporting documents e.g. the Contract document that applies to the Contractor. Absence of specific reference to the sub-contractor in any specification does not imply that the sub-contractor is not bound by this document. • No member of the construction workforce is allowed to wander around private property, except within the immediate surroundings of the site. • The Contractor must provide suitable sanitation facilities for site staff. Sanitation provided during the construction phase 				
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		<p>should be managed so that it does not cause environmental health problems. The use of the surrounding veld for toilet purposes is not permitted under any circumstance.</p> <ul style="list-style-type: none"> • The Contractor must arrange for all his employees and those of his sub-contractors to be informed of the findings of the environmental report before the commencement of construction to ensure: • A basic understanding of the key environmental features of the work site and environments, and • Familiarity with the requirements of this document and the site specific report. • Supervisory staff of the Contractor or his sub-contractors must not direct any person to undertake any activities which would place such person in contravention of the specifications of this document endanger his/her life or cause him/her to damage the environment. • The demand for construction materials and supplies will have an effect on the local economy. This impact can be optimised by sourcing and purchasing materials locally and regionally wherever possible, insofar as the 				
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		<p>material complies with the design specification.</p> <ul style="list-style-type: none"> The Contractor must maintain a detailed complaints register. This must be forwarded, together with solutions, to the authorities when requested. 				
Aesthetics	12	<ul style="list-style-type: none"> Scenic Quality Damage to the natural environment must be minimized. The contractor may not remove any trees. If trees are in the way of the pipe route or with the development sites, the contractor must inform the environmental section who will then liaise with city parks for permission or recommendation. Trees and tall woody shrubs must be protected from damage to provide a natural visual shield. Excavated material must not be placed on such plants and movement across them must not be allowed, as far as practical. The clearing of all sites must be kept to a minimum and surrounding vegetation must, as far as possible, be left intact as a natural shield. No painting or marking of natural features must be allowed. 	All Contractors	Throughout construction	<ul style="list-style-type: none"> Visual inspection. Way-leaves 	<ul style="list-style-type: none"> Daily inspection Environmental incident.

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		<ul style="list-style-type: none"> • Above-ground Structures (reservoirs, water hammer tanks, valve chambers, pump stations etc.) • All above ground structures should be located in areas where the visual impact from roads, houses etc. is minimised. • All above ground structures could be treated or painted to blend in with the natural environment. • Cut and fill areas, river and stream crossings and other soil stabilisation works must be constructed to blend in with the natural environment. • Natural outcrops, rocky ridges and other natural linear features must not be bisected. Vegetation on such features must, as far as possible, not be cut unless absolutely necessary for construction. • Excavated material must be flattened (not compacted) or removed from site. No heaps of spoil material must be left on site once the Contractor has moved to a new construction site. • Any complaints from interest groups regarding the appearance of the construction site must be recorded and addressed promptly by the 				
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		Contractor.				
Fauna and Flora	13	Flora <ul style="list-style-type: none"> • All suitable and rare flora and seeds must be rescued and removed from the site. They must be suitably stored, for future use in rehabilitation. • The felling and/or cutting of trees and clearing of bush must be minimised. • Bush must only be cleared to provide essential access for construction purposes. • The spread of alien vegetation must be minimized. • Any incident of unauthorised removal of plant material, as well as accidental damage to priority plants, must be documented by the Contractor. • Woody vegetative matter stripped during construction must either be spread randomly throughout the surrounding veld so as to provide biomass for other micro-organisms and habitats for small mammals and birds, or it may be stockpiled for later redistribution over the reinstated top soiled surface. No vegetative matter must be burnt or removed for firewood other than those removed during the grubbing and clearing phase. Such 	All Contractors	Throughout construction	<ul style="list-style-type: none"> • Visual inspection • Way-leave from City Parks. • Biodiversity permit from Gauteng Department of Rural and Development 	<ul style="list-style-type: none"> • Environmental incident register • Daily inspection • Number of environmental incident. • Fauna and flora removal and relocation register

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		<p>vegetation can be made available to the local inhabitants to be used as firewood.</p> <ul style="list-style-type: none"> No tree outside the footprint of the Works area must be damaged. <p>Fauna</p> <ul style="list-style-type: none"> No species of animal may be poached, snared, hunted, captured or wilfully damaged or destroyed. Snakes and other reptiles that may be encountered on the construction site must not be killed unless the animal endangers the life of an employee. Anthills and/or termite nests that occur must not be disturbed unless it is unavoidable for construction purposes. Disturbances to nesting sites of birds must be minimized. The Contractor must ensure that the work site is kept clean and free from rubbish, which could attract pests. 				
Infrastructure	14	<ul style="list-style-type: none"> The relevant authorities must be notified of any interruptions of services, especially the Local Municipality, National Road Agency, Transnet, TELKOM and ESKOM. In addition, care must be taken to avoid damaging major 	All Contractors	Throughout construction	<ul style="list-style-type: none"> Visual inspection Way-leaves from different 	<ul style="list-style-type: none"> Incident register. Permit/ Way-leave register

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		<p>and minor pipelines and other services.</p> <ul style="list-style-type: none"> • The integrity of property fences must be maintained. • No telephone lines must be dropped during the construction operations, except where prior agreement by relevant parties is obtained. All crossings must be protected, raised or relocated as necessary. • All complaints and/or problems related to impacts on man-made facilities and activities must be promptly addressed by the Contractor and documented. • Proper storage facilities should be provided for the storage of oils, grease, fuels, chemicals and hazardous materials. • The Contractor must ensure that accidental spillage does not pollute soil and water resources. • Fuel stock reconciliation must be done on all underground tanks to ensure no loss of oil, which could pollute groundwater resources. • Cement must be stored and mixed on an impermeable substratum. • The Contractor shall ensure that existing services (e.g. roads, pipelines, and powerlines and telephone services) are not damaged or 			entities.	<ul style="list-style-type: none"> • Complaints register. .
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		<p>disrupted unless required by the contract and with the permission of the RE.</p> <ul style="list-style-type: none"> The Contractor shall be responsible for the repair and reinstatement of any existing infrastructure that is damaged or services which are interrupted. A time limit for the repairs may be stipulated by the RE in consultation with the Contractor. 				
Blasting	15	<ul style="list-style-type: none"> Blasting must not endanger public or private property. Noise mufflers and/or soft explosives must be used to minimize the impact on animals. All the provisions of the Explosives Act, 26 of 1956 and the Minerals Act, 50 of 1991 must be complied with. The Contractor must take measures to limit fly rock. Certificate of competence. In file Blasting permit must be obtained from the South African police station issued in terms of section 9 of explosive Act, Act 26 of 1956) prior blasting. Method statement for drilling and blasting (NB: Submitted for acceptance before any works) in file Provide the MSDS's for the chemicals are to 	All Contractors	Throughout construction	Visual inspection/ Engineer report	<ul style="list-style-type: none"> Incident register. Complaints register. Permit register.

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		<p>be used.</p> <ul style="list-style-type: none"> • Proof of notification to the affected community. • The Appropriate PPE. 				
Workshops, storage areas and materials handling	16	<ul style="list-style-type: none"> • These areas shall be chosen so as to cause the least impact on the biophysical and social elements of the area. • The siting of workshops, maintenance and refuelling sites and materials storage areas shall not be in the vicinity of sensitive sites e.g. wetlands, cultivated fields or drainage lines, or where local land owners can be disturbed. • Storm water shall be diverted around the storage area. Storm water falling on the storage area shall be discharged if it meets the required water quality standards. • Proper storage facilities, placed on an impermeable surface, shall be provided for the storage of oils, grease, fuels, chemicals and other hazardous materials to be used during the construction phase of the project. If fuel is required on site it shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers. Leakage of fuel shall be avoided. 	All Contractors	Throughout Construction	<ul style="list-style-type: none"> • Visual inspection • Method statement for handling hazardous substances. • MSDS 	<ul style="list-style-type: none"> • Hazardous substances register. • MSDS file • Spill register • Incident register.

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		<ul style="list-style-type: none">• An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any spillage or overflow from these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil.• In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or container and Material Safety Data Sheets (MSDS's) will be made available for all hazardous chemicals. Before containers or storage facilities are erected, emergency procedures in the event of misuse or spillage that may negatively affect an individual or the environment will be in place.• The storage facilities (including any tanks) shall be surrounded by a bund wall, in order to ensure that accidental spillage does not pollute local soil or water resources.• The storage areas shall not be utilised for accommodation purposes and shall be access controlled.• The storage area shall be kept tidy and the area shall be rehabilitated after use.• An inventory of any hazardous chemicals/substances (including that within				
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		<p>equipment) kept on site, along with a description of possible ill effects and treatment of health-related afflictions resulting from accidents, shall be kept in the storage area as well as by the appropriate manager. These areas shall be securely fenced.</p> <ul style="list-style-type: none"> • Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area. • A notice board with the contact details of the responsible party shall be displayed at the gate to the storage area. • The contractor shall ensure that any delivery drivers are informed of all procedures and restrictions required to comply with the EMP. Someone with an adequate understanding of the CEMP shall supervise drivers during delivery and off-loading. • All vehicles and machinery will be inspected for any leaks or malfunctions regularly. Vehicle servicing or repairs is prohibited from site, unless in an emergency. • Drip trays shall be inspected and emptied daily and serviced when necessary. In particular drip trays shall be closely monitored during rain events to ensure that they do not 				
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		<p>overflow. The contents must be disposed of at a recognised site.</p> <ul style="list-style-type: none"> • All repairs done on machinery using hydrocarbons as fuels or lubricants shall have a drip tray placed strategically to avoid incidental spillage. • Workers shall be made aware of the health risks associated with any hazardous substances used (e.g. smoking near refuelling depots), and shall be provided with appropriate protective clothing / equipment in case of spillages or accidents. • Cement and other potential environmental pollutants shall be stored and mixed on plastic sheeting or ready mix trucks shall be used. There shall be no opportunity for environmental contamination. • Workshop areas shall be monitored for oil and fuel spills and such spills shall be cleaned and remediate to the satisfaction of the EO. • The Contractor shall be in possession of an emergency spill kit that must be complete and available at all times on site. 				
Waste Management	17	Methods for waste management and waste minimisation shall be implemented from the outset of the contract as per the Waste	All Contractors	Throughout Construction	<ul style="list-style-type: none"> • Visual inspection/Environment 	<ul style="list-style-type: none"> • Littering • Soil contamination

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	<p>Management Plan to be submitted to Client. All personnel shall be instructed to dispose of all waste in the proper manner. A waste avoidance and minimisation approach will be encouraged for the duration of the project. The following steps in order will be applied.</p> <ul style="list-style-type: none"> • Prevention – avoid and minimise waste • Recycle – reuse and recover all general waste • Treat – treatment in order to reduce toxicity reduce waste quantities • Dispose – waste removal into a registered landfill facility <p>Solid waste</p> <p>Waste with the potential for market re-use will be stored in separate containers, this includes, scrap metal, used tyres and paper. This waste will be recycled where ever possible. Solid waste shall be temporarily stored in tip – poof metal drums or waste skips at an approved area on site for collection and disposal. This area shall be away from drainage lines or water courses.</p> <ul style="list-style-type: none"> • All general waste drums or skips will be appropriately labelled GENERAL WASTE • A refuse control system shall be established 			<ul style="list-style-type: none"> • al inspection checklist. • Legal Documents: Transport certificate obtained from GDARD for transporting general or hazardous waste. • Transport certificate obtained from City of Johannesburg for transporting general waste within COJ. • Waste manifest/ 	<ul style="list-style-type: none"> • n Water pollution.
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		<p>for the collection and removal of refuse to the satisfaction of Client and ECO.</p> <ul style="list-style-type: none"> No waste shall be burned at the site offices or anywhere else on the site. All building rubble shall be a) removed from the site and disposed of at an appropriate dumping site, or b) temporarily stored in a clearly demarcated area on site for future use. All waste shall be disposed at an appropriate waste disposal facility. <p>Litter</p> <ul style="list-style-type: none"> No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. Littering, discarding or burying of any materials shall not be allowed on site. <p>Hazardous waste</p>			<p>waste disposal certificate/ weighbridge slip.</p>	
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		<ul style="list-style-type: none"> Hazardous waste shall be temporarily stored in tip – poof metal drums or waste skips at an approved area on site for collection and disposal. This area shall be away from drainage lines or water courses. All hazardous waste drums or skips will be appropriately labelled. <p>HAZARDOUS WASTE.</p> <ul style="list-style-type: none"> Hazardous waste such as bitumen, tar and oil shall be disposed of at a registered waste disposal facility. Special care shall be taken to avoid spillage of tar products such as tar prime or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water. All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced with clean soil. Soil contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials. Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank 				
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		<p>and returned to the supplier. Water and oil shall be separated in an oil trap. Oils collected in this manner shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at an approved hazardous waste disposal site. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.</p> <ul style="list-style-type: none"> • Sludge should be managed in accordance with the Sludge Guideline 2010. • Sludge should be kept only at the drying bed and no sludge should be stored at a permeable ground or natural ground. • Hazardous waste shall be disposed of at a registered hazardous waste disposal site, disposal certificates shall be kept in the site file for record. <p>Medical Waste</p> <ul style="list-style-type: none"> • All medical waste will be contained in the special bins provided. All sharp needles must be separated from other medical waste, • All out dated and disused medicines will be 				
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		<p>disposed of as a hazardous medical waste or returned to the supplier for disposal. (Tablets and syrups will be crushed and/or dissolved before disposal as hazardous waste),</p> <ul style="list-style-type: none"> • Medical waste used on personnel coming for treatment at the clinic are to be placed on a demarcated container storage room, • The Occupational Health Nurse will notify a service provided for removal of the medical waste prior exceeding 90 days. • The service provider to provide Waste Manifest as well as the Safe Disposal Certificate, to the OHN who will maintain the copies of the waste manifest and safe disposal certificate. • The OHN will arrange for an approved hazardous waste disposal company to collect and dispose of this medical waste. The OHN is responsible for and authorised to keep all records in connection herewith (disposal certificates). 				
Ablution facilities	18	<ul style="list-style-type: none"> • Provide ablution facilities (i.e. chemical toilets) for all site staff at a ratio of 1 toilet per 15 workers (absolute minimum 1:25). 	All Contractors	Throughout construction	<ul style="list-style-type: none"> • Visual inspection • Records of 	<ul style="list-style-type: none"> • Incidence of staff not using

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		<ul style="list-style-type: none"> Secure all temporary/portable toilets to the ground within the Site Camp to the satisfaction of JW EO/ECO to prevent them toppling due to wind or any other cause. Maintain toilets in a hygienic state (i.e. toilet dispensers to be provided, toilets to be cleaned and serviced regularly (by registered appropriate waste contractor), and toilets to be emptied before long weekends and builders' holidays). Remove/ appoint an appropriate supplier to remove accumulations of chemicals and treated sewage from the site and dispose of at an approved waste disposal site or sewage plant. Ensure that no spillages occur when the toilets are cleaned or emptied. Repeated incidents of spillage of chemicals and or waste (i.e. more than one incident), will require toilets to be placed on a solid base with a sump. Ablution facilities must be located at least 50m from any watercourse. Ablution facilities shall be provided on site. The positioning of the ablution facilities shall be done in consultation with Client and shall be placed so that it cannot contaminate the 			<p>waste manifest/disposal certificates/ weighbridge slip</p>	<p>Facilities</p> <ul style="list-style-type: none"> Incidence of pollution
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		<p>natural streams and rivers. One toilet shall be provided per 10 staff members on site. Toilets shall be positioned within walking distance of wherever employees are employed on the site. Toilets shall be provided with locks and doors shall be secured to prevent the toilets from blowing over.</p> <ul style="list-style-type: none"> • The toilets shall be placed outside of areas susceptible to flooding. • Chemical toilets shall be serviced regularly by an authorised service provider and removed to a registered waste water treatment works and disposal certificates shall be obtained from the waste disposal facility for each disposal and retained on site. • Polluted run-off must be discharged in the local sewerage main and not overland or into public streams. In instances where a sewerage main is not available, polluted run-off will be collected in sub-surface tanks and a reputable effluent removal contractor will be contracted to dispose of the waste in an environmentally acceptable manner. Official documentation shall be obtained from the waste disposal facility for each disposal and retained on site. 				
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		<ul style="list-style-type: none"> Toilets situated close to the site boundaries or within sight of residential areas shall be hidden behind screens or other cover as approved by the Engineer; Discharge of waste from toilets into the environment and burial of waste is strictly prohibited; 				
Access road and traffic control	19	<p>Access Roads</p> <ul style="list-style-type: none"> The Contractor and the affected landowner must collaborate on the planning and construction of new access routes and the repair or upgrading of existing routes. Access to the site must be controlled such that only vehicles and persons directly associated with the work gains access to the site. Temporary access roads must not be opened until required and must be restored to its former state as soon as the road is no longer needed. <p>Traffic Control</p> <ul style="list-style-type: none"> All reasonable precautions must be taken during construction to avoid severely interrupting the traffic flow on existing roads, especially during peak periods. Before any work can start the Local Traffic 	All Contractors	Throughout construction	<ul style="list-style-type: none"> Method statement for access road and traffic control. Way-leave 	<ul style="list-style-type: none"> Daily Inspection checklist. Environmental incident. Incident register.

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		Department must be consulted about measures to be taken regarding pedestrian and vehicular traffic control.				
Electrical	20	<ul style="list-style-type: none"> Measures must be taken during thunderstorms to protect workers and equipment from lightning strikes. All tall structures must be properly earthed and protected against lightning strikes. 	All Contractors	Throughout construction	<ul style="list-style-type: none"> Permit OHS approval letter Way-leave 	<ul style="list-style-type: none"> Approval letter Electrical certificate
Development Footprint	21	<ul style="list-style-type: none"> The development footprints and disturbed areas surrounding the proposed project infrastructure should be kept at minimum as possible and the areas cleared of natural vegetation and topsoil must be kept to a minimum; The extent of all development footprint areas and permanent/ temporary structures must be limited to what is essential; As far as possible, existing roads are to be utilised, to limit cumulative impacts from roads and traffic; The height of any temporary structures such as topsoil stockpiles should be kept as low as possible below 1m. 	All Contractors	Throughout construction	<ul style="list-style-type: none"> Agreement letter. Way-leave 	<ul style="list-style-type: none"> Incident register. Complaints register.
Fire Prevention	22	<ul style="list-style-type: none"> The Contractor must take all the necessary precautions to protect the materials on site 	All Contractors	Throughout construction	<ul style="list-style-type: none"> Visual inspection 	<ul style="list-style-type: none"> Fire extinguisher

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		<p>and to avoid veld fires.</p> <ul style="list-style-type: none"> No fires or open flames are allowed on site unless directly used for construction purposes, Review all SANS standards relating to fire precautions and fire control namely, SANS 0131-3 Section 8 and SANS 089-1 or as amended. The Contractor must have fire-fighting equipment and a first aid box available on site and on all vehicles working on site. All waste bins must be kept away from fuel tank installations. All fuel tanks must be installed above ground, depending on the volume of stored fuel, for easy detection of fuel leaks. Any welding or other sources of heating of materials must be done in a controlled environment, wherever possible and under appropriate supervision, in such a manner as to minimise the risk of veld fires and/or injury to staff. Fires lit for comfort (warmth) must be actively discouraged by the Contractor, due to the risk of veld fires and the risk to adjacent properties. Also, no waste material must be burnt. 			<ul style="list-style-type: none"> Emergency Response Plan. 	<p>inspection checklist.</p> <ul style="list-style-type: none"> Incident register Mock drill report.
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Noise Pollution	23	<ul style="list-style-type: none"> Temporary noise pollution due to construction works should be controlled by proper maintenance of equipment and vehicles, and tuning of engines and mufflers. Construction works should be completed in as short a period as possible by assigning qualified engineers and foremen. It is the responsibility of the Contractor to monitor for the mitigation of such impacts. Noise problems should be reduced to normally acceptable levels by incorporating low-noise equipment in the design and/or locating such mechanical equipment in properly acoustically lined buildings or enclosures. In the presence of adequate buffer zones between the facility and residential areas, noise control measures must be minimized. 	All Contractors	Throughout Construction	Random noise measurements	<ul style="list-style-type: none"> Results of random noise measurements Number of registered complaints
Complaints	24	<p>Maintain a complaints register for all complaints. The register must list:</p> <ul style="list-style-type: none"> Complainant name and contact details; Date complaint was lodged; Person who recorded the complaint; Nature of the complaint; Actions taken to investigate the complaint and outcome of the investigation; 	All Contractors	Throughout construction	Complaints register	<ul style="list-style-type: none"> Availability of register on site Designated person to maintain register Complaints

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		<ul style="list-style-type: none"> Action taken to remedy the situation; Date on which feedback was provided to complainant. 				<ul style="list-style-type: none"> logged Complaints followed up and Closed out.
Housekeeping	25	<ul style="list-style-type: none"> All construction and operational areas must be kept in a neat and orderly condition at all times; An efficient removal system of waste and rubble must be ensured during all development phases; All operational facilities, including vehicles, should be actively maintained; Any areas for material storage, waste sorting and other potentially intrusive activities must be screened from view as far as considered feasible. Regularly inspect all construction machinery and holding tanks for leaks or damages. Place generators on drip trays. Repair any defects as soon as possible. In the case of leaks, ensure that the leaking water or effluent is captured and not released into the environment. Service and refuel equipment that uses hydrocarbon fuels, oils, lubricants and other 	All Contractors	Throughout	Visual inspection of site camp/ construction site	Regular inspection reports by SHE Officer and JW EO

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		<p>hazardous chemicals at the designated area at the Site Camp only under conditions approved by JW EO/ECO</p> <ul style="list-style-type: none"> • Ensure that absorbent pads (or equivalent) and/ or drip trays are available to collect any oil, fluid, etc. in the case of a breakdown or emergency repair outside the designated area. Keep a copy of fuels and hazardous substance inventory on site. • Keep spill containment and clean-up equipment at all work sites and for all polluting materials used at the site. • Prevent discharge of any hazardous substances or pollutants, such as cements, concrete, chemicals, and other contaminated waste water and fuels into the ground, surface or stormwater systems on site. • Control litter and keep construction areas as clean and neat as possible. 				
Transportation and refuelling	26	<ul style="list-style-type: none"> • Undertake regular maintenance of vehicles and machinery to identify and repair minor leaks and prevent equipment failures. • Undertake any on-site refuelling and maintenance of vehicles/machinery in designated areas. Line these areas with an impermeable surface and install oil traps. 	All Contractors	Throughout Construction	Visual inspection of vehicles, barges, machinery and refuelling / maintenance	<ul style="list-style-type: none"> • Incidence of non-compliance • Incidence of leaks and spills • Cost of

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		<ul style="list-style-type: none"> • Ensure that oils and lubricants used for maintenance of equipment in the field are correctly contained. • Use appropriately sized drip trays for all refuelling and/or repairs done on machinery – ensure these are strategically placed to capture any spillage of fuel, oil, etc. • Use drip trays under all equipment and plants that are parked overnight or for long periods. • Store and handle fuels, oils and chemicals so as to avoid the risk of spillage, i.e. in waterproof and impervious 			areas	cleaning up spills
Safety and Security	27	<ul style="list-style-type: none"> • Do not allow any open fires on the site. • Do not allow smoking on the site except within designated areas. Suitable fire-fighting equipment must be readily available in these areas. • Equip all fuel stores and waste storage areas with fire extinguishers. • Ensure that all personnel on site are aware of the location of fire-fighting equipment on the site and how the equipment is operated. • Suitably maintain fire-fighting equipment. • Ensure that emergency procedures (in relation to fire, spills, contamination of the ground, accidents to employees, use of hazardous 	All Contractors	Throughout construction	<ul style="list-style-type: none"> • Inspect attendance register for training sessions • Inspect fire extinguishers and certificates 	<ul style="list-style-type: none"> • Number of fire incidents • Certified extinguishers in appropriate locations
			All	Before and during	Visual inspection	Number of

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		<p>substances, etc.) are established prior to commencing construction.</p> <ul style="list-style-type: none"> • Make all emergency procedures available, including responsible personnel, contact details of emergency services, etc. to all the relevant personnel. Clearly demarcate emergency procedures at the relevant locations around the site. • Secure the Site Camp, particularly to restrict • Unauthorised access to fuels and other hazardous substances. • Provide suitable emergency and safety signage on site, and demarcate any areas which may pose a safety risk (including hazardous substances, deep excavations, etc.). • Advise the ECO of any emergencies on site, together with a record of action taken. 	Contractors	construction		safety emergency incidents. /
Response to environmental pollution	28	<ul style="list-style-type: none"> • In the event of environmental pollution, e.g. through spillages, immediately stop the activity causing the problem. • Maintain relevant Material Safety Data Sheets (MSDS) at the site for all potentially hazardous substances (as defined in the regulations for hazardous chemical substances). In the event of an emergency, procedures detailed in the MSDS shall be followed. Clean up any spills 	All Contractors	Throughout construction	<ul style="list-style-type: none"> • Maintain register of pollution events and response • Following resumption of activities, frequently 	<ul style="list-style-type: none"> • Number of incidents • Time activities stopped • Number of recurring Incidents • Availability

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		<p>immediately, through containment and removal of free product and appropriate disposal of contaminated soils.</p> <ul style="list-style-type: none"> • Immediately remediate and rehabilitate areas in the event of a spill of an environmentally hazardous substance. • Only resume activity once the problem has been stopped or (in the case of spillages) the pollutant can be captured without reaching the environment. Repair faulty equipment as soon as possible. • Treat hydrocarbon spills, e.g. during refuelling, with adequate absorbent material, which then needs to be disposed of at a suitable landfill. • Ensure a quantity of appropriate remedial agent, capable of containing and/or remediating a hydrocarbon spill is available on site at all times in case of an emergency spill. The material shall be capable of handling a spill of at least 200l. • Report all fuel, oil or hydraulic fluid spills to the JW EO/ECO so that appropriate clean-up measures can be implemented. • Report all incidents within 24 hours to JW environmental section. 			inspect repaired equipment to ensure proper functioning	and 70 completeness of register
Storm Water	28	Objective	All	Throughout	• Visual	• Daily

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Management	<ul style="list-style-type: none"> To minimise erosion of soil from site during construction. To minimise deposition of soil into drainage. Minimise loss of vegetation cover due to construction related activities. <p>Mitigation Measures</p> <ul style="list-style-type: none"> Identify and demarcate construction areas for general construction work and restrict construction activity to these areas. Prevent unnecessary destructive activity within construction areas (prevent over-excavations) Stockpile topsoil for re-use in rehabilitation phase. Maintain stockpile shape and protect from erosion. All stockpiles must be positioned at least 50 m away from drainage lines and wetlands. Erosion control measures: Run-off control and attenuation on slopes (sand bags, logs), silt fences, storm water channels and catch-pits, shade nets, soil binding, geofabrics, hydro seeding or mulching over cleared areas. <ul style="list-style-type: none"> Control depth of excavations and stability of cut faces/sidewalls. Compile a comprehensive storm water management plan as part of the final design of 	Contractors	Construction	inspection. <ul style="list-style-type: none"> Storm water management Plan. Way-leave from JRA 	inspection checklist. <ul style="list-style-type: none"> Incident register.
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		the project and implement during construction and operation.				
Re-vegetation and Rehabilitation or Reinstatement	29	<p>Objective To ensure re-vegetation and rehabilitation of disturbed areas is undertaken</p> <p>Legislation and Standards Conservation of Agricultural Resources Act (Act 43 of 1983) Environment Conservation Act (Act 73 of 1989) National Forestry Act (Act 84 of 1998) National Environmental Management Act 107 of 1998 and Gauteng Nature Conservation Bill, 2014.</p> <p>Mitigation measures In order to meet this goal, the following objective, actions and monitoring requirements are relevant:</p> <ul style="list-style-type: none"> Disturbed areas must be rehabilitated/re-vegetated with appropriate natural vegetation and/or local seed mix. Re-use native/indigenous plant species removed from disturbance areas in the rehabilitation phase as per the re-vegetation and rehabilitation management plan. Re-vegetated areas may have to be protected from wind erosion and maintained until an 	All Contractors	Throughout Construction	<ul style="list-style-type: none"> Rehabilitation Plan JW EMP Visual inspection Ecologist Specialist report Environmental Authorisation/GA Practical and completion certificate. Community Happy Letters. 	<ul style="list-style-type: none"> Daily inspection checklist. Rehabilitation report Waste management collection report (Waste Disposal Certificate).

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		<p>acceptable plant cover has been achieved.</p> <ul style="list-style-type: none"> • On-going alien plant monitoring and removal within the disturbed project footprint (where the initial clearing for construction took place) must be undertaken on all areas of natural vegetation on an annual basis. • All temporary facilities, equipment and waste materials must be removed from site and appropriately disposed of. • All temporary access road must be rehabilitated to their original condition • Necessary drainage works and anti-erosion measures must be installed, where required, to minimise loss of topsoil and control erosion. • On-going inspection of rehabilitated areas in order to determine effectiveness of rehabilitation measures implemented. • On-going alien plant monitoring and removal should be undertaken as per the approved Rehabilitation/Re-vegetation plan. <p>Management and Mitigation Requirement</p> <ul style="list-style-type: none"> • Conduct a detailed search of at the area. As a minimum, this should take place 				
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		<p>during the spring and summer months prior to impoundment so positive identification of flowering plants can be made. This should be done taking due cognisance of specialist studies already undertaken as part of the EIA process;</p> <ul style="list-style-type: none"> • Allow time for additional searches if these are deemed necessary, based on progress and diversity of plant species found; • Identify and physically mark all conservation worthy plants found on the ground; and • Capture markers and reference in a retrievable system, so that these can be located again for transplanting (e.g. using a combination of aerial photography, GPS and GIS, as appropriate). 				
Practical and Final completion inspection	30	<ul style="list-style-type: none"> • Ensure that practical inspection is conducted before the Contractor handover project back to JW in order to ascertain if the reinstatement or rehabilitation has been done accordingly. • The snag list is compiled and accepted by both parties (JW CAPEX Representatives and Contractor) • All responsible personnel including 	CAPEX/ OHSE& DM/ All Contractors	During the final stage of project	<ul style="list-style-type: none"> • Meeting invite • Visual inspection 	<ul style="list-style-type: none"> • Meeting invite • Attendance register • Snag list • Signed practical and final completion

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		Environmental representative sign both practical and final completion letter.				inspection letter.
Final close out report	31	<ul style="list-style-type: none"> Conduct final audit on site. EO must ensure that audit reports are signed by RE/Engineer and Contractor. Environmental File is returned to JW. 	OHSE & DM	During the final stage of project.	<ul style="list-style-type: none"> Final audit report. Signing of Audit reports. 	<ul style="list-style-type: none"> Final Audit report. Signed Audit report. Environmental file.

Table 3: Environmental Management and Mitigation Measures that must be implemented during the Operational Phase

Operational Phase Measures						
Aspects	ID	Mitigation Measure/Procedure	Responsible	Implementation Timeframe	Monitoring Methods	Performance indicators
Waste Management	1	Sanitation Facilities <ul style="list-style-type: none"> Ablution facilities shall be provided on site. The positioning of the ablution facilities shall be done in consultation with Client and shall be placed so that it cannot contaminate the natural streams and rivers. One toilet shall be provided per 15 staff members on site. Toilets shall be positioned within walking distance of wherever employees are employed on the site. Toilets shall be provided with locks and doors shall be secured to prevent the toilets from 	Johannesburg Water	During operation and maintenance activities	<ul style="list-style-type: none"> Visual inspection of Waste collection and disposal areas. Visual inspection of site. Check waste disposal slips. Monitor 	<ul style="list-style-type: none"> Presence of litter Availability of waste bins and skips. Degree to which rubbish bins and skips are filled Total volume of general and hazardous waste storage capacity

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		<p>blowing over.</p> <ul style="list-style-type: none"> The toilets shall be placed outside of areas susceptible to flooding. Chemical toilets shall be serviced regularly by an authorised service provider and removed to a registered waste water treatment works and disposal certificates shall be obtained from the waste disposal facility for each disposal and retained on site. Polluted run-off must be discharged in the local sewerage main and not overland or into public streams. In instances where a sewerage main is not available, polluted run-off will be collected in sub-surface tanks and a reputable effluent removal contractor will be contracted to dispose of the waste in an environmentally acceptable manner. Official documentation shall be obtained from the waste disposal facility for each disposal and retained on site. Any cooking on Site shall be done on well-maintained gas cookers with fire extinguishers present. No cooking shall be permitted to occur on open fires. Toilets situated close to the site boundaries or within sight of residential areas shall be hidden behind screens or other cover as approved by 			<p>activities against JW Waste Management Plan.</p> <ul style="list-style-type: none"> Waste Inventory Register. 	<ul style="list-style-type: none"> Total volume of general and hazardous waste stored on site Degree to which different waste is separated. Frequency of waste collection. Total volume of recycled and reused waste.
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		<p>the Engineer;</p> <ul style="list-style-type: none"> No spillage shall occur when the toilets are cleaned or emptied and the contents shall be properly stored and removed from Site. Discharge of waste from toilets into the environment and burial of waste is strictly prohibited; All building rubble and rubble from the demolished structures, solid and liquid waste must be disposed of as necessary at an appropriately licensed refuse facility. Ensure that no refuse wastes are burnt on the premises or on surrounding premises. No fires will be allowed on site. <p>Contaminated water</p> <ul style="list-style-type: none"> Workshops, refuelling depots and washing areas shall be bunded. Any wastewater or spilled fuel collected within bunded areas around the refuelling area shall be disposed of as hazardous waste Waste water containing hydrocarbons, paints oil etc. shall be treated as hazardous waste 				
Protection of Vegetation	2	<ul style="list-style-type: none"> Limit the footprint of the maintenance and operational activities to the minimum to minimise environmental damage. 	Johannesburg Water	<ul style="list-style-type: none"> During operation and 	Visual inspection	<ul style="list-style-type: none"> Incidents of vegetation damage.

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- Designate vegetated areas outside the development footprint as “No go” areas.
- Limit the off-road driving within the Johannesburg Water Sites.
- Protected or endangered species of plants shall not be removed unless they are interfering with a structure.
- All trees and vegetation cleared from the site shall be cut into manageable lengths.
- Big trees with large root systems shall be cut manually and removed, as the use of a bulldozer will cause major damage to the soil when the root system are removed.
- Stumps shall be treated with herbicide.
- Protected or endangered species of plants shall not be removed unless they are interfering with a structure.
- Where such species have to be removed due to interference with a structure, the necessary permission and permits shall be obtained from Provincial Department of Agriculture and Rural Development.
- All protected species not to be removed must be clearly marked and such areas fenced off if required.
- The use of herbicides shall only be allowed

- maintenance activities/.
- When is necessary.

- Number of incidents of disturbance of vegetation outside site boundary.

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		<p>after a proper investigation into the necessity, the type to be used, the long-term effects and the effectiveness of the agent.</p> <ul style="list-style-type: none"> No scalping shall be allowed on any part of Johannesburg Water Sites. 				
Alien invasive/weeds control	3	<ul style="list-style-type: none"> Some of the areas of JW area are covered with moderate to very dense invasive alien shrubs and trees. Clearing of such vegetation will be necessary to gain access .However, clearing of this vegetation from the entire project area as far as possible will reduce the re-establishment rate of this vegetation over time, and will thus not only benefit the environment put also the proposed project and potential future phases of the project in the long term. The type of invasive, however, will require regular follow-up eradication of seedlings after clearing, as extensive seed-banks of these species are present underneath present infestations. Wood from alien vegetation can be used. However, care must be taken not to leave any of the leaf- or seed material on the site where the vegetation was cleared. Rather, identify a particular area that no longer has any indigenous vegetation, demarcate that area 	Johannesburg Water	During operation and maintenance activities	<ul style="list-style-type: none"> Visual inspection. Monitoring against Vegetation Management Plan. PCO certificate. 	<ul style="list-style-type: none"> Daily inspections register. Incident register.

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		<p>and dump excess material of alien species there.</p> <ul style="list-style-type: none"> • Once the material is sufficiently dry, it should be burned to destroy any regenerating capacity of stems and roots as well as seeds. • Only registered PCO with Certificate for competency to handle the hazardous substances (e.g. Herbicides) is allowed to use herbicide. • Only environmental friendly herbicide is allowed within JW sites. • MSDS for the herbicides must be kept in the storage area. • Method Statement for applying and handling herbicides and Risk Assessment for applying and handling herbicides. • Appropriate PPE for handling herbicides. • Herbicides stored only in a designated storage. • Empty containers of herbicides disposed of accordingly to the registered hazardous landfill site. • Proof of disposal provided to JW Environmental Section. 				
Sludge Management	4	<ul style="list-style-type: none"> • The sludge must be managed according to the sludge guideline. • All agreements or Contract must be placed in 	Johannesburg Water/Bulk Waste	During operations activities	<ul style="list-style-type: none"> • Visual inspection according to 	<ul style="list-style-type: none"> • Sludge test report • Complaints register.

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		<p>the file.</p> <ul style="list-style-type: none"> The sludge must be kept on a designated bunded drying bed. 			<p>Sludge SOP.</p> <ul style="list-style-type: none"> Monitoring against Sludge Guideline. Monitoring against WUL. 	<ul style="list-style-type: none"> Sludge spill register. Environmental Officers Internal WUL Audit Report.
Workshop and storage Area	5	<ul style="list-style-type: none"> The siting of workshops, maintenance and refuelling sites and materials storage areas shall not be in the vicinity of sensitive sites e.g. wetlands, cultivated fields or drainage lines, or where local land owners can be disturbed. Storm water shall be diverted around the storage area. Storm water falling on the storage area shall be discharged if it meets the required water quality standards. Proper storage facilities, placed on an impermeable surface, shall be provided for the storage of oils, grease, fuels, chemicals and other hazardous materials to be used during the construction phase of the project. If fuel is required on site it shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers. Leakage of fuel shall be avoided. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to 	Johannesburg Water	During operations and maintenance activities	<ul style="list-style-type: none"> Visual inspection SOP for handling hazardous substances. MSDS register 	<ul style="list-style-type: none"> Workshop and storage register. MSDS register. Incident register.

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accommodate any spillage or overflow from these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil.

- In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or container and Material Safety Data Sheets (MSDS's) will be made available for all hazardous chemicals. Before containers or storage facilities are erected, emergency procedures in the event of misuse or spillage that may negatively affect an individual or the environment will be in place.
- The storage facilities (including any tanks) shall be surrounded by a bund wall, in order to ensure that accidental spillage does not pollute local soil or water resources.
- The storage areas shall not be utilised for accommodation purposes and shall be access controlled.
- The storage area shall be kept tidy and the area shall be rehabilitated after use.
- An inventory of any hazardous chemicals/substances (including that within equipment) kept on site, along with a description of possible ill effects and treatment

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of health-related afflictions resulting from accidents, shall be kept in the storage area as well as by the appropriate manager. These areas shall be securely fenced.

- Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area.
- A notice board with the contact details of the responsible party shall be displayed at the gate to the storage area.
- All vehicles and machinery will be inspected for any leaks or malfunctions regularly. Vehicle servicing or repairs is prohibited from site, unless in an emergency.
- Drip trays shall be inspected and emptied daily and serviced when necessary. In particular drip trays shall be closely monitored during rain events to ensure that they do not overflow. The contents must be disposed of at a recognised site.
- All repairs done on machinery using hydrocarbons as fuels or lubricants shall have a drip tray placed strategically to avoid incidental spillage.
- Workers shall be made aware of the health risks associated with any hazardous substances used (e.g. smoking near refuelling depots), and

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		<p>shall be provided with appropriate protective clothing / equipment in case of spillages or accidents.</p> <ul style="list-style-type: none"> • Cement and other potential environmental pollutants shall be stored and mixed on plastic sheeting or ready mix trucks shall be used. There shall be no opportunity for environmental contamination. • Workshop areas shall be monitored for oil and fuel spills and such spills shall be cleaned and remediate to the satisfaction of the EO. • The site shall be in possession of an emergency spill kit that must be complete and available at all times on site. 				
Complaints	6	<ul style="list-style-type: none"> • Maintain a complaints register for all complaints. The register must list: • Complainant name and contact details; • Date complaint was lodged; • Person who recorded the complaint; • Nature of the complaint; • Actions taken to investigate the complaint and outcome of the investigation; • Action taken to remedy the situation; • Date on which feedback was provided to complainant. 	Johannesburg Water	During operations and maintenance activities	<ul style="list-style-type: none"> • Complaints register. • GDARD complaints reference number. 	<ul style="list-style-type: none"> • Availability of register on site • Designated person to maintain register • Complaints logged • Complaints followed up and closed out.
Collection of	7	<ul style="list-style-type: none"> • Water sampling shall be undertaken at the 	Johannesburg	During	<ul style="list-style-type: none"> • Visual 	<ul style="list-style-type: none"> • Daily water

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water sample		<p>selected sampling points as per the WUL.</p> <ul style="list-style-type: none"> Any incident or non-compliance with the WUL parameters or DWS Water Quality Guidelines shall be reported accordingly and investigated Unused sampling bottle shall be disposed of accordingly. 	Water/CDYNA	operation activities	<p>inspection.</p> <ul style="list-style-type: none"> Online Lab reports 	<p>sample report.</p> <ul style="list-style-type: none"> Incident register.
Environmental Incident reporting and Emergency Response and Preparedness	8	<ul style="list-style-type: none"> NEMA Section 30 and 30A emergency incidents and situations must be reported to GDARD or DEA immediately after as an incident or situation occurs. NWA Section 20 emergency must be reported to DWS, mostly by Operations Department. This can be done via phone, fax or email. JW must implement measures to contain the incident or situation immediately. Thereafter the Emergency Incident Report (EIR) or Emergency Situation Report (ESR) must be submitted to the authorities ASAP. The reports must provide as much information as possible, if not; the reports can be updated later as the investigation progresses. Not reporting an incident could result in the authorities issuing a directive or a compliance notice to the responsible person. Important Note: For Section 30A Emergency Situation, an oral or written directive must be 	Johannesburg Water Sites	During operation and maintenance activities.	<ul style="list-style-type: none"> Visual inspection. Flash report/ Incident investigation report. Section 30A Annexure A. JW Environmental Emergency Preparedness and Response Procedure. 	<ul style="list-style-type: none"> Incident register Bioremediation report. Section 30A Directive. Corrective Action Plan

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obtained from GDARD or DEA before works can be undertaken in the watercourse to avoid undertaking listed activities without obtaining EA.

- Johannesburg Water takes responsibility in order to effectively respond to emergency incidences such as fire, hydrocarbon and sewer spills or leakages, disturbance of wildlife and archaeological artefacts. The SHE Rep must conduct daily inspections to ensure that the required equipment needed to handle environmental incidents/ emergencies are readily available and in working condition. Quick response to an incident prevents escalation to an emergency:

9. Water Management

- Water is a scarce resource and water shall be conserved wherever possible.
- Improved and protected watercourses to Class C classification which is moderately modified in terms of determined class of water resource and resource quality objectives of chapter 3 (Part 2) of National Water Act (Act 36 of 1998).
- Demand reduction/ Alternative sources.
- Building a water sensitive city.
- Well managed and maintained water infrastructure networks.

Water Usage	9.1	<ul style="list-style-type: none"> • The site must be kept tidy and hygienic at all times with special reference to sanitation & water management. 	Johannesburg Water Sites	During operation	<ul style="list-style-type: none"> • Visual inspection • Meter readings 	<ul style="list-style-type: none"> • Records of Monthly water Usage.
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		<ul style="list-style-type: none"> Maintain a monthly water usage. Reporting of water pipe burst and damaged meters 				
Reduce water demand	9.2	<ul style="list-style-type: none"> Implement effective demand-side management practices while exploring investment into smart infrastructure and alternative supplies to increase levels of net water savings. Establish Task Team with different law enforcement agencies to develop and implement solution for infrastructure abuse problem. Promote the implementation of Sustainable Urban Drainage System practice. 	Johannesburg Water (Network)	During operation	<ul style="list-style-type: none"> Monthly Monitoring Monthly water management report 	<ul style="list-style-type: none"> Records of percentage reduction on non-revenue water. Records of Percentage reduction of Rand Water system input volume.
Incentivise water saving interventions across domestic and economic sector users.	9.3	<ul style="list-style-type: none"> Implementation of command and control base mechanism that promote water saving (CoJ By-laws). Implementation of incentives base mechanism Develop partnerships beyond the City to encourage water savings. Expand current CoJ drought policy to build greater resilience of the water system. Integrate water conservation requirements in conditions of planning approval. 	Johannesburg Water ()	CoJ/Operations	<ul style="list-style-type: none"> Monthly water management report 	<ul style="list-style-type: none"> Records of reduction in annual water consumption per capita Water from alternative sources as % of total water

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		<ul style="list-style-type: none"> Develop an awareness and communications campaign using available technology. 				supply
Rehabilitation/ Reinstatement	10	<ul style="list-style-type: none"> Clean up and remove any spills and contaminated soil in the appropriate manner. Ensure that no discarded materials are buried on site or on any other land not designated for this purpose. Rehabilitate any disturbed areas as soon as maintenance or construction in the area is complete. If disturbed areas are left to rehabilitate naturally, they must be frequently monitored and interventions put in place immediately should it become necessary. Special attention must be given to the potential for soil erosion and the associated environmental degradation. It is also essential to undertake alien vegetation control and management. 	Johannesburg Water	During operation and maintenance activities	<ul style="list-style-type: none"> EO compliance monitoring. Visual inspection. Compliance inspection against rehabilitation plan. JW EMP. 	<ul style="list-style-type: none"> Inspection report. Audit report by External Auditor. Photos before and after.

6.1 Method Statement

The objective is to ensure all construction activities are undertaken with the appropriate level of environmental awareness to minimise environmental risk.

The environmental specifications are required to be underpinned by a series of Method

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Statements, within which the Contractors and Service Providers are required to outline how any identified environmental risks will practically be mitigated and managed for the duration of the contract, and how specifications within this EMPr will be met. That is, the Contractor will be required to

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describe how specified requirements will be achieved through the submission of written Method Statements to Johannesburg Water Environmental Section and ECO.

A Method Statement is defined as “a written submission by the Contractor in response to the environmental specification or a request by the Site Manager, setting out the plant, materials, labour and method the Contractor proposes using to conduct an activity, in such detail that the Site Manager and Environmental Officers are able to assess whether the Contractor's proposal is in accordance with the Specifications and/or will produce results in accordance with the Specifications”. The Method Statement must cover applicable details with regard to:

- Construction procedures
- Materials and equipment to be used
- Getting the equipment to and from site
- How the equipment/material will be moved while on-site
- How and where material will be stored
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur
- Timing and location of activities
- Compliance/non-compliance with the Specifications, and
- Any other information deemed necessary by the Johannesburg Water.

The Contractor may not commence the activity covered by the Method Statement until it has been approved by the Site Manager, except in the case of emergency activities and then only with the consent of the Site Manager. Approval of the Method Statement will not absolve the Contractor from their obligations or responsibilities in terms of their contract.

Failure to submit a method statement may result in suspension of the activity concerned until such time as a method statement has been submitted and approved. The EO and ECO should monitor the construction activities to ensure that these are undertaken in accordance with the approved Method Statement.

Monitoring

- Regular inspections of the site by EO/SHE.
- Immediate reporting of ineffective sediment control systems.
- Public complaints register must be developed and maintained on site.

Monitoring Program

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OBJECTIVE: Monitor the performance of the control strategies employed against environmental objectives and standards

A monitoring programme must be in place not only to ensure conformance with the EMP, but also to monitor any environmental issues and impacts which have not been accounted for in the EMP that are, or could result in significant environmental impacts for which corrective action is required. The period and frequency of monitoring will be stipulated by the environmental authorisation (once issued). Where this is not clearly dictated, Johannesburg Water will determine and stipulate the frequency of monitoring required in consultation with the relevant authority. The contractor project manager will work with the site manager of the contractor to ensure that monitoring is conducted and reported.

The aim of the monitoring and auditing process would be to routinely monitor the implementation of the specified environmental specifications, in order to:

- Monitor and audit compliance with the prescriptive and procedural terms of the environmental specifications.
- Ensure adequate and appropriate interventions to address non-compliance.
- Ensure adequate and appropriate interventions to address environmental degradation.
- Provide a mechanism for the lodging and resolution of public complaints.
- Ensure appropriate and adequate record keeping related to environmental compliance.
- Determine the effectiveness of the environmental specifications and recommend the requisite changes and updates based on audit outcomes, in order to enhance the efficacy of environmental management on site.
- Aid communication and feedback to authorities and stakeholders.

Method of Monitoring

The Environmental Officer will ensure compliance with the EMP, and will conduct monitoring activities. The EO will undertake site inspections on a monthly basis or as specified in the environmental authorisation once issued.

6.2 Monitoring Reports

Environmental Monthly reports will be compiled by the EO on a monthly basis and must be submitted to Environmental Specialist. The report should include details of the activities undertaken in the reporting period, any non-conformances or incidences recorded, corrective action required and details of these non-conformances or incidents which have been closed out.

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A document handling system must be established to ensure accurate updating of EMP documents, and availability of all documents required for the effective functioning of the EMP. Supplementary EMP documentation could include:

- Method Statements;
- Environmental Action Plan
- Environmental File Site instructions;
- Emergency preparedness and response procedures;
- Record of environmental incidents;
- Non-conformance register
- Training records;
- Site inspection reports;
- Waste Register
- Water Usage Register
- Fauna and Flora Register
- Hazardous chemical Inventory list
- Monitoring reports;
- Auditing reports; and
- Public complaints register (single register for maintained for overall site).

Table 4: Monitoring Programme

ISSUE	FREQUENCIES OF MONITORING	RESPONSIBLE PERSON
WATER		
Prevention of water pollution	Weekly in rainy season	Contractor's Representative (CR)/ Johannesburg Water
Prevention of stagnant water on site.	Weekly in rainy season	
Proper functioning of sanitation facilities	Weekly	
SOIL		
Surface or gully erosion on site	Weekly in rainy season	CR/JW
Soil contamination with oils	Monthly	CR/JW
If small, clean up. If large, appoint a	Immediately	CR/JW

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ISSUE	FREQUENCIES OF MONITORING	RESPONSIBLE PERSON
suitable contractor for clean-up.		
Air		
Control domestic fires.	Weekly	CR/ JW
Heavy vehicle emission control.	Monthly	CR/JW
Dust control of access roads. Wetting when required.	Weekly inspection	CR
WASTE		
Efficiency of domestic waste collection.	Weekly	CR/JW
Prevention of burning of solid/liquid wastes on site.	Weekly	CR/JW
Proper collection and containment of liquid wastes (petroleum, oils, paints, resins & cooking oils)	Monthly	CR/JW
The recycling and/or disposal thereof.		
The collection and disposal of construction waste (concrete, wood, steel)	Bi Weekly	CR
Collection of hazardous waste.	Monthly Bi Weekly	CR/JW
		CR/JW
WILDLIFE		
Weed Control	On-going	CR/JW
Control of illegal hunting or snaring of game, birds or other wild animals.	On-going	CR/JW
SOCIAL		
Inspect overall appearance of site. (paint work, cleanliness &	Weekly	CR

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ISSUE	FREQUENCIES OF MONITORING	RESPONSIBLE PERSON
housekeeping)		
Resolve complaints	Daily	CR/JW
Monitor behaviour of labourers	Daily	CR/JW
SAFETY		
Inspect road signs, pedestrian and vehicle behaviour	At least once a week	CR/JW

6.3 Internal Audits and Reporting

Typically, an audit analyses the results obtained from monitoring, assesses whether objectives and targets have been met and whether there are variances from the stipulated EMP and legal requirements. In addition, the audit assesses whether EMP implementation has been undertaken according to planned arrangements and that the EMP itself is being appropriately updated. The audit should confirm that identified corrective actions have been undertaken and then assess the effectiveness of such actions. The timing of audits should be included in the implementation schedule in the EMP.

The key steps in a successful audit are:

- Establish audit procedures.
- Determine the frequency of audits.
- Ensure that the auditors are competent, in that they must be able to undertake the audit objectively and competently. Audits may be undertaken by internal or external parties, although certain I&AP requirements may define a need for external auditors.
- Maintain records of audits.

A procedure is to be developed by the project management team for conducting EMP audits, and should incorporate processes for scheduling and reporting, as well as the timing and frequency of the audits. This procedure should also address responsibilities and required resources. The EO is usually responsible for the

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maintenance of the environmental audit information that is required prior, during and after an audit. Internal audits must be undertaken by Johannesburg Water Environmental Section on monthly basis.

6.3.1 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 assessments and other requirements, as necessary. Johannesburg Water 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)

Table 5: Compliance Rating Protocol

Classification	Scoring	Classification description
Good	93 – 100%	Substantial compliance
Average	80-92%	Compliance status needs to be improved
Poor	61-79%	Methods to ensure compliance require substantial improvement
Very poor	<60%	Methods to ensure compliance failed completely - no system in place

6.3.2 Work Stoppage

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 Annexure C.

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6.4 Environmental Awareness Plan

OBJECTIVE: Ensure all operation personnel have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and on-going minimisation of environmental harm (Environmental Awareness Plan)

To achieve effective environmental management, it is important that Contractors and site employees are aware of the responsibilities in terms of the relevant environmental legislation and the contents of this EMP. Johannesburg Water is responsible for informing its employees and contractors (transportation contractor) of their environmental obligations in terms of the environmental specifications, and for ensuring that employees are adequately experienced and properly trained in order to execute the works in a manner that will minimise environmental impacts. Johannesburg Water's obligations in this regard include the following:

- Employees must have a basic understanding of the key environmental features of the depot and its surrounding environment.
- Ensuring that a copy of the EMP is readily available on-site and that all site staff is aware of the location and has access to the document. Employees must be familiar with the requirements of the EMP and the environmental specifications as they apply to the operation of the facility.
- Ensuring that, prior to commencing any new site works, all employees have attended an Environmental Awareness Training course. The course must provide the site staff with an appreciation of the project's environmental requirements, and how they are to be implemented.
- Awareness of any other environmental matters, which are deemed to be necessary by the depot manager.
- Ensure that construction workers have received basic training in environmental management, including the storage and handling of hazardous substances, minimise of disturbance to sensitive areas (wetland), management of waste and prevention of water pollution
- Records must be kept of those that have completed the relevant training.
- Training should be done either in a written or verbal format but must be in an appropriate format and language for the receiving audience
- Refresher sessions must be held to ensure the operating staffs are aware of their environmental

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obligations.

Therefore, prior to the commencement of construction activities on site and before any person commences with work on site thereafter, adequate environmental awareness and responsibility are to be appropriately presented to all staff present onsite, clearly describing their obligations towards environmental controls and methodologies in terms of this EMP. This training and awareness will be achieved in the following ways:

6.4.1 Environmental Awareness Training

Environmental Awareness Training must be undertaken by the Environmental Officer and must take the form of an on-site talk and demonstration by the Environmental Officer before the commencement of construction activities on site. A record of attendance of this training must be maintained by the Environmental Liaison Officer/SHE Officer on site.

6.4.2 Formal Environmental Training

JW must ensure that there is a budget allocated for environmental formal training in CAPEX projects for the skills development of community where project is being undertaken. The principal Contractor shall identify short courses and include them on the training matrix that can be done on site during project duration. The following are some of the trainings that can be done on site:

- ISO14001:2015 Environmental Management System Awareness
- Handling of bee hives
- Snake awareness and handling
- Environmental legal Liability.
- Waste Management
- Environmental Site Representative

The principal Contractor must ensure that they appointing a registered company that meet all the requirements and before appointment of service provider, the files shall be submitted to Environmental Section for evaluation.

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6.4.3 Induction Training

Environmental induction training must be presented to all persons who are to work on the site – be it for short or long durations. Contractors or Engineers staff, site staff, sub-contractors or visitors to site.

This induction training should include discussing Johannesburg Water’s environmental policy and values, the function of the EMP and the importance and reasons for compliance to these. The induction training must highlight overall do’s and don’ts on site and clarify the repercussions of not complying with these. The reporting procedure must be explained during the induction as well. Opportunity for questions and clarifications must form part of this training. A record of attendance of this training must be maintained by the SHE officer on site.

6.4.4 Toolbox Talks

Toolbox talks should be held on a scheduled and regular basis (at least once a month) where the foreman/site supervision manager, environmental and safety representative and all employees on site hold talks relating to environmental practices and safety awareness on site. These talks should also include discussions on possible common incidents occurring on site and the prevention of reoccurrence thereof. Records of attendance and the awareness talk subject must be kept on file.

6.5 Erosion Management Plan

The objective to control soil erosion from an ecological perspective is:

- To reduce the effects of raindrop splash erosion on exposed soil surfaces.
- To keep rainwater on the soil surface for as long as possible to increase the infiltration rate and reduce surface runoff.
- To reduce the speed of surface runoff to reduce the erosion effect of the soil surface.
- To provide methods to retain soil, debris, seed banks and organic matter being carried away by runoff.
- To improve water retention of the area (Coetzee, 2005).

Areas with a high soil erosion potential on the site

Areas identified as being of high soil erosion potential on the site include:

- Any areas without vegetation cover

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- Excavated areas
- Steep areas
- Areas which undergo overland flow of water.
- Areas close to water
- Irrigated areas
- Compacted areas
- Rivers
- Drainage lines
- Any areas where developments cause water flow to accelerate on a soil surface.

If any erosion features are present as a result of the activities mentioned above the ELO must:

Assess the situation.

- Take photographs of the soil degradation.
- Determine the cause of the soil erosion.
- Inform and show the relevant contractors the soil degradation.
- Inform the contractor that rehabilitation must take place and that the contractor is to implement a rehabilitation method statement and management plan.
- Monitor that the contractor is taking action to stop the erosion and assist them where needed.
- The progress of the rehabilitation must be monitored weekly and recorded in the site diary.
- All actions with regards to the incidents must be reported on in the monthly Audit report.
- If the erosion incident has not being addressed by the contractor within 14 days of you reporting it, the Johannesburg Water's Environmental Section must be informed.

The contractor/ developer (with the EO's consultation) must:

Select a system to treat the erosion

Design the treatment system

Implement the system

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Monitor the area to see if the system functions like it should, if it the system fails adapt or adjust the system to ensure erosion is controlled.

Monitoring must continue until the area has been stabilized

General Erosion

The civil works contractor may use the following instruments to combat erosion when necessary:

- Reno matrices
- Slope attenuation
- Shade catch nets
- Mulching
- Hydro-seeding or transplanting
- Re-vegetating
- Tilling (roughing the surface)

Erosion Management control measures

Ensure that all soil surfaces are protected by vegetation or a covering to avoid the surface being eroded by wind or water.

Ensure that heavy machinery don't compact areas that are not meant to be compacted as this will result in compacted hydrophobic, water repellent soils which increase the erosion potential of the area.

Surface water control measures

Prevent the concentration or flow of surface water or storm water down cut or fill slopes or along pipeline routes or roads and ensure measures to prevent erosion are in place prior to construction.

Storm water and any runoff generated by hard surfaces should be discharged into retention swales or areas with rock rip-rap. These areas should be grassed with indigenous vegetation. These energy dissipation

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structures should be placed in a manner that flows are managed prior to being discharged back into the natural water courses, thus not only preventing erosion, but also supporting the maintenance of natural base flows within these systems, i.e. hydrological regime (water quantity and quality) is maintained.

- Mitigate against siltation and sedimentation through the use of the above mentioned structures and ensure that all structures do not cause erosion.
- Ensure that all storm water control features have soft engineered areas that attenuate flows, allowing for water to percolate into the local aquifers.
- Minimise and restrict site clearing to areas required for construction purposes only and restrict disturbance to adjacent undisturbed natural vegetation.
- Vegetation clearing should occur in parallel with the construction progress to minimize erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment.
- Minimise the diversion of flows into different catchments.
- If implementing dust control measures, prevent over-wetting, saturation and run-off that may cause erosion and sedimentation.
- Water course (stream) crossings should not trap any run-off, thereby creating inundated areas, but allow for free flowing water courses.

ALL EROSION CONTROL MEASURES

Areas susceptible to erosion must be protected by appropriate measures and repair of any damage caused by erosion due to construction activities must be under taken as soon as possible.

Minimise erosion and sedimentation into water courses through effective stabilisation (gabions and reno mattresses) and re-vegetation of disturbed river banks (Refer to rehabilitation specifications and erosion control measures below).

Stabilisation of sandy, dispersive slopes or slopes steeper than 1:3 will be required.

Ensure that bare soil is covered and hydro seeded to reduce topsoil loss.

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The ELO should compile and keep an Incidents and Accidents Register on site in which all incidents and accidents are recorded, e.g. chemical spills, fires, accidents involving workers and vehicles, etc.

The following information must be recorded in the Incidents Register:

- The name and contact details of the persons involved
- The person recording the incident
- The date and time of incident
- The nature, extent and cause of the accident
- The name and contact details of any persons notified of the incident
- The actions taken to deal with the incident and whether the accident has been sufficiently
- Dealt with additional steps required to prevent recurrence of the incident.

7. RECORD KEEPING, COMPLIANCE AND PENALTIES

Various records will be kept on site for monitoring purposes these include but not limited to:

- Copy of Environmental Management Plan
- Approved Environmental Method Statements
- Environmental Authorisation
- Environmental induction attendance register
- Hazardous chemicals register
- Waste disposal register and disposal certificates
- Oil/fuel spill register

Records of non-compliance shall also be kept on record and will include the nature and magnitude of the non-compliance in a register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. External complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a public complaints register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at

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the monthly site meetings. A score of 90% is required for the Monthly Audit undertaken by the Johannesburg Water's Environmental Officers.

8. DECOMMISSIONING

Objective

- To avoid and or minimise the potential environmental and social impacts associated with the decommissioning phase

Mitigation Measures

Mitigation measures as detailed in the construction phase on the EMP regarding impacts on flora, fauna, habitats and wetlands would be applicable to this phase.

- Rehabilitation to be undertaken in terms of specifications outlined in the Rehabilitation section of this EMP as well as in terms of any specific requirements applicable at the time.

Johannesburg Water EO will need to supervise decommissioning activities

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2. Should the contractor deviate from the conditions and requirements of the EMP and/or Environmental Authorisation (if applicable), the contractor is liable for non-compliances, rectification and associated fines thereof
3. This EMP does not exempt the Contractor from complying with other relevant legislations related to the construction activities.

JW EMP Annexure A: Environmental Management Requirement Acknowledgement Letter

Environmental Requirement for Contractors and Suppliers working for Johannesburg Capital Expenditure (CAPEX) projects	Unique no	JWEMP:122017
	Revision no	00

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:

Name of the Contractor	
Vendor Number	
Project Number	
Scope of Work	

Declaration by Capital Expenditure Projects Contractor

- I undertake to adhere to the requirements as set out in:
 - Johannesburg Water Environmental Management Plan and Waste Management Plan
 - Environmental requirements for Contractors working on Capital Expenditure Projects
- I undertake to comply with all applicable environmental legal and other requirements.
- Undertake to comply with Johannesburg Water's environmental standards, policies and procedures where applicable.
- I pledge to inform all staff of their role in managing environmental impacts on site.
- I am fully aware that incidents must be reported within 24 hours of occurrence.
- I pledge to implement environmental best practice on site at all times during the contract.
- I pledge that all non-conformances issued to us will be addressed promptly.

I hereby acknowledge that I have obtained copies of Johannesburg Water Environmental Management Plan and Waste Management Plan and confirm that I fully understand the contents thereof and the consequences of non-compliance. The Contractor furthermore reiterates their commitments to compliance of the requirements contained within the following provided documentations and conform to all above mentioned requirements.

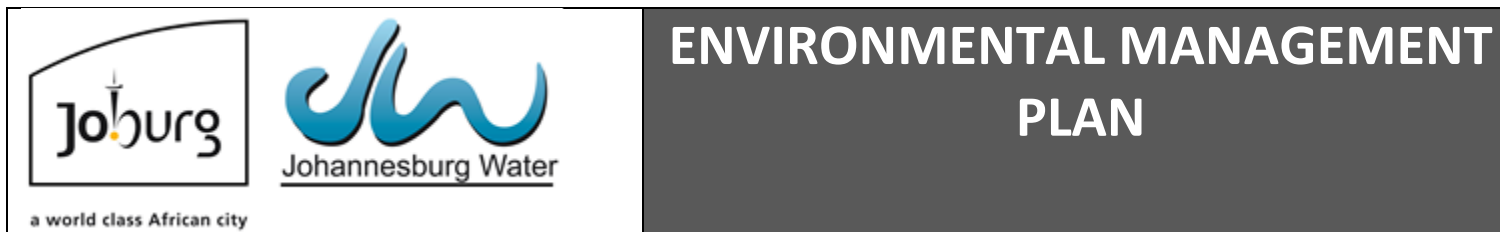
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Signed at on this Day of 20.....

Contractor	Signature:	Date:
Project Engineer (Witness)	Signature:	Date:



Annexure B: Contractors Environmental File Evaluation Form

		<h3>CONTRACTORS ENVIRONMENTAL FILE EVALUATION FORM</h3> <p>A minimum score of 80% is required on all sections for the approval of the submitted Environmental file System. Failure to achieve the required score will result in non-approval of the Environmental file, and the project will not commence prior file approval.</p>	
<h4>ENVIRONMENTAL SYSTEM EVALUATION OUTCOME</h4>			
AVERAGE SCORE OBTAINED			0.00%
		APPROVED/REJECTED	
EVALUATED BY:	REVIEWED BY:	APPROVED/REJECTED BY:	ACKNOWLEDGED BY:
DESIGNATION:	DESIGNATION:	DESIGNATION:	DESIGNATION:
SIGNATURE:	SIGNATURE:	SIGNATURE:	SIGNATURE:
DATE:	DATE:	DATE:	DATE:
PROJECT DETAILS			
Contract Number			
Project Title			
Name of Contractor			
Is the project screened?	YES/NO	IF NO	Construction activities/work (including site establishment) should ONLY commence when after the project is Screened
Specialist Studies/Report			
Environmental Authorisation (If applicable)			
Water Use Licence /General			

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ENVIRONMENTAL MANAGEMENT PLAN

Authorisation (If applicable)			
-------------------------------	--	--	--

SCORE ANALYSIS

	Satisfactory (Approved)	Requirements have been met
0.00%	Unsatisfactory (Not Approved)	Requires substantial improvement / partially achieved

ENVIRONMENTAL REQUIRED DOCUMENTS

1	Copy EMP and signed acknowledgement letter for JW EMP	0
2	SHE/ELO appointment letter	0
3	Contractor Environmental Induction presentation	0
3	Environmental Toolbox talk and copy of attendance register template	0
5	Environmental Objective (Site specific)	0
6	Environmental Policy Statement	0
7	Registers	0
3	Legal Register (Site specific)	0
9	Environmental Aspect and Impact register (site specific)	0
10	Permit register	0
11	Non Conformance Register	0
12	Waste register template	0
13	Complaint register	0
14	Incident register	0
1	Method statement register	0
16	Hazardous substances register	0
17	Daily Environmental checklist/ weekly checklist and spill kit checklist	0
18	Spill kit checklist	0

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3. This EMP does not exempt the Contractor from complying with other relevant legislations related to the construction activities.

19	Method statements or procedures	0
2	Document control procedure	0
2	Storm water management plan/ Erosion control	0
22	Alien invasive and weeds control plan	0
23	Hazardous Management Plan/ Procedure (i.e. .handling of hazardous substances)	0
24	Method statement for the activities to be undertake/(include environmental aspects on the technical MS)	0
25	Waste management plan/ Method statement for waste management	0
26	Incident report template (Flash report/Investigation report)	0
3	Emergency Response Plan	0
28	Training Matrix	0
29	Dust Management Plan or Method Statement for dust suppression	0
30	Contractor Audit procedure/template	0
31	Rehabilitation Plan or Method Statement for Rehabilitation/Reinstatement	0
TOTAL		0

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Annexure C: Environmental Work instruction

ENVIRONMENTAL MANAGEMENT (EM) SITE INSTRUCTION Document No : JW- EMS-HO—R014	  a world class African city
<ol style="list-style-type: none"> 1. All JW rules and regulation including JW Environmental Management Plan and other applicable legislation, standard and by-laws must be adhered to at all times. 2. Copies of Environmental Authorisation, Water Use License/General Authorization, Rehabilitation plan, EMP shall be kept on site (where applicable). 3. All JW sites must have waste bins, drip trays, spill kit and designated hazardous storage (where applicable). 4. Only registered Waste Service providers who comply with National Environmental Management Waste Act and Municipal By-laws shall be appointed. 5. No burning or burying of waste is allowed on site. 6. The conservation of water and the use of energy efficiently shall be implemented in all JW sites. 7. The letter from City Parks for occupying the open space shall be received and kept in the file and if the land belongs to the private owner, the copy of an agreement letter shall be kept in the file (where applicable). 8. The photos are taken before and during and after the project (where applicable). 9. The Environmental file must be approved before the commencement of works on site (where applicable). 10. The Environmental file will be kept on site all the times and shall be made available to competent authority and JW environmental representative (where applicable). 11. Rehabilitation/ reinstatement of the site must be done as per the JW EMP, rehabilitation method statement. 12. The hazardous waste must only be stored not more than 90 days on site as per the legislation. 13. Only asbestos registered service providers shall be appointed to handle and dispose asbestos to registered landfill site. 14. No mixing of general and hazardous waste will be allowed. 15. No cutting of trees is allowed on site without permit. 16. If archaeological artefacts or anything of heritage importance are found at JW sites/ servitude Environmental Section must be informed. 17. Everyone working within JW sites shall familiarize with the EMP requirements and other applicable JW environmental procedures. 18. All the environmental incidents shall be reported within 24 hours to JW environmental Section. 19. Ensure that all JW employees and its service providers or suppliers receive environmental induction. 20. All work must be carried out under close supervision by the competent persons. 21. Repetitive findings or non-compliances shall be avoided. 22. Topsoil stockpile shall be protected by erosions control berms if it is exposed to a period of 14 days during wet season (where applicable). 23. Only 150mm of topsoil shall be removed and stockpile at a height of not more than 1m. 24. All hazardous material must be stored on a bunded and ventilated storage, and MSDS must be available for all of them. 25. No painting or marking of natural features is allowed on site. 26. Pollution of the environment shall be prevented all the times. 27. No leaking mobile plant is allowed on site. 28. Dust control measures shall be implemented on site (where applicable). 29. No sewer spillage shall spill into the storm water or the watercourse. 30. All environmental related incidents and/or emergencies shall be investigated within 48 hours from the date of notice. 31. Killing of fauna and/or Avi-fauna is prohibited. 32. Alien invasive and weeds must be eradicated. 33. Fumigation shall be done by trained a personnel that is registered with DAFF. 34. No smoking is allowed in restricted areas. All such areas are posted appropriately. 	

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ENVIRONMENTAL MANAGEMENT PLAN

35. Personal protective equipment is required to be worn at all times in production areas.
36. Maintain good housekeeping in your work area.
37. Keep fire lanes, roadways, walkways and aisles free and clear of material.
38. The use of unsafe or defective equipment or tools is not permitted.
39. A contractor or subcontractor shall leave no unused materials on site. At the completion of a project the contractor shall remove all unused material and all waste shall be properly disposed of at a registered landfill site.
40. Any contractor or subcontractor found to be in violation of any EH&S rules can be ejected or escorted off premises if deemed necessary.
41. This file shall be kept on site and will be available at all times to the JW Reps and authorities (upon request).

ACKNOWLEDGEMENT BY MANAGER/CONTRACTOR



I, _____ the Manager/Contractor, do hereby declare that my site/company
 _____ acknowledges having read and understood the conditions contained in this document
 and furthermore, the employees agree to abide by these conditions.

CONTRACTOR/FACILITY REP. NAME	SIGNATURE	DATE

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ENVIRONMENTAL SITE INSTRUCTION		Document No : JW-EMS-HO- R014	  <p style="font-size: x-small; margin-top: 5px;">a world class African city</p>
Name of Contractor/Facility			
Responsible Manager/ Engineer			
Project No. <i>(where applicable)</i> :	Date Issued:	Date of Inspection:	
Environmental Representative:		Designation:	
<i>Should the responsible persons fail to comply with any term of this instruction, JW may demand compliance in writing from the defaulting party. Should the defaulting party fail to comply within the stipulated time frames, JW shall take the necessary steps to remedy the situation.</i>		PROJECT DESCRIPTION	
Reference No. of Non-Conformances		Action Required	
EM-1.			
EM-2.			
EM-3.			
EM-4.			
EM-5.			
EM-6.			
EM-7.			
EM-8.			
EM-9.			
EM-10.			
Received & Acknowledged by	Signature	Date	
Responsible Manager/Contractor			
Responsible Consultant <i>(where applicable)</i>			
JW Environmental Representative			

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ENVIRONMENTAL MANAGEMENT PLAN

JW Project Inspector / Engineer (<i>where applicable</i>)		
Contractor SHE/EL Officer (<i>where applicable</i>)		
COMMENTS BY RESPONSIBLE MANAGER/ENGINEER:	Target date for corrections	
	Accepted/Acknowledged by Manager/Contractor	
COMMENTS BY CONTRACTOR (WHERE APPLICABLE):	Follow up comments by JW Environmental Representative	

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SHE CONTRACTORS' COMPETENCY EVALUATION FORM		 Johannesburg Water	
All sections must be answered. Failure to do so may result in your application not being accepted / approved			
JW OPS 038/19R: LEASING OF FARM		JW OPS 038/19R	
CONTRACTOR / PROJECT INFORMATION			
SECTION A			
CONTRACTOR NAME: _____ ADDRESS: _____ _____ Street Address _____ City Country Mail Code		Comments	
PHONE NUMBER: () _____ FAX NUMBER: () _____ SHE CERTIFICATION : _____ EXPIRY DATE : _____ (NAME)			
SECTION B			
CLIENT NAME: JOHANNESBURG WATER PROJECT NAME: _____ PROJECT / CONTRACT JW NUMBER: _____ PROJECT LOCATION _____ City Address Mail Code			Comments
SECTION C			
<div style="background-color: #005596; color: white; display: inline-block; padding: 5px 20px; border: 1px solid black;">FOR JW USE ONLY</div>			
PERSON COMPLETING THE EVALUATION: PHONE NUMBER: () _____ FAX NUMBER: () _____ ADDRESS: (If different from above) _____ Street Address City State Zip TITLE: _____ SIGNATURE: _____			

SECTION D		CONTRACTORS' SHE QUALIFICATION QUESTIONNAIRE					
INJURY / ILLNESS STATISTICS							
USE THE PREVIOUS THREE YEARS' INJURY AND ILLNESS RECORDS TO COMPLETE THE FOLLOWING:							
		20_____	20_____	20_____			
NUMBER TOTAL RECORDABLE CASES							
NUMBER OF RESTRICTED WORKDAY CASES							
NUMBER OF LOST WORKDAY CASES							
NUMBER OF FATALITIES							
NUMBER OF EMPLOYEE HOURS WORKED							
SHE MANAGEMENT SYSTEM				Yes	No	N/A	Proof required
1	Does your Company have an SHE Management System? If Yes , then complete subsections 1.1 – 1.2:						
1.1	Provide the type(s) / name(s) of the management system(s).						X
1.2	If this is a recognised accredited system, please attach copies of certificates.						X
2	Does your Company have a Safety, Health, and Environmental (SHE) Policy in place that is signed by the supplier's senior management?						X
3	Has your Company identified the specific SHE impacts associated with the products, services or works it provides, and the steps taken to mitigate these impacts?						X
4	Does your Company observe SHE legislation and industry best practice standards?						X
5	Has your Company been prosecuted or issued with an enforcement notice / directive / compliance notice for infringement of any SHE legislation in the past three (3) years?						
5.1	If Yes, please provide details of the prosecution / enforcement notice /directive / compliance notice and what measures were taken to ensure the issue/s would not recur.						X
6	Has your Company had any reportable incident (safety and/or environmental) in the past five (5) years?						
6.1	If yes, please provide details:						X
ENVIRONMENTAL MANAGEMENT				Yes	No	N/A	Proof required
7	Has your company had any notices of violations, permit non- compliances or reportable spills in the past year?						
	If yes, how many?						
8	Has your Company a formally established EMS in place?						
	If so, is it based on ISO 14001 and is it certified?						X
	If not, what are your plans to do establish one in the next 12 months?						X
9	Has your Company implemented any third-party certifications or reviews related to your product or services such as Energy Star or Type III environmental declarations – Principles and procedures (ISO 14025)? If so, which one?						X
10	Does your Company measure and trend energy use?						
	Are there targets in place to reduce consumption?						
	Is there a programme in place to reduce consumption?						
	Does your Company measure and trend waste use?						
	Are there targets in place to reduce waste?						
11	Is there a programme in place to reduce waste?						
	Do you incorporate any recycled materials in your manufacturing process?						
	Can your product be easily recycled, re-used or disposed of?						
12	Does your Company have any opportunities to collaborate with us to improve environmental performance, such as transport reduction or technological improvements?						

OCCUPATIONAL HEALTH & WELLNESS		Yes	No	N/A	Proof required
13	Does your Company have a Health and Wellness Policy/Plan and Programme?				X
14	Does your Company have an HIV/Aids Awareness Policy/Plan and Programme?				X
15	Does your Company have an Employee Assistance Programme for permanent and temporary employees?				X
16	Does your Company have a medical surveillance programme that includes permanent and temporary employees?				X
17	Does your Company have man-job specifications (risk based) for each employee (including temporary / casual and labour broker persons) that is specific to the individual, the position that they fill, the work environment and tasks that they perform?				X
SECURITY MANAGEMENT		Yes	No	N/A	Proof required
18	Does your Company have a Security Management Policy to protect resources?				X
EMERGENCY PREPAREDNESS PLAN		Yes	No	N/A	Proof required
19	Does your Company have a Policy/Standard on Emergency Preparedness?				X
SUB-CONTRACTORS AND SUPPLIERS MANAGEMENT		Yes	No	N/A	Proof required
20	Does your Company appoint competent subcontractors /suppliers? (provide details of selection process and criteria)				X
21	Do you have arrangements for monitoring compliance & performance of your subcontractor/supplier?				X
VEHICLE SAFETY		Yes	No	N/A	Proof required
22	Does your Company have a policy that addresses Driver, Passenger and Vehicle Safety (which includes vehicle maintenance, driver/operator competence)?				X
23	Do your Company's motor vehicles / cycles, construction vehicles, mobile plant used/hired comply with the manufacturer's design and legal requirements?				
HYGIENE MONITORING		Yes	No	N/A	Proof required
24	Does your Company have an Occupational Hygiene Programme?				
SHE COMPETENCY		Yes	No	N/A	Proof required
25	Supervisors: Do the Appointed Supervisors have the required training, knowledge and experience specific to the work to be performed? (Proof has to be provided)				X
26	Does/Do the SHE functionary (ies) have the required SHE-related training, knowledge and experience specific to the work being performed? (Proof has to be provided)				X
27	Do employees have the appropriate qualifications and experience for performing the assigned tasks?				X
28	If not, are they under direct and controlled competent supervision?				X
FIRE PREVENTION		Yes	No	N/A	Proof required
29	Are the fire risks being assessed and is provision made for the risks?				
HAZARDS IDENTIFICATION & RISK ASSESSMENT (HIRA)		Yes	No	N/A	Proof required
30	Does your Company have procedures in place for conducting hazard identification and risk assessments and for developing and implementing safe systems of work/method statements?				X
31	Does your Company have an updated Legal Register of the applicable legislation with which it has to comply?				X
32	Does your Company have a competent person appointed to carry out hazard identification and risk assessments?				X
33	Do employees perform hazard identification and a risk assessment prior to the commencement of a task?				X
34	Does your Company have a standard/procedure on the hierarchy of control principles that is applied to the mitigation of risks?				X

TRAINING MANAGEMENT		Yes	No	N/A	Proof required
35	Does the Company have an orientation and safety induction programme/ policy?				
36	Does the Company have implemented training arrangements in place to ensure that employees have sufficient skills and understanding to discharge their various duties? This includes refresher training that will keep employees updated on legislation and good health, safety and environmental practice. This applies throughout the Company, from top management to trainees.				X
37	Are training records kept?				X
38	Have training matrices been developed and implemented?				X
40	Have team leaders and team members been given the appropriate level of First Aid training?				X
COIDA		Yes	No	N/A	Proof required
41	Is your company registered with COIDA or a mutual company and are you still in good standing? If yes, please provide copy of current valid certificate issued by the Compensation Commissioner.				X
42	Are all the Company's employees registered with COIDA?				X
REFERENCES – PLEASE PROVIDE AT LEAST TWO(2) CLIENTS REFERENCES					
1	Client's name:				
	Description of works, services, product:				
	Duration of contract (specify start and end dates):				
	Value of contract/work/services/product:				
	Contact telephone number/s:				
	Number of 'near misses' reported:				
	Number of lost-time injuries:				
	Number of disabling injuries:				
	Number of motor vehicle incidents/accidents:				
	Number of fatalities:				
	Number of lost-time injuries:				
	Largest number of permanent staff members working for the supplier during the contract period:				
	Number of permanent or non-permanent staff members involved in the work/services/product on the contract: Total number of staff days lost due to Injuries:				
	Number of incidents of non-compliance to environmental legislation (including conditions of environmental authorisations / permits / licences):				
Number of environmental incidents:					
2	Client's name:				
	Description of works, services, product:				
	Duration of contract (specify start and end dates):				
	Value of contract/work/services/product:				
	Contact telephone number/s:				
	Number of 'near misses' reported:				
	Number of lost-time injuries:				
	Number of disabling injuries:				


Number of motor vehicle incidents/accidents:	
Number of fatalities:	
Number of lost-time injuries:	
Largest number of permanent staff members working for the supplier during the contract period:	
Number of permanent or non-permanent staff members involved in the work/services/product on the contract: Total number of staff days lost due to Injuries:	
Number of incidents of non-compliance to environmental legislation (including conditions of environmental authorisations / permits / licences):	
Number of environmental incidents:	

COMPANY SIGN-OFF

I acknowledge that the information provided in this SHE Contractors' Competency Questionnaire, as part of the Johannesburg Water evaluation process, is true and correct.

Company name	
Name and surname	
Position	
Signature	
Date	

FOR OFFICE USE ONLY					
SCORING:					
A: Each question scores one (1) point. Total possible points					
Percentage Score = $\frac{\text{Actual Score}}{\text{Possible Score}} \times 100 = \underline{\hspace{2cm}}\%$					
Note: if a question is Not Applicable, do not score any points.					
B: Subsections:	Actual score	Total			
Organisational structure and contact details of key persons					
Comments:					
SUPPLIER EVALUATION RESULT – Comply/Not Comply					
Approved /Not approved (NOTE: Gatekeeper of minimum of 80% is required)					
NAME OF ASSESSOR:					
SIGNATURE:					
DATE:					

	HEALTH, SAFETY & ENVIRONMENTAL (SHE) SPECIFICATION	
	PROJECT NUMBER:	JW OPS 038/19R
	PROJECT LOCATION:	NORTHERN FARM
	PROJECT DESCR:	LEASE OF FARM

VOLUME 2

Occupational Health, Safety & Environmental Specification


JW OPS 038/19R

LEASE OF NORTHERN FARM

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

General Notification

CLIENT SHE SPECIFICATION – JOHANNESBURG WATER SOC LTD VOLUME 2.4 – SEPTEMBER 2016	Page Number Page 1 of 50
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 Johannesburg Water	HEALTH, SAFETY & ENVIRONMENTAL (SHE) SPECIFICATION	
	PROJECT NUMBER:	JW OPS 038/19R
	PROJECT LOCATION:	NORTHERN FARM
	PROJECT DESCR:	LEASE OF FARM

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 & Environmental (SHE) 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 & Environmental (SHE) 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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 Johannesburg Water	HEALTH, SAFETY & ENVIRONMENTAL (SHE) SPECIFICATION	
	PROJECT NUMBER:	JW OPS 038/19R
	PROJECT LOCATION:	NORTHERN FARM
	PROJECT DESCR:	LEASE OF FARM


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 Johannesburg Water	HEALTH, SAFETY & ENVIRONMENTAL (SHE) SPECIFICATION	
	PROJECT NUMBER:	JW OPS 038/19R
	PROJECT LOCATION:	NORTHERN FARM
	PROJECT DESCR:	LEASE OF FARM

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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, 2000 (Act 67 of 2000).
Construction work	Any work in connection with: <ul style="list-style-type: none"> 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 1 (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.
Workplace	Any physical location in which work related activities are performed under the control of the organization.

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1. Introduction

In terms of Section 37 of the Occupational Health and Safety Act (Act no. 85 of 1993), Johannesburg Water SOC Ltd is required to control persons/organizations conducting activities for or on their behalf (Mandatories) and the Construction Regulations promulgated under the Occupational Health and Safety Act (Act no. 85 of 1993), is requiring Johannesburg Water SOC) Ltd. to compile an occupational health and safety specification for any intended project classified as construction work and to provide the specification to prospective tenderers / Mandatories.

The dual objective of this specification is to ensure that the Mandatories and Principal Contractors (herein after called Principal Contractor (including Mandatories)) entering into a contractual agreement/relationship with Johannesburg Water SOC Ltd. achieves and maintains an acceptable level of occupational health, safety and environmental performance whilst conducting activities to perform the contract work.

This document forms an integral part of the Contract Specification and, in particular, shall be the OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENTAL (SHE) SPECIFICATION FOR CONSTRUCTION WORK. The Contract Specification is contained in Volume 1 of the contract documents. The principal and other contractors shall ensure that this specification is included with any contract/s that they may have with other contractors and/or suppliers that are engaged for the provision of labour, goods or services for this project. The Principal Contractor and its Contractors shall furthermore implement any reasonable practicable means to ensure compliance to this Occupational Health, Safety and Environmental (SHE) Specification and any other applicable legislation on their organization and/or activities performed by or for them. This SHE Specification will be read in conjunction, where issued and applicable, with the Environmental Specification issued for listed activities requiring environmental authorization by a relevant authority.


Compliance with this SHE specification does not absolve the Principal Contractor from complying with any other applicable minimum legal requirement and the Principal Contractor remains responsible for the sustainable integrity of the environment and the health and safety of its employees, mandatories as well as any persons affected by activities conducted for or on behalf of Johannesburg Water SOC Ltd (SOC) Ltd..

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

Johannesburg Water SOC Ltd is committed to responsible occupational health, safety and environmental 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 SHE 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 of/from compliance to this SHE Specification noted and/or observed, where applicable;
- Carrying out safety observations, implement corrective and preventative actions and giving immediate feedback;

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- 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 and Environmental (SHE) 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 SHE Specification

Where any omission from the SHE 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.

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.

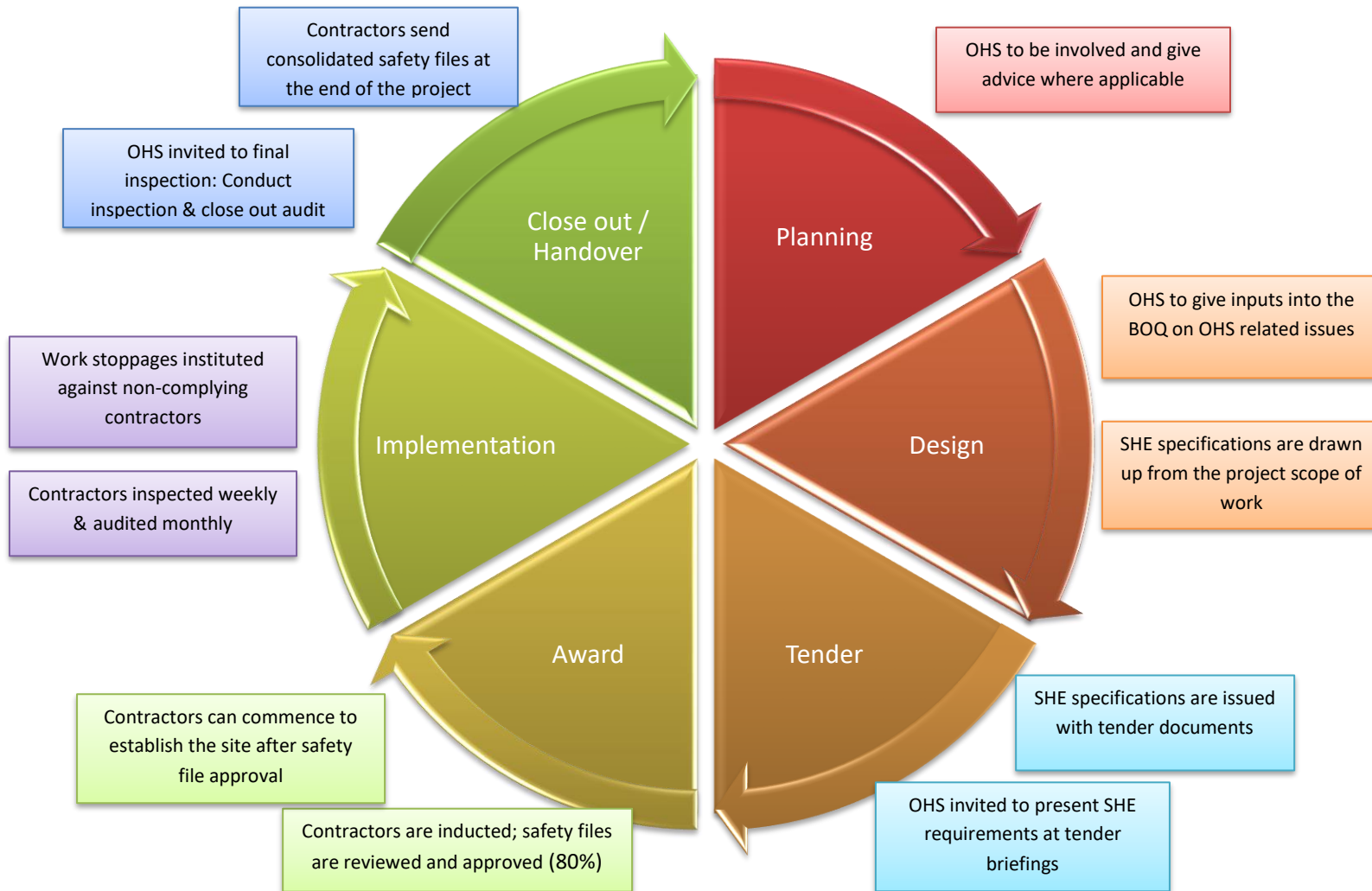
2 Overview of contractor management process


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 SHE system induction;
- Preparation of SHE File by Principal Contractor;
- Evaluation of SHE File;
- Principal Contractor engagement phase;
- Project close-out and submission of consolidated Health & Safety File.

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2. SHE DOCUMENTATION

2.1 Safety 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.


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);
- 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; COIDA 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 SHE 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

2.2 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

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- 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.
 - 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.

2.3 37.2 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.

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- It is the responsibility of the contractor to ensure that there are 37(2) agreements between themselves and all their appointed sub-contractors.

2.4 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.

2.5 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 (COID)
- Local by-laws and provincial ordinances

2.6 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.

2.7 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.

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Appointment	Legislative Ref	Competency requirements (Min)
Alternate Construction Manager	CR 8.1	N.Dip Eng + 4yrs exp
Assistant Construction Manager	CR 8.2	N.Dip Eng + 4yrs exp
Assistant Construction Supervisor	CR 8.8	-
Bulk mixing plant	CR 20	Certificate
Confined Space Supervisor	GSR 5	Certificate + Proven experience
Construction Manager	CR 8.1	N.Dip Eng + 4yrs exp
Construction Health and Safety Officer	CR 8.5	N.Dip Safety + 2yrs exp; OR N.Dip Enviro + 3yrs exp; OR NEBOSH / SAMTRAC + 4yrs exp Register with SACPCMP
Construction supervisor	CR 8.7	3 yrs experience
Construction vehicle & mobile plant supervisor	CR 23.1	Certificate
Electrical installation and appliances inspector	CR 24	
Emergency, security and fire coordinator	CR 29	Certificate
Excavation supervisor (including piling)	CR 13	3yrs exp / N.Dip building
Explosive actuated fastening device inspector	CR 21	Certificate
Fall protection supervisor	CR 10.1	Certificate
First-aiders	GSR 3	Certificate
Fire fighting equipment inspector	CR 29	Certificate
General Machinery Supervisor	GMR 2.1/7	GCC (GMR 2.1)/ 3yrs exp (GMR 2.7)
Temporary work supervisor (Formwork)	CR 12.2	N.Dip building + 4yrs exp
Hazardous chemical substances supervisor	HCS Regs	Certificate
Incident investigator	GAR 9.2	Certificate
Ladder inspector	GSR 13A	-
Lifting machines and equipment inspector	DMR 18.5	Certificate + 3yrs experience
Materials hoist inspector	CR 19.8	Certificate
Occupational health and safety committee	OHS Act 19	-
Occupational health and safety representatives	OHS Act 17	Certificate
Risk assessor	CR 9.1	Certificate
Stacking and storage supervisor	CR 28	Certificate
Structures supervisor	CR 11.2	N.Dip building + 4yrs exp
Suspended platform supervisor	CR 17.1	Certificate
Vessels under pressure supervisor	PER 12	Certificate
Welding supervisor	GSR 9	Certificate

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2.8 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.

2.9 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.

2.10 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.

2.11 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.
- 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.

2.12 Construction work permit

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

3. ORGANISATIONAL STRUCTURE

- The contractor shall develop and submit together with SHE file an organizational organogram related to the contractor, listing all the levels of responsibility from the Chief Executive down to the supervisor(s) responsible for the project.
- The organogram diagram must list all relevant positions, names of appointees and legal appointments.
- The contractor is responsible for updating the organogram timeously when there are changes to the appointments.
- All appointed sub-contractors are also required to compile their own organograms.

4. COMMITMENT TO SHE

- Visible commitment is essential to providing a safe working environment.
- Managers, supervisors and employees at all levels must demonstrate their commitment by being proactively involved in the day to day SHE operations.
- Legislation requires that each employee takes reasonable care of themselves and their fellow workers

5. HIRA

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.

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 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

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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.

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.

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.

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:

- 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.

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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.

6. 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.

7. INCIDENT MANAGEMENT

7.1 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.

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- 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.

7.2 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.
- 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.


7.3 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.

8. 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
- 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.

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- 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.

9. ENVIRONMENTAL MANAGEMENT

9.1 Air pollution management

The following requirements for air pollution management shall apply:


- Speed limits must be implemented in all areas, including public roads and private property to limit the levels of dust pollution.
- Dust must be suppressed on access roads and construction sites during dry periods by the regular application of water or a biodegradable soil stabilisation agent. Water used for this purpose must be used in quantities that must not result in the generation of run-off.
- The site-specific investigation will quantify the impact of dust on nearby wetlands, rivers and dams in terms of sedimentation. Mitigation measures identified during the site specific study must be implemented.
- The Contractor must notify the Principal of all schools within 50m of the site of proposed activities. The Principal must in turn ensure that children with allergies and respiratory ailments take the necessary precautionary measures during the construction period. The Contractor must ensure that construction activities do not disturb school activities e.g. dust clouds may reduce visibility affecting sports activities.
- Waste must be disposed of, as soon as possible at a municipal transfer station, skip or on a permitted landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours.
- Noise control measures must be implemented. All noise levels must be controlled at the source. All employees must be given the necessary ear protection gear. Interested and affected parties must be informed of the excessive noise factors.
- The Contractor must inform all adjacent landowners of any after-hour construction activities and any other activity that could cause a nuisance e.g. the application of chemicals to the work surface. Normal working hours must be clearly indicated to adjacent landowners.
- No loud music is allowed on site and in construction camps.
- No fires are allowed if smoke from such fires will cause a nuisance to IAPs.

9.2. Social and cultural impact management

The following requirements for social and cultural impact management shall apply:

- Access by non-construction people onto any construction sites must be restricted. The Contractors activities and movement of staff must be restricted to designated construction areas only.
- Rapid migration of job seekers could lead to squatting and social conflict with resident communities and increase in social pathologies if not properly addressed. The Contractor must ensure that signs indicating the availability of jobs are installed.
- Criteria for selection and appointment (by the Contractor) of construction labour must be established to allow for preferential employment of local communities. The Local Authority must be actively involved in the process of appointing temporary labourers.
- Sub-Contractors and their employees must comply with all the requirements of this document and supporting documents e.g. the Contract document that applies to the Contractor. Absence of specific reference to the sub-contractor in any specification does not imply that the sub-contractor is not bound by this document.
- No member of the construction workforce is allowed to wander around private property, except within the immediate surroundings of the site.
- The Contractor must provide suitable sanitation facilities for site staff. Sanitation provided during the construction phase should be managed so that it does not cause environmental health problems. The use of the surrounding veld for toilet purposes is not permitted under any circumstance.
- The Contractor must arrange for all his employees and those of his sub-contractors to be informed of the findings of the environmental report before the commencement of construction to ensure:
 - A basic understanding of the key environmental features of the work site and environments, and
 - Familiarity with the requirements of this document and the site-specific report.

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- Supervisory staff of the Contractor or his sub-contractors must not direct any person to undertake any activities which would place such person in contravention of the specifications of this document endanger his/her life or cause him/her to damage the environment.
- The demand for construction materials and supplies will have an effect on the local economy. Sourcing and purchasing materials locally and regionally wherever possible, insofar as the material complies with the design specification can optimise this impact.
- The Contractor must maintain a detailed complaints register. This must be forwarded, together with solutions, to the authorities when requested.

9.3 Aesthetic and visual impact management

The following requirements for aesthetic and visual impact management shall apply:

- Scenic quality:
 - Damage to the natural environment must be minimized.
 - Trees and tall woody shrubs must be protected from damage to provide a natural visual shield. Excavated material must not be placed on such plants and movement across them must not be allowed, as far as practical.
 - The clearing of all sites must be kept to a minimum and surrounding vegetation must, as far as possible, be left intact as a natural shield.
 - No painting or marking of natural features must be allowed.
- Above ground structures:
 - All above ground structures should be located in areas where the visual impact from roads, houses etc. is minimised.
 - All above ground structures could be treated or painted to blend in with the natural environment.
 - Cut and fill areas, river and stream crossings and other soil stabilisation works must be constructed to blend in with the natural environment.
 - Natural outcrops, rocky ridges and other natural linear features must not be bisected. Vegetation on such features must, as far as possible, not be cut unless absolutely necessary for construction.
 - Excavated material must be flattened (not compacted) or removed from site. No heaps of spoil material must be left on site once the Contractor has moved to a new construction site.
 - Any complaints from interest groups regarding the appearance of the construction site must be recorded and addressed promptly by the Contractor.

9.4 Archaeology and cultural sites management

The following requirement for archaeology and cultural site management shall apply:


- All finds of human remains must be reported to the nearest police station.
- Human remains from the graves of victims of conflict, or any burial ground or part thereof which contains such graves and any other graves that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the South African Heritage and Resource Agency (SAHRA).
- Work in areas where artefacts are found must cease immediately.
- Under no circumstances must the Contractor, his/her employees, his/her sub-contractors or his/her sub-contractors' employees remove, destroy or interfere with archaeological artefacts. Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the National Heritage Resources Act, 25 of 1999.
- A fence at least 2m outside the extremities of the site must be erected to protect archaeological sites.
- All known and identified archaeological and historical sites must be left untouched.
- Work in the area can only be resumed once the site has been completely investigated. The Project Manager will inform the Contractor when work can resume.
- The replacement of memorial stones removed by the contractor, to be replaced in original state after the completion of work.

9.5 Flora and fauna management

The following requirements for flora and fauna management shall apply:

Flora:

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- All suitable and rare flora and seeds must be rescued and removed from the site. They must be suitably stored, for future use in rehabilitation.
- The felling and/or cutting of trees and clearing of bush must be minimised.
- Bush must only be cleared to provide essential access for construction purposes.
- The spread of alien vegetation must be minimized.
- The Contractor must document any incident of unauthorised removal of plant material, as well as accidental damage to priority plants.
- Woody vegetative matter stripped during construction must either be spread randomly throughout the surrounding veld so as to provide biomass for other microorganisms and habitats for small mammals and birds, or it may be stockpiled for later redistribution over the reinstated top soiled surface.
- No vegetative matter must be burnt or removed for firewood other than those removed during the grubbing and clearing phase. Such vegetation can be made available to the local inhabitants to be used as firewood.
- No tree outside the footprint of the Works area must be damaged.


Fauna:

- No species of animal may be poached, snared, hunted, captured or wilfully damaged or destroyed.
- Snakes and other reptiles that may be encountered on the construction site must not be killed unless the animal endangers the life of an employee.
- Anthills and/or termite nests that occur must not be disturbed unless it is unavoidable for construction purposes.
- Disturbances to nesting sites of birds must be minimized.
- The Principal Contractor must ensure that the work site is kept clean and free from rubbish, which could attract pests.

9.6. Environmental infrastructure and facility management

The following requirements for environmental infrastructure and facility management shall apply:

- The relevant authorities must be notified of any interruptions of services, especially the Local Municipality, National Road Agency, Spoornet, TELKOM and ESKOM etc. In addition, care must be taken to avoid damaging major and minor pipelines and other services.
- The integrity of property fences must be maintained.
- No telephone lines must be dropped during the construction operations, except where prior agreement by relevant parties is obtained. All crossings must be protected, raised or relocated as necessary.
- All complaints and/or problems related to impacts on man-made facilities and activities must be promptly addressed by the Contractor and documented.
- Storage Facilities
 - Proper storage facilities should be provided for the storage of oils, grease, fuels, chemicals and hazardous materials.
 - The Contractor must ensure that accidental spillage does not pollute soil and water resources.
 - Fuel stock reconciliation must be done on all underground tanks to ensure no loss of oil, which could pollute groundwater resources.
 - Cement must be stored and mixed on an impermeable substratum.
- Traffic Control
 - All reasonable precautions must be taken during construction to avoid severely interrupting the traffic flow on existing roads, especially during peak periods.
 - Before any work can start the Local Traffic Department must be consulted about measures to be taken regarding pedestrian and vehicular traffic control.
- Access Roads
 - The Contractor and the affected landowner must collaborate on the planning and construction of new access routes and the repair or upgrading of existing routes.
 - Access to the site must be controlled such that only vehicles and persons directly associated with the work gains access to the site.
 - Temporary access roads must not be opened until required and must be restored to its former state as soon as the road is no longer needed.
- Batching Plants

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- Concrete must be mixed only in an area demarcated for this purpose. All concrete spilled outside this area, must be promptly removed by the Contractor and taken to a permitted waste disposal site. After all concrete mixing is complete; all waste concrete must be removed from the batching area and disposed of at an approved dumpsite. Storm water must not be allowed to flow through the batching area. Water laden with cement must be collected in a retention area for evaporation and not allowed to escape the batching area. Operators must wear suitable safety clothing.
- Chemical flushing toilet facilities should be managed and serviced by a qualified company. No disposal or leakage of sewerage should occur on or near the site.
- Blasting
 - Blasting must not endanger public or private property.
 - Noise mufflers and/or soft explosives must be used to minimize the impact on animals.
 - All the provisions of the Explosives Act, 26 of 1956 and the Minerals Act, 50 of 1991 must be complied with.
 - The Contractor must take measures to limit fly rock.

9.7 Environmental health and safety consequences

The following requirements for environmental health and safety consequences shall apply:

- Measures must be taken to prevent any interference that could result in flashover of power lines due to breaching of clearances or the collapse of power lines due to collisions by vehicles and equipment.
- Measures must be taken during thunderstorms to protect workers and equipment from lightning strikes.
- All tall structures must be properly earthed and protected against lightning strikes.
- The Contractor must take all the necessary precautions to protect the materials on site and to avoid veld fires.
- No fires or open flames are allowed on site unless directly used for construction purposes, e.g. acetylene blowtorch.
- Review all SABS standards relating to fire precautions and fire control namely, SABS 0131-3 Section 8 and SABS 089-1 or as amended.
- The Contractor must have fire-fighting equipment and a first aid box available on site and on all vehicles working on site.
- All waste bins must be kept away from fuel tank installations.
- All fuel tanks must be installed above ground, depending on the volume of stored fuel, for easy detection of fuel leaks.
- Any welding or other sources of heating of materials must be done in a controlled environment, wherever possible and under appropriate supervision, in such a manner as to minimise the risk of veld fires and/or injury to staff.
- Fires lit for comfort (warmth) must be actively discouraged by the Contractor, due to the risk of veld fires and the risk to adjacent properties. Also, no waste material must be burnt.
- Fires for food preparation purposes (e.g. braai) are only allowed in designated areas;
- The process of excavation and back filling must be carried out as a sequential process following one another as quickly as possible. Excavations must only remain open for a minimum period of time and during this time they must be clearly demarcated. If excavations place the public at risk these sites must be fenced.
- The residents directly affected by open trenches must be notified of the dangers. This will be done during the site-specific phase.

9.8. Waste management


The Principal Contractor will establish a waste management programme and the various types of bins provided for the various types of waste containers / liners will be colour coded and/ or clearly marked:

- General waste – white;
- Hazardous waste – red;
- Recyclable waste – green;
- Construction and other types of waste – blue.

The following requirements shall be incorporated into the waste management programme:

- Solid Waste:
 - Littering on site and the surrounding areas is prohibited.

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- Clearly marked litterbins must be provided on site. The Contractor must monitor the presence of litter on the work sites as well as the construction campsite.
- All bins must be cleaned of litter regularly.
- All waste removed from site must be disposed at a municipal/permitted waste disposal site.
- Excess concrete, building rubble or other material must be disposed of in areas designated specifically for this purpose and not indiscriminately over the construction site.
- The entire works area and all construction sites must be swept of all pieces of wire, metal, wood or other material foreign to the natural environment.
- Contaminated soil must be treated and disposed of at a permitted waste disposal site, or be removed and the area rehabilitated immediately.
- Waste must be recycled wherever possible.
- Liquid Waste
 - The Principal Contractor must install and maintain mobile toilets at work sites.
 - The Principal Contractor must provide adequate and approved facilities for the storage and recycling of used oil and contaminated hydrocarbons. Such facilities must be designed and sited with the intention of preventing pollution of the surrounding area and environment.
 - All vehicles must be regularly serviced in designated area within the Contractors camp such that they do not drip oil. Where required, vehicles will be serviced in bunded areas and drip trays will be provided.
 - All chemical spills must be contained and cleaned up by the supplier or professional pollution control personnel. Run-off from wash bays must be intercepted.
- Hazardous Waste:
 - No hazardous materials must be disposed of in the veld or anyplace other than a registered landfill for hazardous material. Hazardous waste must be stored in containers with tight lids that must be sealed and must be disposed at an appropriately permitted hazardous waste disposal site. Such containers must not be used for purposes other than those originally designed for.
 - The Principal Contractor must maintain a hazardous material register.

9.9. Rehabilitation management

The following requirements for rehabilitation management shall apply:


- When all major construction activities are completed, the site must be inspected to determine site-specific rehabilitation measures. This may be considered as unplanned work e.g. soil rehabilitation due to oil spills.
- All temporary buildings and foundations, equipment, lumber, refuse, surplus materials, waste, construction rubble fencing and other materials foreign to the area must be removed.
- If waste products cannot be recycled they must be disposed of at a permitted landfill site.
- All drainage deficiencies including abandoned pit latrines and waste pits must be corrected.
- Cut and fill areas must be restored and re-shaped.
- The area must be restored to its natural vegetation condition using indigenous trees, shrubs and grasses as directed by a grassland and/or rehabilitation expert.
- Borrow pits must be re-shaped into even slopes and surfaces to blend with the natural terrain and topsoil must be replaced.
- The grass mix, shrubs and trees used for rehabilitation must be compatible with the species identified in the site-specific investigation.
- Areas compacted by vehicles during construction must be scarified to allow penetration of plant roots and the regrowth of natural vegetation.

10 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.

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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:

- 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.

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.

11 SHE TRAINING

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, 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.

12.1 General Job training

The contractor is required to ensure that before an employee commences work their direct supervisor or line manager who is responsible for the employee has informed the employees of his scope of authority, hazards and risks associated with the work to be performed as well as the safety control measure(s). This will involve discussion in connection with any work standard, job description or company policy or procedure.

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12.2 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;
- 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.

12.3 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.


12.4 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.

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12 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.
- 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).

13 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.

14 SITE RULES

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- 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.

15 PUBLIC HEALTH AND SAFETY

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.

16 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.

17 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).

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- 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).
- 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.

18 ACCOMMODATION ON SITE

No employees shall be accommodated on site.

19 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

20 COMPLIANCE MONITORING


20.1 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.

20.2 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.

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- 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.

20.2.1 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 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


20.3 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.

NR	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

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NR	DESCRIPTION OF AUDIT NON-CONFORMANCE / NON-COMPLIANCE
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
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
6.2	Proof of competency not available on-site
7	SITE SAFETY OFFICER
7.1	Site safety officer not appointed specifically for site where construction activities are performed
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.

20.4 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

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CRITERIA	ACTION TO BE INSTITUTED	RESPONSIBLE PARTY
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
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

21 OPERATIONAL REQUIREMENTS

21.1 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.

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- 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.
- 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.

21.2 CONFINED SPACE ENTRY

- Enclosed space work necessitates a Confined Space Permit. This may only be obtained from the authorized person nominated in writing.

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- 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.

Pump sumps & valve chambers

Ventilation

- All available manholes or ventilation covers must be removed and the compartment ventilated for 10 (ten) to 15 (fifteen) minutes, using compressed air or a portable blower.
- Such ventilation must be continued while personnel are in the compartment.
- Ensure that exhaust fumes from blower do not enter the confined space.
- Before entering any sump or compartment, the atmosphere must be tested by the Principal Contractor's competent person (trained by the supplier of the gas monitoring equipment) by lowering the gas monitoring equipment to the bottom of the sump or compartment by means of a rope.
- A register must be kept indicating that the atmosphere has been tested and that the sump or compartment is fit to work in.
- The Principal Contractor's construction supervisor must check and co-sign this register each time he visits a site to ensure that the atmosphere is continuously being monitored.

Entering sump

- When entering a sump the person entering the sump must wear the safety harness, gas detector as well as a self-rescuer.
- A lifeline must be attached to the safety harness and a person on the surface must be in continuous contact with the person in the sump.
- At least one person on the surface must be trained in basic first aid and CPR and a first aid kit with resuscitation equipment must be available outside the entrance of the confined space for emergencies.
- Should the alarm sound when a person is in the confined space, the area must be evacuated immediately and the atmosphere re-tested and certified safe before re-entry into the confined space.
- In no circumstance shall any person remain within a sump for a period of more than one hour at a time.
- A five-minute rest on the surface must be taken after this period before re-entering.
- No naked lights, smoking or unprotected electrical apparatus which may cause sparks, shall be permitted in any sump or in their vicinity.


Confined spaces & water chambers

General

- All employees working in confined spaces or sewer manholes must be issued with gas monitoring equipment and safety harnesses and self- rescuers where applicable.
- All these employees must be trained in their use.
- Where over pumping between manholes is involved, only leakage free pumping machines and conveyance tubes will be allowed.
- Under no circumstances may any confined space be entered unless it has been certified safe to work in.
- Safety harnesses and attachments must be checked for damage to webbing, metal fittings and ropes on a monthly basis and the findings recorded in a register.
- Should a harness be damaged, it must be reported to the construction supervisor immediately.

The following records shall be taken and maintained by the Principal Contractor:

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- Confined space entry permits
- Confined space entry registers
- Safety harness registers

Ventilation

- All available manholes or ventilation covers must be removed and the chamber ventilated for 10 (ten) to 15 (fifteen) minutes, using compressed air or a portable blower.
- Such ventilation must be continued while personnel are in the chamber.
- Ensure that exhaust fumes from blower do not enter the confined space.
- Before entering any chamber, the atmosphere must be tested by the Principal Contractor's competent person (trained by the supplier of the gas monitoring equipment) by lowering the gas monitoring equipment to the bottom of the chamber by means of a rope.
- A register must be kept indicating that the atmosphere has been tested and that the area is fit to work in.
- The Principal Contractor's construction supervisor must check and co-sign this register every time he visits the site to ensure that the atmosphere is continuously being monitored.
- Fumes must be extracted from the chamber while welding.

Entering chamber

- When entering a chamber the person entering the chamber must wear a safety harness as well as the gas detector.
- A lifeline must be attached to the safety harness and a person on the surface must be in continuous contact with the person in the manhole.
- At least one person on the surface must be trained in basic first aid and CPR and a first aid kit with resuscitation equipment must be available outside the entrance of the confined space for emergencies.
- In no circumstances shall any person remain within a chamber for a period of more than one hour at a time. A five-minute rest on the surface must be taken after this period before re-entering.
- Should the alarm sound when a person is in the confined space, the area must be evacuated immediately and the atmosphere re-tested and certified safe before re-entry into the confined space.
- When the activity to undertake inside the pipeline includes the use of any hazardous chemical substances or substances, which might cause hazardous fumes or gasses the contractor, must comply with 5.24 Hazardous Chemical Substances.


Safety equipment

- All teams must be issued with gas monitoring equipment and safety harnesses and self-rescuers where applicable.
- All employees must be trained in the use thereof.

21.3 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.

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- 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.

21.4 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:

- "Radio-Active Material" symbolic signs at radioactive storage areas.
- "Eye Protection" symbolic signs shall be displayed at all grinding machines and at any area where it is mandatory to wear eye protection or where there is danger of an eye injury being sustained.
- "Ear Protection" symbolic signs shall be displayed at all areas where there is a danger of noise induced hearing loss being sustained.
- Every separate room of a workplace shall be consecutively numbered.
- All toilets or urinals shall be marked in a conspicuous place with painted or stencilled letters to indicate the sex for which they are intended.
- The location of every first aid box is to be clearly indicated by means of a sign.
- In any room, cabinet or enclosure where flammable substances are used or stored shall be fixed a suitable and conspicuous sign prohibiting smoking or the use of naked flames in the area.
- At the entrance to premises where machinery is used
- Restricted access on "Authorised Person Only" signs on entry. "No person shall enter the workplace or premises without the permission of the employer or user of the machinery".
- At every place where machinery is used a notice (English & Pictograms) shall be posted.
- Explosive Power Tool shall have a sign warning people when it is in use.
- Electrical Control Gear. A notice shall be posted so as to warn against the re-closing of a switch of control gear whilst a person is working on such equipment.
- Emergency contact telephone numbers.
- Adequate scaffolding signs. (When applicable).
- Adequate fire fighting equipment signs.
- Speed limit signs.
- Warning notices at openings through which people may fall.
- Risk based signage depending on the task being performed e.g.:
 - "Men working above", "Men working below", "Road closed – detour", "Excavation in progress", "No walkway" etc.;
- No-entry signs to incomplete platforms

The Principal Contractor shall install a notification board indicating the following information at the site entrance:


- Johannesburg Water SOC Ltd project number;
- Principal Contractor identification details (name, telephone number)
- Name and contact details of Construction Supervisor;
- Name and contact details of site safety officer;
- Monthly compliance rating;
- Lost Time Injury Rate;

The Principal Contractor will ensure that information on the notification board is kept up-to-date.

21.5 USE AND STORAGE OF FLAMMABLES

The Principal Contractor to ensure that:

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- 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.

21.6 HAZARDOUS CHEMICAL SUBSTANCES

The Principal Contractor must ensure that:

- Employees receive the necessary information and training to be able to use and store hazardous chemical substances safely;
- Employees obey lawful instructions regarding:
 - The wearing and use of protective equipment
 - The use and storage of hazardous chemical substances
 - The prevention of the release of hazardous chemical substances
 - The wearing of exposure monitoring and measuring equipment
 - The cleaning up and disposal of materials containing hazardous chemical substances
 - Housekeeping, personal hygiene and the protection of the environment
- The risk assessments required in terms of Construction Regulation include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;
- Suppliers provide the necessary information in the form of a material safety data sheet regarding a hazardous chemical substances required to ensure the safe use and storage of that substances;
- An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the hazardous chemical substances;

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- Hazardous chemical substances containers be clearly marked with the contents and main hazardous category e.g. "Flammable" or "Corrosive" and the reference number of the hazardous chemical substances on the list indicated above;
- Hazardous chemical substances, for example asbestos dust, are not cleared by using compressed air but should be vacuumed;
- No person eats or drinks in a hazardous chemical substances workplace; and
- Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.
- MSDS's to be in 16 point format- available on site

21.7 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
 - 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.

21.8 STACKING AND STORAGE

The Principal Contractor must ensure that:

- A competent person is appointed in writing to supervise all stacking and storage on a construction site;
- Adequate storage areas are provided and demarcated;
- The storage areas are kept neat and under control;
- The base of any stack is level and capable of sustaining the weight exerted on it by the stack;
- The items in the lower layers can support the weight exerted by the top layers;
- Cartons and other containers that may become unstable due to wet conditions are kept dry;

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- Pallets and containers are in good condition and no material is allowed to spill out;
- The height of any stack does not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector has been obtained to build the stacks higher with the aid of a machine. The operator of the machine must be protected against items falling from overhead off the stack and no items may overhang;
- The articles that make up a single tier are consistently of the same size, shape and mass;
- Structures for supporting stacks are structurally sound and able to support the mass of the stack;
- No articles are removed from the bottom of the stack first but from the top tier first;
- Anybody climbing onto a stack must do it in a safe manner, taking reasonable safety precautions, and ensuring that the stack is stable and capable of supporting him or her
- Stacks that are in danger of collapsing are broken down and restacked;
- Stability of stacks are not threatened by vehicles or other moving plant and machinery;
- Stacks are built in a header and stretcher fashion and that corners are securely bonded;
- Stacks are stepped back at least half the depth of a single container at least every fifth tier; and
- Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.
- Laydown area is allocated for Contractor-supplied items.
- At all times, the Contractor shall be responsible for the safe and adequate storage of all materials and equipment on site which he is to install, whether they are supplied by himself or others.
- The safe handling, unloading and loading of material receipts and dispatches at site or storage areas shall be the Contractors' responsibility.

The Contractor shall provide a suitable and adequate lock-up store for the storage of items of equipment and material, which would be damaged or pilfered if stored in the open. The Principal Contractor shall provide all facilities required for weather-proofing, dust proofing or vermin proofing.

The Contractor is responsible for the proper storage and maintenance of all equipment until issue of the Certificate of Practical Completion.


All equipment and materials will be stored on suitable wood poles or pallets which will not protrude more than a meter from any of the stored material. Safe access ways shall be maintained between all stored items preventing employees from having to climb over or under equipment to retrieve the necessary.

21.9 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.

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21.10 PUBLIC HEALTH AND SAFETY

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.

21.11 TRAFFIC MANAGEMENT

- 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.

21.12 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


21.13 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;

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- 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;
- 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.


21.14 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 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)
 - 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

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- 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.

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.

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- 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)
- 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.

21.15 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.

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- 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.

21.16 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.


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.

Self-Propelled Mobile Machinery

All Self-Propelled Mobile Machinery must be inspected daily and the findings recorded in a register. Pre-use inspection checklist shall identify critical items that would stop the operator from operating machinery should a defect be detected.

All operators shall be tested on their ability to operate machinery and equipment inspected prior to be used on any of the premises by the Johannesburg Water SOC Ltd Project Inspectors and Responsible Engineer. Relief drivers shall be made available for mobile machinery where there is a need for on-going operations and the contractor shall establish a rotation schedule.

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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.

21.17 Asbestos exposure


Where the potential exist that the Principal Contractor's employees will be exposed to asbestos the Principal Contractor must ensure compliance to the Asbestos Regulations as promulgated under the Occupational Health and Safety Act (Act no. 85 of 1993).

21.18 Fall protection (Working in elevated positions)

A pre-emptive risk assessment will be required for any work to be carried out above **two metres** from the ground or any floor level. This work will be classified as "work in elevated positions".

As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he is working at ground level. Whilst working in this position he shall be wearing a single belt with lanyard to prevent the person falling from the platform, ladder or other device. This safety belt will be, as far

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as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length and strength that the person will not be able to move over the edge.

Alternatively, any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with suitable guard rails at two different heights as prescribed in the relevant South African National Standard for the design, erection, use and inspection of access scaffolding.

Where the requirement in the paragraph above is not practicable, the person will be provided with a full body harness that will be worn at all times and shall be attached above the wearer's head at all times. The lanyard must be fitted with a shock-absorbing device or the person must be attached to a fall arrest system (anchorage connector; body wear; and connecting device) approved by Johannesburg Water SOC Ltd.

Where the requirements in the paragraph above are not practicable, a suitable catch net must be erected.

Employees working in elevated positions must be trained to work without risk to their health and safety or to the health and safety of others and be declared medically and psychologically fit to perform work at elevated positions.

Where work on roofs is carried out, the risk assessment must take into account the possibility of persons falling through fragile material, i.e. skylights and openings in the roof.

Access scaffolding

Access scaffolding must be erected, used and maintained safely in accordance with Construction Regulations and relevant SA Bureau of Standards Code of Practice.

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. Sufficient material must be available to erect the scaffolding properly.

Scaffolding must only be erected, altered or dismantled by persons who have adequate training and experience and are competent in this type of work and under the continuous supervision of such a person.

21.19 Structures

The Principal Contractor must ensure that:

- Only skilled employees are allowed to erect structures and that the skills of these employees are verified at regular intervals.
- Steps are taken to ensure that no structure becomes unstable or collapses due to construction work being performed on it or in the vicinity of it.
- No structure is overloaded to the extent that it becomes unsafe.
- He has received from the designer the following information:
 - Information on known or anticipated hazards relating to the construction work and the relevant information required for the safe execution of the construction work.
 - A geo-scientific report (where applicable).
 - The loading the structure is designed to bear.
 - The methods and sequence of the construction process.


All drawings relating to the design are on site and available for inspection.

21.20 Explosive powered tools

Every explosive powered tool must be:

- Provided with a guard around the muzzle to confine flying fragments or particles; and

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- Must be fitted with a firing mechanism that will prevent the explosive powered tool from firing unless it is pushed against the surface and at the right angle. Where the explosive powered tool is fitted with an intermediate piston between the charge and the nail this requirement is waived.

The Principal Contractor or user must ensure that:

- Only the correct type of cartridge is used;
- The explosive powered tool is cleaned and inspected daily before use by an appointed competent person. The competent person will keep a register with the findings of his inspection and the details of cleaning, service and repairs;
- The safety devices are in good working order before the explosive powered tool is used;
- When the explosive powered tool is not being used it is stored in an unloaded condition together with the cartridges in a safe and secure place inaccessible to unauthorised persons;
- A warning notice is displayed at the point where the explosive powered tool is in use;
- The issue and return of cartridges must be by issue/returns register signed by both issuer and user and empty cartridge cases must be returned with unspent cartridges;
- Users and operators of the explosive powered tool have received the necessary training and has been authorised as competent to use/operate the explosive powered tool; and
- Users and operators must wear the prescribed personal protective equipment whilst using and/or operating the tool.

21.21 Blasting Operations

No blasting shall be done by Principal Contractors and Contractors without the approval and permission of Johannesburg Water SOC Ltd. The Contractor shall apply in writing to Johannesburg Water SOC Ltd for permission to blast. All contact with the Inspector of Labour shall be done through the appropriate channels.

Contractors who are requested to blast must furnish the following information to Johannesburg Water SOC Ltd before permission will be granted:


- The blaster must hold a surface-blasting permit for blasting.
- The name of the blaster.
- The number of his blasting permit.
- The registration number of the explosive vehicle.
- The number of the continuous transport permit held.
- The blasting method statement in detail.
- Hazard Identification Risk Assessment
- Any other requirement as stipulated in the Occupational Act, Explosive regulations

The Occupational Health and Safety Act (Act no. 85 of 1993) and Mine Guidelines are to be strictly adhered to at all times. **NB: Insofar as those Regulations shall apply in all cases, irrespective of the depth of the hole to be blasted.** The Site Manager is to be advised each morning as to the blasting programme for the day.

Individual precaution procedures may be developed for various sections of the works as required, but generally the following precautions shall be implemented before blasting commences:

- Blasting notification will be provided to neighbouring interested and affected parties 2 (two) days before and on the day of before blasting commences;
- Warning sirens will be sounded continuously for 10 minutes prior to the blast;
- A perimeter of 500 m will be evacuated around the blasting site;
- After the blast, the blaster will examine the site and if satisfied that the blast is complete, he will then give the "All Clear" by sounding the siren for one minute in short bursts;
- Prior to each blast, the Contractor shall send a notice requiring acknowledgement to the other Contractors at adjacent sites, notifying them that a blast is to be made and at what time;
- The actual blast will be fully covered by blasting mats etc., to prevent scatter of "Fly rock";
- An inspection of surrounding buildings and structures shall be conducted prior to and after each blast ensuring that no damage has been caused during the blast.

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	PROJECT DESCR:	LEASE OF FARM

21.22 Bulk mixing plants (Batch plants)

- All contractors shall ensure that all bulk mixing plants are operated and supervised by a competent person who has been appointed in writing.
- All contractors shall ensure that the placement and erection of a bulk mixing plant complies with the requirements set out by the manufacturer and that such plant is erected as designed.
- All contractors shall ensure that all devices to start and stop a bulk mixing plant are provided and that these devices are:
 - Placed in an easily accessible position; and
 - Constructed in such a manner as to prevent accidental starting.
- The contractor shall ensure that the machinery and plant selected is suitable for the task and that all dangerous moving parts of a mixer are placed beyond the reach of persons by means of doors, covers or other similar means.
- No person shall be permitted to remove or modify any guard or safety equipment relating to a bulk mixing plant, unless authorized to do so by the appointed person.
- The contractor shall ensure that all persons authorized to operate the bulk mixing plant are fully aware of all the dangers involved in the operation thereof and conversant with the precautionary measures to be taken in the interest of health and safety.
- No person supervising or operating a bulk mixing plant shall authorize any other person to operate the plant, unless such person is competent to operate machinery.
- The contractor shall ensure that all precautionary measures as stipulated for confined spaces in "good safe practices" are adhered to when entering any silo.
- The contractor shall ensure that a record is kept of any repairs or maintenance to a bulk mixing plant and that it is made available, on site, to an inspector, client, client's agent or employee upon request.
- The contractor shall ensure that all lifting machines and lifting tackle used in the operation of a bulk mixing plant complies with the requirements of the Regulations promulgated.
- The contractor shall ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres, when entering a silo, as contemplated in the Regulations.


21.23 Electrical installations

The installation of temporary electricity for construction shall be in accordance with Construction Regulations and the Electrical Installation Regulations. The Principal Contractor must ensure that:

- Existing services are located and marked before construction commences and the markings maintained during construction;
- Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site;
- Temporary electrical installations must be inspected at least once a week by a competent person and a record of the inspections kept in the SHE File;
- Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept in the SHE File; and
- A competent person appointed in writing must control and be responsible for all temporary electrical installations.
- An employer or user shall provide free of charge and maintain in good condition such protective equipment as may be necessary to prevent incidents, for use by persons engaged in working on or in close proximity to live electrical machinery or dead electrical machinery which may become live.

21.23.1 Electrical control gear

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- The contractor shall ensure that all electrical machinery are provided with controlling apparatus and protective devices which shall, as far as is reasonably practicable, be capable of automatically isolating the power supply in the event of a fault developing on such machinery.
- The contractor shall place a switch, circuit breaker or fuse in the neutral conductor of a polyphase alternating current or three-wire direct current distribution system unless such switch, circuit breaker or fuse is so arranged as to isolate all phase conductors and the neutral conductor simultaneously: Provided that this shall not include an isolating link on the neutral conductor installed for test purposes or to prevent circulating currents.
- The contractor shall, whenever reasonably practicable, provide switchgear with an interlocking device so arranged that the door or cover of the switch cannot be opened unless the switch is in the 'off position and cannot be switched on unless the door or cover is locked.
- The contractor shall mark or label all controlling apparatus permanently so as to identify the system or part of the system or the electrical machinery which it controls, and where such control apparatus is accessible from the front and the back these markings shall be on both the front and the back.
- The contractor shall post a notice at switchgear or control gear which has been switched off or locked out to enable persons to work on electrical machinery or other machinery operated by electricity and controlled by. Such switchgear or control gear, warning against reclosing such switchgear or control gear.

21.23.2 Work on disconnected electrical machinery

- Without derogating from any specific duty imposed on employers or users of machinery by the Act, an employer or user shall, whenever work is to be carried out on any electrical machinery which has been disconnected from all sources of electrical energy, but which is liable to acquire or to retain an electrical charge, as far as is practicable, cause precautions to be taken by earthing or other means to discharge the electrical energy to earth from such electrical machinery or any adjacent electrical machinery if there is danger there from before it is handled and to prevent any electrical machinery from being charged or made live while persons are working thereon

21.23.3 Portable electric tools

No person shall use or permit the use of a portable electric tool with an operating voltage that exceeds 50 V to earth unless-

- It is connected to a source of electrical energy incorporating an earth leakage protection device, the construction of which meets the requirements of the relevant health and safety standard incorporated into these Regulations under section 44 of the Act; or
- It is connected to a source of electrical energy through the interposition between each tool and the source of an individually double-wound isolating transformer, the secondary winding of which is not earthed at any point and the construction of which meets the requirements of the relevant health and safety standard incorporated into these Regulations under section 44 of the Act; or
- It is connected to a source of high frequency electrical energy derived from a generator which is used solely for supplying energy to such portable electric tool and which arrangement is approved by the chief inspector; or it is clearly marked that it is constructed with double or reinforced insulation.


No person shall sell a portable electric tool constructed with double or reinforced insulation unless-

- It is clearly marked that it is constructed with such insulation; and Its insulation is constructed in accordance with the relevant health and safety standard incorporated into these Regulations under section 44 of the Act.
- No employer or user shall use or permit the use of a portable electric tool which is not fitted with a switch to allow for easy and safe starting and stopping of the tool.
- The employer or user shall maintain every portable electric tool, together with its flexible cord and plug, in good working order.

21.23.4 Switchboards

The contractor shall ensure that an unobstructed space for operating and maintenance staff is provided at the back and front of all switchboards, and the space at the back shall be kept closed and locked except for the purpose of

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inspection, alteration or repair: Provided that the requirements of this regulation with respect to the unobstructed space at the back of the switchboard shall not apply in the case of-

- switchboards which have no uninsulated conductors accessible from the back;
- switchboards, the switchgear of which is of a totally enclosed construction;
- switchboards, the backs of which are only accessible through an opening in the wall or partition against which they are placed, such openings being kept closed and locked; and
- switchboards which can be safely and effectively maintained from the front and which have all parts accessible from the front.


21.23.5 Electrical machinery in hazardous locations

- No person may use electrical machinery in locations where there is danger of fire or explosion owing to the presence, occurrence or development of explosive or flammable articles, or where explosive articles are manufactured, handled or stored, unless such electrical machinery, with regard to its construction relating to the classification of the hazardous locations in which it is to be used, meets the requirements of a safety standard incorporated for this purpose in these regulations under section 36 of the Act.
- Every user of electrical machinery shall be in possession of a certificate in a form acceptable to the chief inspector which has been issued by an approved inspection authority, in which it is certified that the electrical machinery has been manufactured and tested for the groups of dangerous articles in terms of the safety standard which has been incorporated in these regulations for this purpose under section 36 of the Act: Provided that in lieu of such certificate an inspector may approve permanent labeling on such machinery which contains all the relevant information.
- When diverse items of electrical machinery such as motors, cables and control apparatus are used together to form an electrical installation, the user shall ensure that the selection, arrangement, installation, protection, maintenance and working thereof results in no less a degree of safety than when the individual items of such machinery are used separately.
- The user shall use electrical machinery to which this regulation applies only under such conditions and in such surroundings as are prescribed in the safety standard incorporated in these regulations for this purpose under section 36
- No person shall effect repairs or adjustments to or otherwise work on electrical machinery under conditions (bullet 1) unless such machinery has been rendered dead and effective measures have been taken to ensure that such machinery remains dead.
- Wherever there is a possibility of the formation of static electricity under working conditions, the user shall earth all metallic structures, machine parts, pneumatic conveyor ducts and pipelines conveying flammable articles and the like, or take such other measures as may be necessary to effectively prevent the formation of electric sparks.
- The user shall cause all electrical machinery to which this regulation applies to be examined and tested at intervals not exceeding two years by a person who is competent to express an opinion on the safety thereof.
- The person carrying out the examination shall enter, sign and date the results of each such examination in a record book which shall be kept by the user for this purpose: Provided that where such machinery is subject to adverse climatic or physical conditions the frequency of such examinations shall be increased to intervals of no longer than one year or such shorter period as circumstances may necessitate.

21.23.6 Design and construction

- No person shall authorize, design, install or permit or require the installation of an electrical installation, other than in accordance with a health and safety standard incorporated into these regulations under section 44 of the Act: Provided that the components within an electrical installation shall comply with the standards referred to in the incorporated standard and proof of compliance shall be identifiable on the components or certification shall be available from the supplier or manufacturer of the components: Provided further that items of an electrical installation not covered by such incorporated safety standard, and the conductors between the point of supply and the point of control, shall be installed in accordance with the by-laws or regulations of the supplier concerned.

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- A registered person shall exercise general control over all electrical installation work being carried out, and no person shall allow such work without such control: Provided that where the voltage exceeds 1kV, the installation shall be designed and supervised by a person deemed competent in terms of paragraphs (b), (c) or (d) of the definition of a competent person in regulation 1 of the General machinery Regulations, 1998.
- No supplier shall restrict the application of a health and safety standard referred to in sub-regulation (1) when an electrical installation is installed, except where the distribution system of the supplier may be adversely affected by the application thereof.

21.23.7 Electrical contractor

- Any person, including a juristic person, who intends to do installation work as an electrical contractor shall register annually with the chief inspector in the form prescribed in annexure 1 of the Electrical Installations Regulations.

21.23.8 Commencement and permission to connect installation work


- No person shall commence with installation work which would require a new supply or an increase in electricity supply capacity unless the supplier has been notified thereof in the form of Annexure 3: Provided that the supplier may waive this requirement in respect of such types of work as it may specify.
- No person shall connect or permit the connection of any completed or partially completed electrical installation to the electricity supply unless it has been inspected and tested by a registered person and a certificate of compliance for that electrical installation has been issued: Provided that the supplier may on request connect the supply to the installation for the purpose of testing and completion of the certificate of compliance by a registered person: Provided further that this sub-regulation shall not apply in the case where the electricity was disconnected for the non-payment of the electricity account or where there has been a change of tenant but not of ownership.
- Where the supply to an electrical installation is 25kVA or above, the user shall appoint an approved inspection authority or a competent person who shall ensure the compliance from the commencement to the commissioning of the installation.

21.23.9 Issuing of certificate of compliance

Only registered person may issue a certificate of compliance in the form of annexure 4 and which shall be accompanied by a test report in the format approved by the chief inspector, after having satisfied himself or herself by means of an inspection and testing that—

- a new electrical installation complies with the provisions of regulation 7 (1) of the Electrical Installation Regulations (EIR); or
- an electrical installation which existed prior to the publication of the current edition of the health and safety standard incorporated into these regulations in terms of regulation 7 (1) (EIR), complies with the general safety principles of such standard; or
- an electrical installation which existed prior the publication of the current edition of the health and safety standard incorporated into these regulations in terms of regulation 7 (1) and to which extensions or alterations have been affected, that—
 - ting part of the installation, complies with the general safety principles of such standard and is reasonable safe, and
 - extensions or alterations affected comply with the provisions of regulation 7 (1) of the Electrical Installation Regulations (EIR).
- If at any time prior to issuing a certificate of compliance any fault or defect is detected in any part of the installation, the registered person shall refuse to issue such certificate: Provided that if such fault or defect in

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the opinion of the registered person constitutes an immediate danger to persons in the case where electricity is already supplied, he or she shall forthwith take steps to disconnect the supply to the circuit in which the fault or defect was detected and notify the chief inspector.

- Any person who undertakes to do electrical installation work shall ensure that a valid certificate of compliance is issued for that work.
- No person shall amend a certificate of compliance issued by a registered person.

22. 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

23. 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.

JOHANNESBURG WATER (SOC) LTD

MEDICAL SCREENING POLICY

JW OPS 038/19R: LEASING OF NORTHERN FARM

NOTICE

It is the Contractor's responsibility to ensure that medical surveillance requirements specified in the Occupational Health and Safety Act (85/1993) and Regulations and any other applicable legal and Johannesburg Water's requirements are fully complied with.

This document is meant to facilitate the Contractor's compliance to applicable requirements and does not replace the applicable legal requirements.

This document may be revised at any time to include applicable legal requirements not currently included that may come to the attention of Johannesburg Water in future. The Contractor will accordingly be responsible to comply with the revised requirements as might be necessary.

Where methods to ensure legal compliance have been specified in this document, Contractors may submit alternative detailed method statements for consideration and approval by Johannesburg Water. Johannesburg Water may, at its sole discretion, reject or accept such alternative methods.

1 PURPOSE OF THE MEDICAL SURVEILLANCE REQUIREMENTS PROCEDURE

The purpose of this Medical Surveillance Requirements Procedure is to facilitate the achievement of legal compliance relating to medical surveillance by all Consultants, Contractors, Subcontractors and suppliers that will be working on the Johannesburg Water project and to ensure that employees are fit to work in the roles that they have been employed to execute and remain so for their duration on the project site.

This document represents the minimum requirements for medical surveillance and does not replace applicable legal requirements.

2 MEDICAL SURVEILLANCE OBJECTIVES

The Johannesburg Water main objectives for medical surveillance are:

- a) To ensure compliance to all applicable medical surveillance legal requirements.
- b) To ensure compliance to all Johannesburg Water's requirements regarding medical surveillance.
- c) To ensure that employees are fit to execute the work for which they have been employed.
- d) To prevent employees from acquiring occupational diseases or illnesses.
- e) To ensure early detection and treatment of occupational diseases and to prevent the aggravation of existing medical conditions.
- f) To ensure that employees on departure from the project have not contracted any occupational diseases and to enable any such condition that arises to be suitably addressed.

All contractors are required to demonstrate total commitment towards the achievement of these objectives.

3 GENERAL REQUIREMENTS

- 3.1 The Principal Contractor shall ensure that a medical surveillance programme is implemented for all employees.
- 3.2 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.
- 3.3 Medical surveillance & Immunisation shall be done accredited institutions or occupational health doctor, including, but not limited to:
- a) Audiograms.
 - b) A cardio-respiratory examination, including full size chest x-rays.
 - c) Lung function tests.
 - d) Eye/ sight tests.
 - e) A general physical examination.
 - f) A review of previous medical history.
 - g) Blood pressure tests
 - h) Glucose tests
 - i) Vaccinations (Hepatitis A & Typhoid)

Copies of all medical certificates shall be submitted to the Johannesburg Water Project Specialist or Appointed OHS Agent to 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 Project Specialist or Appointed OHS Agent.

Medical surveillance shall address all occupational health risks to which the employee is exposed, identified through the risk assessment referred to in section 4 below.

Retention monies will be withheld if the exit medical is not complete for all employees.

The cost of all medical examinations will be borne by the Contractor as provision is made on the bill of quantities.

4 OCCUPATIONAL HEALTH RISK ASSESSMENT

- 4.1 The Contractor shall conduct an occupational health risk assessment prior to site establishment.
- 4.2 The Contractor shall ensure that, as far as is reasonably practicable, ergonomic related hazards are analyzed, evaluated and addressed in the risk assessment.
- 4.3 The methodology used by the contractor to assess occupational health risks associated with their activities shall be submitted to Johannesburg Water for approval by the Johannesburg Water Project Specialist or Appointed OHS Agent prior to site establishment. The methodology should take the following into consideration, among others:
- a) Legal requirements.
 - b) Normal activities undertaken by the contractor.
 - c) Abnormal situations (e.g. unanticipated breakdown of equipment etc).

-
- d) Emergency situations (e.g. fires, exposure to chemicals).
 - e) Changes in work procedures and methods.
 - f) Previous experience.

4.4 A risk register that will include the following shall be submitted to the Johannesburg Water Project Specialist or Appointed OHS Agent before site establishment.

- a) All occupational health risks identified during the occupational health risk assessment.
- b) A list of the occupational health risks that have been identified as being significant.
- c) Reference to the method statements, measures or procedures that will be followed to either eliminate or reduce the significant risks to tolerable levels.

4.5 The Contractor shall, in writing, clearly explain how each occupational health risk assessed to be significant will be addressed to eliminate or reduce it to a tolerable level and submit it for approval by the Johannesburg Water Project Specialist or Appointed OHS Agent before site establishment. This may be through method statements or written operational control procedures. Associated responsibilities and authorities shall be clearly defined. All method statements shall reflect at least:

- a) When the activities relating to the method statement will be conducted (timing).
- b) Materials to be used.
- c) Equipment and staffing requirements.
- d) The proposed construction procedure designed to implement the relevant requirements.
- e) The system to be implemented to ensure compliance with the method statement.
- f) Any other information deemed to be necessary by the Johannesburg Water Project Specialist or Appointed OHS Agent and/or the contractor's responsible person.

4.6 For significant occupational health risks identified after site establishment, method statements shall be submitted to the Johannesburg Water Project Specialist or Appointed

OHS Agent at least 10 working days before the start of the associated activity, when possible.

- 4.7 All changes to approved method statements or procedures shall be approved in writing by the Johannesburg Water Project Specialist or Appointed OHS Agent.
- 4.8 The contractor's Responsible Person shall retain records of any amendments and shall ensure that only the most current approved version of any method statement or procedure is used.
- 4.9 Every occupational health risk that is identified during the risk assessment process shall be conveyed to every employee whose work is associated with the risk. This may be done in the form of a toolbox talk but does not replace the toolbox talk entirely. Each employee shall sign to confirm an understanding of the occupational health risks in the tasks.
- 4.10 Occupational health risk assessments may be combined with safety and environmental risk assessments, but the consideration of occupational health issues shall be clearly reflected in the records generated and maintained.
- 4.11 The occupational health risk assessment process and effective implementation of measures to eliminate or reduce identified risks is the responsibility of the Contractor. Johannesburg Water will closely monitor the effectiveness of implemented measures.



HEALTH, SAFETY & ENVIRONMENTAL (SHE) SPECIFICATION: BASELINE RISK ASSESSMENT

PROJECT NUMBER:	JWOPS 038/19R
PROJECT LOCATION:	Northern farm
PROJECT DESCR:	Leasing of farm

POSSIBLE RISKS FOR THIS PROJECT

Task	Hazard	Risk	Consequence	Rating	Controls
Road maintenance	<ul style="list-style-type: none"> ✓ Hazardous chemicals ✓ Vehicle 	<ul style="list-style-type: none"> ✓ Dust ✓ Un-road worthy vehicle 	<ul style="list-style-type: none"> ✓ Respiratory illness ✓ Vehicle accident 	H	<ul style="list-style-type: none"> ✓ Dust mask must be worn ✓ Dust suppression must be done ✓ Vehicle or plant doing maintenance must be road worthy
Equipment maintenance	<ul style="list-style-type: none"> ✓ Hand tools ✓ Equipment 	<ul style="list-style-type: none"> ✓ Unsafe tools ✓ Noise ✓ Heavy equipment 	<ul style="list-style-type: none"> ✓ Hand injuries ✓ Damage to equipment ✓ Hearing loss 	M	<ul style="list-style-type: none"> ✓ Hearing protection must be worn when working around running equipment ✓ Competent person must maintain equipment
Security duties	<ul style="list-style-type: none"> ✓ Security guards ✓ External community 	<ul style="list-style-type: none"> ✓ Incompetent security ✓ No proper tools for security ✓ Trespassing into property 	<ul style="list-style-type: none"> ✓ Injury ✓ Lose of equipment due to theft 	H	<ul style="list-style-type: none"> ✓ Security plan must be developed and implemented ✓ Security guards must be provided with appropriate work tools ✓
Utilization of effluent	<ul style="list-style-type: none"> ✓ Effluent 	<ul style="list-style-type: none"> ✓ Unvaccinated employees ✓ Spillages 	<ul style="list-style-type: none"> ✓ Illnesses ✓ Environmental pollution 	M	<ul style="list-style-type: none"> ✓ Employees coming in contact with effluent must be vaccinated

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

SHE CONTRACTORS' MANAGEMENT SYSTEM				 Johannesburg Water
TENDER DOCUMENT SHE SPECS SIGN-OFF FORM				
REQUESTED BY	Clifford Mpofu	DATE	21/7/2022	JW OPS 038/19R
JW OPS 038/19R: LEASE OF NORTHERN FARM				

LIST OF SHE SYSTEM ATTACHED TO THE TENDER DOCUMENT				
SHE SYSTEM ATTACHED	Y/N	VERSION	NO PAGES	REMARKS
Volume 2 SHE Specification	Y	V2 – 01/16	47	For info
SHE Contractor's Competency Form	Y	V01 – 01/12	06	For info
Baseline Risk Assessment	Y	V01 – 05/15	02	For info
Returnable Annexure A: Acknowledgement of SHE Specification & Annexures	Y	V01 – 01/12	01	Return with tender documents
Medical Screening Policy	Y	V01 – 05/15	07	For info
COVID-19 Risk Assessment	Y	V01-04/20	4	For info
COVID 19 Guidelines	Y	V02-08/20	11	For info
Environmental Management Plan	Y	V2/20	113	For info
Waste Management Plan	Y	V01/18	52	For info
<p>NB* All documents shall be returned with the tender documents and copies thereof to be submitted with the safety file by the successful bidder.</p>				
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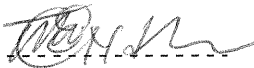

 Johannesburg Water DOCUMENT OWNER: Occupational Health Safety, Environment and Disaster Management Department	DOCUMENT TYPE: 1. Waste Management Procedure	DOCUMENT NO.: JW (WMP 001)					
TITLE: Procedure for Handling and Managing Waste			IMPLEMENTATION DATE:				
OHSE & DM CREATION TEAM	AUTHOR/COMPILED BY: SIGN  Edward Nduvheni Environmental Manager	RECOMMEND AND APPROVED: SIGN  Boetie Mashigo Occupational Health, Safety, Environment & Disaster Management Manager	<table border="1"> <tr> <td data-bbox="1187 465 1299 546"> REVISION NUMBER 01 </td> <td data-bbox="1299 465 1482 546"> NEXT REVISION DATE </td> </tr> <tr> <td colspan="2" data-bbox="1187 546 1482 725"> Page </td> </tr> </table>	REVISION NUMBER 01	NEXT REVISION DATE	Page	
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Appendix A: Johannesburg Water Waste Register.....50

1. INTRODUCTION

Johannesburg Water Waste Management Procedure (WMP) is a document that details goals and programmes for the management of waste in a manner that meets Johannesburg Water requirements and complies with all legislative requirements.

The procedure also recommends possible methods that can be used in the collection, transportation of waste to disposal and processing facilities. Effective waste management is critical in ensuring the prevention of pollution, ecological degradation and reduction of the environmental footprint.


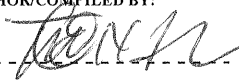

An integrated approach is also required to minimise and manage all waste streams and the associated risks in an environmentally acceptable and cost-effective manner. JW will manage waste in a responsible manner through the identification and proactive management practices of waste. This commitment is based on the waste management principles that embody avoidance of waste generation, and where avoidance is not possible, promote the conservation of resource use through effective and efficient resource utilisation, minimisation, reuse, recycling and the disposal of the remaining waste.

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The WMP extends over the entire waste cycle from cradle to grave, and covers generation, collection, transportation, treatment, storage, classification and final waste disposal. It is a move away from traditional approaches of management of environmental impact and remediation to establishing a waste management system which focuses on waste prevention and minimisation. This document shall be implemented, monitored and audited in order to ensure continual improvement of waste management performance across JW projects/ CAPEX, OPEX and associated activities. It is also produced in order to have standardisation of the process and activities related to waste management across JW. The Plan will be reviewed when the need arises and/or there is a change in scope or nature of the business to ensure continued relevance and effectiveness, and compliance will be measured through audits and inspections.

Johannesburg Water will practice the five environmental management principles in line with NEMA (107 of 1998)

- Duty of care - the waste is avoided, minimised, reused or recycled or otherwise disposed of in a responsible manner
- Cradle to grave- responsibility for the waste and the considerations of the waste exist throughout its life cycle
- Polluter pays principle – any organisation causing pollution is liable for the costs of cleaning it up
- Precautionary principle – always assume that waste is hazardous until shown to be safe:
- Preventative principle – reduce risk by collection, treatment and disposal to take place as near as possible to the point of generation as is technically and environmentally feasible.

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This procedure is necessary to provide the minimum management requirements of waste streams that can pose a significant risk to Johannesburg Water.




2. SCOPE

2.1 PURPOSE

The purpose of this procedure is to ensure the effective management of all waste generated system is established, implemented and maintained at Johannesburg Water Offices, CAPEX and OPEX, in order to prevent pollution and other Safety, Health and Environmental adverse conditions or situations in accordance with acceptable environmental legislations and other applicable standards and/or requirements.

2.1 APPLICABILITY


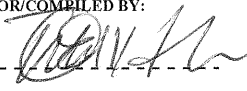

This procedure aims to address the management of all relevant waste streams within JW sites and/or depots. It does not relieve any person in any way from any of his/her legal responsibilities in respect of environmentally sound waste management of waste streams not addressed in this procedure. It covers measures pertaining to handling, storage and disposal of general, hazardous, medical waste and other waste generated at JW sites/depots in an attempt to embrace the cradle to grave

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concept. This procedure is applicable to all employees, suppliers and contractors performing work at JW and/or for JW.

3. REFERENCE

- The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996).
- National Environmental Management Act, 1998 (Act No. 107 of 1998).
- National Environmental Management: Waste Management Act No. 59 of 2008.
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- Hazardous Substances Act, 1973 (Act No. 15 of 1973).
- National Road Traffic Act, 1996 (Act No. 93 of 1996).
- Health Act, 1977 (Act No. 63 of 1997).
- SANS 14001:2015- Environmental Management Systems.
- Asbestos Regulation, 2001 (promulgated under the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- Department of Water Affairs and Forestry, 2nd Edition, 1998: Waste Management Series: Minimum requirements for Waste Disposal by Landfill.
- Department of Water Affairs and Forestry, 3rd Edition, 2005: Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste.
- ISO 14001:2015 Environmental Management Systems.
- National Waste Management Strategy (NWMS).
- Sludge Guideline.
- Guidelines for good practice in the health care
- **PROFESSIONS**

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4. TERMS, DEFINITIONS, CLASSIFICATION AND ABBREVIATIONS

4.1 Definitions


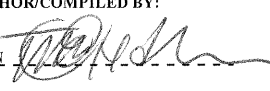

All definitions below are as defined on NEMA and NEM: WA. All other definitions shall be interpreted as presented on the ISO Standards.

Duty of Care: It is whereby the generator of the waste is ultimately responsible for ensuring that the waste is handled, stored, transported and disposed of according to the legislation and in an environmentally sound and responsible manner.

Cradle to Grave: It is the responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.

Clinical glass: Glass possibly contaminated with blood and body fluids or chemicals, (e.g. blood collection tubes, laboratory glass, medication vials).

Waste: Referred to any substance, whether or not that substance can be reduced, reused, recycled and recovered: that is surplus, unwanted, rejected, discarded, abandoned or disposed of which the generator has no further use of the purpose of production, that must be treated or disposed of, that is identified as a waste by the Minister by notice in the Gazette. It includes waste generated by contractors, medical or any other sector but, a by-

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product is not considered as waste, any portion of waste, once reused, recycled and recovered, ceases to be waste.

Hazardous Waste: All waste containing organic or inorganic elements or compounds that may, owing to inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment i.e. Group I, Group II, Group III and Group IV hazardous substances in terms of the Hazardous Substances Act No. 15 of 1973.

Note: All human anatomical waste such as blood and body fluids are potentially hazardous.
Human/animal anatomical waste:

Waste consisting of:

Tissues;

Organs;




Body parts;

Products of conception; and

General Waste: All waste generated in the normal day to day activities in the homes, canteens, offices, constructions which does not pose any immediate hazard or threat to health and/or the environment (which include but not limited to domestic waste, building rubble and demolition waste, business waste and inert waste etc.)

Inert Waste: "means waste that -

(a) does not undergo any significant physical, chemical or biological transformation after disposal;

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(b) does not burn, react physically or chemically biodegrade or otherwise adversely affect any other matter or environment with which it may come into contact; and

(c) does not impact negatively on the environment, because of its pollutant content and because the toxicity of its leachate is insignificant;

"Health care risk waste"/Medical waste: Means waste capable of producing any disease and includes but is not limited to: Laboratory waste; Pathological waste; Genotoxic waste; Infectious liquids and infectious waste; Sharps waste;

Chemical waste: Pharmaceutical waste and waste generated from the clinic.


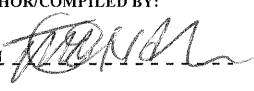

Office Waste: All waste generated from office and from office work as well as unused/unwanted (i.e. old/unused computers, cartridges, papers etc.)

Waste accumulation date: It is the first date/day in which the waste is disposed into the provided medical waste container.

Storage: The accumulation of waste in a manner that does not constitute treatment or disposal of that waste

Disposal: Referred to the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land.

Recovery: means the controlled extraction of a material or the retrieval of energy from waste to produce a product

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Recycle: means a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material

Re-use: means to utilise articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles

Storage: means the accumulation of waste in a manner that does not constitute treatment or disposal of that waste

Treatment: means any method, technique or process that is designated to –

- (a) change the physical, biological or chemical character or composition of a waste; or
- (b) remove, separate, concentrate or recover a hazardous or toxic component of a waste; or
- (c) destroy or reduce the toxicity of a waste, In order to minimise the impact of the waste on the environment prior to further use or disposal


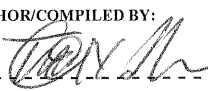

Waste Management License: Referred to a license issued in terms of section 49 of the National Environmental Management Waste Act, Act No. 59 Of 2008

Waste Disposal Facility: Referred to any site or premises used for the accumulation of Waste with the purpose of disposing of that waste at that site or on that premises

Waste Transfer Facility: Referred to a facility that is used to accumulate and temporarily store waste before it is transported to a recycling, treatment or waste disposal facility.

Waste management activity: means any activity listed in Schedule 1 of the Environmental Management: Waste Act or “waste minimisation programme” means a programme that is intended to promote the reduced generation and disposal of waste

Waste minimisation program: means a programme that is intended to promote the reduced generation and disposal of waste.


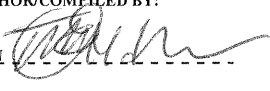

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4.2 Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

4.3 Abbreviations

Abbreviation	Description
CAPEX	Capital Project
OHSE & DM	Occupational Health Safety, Environment and Disaster Management Manager
CFL	Compact Fluorescent Lamps
DEA	Department of Environmental Affairs
ECO	Environmental Control Officer
EO	Environmental Officer
EIA	Environmental Impact Assessment
ELC	Environmental Liaison Committee
EM	Environmental Manager
EMP	Environmental Management Plan
ES	Environmental Specialist
GN	Government Notice
GDARD	Gauteng Department of Agriculture & Rural Development
H:H	High Hazard

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HSEP	Health, Safety & Environmental Practitioner
JW	Johannesburg Water
OHN	Occupational Health Nurse
OPEX	Operational
MSDS	Material Safety Data Sheets
NEMA	National Environmental Management Act (Act 107 of 1998)
NEM:WA	National Environmental Management: Waste Act (Act 59 of 2008)
PCB	Polychlorinated Biphenyl
PPC/E	Personal Protective Clothing/Equipment
PS	Project Specialist
SHE	Safety, Health and Environment
WMP	Waste Management Procedure


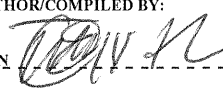

5. RESPONSIBILITIES AND AUTHORITY

5.1. Managers and Supervisors

- To ensure compliance to relevant legislation and guidelines on procedures.

5.2. ES & HSEP

- To monitor the application of this procedure and to report deviations observed to the relevant Managers and/or Supervisors.

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- To ensure that all waste generated on site is recycled and/or disposed of in a responsible manner in line with the JW Waste Management Procedure and its plan and other relative environmental legislative and other applicable standards or requirements.

5.3. OHN


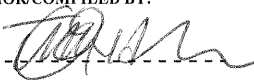

- Is responsible for managing medical waste in the clinic in an appropriate manner as per requirements of the OHS Act No. 85 of 1993, Hazardous Substances Act No. 15 of 1973 and Gauteng Health Care Risk Waste Regulations.

5.4. OHSE & DM Team (ES, PS, HSEP, OHN)

- To review this procedure annually and to attend to adversities/deviations that might occur.

5.5. Maintenance Manager/s

- Shall notify and call the contractors/service provider to collect scrap metal, used oil and empty drums and fluorescent tubes.

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5.6. Managers, Works Managers, Regional Managers, Depot Managers and/or Supervisors




- Shall notify the Occupational Health Nurse when the medical waste containers are full.

5.7. Project Managers/Engineers/ Resident Inspectors and Contractors

- Monitor the overall control of the project and oversee the implementation of the waste management procure at construction site.
- Provide overall JW WMP to the contractor.
- Ensure that JW WMP requirements are understood by contractor
- Provide support and advise to contractors on waste management issues.
- It is the responsibility of the Project Unit Department (CAPEX) when appointing contractors, to include reference to this procedure in the contract for adherence by the principal contractors as well as other sub-contractors, suppliers of the activity product or service.

5.8. CAPEX Contractor


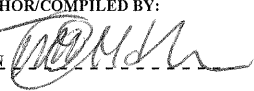
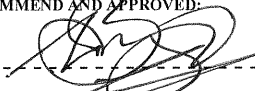
Compile a project specific Waste Management Plan that shall be reviewed by Johannesburg Water.

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- Appoint competent personnel (i.e. as per OHS and Environmental Specification) to ensure compliance to this procedure and other related requirements in this regard.
- Set waste management targets for reduction, reuse, recycling, and general waste recycling.
- Monitor performance against targets and be in a position to explain negative variances.
- Submit periodic reports to Johannesburg Water OHSE & DM regarding compliance to project specific WMPs.
- Continually review project specific WMPs to ensure relevance and effectiveness.
- The Contractor on monthly basis shall submit the waste manifest, safe disposal certificates and weighbridge to JW OHSE & DM.

5.9. Waste Contractor

- Manage the collection and disposal of waste in accordance with JW term service contract and in compliance with the NEM: Waste Act of 2008.
- The Waste Contractor shall provide the service level agreement made with the holder of licence and the licence or permit for the waste facility to JW.
- The Waste Contractor shall provide JW OHSE & DM with Access route map of the route it will be used when they come to collect waste and Emergency Response Plan in case of any waste spillages.
- Submit monthly reports on amount and type of waste disposed of.
- Submit Waste Manifest, Certificates of Safe Disposal and weighbridge slip,
- Comply with the environmental law prescribed for the transportation, handling and disposal of waste,

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- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.




5.9. Waste Disposal Management and Treatment options

- All waste disposal sites/facilities receiving waste must have an appropriate permit issued by the relevant authority or Municipality,
- The waste contract who collects waste must issue a waste manifest document and the disposal facility issues a Safe Waste Disposal Certificate and weighbridge slip.
- Recycling activity must be done with the suppliers who are in a position of a permit applicable to the site for waste processing or atmospheric pollution permit for facilities such as incineration, waste paper processing, scrap metal recyclers etc.

6. DOCUMENT CONTENT

6.1 LEGAL FRAMEWORK

The underlying overarching framework for waste management is that, the generator is accountable and responsible for waste from cradle to grave. Waste management is one of those areas that is mostly governed by a single piece of legislation i.e. NEM: WA although there are others that support it.

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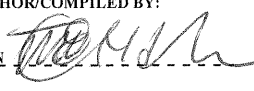

Section 24 of the Republic of South Africa Constitution focuses on the Constitutional right to an environment that is not harmful to human health or well-being. In South Africa, there are a number of legislations that address waste management (generation, handling, transportation, treatment, and disposal). This makes it critical to develop and implement a WMP that is in

6.2 WASTE MANAGEMENT OBJECTIVES AND STRATEGIES

The primarily objective of waste management for the JW is to ensure that all waste is managed appropriately, capitalising on processes that prevent, minimise, reduce, recover and recycle. This contributes to ensuring that risks of exposing employees, the public and the impact on the environment are prevented and if not, minimised.

6.2.1 The specific objectives and targets of waste management for JW are as follows:

- To ensure that interfaces for waste management are clearly defined and understood by management and staff.
- To establish a standardised approach towards waste management in JW.
- To monitor waste generation in a bid to reduce waste generated over extended periods.
- To stipulate expectations to all parties doing work on behalf of JW.

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7. WASTE PLANNING

Waste management planning involves the identification of waste types that shall be generated, classification of the waste into waste streams, estimation of waste quantities and the proposal of strategies for waste reduction.

7.1. WASTE STREAMS AND TYPES

According to the Department of Water Affairs Minimum Requirements for handling, classification and disposal of hazardous waste, waste classification is based on the severity of the risk associated with the waste. Further, waste is categorised for proper handling and disposal in a suitable waste disposal facility.

JW generates its waste from activities such as office administration, OPEX and CAPEX Projects. The waste types identified from JW fall under the categories of general and hazardous waste. The bulk of waste produced by JW is predominantly general waste hence the need for a proper management system.


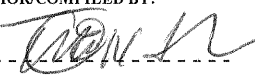

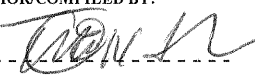

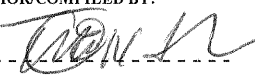


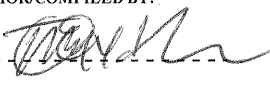

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Table 1: Waste Streams and waste types


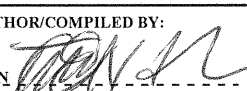
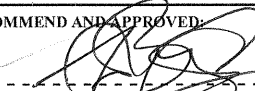
Waste streams and waste types
General Waste
<ul style="list-style-type: none"> • Cement bags (washed) • Paper • Heat Treated Wood • Uncontaminated Plastic • Cans / Tins • Bottles • Waste Tyres • Scrap Metal • Building and Demolition Rubble (Not Contaminated with hazardous substances) • Organic waste (i.e. garden waste, other wood materials)
Hazardous Waste
<ul style="list-style-type: none"> • Oil, Transformer Oil • Oil contaminated soil and waste • Solvents • Cement • Cement bags (unwashed) • Contaminated soil • Fluorescent tubes • Conductor drums (treated with hazardous substances) • Wood (treated with hazardous substances) • Medical Waste • SF6

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- Spare mechanical parts
- Metal coated with hazardous substances
- Contaminated Building Rubble/dry concrete
- Wet Concrete
- E-Waste (incl. Printer cartridges and computers)
- Paint tins and cans
- Asbestos and asbestos containing material
- Herbicides and herbicides containers
- Grey water and sewerage
- Corpse
- Fetus
- Human organs
- Dead animals
- Pathological waste
- Sharps, especially contaminated sharps.
- Grit and Screen/s Waste

Medical Waste


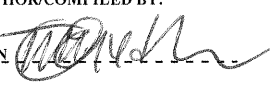

- Waste generated after first aid treatments/applications
- SHE bin
- Pharmaceutical waste.

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7.1.1. General Waste

The waste types identified under this stream are generated from activities such as site/office establishment and operation, vegetation clearing, excavations, pipe installation or pipe fixing. They include: garden waste, excess soil (spoilt) building rubble and scrap metal, food waste and re-usable/recyclables such as glass, paper, plastics, and tins, cardboard, wood and waste tyres. In most instances, general waste is temporarily stored in bins/ skips prior to removal by contractors to off-site general waste recyclable centres and/or disposal facilities.

- Examples of domestic wastes include but not limited to paper, plastic, food, cardboard box, cans, glass, wrapping materials etc.
- All waste is placed inside the labelled and/or colour coded bins provided in JW sites,
- Once the bins are full they are taken out to a skip placed in different demarcated areas on sites/depots,
- Once all general waste is placed inside the skip, the lid is then closed to prevent papers from being blown off by the wind,
- The service provider collects general waste on a weekly basis,
- The service provider arrives at the station and proceeds to the empty truck and then proceeds to the general waste storage areas for waste collection,
- At the storage area, the service provider offloads the empty skip and loads the full skip to the truck,
- Waste is disposed of at an licensed waste disposal site/facility,
- Once disposed of, a copy of ticket from the waste disposal facility is given to the service provider's driver/representative; one copy given to the Maintenance

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Manager/Supervisor or Depots/Works Manager and forwarded by the Maintenance Manager/Depots or Works Manager to OHSE & DM section (HSEP & ES) for filling.

7.1.2 Hazardous Waste



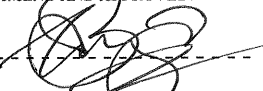
Hazardous waste varies significantly in nature, composition, size and the severity of risks and harmfulness to people and the environment. These waste include: asbestos containing materials from old buildings and insulation, medical waste, fabric filter, fluorescent tubes, batteries, printer cartridges, paint tins, PCB containing oils, used oil and car parts from workshops, silica gel from transformers, used oil, grease and lastly oil contaminated waste which consists of oily rags used for wipe-ups and old PPEs and oil contaminated soils from spillages. In general, hazardous waste is stored at on-site hazardous waste storage areas before being removed by contractors, which are registered as hazardous waste transporters, and disposed of at a licensed H: H waste disposal facilities.

7.1.3 Used oil and chemical contaminated rags

- All used oil generated on site is stored in 210 litre drums at the workshops,
- All filled-up drums are taken to the Main Stores by workshop personnel,
- At the main stores the personnel offload the oil put it at the demarcated area with concrete slab and within the bund area where necessary,
- Once the oil is offloaded the main store is locked by Stores Assistant to prevent unauthorised entry,




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- Once drum storage area is full at the main store and oily rags bin is full, Stores Assistant informs the Stores Supervisor, and the Maintenance Manager,
- Maintenance Manager initiates a call for a service provider to collect oily rags bin for disposal, and
- Stores Supervisor/ Maintenance Manager shall place an order for the filled used oil drums to be removed by the service provider.
- The service provider arrives at the site/depots and proceeds to take the empty tank and then proceeds to the main stores,
- At the stores, the service provider goes with the stores assistant to the storage area,
- At the storage area, the service provider decant the oil from drums to his oil tank using a sucking machine and load the empty drums as well,
- Service provider provides Stores Supervisor with waste manifest and safe disposal certificate,
- Stores Supervisor/Maintenance Manager issues a gate pass for service provider,
- The service provider collects the mass of full tank which will be recorded on the invoice as well as on the safe disposal certificate,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM section for filling.
- Service provider shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.

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7.1.4 Oil Spill Management

- During a spill of oil, action should be taken immediately to prevent and contain the spill from spreading, contaminating the ground (soil), washed and contaminating the nearest water bodies, infiltrates down and contaminate ground water, washed and enter into the drains,
- Oil spill kits should be stored near the oil store that the user can access them easily when needed,
- All sites should have oil spill kits at the main stores,
- If you discover any spill of any significant proportion that you cannot handle, it must be reported to OSHE & DM section immediately,
- Oil containing equipment should be located within an oil tight secondary containment system such as a bund and drip trays to prevent oil leaks,
- Enclose all pipes, valves and gauges within the bund,
- The water in bund that may be contaminated with oil, should be sampled, tested and if contaminated, then dispose of as hazardous waste,
- Any used oil that is sent to the hazardous waste site need to be accompanied by the MSDS for that particular product,
- Contaminated soil material shall be stored into 210 L drum,
- The drum has to be labelled with relevant information written onto it,
- The collection of this waste shall be carried out by the registered contractor,
- The waste disposal must be done at the registered waste disposal facility,
- The mass of the full drum will be recorded on the invoice as well as on the Safe Disposal Certificate.

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Oil Spill Management (conti...)

- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the civil stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.
- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept

7.1.5. Medical waste

The activities that lead to the generation of this type of waste are first aids, employees wounded on sites or offices and clinics. All medical waste shall be handled according to the legal and JW requirements. The current practices within JW operations are that the contractors make arrangements with the medical facilities (clinics and hospitals) around their area of operations or with registered medical waste transporter. Any medical waste shall be handled in the manner as it is stipulated in the legislation, for the proper handling and disposal of these wastes. Examples of medicals waste, handling and disposal are as follows:


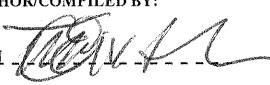
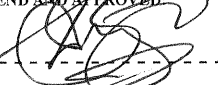
- Sharps/needles & soiled materials used on personnel coming for treatment at the clinic are put on a demarcated container stored in a dressing room,
- An accumulation date is put on the waste container - to ensure that the waste does not exceed 90 days,
- 20 days before the containers reach 90 days, Occupational Health Nurse initiates a call for a medical waste to be removed by a service provider,

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- The service provider arrives at the station and proceeds to the Occupational Health Centre (clinic),
- At Occupational Health Centre, the service provider goes with OHN to the storage area of medical waste,
- At the storage area, the service provider counts and loads the containers of medical waste to the truck,
- The number of containers collected will be recorded on the invoice,
- The invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the OHN who will maintain the copies of the waste manifest and safe disposal certificate,
- All medical waste will be contained in the special bins provided. All sharp needles must be separated from other medical waste,
- All out dated and disused medicines will be disposed of as a hazardous medical waste or returned to the supplier for disposal. (Tablets and syrups will be crushed and/or dissolved before disposal as hazardous waste),
- The OHN will arrange for an approved hazardous waste disposal company to collect and dispose of this medical waste. The OHN is responsible for and authorised to keep all records in connection herewith (disposal certificates).

7.1.6 Laboratory Chemicals and broken glass


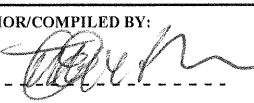

- Obsolete and redundant laboratory chemicals and used solvents;
- Laboratory chemicals will be stored in 210L sealed drum and broken glass in 20L sealed container,

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- Laboratory chemicals shall be collected by the contractor managed by OHSE & DM section,
- Whenever this waste is removed for disposal it must be accompanied by MSDS, manifest and a copy kept on file at OHSE & DM section,
- All obsolete and redundant laboratory chemicals and solvents will be disposed of at a registered hazardous waste disposal site by an approved hazardous waste contractor.

7.1.7 Scrap metal (Ferrous and Non- Ferrous Scrap Metals)


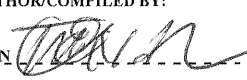

- Workshop personnel take all scrap metal generated on site to the Main Stores, e.g. copper, pipes, aluminium, zinc, heavy & light metal etc.
- At the scrap yard, the personnel offload the scrap metal, separate it and place it at the demarcated area,
- Once the scrap metal is offloaded the main store is locked to prevent unauthorised entry,
- Once scrap metal storage area is full at the main store, Stores Assistant informs the Stores Supervisor/Maintenance Manager,
- Stores Supervisor/Maintenance Manager shall place an order for scrap metal to be removed.
- The service provider arrives at the station and proceeds to empty the truck and then proceeds to the main stores,
- At the stores, the service provider goes with the Stores Assistant to the storage area,

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- At the storage area, the service provider loads the scrap metal to the truck.
- Stores Supervisor/Maintenance Manager issues a gate pass for service provider,
- The service provider proceeds with full truck of scrap metal, the mass of full truck will be recorded on the ticket,
- Copy of ticket from the service provider will be given to the Stores Supervisor/Maintenance Manager; one copy forwarded to the stores personnel who will forward the original to the OHSE & DM for filling.
- Stores personnel make a spread sheet indicating date of collection, type of scrap metal and quantity of metal collected,

7.1.8. Personal Protective Equipment/Clothing

- Contaminated/worn-out PPE is returned to stores in exchange for the new PPE including the Hazmat Gas/Partikel filter,
- PPE owner cuts the contaminated/worn-out PPE and places it inside the skip provided outside the fitting room in stores,
- Once all the PPE is placed inside the skip, the lid is then closed to prevent air contamination from the contaminated PPE,
- Once the skip is full, the stores personnel initiate a call out to the service provider/Waste Contractor to come and collected the skip.
- The service provider/contractor arrives at the sites/depots and proceeds to the stores to empty skip.)The information is sent to OHSE & DM for filling,
- At the stores, the waste contractor drop-off the empty skip,


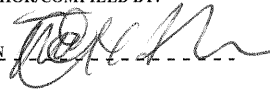

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- The mass of the full skip will be recorded on the invoice as well as on the Safe Disposal Certificate,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.

Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.


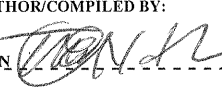

7.1.9 Empty Paint Tins

- All empty paint tins are taken to store yard after use at respective places on station,
- Empty containers are placed inside the skip provided outside the workshop,
- Once all the empty paint tins are inside the skip, the lid is then closed,
- Once the skip is full, the stores personnel initiate a call out to the Waste Contractor to come and uplift the skip,
- All empty paint tins are taken to store yard after use at respective places on station,
- Empty containers are placed inside the skip provided outside the workshop,
- Once all the empty paint tins are inside the skip, the lid is then closed,
- Once the skip is full, the store personnel initiate a call out to the Waste Contractor to come and uplift the skip,
- The contractor arrives at the station and proceeds to the store yard.

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7.1.10 Scrap metal (Ferrous and Non- Ferrous Scrap Metals)


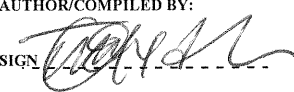

- Workshop personnel take all scrap metal generated on site to the Main Stores, e.g. copper, pipes, aluminium, zinc, heavy & light metal etc.
- At the scrap yard, the personnel offload the scrap metal, separate it and place it at the demarcated area,
- Once the scrap metal is offloaded the main store is locked to prevent unauthorised entry,
- Once scrap metal storage area is full at the main store, Stores Assistant informs the Stores Supervisor/Maintenance Manager,
- Stores Supervisor/Maintenance Manager shall place an order for scrap metal to be removed,
- The service provider arrives at the station and proceeds to the weigh bridge to weigh the empty truck and then proceeds to the main stores,
- At the stores, the service provider goes with the Stores Assistant to the storage area,
- At the storage area, the service provider loads the scrap metal to the truck,
- Stores Supervisor/Maintenance Manager issues a gate pass for service provider,
- The service provider proceeds with full truck of scrap metal, the mass of full truck will be recorded on the ticket,
- Copy of ticket from the service provider will be given to the Stores Supervisor/Maintenance Manager; one copy forwarded to the stores personnel who will forward the original to the OHSE & DM for filling.
- Stores personnel make a spread sheet indicating date of collection, type of scrap metal and quantity of metal collected,

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- The information is sent to OHSE & DM for filling.


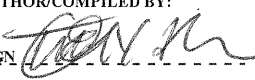

7.1.11 Personal Protective Equipment/Clothing

- Contaminated/worn-out PPE is returned to stores in exchange for the new PPE including the Hazmat Gas/Partikel filter,
- PPE owner cuts the contaminated/worn-out PPE and places it inside the skip provided outside the fitting room in stores,
- Once all the PPE is placed inside the skip, the lid is then closed to prevent air contamination from the contaminated PPE,
- Once the skip is full, the stores personnel initiate a call out to the service provider/Waste Contractor to come and collected the skip,
- The service provider/contractor arrives at the sites/depots and proceeds to the stores to empty skip.
- At the stores, the waste contractor drop-off the empty skip
- The mass of the full skip will be recorded on the invoice as well as on the Safe Disposal Certificate,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.
- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.

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7.1.12 Empty Paint Tins

- All empty paint tins are taken to store yard after use at respective places on station,
- Empty containers are placed inside the skip provided outside the workshop,
- Once all the empty paint tins are inside the skip, the lid is then closed,
- Once the skip is full, the stores personnel initiate a call out to the Waste Contractor to come and uplift the skip.
- All empty paint tins are taken to store yard after use at respective places on station,
- Empty containers are placed inside the skip provided outside the workshop,
- Once all the empty paint tins are inside the skip, the lid is then closed,
- Once the skip is full, the store personnel initiate a call out to the Waste Contractor to come and uplift the skip.
- The contractor arrives at the station and proceeds to the store yard.
- At the civil stores, the waste contractor drop-off the empty skip, uplift the full skip and proceed with the full skip.
- The mass of the full skip will be recorded on the invoice as well as on the Safe Disposal Certificate.
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the civil stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.
- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept

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7.1.13 PVC, Rubber, scrap wood


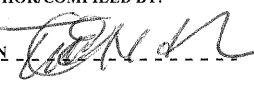

- Workshop personnel take all PVC, rubber, scrap wood generated on site to the scrap yard,
- At the scrap yard the personnel offload the PVC, rubber, scrap wood, separate it and place it at the demarcated area,
- Once the PVC, rubber, scrap wood is offloaded the main store is locked to prevent unauthorised entry,
- Once PVC, rubber, scrap wood storage area is full at the main store, Stores Assistant informs the Stores Supervisor,
- Stores Supervisor/Maintenance Manager shall place an order for PVC, rubber, and scrap wood to be removed.
- The service provider arrives at the site and proceeds to the storage area, collect scraps and then proceeds to the main stores,
- At the stores, the service provider goes with the Stores Assistant to the storage area,
- At the storage area, the service provider loads the PVC, rubber, scrap wood to the truck,
- Maintenance Manager issues a gate pass for service provider,
- The service provider proceeds to with full truck of PVC, rubber, scrap wood the mass of full truck will be recorded on the ticket,
- Copy of ticket from the landfill site will be given to the Stores Supervisor/Maintenance Manager; one copy forwarded to the stores personnel who will forward the original to the OHSE & DM for filling,

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- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.

7.1.14 Fluorescent tubes


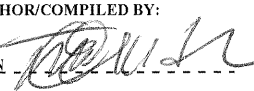

- The electricians/ electrical workshop assistant of both work areas obtain a defect from planning department to replace faulty/fused fluorescent tubes,
- The electricians/ electrical workshop assistant go to the respective area to replace the faulty tubes,
- Take out the fluorescent tubes that are no longer working; replace them with new tubes,
- Obtain and sign for the key to the crushing area, and take the used tubes to the crushing area,
- At the crushing area the personnel offload the tubes in a demarcated area,
- Fluorescent tubes are crushed into a sealed labelled metal drum situated at electrical workshops in both work areas,
- After crushing, the drums are kept sealed to prevent air pollution,
- After crushing, the crushing area is cleaned and locked; the keys are handed back to the electrical workshop foreman, to prevent unauthorised entry.
- When the fluorescent drums are full the electrician/workshop assistant informs the Electrical Foreman,
- The Electrical Foreman generates an order for the service provider to fetch full drums of crushed fluorescent tubes for disposal,

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- The service provider arrives at the site and proceeds to the stores empty drums on truck and then proceeds to the electrical workshop (crushing area),
- At the electrical workshop, the service provider goes with the electrician/workshop assistant to the crushing area,
- At the crushing area, the service provider offloads the empty drums and loads the full drums on the truck,
- After loading the full drums he reports back to the Electrical Foreman,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the Electrical Foreman who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE &DM section for filling.
- Electrical Foreman issues a gate pass for service provider,
- The service provider proceeds with full drums of crushed fluorescent tubes, the mass of full truck will be recorded on the ticket,
- Copy of ticket will be given to the service provider; one copy forwarded to the Electrical Foreman who will forward the original to the OHSE & DM for filling.
- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.

7.1.15. Electronic Waste (Printers, Toner Cartridges, fax machines laptops, desktops, phones and cell phones etc.)


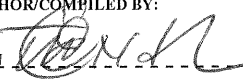

- Electronic Waste are taken to Facilities,
- Empty cartridges are taken to Facilities and stored in a box provided by the supplier,

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- The Admin Assistant records the cartridges on register (indicating place of origin and number of cartridges),
- Admin Assistant sends the cartridges to Stationary section through pony express on monthly basis (the collector signs the register as proof of collection),
- All JW E- Waste such as computers, electronic equipment, laptops, and phones must be taken to the manufacturer for recycling and safe disposal.
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the civil stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.

7.1.16 Building rubble & Garden Refuse




- All building rubble & garden refuse generated on site is taken behind workshop (temporary storage area),
- On a bi-weekly basis the Depot/Works Manager calls the driver to come and load the building rubble & garden refuse for disposal at a registered Municipal landfill site,
- The driver arrives at the workshop, loads the building rubble & garden refuse to the truck,
- The driver proceeds with full truck of building rubble & garden refuse and ensure that the mass of full truck is recorded on the ticket,
- Then proceeds to the registered landfill site,
- At the landfill site, the mass of a full truck is recorded and the service should receive a receipt.

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- Copy of ticket from the landfill site is given to the Depot/Works Manager by the service provider, who will forward the original to the OHSE & DM for filling.

7.1.17 Asbestos Pipes




- Any asbestos containing materials or waste such as asbestos cement sheets, pipes, building materials, equipment, PPE etc.
- Demolition of asbestos work shall be carried out by an approved asbestos contractor with Department of Labour. Only trained personnel shall undertake the work.
- All asbestos work and the disposal thereof must be done in strict accordance with Asbestos Regulation, 2001.
- The Department of Labour shall be notified prior commencement works on site in line with Asbestos regulation of 2001.
- All waste asbestos containing material must be directly put into asbestos double bags
- The bags will then be placed into a lockable asbestos waste bin for safe disposal by an approved hazardous waste contractor
- Asbestos shall be transported by the licensed contractor.
- The transported asbestos must be fixed or double bagged in order to prevent any dangerous fibres from escaping
- All asbestos containing waste must be disposed at an approved hazardous waste disposal site.
- The mass of the full box will be recorded on the invoice as well as on the Safe Disposal Certificate,

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- The Invoice, Waste Manifest, Safe Disposal Certificate as well as the weigh bridge slip, to be forwarded to the stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for the recording purposes.

7.1.18 Papers

- Paper waste includes materials such as newspapers, magazines, office papers which are used for printing, photocopies, plain paper fax's.
- Papers are stored in allocated paper recycling boxes in the offices and workshops
- Confidential documents are to be shredded before removed for recycling and be stored in a refuse plastic bag.
- Papers are collected by an approved contractor that deals with paper recycling
- Papers are removed from site by the paper recycling company/contractor. At the stores, the waste contractor drop-off the empty skip
- The mass of the full box will be recorded on the invoice as well as on the Safe Disposal Certificate,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the civil stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.


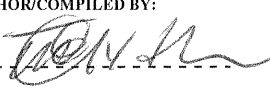

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7.1.19 Grit and Screen/s Waste (from the Sewer Waste Water Treatment Plant)

- Any sewer contained materials or waste containing sewer such as plastics, rags, tins, papers, sand and/or stones etc.
- All waste with sewer containing material must be directly put into Skips, which is clearly marked.
- The full skip will then be collected by a service provider for safe disposal by an approved hazardous waste contractor
- Sewer grit and screen waste shall be transported by the licensed contractor,
- All sewers containing waste must be disposed at an approved hazardous waste disposal site.
- The mass of the full skip will be recorded on the invoice as well as on the Safe Disposal Certificate,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling.

7.1.20 Sewer Spillages


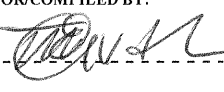

- During a spill of sewer, action should be taken immediately to prevent and contain the spill from spreading, contaminating the ground (soil), washed or flow and contaminated the nearest water bodies, infiltrates down and contaminate ground water, washed and enter into the drains,

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- Sewer spill kits should be stored on site and JW maintenance personnel should always have it in their cars, that the user can access them easily when needed,
- All relevant sites should have sewer spill kits at the main stores,
- If you discover any spill of any significant proportion that you cannot handle, it must be reported to OSHE & DM section immediately,
- The water in that may be contaminated with sewer, should be sampled, tested and if contaminated, then treated,
- Contaminated soil material shall be stored into 210 L drum,
- The drum has to be labelled with relevant information written onto it,
- The collection of this waste shall be carried out by the registered contractor
- The waste disposal must be done at the registered waste disposal facility,
- The mass of the full drum will be recorded on the invoice as well as on the Safe Disposal Certificate,
- The Invoice, Waste Manifest as well as the Safe Disposal Certificate, to be forwarded to the stores personnel who will maintain the copies of the waste manifest and safe disposal certificate and forward the originals to the OHSE & DM for filling,
- Waste contractor shall be audited annually to ensure responsible disposal of waste, as part of the station's cradle to grave concept.

7.1. 21. Canteen Used Oil

- The Canteen buys cooking oil for the use in kitchen,
- Cooking oil is only used once, once used is decanted into its original containers,

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- Once the used oil containers are more than 10 the Kitchen Supervisor informs the Canteen Manager who initiates a call for a service provider to collect the used oil containers,
- Once the service provider arrives on site they proceed to Canteen kitchen,
- Count the full drums of used oil & empty drums,
- Pay (in cash) for the full drums of used oil & empty drums and service provider should issue with invoice & safe disposal letter to the Canteen.
- The invoice & safe disposal letter is forwarded to Facilities for filling.

7.1.22 Human anatomical waste

All human anatomical waste such as blood and body fluids are potentially hazardous.

Human/animal anatomical waste:

Waste consisting of:

Tissues;

Organs;

Body parts;


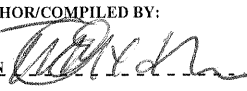

Products of conception; and

This waste category is divided into the subcategories of:

- Human anatomical waste;
- Infectious animal anatomical waste; or
- Non-infectious animal anatomical waste.

Note: The following are considered to be non-anatomical wastes:

- a. Blood and body fluids.
- b. Extracted teeth.

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OHSE & DM CREATION TEAM	AUTHOR/COMPILED BY:  SIGN _____ Edward Nduvheni Environmental Manager	RECOMMEND AND APPROVED:  SIGN _____ Boetie Mashigo Occupational Health, Safety, Environment & Disaster Management Manager	<table border="1"> <tr> <td data-bbox="1190 479 1299 555"> REVISION NUMBER 01 </td> <td data-bbox="1299 479 1474 555"> NEXT REVISION DATE </td> </tr> <tr> <td colspan="2" data-bbox="1190 555 1474 719"> Page </td> </tr> </table>	REVISION NUMBER 01	NEXT REVISION DATE	Page	
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c. Nail clippings.

d. Hair

- Only registered and/or accredited service providers shall be used for collection, transportation and disposal of human anatomical waste.
- All anatomical waste collected at the head of works shall be reported and removed appropriately according to its classification.
- The supply shall ensure that a report is obtained from the supplier.

8. ESTIMATES OF WASTE QUANTITIES

The OPEX department and CAPEX contractors shall record waste quantities generated and disposed of. Further, records relating to the safe disposal of waste shall be kept at all times. Both waste quantities and safe disposal records must be sent to the Johannesburg Water Environmental Specialist once received or on a monthly basis. Copies of service provider/s waste permit/s shall be kept on sites, if the contractors do not dispose of the waste themselves. Records of waste quantities must be done on JW Waste quantity register.

The following table illustrates how waste shall be recorded:


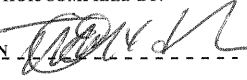

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Table 2: Waste Quantities generated

Waste	Quantities/volumes generated	Re-use/Recycled	Means of Disposal
Hazardous waste			
Mixed hazardous waste	Any	-	Hazardous sites Landfill
Asbestos and Medical Waste	Any	-	Hazardous sites and, Medical Centres (clinics and hospitals)
General Waste			
Domestic waste	Any	Yes	General landfill site
Building rubble	Any	Yes	General landfill Sites and donated to local communities or land owners

9. PRINCIPLES

9.1 PREVENTION AND MINIMISATION

This refers to the reduction of the volume of waste during production by means of different processes or clean technology. Waste avoidance, i.e. reducing waste without relying on recycling or re-use, is the most economically and environmentally beneficial waste minimisation option. Whilst, waste minimisation intends to avoid creation of waste before it is produced and reduce its quantity and toxicity. Prevention is the primary goal, followed by reuse, recycling, treatment and appropriate disposal.

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The following preventative and/or minimisation measures shall be employed:


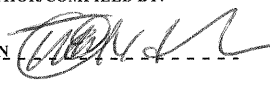

- Ensure Compliance to JW WMP and Procedures.
- Regular waste management awareness training,
- Avoid having and the use of materials in excess on sites,
- Ensure that all project sites (contractors) have method statements or WMP
- Take back schemes where an industry must take back the product when it becomes a waste
- Print on both sides of the paper

If it is possible, avoid printing and instead store documents digitally

9.2 PRECAUTIONARY MEASURES

The following precautionary measure shall be employed:

- Procuring of the exact amount of resources and in bulk packages needed to avoid excess materials that may be wasted,
- Ensure that good quality materials (steel, concrete, disposable eating or drinking containers) are purchased to avoid defected materials that may easily be rendered not fit for use,
- Good housekeeping practices.

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9.3 REDUCE, REUSE AND RECYCLING

There are a number of waste types that JW generates that can be reduced, reused and recycled. Reduce is all about for instance, oil contaminated soil and waste can be reduced by making sure that construction vehicles are maintained and free of oil leaks. The following reduce; reuse and recycling measures shall be employed:


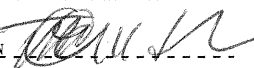

- Form a relationship with the waste recycling companies located in and around the projects areas
- Set targets for specific waste streams
- Packaging material (i.e. conductor drums and insulator boxes) be given back to supplier or to communities for re-use
- Recycling of paper is important, so is recycling of ink cartridges. Do not throw them away

9.4 TEMPORARY STORAGE

Daily, JW temporarily stores its waste from the point of generation daily and then takes it to the Depots/ Works/ camp sites/projects site offices where it is transferred into bins or skips. The following storage and disposal measures shall be employed:

All waste shall be stored in suitable waste containers.

- All waste receptacles shall be labelled or colour coded so as to ensure that the waste separation and recycling / re-use / disposal requirements are met.
- All waste containers (drums, bins and/or skips) shall be cleaned on a regular basis and records of service shall be maintained in the contractors site file.




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- All storage areas shall be demarcated so as to ensure that access is controlled.
- The contractor shall maintain accurate records on file of the volumes / weights of waste streams and date of disposal.
- All hazardous waste shall be stored in sealable impermeable, containers / skips or bunded containment structures.
- All storage containers / skips and bunds shall be maintained to ensure that the risk of polluting the surrounding natural environment is prevented.

9.5 DISPOSAL

- Only registered and/or accredited service providers shall be used for collection, transportation and disposal of hazardous waste.
- All waste generated shall be disposed of according to its classification and only at a registered landfill site.
- The contractor shall ensure that a removal manifest is obtained from the service provider on site.
- The contractor shall ensure that the service provider issues a weigh bridge slip together with a Safe Disposal Certificate within the required time frames of the removal from site.
- The contractor shall maintain a waste register and attach all relevant proof of disposal documentation.

Considering the NEM: WA requirements all waste generated shall be classified and disposed of within 18 months.

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9.8 WASTE CLASSIFICATION ACCORDING TO NEM: WA

9.8.1 Waste Classification


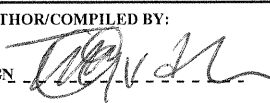

Waste generated must be classified in accordance with the Department of Environmental Affairs, Waste Classification and Management Regulations. This classification system shall be done in accordance with SANS 10234 (Globally Harmonized System (GHS)) within one-hundred and eighty (180) days of generation.

9.8.1.1 General and Domestic Waste

These waste types fall within Annexure 1 of Notice 6144 of 2012, NEMWA Waste Classification and Management Regulation and there is no need to classify these waste streams in terms of SANS 10234. The majority of these waste streams will be designated to be re-used, recycled or recovered. See Table below as an example of this.

Table 3: General and Domestic waste classification examples.

Waste Type	Waste Classification
Office kitchen waste	Domestic Solid Waste
Office paper waste	Domestic Solid Waste
Office – other waste i.e. packaging, plastic,	Domestic Solid Waste
Litter and domestic waste in construction camp	Domestic Solid Waste

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Scrap Metal	General Solid Waste
Wood packaging waste	General Solid Waste
Scrapped line hardware waste	General Solid Waste
Plastic	Domestic Solid Waste
Building Rubble	General solid Waste
Washed/soaked cement bags	Domestic Solid Waste


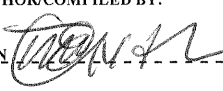

9.8.1.2 Hazardous Waste

For the purposes of the GHS (SANS 10234), the classification of substances and mixtures incorporates:

- Identification of the relevant data regarding the hazards;
- Subsequent review of the data to ascertain the associated hazards; and
- A decision on whether the substance or mixture is classifiable as hazardous and the degree of hazard. It is also important to consult the applicable MSDS when classifying hazardous waste.

Table 4: Hazardous waste classification examples

Waste Type	Waste Classification
Oil contaminated soil	Flammable solid
Workshop Wastes (Filters, oily rags etc.)	Flammable solid
Contaminated containers (paint, oil tins etc.)	Flammable solid
Used oil, petrol, diesel etc.	Flammable liquids
Fluorescent light tubes/bulbs (CFLs)	Health Hazards (Acute toxicity)
E-waste (batteries, ink cartridges,	Health Hazards

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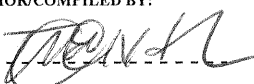

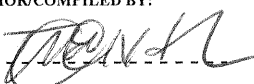

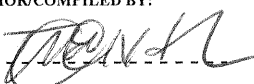

projectors, printers, computers etc.)	
Corpse, human organs, fetus and dead animals	Health Hazards
Grit and Screen/s	Health Hazards

As stated above the classification of hazardous waste must be done within one-hundred-and eighty (180) days of generation. It is recommended that hazardous waste be collected before the 180 day grace period and that a recognised service provider classifies the waste before disposal thereof.

An agreement must be in place with the service provider detailing this. Proof of such classification and safe disposal must also be provided. It must be noted that should the hazardous waste not be disposed of and classified as detailed above, the necessary steps must be taken to classify the hazardous waste on site according to the GHS before the 180 day grace period is reached.

10. All Employees

- It is the responsibility of all JW Employees to conduct work in an environmental conscientious manner,
- All personnel, including contractors must ensure that waste is disposed into allocated containers which are clearly marked on site,
- Report any hazard or deficiencies in their working environment concerning waste, to their supervisors and/or OHSE &DM section,

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- It is the responsibility of all individual departments that generate hazardous waste to ensure that waste drums and/or waste skips are clearly marked and have allocated area,
- Drums/Bins/Skips need to be correctly labelled clearly stating the type of waste and there should be a record with date/s on which accumulation of waste has started.

11. RECORDS AND DATA


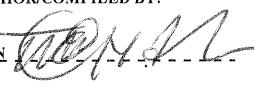
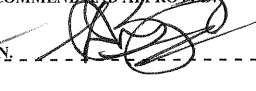
Table 5: Records and Data

Doc Ref. No.	Title or Description	Storage Location
	Safe disposal certificates	Waste Contractor
	Weighbridge Slip	Waste Contractor
	Invoices from removal contractor	Waste Contractor
	Monthly report	Responsible Department
	Waste Manifest documents	Responsible Department
	Safe Disposal Certificates	Responsible Department
	Work area gate pass-outs	Responsible Department

12. DOCUMENT REVISION AND CHANGE HISTORY

The owner of this document is responsible for the revision and control of the document and copies thereof, including the updating of the information below, which contains the history of the document with a description of each revision.

Date: 11/05/2018

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Revision No. 2

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Appendix A: Johannesburg Water Waste Register