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2.2 General Specifications for all groups

- All materials used must be new.
- All rubble / building materials must be removed from the building site after completion of the building.
- All construction work to be carried out in compliance with the S.A.N.S. codes of practice and strictly to plans and specifications.
- The Bidder must inform the Representative of the Department at least 48Hrs, in writing beforehand about construction inspections to be done.

2.3 Detail Specifications

A. The following is the minimum specifications for all the fencing:

1. Fence Height = 1.2m
2. Maximum spacing of straining posts = 30m
3. Spacing of y-standard posts = 3m
4. Utilize stays on all corner, gate, and straining posts.
5. Cast 0.3m x 0.3m x 0.3m, 20MPa concrete foundations for all corner, straining and gate posts and stays. Use 0.5m x 0.5m x 0.5m foundations for service entrances.
6. Use 3.15mm Fully Galvanised straining wire
7. Use 3 strands of straining wire
8. Use fully galvanised 2mm binding wire to fix mesh to straining wire.
9. Position of the fencing is in the center of the 1 m concrete strip.
10. Concrete strip and fence are on the inside of the netting structure.

Material Details:

1. Mesh-Fully Galv. Diamond mesh 1200mm x 75mm x 2.5mm
2. Corner, straining and gate posts - Galv. Posts with caps 1.8m x 50mm x 2mm
3. Stays – Galv. stays 1800mm x 38mm x 2mm
4. Pedestrian Gates: Galv. security gates 0.9m x 1.2m x OD 50mm x 2mm
5. Service Gates: Galv. security gates 2.4m x 1.2m x OD 50mm x 2mm
6. Fix stays to posts with M12x150mm bolts, nuts and washers, HDG

B. The following is the minimum specifications for all the concrete strips:

1. Use 20 MPa concrete
2. Concrete thickness = 100mm
3. Width = 1m
4. Excavate 300mm
5. Backfill and compact "berggruis" to layer of 200mm.

C. The following is the minimum specifications for all the shade net covering structures:

1. Use 20% Allnet black shade net.
2. Maximum spacing of 6m for support coulombs

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3. Minimum height of structure is 2m at eave.
4. Provide turn buckles for all staining cables (for adjusting of tension in future)
5. Minimum cable diameter is 8mm.
6. Cable Tension = 1 830kg / 18.3kN (Min. = 1739kg / 17.39kN; Max. 1 922kg / 19.22kN)
7. All components should have a minimum lifespan of 25years.
8. Maximum allowable gaps are 3mm for the total structure, including shade net doors and channels.
9. Use double (2) service gates of 2.4m each
10. Use 0.9m pedestrian gates.(position will be indicated on site)

D. The following is the minimum specifications for all the access roads:

1. Width=3.5m
2. Use concrete pre-cast kerb blocks for sides
3. Excavate 200mm
4. Use similar gravel as for existing roads and compact in 100mm layers
5. Install pipes where roads cross existing channels.

E. The following is the minimum specifications for tunnels

1. Multi span tunnels (32m – 34m) x 45m x 4m
2. Tunnels must be manufactured by a reputable tunnel manufacturer (confirm and obtain written approval from Departmental project manager before ordering)
3. Covered with 200 micron UV stabilized plastic.
4. Use strapping on all covering.
5. Ventilation flaps for temperature control (Manual or mechanically supported)
6. Minimum of 6 Entrance doors
7. Must have bracing or stays for wind support.
8. Include gutters for drainage.
9. If mild steel frames are used, use painted finish with corrosive resistant paint.

- See Bill of Quantities and tender document for additional specifications.
- Bidders must confirm dimensions during briefing session and obtain additional measurements required.
- During implementation the Contractor will be requested to submit proposals for some of the items specified, which will have to be approved by the department before procurement.

Group 1 (Section B)

Remove existing covering and associated structures (Remove old Material from site) and supply and installation of new fencing and shade net covering with supports, support cabling

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and anchoring. Casting of concrete strips under fencing and on islands. Supply and installation of sluice gates for out-lets :

- **Pond 6 (30 m x 20 m each)**
- **Pond 7 (30 m x 20 m each)**
- **Pond 8 (30 m x 20 m each)**

Shade net and fencing must cover group as a single unit.

Group 2 (Section C)

Remove existing Y-standards (Iron poles) and associated structures (old Material will be stored on site for future use) and supply and installation of new fencing and shade net covering with support cabling and anchoring. Casting of concrete strip under fencing and on islands. Construct gravel road to service gates. Supply and installation of sluice gates for out-lets and covering of walkways:

- **Pond 5 (40 m x 25 m each)**

Shade net and fencing must cover pond as a single unit.

Group 3 (Section D)

Supply and install two complete multi span tunnels to cover existing ponds.

- **Ponds 9 to 14 (30m x 10m)**

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OCCUPATIONAL HEALTH AND SAFETY - SPECIFICATIONS

Specification in here.

**CLIENT HEALTH AND SAFETY SPECIFICATIONS
AS PER CONSTRUCTION REGULATION 5(1)(b), 2014
OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993**



agriculture & rural development

Department of
Agriculture and Rural Development
FREE STATE PROVINCE

CONSTRUCTION WORK
Contractor Pack
Appendix 1

PREPARED BY



**CLIENT HEALTH AND SAFETY SPECIFICATIONS
AS PER CONSTRUCTION REGULATION 5(1)(b), 2014
OCCUPATIONAL HEALTH AND SAFETY ACT, NO. 85 OF 1993**

1. BACKGROUND

In terms of the Construction Regulation 5(1)(b), 2014 of the Occupational Health and Safety Act, No. 85 of 1993, the Client, is required to compile an Health & Safety Specification for any intended project and provide such specification to Contractor.

The Project location varies and will be within the Mangaung Local Municipal Area, Free State, South Africa.

2. SCOPE

The scope is the development of a health & safety specification that addresses all aspects of occupational health and safety as affected by construction work.

The Project scope is general Construction Work in Department of Agriculture and Rural Development.

Also refer to the RFQ document.

3. DEFINITIONS

Act: means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

AIA means an Inspection Authority approved by the chief inspector: Provided that an inspection authority approved by the chief inspector with respect to any particular service shall be an Approved Inspection Authority with respect to that service only.

Client: means any person for whom construction work is being performed (Department of Agriculture and Rural Development).

Client's Health and Safety Agent: SHE Group, 5 Walter Sisulu Road, Universitas, Bloemfontein, 9321. Tel. 0514369675

Competent person: means any person having the knowledge, training, experience and qualifications specific to the work or task being performed.

Construction work: means any work in connection with—

- the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

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Contractor: means an employer, as defined in section 1 of the Occupational Health and Safety Act, who performs construction work and includes principal contractors;

Hazard identification: means 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;

Health and safety file: means a file or other record in permanent form, containing the information required as contemplated in these regulations;

Health and safety plan: means a documented plan, which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

Health and safety specification: means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons *(this document will only be valid until the relevant applicable regulations change)*

HCS: Hazardous Chemical Substances

MSDS: Material Safety Data Sheet

PPE: Personal Protective Equipment

OREP: Occupational Risk Exposure Profile

Medical Certificate of Fitness: means a certificate contemplated in Construction Regulation 7(8);

Occupational Health Practitioner means an occupational medicine practitioner or a person who holds a qualification in occupational health recognized as such by the South African Medical and Dental Council as referred to in the Medical, Dental and Supplementary Health Service Professions Act, 1974 (Act No. 56 of 1974), or the South African Nursing Council as referred to in the Nursing Act, 1978 (Act No. 50 of 1978);

Principal contractor: means an employer, as defined in section 1 of the Occupational Health and Safety Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

Risk assessment: means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;

Structure: means any building, steel or reinforced concrete structure

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SACPCMP means the South African Council for the Project and Construction Management Professions

Designer: means a competent person who

- prepares a design;
- checks and approves a design;
- arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
- designs temporary work, including its components;
- an architect or engineer contributing to, or having overall responsibility for a design;
- a building services engineer designing details for fixed plant;
- a surveyor specifying articles or drawing up specifications;
- a contractor carrying out design work as part of a design and building project; or
- an interior designer, shop-fitter or landscape architect;

Construction manager: means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;

Construction site: means a work place where construction work is being performed.

4. OH&S MANAGEMENT

4.1 Notification of Construction Work

The principal contractor shall, where the contract meets the requirements laid down in Construction Regulation 4, prior to commencement of the works, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure 2 in the Construction Regulations) for the purpose.

A copy shall be kept on the OH&S file and a copy shall be forwarded to the employer for record keeping purposes. No Construction activities may take place before Notification of Construction Work has been submitted to the Department of Labour and proof submitted to Client.

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4.2 Structure and Organisation of OH&S Responsibilities

4.2.1. Overall Supervision and Responsibility for OH&S

- The Client to ensure that the Principal Contractor, is appointed in terms of Construction Regulation 5(1)(k), implements and maintains the agreed and approved OH&S Plan.
- The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that his Employees (as defined in the Act) complies with the Act. Legal Compliance Audit may be used for this purpose.
- Any OH&S Act (85 /1993), Section 16 (2) appointee/s as detailed in his/her/their respective appointment forms
- The Construction Manager, Assistant Construction Manager, Supervisor and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 8. Should provide proof of OHS training and fully understand their duties and responsibilities outlined by the respective appointments.
- The principal contractor shall appoint as a minimum a Part-Time competent Health and Safety Officer that is registered with the SACPCMP. The Part-Time Health & Safety Officer will be responsible to conduct internal Audits and monitor health and safety on site.

4.2.2 Further (Specific) Responsibilities for OH&S

The contractor shall note that it is a generic list only and is intended for use as a guideline. Other Appointment Letters required as and when required depending on the scope of work:

Appointment	Legal Reference
Construction Manager	Construction Regulation 8(1)
OH&S Officer	Construction Regulation 8(5)
Construction Supervisor	Construction Regulation 8(7)
Risk Assessor	Construction Regulation 9
Fall Protection Plan Developer	Construction Regulation 10
Scaffold Supervisor	Construction Regulation 16

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Stacking & Storage Supervisor	Construction Regulation 28
Emergency Coordinator	Construction Regulation 29
First Aider	General Safety Regulation 3
Fire Equipment Inspector	Construction Regulation 29
Incident Investigator	General Admin Regulation 9
Ladder Inspector	General Safety Regulation 13A
OH&S Representatives	OHS Act Section 17

The above appointments shall be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information shall be communicated and agreed with the appointees.

Competencies of all Appointed Personnel to be attached to Appointment and Placed on Health and Safety File

The principal contractor shall, furthermore, provide the clients agent with an organogram of all contractors that he/she has appointed or intends to appoint and keep this list updated and prominently displayed on site.

4.3 Communication & Liaison

- 4.3.1 OH&S Liaison between the Client, the principal Contractor, the Designer and other concerned parties will be through the Client.
- 4.3.2 Consultation with the workforce on OH&S matters will be through their Supervisors.
- 4.3.3 The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

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4.4 OH&S File

The Principal Contractor must, in terms of Construction Regulation 7(1)(b), keep a health & safety file on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done.

The Health And Safety File Index should at least consist of the following, but not limited to:

1. Health and Safety Plan
2. Appointments Letters
3. Notification of Construction Work
4. Letter of Good Standing (COIDA)
5. Policies
6. Risk Assessments
7. Safe Operating Procedures
8. Registers
9. Fall Protection Plan
10. Personal Protective Equipment
11. Incident Management
12. Emergency Preparedness
13. Daily Safe Task Instructions (DSTI's)
14. Act & Regulations
15. 37(2) Agreements
16. Training
 - 16.1. Attendance Register
 - 16.2. Induction Manual
 - 16.3. Competencies (Certificates)
17. Toolbox Talks
18. Occupational Medicals

4.5. OH&S Goals and Objectives and Arrangements for Monitoring and Review of OH&S Performance

The Principal Contractor is required to maintain a DIFR of less than 1 and report on this to the Client on a monthly basis.

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4.6 Identification of Hazards and Development of Risk Assessments, Standard Working Procedures (SWP) and Method Statements

The Principal Contractor is required to develop Risk Assessments and Standard Working Procedures (SWP) for each activity executed in the project (See Section 5 below "Project/Site Specific Requirements")

4.7. Arrangements for Monitoring and Review

4.7.1. Monthly Audit by Client

The Client will be conducting monthly Audits to comply with Construction Regulation 5(1)(o) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

If contractor is non-compliant according to Client's Health and Safety Audit, the Client's Agent / Representative may stop the work or a specific work activity and request a re-audit that must be approved by the client and the contractor will be held liable for the cost.

4.7.2. Other Audits and Inspections by Client

The Client reserves the right to conduct other ad hoc audits and inspections as deemed necessary.

The Principal Contractor must conduct a Monthly Internal Health and Safety Audit. The Audit must be conducted by a representative of the contractor, on condition that the person is qualified to conduct an Occupational Health and Safety Audit.

4.7.3. A representative of the Principal Contractor must accompany the Client on all Audits and Inspections and may conduct his/her own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results.

4.7.4. Reports

4.7.4.1 The Principal Contractor is required to provide the Client with a monthly report.

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

- * dies
- * becomes unconscious
- * loses a limb or part of a limb
- * is injured or becomes ill to such a degree that he/she 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/she 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 the Provincial Director of the Department of Labour within seven days. (Section 24 of the Act & General Administrative Regulation 8.)

4.7.4.3. The Principal Contractor is required to provide the Client with copies of all statutory reports required in terms of the Act. The Principal Contractor is required to provide the Client with copies of all internal and external accident/incident investigation reports.

4.7.5. *Review*

4.7.5.1 The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

4.7.5.2 The Principal Contractor must provide the Client, other Contractors and all other concerned parties with copies of any changes, alterations or amendments.

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4.8 Site Rules and other Restrictions

4.8.1 *Site OH&S Rules*

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the OH&S aspects of the construction.

4.8.2. *Security Arrangements*

4.8.2.1 Access control will be managed by Woodland Hills' Security at the main gate. The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control at the Community Hall must include the rule that non-employees will not be allowed on site unaccompanied.

4.8.2.2 The Principal Contractor must appoint a competent Emergency Controller who must develop emergency contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a monthly practice/testing program for the plans e.g. January: Fall Accident, February: Electrical Shock, etc. and practiced/tested with all persons on site at the time, participating.

4.9 Training

The contents and syllabi of all training required by the Act and Regulations to be included in the Principal Contractor's OH&S Plan.

4.9.1 *Site Specific Induction Training*

All employees of the Principal and other Contractors to be in possession of Site Specific OH&S Induction training.

4.9.2 *Other Training*

4.9.2.1 All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of Competency Certificates & Medical Certificates of Fitness (Construction Regulation 23).

4.9.2.2 All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training.

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4.9.2.3 OH&S Training Requirements: (as required by the Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- Site Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- Construction Manager and Supervisor
- Basic Fire Prevention & Protection (ERW 9 and CR 29)
- Basic First Aid (General Safety Regulations 3)
- Work at Heights Training

4.10. Accident and Incident Investigation

4.10.1 The Principal Contractor is responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9)

4.10.2. The results of the investigation to be entered into the Accident/Incident Register: Annexure 1. (General Administrative Regulation 9)

4.10.3. The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

4.11 H&S Representatives

4.11.1 *Designation of OH&S Representatives*

Before commencing work, the Principal Contractor shall designate a competent Safety, Health and Environmental representative (SHE Rep) who shall be acceptable to the Agent, to represent and act for the Contractor.

The Contractor shall inform the Agent in writing of the name and address of the Contractor's SHE Rep and of any subsequent changes in the name and address of the SHE Rep, together with the scope and limitations of the SHE Rep's authority to act for the Contractor. The Contractor's SHE Rep shall make available to the Employer an all-hours telephone number at which the SHE Rep can be contacted at any time in the event of an emergency involving any of the Contractor's employees, or other persons at the Works.

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4.11.2 OH&S Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

4.11.3 Duties and Functions of the OH&S Representatives

4.11.3.1 The Principal Contractor must ensure that the designated OH&S Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor.

4.11.3.2 OH&S representatives must be included in accident/incident investigations.

4.12 Occupational Medicals – Principal Contractor must ensure that all employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner as per Annexure 3 of Construction Regulation, 2014 -Construction Regulation 7(1)(g)

4 PROJECT/SITE SPECIFIC REQUIREMENTS

5.1 The following is a list of specific activities and considerations that have been identified for the project and site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures have to be developed by the Principal Contractor:

- Site Establishment
- Secure / safe storage for materials, plant and equipment
- Vehicle access to the site
- Dealing with existing structures
- Access control
- Public liability exposures
- Health risks arising from neighboring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, lightning etc.
- Exposure to noise
- Protection against dehydration and heat exhaustion
- Protection from wet and cold conditions
- Dealing with HIV/Aids and other diseases
- Use of portable electrical equipment
- Loading and offloading of trucks
- Manual handling

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- Lifting and lowering operations
- Working in elevated positions
- Signage
- As discovered by the principal contractors hazard identification exercise
- As discovered from any inspections and audits conducted by the client or by the principal contractor or any other contractor on site.
- As discovered from any accident / Incident Investigation

The following are in particular requirements of works and will form a basis for compliance audits which will be arranged by the Client.

1. Administrative & Legal Requirements
2. Education, Training & Promotion
3. Public Safety & Emergency Preparedness
4. Personal Protective Equipment
5. Housekeeping
6. Working at Heights
7. Electrical Safeguarding
8. Emergency/Fire Prevention & Protection
9. Ladders & Tools
10. Lifting Equipment
11. Transport & Materials Handling
12. Site Plant & Machinery
13. Plant & Storage Yard
14. Occupational Health & Hygiene
15. Construction Activities

5.2 Construction Vehicles and Mobile Plant – Regulation 23

The Contractor shall ensure that drivers of motor vehicles are in possession of a driver's license, valid for the class of vehicle which they are required to drive, and shall produce the license on request.

The Contractor shall not permit any driver to be in control of a vehicle at the Works while under the influence of alcohol, drugs or other substance.

A register shall be kept of workers operating construction vehicles and mobile plant.

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The register shall contain proof of training of operators to operate construction vehicles and mobile plant, certification of competency and authorization of operators to operate machinery, vehicles or plant.

Names of operators and their relevant training with date and time stamps together with name of course instructor shall be kept in the Health and Safety File on site.

Physical and Psychological fitness shall be proved by way of a medical certificate of fitness of the said operators before allowing operators to operate machinery, vehicles or plant.

The Health and Safety File shall include the written training material offered to operators for the different construction vehicles and mobile plant.

Each and every driver shall be trained on risks involved and safety procedures.

All Construction vehicles and mobile plant must be of acceptable design and construction and used according to their design.

All construction vehicles and mobile plant must be maintained in good working order.

A register of all vehicles and plant shall be kept on site together with names of operators responsible for each.

The register shall report all maintenance activities performed on these vehicles and plant as well as signatures certifying the condition of the vehicles as in a good working order.

All requirements on the vehicles and mobile plant with regard to safety and health shall be inspected and certified.

During use of Construction vehicles or mobile plant the following rules shall be adhered to:

- No person shall be allowed to or require to ride on any Construction Vehicle or Mobile Plant in a position otherwise than a safe place provided for on the construction vehicle or mobile plant as designed for that purpose.
- The construction site must be organized in such a way that as far as is reasonable practical, pedestrians and vehicles can move safely and without risks to health and safety.
- No tools and/or material shall be transported in the same compartment as the operators/drivers/employees unless the said are secured against movement during transportation.

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5.3 Barricading and Demarcation

The construction site shall be barricaded completely to prevent pedestrians and vehicles to enter the construction area at the community hall.

Protection around the site must be in the form of a physical barrier and appropriate signage, to prevent public from entering the area.

5.4 Housekeeping and Construction Sites – Regulation 27

The Contractor shall at all time carry out the Works in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall take all precautions, which are necessary and adequate to eliminate any conditions, which contribute to the risk of injury to persons or damage to property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for the discovery, determination and elimination of such conditions.

During the period of this Contract, the Contractor shall be responsible for the safe storage of all materials and equipment required for execution of the Contract, and for disposal of all non-usable waste material in an orderly manner.

All materials, whether stored on the construction site or within the Contractor's designated area, shall be stored neatly and safely to prevent possible injury to any personnel. The material shall be stored to facilitate safe access to, and removal of the material from the storage area.

Loose material need for use shall not accumulate so as to obstruct means of access to and egress from the workplace.

Scrap and waste shall not be allowed on site and must be removed daily.

The construction sites adjacent to build up area or public way shall be effectively fenced and controlled with access points.

5.5 Stacking and Storage on Construction Sites – Regulation 28

A Competent person shall be appointed in writing with the duty of supervising all stacking and storage of material on site. Adequate storage areas shall be provided which includes demarcated areas. All storage areas shall be kept neat and under control. Registers and checklist on housekeeping shall be kept on site

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5.6 First Aid

5.6.1 Safety Notice Board

The Contractor shall provide a Safety Notice Board where safety notices, site regulations concerning safe working practices and information on the location of the nearest first aid station, can be conspicuously displayed to all staff. The size of the notice board shall be at least 600 mm x 800 mm.

5.6.2 First Aid Equipment

The Contractor shall provide for its employees a stretcher for emergencies and an approved first aid box. The first aid box shall be checked weekly by a responsible person, who shall be appointed by the Contractor, and a record shall be kept of the contents. Any deficient medical supplies shall be promptly replenished by the Contractor.

5.6.3 Hazard Notices

The Contractor shall display hazard notices in all areas where hazardous conditions prevail or may occur.

5.6.4 Reporting of Incidents and/or Injuries

All incidents in respect of damage to Works, property or machinery, or injury to persons, shall be reported by the Contractor's SHE Rep by the quickest means possible.

A mandatory incident report form, containing full details of the incident, shall be completed and submitted to the Site Agent and the Department of Employment and Labour within twenty four (24) hours of the occurrence of the incident.

5.7 Construction Welfare Facilities – Regulation 30

On each site where existing facilities are not present, at least one sanitary facility shall be erected for every 10 workers, one shower for every 15 workers, and sheltered eating areas.

Eating facilities shall be made available in the form of a shaded net, table and chairs.

End of Document

CONTRACT NO: DARD/RFT 02/2024/2025

OCCUPATIONAL HEALTH AND SAFETY - SPECIFICATIONS

Specification in here.

CONTRACT NO: DARDEA/RFT 02/2024/2025

ENVIRONMENTAL SPESIFICATION

FS DARD applied for authorisation for the establishment of the ATDC at Gariep Dam. DTEEA issued a RoD for the project and an EMP was compiled.

Attached hereto are:

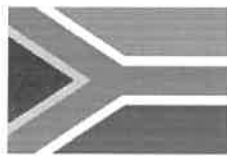
- RoD 2009/01/23
- Revised EMP 18 August 2009
- RoD Alien Species 2014

The site is environmentally sensitive and adherence to the EMP is compulsory and will be monitored. The Contractor must plan and price to adhere to the prescriptions.

EMP and RODs here.

PROPOSED ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE

ENVIRONMENTAL MANAGEMENT PLAN



Proponent:

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Prepared for:



ENVIRONMENTAL CONSULTANTS



agriculture
Department of
Agriculture
FREE STATE PROVINCE

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1. INTRODUCTION

This document describes mitigation measures and is partly prescriptive, identifying specific people to undertake specific tasks, in order to ensure that impacts on the environment are minimized during the construction-, operational and decommissioning phases of the proposed establishment of the South African Technology Demonstration Centre, Xhariep district, Free State Province.

The aim of this Environmental Management Plan (EMP) is to integrate environmental planning, design, construction, and operational activities on the site. The EMP must form part of the contractual obligation between the Contractor and the Client.

2. PROPOSED MECHANISMS FOR MONITORING COMPLIANCE WITH THE EMP AND REPORTING THEREOF

2.1 Environmental Site Agent

The environmental site agent (ESA) is the person involved with the development project who is responsible for the implementation of the environmental management plan. This person is therefore responsible for the environmental issues involved with the construction phase of the project.

The ESA must be a person with adequate environmental knowledge to understand and implement this management plan. The ESA may not be someone appointed by the contractor, engineer or other party involved with the project. The ESA must report to the applicant only. The ESA has the authority to stop works if in his opinion there is a serious threat to or impact on the environment caused directly from the construction operations. This authority is to be limited to emergency situations where consultation with the engineer or applicant is not immediately available. In all such work stoppage situations the ESA is to inform the engineer and applicant of the reasons for the stoppage as soon as possible.

Upon failure by the contractor or his employee to show adequate consideration to the environmental aspects of this contract, the ESA may recommend to the engineer to have the contractor's representative or any employee(s) removed from the site or work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor.

2.2 Environmental Awareness Training for Site Personnel

All contractor teams involved in work on the development are to be briefed on their obligations towards environmental controls and methodologies in terms of this EMP prior to work commencing. The briefing will usually take the form of an on site talk and demonstration by the ESA. The education / awareness program should be aimed at all levels of management within the contractor team. (See "Do's & Don'ts" summery sheet).

2.3 On Site Communication Procedure

2.3.1 Site Instruction Entries

The Site Instruction book entries will be used for the recording of general site instructions as they relate to the works on site. It will also be used for the issuing of stop work orders for the purposes of immediately halting any particular activities of the contractor in lieu of the environmental risk that they may pose.

2.3.2 ESA Diary Entries

The purpose of these entries will be to record the comments of the ESA as they relate to activities on the site. Each of these books must be available in duplicate, with copies for the Engineer and ESA. These books should be available to the authorities for inspection or on request. Contractors meeting minutes must reflect environmental queries, agreed actions and dates of eventual compliance. These minutes form part of the official environmental record.

2.3.3 Method Statements

Method statements from the Contractor will be required for specific sensitive actions on request of the authorities or ESA. A method statement forms the base line information on which sensitive area work takes place and is a "live document" in that modifications are negotiated between the Contractor and ESA / Engineer, as circumstances unfold. All method statements will form part of the EMP documentation and are subject to all terms and conditions contained within the EMP main document. A method statement describes the scope of the intended work in a step by step description in order for the ESA and Engineer to understand the Contractors intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks. For each instance wherein it is requested that the Contractor submit a method statement to the satisfaction of the ESA, the format should clearly indicate the following:

- ◆ **What** - a brief description of the work to be undertaken;
- ◆ **How** - a detailed description of the process of work, methods and materials;
- ◆ **Where** - a description/sketch map of the locality of work (if applicable); and
- ◆ **When** - the sequencing of actions with due commencement dates and completion date estimates.

The Contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ESA.

2.3.4 Record Keeping

All records related to the implementation of this management plan (e.g. site instruction book, ESA diary, method statements) must be kept together in an office where it is safe and can be retrieved easily. These records should be kept for two years and should at any time be available for scrutiny by any relevant authorities.

2.3.5 Photographs

It is recommended that photographs are taken of the site prior to, during and immediately after construction as a visual reference. These photographs should be stored with other records related to this EMP. If captured in digital format hard copies must be kept with all other records relevant to the implementation of this EMP.

2.3.6 Environmental Completion Statement

An Environmental Completion Statement is a report by the ESA to the relevant authorities stating completion of the project and compliance with the EMP and conditions.

2.4 Basic Rules of Conduct

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid. **NOTE: ALL new site personnel must attend an environmental awareness presentation. Please inform your foreman or manager if you have not attended such a presentation or contact the ESA.**

DO:

- ◆ Use the toilet facilities provided – report dirty or full facilities
- ◆ Clear your work areas of litter and building rubbish at the end of each day – use the waste bins provided and ensure that litter will not blow away.

- ◆ Report all fuel or oil spills immediately & stop the spill continuing.
- ◆ Dispose of cigarettes and matches carefully. (Littering is an offence.)
- ◆ Confine work and storage of equipment to within the immediate work area.
- ◆ Use all safety equipment and comply with all safety procedures.
- ◆ Ensure a working fire extinguisher is immediately at hand if any "HOT WORK" is undertaken e.g. welding, grinding, gas cutting etc.
- ◆ Prevent excessive dust and noise.

DO NOT:

- ◆ Make any fires.
- ◆ Enter any fenced off or marked area.
- ◆ Allow cement or cement bags to blow around.
- ◆ Allow waste, litter, oils or foreign materials into the storm water channels
- ◆ Litter or leave food laying around

3. IMPACTS AND MITIGATION MEASURES IDENTIFIED

A number of potential environmental impacts that may arise during the project have been identified. These are outline in the following table below, and guidelines and mitigation are proposed. The Contractor must familiarize himself with the requirements of the EMP, keeping in mind that this EMP specifies the minimum performance specifications and that other site-specific requirements and possible additional requirements from the Department of Tourism, Environment and Economic Affairs – Free State Province outlined in the Environmental Authorization, must be complied with.

3.1 Construction Phase

CONSTRUCTION PHASE							
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE							
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE
Establish main Site Office & Storage Site	Site layout planning	Negative impact of haphazard placement of infrastructure on the environment	Objective: To ensure acceptable impact & management of environmental issues at main site office and storage site during construction by proper planning of layout of infrastructure placement Targets: 1) Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure, 2) The planning for layout must be done in consultation on-site with the ESA.	Site Layout Plan approved by the ESA	Contractor	Costs will be covered within the contract for implementation of the project	Site establishment stage
	Access	Hazards to animals, and security of materials	Objective: To secure the Contractor's camp area against unauthorized entry Targets: 1) Fence or suitably secure main site office and material storage	Site Office & Material Storage Site is secure and there is no unauthorized entry	Contractor	Costs will be covered within the contract for implementation of the project	Site establishment stage
						Engineering Contractor Environmental Site Agent	Engineering Consultant Environmental Site Agent

ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE								
CONSTRUCTION PHASE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Establish main Site Office & Storage Site			area.					
	Access route	Erosion and dilapidation of the access route	Objective: Prevent erosion and the dilapidation of the access road Targets: 1) Upgrade the access road to an acceptable condition, 2) Proper maintenance should be done to ensure the quality of the access road, 3) Implement erosion protection works at identified problem areas.	The access road is in a acceptable condition	Contractor	Costs will be covered within the contract for implementation of the project	Site establishment stage	Engineering Consultant Environmental Site Agent
	Topsoil	Destruction or loss of topsoil	Objective: To retain topsoil for later use in closure Targets: 1) Remove topsoil approximately 300mm deep from establishment area and stockpile areas, 2) Provide containment and settlement facilities for effluents from concrete mixing and washing (concrete vehicle wash bag) facilities,	Sufficient topsoil for closure available No topsoil contaminated with cementitious materials, fuel or oil	Contractor	Costs will be covered within the contract for implementation of the project	Site establishment stage	Continuous by Contractor's Site Engineer Environmental Site Agent

CONSTRUCTION PHASE

ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			3) Provide spill containment facilities for hazardous materials like fuel and oil.					
Establish main Site Office & Storage Site	Existing vegetative cover	Loss of vegetation	Objective: To avoid destruction of vegetation Targets: 1) Minimize extent of removal of any vegetation, 2) Do not remove any large tree, Aloe or <i>Haworthia</i> specie without permission from the ESA, 3) No open fires permitted under trees.	No unnecessary loss of vegetation, Protection of valuable vegetation as indicated and marked/fenced off by the ESA.	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Continuous by Contractor's Site Engineer Environmental Site Agent
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District	Fauna	Disturbance to the fauna in the area	Objective: To avoid disturbance to the fauna in the area. Targets: 1) No hunting, snaring, shooting, nest raiding or egg collection by the construction staff should be allowed.	Protection of the fauna that may be in the area of construction	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Applicant Environmental Site Agent

CONSTRUCTION PHASE

ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District	Surface water and/or existing storm water systems	Contamination of storm water runoff with suspended solids	Objective: Contain soils and materials within defined areas and prevent contamination of storm water runoff. Targets: 1) Ensure that excavation areas have a predetermined stockpile area for construction materials and excavated material, 2) Disposal of waste excavated material at appropriate waste disposal sites, 3) Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces, 4) Construct and operate the necessary collection facilities and storm water management systems such as diversion berms, ditches, drains, oil separation sumps, gross water ways etc. to prevent contamination of any water, 5) Provide suitable and sufficient ablution facilities,	Correct stockpiling of excavated material on site, No pollution of water courses.	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Applicant Environmental Site Agent

CONSTRUCTION PHASE						
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE						
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District	Loss of vegetation	Destruction of vegetation and conserving worthy trees and shrubs	6) Do not locate any site toilet, sanitary convenience, septic tank or French drain within the 1:100 year floodline, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line,			
			7) Combine drinking water facilities with hand washing facilities near site toilet.			
			<u>Objective:</u> Prevent destruction of vegetation <u>Targets:</u> 1) Proper planning of road alignment and width of road-minimum area to be disturbed still enabling practical execution of operation, 2) Physical marking of trees and sensitive vegetation to be protected. No large trees, <i>Aloe</i> or <i>Haworthia</i> species may be removed without the permission of the ESA,	No unnecessary destruction of riparian vegetation	Contractor	Costs will be covered within the contract for implementation of the project
						Throughout construction phase
						Applicant Environmental Site Agent

CONSTRUCTION PHASE								
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District			3) No open fires permitted under trees, 4) Rehabilitate denuded areas with appropriate species as per specifications.					
	Soil Erosion	Erosion	<u>Objective:</u> Prevent erosion of areas <u>Targets:</u> 1) Ensure correct drainage of areas, 2) All the areas disturbed during construction work needs to be landscaped to a standard similar or better than before on completion of the works before replacement of topsoil, 3) The layout of the area should be optimized to limit the erosion potential, 4) The design of all works shall include measures to prevent erosion resulting from erosion resulting from concentration, 5) Rehabilitate denuded areas especially slopes with appropriate	Construction site erosion free	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction phase	Applicant Environmental Site Agent

CONSTRUCTION PHASE

ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District	Waste Handling	Pollution of environment with waste materials	species and erosion protection measures i.e. geotextiles, rocks: topsoil mixtures as per specifications. <u>Objective:</u> To avoid pollution of environment with waste materials <u>Targets:</u> 1) Provide adequate waste bins on-site equipped with a lid to ensure no pollution, 2) Set up system for regular waste removal to an appropriate waste disposal site, 3) Minimize waste by sorting wastes into recyclable and non-recyclable wastes, 4) No solid waste may be burned on site, 5) Contain chemical spills, and arrange for cleanup / control by the supplier, or by professional pollution control personnel, 6) Hazardous substances, e.g.	Appropriate management of wastes	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Applicant Environmental Site Agent

CONSTRUCTION PHASE								
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			diesel, oil, etc. required by the contractors shall be stored in dedicated areas developed to minimize spills and protect the environment. All storage areas, spillage containment areas, containers of hazardous substances and dangerous equipment shall be clearly and prominently marked as such.					
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District	Health and Safety	Hazardous working conditions for workers	<u>Objective:</u> Provide adequate measures to ensure workers are not placed at undue risk. <u>Targets:</u> 1) Ensure that PPE is available to workers, 2) Adhere to the Occupational Health and Safety Act, 3) Keep a first aid room stocked, 4) Issue all workers with necessary health and safety items, 5) Provide warning signs to motorists, in advance, of the	Safe working conditions for workers	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Applicant Environmental Site Agent

CONSTRUCTION PHASE

ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Construction and establishment of the South African Technology Demonstration Centre, Xhariep District	Air Quality	Dust nuisance from the excavated and stockpiled materials	Objective: To avoid dust nuisance from excavated materials or construction materials Targets: 1) Implement dust suppression measures e.g. regular watering, 2) Concrete mixing to be carried out away from sensitive areas, 3) Build a settling dam off the concrete vehicle wash.	Appropriate management of dust No complaints from workforce	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Applicant Environmental Site Agent
	Fire	Uncontrolled fire outbreak	Objective: Provide adequate measures to ensure no fire risks. Targets: 1) Establish and maintain fire breaks around the Work Sites if as and when specified by the ESA and as required by applicable legislation and the local authority. 2) Ensure Work Site and the contractor's camp is equipped with adequate fire fighting	No fires as a result of Works on site: the Contractor will be held liable for any damage to property adjoining the Site as a result of any fire caused by one of his employees	Contractor	Costs will be covered within the contract for implementation of the project	Throughout construction stage	Applicant Environmental Site Agent

CONSTRUCTION PHASE

ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Construction and establishment of the South	Noise	Noise nuisance from construction equipment	equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site,					
			3) No open fires are permitted anywhere on site. Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas on site,					
			4) Prevent employees from creating fires randomly outside designated areas,					
			5) Do not store any fuel or chemicals under trees,					
			6) Do not store gas and liquid fuel in the same storage area,					
			7) Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area.					
			Objective: To avoid noise nuisance from construction equipment Targets:	No noise nuisance as a result of the construction equipment.	Contractor	Costs will be covered within the contract for implementation	Throughout construction stage	Applicant Environmental Site Agent

CONSTRUCTION PHASE						
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE						
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES
African Technology Demonstration Centre, Xhariep District			1) Limit working hours of noisy equipment to daylight hours,			of the project
			2) Fit silencers to equipment,			
			3) Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 16:15, Mondays to Fridays),			
			4) Ensure that employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.			

3.2 Operational phase

The intention, of providing an EMP for the operational phase, is merely to provide Management with guidelines to be used in the management of the South African Technology Demonstration Centre, to safeguard the environment against negative environmental impacts.

OPERATIONAL PHASE								
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Operation of the South African technology demonstration centre, Xhariep District.	Surface water and/or existing storm water systems	Management of storm water systems	<u>Objective:</u> Ensure the proper working status of all storm water channels. <u>Targets:</u> 1) Management of all storm water systems to keep them in working condition, 2) Storm water handling to be done according to prevent erosion.	No pollution of water courses	Applicant	Costs will be covered within the contract for the operation of the project	Throughout the live span of the activity	Applicant Environmental Agent Site
	Soil erosion	Erosion	<u>Objective:</u> Prevent erosion of areas <u>Targets:</u> 1) Ensure correct drainage of areas, 2) The layout of the area should be optimized to limit the erosion potential,	Proposed site erosion free	Applicant	Costs will be covered within the contract for the operation of the project	Throughout the live span of the activity	Applicant Environmental Site Agent

OPERATIONAL PHASE								
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Operation of the South African technology demonstration centre, Xhariep District.			3) Rehabilitate denuded areas especially slopes with appropriate species and erosion protection measures i.e. geotextiles, rocks: topsoil mixtures as per specifications,					
	Aesthetic view of the area	Aesthetic pollution	Objective: To avoid visual pollution Targets: 1) Treat man made surfaces to blend in with the surrounding landscape i.e.1:3 slopes, usage of colouring compounds on concrete like permean, 2) Demolition of all temporary infrastructure should be done, 3) Ripping and landscaping of compacted areas should be done,	The aesthetic view of the area is not affected by the proposed construction.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Agent Site
	Weed and invader plant control	Deterioration of the area due to the invasion of weed and/or invader plants	Objective: To avoid the invasion of problem plants Targets: 1) A weed and invader control program needs to be	No weed or invader plants will be present at the proposed site.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Agent Site

OPERATIONAL PHASE

SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Operation of the South African technology demonstration centre, Xhariep District.	Alien fish specie control	Pollution of natural water sources with alien fish species	Objective: To avoid the pollution of natural water sources with alien fish species. Targets: 1) A risk assessment should be done and approved by the appropriate competent authority prior to the introduction of alien fish species at the site, 2) Proper prevention systems should be incorporated to ensure that no natural water sources are contaminated with alien fish eggs/species. Examples to be considered consist out of: ◆ Ultraviolet light irradiation, ◆ Heat treatment, ◆ High-powered ultrasound, ◆ Chlorine, ozone and hydrogen peroxide applications.	No alien fish species/eggs will be released into natural water sources.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Site Agent

OPERATIONAL PHASE								
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Operation of the South African technology demonstration centre, Xhariep District.	Diesel spillage	Contamination of soil and water courses due to diesel spillage	Objective: To avoid the pollution of soil and water courses due to diesel spillage.	No contamination of soil or water due to diesel spillages.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Site Agent
			Targets:					
			1) The storage tank must be erected inside a bund wall with sufficient capacity to contain 110% of the volume of the contents of a full tank. The bund wall system must be impenetrable and be in accordance with SANS 10089:1,					
			2) All equipment on site must be inspected for diesel leaks before it is operated,					
			3) Leakages must be repaired as soon as possible and drip trays must be placed underneath machinery until such leakages have been repaired,					
			4) Soil contaminated with oil, diesel, petrol or other foreign matter must be excavated as far as contaminated and					

OPERATIONAL PHASE

SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE

ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Operation of the South African technology demonstration centre, Xhariep District.			disposed of at a licensed hazardous waste disposal site,					
			5) Topsoil and subsoil must be protected from contamination by means of proper site management, for example collect and recycle lubricants and avoid accidental spills of pollutants,					
			6) Vehicles and machinery may not be serviced on site,					
			7) Polluted runoff water must be isolated and not be allowed to enter drainage lines, wetland areas or storm water canals.					
	Fire hazard caused by diesel tank	Increased fire hazard due to the presence of the above ground diesel tank	<u>Objective:</u> To minimize the fire hazard caused by the diesel tank. <u>Targets:</u> 1) To avoid possible ignition of the diesel, any ignition source such as cigarettes, human and vehicle activity and open flames must be kept at least 20m away from the storage	Minimizing the fire hazard of the site, Improving the safety of the site.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Site Agent

OPERATIONAL PHASE						
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE PROVINCE						
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES
			site,			
			2) The Fire Department of the local municipality, if applicable, must be notified about the commissioning of the diesel storage facility,			
			3) The storage tank, pipe work, valves and pumps must be inspected thoroughly to ensure that there are no diesel leaks,			
			4) The fire fighting equipment, as specified in the detail engineering design, must be kept ready in case of fire,			
			5) A trained team of people with clear responsibilities must perform the commissioning,			
			6) An Emergency Plan must be compiled for the operation of the diesel storage facility,			
			7) All personnel at the site must be trained in the application of the Emergency Plan,			
			8) The storage tank must be			

OPERATIONAL PHASE						
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE						
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	SCHEDULE
			equipped with a clear signboard that indicates its flammability hazard.			
Operation of the South African technology demonstration centre, Xhariep District.	Contamination of water courses	Contamination of water courses due to coal and coal by-products	Objective: To prevent the contamination of water courses by coal or coal by-products. Targets: 1) The coal storage area must be designed to impede any wind blown coal dust stormwater pollution, 2) The storage and use of coal ash on the Gariep Hatchery site must not pollute stormwater, 3) Stormwater must be protected from contamination by means of proper site management, 4) Pollution runoff water must be isolated and not be allowed to enter the Orange River, drainage lines, wetland areas or storm water canals.	No water courses contaminated by coal or coal by-products.	Applicant	Throughout the live span of the activity
					Costs will be covered within the contract for operation of the project	Applicant Environmental Site Agent

OPERATIONAL PHASE								
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
Operation of the South African technology demonstration centre, Xhariep District.	Carbon footprint	Increased carbon footprint due to the burning of coal as a fuel source for the boiler.	<u>Objective:</u> To lessen the carbon footprint of the proposed activity. <u>Targets:</u> 1) Trees should be planted to compensate for the CO ₂ to be produced during the burning of coal as a fuel source for the boiler, 2) The manufacturer of the coal fired hot water boiler must apply intelligent boiler control technology in its design to minimise CO ₂ emissions.	The trees to be planted will compensate for the increased CO ₂ production by the site.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Site Agent
	Disposal of ash	Build up of ash at the site	<u>Objective:</u> To avoid the build up of ash at the site <u>Targets:</u> 1) Ash from the boiler could be used to upgrade and repair access roads to the sites, 2) The applicant should enter into a service level agreement with the local municipality, to ensure an offset area for any excess	No ash stockpiled at the site.	Applicant	Costs will be covered within the contract for operation of the project	Throughout the live span of the activity	Applicant Environmental Site Agent

OPERATIONAL PHASE								
SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE PROVINCE								
ACTIVITY	ASPECT	IMPACT	MITIGATION MEASURE: (objective and target)	PERFORMANCE INDICATOR	RESPONSIBILITY	RESOURCES	SCHEDULE	VERIFICATION
			ash, 3) If ash is stored on site for a period longer than a week a waste permit should be obtained from DEAT, 4) Implement dust suppression measures e.g. regular watering when necessary.					

3.3 Decommissioning Phase

The objective of providing guidelines during the decommissioning phase is to prevent structures being left to deteriorate. Therefore it is imperative that non-functional structures be removed as soon as possible and the area rehabilitated to its former natural state. If non-functional structures are not needed anymore, or not removed, it must be maintained as if it is used to prevent the environmental degrading of the area. To ensure the integrity of the area, this aspect must also form part of the checklist of the annual environmental audit.

4. IDENTIFICATION OF PERSONS RESPONSIBLE FOR IMPLEMENTATION OF THE EIR AND EMP

4.1 Construction Phase

The construction contractor will:

- ◆ Be held responsible for the implementation of the EMP,
- ◆ Be responsible to have the EMP available on site at all times,
- ◆ Identify the need/extent, and be responsible for the implementation on of an environmental awareness-training program for construction staff, to be conversant with EMP content and their responsibilities before the commencement of construction,
- ◆ Be held responsible for compliance with all relevant aspects of the EMP,
- ◆ Be held responsible for all environmental issues on site, for one raining season after finishing of the construction phase to determine the effectiveness of the storm water control measures,
- ◆ Provide the applicant with a "Method Statement" which will indicate the procedures that will be applied in order to meet the requirements of any aspect of the EMP,
- ◆ Ensure that all problems identified during environmental inspections, are addressed and rectified as soon as reasonable possible,
- ◆ After ceasing of construction activities, an environmental audit should be done, by the ESA, before commencing with the operational phase, to determine compliance with the EMP. The results to be sent to DTEEA-FS in writing.

4.2 Operational Phase

During this phase the applicant, Department of Agriculture will be responsible to prevent negative environmental impacts, and as such will be responsible for:

- ◆ Providing a budget for maintenance,
- ◆ Maintaining all approved infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts,
- ◆ Not construct any additional buildings, infrastructure, etc. contrary to the approved Environmental Authorization, without performing an environmental impact assessment to evaluate alternatives and environmental impacts,
- ◆ To immediately remedy any factors that contribute to negative environmental impacts,
- ◆ To do an annual environmental audit and to have the results in writing available at the administration offices of the Department of Agriculture.

4.3 Decommissioning

The objective to provide guidelines during the decommissioning phase is to prevent structures being left to deteriorate. Therefore it is imperative that non-functional structures are removed as soon as possible and the area is rehabilitated. If non-functional structures are not required any longer, and not removed, it must be maintained as if it is in used to prevent the environmental degrading of the area.

The Applicant is responsible for:

- ◆ Removal of the construction building rubble to a suitable disposal facility,
- ◆ Ensure that suitable arrangements be made to protect the environment against long term negative impacts,
- ◆ Minimize negative visual impacts,
- ◆ Maintain the storm water channels in a working condition,
- ◆ To clean up contaminants of the environment,
- ◆ Prevent erosion through regular monitoring and rehabilitation of degraded areas.

EMP: CONTRACTORS RESPONSIBILITY			
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE SIGNATURE
<u>Objective:</u> To ensure acceptable impact & management of environmental issues at main site office and storage site during construction by proper planning of layout of infrastructure placement <u>Targets:</u> 1) Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure, 2) The planning for layout must be done in consultation on-site with the ESA.	➤ Site Layout Plan approved by the ESA		
<u>Objective:</u> To secure the Contractor's camp area against unauthorized entry <u>Targets:</u> 1) Fence or suitably secure main site office and material storage area.	➤ Site Office & Material Storage Site is secure and there is no unauthorized entry		
<u>Objective:</u> Prevent erosion and the dilapidation of the access road <u>Targets:</u> 1) Upgrade the access road to an acceptable condition, 2) Proper maintenance should be done to ensure the quality of the access road,	➤ The access road is in a acceptable condition		

EMP: CONTRACTORS RESPONSIBILITY			
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	SIGNATURE
Implement erosion protection works at identified problem areas.			
Objective: To retain topsoil for later use in closure Targets: 1) Remove topsoil approximately 300 mm deep from establishment area and stockpile areas, 2) Provide containment and settlement facilities for effluents from concrete mixing and washing (concrete vehicle wash bag) facilities, 3) Provide spill containment facilities for hazardous materials like fuel and oil.	➤ Sufficient topsoil for closure available ➤ No topsoil contaminated with cementitious materials, fuel or oil		
Objective: To avoid destruction of vegetation Targets: 1) Minimize extent of removal of any vegetation, 2) Do not remove any large tree, <i>Aloe</i> or <i>Haworthia</i> species without permission from the ESA, 3) No open fires permitted under trees.	➤ No unnecessary loss of vegetation ➤ Protection of valuable vegetation as indicated and marked/fenced off by the ESA		
Objective: To avoid disturbance to the fauna in the area. Targets: 1) No hunting, snaring, shooting, nest raiding or egg collection by the construction staff should be	➤ Protection of the fauna that may be in the area of construction		

EMP: CONTRACTORS RESPONSIBILITY			
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE SIGNATURE
allowed. Objective: Contain soils and materials within defined areas and prevent contamination of storm water runoff. Targets: 1) Ensure that excavation areas have a predetermined stockpile area for construction materials and excavated material, 2) Disposal of waste excavated material at appropriate waste disposal sites, 3) Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces, 4) Construct and operate the necessary collection facilities and storm water management systems such as diversion berms, ditches, drains, oil separation sumps, gross water ways etc. to prevent contamination of any water, 5) Provide suitable and sufficient ablution facilities, 6) Do not locate any site toilet, sanitary convenience, septic tank or French drain within the 1:100 year floodline, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line, 7) Combine drinking water facilities with hand washing	➤ Correct stockpiling of excavated material on site ➤ No pollution of water courses		

EMP: CONTRACTORS RESPONSIBILITY				
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE				
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE	SIGNATURE
facilities near site toilet.				
Objective: Prevent destruction of vegetation Targets: 1) Proper planning of road alignment and width of road- minimum area to be disturbed still enabling practical execution of operation, 2) Physical marking of trees and sensitive vegetation to be protected. No large trees, <i>Aloe</i> or <i>Haworthia</i> specie may be removed without the permission of the ESA, 3) No open fires permitted under trees, 4) Rehabilitate denuded areas with appropriate species as per specifications.	➤ No unnecessary destruction of vegetation			
Objective: Prevent erosion of areas Targets: 1) Ensure correct drainage of areas, 2) All the areas disturbed during construction work needs to be landscaped to a standard similar or better than before on completion of the works before replacement of topsoil, 3) The layout of the area should be optimized to limit the erosion potential,	➤ Construction site erosion free			

EMP: CONTRACTORS RESPONSIBILITY ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, XHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE SIGNATURE
4) The design of all works shall include measures to prevent erosion resulting from concentration, 5) Rehabilitate denuded areas especially slopes with appropriate species and erosion protection measures i.e. geotextiles, rocks: topsoil mixtures as per specifications.			
<u>Objective:</u> To avoid pollution of environment with waste materials <u>Targets:</u> 1) Provide adequate waste bins on-site equipped with a lid to ensure no pollution, 2) Set up system for regular waste removal to an appropriate waste disposal site, 3) Minimize waste by sorting wastes into recyclable and non recyclable wastes, 4) No solid waste may be burned on site, 5) Contain chemical spills, and arrange for cleanup / control by the supplier, or by professional pollution control personnel, 6) Hazardous substances, e.g. diesel, oil, etc. required by the contractors shall be stored in dedicated areas developed to minimize spills and protect the environment. All storage areas, spillage containment areas, containers of hazardous	➤ Appropriate management of wastes		

EMP: CONTRACTORS RESPONSIBILITY			
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE SIGNATURE
substances and dangerous equipment shall be clearly and prominently marked as such.			
<u>Objective:</u> Provide adequate measures to ensure workers are not placed at undue risk. <u>Targets:</u> 1) Ensure that PPE is available to workers, 2) Adhere to the Occupational Health and Safety Act, 3) Keep a first aid room stocked, 4) Issue all workers with necessary health and safety items, 5) Provide warning signs to motorists, in advance, of the working area.	➤ Safe working conditions for workers		
<u>Objective:</u> To avoid dust nuisance from excavated materials or construction materials <u>Targets:</u> 1) Implement dust suppression measures e.g. regular watering, 2) Concrete mixing to be carried out away from sensitive areas, 3) Build a settling dam off the concrete vehicle wash.	➤ Appropriate management of dust ➤ No complaints from workforce		

EMP: CONTRACTORS RESPONSIBILITY			
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE SIGNATURE
<u>Objective:</u> Provide adequate measures to ensure no fire risks. <u>Targets:</u> 1) Establish and maintain fire breaks around the Work Sites if as and when specified by the ESA and as required by applicable legislation and the local authority. 2) Ensure Work Site and the contractor's camp is equipped with adequate fire fighting equipment. This includes at least rubber beaters when working in veld areas, and at least one fire extinguisher of the appropriate type irrespective of the site, 3) No open fires are permitted anywhere on site. Restrict contained fires for heating and cooking (i.e. in a fire drum) to designated areas on site, 4) Prevent employees from creating fires randomly outside designated areas, 5) Do not store any fuel or chemicals under trees, 6) Do not store gas and liquid fuel in the same storage area, 7) Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area.	➤ No fires as a result of Works on site: the Contractor will be held liable for any damage to property adjoining the Site as a result of any fire caused by one of his employees		

EMP: CONTRACTORS RESPONSIBILITY			
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT, FREE STATE			
MITIGATION MEASURE: (Objective and Targets)	PERFORMANCE INDICATOR	COMPLIANCE & COMMENTS	DATE SIGNATURE
<u>Objective:</u> To avoid noise nuisance from construction equipment <u>Targets:</u> 1) Limit working hours of noisy equipment to daylight hours, 2) Fit silencers to equipment, 3) Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 16:15, Mondays to Fridays), 4) Ensure that employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.	➤ Appropriate management of noise levels		

5. EMERGENCY RESPONSE PLAN

The objective of this section is to provide a brief summary of options available to the project manager. The details of the design will reside with the designers, but cognizance should be taken of the design philosophy and key aspects given in the guidelines to problem solving given below.

5.1 Typical remedial work options

The following table is provided to assist the inspector and project manager with problem solving:

OBSERVATION OR EVENT	ACTION BY INSPECTOR OR OBSERVER	ACTION BY PROJECT MANAGER
Spillage of diesel or hydrocarbons on soil	Report to Project Manager and continue observations. <u>Also check:</u> ➤ That the source causing the spillage is decommissioned, and that the affected area is isolated to prevent spreading of the hazardous substance.	Action will be required ASAP by following the next steps: ➤ Dig down into the soil to see how far down the pollution penetrated, ➤ If less than 300mm penetration: a. Turn the soil over to expose it to the air, b. Apply Mono Ammonium Phosphate (MAP) at a rate of 58gr/m² to the dug up soil c. Water enough to keep the soil moist. ➤ If penetration is greater than 300mm: a. Remove the affected soil and spread in a layer not more than 300mm thick,

OBSERVATION OR EVENT	ACTION BY INSPECTOR OR OBSERVER	ACTION BY PROJECT MANAGER
		b. Apply MAP at a rate of 50gr/m² c. Water enough to keep the soil moist. ➤ Repeat the above steps every 6 weeks or until the soil is clean.
Erosion of access road	Report to Project Manager and continue observations. <u>Also check:</u> That all vehicular movement is restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas.	Action will be required ASAP: ➤ Implement erosion protection works at identified problem areas, ➤ Implement remedial works to be done at affected areas in order to restore the area to its previous or better status.

6. INCIDENT REGISTER

INCIDENT REGISTER					
ESTABLISHMENT OF THE SOUTH AFRICAN TECHNOLOGY DEMONSTRATION CENTRE, KHARIEP DISTRICT					
NAME OF PERSON REPORTING THE INCIDENT	INCIDENT	DATE OF INCIDENT IDENTIFIED	HOW WAS INCIDENT ADDRESSED?	DATE OF RECTIFICATION	SIGNATURE

7. RELOCATION OF PROTECTED SPECIES

Relocation refers to the moving of a plant to a new location. The establishment of populations of native plants in the wild:

- ◆ Should replicate as closely as possible the pre-settlement vegetation at that site,
- ◆ Once established, should be able to survive & reproduce with minimum human intervention.

Some *Aloe* and *Haworthia* species were identified at the site, close to the proposed site earmarked for the construction of the demonstration centre. Although these species are not endangered species they are protected in the Free State and may therefore not be damaged during the construction period of the demonstration centre. If situated within the area earmarked for construction the plants should be relocated to a similar habitat.

Aloes and *Haworthias* have fibrous roots and the next steps need to be followed during the relocation of the species:

1. Identify individual plants to be relocated,
2. Identify area where plants will be relocated to,
3. Prepare holes:
 - ◆ *Aloe* sp. – 500cm deep. The width of the plant should serve as an indication of the width required for the hole,
 - ◆ *Haworthia* sp. – 10cm (deep) x 20cm (width),
4. Add some potting soil to prepared hole,
5. Collect plants to be relocated. Caution should be taken not to damage the roots as they grow shallow but wide,
6. Place collected plants into prepared holes and water,
7. Relocated *Aloe* plants should be anchored. A wire covered with tube can be placed around the plant, acting as a fixing point for anchor cables.

In the event of any uncertainties Enviroworks can be contacted at the following contact details – 051 447 8159 (Tel).

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C4. Site Information

(Green forms) Used for construction contracts, includes information on prior studies, existing services etc.

The Existing Fish Ponds must be renovated and repaired at (ATDC) near Gariep Dam. Ponds will be utilised for Fish production. Coordinates: S 30.62628°; E 25.47266°

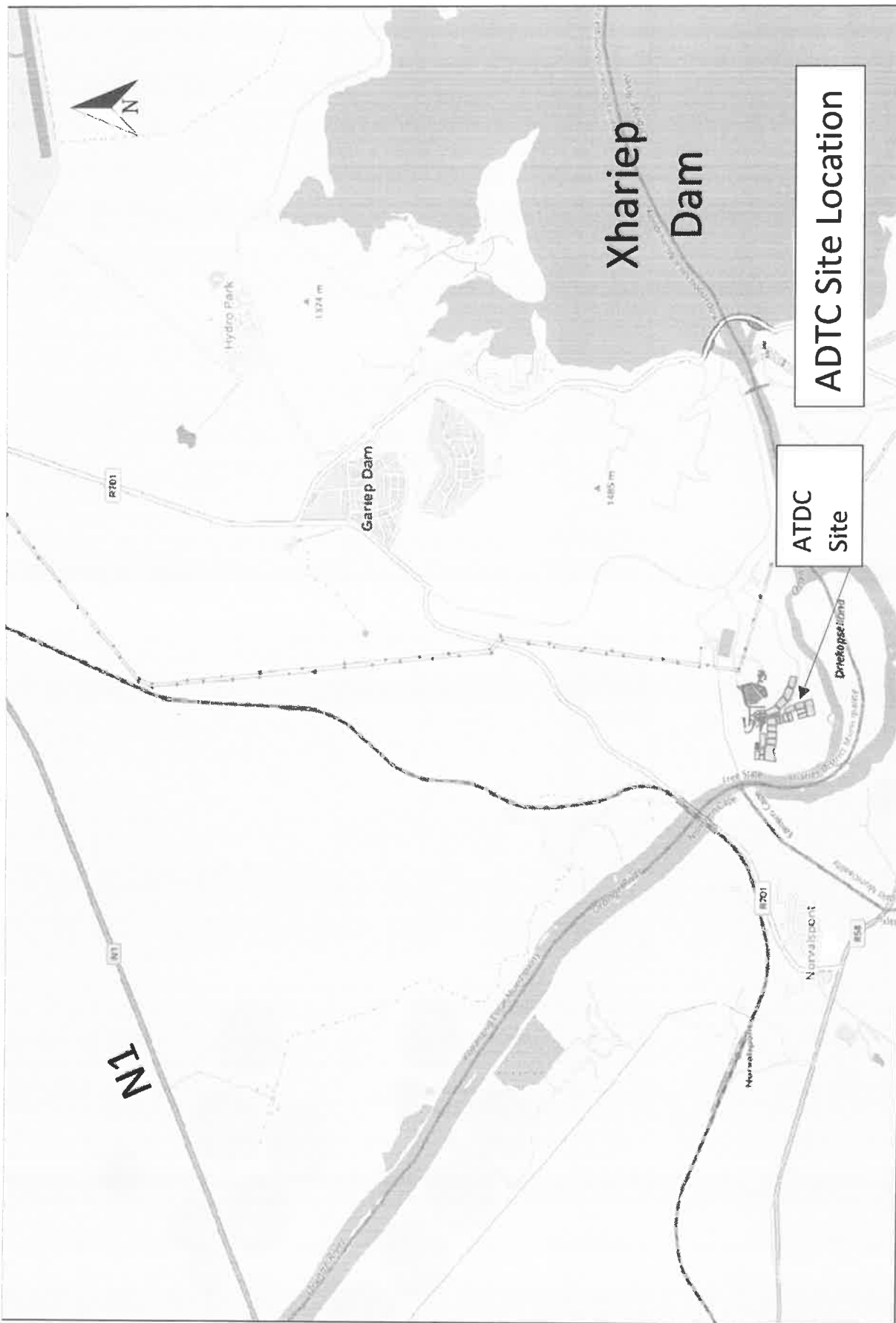
Access to site

The site is on the operational Aqua Technology Demonstration Centre, Government staff are working on the site and the Contractor will share the operational site.

Note: Plan GHR 000 / Pond Layout is only for information, if there is differences in the Scope of Work, the specification document will be conclusive.

LIST OF DRAWINGS

Drawing No.	Description	Annexure
GHR 000	Pond Layout	Annexure 1







the detea
the department of economic
development, tourism and
environmental affairs
FREE STATE PROVINCE

RECORD OF DECISION – RISK ASSESSMENT – ALIEN FISH SPECIES

Holder of authorisation: Free State Department of Agriculture and Rural
Development
Mr. M. P. Thabethe, HOD

Location of activity: China South Africa Agricultural Technology
Demonstration Centre, Gariep Dam
Boiteko Fish Project, Petrusburg
Gotswametsing Fish Project, Koffiefontein
One Vision Fish Farming Project, Fauresmith
Ludlow 3 Project, Springfontein
Lephoi Agricultural Fishing Cooperative, Bethulie
Letlaka Fish Project, Zastron

Decision

The Free State Department of Economic Development, Tourism & Environmental Affairs (FS DETEA) is satisfied on the basis of information available to it and subject to compliance with the conditions of this record of decision (ROD) that the applicant should be authorised to undertake the activity as specified below.

Activities Authorised:

By virtue of the powers conferred on it by section 89 of the National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004) (NEMBA) and the related Acts, Regulations and related Amendments, the DETEA hereby authorises –

Mr. M.P. Thabethe, HOD Free State Department of Agriculture and Rural Development
With the following contact details:

Main Building
Gielie Joubert Street
Glen
Bloemfontein
9360

Tel: 051 861 8454
Fax: 051 861 8509
E mail: pa.hodagric@fs.agric.za

OFFICE OF THE DEPUTY DIRECTOR: Environmental Impact Management
Private Bag X 20801 Tel +27 (0)51 400 4846
Bloemfontein Fax +27 (0)51 400 4842
9300 e-mail: mkhosana@detea.fs.gov.za

www.detea.fs.gov.za

To undertake the following activities

1. To import, transport to and release for the purpose of aquaculture into the aquaculture ponds and tanks at the China South Africa Agricultural Technology Demonstration Centre at Gariep Dam, and the six Recirculating Aquaculture Systems/fish farms/fish projects at Petrusburg, Koffiefontein, Fauresmith, Springfontein, Bethulie and Zastron the following two fish species that are alien to the Free State Province:

- 1.1 Mozambique tilapia, *Oreochromis mossambicus*
- 1.2 Common carp, *Cyprinus carpio*

CONDITIONS

Scope of Record of Decision

1. Authorisation of the above activities is subject to the conditions as contained in this document, which conditions form part of the authorisation and are binding to the holder of the authorisation.
2. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, employee, sub contractor or persons rendering a service to the holder of the authorisation.
3. The authorised activity may only be carried out at the properties as indicated above.
4. This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.
5. The holder of this authorisation must inform all interested and affected parties in writing within seven (7) calendar days of the date of this authorisation, of its decision to authorise the activities.
6. This authorisation does not cover activities that have previously taken place.

SPECIFIC CONDITIONS

1. All applicable provincial and national legislation must be adhered to.

2. Only the following two alien fish species will be allowed to be imported and released for aquaculture purposes at the localities as specified above:

2.1 Mozambique tilapia, *Oreochromis mossambicus*

2.2 Common carp, *Cyprinus carpio*

3. Although the biodiversity risk and benefit assessment indicates that the alien Nile tilapia, *Oreochromis niloticus* might not survive the low water temperatures in winter and will possibly not be able to establish feral populations, this species will not be allowed to be imported into the Free State Province based on recommendations from aquatic scientists in South Africa. This species has the potential to hybridise with the Mozambique tilapia, which is indigenous to certain parts of southern Africa, and can completely eliminate other indigenous tilapia species of the genus *Oreochromis* should it escape and spread.
4. Before release of the alien fish species the applicant needs to demonstrate that the above mentioned facilities into which the species will be released are suitable and appropriate for the intended purpose.
5. The applicant needs to submit to the FS DETEA a decommissioning plan. This plan needs to be approved by the FS DETEA prior to any alien fish species being released and needs to specifically address the issue of disposal of the alien fish species.
6. Before any alien fish species are to be released at the China South Africa Agricultural Technology Demonstration Centre at Gariep Dam, the prescribed prevention and sterilization systems as required by the original Environmental Authorization EMB/1i.7, 18/08/267 have to be in place and fully operational. No import and release of any alien fish species will be allowed until such time that proper fully operational prevention and sterilization systems are in place.
7. The prevention and sterilization systems must be inspected by officials of the FS DETEA to ensure is it fully operational and in a working condition before any alien fish species are to be imported.
8. To further prevent any eggs, ova, fish fry or alien fish reaching the Orange River near the China South Africa Agricultural Technology Demonstration Centre, mechanical screens must be installed on all effluent pipes in the main hatchery, at all the outside ponds and all effluent channels, especially the main effluent channel leading to, and ending in the Orange River.
9. Proper safety and management systems must be put in place by the Free State Department of Agriculture and Rural Development and their implementing agency, Econofish at the six Recirculating Aquaculture Systems/fish farms/fish projects in the Xhariep district and project beneficiaries must be trained and

informed on the control and preventative measures to prevent the spread of the alien fish species to other places within the borders of the Free State.

10. No live alien fish may leave the premises of the six Recirculating Aquaculture Systems/fish farms/fish projects in the Xhariep district.
11. All imports of Mozambique tilapia and common carp to be released at the approved localities must be accompanied by a valid animal health certificate from a reputable animal health practitioner/veterinarian stating that all fish to be imported are disease and parasite free and that the necessary preventative measures have been done to ensure this.
12. No hybrids of Mozambique tilapia x Nile tilapia, and *vice versa* may be imported into the Free State and all import consignments must be accompanied by a statement from the supplier stating that only pure strains of Mozambique tilapia will be imported.
13. For every consignment of alien fish to be imported, the applicants need to apply for a permit for the import and release of freshwater fish into water systems in the Free State and pay the applicable administration fee.
14. All conditions and stipulations as stated on the appendix to the permits must be adhered to.
15. None of the alien fish species to be imported for aquaculture purposes may be resold, redistributed, handled or held by any third party without a valid permit from the FS DETEA.
16. Officials from the FS DETEA retain the right to inspect at any time all the aquaculture facilities, tanks, ponds etc. where stocking of the alien fish were done.
17. Under no circumstances may the alien fish species be released in any other water system within the Free State and may not be donated or sold without a valid permit from the FS DETEA.

CONCLUSION

All the conditions as set out in this Record of Decision must be adhered to and all possible measures must be implemented to prevent the escape of the alien fish species into the natural freshwater systems within the Free State Province.

Should any intentional or un-intentional release or escape of any alien fish species into any natural freshwater systems from the aquaculture facilities and fish farms take

place, the "polluter-pay-principle" will be enforced to remedy the damage or threats to the indigenous biodiversity of the Orange Vaal River Systems.

APPROVED:



M. R. Seleke
Head of the Department

Date: 01/04/2014

TRANSMISSION VERIFICATION REPORT

TIME : 10/04/2014 13:15
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the detea
the department of economic
development, tourism and
environmental affairs
FREE STATE PROVINCE

FAX COVER SHEET

ROOM NO 410

ORGANISATION	Dept. of Agriculture & Rural Development
ATTENTION TO	Mr . M. P. Thabethe : HOD
FAX	051 861 8509
FROM	DETEA
DATE	10 March 2014
FAX	086 538 1590
NO OF PAGES	6 + FAX COVER

SUBJECT: Record of Decision - Risk assessment – Alien Species

MESSAGE

CONSERVATION

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Tel +27 (0)51 400 9410
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e-mail: pulenimdetea.fs.gov.za

www.dtea.fs.gov.za

CONTRACT NO: DARDEA/RFT 02/2024/2025

C4. Site Information

(Green forms) Used for construction contracts, includes information on prior studies, existing services etc.

The Existing Fish Ponds must be renovated and repaired at (ATDC) near Gariep Dam. Ponds will be utilised for Fish production. Coordinates: S 30.62628°; E 25.47266°

Access to site

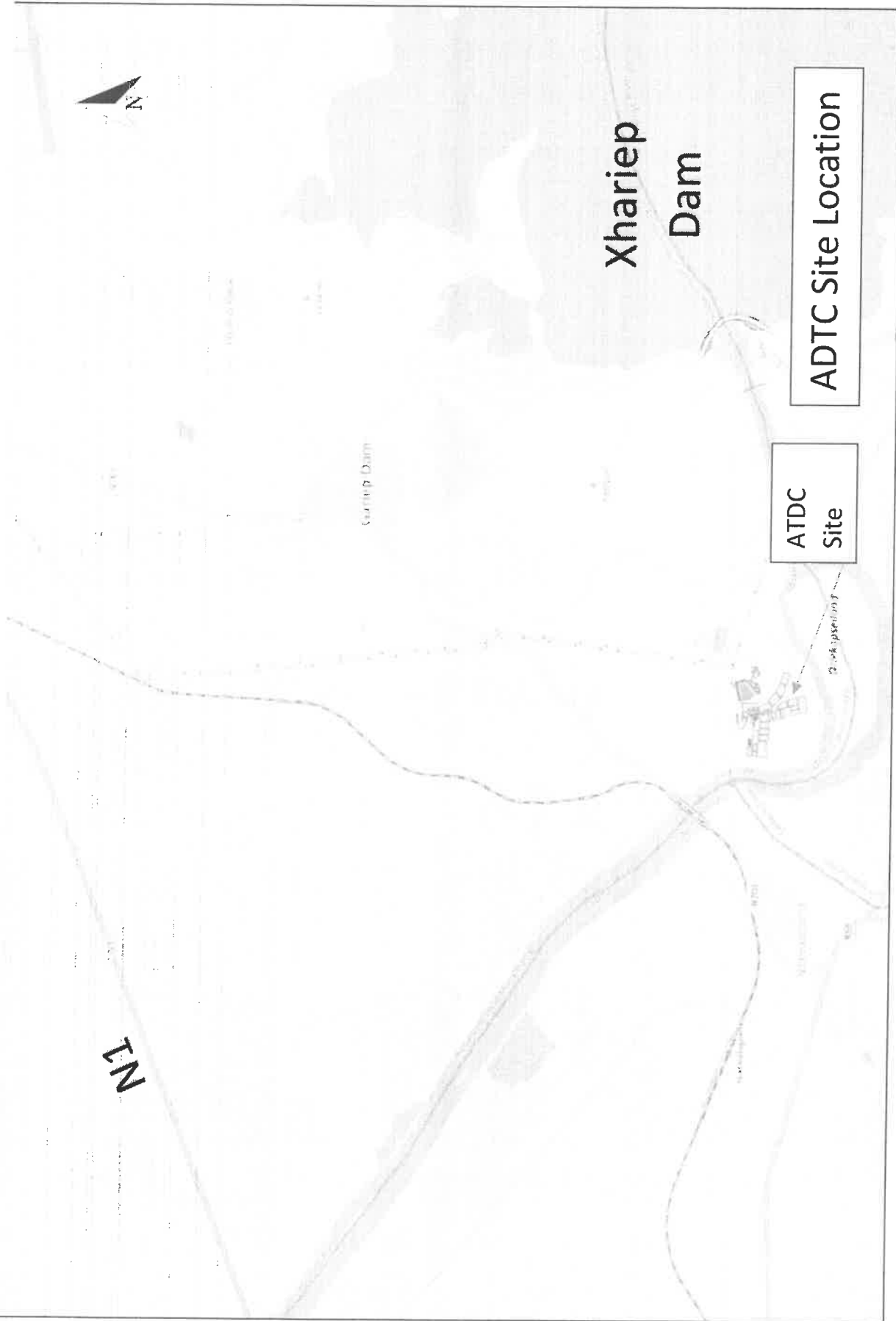
The site is on the operational Aqua Technology Demonstration Centre, Government staff are working on the site and the Contractor will share the operational site.

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