



## SCOPE OF WORKS

# Fire Pump and Tank System – Design, Supply, Fabricate and Install

Signatures

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## SCOPE OF WORK

**Tender No.:**

**Description:** Design, Supply, Fabricate, Construct, Install a Fire Pump and tank system at Foskor Phalaborwa

### 1. PRE-QUALIFICATION

No	Pre-Qualification Requirements	Comments
1	Mechanical and civil works of CIDB 7CE or 7ME or higher	Provide certificate of CIDB grading

### 2. INVITATION TO TENDER

This document describes the requirements for the Design, Supply, Fabrication, Installation and Commissioning fire pump and tank system.

#### 2.1 DEFINITIONS AND ABBREVIATIONS

BOQ	–	Bill of Quantities	MHSA	–	Mine Health and Safety Act
BRA	–	Baseline Risk Assessment	NDT	–	Non-destructive Test
COC	–	Certificate of Compliance	OH&S	–	Occupational Health and Safety
COP	–	Code of Practice	OHC	–	Over-Head Crane
CTD	–	Critical task Descriptions	PEE	–	Portable Electrical Equipment
DAP	–	Diammonium Phosphate	PPE	–	Personal Protective Equipment
DB	–	Distribution Boards	QA	–	Quality Assurance
DWA	–	Department of water affairs	QC	–	Quality Control
DWG	–	Drawing	QCP	–	Quality control Plan
ECO	–	Engineering Change Order	QMS	–	Quality Management System
HDG	–	Hot-Dip galvanizing	RFI	–	Request for Inspection
HIRA	–	Hazard Identification and Risk Assessment	ROPS	–	Rollover Protection System
IFC	–	Issued for Construction	SANS	–	South African National Standards
ISO	–	International Organization of Standardization	SHE	–	Safety, Health, Environment
LDV	–	Light Delivery Vehicle	SHERQ	–	Safety Health Environment Risk & Quality
MAP	–	Monoammonium phosphate	TMMS	–	Trackless Mobile Machines
MCOP	–	Mandator Code of Practice	WBS	–	Work-breakdown structure

## 2.2 SCOPE BACKGROUND

Foskor requires a Fire pump and tank system to ensure compliance to relevant fire regulations and requirements

## 2.3 COMPANY BACKGROUND

Foskor is one of the world's largest producers of phosphate rock (concentrate) and phosphoric acid. It is one of the world's few vertically integrated producers of phosphoric acid and is the second-largest supplier to India, the world's largest consumer of phosphoric acid.

The Company owns and mines phosphate resources and beneficiates the mined material to produce a phosphate concentrate at Phalaborwa, in the Limpopo Province of South Africa. The phosphate concentrate is sold locally and transported to the Richards Bay plant on the coast of Kwa-Zulu Natal to produce phosphoric acid, sulfuric acid and granular fertilizers MAP and DAP from phosphoric acid and is the leading supplier of fertilizers to South Africa. In all about 95% of the phosphoric acid is exported and the granular sales are divided between exports and local markets. Since 1951 Foskor has supplied more than 95% of South Africa's fertilizer requirements.

## 3. **SCOPE OF WORK**

### 3.1 BACKGROUND DOCUMENTATION

Foskor has done a feasibility to determine the location and approach for a Fire Pump and tank System. The feasibility focused on a option analysis and concept formulation. The Tank size was defined, and the approach of a containerized pump system was suggested. Phase one of the Main ring line is included in this scope. This is an estimated 290m that will be put above ground with 3 vehicle crossings.

The existing Water fill point will be moved from the current position by about 35m.

### 3.2 SCOPE - EXTENT OF WORK OR SERVICE REQUIRED

#### 3.2.1 General Scope Considerations:

Please allow for a competent Quality Control Officer to compile and manage the contractor's quality management. In the event of quality system failures, Foskor will request the Quality Official's experience and qualifications and if this is not acceptable, it will be expected that the contractor obtains this service at his/her own cost.

Please allow for a competent person to compile the method statement and the subsequent Microsoft Project plan. This person will manage and update this plan weekly and present it to the Foskor Project Engineer. It is expected that this planning and management is executed by the contractor. This service will be provided at the contractor's cost. If the contractor cannot execute this plan and report to management, it will be expected that the contractor will obtain this service at his/her cost.

#### 3.2.2 Scaffolding



Foskor Shall supply all the Scaffolding needs for the Construction Period.

The contractor will manage the scaffolding by keeping records of request, construction and removal.

Request for scaffolding needs to be communicated at least 3 working days before required and planning and managing is the contractor's responsibility

### 3.2.3 General Scope

The scope of work shall include for the design, procurement, supply, manufacture, lining, corrosion protection, inspection, performance testing, certification, packaging for transport, delivery, offloading, unpacking, de-stuffing, handling, site storage, safe-keeping, site transport, assembly, erection, application of touch-up protection, and commissioning of the new Fire Pump and Tank system with a portion of main line pipe

All the above equipment shall be fabricated or supplied from new materials and components. No recycled, repaired, refurbished or 'made like new' materials, components or assembly of components and equipment shall be accepted.

The scope of work shall include provisions for resources, labor, services, and material, cramage, project management, QA/QC management, engineering, and hand-over of all supplied equipment including but limited to:

- Allowance for a competent Project Manager,
- Engineers for all applicable disciplines,
- Site Manager and Supervisor/s,
- Quality Assurance/Control Officer,
- Safety Officer and Safety Representative/s,
- Project Planner,
- Administration, etc.
- Competent construction team

The above-mentioned services which are not exhaustive to the list provided are required to ensure effective project management, engineering, site management, safety management, compilation and management of the Contractor's quality control and management plans, compilation of method statements, risk assessments, project plans, and other project support services that will require continuous reporting on a daily, weekly, and monthly basis. It is expected that all these services will be allowed for in the Contractor's Tender costing. If the Contractor cannot execute any of these services to the detrimental of the project, it will be expected that the Contractor obtains such services at his/her cost.

### 3.2.4 Project costing and expenses:

The contractor shall supply all engineering services, materials, labor, transport, supervision, and consumable materials, equipment, tools and every item of expense for the scope of work to be completed successfully unless otherwise stated taking the following into consideration.

The Contractor shall submit Turnkey cost structure for all engineering services, management services, materials, equipment, labor, transport, supervision, consumable materials, equipment,

tools, and each item of expense for the scope of work to be completed successfully unless otherwise stated and declared in the Tender submission.

### 3.2.6 Special Requirements

None

### 3.2.7 Disposal of refuse

The Contractor shall be responsible for daily disposal of refuse and waste generated by the Contractor personnel on site or in a laydown area. The site is to be kept clean, neat, and tidy, by complying with the FOSKOR Waste Management Code of Practice (COP).

### 3.2.8 General requirements for commissioning

Commissioning or handover will be executed as per FOSKOR Procedures or as directed by the Engineer. Normally the FOSKOR Punch list and Hand over certificate will be used.

- Commissioning or handover will be executed as per FOSKOR Procedures or as directed by the Engineer. NFPA and SANS Compliance
- All certificates and compliance documents
- Normally, the FOSKOR punch lists, commissioning and handover certificates will be used.
- FOSKOR project representative/s must be invited to the final release of equipment.

### 3.2.9 The successful or appointed service provider shall comply with the latest revisions of the following FOSKOR CTD's (Critical task Descriptions) (CTD's are available on request):

- i. Not Applicable

### 3.2.10 Sub-Contracting and joint ventures

**The primary aspect of the works may not be subcontracted. For subcontracting the relevant companies supporting documentation needs to support the bidder's tender. Joint Ventures must be declared in the bidder's tender with all relevant supporting documentation.**

**The main contractor must pass the technical evaluation criteria.**

### 3.2.11 PROGRESS REPORT – TO BE SUBMITTED BY THE CONTRACTOR

A progress report needs to be submitted monthly to the respective project engineer or project leader. This will form the basis for invoice certificates and invoice approvals in conjunction with the relevant Bill of Quantities. No invoice shall be approved without supporting documents to substantiate the claim and monthly report.

#### PROGRESS REPORT INDEX – TYPICAL

#### 1. SHREQ

- Safety issues, Environmental, Incidents, etc.
- Legal Appointees
- Work Permit Expiry date.
- Letter of Good Standing - Expiry date



2. COMPLIMENT

- Trades, Qty, Hours, etc.
- Equipment on site

3. PROGRESS AND ACTIVITIES

- Planned versus actual.
- Activities completed or milestones.
- Technical issues
- Milestones achieved with photos.

4. QUALITY

- Quality control and Quality assurance - Summary

5. DRAWINGS

- Drawing issued.
- Drawing issues

6. DELAYS – SUPPORTED VIA DAILY DIARIES

- Commercial / Financial
- General

3.2.12 Project Site Management - Focus Areas

These focus areas will be done by the Foskop project team in conjunction with relevant Foskop COP's and procedures. Any non-conformance will be treated as a serious matter, and tasks will be stopped until corrective action has been implemented.

Please ensure the aspects below are considered when costing, planning, and executing a project on Foskop site:

1. HIRA

- HIRA to be done.
- All persons authorized in HIRA.
- HIRA Relevant and Mitigation actions clear and documented.
- HIRA is available at workers on site.
- All workers participated in HIRA.

2. TMMS

- TMM inspection done in available in TMM.
- Driver authorized for the specific TMM.
- TMM clean (No scrap yard on the back of the LDV).

3. COMMUNICATION

- Proper communication on site regarding activities.
- Who oversees what activities? – Documented and discussed.
- Who coordinates when required? - Documented and discussed. (Rigging, different teams, top vs bottom, interlinking tasks, etc.).

- Who does what? (Ensure persons are competent for specific task) Does the team know what they are responsible for and what they must achieve?
  - Safe work procedures, task steps are communicated, and all is informed.
4. BARRICADING - In conjunction with Housekeeping
- Are relevant places barricaded?
  - Storage areas barricaded and indicated.
  - Waste or scrap area barricaded and indicated.
  - Unsafe places barricaded.
  - Use fixed barricading when dealing with heights or other identified high risks.
  - Use scaffolding barricading on last resort.
5. TOOLS
- Ensure all tools are inspected and on register.
  - Not inspected tools and defect tools to be treated as a very serious matter as this indicates the 2.9.2 and 2.6.1 competence to ensure a safe environment for their workers and corrective measure will be taken.
  - Ensure correct tools for the task are utilized.
  - Ensure rigging equipment is inspected and correctly marked.
  - Ensure that confined spaces have a CO2 meter that is calibrated – Certificate available.
6. PPE
- All persons must wear correct PPE for all the tasks to be conducted onsite.
7. HOUSEKEEPING - in conjunction with barricading.
- Keep the site clean.
  - Every day or shift must have at least a dedicated cleaning/barricading time of 30min. All to participate.
  - Site to be clean when work complete – invoice will not be processed.
8. SUPERVISION (2.9.2 appointment and 2.6.1 appointment)
- Keep the site clean.
  - Make sure hazards are continuously identified and proper steps taken to correct or mitigate.
  - Ensure tools and equipment are maintained, inspected, and operated by competent and authorized workers.
  - Ensure correct PPE is used by workers and in good condition.
  - Coordinate activities on site.
  - Understand the risks of the site or tasks.
  - Understand the method statement.
  - Understand the risk of the site.
  - Understand the project schedule and milestone dates.
  - Know what was tendered for in the BOQ (Scope of task). BOQ forms the basis of method statement and risk mitigation.
  - For shutdown tasks or where shifts will be working, a full-time 2.9.2 appointee must be on site. The 2.6.1 appointee shall visit all shifts to support the 2.9.2 appointee. Site attendance shall be verified via a clocking system. The 2.9.2 appointee shall not be



shared with any other work – ONLY 8 HOUR SHIFTS IF THE PLAN IS MORE THAN 2 DAYS.

**NOTE:** Refer to the duties of the supervisor/2.9.2 in the MHSA. If the supervisor/2.9.2 is a worker (handling tools or working with tools) then an additional supervision /2.9.2 appointment needs to be provided, as the supervisor/2.9.2 appointee cannot be responsible for the site, ensure worker safety and a safe environment while doing other work. Supervisors will not be allowed to do tool work.

#### Safety - Training and Authorizations

Summarized - typical but not limited to:

1. Basic health and safety – Training,
2. First aid – Training,
3. HIRA – Training and Authorization,
4. TMM – FOSKOR driving license, and Authorization,
5. Working at heights – Training and Authorization,
6. Hot work - Training and Authorization,
7. Conveyors – Training and Authorization,
8. Electrical – Training and Authorization,
9. Lifting and rigging – Training and Authorization,
10. Overhead crane - Training and Authorization,
11. Fire – Training,
12. Other – as and when as per FOSKOR COP's.

For a basic step guide for Work Permit see Safety section.

### 3.3 SCOPE

#### 1. Scope of Works

FOSKOR executed a feasibility study to guide the Design, Fabrication, Supply and installation of a compliant Fire system for FOSKOR. The Design and construction need to be signed off by the Relevant competent Professional Engineer and needs to comply with relevant standards

The project aims to improve FOSKOR Mine's fire suppression capabilities by implementing a fire water distribution (ring main) system of which the fire water tanks will be a crucial component of this ring main system, designed to provide pressurised and rapid response fire water suppression across the mine's facilities.

#### 1.1 **Design**

Detail Engineering Design for all disciplines for the following:  
Pump and tank System at wash bay area  
Relocation of Water fill point

Tanks - Key aspects of the project include – (As per Feasibility):

- Detail engineering design for the tanks
- Two fire water tanks and pump system – All disciplines
- Compliance with relevant NFPA standards and local regulations
- Capacity to deliver a minimum flow rate of 6000 l/min
- Ring main pipeline of at least 250NB up to the Piperack across the road with a spur line to the existing fire JoJo tanks system at conv 331 -
- Moving of Water fill point – Civil and pipe
- Ensure Pump and tank design caters for the Ring Main pipeline requirements as defined in the Feasibility – Minimum.

#### Typical Presentation of Scope Requirements





Pumps - Key aspects of the project include (As per Feasibility):

- Detail engineering Design
- Containerised pump sets comprising diesel, electric, and jockey pumps **or equivalent**
- Associated ancillaries and control systems
- Integration with future fire water tanks, local PLC network, and the Foskor emergency dispatch room
- Compliance with relevant NFPA standards and local regulations
- Capacity to deliver a minimum flow rate of 6000 l/min at 102.4m head pressure - Minimum

## 1.2 Compliance Standards

All work and equipment supplied must strictly adhere to the following standards:

- SANS 10400 Part T
- SANS 1475
- SANS 543
- SANS 1128-1
- NFPA 11
- NFPA 15



- NFPA 18A
- NFPA 22
- NFPA 30
- NFPA 70
- NFPA72

All oil and (diesel) fuel tanks to be compliant to applicable NFPA and SANS standards.

## **2. PUMP SYSTEM – As per Feasibility**

### **2.1 Hydraulic Calculations**

- Minimum flow rate for the most remote standpipe: 6000 l/min
- Minimum residual pressure: 102 m head in 250NB diameter ring main, with 110NB spur lines supplying sprinklers, hydrants and deluge systems across the mine.

NOTE - Supplier to review FOSKOR issued feasibility information/documentation and drawings and reconfirm the tank water storage required capacity calculations and assumptions for FOSKOR's review and approval prior to commencement of fabrication of the scope's pump sets.

### **2.2 Fire Water Supply into tanks):**

- Pumps take suction from a tank or reservoir.
- Supply take off point to be potable water – FOSKOR potable water to be tested and ensured that the potable water needed complies to the minimum requirements for a fire system.

Typical extract of potable water analysis



### 3. RESULTS

All the results listed below are as per the reports 2025/01/206 & 2025/02/258 for Chemical analysis and 2025/01/205 for Microbiological Analysis from Muratho Laboratory Services and Consulting.

Table 1 Results for the Chemical Analysis:

Parameter	Unit	Method ID	SANS 241-1:2025 Drinking Water Standard Limits	Sample ID	Sample ID	Sample ID
				Tailings Outside Drinking Tap (2025/01/206/1)	CON-Lab (2025/01/206/2)	Floating Kitchen Tap Outside W/S (2025/01/206/3)
pH @25°C	pH value	CH01	≥ 5 and ≤ 9.7	7.81	7.79	7.71
Conductivity	mS/m	CH02	≤ 170	44.70	43.30	43.40
Total Dissolved Solids	mg/l	CH02	≤ 1200	290.55	281.45	282.10
Fluoride as F	mg/l	CH017	≤ 1.5	<0.03	<0.03	<0.03
Sulphate as SO <sub>4</sub>	mg/l	CH017	≤ 500	70.10	71.15	60.00
Nitrate as N	mg/l	CH017	≤ 11	1.80	2.80	1.20
Chloride as Cl	mg/l	CH017	≤ 300	25.10	25.22	12.00
Magnesium as Mg	mg/l	CH013	≤ 17.20	17.20	16.10	5.04
Sodium as Na	mg/l	CH013	≤ 200	23.60	23.20	12.00
Zinc as Zn	mg/l	CH013	≤ 5	<0.01	<0.01	<0.01
Cadmium as Cd	mg/l	CH013	≤ 0.003	<0.002	<0.002	<0.002
Copper as Cu	mg/l	CH013	≤ 2	0.06	<0.01	<0.01
Iron as Fe	mg/l	CH013	≤ 0.3	0.06	0.06	0.05
Lead as Pb	mg/l	CH013	≤ 0.01	<0.01	<0.01	<0.01
Manganese as Mn	mg/l	CH013	≤ 0.1	0.07	0.06	0.05
Mercury as Hg	mg/l	SUB	≤ 0.006	<0.003	<0.003	<0.003
Arsenic as As	mg/l	SUB	≤ 0.01	<0.009	<0.009	<0.009
Cyanide (free)	mg/l	SUB	≤ 0.2	<0.01	<0.01	<0.01
Phenols	mg/l	SUB	≤ 0.01	<0.01	<0.01	<0.01

- Capacity for minimum 120 minutes supply
- Potable water connection point is potable water pump station at Cyfos. The route is on a existing pipe rack and in a exiting trench with concrete cover slabs trench up to the wash bay



The Supplier is expected to interface the water storage tanks with the supply system.

#### 2.3 Fire Water Storage Tank – this scope – As per Feasibility:

- 546 m<sup>3</sup> effective capacity tank for sized for minimum 120 minutes supply at 6000 l/min



- Equipped with automatic filling system and alarms to be interlocked to pump sets
- Design of all earthworks and civil works for the fire water storage tanks.

#### **2.4 Fire Water Pumps (containerised pump sets or equivalent):**

- NFPA compliant, and FM approved
- Designed to supply requirements with one pump on standby (diesel/electric standby duty arrangement)
- Jockey pump maintains system pressure
- Connected to tanks via suitable manifold system which includes a cut off valve
- Requirement control and information requirement

#### **2.5 Fire Water Reticulation (Surface and Buried), Phase 1:**

- Includes ring main piping, spur lines and supplies to be able to accommodate - up to conv 331 (Phase 1)
  - Hydrants, fire hose reels, deluge and sprinklers

The Supplier is expected to interface the water storage tanks with the system.

#### **2.6 Plant Fire Alarm and Detection Systems: Fire Pump station**

- Includes manual and automatic detection systems where applicable
- Smoke, thermal, and flame detection devices where applicable
- Central fire alarm system with supervisory station, control units, and alarm system (reporting to the Emergency Dispatch Room).

The Supplier is expected to interface the fire pump and water storage tanks with the system.

#### **2.7 Works to be Included**

The Works include, but are not limited to, the items listed below:

- 4.1 Design, engineering and manufacturing of the Goods – Approval of Design
- 4.2 Drawings, specifications, Q.A. plans etc.
- 4.3 Certified Supplier drawings
- 4.4 Corrosion protection
- 4.5 Packaging
- 4.6 Delivery to Site
- 4.7 Traveling and accommodation
- 4.8 Inductions and medicals
- 4.9 Commissioning of the tanks and containerised pump system
- 4.10 All required assembly bolts, nuts and washers
- 4.11 Earthworks
- 4.12 Piping and valves from tank outlet to pump suction
- 4.13 Civil works
- 4.14 Electrical Supply
- 4.15 Fencing
- 4.16 All special tools required for maintenance
- 4.17 All relevant instruments and control system
- 4.18 Training
- 4.19 Supply of a full set of mating flanges on suction and discharge side.
- 4.20 Quotation and pricing only, operating spares for a period of 2 years. (Only the list and pricing are needed)



- Control : Single junction box terminals. Terminations into local PLC, RIO panels

## 2.7 Reference Standards (Utilise latest editions available):

- NFPA 13-Installation of Sprinkler Systems.
- NFPA 14-Installation of Standpipe and Hose Systems.
- NFPA 20-Standard for the Installation of Stationary Fire Pumps for Fire Protection.
- NFPA 24-Installation of Private Fire Service Mains and their Appurtenances.
- NFPA 25-Standard for the Inspection, Testing, and Maintenance of Water Based Fire Protection Systems.

## 2.8 Technical Specifications for the Fire Suppression System – As per Feasibility

The fire water pump sets (and tank) system shall be designed to provide a pressurised and rapid response fire water suppression as required across the mine.

Description – Typical Minimum Requirement bas per Feasibility
<p><b>PUMP PERFORMANCE</b></p> <ul style="list-style-type: none"> <li>• Qmax/Duty: 6000l/m @ 102.4m Run Out: 6600l/m @ 100.8m NPSHR @ R/O: 4m</li> <li>• Churn: 116.6m</li> <li>• Cold Clean Water, Flooded Suction Site Voltage: 525VAC</li> </ul> <p>Churn pressure of the pump/s before static pressure is introduced exceeds 1000kpa.</p> <p><b>INCLUSIONS or equivalent</b></p> <ul style="list-style-type: none"> <li>• 12-meter container or equivalent system</li> <li>• Complete with painted mild steel base plate, flexible coupling, and guard.</li> <li>• 6HR powder coated, mild steel 350L fuel tank with all fuel piping and fittings.</li> <li>• Diesel tank</li> <li>• Bund pan for fuel tank.</li> <li>• Jockey pump set and pipe work</li> <li>• All control panels and SANS annunciator.</li> <li>• Electrical installation within the confines of the pump house.</li> <li>• 6hr approved performance test.</li> <li>• Exhaust silencer and 1m flexible coupling included.</li> <li>• Pump skid, drip pan, guard, insulation/personal protection</li> <li>• Cable routing systems (like Trench, tray, conduits/pipes) for power and control cables.</li> <li>• Grounding/Earthing of equipment, including earthing cables and other accessories.</li> <li>• All field instruments within package's battery limit, completed with factory calibration certificate.</li> </ul>

	<ul style="list-style-type: none"> <li>All instrument cable interconnection within package's battery limit, between field instruments up to the pump set's (i.e. the supply package) junction boxes, between supply package's junction boxes up to the MCC (motor's status and command signals).</li> </ul> <p>The container or equivalent is to be a new container which will be painted inside light grey and exterior post office red, underneath of the container to be cleaned and bitumen painted. The container is to have the following as a minimum:</p> <ul style="list-style-type: none"> <li>Steel service door,</li> <li>Double door at both ends for easy removal of equipment,</li> <li>Side louvers for air intake /ventilation,</li> <li>Rubberized floor</li> <li>fluorescent light and plug point,</li> <li>Extractor fan,</li> <li>Pipe work cut outs.</li> </ul> <p>Package and equipment lifting lugs, certified spreader bars, slings, shackles and eyebolts</p>
	<p><b>CONNECTIONS AND ANCILLARIES</b></p> <ul style="list-style-type: none"> <li>Distribution board for our equipment.</li> <li>Extractor fan for diesel engine.</li> <li>Pipework including the following: <ul style="list-style-type: none"> <li>Direct reading flow test meter and piping</li> <li>Suction and delivery pipework.</li> <li>Suction and delivery valves (Butterfly Type).</li> <li>Suction and delivery pressure gauges.</li> <li>Jockey pump pipework.</li> </ul> </li> <li>All relevant control systems to communicate with Emergency dispatch room</li> </ul> <p>Automatic start test arrangement complete.</p>
	<p><b>Spare Parts</b></p> <ul style="list-style-type: none"> <li>Recommended spare parts for installation, test, commissioning and start up.</li> <li>Recommended spare part list (priced) for 2 years operation.</li> </ul> <p>Special tools required for erection, site assembly, pre-commissioning, commissioning, start-up and maintenance purposes</p>
	<p><b>Documentation</b></p> <ul style="list-style-type: none"> <li>Inspection &amp; Test Plan</li> <li>Installation Check List</li> <li>Testing &amp; Commissioning Check List</li> </ul> <p>Pump Acceptance Test Form</p>

	<b>TANK SIZES</b> <ul style="list-style-type: none"> <li>• Minimum effective water capacity required is 540kl</li> <li>• Minimum of two water storage tanks required</li> </ul>
	<b>INCLUSIONS</b> <ul style="list-style-type: none"> <li>• FLA 7 Ring 600mm for ladders, platforms, cages, rails and hatches</li> <li>• Inlet Pipe – 100NB side mounted with an internal deflector and external flange, DEX750X Y-Type tank infill valves 100mm</li> <li>• Overflow Pipe – 100NB, 7 Ring with internal Bell Mouth and external discharge pipe flange</li> <li>• Test Return Pipe – 150NB side mounted with internal deflector and external flange</li> <li>• Cooling Return – Side mounted with internal deflector and external tread – 50NB</li> <li>• Outlet nozzle – Side mounted with internal AV ASIB with an external flange which to be confirmed with containerised pumpstation supplier, Variable height.</li> <li>• Dump drain – Side mounted with an external deflector 80NB, Butterfly Valve – geared 80NB</li> <li>• Glycol Gauge Assembly, including nozzle and protective cage 7 Ring</li> <li>• Water level indicator – Communication of level to go to Emergency dispatch room</li> <li>• Ventilator</li> </ul>
	<b>Earthworks and Civil Works for Tanks</b> <ul style="list-style-type: none"> <li>• Earthworks and civil works requirements to be executed by the civil contractor</li> <li>• Civil works to comply with SANS 1200 G and SANS 2001-CC1</li> </ul>
	<b>Spare Parts</b> <ul style="list-style-type: none"> <li>• Recommended spare parts for installation, test, commissioning and start up.</li> <li>• Recommended spare part list (priced) for 2 years operation.</li> <li>• Special tools required for erection, site assembly, pre-commissioning, commissioning, start-up and maintenance purposes.</li> </ul>
	<b>Documentation</b> <ul style="list-style-type: none"> <li>• Inspection &amp; Test Plan</li> <li>• Installation Check List</li> <li>• Testing &amp; Commissioning Check List</li> <li>• Tank Acceptance Test Form</li> </ul>

The following are inclusions to be provided and priced for by the Supplier:

- Soft/electronic and hard/printed copies of the Operations and Maintenance Manuals.
- All workmanship and equipment are guaranteed for a period of twelve (12) months from the date of completion, fair wear and tear excepted.



- Manufacturer's data sheets shall be provided for all materials and equipment for approval before purchase or installation. Data sheets shall describe the type of material, capacities, manufacturer, and part numbers of equipment and give information necessary for verifying equipment approval.
- The Contractor shall submit detailed and accurate shop drawings prepared in accordance with NFPA 20, and NFPA 24 for approval of all equipment to be constructed and installed. Shop drawings shall identify all materials and list all equipment to be used.
- Shop drawings shall include ceiling grid or reflected ceiling layout and shall be coordinated with other trades prior to submittal

## 2.9 Testing and Integration with Foskop Site

The Supplier shall conduct thorough testing of the fire water storage tanks to confirm capacity, stability and integration with Foskop's systems. Testing must include verification of tank capacity, structural integrity, water tightness testing\* and integration with connected systems to ensure compliance with required specifications. The Supplier is responsible for providing all necessary equipment for testing, including pressure gauges and level indicators.

The fire water storage tank system shall be designed and installed to coordinate and integrate with the following Foskop systems:

- **Fire Alarm Systems:** The storage tanks and associated monitoring equipment must be configured to connect with Foskop Mine's fire alarm systems (designed by others), ensuring seamless communication in emergency situations.
- **Emergency Power Systems:**
  - The tanks must support the operation of the containerised fire water pumps, which will automatically switch to a diesel-operated pump if electrical power is unavailable.
  - A level control system within the tanks should be implemented to maintain consistent water levels as required for fire suppression needs.
- **Emergency Dispatch Room Integration:** The storage tank monitoring system must be compatible with Foskop's Emergency Dispatch Room, allowing real-time monitoring of water levels, tank status and ensuring centralised control during emergencies.

\*Water tightness testing includes filling the tanks with water, monitoring and measuring the water level of the tanks over a prolonged period of time and analysing the measurements and observations recorded during the test to ensure the tanks are not leaking.

## 2.10 Quality Management System

- Supplier shall plan and carry out the scope of work within a quality management system that complies with ISO 9001 latest edition-Quality Management System Requirements.
- Supplier shall provide ISO 9001 for workshop or testing facility that used by Supplier for testing any purchased products.
- Supplier shall arrange Quality Assurance activities at Manufacture factory or Supplier workshop and witnessed by Foskop's representative.
- The Contractor shall provide the necessary quality management system based on ISO 9001:2008, and comply with Foskop's quality procedures and those detailed in Attachment 1 [Contractor Data Requirements Listing] as detailed below:
- A copy of Foskop's Quality Procedures is included as an Attachment to this Request for Quotation.
- The Contractor shall ensure that the quality of the Works complies with Foskop's requirements in terms of the Specification and with specific reference to the relevant Employer's requirements where applicable.



- Generic quality plans shall be supplied by the Contractor. These should specify or refer to the essential technical quality requirements of the Contractor's scope of work. This shall include the activities and processes, as well as the key controls necessary to ensure that the Order requirements can be achieved.
- The Contractor shall monitor its activities in accordance with its approved Project quality plan and notify Foskor of any deviations to this plan. The Contractor shall rectify any deviations from the Project quality plan with subsequent approval by Foskor's authorised representative.
- Foskor reserves the right to audit any of the Contractor's systems on request and the Contractor shall ensure that any required corrective action is taken.
- Foskor's authorised representative will be granted access on reasonable notice during business hours to any and all parts of the Contractor's premises where the Works are being performed.
- The Contractor shall issue the Project quality requirements and support documentation to their material suppliers and subcontractors in terms of the Specification. Any deviations by the Contractor to the quality control plans are identified, reported and rectified by the Contractor at its cost.
- The Contractor shall be required to attend an Order kick-off meeting after Order award, but prior to manufacture of the Goods, Plant and Materials. 2 (two) weeks after the kick-off meeting, all Project specific quality documentation shall be supplied to Foskor's authorised representative (Project quality plan, data book index, QCPs including all procedures and forms to be referenced on the QCP).
- Foskor has the right to attend final inspection and testing and must be notified accordingly in advance, not less than 7 (seven) days prior to such final inspection and testing.

#### 2.11 Packaging

- Packing should be such as to ensure adequate protection in transit. Any damage as a result of inadequate packaging and marking is for the Contractor's account.
- When items are packed, the container or package must be marked with the standard pictorial markings, twin arrow (for this way up), wine glass (for fragile items), chain marking (lifting points) and centre of gravity (for heavy items).
- Packaging must indicate the total mass of the transport crate.
- Applicable codes for Packaging are ISO 1496 "Freight Containers" and IATA "Dangerous Works Regulation".
- Each consignment shall include a complete bill of material / Packaging list identifying each loose item component or part and referencing the relevant order number and equipment number.
- Packaging and protection must be adequate to protect the equipment and prevent deterioration of equipment for a period of 6 (six) months after delivery to Site on the basis that the package has no protection from the Site climate during that period.
- Storage instructions to be included and communicated with the responsible Employer's Engineer.

#### 2.12 Delivery

It is the Contractor's responsibility to ensure the equipment is successfully delivered to the Foskor Phalaborwa Mine Site.

- The Contractor must include a realistic delivery schedule in the overall programme (submitted as part of the Contractor's tender).



- Each and every crate to be clearly marked with the following:
- Project: **Foskor Fire Protection Project**
- Employer's Order Number:
- Manufacturer Name:
- Model Number:
- Serial Number
- Year of Manufacture
- Equipment Number:
- Delivery Address GPS: **Foskor Mine Phalaborwa**
- The Contractor will advise Foskor in advance of all major shipments of the Goods.

**Commented [Ad1]:** Foskor to type in the Project/RFQ number

### 2.13 Tagging and Permanent Marking

Each item of the Goods shall carry a label of non-corrodible material e.g. stainless steel or traffolyte, permanently stamped or engraved with the following:

- Employer's Order Number.
- Manufacturer.
- Model.
- Serial Number.
- Year of Manufacture; and
- Equipment Number.
- Labels shall be affixed by means of machine screws and prominently displayed. Labels shall be provided and affixed by the Contractor before despatch of the Goods to Site.
- Lettering shall be 10mm high (minimum).

### 2.14 Programme and Planning

Within 14 (fourteen) days after receiving the Order, the Contractor shall submit to Foskor's authorised representative, for its approval, the programme for the supply and delivery of the Works showing:

- Clearly referenced Project number, Project name, Contractor and Works being executed.
- In Primavera P6 (latest)/Microsoft Projects (latest), or equivalent shall be used.
- The programme shall be approved by Foskor.

### 2.15 Fabrication / manufacturing / supply programmes

- The planning of the manufacturing / fabrication / supply of Goods shall be planned to a level of detail sufficient to monitor and control their impact on the Order deliverables.
- The programme shall allow for the tracking of all activities required by the Contractor and its subcontractors in order to deliver Goods on time and as per the Order.
- The programme shall include specific milestones for the following typical events:
  - Order Commencement Date.
  - The exchange of critical Project information between the Contractor and Foskor.
  - Design, detailing, procurement, fabrication, QA / QC and relevant hold-points; and



- Logistics and delivery activities to Site (spares delivery activities to Site to be clearly indicated).

#### **2.16 Progress Updates**

Regular updated programmes shall be prepared by the Contractor and submitted to FOSKOR, reflecting the following:

- Project Status Date.
- Progress achieved on the Works up to the Status Date.
- All incomplete tasks shall be rescheduled using the Status Date.
- All S-curves shall reflect the latest status.
- Milestone tabulation, variance tables; and
- Status narratives.

The frequency and timing of programme updates by the Contractor (including any applicable supporting information) shall be agreed between FOSKOR and the Contractor.

#### **2.17 [ADDITIONAL: Compliance Extracts or focus points for the fire pump and tank system Design and installation contractors](#)**

##### **2.17.1 Qualifications and Competency**

- Demonstrated Experience: Contractors must provide evidence of prior successful fire pump installations, particularly in mining or industrial environments.
- Company Accreditation: Ensure the contractor is registered with recognized industry bodies like the Fire Protection Association of Southern Africa (FPASA) or South African Bureau of Standards (SABS).
- Personnel Certification: All relevant personnel must be trained and certified in applicable NFPA standards, notably NFPA 20 (Standard for the Installation of Stationary Pumps for Fire Protection).
- Personnel Certification: Confirm that the technicians are certified in fire pump installation and maintenance, particularly under NFPA 20.
- Regulatory Knowledge: Contractors must demonstrate familiarity with mining-specific fire safety standards (NFPA 122) and local regulations, including the Mine Health and Safety Act (MHSA) and SANS 10400.
- Company Accreditation: Ensure the contractor is registered with recognized industry bodies like the Fire Protection Association of Southern Africa (FPASA) or South African Bureau of Standards (SABS).
- Personnel Certification: Confirm that the technicians are certified in fire pump installation and maintenance, particularly under SANS 1910 and NFPA 20.
- Relevant Licenses: Verify that the contractor holds appropriate construction and safety licenses.

##### **2.17.2 Compliance with Standards and Codes**

- Adherence to Standards: All designs and installations must strictly comply with NFPA 20, NFPA 122, and applicable local standards.
- Documentation: Contractors must provide verifiable documentation confirming compliance with design specifications, hydraulic calculations, and the use of compliant system components.

##### **2.17.3 Material and Equipment Quality**

- Approved Components: All fire pumps, valves, and controllers must be UL-listed or FM-approved.
- Material Suitability: Materials used must be corrosion-resistant and suitable for harsh mining conditions.



- **Quality Standards:** All components must meet industry standards for durability and performance in mining environments.

#### 2.17.4 System Design and Engineering

- **Engineering Certification:** System designs must be reviewed and stamped by a qualified professional engineer.
- **Hydraulic Performance:** Hydraulic calculations must ensure adequate water flow and pressure, accounting for elevation variations in mining operations.
- **Redundancy:** Designs must incorporate redundant systems where necessary to ensure continuous fire protection.

#### 2.17.5 Installation Practices

- **Standard Compliance:** Installation must follow manufacturer guidelines and NFPA standards.
- **Mechanical Integrity:** Proper alignment, secure anchoring, and vibration isolation must be implemented.
- **Safe Connections:** Electrical and mechanical connections must adhere to safety and operational standards.

#### 2.17.6 Testing and Commissioning

- **Acceptance Testing:** Contractors must conduct comprehensive acceptance testing in accordance with NFPA 20, including flow and pressure tests.
- **Documentation:** All testing procedures and results must be documented and certified.
- **System Integration:** Fire pump systems must be fully commissioned and integrated with existing fire detection and suppression systems.

#### 2.17.7 Quality Assurance and Control (QA/QC)

- **QA/QC Plan:** Contractors must implement a documented QA/QC plan throughout the project lifecycle.
- **Inspections and Audits:** Regular inspections, audits, and third-party verifications must be conducted.
- **Deficiency Management:** Identified deficiencies must be addressed promptly, with full certification of all completed work.
- **STANDARDS**
- **NFPA standards** provide detailed guidelines for the design, installation, and maintenance of fire protection systems, including fire water pump stations. Here's an overview of the relevant sections from NFPA 20, NFPA 22, and NFPA 122 as they pertain to fire water pump station design and construction:
- **NFPA 20: Standard for the Installation of Stationary Pumps for Fire Protection**
- **Pump Types:** Covers centrifugal and vertical turbine fire pumps.
- **Pump Capacity:** Specifies flow rate and pressure requirements based on the hazard level.
- **Pump Drivers:** Outlines the use of electric motors or diesel engines.
- **Controller Installation:** Defines requirements for pump controllers and automatic starting.
- **Water Supply:** Requires a reliable water source, including suction piping and fittings.
- **Testing and Maintenance:** Mandates regular testing, performance checks, and maintenance procedures.
- **Room Design:** Requires pump rooms to be protected against fire exposure and flooding.
- **NFPA 22: Standard for Water Tanks for Private Fire Protection**
- **Tank Types:** Covers construction of water storage tanks (steel, concrete, and others).
- **Capacity:** Requires adequate storage volume based on risk assessment.
- **Location and Protection:** Specifies tank placement to minimize fire exposure risks.
- **Piping and Valves:** Provides guidance on connections between tanks and fire pumps.
- **Freezing Protection:** Requires measures to prevent freezing in cold climates.
- **Inspection and Maintenance:** Details inspection frequencies and maintenance practices.
- **NFPA 122: Standard for Fire Prevention for Metal/Nonmetal Mining and Metal Mineral Processing Facilities**
- **Fire Water Systems:** Requires reliable water supply systems for fire protection in mining operations.
- **Pump Stations:** Must be designed to withstand harsh environments typical of mining.
- **Redundancy:** Emphasizes backup power sources for continuous operation.
- **Fire Suppression:** Integrates pump stations into broader fire suppression systems, including hydrants and sprinklers.





- Maintenance: Regular inspections and maintenance to ensure readiness.
- For compliance in South Africa, it's important to align these NFPA standards with local codes such as the South African National Standards (SANS) for fire protection.

#### 2.17.8 STANDARDS: ADDITIONAL INFORMATION ELABORATION

- NFPA 20: Standard for the Installation of Stationary Pumps for Fire Protection
- NFPA 20 focuses on the requirements for fire pump systems. Key aspects include:
- Pump Selection
- Fire pumps must meet the required water flow and pressure demands.
- Types include electric motor-driven, diesel engine-driven, and steam turbine-driven pumps.
- Design Requirements
- Fire pump rooms must be adequately sized and ventilated.
- Ensure sufficient clearance for maintenance and operation.
- Fire pumps must have a reliable power source (backup power for electric-driven pumps or diesel engines).

##### System Components:

- Include pump, driver, controller, jockey pump, and piping arrangements.
- Provide pressure relief valves where necessary to prevent over-pressurization.
- Testing and Maintenance:
- Systems must be tested regularly to ensure functionality (e.g., churn tests and flow tests).

##### Environmental Protection:

- Fire pump installations should be protected from flooding and extreme weather.
- NFPA 22: Standard for Water Tanks for Private Fire Protection
- NFPA 22 covers the design and construction of water storage tanks used in fire protection systems. Key aspects include:

##### Tank Design

- Tanks must be constructed to resist environmental and structural forces.
- Materials: Steel, concrete, or other approved materials.
- Capacity and Supply
- The tank's capacity must meet the fire flow requirements specified in NFPA 20.
- Ensure reliable water supply connections to maintain tank levels.
- Location and Accessibility
- Tanks should be located to ensure accessibility for maintenance and fire-fighting operations.
- Corrosion Protection
- Apply coatings or linings to prevent corrosion of the tank interior.
- Piping and Valves
- Include properly sized piping, valves, and fittings to allow efficient water flow and maintenance.

#### 4. PROJECT URGENCY

Project urgency is defined below:



- This is an urgent project and schedule compliance is critical.

## 5. DELIVERY OF MATERIALS AND EQUIPMENT

It is the responsibility of the Contractor to take delivery, off-load, store, and move into their permanent position all equipment and materials covered under this Scope. The Contractor shall, at his own expense, be responsible for the delivery to the Site of imported plant and equipment, materials and Contractor's plant and equipment in connection with the execution of the works, including but not limited to securing of permits and customs clearances, and payment of handling costs, storage costs, releasing costs, transportation costs, and duties, taxes, imposts, excise and charges of any kind that may be imposed by the South African Government, or any of its agencies and political subdivisions relating to the supply and delivery to the site of the imported plant and equipment, materials and Contractor's plant and equipment.

TAKE NOTE - Foskor pays for material delivered to Foskor site only!

NB: The contractor/ consultant must clearly state in his tender submission if there is an exclusion on the Foskor scope (As per the site meeting procurement scope and site meeting minutes) Failure to state the exclusion will mean that the full Foskor scope is still applicable.

Lay down areas are as indicated on the drawings

## 6. BATTERY LIMITS – INCLUSIONS AND EXCLUSIONS

## 7. TABLE - INCLUSIONS AND EXCLUSIONS

List the boundaries in terms of equipment (Foskor plant specific). Up to where is it Foskor's responsibility and where/what is the contractor's responsibility.

WHO WILL SUPPLY THE FOLLOWING?									
FF = FOSKOR, FREE OF CHARGE		FC = FOSKOR, AT COST TO CONTRACTOR		C = CONTRACTOR		N/A = NOT APPLICABLE			
1. Sanitary	2. Transport	3. Quality	4. Security	5. Lifting and Rigging	6. Medicals	7. Communication devices			
1.1 Water on site and toilet facilities / janitorial services	C 2.1 Labour	C 3.1 Plan, Management, QA, QC	C 4.1 Site Security	C 5.1 All rigging equipment (Slings, Chain blocks, turners, etc)	C 8.1 Entry and Exit	C 7.1 All communication devices like laptops, computers, networks, radios, cellphones, etc			C
1.2 Potable connection point	C 2.2 Materials	C 3.2 All quality test Civil, Paint, Mechanical, etc	C 4.2 Foskor ID Card	C 5.2 Rigger	C 8.2 First aid box at place of work	C			
1.3 Connection to construction water supply	C 2.3 Equipment	C 3.3 Sampling and laboratory testing	C 4.3 Personal Items	C 5.3 Mobile cranes	C				
1.4 Change rooms	C 2.4 All TMMS	C							
8. PPE	9. Surveying	10. Safety File	11. Training & Authorizations	12. Site Establishment	13. Waste management	14. Painting			
8.1 Supply, Issue, inspect and manage	C 9.1 Site Surveys	C 10.1 Foskor will issue template	F 11.1 All Required Training	C 13.1 Site office/s with suitable facilities for daily "Green Area" meetings, and lunch area	C 13.1 Transport all on site to waste to Foskor designated waste sites	C 14.1 All Equipment and tools paint, labour, etc			C
		10.2 Ensure file conform/ populate to Foskor standards	C 11.2 Authorisation - As per Foskor COP	F 13.2 Site establishment space	F				
15. Fuel	16. Mechanical	17. Labour	18. Compressed air	19. Scaffolding	20. Tools & Equipment	21. Training			
15.1 Fuel Supply	C	17.1 All labour as per Scope of Work to execute task including management	C 18.1 Sandblasting or flash blast	C 19.1 Scaffolding Supply & Erect	F 20.1 All Portable Electrical Equipment	C 21.1 All required training and training manuals as required to ensure that Foskor can train its workforce and operate the plant / equipment safely			C
15.2 Fuel storage	C		18.2 Compressor	C 19.2 Scaffolds be managed by the Contractor with proper documentation (request, Erected, Job completed, Demolished, etc)	C 20.2 Hot Work Equip as per Foskor COP - Welding Machines, Gas Cutting, Grinding, Gauging, etc	C			
15.3 Fuel fire protection	C		18.3 Air for power tools - If available	C 19.3 Cherry Picker's - only if	F 20.3 Tools as required to execute task	C 21.2 All manuals			C

WHO WILL SUPPLY THE FOLLOWING?									
FF = FOSKOR, FREE OF CHARGE		FC = FOSKOR, AT COST TO CONTRACTOR		C = CONTRACTOR		N/A = NOT APPLICABLE			
					available by pre-booking				and related documents to be supplied to project Eng. and Foskor Drawing office for safe keeping
15.4 Refueling	C				19.4 Cherry Picker's Driver--Trained and authorized driver	C			
<b>22. Certificates</b>		<b>23. Consumables</b>	<b>24. Storage and inventory control</b>	<b>25. Electrical</b>					
22.1 Supply All regulatory and other certificates as required	C	23.1 Welding rods	24.1 Protective coverings/tarpaulins	C	25.1 Generators	C	25.4 Temporary lighting	C	25.7 Electric panel + distributing wiring
		2 Bolts/Nuts/etc.	24.2 Storage area and inventory control	C	25.2 Electrical Extensions	C	25.5 Power for tools on site from existing FOSKOR electrical supply point (Welding plugs and 220 v plugs)	C	25.5 Electrical connection point
	23.3 All other required Consumables to execute the construction	C			25.3 COC Site Establishment	C	25.6 Connection to Electrical supply	C	25.9 Electrical and Instrumentation Installation

## 8. AS BUILT DRAWINGS

As built drawing requirements are defined below:

- As-built drawings are to be compiled after completion and delivered to Foskor.

Note! – All drawings to be delivered in AutoCAD electronic format. All drawings to be detailed engineering drawings.

## 9. QUALITY

- i. The service provider must provide the necessary quality management systems and plans to ensure that the quality of his work complies with the requirements of this scope of work.
- ii. The service provider shall comply during all phases of construction with the Foskor approved Quality Assurance Plan.
- iii. The service provider shall be responsible for all the resources required for executing the Quality Management System including but not limited to, developing the Quality Assurance Plan and performing the Quality Control measures to ensure that the deliverables comply with the specifications and standards mentioned in the scope of work.
- iv. Any change requests / additional work resulting due to inadequate quality management system will be for the account of the service provider.
- v. Foskor might appoint a third party for Quality Control Inspections.
- vi. The Service provider will have to provide an approved quality system for all work executed.
- vii. This will include the following but is not limited to:
  - a. Quality plan
  - b. Quality compliance – Performance and reports
  - c. Quantity surveying
  - d. Quality Assurance
  - e. Quality Authorization matrix – part of the Quality plan
  - f. Quality control
  - g. Quality administration. – All documents, checks, measurements, reports, variances, analysis, Corrective actions, etc. needs to be properly filed and available on request at any time. The file will require an index.
  - h. Includes all test work, laboratories, Filing, etc.
  - i. Survey and survey verifications.
  - j. Construction versus design - Any Deviations from the approved "Construction Drawings"

- k. Quality communication – What needs to be reported to whom and at what frequency.
- viii. FOSKOR envisages a complete quality System driven by the Service provider and this system/plan will be approved by FOSKOR and the appointed designer (if applicable) before construction/fabrication will be started.
  - ix. Compliance to this plan will be measured and failure to adhere to the quality plan will result in the stopping of construction activities until concerns have been addressed. The cost for this delay will be for the service provider's account.
  - x. FOSKOR may appoint a third party to measure and control FOSKOR's interest in the terms of quality in this contract and the service provider is expected to work in conjunction with this company.
  - xi. Hold points will be discussed and finalized with the successful service provider based on the approved Quality plan

The Quality plan will only be compiled and signed off after the Method Statement and WBS\* have been compiled.

Quality on Shutdown type tasks will be included in the Scope of Works, but the service provider will have to submit proof of an experienced quality assurer or relevant qualifications. IF the service provider does not have this it will be required that this service be hired in by the service provider at his cost.

- i. State any specific hold points that are not negotiable here.
- ii. State any other applicable quality that is not in the "Parameters" section.

Method statement – the service provider must list all steps and actions required to complete the work as per the scope of work – typically includes the items listed below:

- i. Key step and stages of the work required.
- ii. Tools, Equipment, TMMS, etc
- iii. Labour requirements, etc
- iv. Spares, resources,
- v. Safety requirements

**\*WBS** is a hierarchical and incremental decomposition of the project into phases, deliverables and work packages. It is a tree structure, which shows a subdivision of effort required to achieve an objective, for example, a program, project, and contract.



This includes arrangements, tools, equipment labor, Tasks, Purchase, Quality, Communication, etc

#### QUALITY FILE INDEX

The quality file index listed below will be the minimum requirement.

This file must be kept up to date for the duration of the project and will be handed to the Foskor project Engineer on completion of the project.

#### QUALITY FILE INDEX

	<b>QUALITY FILE INDEX</b> FOSKOR: TSS - PROJECTS	Doc. No.:	FSK-P-GEN-IX-001
		Rev. No.:	00
		Date:	12 - July - 2019

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Quality Control Plan (QCP) Approved.....	2
Competency of People – Welder Qualifications, Trade, Authorization, Certifications, etc....	3
Designer/Engineers Instructions, Specifications, Approvals, Concessions applied for & approved. Site instructions, Variations and ECO's .....	4
Method Statement of contractor– Approved .....	5
Material orders & Delivery notes.....	6
Certificates – Material, Data Sheets, Compliance, Certification, etc .....	7
Test Results – Each Discipline – Test cubes, NDT, etc.....	8
Request for inspection (RFI).....	9
As Built Drawings .....	10
Reports - Survey, etc.....	11
Punchlist/Snag list .....	12
Handover/ Occupations/ Taking over Certificates/Commissioning.....	13



## 10. PROJECT DELIVERABLES

### 10.1 DELIVERABLES FOR THIS PROJECT INCLUDE:

- Construction of the Fire Pump and tank system
- Hand over certificate
- Quality file

### 10.2 TRANSMITTAL OF DOCUMENTS AND MANUALS

#### MANUALS AND DOCUMENTATION

The following must be supplied:

1. Three "manuals" containing detailed and step-by-step task descriptions for general maintenance, major component replacements and abnormal operating conditions.
2. Task descriptions to show identified hazards and what corrective actions must be taken. (Risk assessment and safety precautions)
3. Three "workshop maintenance manuals" to be supplied. The maintenance manuals must at least contain:
  - a. Expected life of critical components,
  - b. Comprehensive list of planned maintenance (PM) tasks (structural inspections, mechanical, electrical, and electronic),
  - c. Frequency of each PM task,
  - d. List of spares complete with part numbers, part description, year of manufacture, lead time, country of origin, quantity required, and special tools required to do each PM task,
  - e. Comprehensive task description consisting of procedures and all technical information, such as pressure settings, temperature limits, torque specification, shaft alignment tolerances and voltage- & current limits, etc for each PM task,
  - f. Condition monitoring information: Recommended techniques, monitoring points, alarm values, etc.
  - g. Exploded view of each component,
  - h. Strip and assembly procedures,
  - i. Lubrication specifications. The manual must contain at least the following information:
    - Full specification of the required lubricant for each application / compartment,
    - Type, quantities of initial oil/grease fills required, as well as equivalent substitutes,
    - Recommended intervals for complete lubricant charges,
    - A list of at least 3 approved lubricant brands (different companies and their part no),
    - Acceptable ISO-contamination levels in lubricants and hydraulic fluids.
4. Three "Workshop Electrical and Electronic maintenance manuals" to be supplied. The maintenance manuals must at least contain:
  - a. Logic and wiring diagrams of all electronic systems,
  - b. Fault finding and test procedures,
  - c. Voltage and current settings and limits,
  - d. Repair procedures for electric motors and switchgear,
  - e. Technical descriptions of all components (power supplies, PLC's, transducers, instrumentation, and operation interface panels),
  - f. Safety features.



5. 3-off Spare Parts Manuals to be supplied. The parts manual must at least contain:
  - a. A list of the top 50 moving parts,
  - b. List of all spare parts,
  - c. Index reflecting all part numbers in numerical sequence with page numbers on which the part numbers appear,
  - d. Special tools and their replaceable components,
  - e. All accessories and their replaceable components,
  - f. Exploded view illustration of each item identified by Contractor/OEM part number,
  - g. Identification of service exchangeable items,
  - h. Vendor brand names and vendor part numbers of all non-Contractor/OEM manufactured items that are approved by the Contractor/OEM.
  
6. 3-off Maintenance Schedules to be supplied, specifying the equipment, component location, type of maintenance and frequency of maintenance required on the equipment.

### 10.3 FORMAT OF DOCUMENTS AND MANUALS

Note! - All Manuals must be in English.

**Documents and Manuals to be submitted in the flowing formats:**

Type of Document	Hard Copy	Electronic Format
Manuals	x	x
Drawings	x	x
Reports	x	x
Data Books	x	x

Hard Copy: Book or binding arch file format and must be durable and of high quality.

Soft Copy: Manuals, Reports and Data Books – Word, Excel, PDF, etc.

Storage – Compact Disk or Data traveler

Language: English

- The Contractor shall furnish all drawings, data and other documentation in the format, quantity and time period as specified in Attachment 1 [Contractor Data Requirements Listing].
- The Contractor shall comply with Foskor's requirements for the production of design calculations and drawings as specified.
- The schedule of drawings, operating, maintenance, training and other data requirements constitutes part of the Specification. The Order will not be regarded as complete unless these requirements are fully met.
- The format of electronic documentation shall conform to the following requirements, unless noted otherwise:

DOCUMENT	NATIVE FORMAT	ISSUED TO FOSKOR
Drawings	AutoCad (Latest)	Native and PDF

DOCUMENT	NATIVE FORMAT	ISSUED TO FOSKOR
Programme	MS Project (Latest) or Primavera (Latest)	Native and PDF
Datasheets	Microsoft Office (Latest)	Native and PDF
Other Documentation	Microsoft Word (Latest)	Native and PDF

- All drawings shall be produced in AutoCAD software. FOSKOR uses AutoCAD software for all engineering work and any engineering work produced using other software is converted into ".dwg" or ".dxf" files by the Contractor.
- All drawings shall be clearly cross-referenced with other drawings in cases where such links exist, and if cross-referencing with existing Employer's drawings arises as a result of the Works, the originals of such drawings shall also be clearly cross-referenced with the new drawing numbers.
- A cover sheet summarising the content of the set will accompany multiple sheets with the same drawing numbers.
- The Contractor shall issue documentation under formal transmittal and maintain an updated document register clearly indicating latest revisions of documents and transmittal reference number.
- On-going transmittals of electronic documentation from the Contractor to FOSKOR during Project implementation will be conducted via e-mail or other approved electronic communication media

#### 10.4 PROJECT COMPLETION

On project completion, the contractor will issue FOSKOR with a Handover certificate.

The handover certificate will be accompanied by the following documents:

1. Quality file,
2. Safety file,
3. Certification of Fire system
4. Design Report – Signed off by relevant PR Eng
5. Drawings - All Disciplines

## 11 DOCUMENTS / DRAWINGS ISSUED BY FOSKOR

Drawing or Document No	Title	Revision
	Feasibility - A 3D Scan (Navis works) model will be provided that was part of the feasibility - to be issued as part of tender documentation	
	Feasibility Report - Fire Management system	

<b>Note</b>	Please read your Scope of Work	
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## 12 ON-SITE SUPERVISION REQUIREMENT

- A Foskop work permit before commencement of site work.
- For shift work a 2.9.2 legal appointee will be on site full time
- A 2.6.1 appointed site manager for overall site management
- Appointed SHE Rep for the entire duration of site work.

## 13 TENDER DELIVERABLES

The deliverables will include: -

- Completed Foskop pricing schedule (BOQ),
- Preliminary project schedule,
- Tax clearance certificate,
- Letter of good standing (Workman compensation),
- BEE certificate,
- Commercial documents requested by the Procurement department,

Failing to submit the required documentation or failing to complete the Pricing Schedule correctly will lead to the disregard of the tender.

## 14 SAFETY

Service provider to refer to the full and updated Foskop COP's available:

- The service provider and sub-service providers need to always comply with the Mine Health and Safety act. All Foskop COP's Policies and procedures need to be adhered to.
- A service provider 2.9.2 to be permanently on-site.
- Medical, Induction, Foskop ID Card, etc. is approximately R800 per person. Exit medicals need to be done on termination of the contract.
- The successful tenderer will be required to compile a Foskop Work permit and at least 2 weeks should be allocated for this. The service provider must provide the following appointed persons in terms of the MHSA: 2.6.1; 2.9.2 and Section 29(1) – SHE REP for the duration of the contract.
- All vehicles and cranes as well as other TMM's to be inspected before entering Foskop Premises.
- All person competencies to be verified before being allowed to work on Foskop premises for a specific task.
- The service provider must compile a Safety File as per Foskop standard for all service providers and sub-service providers.
- Site access will need to be controlled, and all persons must receive site-specific induction before entering the site.

- ix. Conduct inspections as per Foskop Safety System. Analyze data and trends and recommend preventative measures where required.
- x. Ensure all authorizations are in place as per the Foskop Safety System. Arrangement with Foskop training to be done by the service provider to ensure that authorization and training are conducted. Arrange timeously.
- xi. Ensure all workers' competencies are available and have been validated.
- xii. Ensure proper security, signboards, fencing, and barricading is in place on-site where applicable.
- xiii. The service provider shall in general comply with the FOSKOR General Engineering Specifications, COP's, latest revisions, and all relevant regulations.
- xiv. The service provider must complete a Baseline Risk Assessment (COP 01) before a work permit can be issued for the installation.
- xv. All service providers not in possession of a valid Foskop ID card must complete the Foskop induction course and must undergo a medical examination at the Foskop clinic on the service provider's account.
- xvi. The service provider shall be responsible for coordinating and integrating his schedule and responsibilities with other FOSKOR appointed contract manager on-site for this Scope of Work.
- xvii. All personnel operating mobile equipment, including LDV's must have a Foskop driver's permit.
- xviii. An open Pit License is required for driving in the mining areas.
- xix. All the required PPE and Safety Equipment are for the service provider's account.
- xx. All service providers must ensure that:
  - a. Their workers are issued with the correct personal protective equipment free of charge.
  - b. That the workers wear the PPE per the project area's requirements or as given by the service provider Supervisor.
  - c. Training is provided in the correct use of PPE to workers.
  - d. Daily inspections are done on PPE.
  - e. The registers will be complete at least monthly on findings on PPE. (All PPE must be kept in good condition)
- xxi. All providers of services need to be informed of the following minimum training applies to all service providers (irrespective of the tasks or scope of work) that will enter the Foskop Phalaborwa site with effect from 1 April 2014. This training is not presented by the Foskop Training section and service providers must ensure that the training is sourced through accredited external training companies:
  - a. Basic health and safety principles
  - b. HIRA
  - c. First Aid Training
- xxii. All other training requirements must be aligned with the baseline risk assessment. Risks identified in the baseline risk assessment will provide guidance on training requirements. A summary of the training must be completed as well as status on required authorization as per Foskop COP's.
- xxiii. Training certificates will be accepted when complying with the following:



- a. Unit Standard Title
- b. Learner Full name
- c. Learner ID number
- d. Competency achieved
- e. Date of Assessment
- f. Assessors' signature
- g. Training provider logo
- h. Training provider registration number and accreditation number.
- i. SETA logo

## 15 LEGISLATIVE REQUIREMENTS SUMMARY

### 15.1 MINIMUM LEGISLATIVE REQUIREMENTS:

The successful or appointed service provider shall comply with:

- Occupational Health and Safety Act (Act 85 of 1993)
- Mine Health and Safety Acts and regulations (Act 29 of 1996)
- Explosive Acts and Regulations - South Africa
- Foskor COP's and applicable General SHEQ Requirements
- Foskor Engineering Specifications
- The latest revisions of the SANS standardized specifications and Foskor Specifications as applicable at the time of quotation shall apply to this contract.

#### 15.1.1 Environmental

The successful or appointed service provider shall comply with the following Environmental Specifications, Policies and Procedures:

- COP 41 Housekeeping and workplace organisation
- COP 49 Waste Management
- COP 51 Resource conservation, energy, and materials
- COP 70 Storage of petroleum products and other hazardous material
- National Environmental Management Act 107 of 1998 (NEMA) and its Regulations
- National Environmental Management Waste Act 59 of 2008 (NEMWA) as amended.

The successful service provider shall include in his/her SAFETY FILE, and comply with, the following documents:

- Environmental Aspect and Impact Register (Applicable to this contract).
- Environmental Objectives and Targets (Applicable to this contract).
- Waste Management Plan (Applicable to this contract).



FOSKOR Atmospheric Emissions License (Copy available on request – to be discussed with Mine Official responsible for the Services required)

FOSKOR Waste Management Licence (Copy available on request – to be discussed with Mine Official responsible for the Services required)

FOSKOR Water Use Licence (Copy available on request – to be discussed with Mine Official responsible for the Services required)

## 15.2 SUMMARISED REQUIREMENTS/EXTRACTS FROM FOSKOR COP'S

### 15.2.1 Before entering and operating a service vehicle (Own vehicle) on Foskor site, the appointed service providers shall:

- i. Ensure that their driver/s have a valid national driver's license for the specific class of vehicle, have been tested by the Foskor mobile equipment training center and authorized by a Foskor MHSA (Mines Health and Safety Act) regulation 2.13.1 appointee for the class of vehicle to be used on site.  
(Contact the Foskor mobile equipment training center at 015 789 2840 to make an appointment for competence testing and authorizations).
- ii. The appointed service provides shall, before entering and operating a vehicle or trailer on the Foskor premises:
  - a. Obtain permission from the Foskor Safety and Security manager to operate their nominated service vehicle/s or trailers on the Foskor site. (Forms will be provided)
  - b. Obtain a certificate of fitness from the Foskor Light Vehicle maintenance workshop supervisor or appointed Foskor inspector for their nominated service vehicle/s. Inspections conducted daily between 08:00 and 08:30 and between 13:30 and 14:00 (Excl. Fridays) at the Light Vehicle Maintenance workshop.
  - c. Submit the above permission and COF at the main security office for the issue of a vehicle access disk.
- iii. Ensure that their service vehicles/trailers have been inspected (Daily) by the Foskor standard (COP 59) to ensure that they are safe and fit for use. (Forms will be provided)  
See Foskor COP 59, Trackless Mobile Machinery for details.

### 15.3 Before entering and working on Foskor site the appointed service providers shall ensure that their workmen are:

- i. Briefed on the required task and have been informed of any abnormal conditions/situations.
- ii. Physically, emotionally, and mentally fit to perform their duty.



- iii. Issued with the necessary PPE (Personal Protective Equipment) to safely operate their service vehicles and perform the duty of maintaining, servicing, inspecting, and testing earthmoving and mobile equipment.
- iv. Before commencement of work:
  - a. All tools and equipment shall have been inspected and tested to be in good and safe working order.
  - b. All workmen have participated in the completion of a standard Foskor site risk assessment (Commonly known as a HIRA or Hazard Identification and Risk Assessment) and taken appropriate actions to mitigate any identified hazards.

**15.3.1** Before entering and working on the Foskor site the appointed service provider shall:

- i. Ensure that their portable electrical equipment have been tested and declared safe for use by the Foskor electrical services workshop.

#### **15.4 PERMIT TO WORK**

Before any on-site work under this contract may commence, the appointed or successful service provider shall obtain a PERMIT TO WORK from Foskor. The following guidelines are provided to assist the appointed service provider in obtaining a PERMIT TO WORK. (See Foskor COP 28 Permit to work and COP 25 Control of Externally Provided Processes, Products and Services (Service provider Control) for details):

- i. The PERMIT TO WORK can be obtained from Safety, and on completion returned to the Legal Administrator, Foskor Safety department.
- ii. Obtain a contract number from the Foskor Procurement or Projects department.
- iii. Appoint a subordinate manager under Regulation 2.6.1 and an on-site supervisor under Regulation 2.9.2 of the Mines Health and Safety Act.

The appointed subordinate manager and supervisor shall be required to write and pass the Foskor 2.6.1 and 2.9.2 legal examinations within 30 days after the contract has been awarded.

Attend an hour-long legal exam briefing any Thursday between 08:00 and 09:00 at the Security training hall.

Write legal examination any Friday between 07:30 and 10:30 at the Security training hall. (Please book)
- iv. Appoint an on-site SHE-Rep under section 29(1) of the MHSA to assist Regulation 2.6.1 and 2.9.2 on the daily on-site management of health, safety and environmental issues.

The designated SHE Rep must have the ability to read, write and express him/herself.

The appointed SHE-Rep shall be required to attend a five-day SHE-Rep training course within 30 days after being awarded this contract (Training free of charge). Make booking on 015 789 2531

A pre-requisite for attending the SHE-Rep training course is successful completion of Basic Health and Safety Principles and HIRA training.

See Foskor's COP 5 Health and Safety Representatives for details.

- v. Provide a name list, including ID numbers, residential and postal addresses, and telephone numbers of all of the appointed service providers' on-site employees.
- vi. All the appointed service providers' on-site employees shall undergo a full medical examination at the Foskor on-site CLINIX Clinic. The clinic can be contacted at 015 789 2427 for an appointment. Please note:  
All NEW- and employees LEAVING the service of the appointed service provider must undergo a full entry or exit medical examination.  
Women who are pregnant or suspect that they may be pregnant must notify the examining medical practitioner.
- vii. The appointed service providers designated on-site drivers shall receive competence testing and authorization to operate vehicles on Foskor site.
- viii. All the appointed service providers' employees shall receive/have received the following training:  
*First Aid Level 1 (Provide own training)*  
*Working at heights (Provide own training)*  
*Basic Health & Safety Principles (Provide own training)*  
*HIRA (Provide own training)*  
*Basic Firefighting. (Provide own- or receive Foskor training, contact 015 789 2531 for bookings)*  
*Lock-out. (Provide own or receive Foskor training, contact 015 789 2531 for bookings)*  
All training not provided by Foskor must be verified by the Foskor training superintendent, Mr Johan Fouche. Please contact him at 015 7789 2525 to make an appointment or email proof of training and certificates to [johanfo@foskor.co.za](mailto:johanfo@foskor.co.za) to confirm compliance before requesting his approval on the PERMIT TO WORK.
- ix. All the appointed service providers' on-site employees shall receive the basic Foskor site induction training at the Foskor Security office.
- x. All the appointed service providers' on-site employees shall receive site-specific induction training provided by the Foskor area Regulation 2.6.1 appointee/s.
- xi. A BRA (Baseline Risk Assessment) shall be completed for ALL "typical" tasks that will be completed under this contract. The BRA to be approved by the responsible Foskor MHSA 2.13.1 appointed and signed by all the service providers' employees. Make use of Foskor's BRA document, Annexure 1.2, contained in COP 1, Risk and Opportunities Management (Available on request)
- xii. Attach a detailed SCOPE OF WORK describing the required task and -outcome of this contract.
- xiii. All Foskor's appointed MHSA Regulation 2.9.2, 2.6.1, 2.13.1 and 3.1. A manager must undersign/approve the PERMIT TO WORK.
- xiv. Registration and proof of payment under the Compensation for Occupational Injuries and Diseases Act, no. 130 of 1993. The registration number must be provided.
- xv. SARS issued a tax clearance certificate.
- xvi. All relevant documentation and/or evidence of compliance must be attached to the PERMIT TO WORK.





- xvii. Upon successful completion and approval of the PERMIT TO WORK the Security department will issue the appointed service providers' employees with access ID cards.
- xviii. Any other documents, certificates or records as requested by a Foskor official deemed necessary to ensure that all safety, legislative and administrative requirements have been met must be attached to the PERMIT TO WORK.
- xix. The appointed service provider must allow at least three to ten working days to complete all the PERMIT TO WORK requirements.

## 16 SAFET FILE

The appointed contractor must compile a SAFETY FILE specifically for this contract. The SAFETY FILE must always be available for inspection by a Foskor official: The following guidelines are provided to assist the appointed contractor in compiling a SAFETY FILE:

Before any work may commence, the appointed service provider must IN CONJUNCTION WITH THE FOSKOR SAFETY DEPARTMENT, compile a SAFETY FILE specifically for THIS contract. (Contact the relevant area responsible Safety Representative as indicated by Foskor at the Kick-off meeting.

The SAFETY FILE must always be available for inspection by a Foskor official.

### 16.1 FOSKOR SAFETY FILE INDEX - TYPICAL

#### **Template SHE FILE INDEX: - TYPICAL**

<u>ISO clause / Description of item</u>	<u>File divider</u>
1. Integrated Management System. Clause 5.1 & 5.2	1
2. Policies Clause 5.2: OH&S Policies	2
3. COP 1: FOSKOR risk management Clause 6.1.2.1 & 6.1.2.2: Hazard identification, risk assessment and determining controls.	3
4. COP 88: Objectives, targets and management programmes Clause 6.2: Objectives and programs	4
5. COP 2: Compliance obligations and appointments COP 5: Health and safety representatives, Clause 5.3: Legal and other requirements Clause 5.3 / 7.1: Resources, roles, responsibility, accountability and authority Clause 6.1.3: compliance obligations/ legal and other requirements	5
6. COP 15: SHERQ Competency and awareness training	

Clause 7.2 / 7.3: Competence, training and awareness	6
7. COP 17: Mobile, technical and process training	
Clause 7.2 / 7.3: Competence, training and awareness	7
8. COP 6: SHERQ Committees	
COP 7: Communication	
Clause 7.4: Communication, participation, and consultation	
9. OCCUPATIONAL HYGIENE	
COP 42: Lighting: natural and artificial.	
COP 43: MCOP Occupational health programme on thermal stress	
COP 44: Sanitation plant hygiene amenities	
COP 45: MCOP occupational health program on personal Exposure to Air borne Pollutants.	
COP 64: Ergonomics	
COP 86: MCOP for Occupation Health Program for noise	
Clause 8.1.2 Eliminating hazards and reducing OH&S risks	9
10. COP 49: Waste management	
COP 58: Hazardous chemical substances and control Hazchem and waste management	
Clause 8.1.2 Eliminating hazards and reducing OH&S risks	10
11. COP 53: Lock out system and usage.	
Clause 8.1.1 General	
Clause 8.1.2 Eliminating hazards and reducing OH&S risks	11
12. COP 55: Stair's walkways handrails and Ladders	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	12
13. COP 56: Lifting machinery and lifting Tackle.	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	13
14. COP 57: Boilers and vessels under pressure work forms	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	14
15. COP 59: MCOP for the operation of TMM's	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	15
16. COP 60: Portable electrical equipment checks and registers	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	16

17. COP 61: Earth leakage Relays and checks	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	17
18. COP 62: General Electric installations and machinery in hazardous locations	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	18
19. COP 63: Hand tools	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	19
20. COP 65: Personal Protective Equipment	
COP 67: MCOP Women in mining PPE	
Clause 8.1 Operational planning and control	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	20
21. COP 69: Maintenance of fire equipment.	
Clause 8.1 Emergency preparedness and response,	
Clause 8.1.2 Eliminating hazards and reducing OH&S	21
22. COP 72: Firefighting emergency drill and instructions	
COP 74 Emergency preparedness and response	
Clause 8.1 Operational planning and control,	
Clause 8.2 Emergency Preparedness and response	22
23. COP 93: MCOP for the safe use of conveyors installation for the transportation of minerals,	
material or personnel	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	23
24. COP 94: Hot work	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	24
25. COP 95: Confined space entry	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	25
26. COP 96: Working on Heights	
Clause 8.1 Operational planning and control	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	26
27. COP 97: Erection and use of scaffolding	
Clause 8.1 Operational planning and control,	

Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	27
28. COP 98: Water safety	
Clause 8.1 Operational planning and control,	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	28
29. COP 101: MCOP: The right to refuse dangerous work and withdraw from dangerous workplace.	
Clause 8.1 Operational planning and control	
Clause 6.1: Actions to address risks and opportunities/Hazard identification, risk assessment and determining controls.	
Clause 8.1.2 Eliminating hazards and reducing OH&S Risk	29
30. COP 102: MCOP: Risk based emergency care on mine	
Clause 8.1 Operational planning and control	
Clause 8.2 Emergency preparedness and response	30
31. COP 103: Use of mobile devices on the mine premises	
Clause 6.1: Actions to address risks and opportunities/Hazard identification, risk assessment and determining controls.	
Clause 8.1 Operational planning and control	
Clause 8.2 Emergency preparedness and response	31
32. COP 22: SHEQ Inspection	
Clause 8.1 Operational planning and control	
Clause 8.2 Emergency preparedness and response	32
33. COP 23: Internal and external audit.	
Clause 9.2 Internal audit	
Clause 9.2.1 general and 9.2.2 internal audit programme.	33

**Notes:**

1. If a COP is not applicable to your section, please complete and attach the "Not Applicable" form in the space of the COP.
  2. Always keep your file neat and clean.
  3. A Foscok Representative may add or remove any other Foscok safety, health, quality and environmental policies and/or procedures deemed applicable.
  4. If a COP is not applicable to this contract/project, please complete and attach the "Not applicable" form in the space of the COP.
- 16.2 TYPICAL CONTENTS OF SAFETY FILE:
- i. Title and index cover page
  - ii. A copy of the PERMIT TO WORK.
  - iii. A copy of the MHSA Regulation 2.6.1 and -2.9.2 and SHE Rep appointment letters.
  - iv. A copy of Foscok COP 25, Service provider control.



- v. Baseline risk assessment of ALL and ANY POTENTIAL tasks that may be performed on site under this contract. See FOSKOR COP 26, Critical Task Descriptions for details.
- vi. Copies of critical task descriptions and standard operating/maintenance procedures.
- vii. Copies of the appointed service providers safety, health, environmental, HIV and AIDS, smoking and waste management policies.
- viii. Training records of all on-site employees.
- ix. Employee records of actual time worked (Normal and overtime).
- x. Copy of on-site induction training.
- xi. Records of inspections of TMM (Trackless Mobile Machinery) and trailers. See FOSKOR COP 59, Trackless Mobile Machinery for details.
- xii. Records of issues and inspections of PPE (Personal Protective Equipment) and safety equipment. See FOSKOR COP 65, Personal Protection Equipment for details.
- xiii. Records of issues and inspections of PEE (Portable Electrical Equipment). See FOSKOR COP 60, Portable electrical Equipment for details.
- xiv. Records of issues and inspections of tools and equipment. See FOSKOR COP 63, hand tools for details.
- xv. Records of daily, weekly and monthly 2.6.1 / SHE Rep safety inspections. See FOSKOR COP 22, SHE Inspections for details.
- xvi. Records of daily green area and safety talks. See FOSKOR COP 7, Communication for details.
- xvii. Any other documents, certificates or records as requested by a FOSKOR official deemed necessary to ensure that all safety, legislative and administrative requirements have been met.

**Note:**

**The bidder / Service provider can obtain updated FOSKOR COP's and Engineering Specification on request.**

**16.3 REMINDER OF RISK IDENTIFICATION – LIFE SAVING RULES**

- Risk Assessments and clearance certificates
- Lifting operations
- Working at heights
- Confined space entry
- Positive energy Isolation and lockout
- Moving Machinery
- Personal Protective Equipment

Risk assessment is applicable to all jobs and training applies to all that will do physical work!

## **17 PARAMETERS**

### **17.1 DESIGN PARAMETERS**



All plants and equipment will be designed to:

- Operate satisfactorily under atmospheric, ambient, and other conditions present at the site location.
- Ensure interchangeability of units and/or sub-parts throughout the plant to reduce spare holding requirements – take old plant equipment into account.
- Ensure reliability and maintainability. Minimum availability of 98% is required.
- Operate without undue vibration, stresses (temperature and built-in) and excessive noise.
- Comply with legal requirements in terms of the water license and DWA.

#### 17.2 SPECIFICATIONS, CODES, STANDARDS AND REGULATIONS

The latest edition of the South African National Standards in effect at the date of projects design shall establish the minimum requirements for design, materials, and construction. This should be referenced with the FOSKOR General Engineering specifications and requirements of the FOSKOR SHERQ system (COP's). No work shall be contemplated which is in breach of any legislation in South Africa – Typically but not limited to:

- Occupational Health and Safety Act (Act 85 of 1993)
- Mine Health and Safety Acts and regulations (Act 29 of 1996)
- Explosive Acts and Regulations - South Africa
- FOSKOR COP's and applicable General SHEQ Requirements
- FOSKOR Engineering Specifications
- Chamber of Mines / Mine Council SHEQ Requirements (Milestones)
- The latest revisions of the SANS standardized specifications and FOSKOR Specifications as applicable at the time of quotation shall apply to this contract.

**Note!** The equipment to be capable of continuous operation 24 hrs/day, 365 days/year with operating availability equal to 100%.

#### Environmental

The successful or appointed service provider shall comply with the following Environmental Specifications, Policies and Procedures:

- COP 41 Housekeeping and workplace organisation
- COP 49 Waste Management
- COP 51 Resource conservation, energy, and materials
- COP 70 Storage of petroleum products and other hazardous material
- National Environmental Management Act 107 of 1998 (NEMA) and its Regulations
- National Environmental Management Waste Act 59 of 2008 (NEMWA) as amended.



The successful service provider shall include in his/her SAFETY FILE, and comply with, the following documents:

- Environmental Aspect and Impact Register (Applicable to this contract).
- Environmental Objectives and Targets (Applicable to this contract).
- Waste Management Plan (Applicable to this contract).

FOSKOR Atmospheric Emissions License (Copy available on request – to be discussed with Mine Official responsible for the Services required)

FOSKOR Waste Management Licence (Copy available on request – to be discussed with Mine Official responsible for the Services required)

FOSKOR Water Use Licence (Copy available on request – to be discussed with Mine Official responsible for the Services required)

### 17.3 SITE GEOGRAPHY

The plant is located at Phalaborwa, Limpopo, South Africa

### 17.4 AMBIENT CONDITIONS

- Ambient temperature























Summer	35 °C Avg.	50 °C Max
Winter	17 °C Avg.	2 °C Min

Site Altitude: 380 m

- Prevailing wind direction: Generally South Easterly - Maximum design velocity 40 m/s (144 km/h)
- Very dusty conditions
- Average annual rainfall = 540 mm

Note - Allowance to be made for weather in any calendar impacts in any schedule or project plan submissions

17.5 FOSKOR GENERAL ENGINEERING SPECIFICATIONS (SHOULD BE CONSULTED BEFORE FINALIZATION OF ANY DESIGN OR SPECIFICATION)

 Name	Modified	Modified By
 Engineering Specification Index	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS001 - General Design Information - Rev 1	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS002 - Engineering Drawings - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS003 - Quality Control Procedures - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS005 - Concrete and Formwork - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS007 - Plate work - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS008 - Welding procedures - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS009 - Structural fabrication and erection - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS011- Piping - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS012 - Pressure vessels - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS013M - Painting and Protective Coatings	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS014 - Rubberlining - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS015 - Fencing - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS016 - Roofing and side cladding - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS017 - Fuel - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS018 - Lubrication - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS019 - Liquid containemt bund walls - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS020 - General purpose valves - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS021 - Gearboxes - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GS022 - Chainblocks and lever hoists - Rev 0	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu
 GSI-004 - Field Instrumentation Standards	... 15 April, 2016	<input type="checkbox"/> Khayelihle Pepu



## 17.6 SPECIFICATION

ELECTRICAL SPECIFICATIONS		
NUMBER	REVISION	TITLE
EE-1	Latest Revision	Motor Control Centre & Switchgear
EE-2	Latest Revision	Squirrel Cage Induction & Wound Rotor Motors
EE-11	Latest Revision	Power Factor Correction Equipment
GE-1	Latest Revision	Design Criteria for Electrical Installations
GA-1	Latest Revision	Procedures for Enquiries & Tenders
GD-1	Latest Revision	General Requirements for Design, Project Management & Tenders
GD-2	Latest Revision	Engineering Change Order (E.C.O) Procedure
GM-1	Latest Revision	Mechanical Equipment
GM-5	Latest Revision	Pipe Standards
GM-6	Latest Revision	Engineering Drawing & Document Requirements
GM-8	Latest Revision	Surface Protection
GM-3	Latest Revision	Painting & Surface Protection of Steel
GS-1	Latest Revision	Structural Steel work & Plate work Fabrication & Erection
GQ-1	Latest Revision	Quality Control
GI-1	Latest Revision	General specifications & Procedures
GI-2	Latest Revision	Installation & Commissioning
GI-3	Latest Revision	General Equipment Specification
GI-4	Latest Revision	Field Instrumentation Specification

## 17.7 PROJECT SPECIFIC SPECIFICATION FROM DESIGNER

N/A

## 18 PROJECT MANAGEMENT – CONTRACTOR

- Nominate a single window of communication to Foskor – Typically the appointed contractor 2.6.1
- Attend meetings as agreed during the project kick-off meeting.
- Submit Progress reports (Format & interval) as defined in the Kick-off Meeting (Invoicing, Labour, Performance against the plan, Contractor purchases, Quality Management, Safety, Etc.
- Manage and participate in the “Daily Journal” as part of executing the project.

- e) All meetings will be held at FOSKOR offices unless otherwise stated.
- f) The contractor to provide updated project management plans on progress as defined by the FOSKOR Project Engineer.
- g) **Project progress updates** - If the contractor cannot produce proper updates on a WBS then the contractor will be required to subcontract this function to produce the WBS updates for the duration of the project. This cost must be included in the contractor's price.

The Service provider is responsible for managing the project and this is graphically displayed below indicating where what functions lie. Graphical presentation only covers some basic aspects.

## 19 PLANNING AND SCHEDULING

- The Project Section has a planning standard that needs to be adhered to during the execution as per the relevant order placed.
- The FOSKOR scheduler can be contacted to provide schedule details input and guidelines if needed.
- Schedule must be compiled within one week after kick-off meeting conducted by the FOSKOR Project Leader
- The Contractor schedule needs to be signed off by contractor 2.6.1 before approval by FOSKOR.
- The FOSKOR scheduler will issue the Templates to be used - This template must be adhered to, and no changes should be made.
- Progress Update is needed every once a week a day before the weekly progress meeting or as requested.
- The progress Updates to be submitted to FOSKOR Scheduler/Planner via email.
- It is the contractor's responsibility to appoint the competent person to manage the contractors schedule which that person will directly communicate with FOSKOR Scheduler - If the contractor's responsibility to add the cost of a competent person on the project. Commercial action to be taken if the performance in planning is lacking.
- FOSKOR requires all contractors to use MS Project software which it will be fully implemented latest 01 February 2022.

### 19.1 Typical aspects to be adhered to:

- It is the subcontractor's responsibility to produce a detailed schedule which tie up to the FOSKOR standards of requirements.
- The Schedule must not have open ended activity task.
- The schedule must be fully resourced.
- The schedule must not have constraints.
- The calendar must be created and assigned in the schedule. Confirm the templates with the FOSKOR Scheduler
- It is FOSKOR responsibility to review the schedule before it's been approved.
- A schedule must be approved by Project Scheduler/Project Manager and Project Engineer.
- The approved baseline schedule must be updated by the contractor to show Planned vs Actual.

- The contractor must show S-Curve which will be constructed from the schedule.
- Project updates must be submitted to the Project Planner/Scheduler for review.

## 20 LIAISON AND CO-OPERATION WITH OTHERS

- The CONTRACTOR/ SERVICE PROVIDER shall be required to co-operate and liaise with Foskor appointed Project Manager.
- The CONTRACTOR/ SERVICE PROVIDER must note that construction is within an operational plant.
- The CONTRACTOR/ SERVICE PROVIDER may appoint a Foskor approved sub-contractor
- The CONTRACTOR/ SERVICE PROVIDER shall be required to work in conjunction with the Foskor appointed structural-, electrical-, equipment- and instrumentation installation contractor – if applicable.

## 21 GENERAL CONDITIONS – COMMERCIAL

### A. EXTENSIONS, PENALTIES AND RETENTIONS

- Extension on the promised completion or milestone date may be requested but needs to be approved by Foskor. The contractor should be in possession of a formal document issued via Foskor Procurement indicating that this request was approved.
- Any additional work not defined in the order needs to be approved by Foskor in writing before any work commences.

Description	Condition	Duration
Penalties	0.5% per week	Late Delivery after promised completion date
Performance Bond	0% of Contract Value	0 Year after completion
Retention	10 % of Contract value	Release after 3 months
Type of Contract	FIDIC	
Tender price validity	6 months	
Escalation	None	None

All delays must be immediately brought under the attention of the section engineer and the party responsible agreed upon immediately.

## B. AFTER SALES SERVICE OR REQUIREMENTS

After sales service requirements are listed below:

1. Full description of guarantee and guarantee period to be attached to the official tender.
2. Full description of planned support during AND after the guarantee period to be attached to the official tender.

## C. INVOICES DUE DATES

The due dates for claim certificate are the 5<sup>th</sup> of every month. Invoices are due at the latest, 15<sup>th</sup> of every month.

A Foskor QS will be responsible for claim certificate verification and claim certificates needs to be submitted at the latest on the 7<sup>th</sup> of each month to the QS

## 22 TENDER EVALUATION CRITERIA

- As part of the process to assist with the evaluation of the bidder's proposal/quotation and to make an informed decision in the awarding of this tender, the following information is required.
- The following tender evaluation criteria will be used for adjudicating the Contractor submitted tender.
- Only submitted documents will be used for adjudication purposes.
- Please provide the required documentation as requested in the "Proof/documents to be submitted" column. Please be specific when submitting documents by ensuring that they answer the specified item.
- Please use the annexure number as indicated to identify the proof submitted.
- Failure to submit the relevant documentation as requested in the Evaluation criteria document may lead to a disregard of the submitted tender.
- A Site or verification audit on submitted documents may be conducted based on Foskor's requirement and the tender may be disregarded base on the audit.

### A. MANDATORY REQUIREMENTS

**Bid submission not meeting the mandatory requirement will result in the bid being disqualified.**

No	Pre-Qualification Requirements	Comments
1	Mechanical and civil works of CIDB 7CE or 7ME or higher	Provide certificate of CIDB grading

## 23 EVALUATION CRITERIA (TECHNICAL)

Evaluation Criteria (Technical)				
T- Fire Pump and tank system at Washday area				
No	Technical Criteria Description	% Contribution	Proof / documents to be submitted	Notes
1	<b>Experience &amp; Team competence -</b>			
a)	<p>Company - Previous Design of Fire Pump &amp; tank and pump system.</p> <p><b>Scoring:</b></p> <ul style="list-style-type: none"> <li>• No Experience = 0%</li> <li>• Company experiences 0 to 1 year = 2.5%</li> <li>• Company experience &gt;1 to &lt;3 years = 5%</li> <li>• Company experience &gt;3 years = 10%</li> </ul>	10%	<p>Please provide a order list with values for the respective <u>bidding company</u></p> <p>The list to contain the following.</p> <p>Order no, Order description, Brief explanation of what the work entailed, Order value, Reference name and Tel no</p> <p>Please attach at least 3 orders with the list</p>	<b><u>Mark as Annexure TA</u></b>
b)	<p>Engineering Certification - Design of Fire Pump Tank and pump system</p> <p><b>Scoring:</b></p> <ul style="list-style-type: none"> <li>• No ECSA registration and Certification to sign of Fire System designs and no CV = 0%</li> <li>• ECSA registration and Certification to sign of Fire System designs Provided – No CV = 5%</li> <li>• ECSA registration and Certification to sign of Fire System designs Provided including CV = 10%</li> </ul>	10%	<p>Provide Engineers registration as ECSA certificate.</p> <p>Provide Professional Engineers Certification to sign of Fire design installations</p> <p>Provide Short CV of Design Engineers</p> <p>Competency verification report by independent agency for all Skilled resources.</p>	<b><u>Mark as Annexure TB</u></b>

Evaluation Criteria (Technical)				
T- Fire Pump and tank system at Washday area				
No	Technical Criteria Description	% Contribution	Proof / documents to be submitted	Notes
c)	<p>Company Accreditation - Registered with regulatory bodies eg. FPASA – NFPA20 or SABS – SANS1475</p> <p><b>Scoring:</b></p> <ul style="list-style-type: none"> <li>• No company accreditation with regulatory bodies = 0%</li> <li>• Partial compliance =2.5%</li> <li>• Company is registered with relevant regulatory body= 10%</li> </ul>	10%	Provide Registration with relevant regulatory bodies - provide proof of active membership	<b><u>Mark as Annexure TC</u></b>
d)	<p>Company personnel Certification of Fire technicians for installations and maintenance</p> <p><b>Scoring:</b></p> <ul style="list-style-type: none"> <li>• No Certification or not adequate for technicians to install and maintain of fire installations = 0%</li> <li>• Certification for technicians to install and maintain of fire installations Certification in place= 10%</li> </ul>	10%	Fabrication, Installation - Provide a name list of all certified fire technicians for this project. Provide a Copy of all certificates with numbers for persons on the name list that will be used on this project.	<b><u>Mark as Annexure TD</u></b>
e)	<p>Contractor to provide Acceptance testing certificates Acceptance testing - Provide Documentation copies regarding -</p> <p>Acceptance Testing: Contractors must conduct comprehensive acceptance testing in accordance with NFPA 20, including flow and pressure tests. Documentation:</p> <p><b>Scoring:</b></p> <ul style="list-style-type: none"> <li>• No Certification = 0%</li> <li>• Certification of 1 system in the last 3 years = 10%</li> <li>• Certification of 2 or more systems for the last 3 years = 20%</li> </ul>	20%	<b>Bidding Company</b> - Provide at least 2 copies of certified fire system installations in the last 3 years in South Africa	<b><u>Mark as Annexure TE</u></b>

Evaluation Criteria (Technical)				
T- Fire Pump and tank system at Washday area				
No	Technical Criteria Description	% Contribution	Proof / documents to be submitted	Notes
f)	<p>Provide Company organogram indicating management, (Civil and Mechanical) fabrication and installation team compilation.</p> <ul style="list-style-type: none"> <li><b>Scoring:</b> Organogram not submitted = 0%</li> <li>Partial organogram (Management = 1%, Civils = 1%, Mechanical = 1%, Legal appointees = 2%) for a total of 5% = 5%</li> <li>Organogram submitted and accepted with all supporting structures and indicating legal appointees = 10%</li> </ul>	10%	<p>Bidding company - Submit an organogram indicating management, supervisors and teams foreseen during design and construction. Complete organogram of all teams and who will be the legal appointee's as per the MHSA. Include subcontractors.</p> <p>Indicate who will be the relevant 2.61 and 2.9.2 appointees</p>	<b><u>Mark as Annexure TF</u></b>
g)	<p><u>List of equipment to be used</u></p> <p>Company to submit a list of equipment and assets as the required to execute the supply, fabrication and construction of a garage, shelter for the fire truck</p> <p><b>Scoring:</b></p> <ul style="list-style-type: none"> <li>Company does not have required assets related to relevant work = 0%</li> <li>Company does not own all equipment or Partial assets or not sufficient or not relevant to scope = 5%</li> <li>Company has required assets relevant to this scope=10%</li> </ul>	10%	<p>Bidding company - List assets – Provide an asset list on a letter head signed off by the relevant authorized company person. Alternatively provide confirmation of where the assets will be hired incl. letter and contact details of such lessor of the equipment.</p> <p>The focus is construction assets for this project.</p> <ul style="list-style-type: none"> <li>Welding and gas cutting equipment.</li> <li>Fabrication equipment</li> <li>Workshops</li> <li>Cranes</li> <li>LDV's and other transport</li> <li>Lifting and rigging tools</li> <li>Civil construction equipment</li> </ul>	<b><u>Mark as Annexure TG</u></b>

Evaluation Criteria (Technical)				
T- Fire Pump and tank system at Washday area				
No	Technical Criteria Description	% Contribution	Proof / documents to be submitted	Notes
h)	Provide extracts of Quality Control Plans (QCP's) - <u>Scoring:</u> <ul style="list-style-type: none"> <li>No quality control plans or inspections submitted or not accepted = 0%</li> <li>Unsigned acceptable quality plans = 2.5%</li> <li>Partial Quality Control plans or inspections signed = 5%</li> <li>Quality Control plans and inspections provided and accepted signed =10%</li> </ul>	10%	Bidding Company <ul style="list-style-type: none"> <li>Quality Control Plans - Give extract of Signed off Quality Control Plans (QCP's) with relevant inspector and client signatures of similar projects. Provide at least 2 QCP's with client signatures</li> <li>Quality inspections done - with relevant inspector and client signatures of similar projects. Provide at least 2 Inspections with client signatures</li> </ul>	<u>Mark as Annexure TH</u>
i)	Detailed project plan for the work indicating enough detail to establish the approach and relevant tasks/activities. <u>Scoring:</u> <ul style="list-style-type: none"> <li>Project plan reviewed and not accepted - Not relevant or not submitted=0%</li> <li>Provided but does not clarify all issues or tasks for this project. Non relevant portions for this project= 5%</li> <li>Provided and accepted for this project= 10%</li> </ul>	10%	Provide detailed project plan (Gantt Chart) for the Design and construction of a Fire pump and tank system until hand over	<u>Mark as Annexure TI</u>
	<b>Total Technical Score</b>	<b>100.00 %</b>		
<b>Note:</b> In order for the bid to be considered the bidder needs to score 70% and above, and comply to all mandatory requirements - This is still dependant on an audit or verification of submitted document that can lead to a bid not being accepted				



## 24 PRICING SCHEDULE

### **Description: Fire System – Pump and tank at Washday Area**

Specifications shall be deemed to form part of and included in the pricing instructions.

#### A. PRICING SCHEDULE / SCHEDULE OF QUANTITIES OR BOQ

1. The units of measurement described in the Bill of Quantities are metric units. Abbreviations used in the Bill of Quantities are as follows:

%	=	percent	m <sup>2</sup> .pass	=	square meter-pass
h	=	hour	m <sup>3</sup>	=	cubic meter
ha	=	hectare	m <sup>3</sup> .km	=	cubic metre-kilometre
kg	=	kilogram	MN	=	meganewton
kl	=	kiloliter	MN.m	=	meganewton-meter
km	=	kilometer	MPa	=	megapascal
km-pass	=	kilometer-pass	No.	=	number
kPa	=	kilopascal	Prov sum	=	Provisional sum
kW	=	kilowatt	P C sum	=	Prime Cost sum
l	=	liter	sum	=	lump sum
m	=	meter	t	=	ton (1 000 kg)
mm	=	millimeter	W/day	=	Workday
m <sup>2</sup>	=	Square meter			

2. No allowance is made for waste.
3. FOSKOR pays for material on site unless special approval has been obtained prior.



**Note** - All Labor, Transport, Supervision, Admin, Quality, Mobile Cranes, tools, equipment, lifting and rigging and every item are part of this Scope requirement

#### **PRICING SCHEDULE**

**Description: Fire System – Pump and tank at Washday Area**

Annexure A					
No.	Item Description	Unit	Quantity	Rate	Total Amount R
1	<b>PRELIMINARY AND GENERAL</b>				
1.1	Time-Related P & G's – Includes all Design, construction, construction management and supervision, administration, legal, insurance management, travelling, accommodation, transport, licenses, safety, and project management, etc.	SUM	1		
1.2	Site Establishment - Work permit, infrastructure set up, etc.	Sum	1		
1.3	Site De-Establishment	Sum	1		
1.4	Other (specify)	Sum	1		
	<b>TOTAL</b>				<b>R</b>
	<b>NOTE:</b> All invoices will be paid if material/equipment is delivered On-site.				
	<b>GENERAL NOTES</b>				
	(a) All rates should include labor rates, delivery to site, offloading, handling, and site storage, etc.				
	(b) Rates shall include for all fabrication work, welding, marking, drilling, for bolts, steel plates, bolts, nuts and any type of washer, riveted work, counter sinking and tapping for bolts or machine screws.				
	(c) Rates shall include for all painting and finished as per Foskor standard.				
	(d) Rates shall include assembly, erection, touch-up paint, temporary supporting and fixing into position.				

2	<b>Design Phase 1 - Detail Engineering – All Disciplines</b>  <b>Design - Phase 1 Wash Bay up to conv 331 tank connection. Design concept and layout to be signed off by Foskor before detail engineering can commence. Allow for suitable engagement</b>				
2.1	Civil and earthworks design	Task	Sum		
2.2	Electrical and Control system Design – including earthing (Foskor to supply electrical up to Electrical Distribution Box supplied by this project, Flood lights, Electrical Distribution to all requirements for this project, etc	Task	Sum		
2.3	Tank Design and Pump Station Design - All disciplines	Task	Sum		
2.4	Detail Engineering drawings - All disciplines	Task	Sum		
2.5	Mainline Civil, earthworks, Piping, etc.	Task	Sum		
2.6	Moving of Water fill point - Design	Task	Sum		
2.7	Complete Design report Signed off by relevant PR Eng - All disciplines	Task	Sum		
2.8	BOQ for construction - All Disciplines	Task	Sum		
2.9	Drawings All Disciplines. All Drawing issued to Foskor in CAD format	Task	Sum		
	<b>TOTAL</b>				<b>R</b>
4	<b>CONSTRUCTION – Supply fabricates, paint, install, commission, Etc – Phase 1 (Pump station up to conv 331)</b>				
4.1	Moving of Water fill point - Slab and Pipe including excavations, compaction's Construction, etc as per relevant Sans and Foskor standards – As per Signed off Design	Task	Sum		
4.2	Earthworks - Fill area next to main gravel road as per SANS Specifications, as per Signed off Design. Filling should be obtainable within a 12km radius	Task	Sum		
4.3	Civil Construction All relevant aspects– As Per Design and all relevant SANS Specifications	Task	Sum		

	Supply, excavate, compaction, erection, construction, etc as per SANS Specifications. Including pipe route				
4.4	Fencing of Area with 2 access gates – Fencing as per Design and as per Foskor's Fencing Specification – Fencing to be at least 1.8m high	Task	Sum		
4.5	Pump Station Supply - Fabricate paint and install as per relevant signed off design and NFPA and SANS, Foskor specifications	Task	Sum		
4.6	Fire Water tanks – Supply, fabricate, Paint, install, commission as per SANS, NFPA, Foskor specifications and signed off design	Task	Sum		
4.7	Fire Water tank supply pipelines - Potable water - Supply, fabricate, Excavate, erect, install, Paint as per NFPA, Sans and Foskor specifications. Including pipe supports, etc. – as per signed off design	Task	Sum		
4.8	Supply, Fabricate, erect and commission Main line and Spur line minimum 250nb to Conv 331 – Earthworks, civil, piping, etc. – as per signed off design	Task	Sum		
4.9	Electrical, instrumentation, Control Systems, Communication, alarms, etc. – Supply, install, commission including all cabling, cable racks as per Sans, NFPA and Foskor specifications  All relevant communication established to EMS dispatch room  –as per signed off design	Task	Sum		
	<b>TOTAL</b>				<b>R</b>
5	<b>Commissioning and Hand over - Phase 1 including Quality Documentation and Design sign off (The Designer must be part of this process)</b>				
5.1	As Built Drawings- Cad	Task	Sum		
5.2	Design and Installation Report	Task	Sum		
5.3	Documentation – All Compliance documentation, Certificates, COC, Manuals. etc. handed over to Foskor EMS. Hardcopy and electronic format	Task	Sum		
	<b>TOTAL</b>				<b>R</b>

6	OTHER – Please Specify				R
7	Engineering labor rates – RATES ONLY Design rates applicable for works outside the original scope – If engineering issues arose that was not in the scope boundaries. To be approved in writing by Foskor Engineer before execution. This rate is indicative and not part of the Bid Submission				
7.1	Senior Engineer	R/h			
7.2	Engineer	R/h			
7.3	Junior Engineer	R/h			
7.4	Design Draughtsman	R/h			
7.5	Draughtsman	R/h			
7.6	Other -please specify				
8	<b>GRAND TOTAL</b>				R

All price alterations must be signed for by the bidder confirming that such changes were made by the Bidder. **PLEASE NOTE THAT PRICE CHANGES WITHOUT SIGNATURE WILL LEAD TO THE DISQUALIFICATION OF THE BID SUBMITTED.**

**NOTE:** The onus lies with the tenderer to make sure that all formulas and calculations are correct. Calculation errors discovered during the evaluation process will be logged as non-conformance and the tender/quotation will therefore be disregarded.