

**EXHIBIT I  
SCOPE OF WORK**

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### **1. BACKGROUND:**

Bashayer Marine Terminal (BMT) is a crude oil exporting facility located 30 Km south to Port Sudan town. The terminal comprises of an offshore CLAM Buoy to moor the oil tankers, which is connected to the tank farm on the sea shore. The terminal is facilitated with eight floating storage tanks equipped, the terminal has firefighting water system with GRP 12 inches pipe ring which supplies water to all around the terminal for fire hydrant, monitors, water cooling sprinklers and foam system.

### **2. SCOPE OF WORK**

Bidder shall be responsible for the Inspection and assessment of MT firefighting system as follows:

1. Inspection of MT firefighting system such as but not limited to:
  - GRP firefighting ring line and isolation valves
  - Firefighting monitors and hydrants
  - Firefighting pumps, manifolds, pressure control valves (PCV), and flow control valve (FCV).
  - Foam system pumps and trunk lines.
  - Water cooling sprinklers lines, isolation valves, and raisers and sprinklers headers.
  - Make up seven wells water lines, and their associated chemical injection skid.
  - Inspection for all firefighting system pressure/level gauges and transmitters.
2. Generation of comprehensive inspection report.
3. Evaluation and Assessment based on inspection findings
4. Recommendation for repair, alteration, or replacement in all MT firefighting system.
5. Bill of quantity (BOQ) of required material, costing and vendors list.

### **3. DETAILED SCOPE OF WORK**

#### **3.1 Inspection:**

##### **3.1.1 GRP firefighting ring and isolation valves**

- Bidder to perform full inspection for marine terminal GRP firefighting water ring such as conditions, leaks, or defected / weak areas. The ring NPS 12 inches.
- Bidder to perform comprehensive inspection for the ring isolation gate valves (24 gate valves).
- Bidder to perform inspection for firefighting monitors and hydrants and their associated accessories.

##### **3.1.2 Firefighting pumps, manifolds and PCV/FCV valves**

- Bidder to perform inspection for firefighting pump skid which consist of two jockey pumps , two electrical pumps, and one diesel pump. Refer to attached drawing.
- Bidder to perform inspection of pump manifold piping and insolation valves from water tank flanges to pumps suction/discharge flanges to water ring inlet.
- Bidder to perform inspection for PCV and FCV valves.

- Bidder to perform inspection for pressure gauges, transmitters, and water tank level gauges.
- Bidder to perform inspection and assessment for fire pumps prime mover both electrical and diesel engine.

#### 3.1.3 Foam system

- Bidder to perform inspection for foam system foam pump, foam tank, foam trunk line, isolation valves, drain valves and foam pourers.
- Bidder to perform inspection for pressure/level gauges and transmitters.

#### 3.1.4 Water cooling sprinklers

- Bidder to perform inspection for firefighting water sprinklers system such as but not limited to water supply line, isolation valves, drain valves, raisers and spray headers.

#### 3.1.5 Make up seven wells water lines, and their associated chemical injection skid

- Bidder to perform inspection for wells cluster outlets line and their main header line down to water tanks inlets.
- Bidder to perform inspection for chemical injection skid of brackish water header.

### 3.2 Comprehensive inspection reports:-

Bidder to generate comprehensive inspection report, the report shall include all inspection findings such as metal loss, corrosion areas and type, observed damage, GRP inspection findings, pumps and their prime movers and paint /coating conditions.

### 3.3 Evaluation and Assessment:-

- Bidder to perform evaluation and assessment study based on inspection comprehensive report to determine remaining life time, and correction action required such as replacement, alteration or repair for each items on firefighting system.
- Bidder to perform evaluation and assessment for hydraulic requirements for firefighting ring and foam system.
- Bidder to perform evaluation and assessment for all system pumps and their performance.
- Bidder to recommend the suitable isolation valve type for GRP ring isolation and sectionalizing.

### 3.4 Recommendation:-

- Bidder to recommend and advice regarding firefighting system performance and integrity.
- Bidder to recommend and advice regarding pumps performance.
- Bidder to recommend and advice regarding any required modification to system such as foam system, sprinklers system, water ring material. And isolation valves type to match the least technology
- Bidder to recommend regarding GRP ring either to use existing ring or to build new system.
- Bidder to submit new proposal for foam system modification form centralized foam tank to split individual foam vessel for each storage tank.

### **3.5 Quantifying of required correction action:-**

Bidder to provide list of all required material for correction action, which includes descriptions, quantity, vendors & manufacturers, estimated cost.

## **4. CODES AND STANDARDS**

4.1 The following codes and standards shall meet or exceed the requirements of the latest edition of the following codes, regulations and standards, except as superseded herein. In cases where more than one code, regulation or standard apply to the same condition, the most stringent shall be followed. In the event of a conflict between this specification and other specifications or correspondence, the PETCO/OWNER shall be consulted and a ruling, in writing, shall be obtained before any work is started.

4.2 National fire protection association NFPA

- NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- NFPA 18A Standard on Water Additives for Fire Control and Vapor Mitigation
- NFPA 14 Standard for the Installation of Standpipe and Hose Systems
- NFPA 15 Standard for Water Spray Fixed Systems for Fire Protection
- NFPA 16 Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
- NFPA 13 Standard for the Installation of Sprinkler Systems
- NFPA 11 Standard for Low-, Medium-, and High-Expansion Foam

4.3 Any deviation from this specification must be approved, in writing, by PETCO / OWNER. Such written approval must be obtained prior to the commencement of any work which would constitute such a deviation.

4.4 PETCO HSE policy.

4.5 GNPOC specifications

4.6 PETCO General Specifications

## **5. INSPECTION ACCEPTANCE:**

- Inspection and testing shall be in accordance with the requirements of this SOW, and NFPA 11 Code.
- The acceptance of the results of any inspection or test by OWNER's representative does not relieve the Bidder of the responsibility for meeting the requirements of this Specification and correspondent Material Requisition.

## **6. BIDDER OBLIGATIONS:**

- Bidder shall specify the required set points for all instrumentation and controls.
- Bidder shall prepare the site for work.
- Bidder shall provide pressure test equipment including but not limit to pumps, pressure gauges, fittings, and connection hoses.
- Bidder shall provide all the required material and perform work according to scope of work and PETCO specification.
- Bidder shall provide all the working tools, ladders, Scaffolding, Gas detectors for the entire job requirement.
- Bidder shall repair all the damage of items during the work up to PETCO's satisfaction.
- Bidder shall maintain good housekeeping practice on daily bases, throughout the job execution period and reinstate to normal condition after completion of the job.
- Assignment of personnel, materials, equipment and support as required performing the WORK.
- The proposed Project Organization Chart and Personnel, Material, purchase procedures & equipment for the job shall be approved by PETCO.
- Warranting that the personnel, material, equipment, consumables and logistical requirements to ensure effective and safe performance of the WORK have been performed. BIDDER shall not change the assigned Personnel to the Project without prior approval from PETCO.
- Preparation of PROJECT EXECUTION SCHEDULE. This schedule shall be based on detailed breakdown of the BIDDER Scope of WORK as stipulated in this ITB.
- Progress reporting shall be on Daily/Weekly/Monthly basis based on actual versus planned. Rectification plan should be provided in case of any major delay is anticipated at the contract own cost to catch up the original schedule plan.
- Bidder shall provide accommodation, transportation, office and office facilities, insurance, personal protection equipment (hard hats, safety boots, hand gloves, eye goggles, etc.), and other expendable/consumable supplies for Bidder's personnel.

## **7. PETCO OBLIGATION:**

- Hands over site to the bidder.
- Approves the quality control and inspection procedures.
- Acceptance of inspection works.
- Settles the Site problems to smooth the project execution.
- Provide water for system firefighting ring pressure test.

**- END OF EXHIBIT II -**