

OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT, ISLAMABAD
FOREIGN SECTION E

(To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A

Material CEMENT PUMPING UNITS
Tender Enquiry No PROC-FE/CB/DS-4953/2021
Due Date
Evaluation Criteria FULL

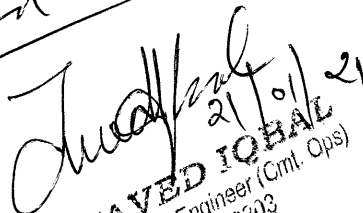
SCHEDULE OF REQUIREMENT


Sr No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
1	TRUCK MOUNTED TWIN PUMP CEMENT PUMPING UNIT, R.H. DRIVE WITH DIGITAL DATA ACQUISITION SYSTEM, RECIRCULATING SYSTEM AND SURGE TANK. DETAILED SPECIFICATION ARE ATTACHED AT ANNEXURE-B FROM PAGE 01 TO PAGE 13.	Number	2					

Note:

NOTE:

- 1. Bid Validity:** Bid must be **valid for 150 days** from the date of Technical Bid Opening
- 2. Bid Bond Amount:** USD 56,000/= (United States Dollar Fifty Six Thousand only) or equivalent Pak Rupees **valid for 180 days** from the date of Technical Bid Opening
- 3. Evaluation Criteria:** - Full Consignment Wise CFR Karachi. Unpriced list of recommended spares along with quantity to be mentioned in Technical Bid and Priced list to be submitted with Financial Bid only.
- 4. Delivery Period:** 50 weeks from establishment of LC
- 5. Bidders** are advised to carefully read all the terms and conditions of the Tender Document "Master Set of Foreign Tender Document (Press-Single Stage Two Envelop) – Updated" available on OGDCL website which is an integral part of this Schedule of Requirement

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ANNEXURE-B

Oil & Gas Development Company Ltd. Islamabad- Pakistan
Title: Specifications for Truck Mounted Twin Pump Cementing Unit with Digital Data Acquisition System and Dry cement surge tank

**TRUCK MOUNTED TWIN PUMP CEMENTING UNIT
WITH DIGITAL DATA ACQUISITION SYSTEM****1. DESCRIPTION**

The truck mounted twin pump cementer R.H. Drive capable of pumping cement slurry, mud, crude oil and other high pressure jobs for cementing Oil and Gas wells. Its main functions are as under:-

- i. To mix, pump and squeeze cement slurry into wells.
- ii. To displace cement slurry.
- iii. To perform other high pressure jobs such as testing of different oil field equipments.


All components and systems should be assembled in a manner to provide easy access for maintenance. The complete unit should be suitable for cement pumping operations at Oil & Gas fields in Pakistan.


The unit should be capable pumping of sand laden fluids, cement slurries inhabited acid down hole in ambient temperature ranges from -6 degree C to + 55 Degree C.

2. EQUIPMENT SPECIFICATIONS


The unit is required to consist of following systems:

- 2.1 Truck chassis.
- 2.2 Power system.
- 2.3 High pressure pumping system.
- 2.4 Low pressure fluid handling system.
- 2.5 Re-circulating Cement Mixing System.
- 2.6 Dry cement De-Aeration Surge Tank.
- 2.7 Control and Monitoring System.
- 2.8 Digital Data Acquisition System.
- 2.9 Unitization and Completion.
- 2.10 Codes and Standards


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2.1 TRUCK CHASSIS

Flat face Right Hand Drive cab-over 8 x 6 heavy duty truck chassis suitable for Oil & Gas fields used in tropical climate of Pakistan. Length of the truck should not exceed 46 feet.

The following items should be included with Truck Chassis also:-


(i) CAB

Cab-over type Right Hand Drive cab along with sleeper having

- Heavy duty rear cab supports and steel front cab supports
- Heater w/integral defroster
- Air Conditioner
- Air suspension cushioned driver seat + fixed passenger seat
- Stationary passenger seat w/steel toolbox
- Air horn
- AM/FM radio
- Windshield wipers
- Electric windshield washer
- Rear and RH/LH two view side mirrors
- Inside Cab dome light
- Combination front/rear stop/tail/turn/backup lights RH/LH

Complete metric instrumentation/readouts/controls including:

- Air pressure
- Engine temperature
- Tachometer
- Engine hour meter
- Fuel
- Low oil pressure warning light/buzzer
- High coolant warning light/buzzer
- Low air pressure warning light/buzzer
- Engine Oil pressure
- Voltmeter
- Ammeter
- Speedometer w/odometer


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(ii) ENGINE

Caterpillar, Cummins or equivalent, rated minimum at 425 HP, 6 cylinder, jacket water cooled, turbocharged diesel engine, EURO-V or equivalent emission norms

Electronic Engine Management System

Fuel water separator

Air compressor

Heavy duty air cleaner

Oil filters

Silicone radiator and heater hoses

24V Starting motor

Alternator

12V batteries w/battery box

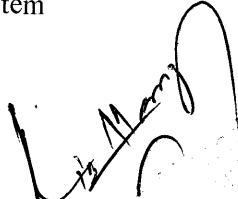
Single vertical muffler w/protection guard, spark arrestor and rain cap


Steel flywheel housings

Magnetic drain plugs

Engine emergency shut down/kill system

Steel front engine supports


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(ii) **JACOBS BRAKE** (or equivalent)(iii) **TRANSMISSION**

Allison automatic transmission. (or equivalent)

(v) **TIRES**

Front Tires should be 425R65-22.5 and rear tires should be 1200R20 of size (or equivalent).

(vi) **PAINT**

Signal Red

(vii) **AIR EQUIPMENTS**

- Air Dryer
- Air Tank

(ix) **POWER SPLITTER**

Power splitter box

(x) **FRONT AXLE**

Rated at minimum 33,000lbs and power steering (right position)

(xi) **REAR AXLE**

Dual rear axle rated at minimum 59,000lbs.

(xii) **SUSPENSION REAR**

Rated at minimum 66,000lbs

2.2 DECK POWER SYSTEM(i) **DIESEL ENGINES.**

Two diesel engines mounted on the deck of the truck chassis should be Caterpillar C-15 ACERT or MTU series 60 (or equivalent) four stroke, six cylinder, electronic type, turbocharged diesel engines rated minimum 525 BHP at 2100 RPM including engine diagnostic computer. These engines will be used to drive two high pressure triplex pumps via power shift transmissions and flexible drive lines. Each diesel engine should have specifications as mentioned below: -

- a) Rated minimum 525BHP at 2100 RPM.
- b) Electronic Control Module (ECM).
- c) Electronic Data Link.
- d) Electronically Controlled Unit Injector Fuel System (EUI).
- e) Heavy duty dry type intake air filters with replaceable filter elements and restriction indicator.
- f) Horizontal exhaust/silencer system stainless steel with spark arrester and rain cap.
- g) Lube oil pump and distribution system.

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- h) Fuel filters – primary and secondary.
- i) Full flow engine lube oil filter.
- j) Water cooling system with circulating pump, vertical radiator and fan assembly.
- k) Emergency engine shut off system.
- l) Transmission cooler with cooling lines.
- m) Two fuel tanks (Aluminum) each should contain 100 US Gallons, with locking arrangement.
- n) Over speed protection system.
- o) High temperature shut down system.
- p) Low pressure oil shut down system.
- q) Air Compressor (12.5 CFM) for brake and other pneumatic system.

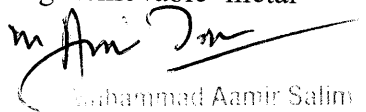
(ii) **POWER SHIFT TRANSMISSION**

Two automatic transmissions installed on the rear of two Deck diesel engines should be Allison transmission 4700 OFS (or equivalent) to drive two triplex pumps through power take off. Each of the two transmissions should be equipped as follows:-

- a) Power shift with manual gear selector.
- b) Fill tube and dipstick
- c) Torque converter cooling.
- d) Transmission neutral start system.
- e) Hydraulic Drive PTO System.
- f) External Transmission Filter.

(iii) **DRIVELINES**


Each engine/transmission combination shall drive a triplex pump via a heavy-duty universal joint drive shaft. The drive angle should not exceed permissible limits. Drivelines are to be guarded using removable metal guards with grease holes.

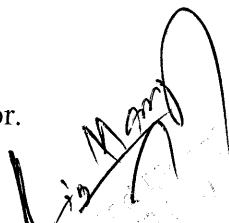

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(iv) **HYDRAULIC SYSTEM**

Chassis engine to operate the hydraulic system of twin pumper via power splitter. Hydraulic system should be a hydraulic pump system. This hydraulic system will provide power to the following hydraulic motors (from a to f). The other main components of hydraulic system should be installed on the unit also given below (from g to o).

- a) One (1) mix water centrifugal pump hydraulic drive motor.
- b) One (1) re-circulating centrifugal pump hydraulic drive motor.
- c) One (1) pressurizer centrifugal pump hydraulic drive motor.
- d) One (1) RCM (Re-circulating Cement Mixer) tub agitator.
- e) One (1) ADC (Automatic Density Control) System.
- f) Two (2) Displacement tanks agitator motors.
- g) Carbon steel hydraulic oil tank having capacity of minimum 130 US Gallons.
- h) Hydraulic oil cooling system.
- i) All required hydraulic oil gauges.
- j) Hydraulic filters for the hydraulic system.
- k) Necessary relief and check valves.


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- l) Hydraulic hoses.
- m) ADC control valve manifold assembly.

These hydraulic pumps should be high pressure rated axial piston open loop system with load sensing proportional control valves or equivalent items which can realize the same functions.

2.3 HIGH PRESSURE PUMPING SYSTEM

(i) TRIPLEX PUMPS

Mounted on the rear of the unit should be two “National Oil-Well W-600-S” or “SPM TWS-600S” (or equivalent) single acting horizontal positive displacement triplex pumps. Each of the triplex pumps will have the following technical specifications:

- a) Short length design for back to back mounting and side input/output.
- b) Forged alloy steel mono-block fluid end with removable suction and discharge covers.
- c) Fabricated steel suction manifold.
- d) Fabricated steel discharge connections with (Fig. 1502) rating.
- e) Hard coated plungers
- f) Replaceable alloy steel wing guided valves.
- g) Replaceable alloy steel valve seats.
- h) Bronze packing followers.
- i) Oil pressure gauge.
- j) Pump half flanged drive coupling.
- k) Crankcase breather.
- l) Pressure lubricated crankshaft, cross head sleeves and wrist pin bearings.
- m) Gauges connections for the mounting of Martin Decker (or equivalent) type gauge protector (connected to the control panel pressure gauges) and a Viatran (or equivalent) pressure transducer (connected to the digital Data Acquisition System).
- n) Transmission driven pump RPM speed sensor (connected to both the pump flow/ total meters on the Unit control panel and the data Acquisition System).
- o) Suitable for pumping inhabited acids, cement slurries, sand laden fluids and other oil well serving fluids.

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Both pumps should have following performance parameters:

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Plunger Size	Working Pressure (Max)	Displacement rate (Max)
4" dia x 6" stroke	8,000 psi	10.5 bbl/min

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These pumps should be suitable for pumping inhibited acids, cement slurries, sand laden fluids, crude oil, drilling mud and a variety of other oil well servicing fluids.

(ii) **TRIPLEX PUMP LUBRICATION SYSTEM**

Each triplex pump should use an air over oil packing lube system, with a lube oil storage tanks, equipped with high pressure check valves, flow controls and hoses to each triplex pump packing assembly i.e. the system for lubrication of packing of oil well pump plungers.

2.4 LOW PRESSURE FLUID HANDLING SYSTEM

(i) **DISPLACEMENT TANK**

Installed on the unit should be two (2) compartment of 4-6 cum. capacity open top carbon steel fluid holding / displacement tank. This tank should be designed to eliminate side wall pop-out which can affect fluid displacement. Other features should be included as under:

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- a) Each compartment should be equipped with agitators.
 - b) Each compartment should be fitted with steel gauge poles calibrated in cubic meter and 01 bbl. markings.
 - c) 2" over flow line in each compartment or one (1) 3" over flow line for both compartments.
 - d) Pneumatically operated loading system which may be directed in each compartment.
 - e) Pneumatically operated suction valves.
 - f) The tank manifold should be equipped with sufficient victaulic type couplings to allow complete disassembly of piping in case the need arises.
 - g) The discharge ports from displacement tank should be pneumatically operated 6" butterfly valves loading into 6" pipe that provides good velocity for gravity flow.
 - h) Inlet of the tanks should be of 4" in size.
 - i) Drain line for each compartment.
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(ii) **LOW PRESSURE SUCTION MANIFOLDING**

The unit should be equipped with a complete set of low pressure manifold as follows.

- a) Triplex pump suction manifold from either displacement tank or slurry mixing tub.
- b) Triplex pump suction from outside source.
- c) Suction and discharge manifold for mixing centrifugal pump including external connection for emergency mixing.
- d) Suction and discharge manifold for re-circulating centrifugal pump.
- e) Both triplex pump release lines of 2" and mud fill lines of 2" should be low pressure section of manifold. These both can be discharged to the bottom of either section of the displacement tank.

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- f) The low pressure manifold includes butterfly valves for fluid flow and control. These valves should be manually operated.
- g) This manifold should allow suction of fluid from either compartment of the displacement tank or external supply directly to the 4" x 3" mixing water centrifugal pump

(iii) **LOW PRESSURE LOAD MANIFOLD**

This manifold consists of various butterfly valves, pneumatic and mechanical actuator flanges, victaulic couplings, flanged connections, pipe and pipefitting etc.

This manifold is designed to take fluid from external sources via 4" Fig. 100 union connections, with removable caps and chains, on the suction manifold of the mixing centrifugal pump to either compartment of the displacement tanks or the suction manifold of the triplex pumps.

(iv) **RETURN MANIFOLD (HIGH PRESSURE BLEED OFF)**

This manifold consists of two (02) 2" x 1" rated 15,000 Psi Plug Valves (should be from M/S FMC) (or equivalent) with Fig. 1502 hammer union connections should be installed on back delivery 2" lines of two triplex pumps with fig-1502 connection facing to displacement tank.

(v) **HIGH PRESSURE DISCHARGE MANIFOLD**

Both triplex pumps should be connected with 15000 Psi working pressure release manifold consisting of three (03) Plug Valves (should be from M/S FMC) (or equivalent) and fittings with 1502 hammer unions arranged in a manner to allow the discharge (cement slurry, mud and water) either by one triplex pump separately or by both pumps combined (must have two outlets).

(vi) **CENTRIFUGAL PUMPS**

a) **WATER MIXING CENTRIFUGAL PUMP**

Installed on the unit should be a hydraulically driven Mission (or equivalent) 4" x 3" centrifugal mix water pump (or equivalent design) that has capability of pumping pressure 100 Psi (min) and flow rate 420 GPM approximately having option of operate able on both engines independently as per requirement.

Note: Flowmeter to be provided for accurate measurement of mix fluid.

b) **RECIRCULATING CENTRIFUGAL PUMP**

Installed on the unit should be a re-circulating centrifugal Mission (or equivalent) pump, connected to the discharge of the re-circulating cement slurry tub should be a hydraulically driven mission 6" x 5" re-circulating centrifugal pump capable of pumping at pressure 50 Psi (min) and flow rate up to 845 GPM (3.2 cum/min). This pump should take cement slurry from the re-circulating cement slurry tub and feed it to the cement slurry jet type mixer via a micro motion non-radio active type density meter connected to the digital data acquisition system. All

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required control valves should be installed on the suction/discharge lines of this re-circulating centrifugal pump. This pump should be equipped with external suction/discharge connection. This pump should also be connected to triplex pump suction / feed manifold as emergency backup if booster centrifugal pump fails. Also, there should be pneumatic valve to keep it isolated from the triplex manifold in normal operation.

c) PRESSURIZER CENTRIFUGAL PUMP

The dedicated Mission (or equivalent) 6" x 5" pressurizer pump should be capable of receiving fluid from the RCM tub, the displacement tanks or an outside source. The pressurizer pump will discharge into the suction manifolds of the triplex pumps with a pressure of 50 Psi (min) and capable of flow rate up to 845 GPM. Separate non-radioactive densitometer should be installed on booster pump discharge to monitor the actual density of the pumped slurry.

Note:

- (a) Recirculating & booster centrifugal pumps should be back up for each other in case, any one of them fails.
- (b) One of them should be on deck engine "A" and other on deck engine "B".

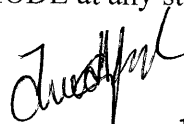
2.5 RE-CIRCULATING CEMENT MIXING SYSTEM (RCM)

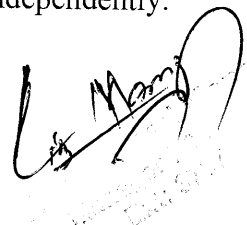
The cement mixing system can be operated in a manual or automatic mode. In manual mode the operator uses a manually operated hydraulic control valve to control the cement-metering valve. In the automatic mode, an electro-hydraulic control system operates the cement-metering valve. The electro-hydraulic system is controlled by an industrial process controller/computer. The slurry density can be quickly reduced by the use of a bypass line (connected to the recirculation pump suction). The bulk cement is pneumatically delivered to the cement metering valve. The proportional cement metering valve controls the flow rate of the bulk cement to the re-circulating mixer. When the system is in automatic mode, the computer automatically controls the valve. Cement mix head must mix water and dry bulk cement before introducing re-circulated mix into mixing system. Mix water along with re-circulated slurry mixes the dry bulk cement into slurry. The slurry is then discharged into the mixing tank via an air separating diffuser. The newly mixed slurry is homogenized and is re-circulated by the recirculation centrifugal pump back to the mixer. The 3" densitometer located on the circulating piping system detects the actual density and feeds it back to the computer. When the primary mixing tank becomes full, it flows over a weir into a second tank for averaging and final discharge to a downhole pumping unit. The mixing tubs should be located on the side of the operator's console. A digital sensor must be installed for mixing tub level indication.


NOTE:

Both the (i) bulk cement metering valve and (ii) mix water valve should be automatically operated in AUTO MODE once the job parameters (slurry density and rate) is set in job in the computer. Anyone or both the valves can be turned to MANUAL MODE at any stage of the job independently.


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2.6 DRY CEMENT DE-AERATION SURGE TANK

This dry cement input surge can assembly should be fixed at the rear of the chassis. It should be connected with 4" hammer union delivery hose from dry cement bulk storage tank (High Pressure Storage Tank) to deliver a controlled supply of dry cement through input metering valve. It should be provided with air system with sufficient air for cement transfer from surge tank as the transfer will be pneumatic (not gravity) and cement flow rate must be controllable. It should also be provided with constant pressure regulator system. It should also be equipped with a safety valve to release pressure if pressure regulating system fails. It should be provided with sufficient air jets to avoid choking of dry cement. Surge Can must include gauge weight indicator & sight glass. A by-pass line from the storage silo to mixing system in case of problems in Surge Can, should be installed in the form of manifold.

Capacity: 35 cubic feet, working pressure: 6-9 psi, designed pressure: 30 psi

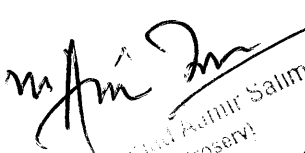
2.7 CONTROL AND MONITORING SYSTEM

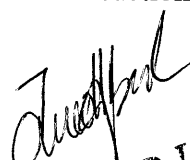
(i) CONTROL PANEL


Control Panel with pneumatic hydraulic and electric devices allow operator to change engine speed and gear selection, start and stop pumps, engines. Installation of non-radioactive density meter, gauges to indicate pressure volume density and pumping rate. Cover shed of the appropriate material must be included for protection of the operator and equipment.

(ii) MAJOR EQUIPMENTS TO BE INCLUDED ON PANEL

- a) Two 6" Dial dual needle 0-12000 PSI pressure gauges Martin Decker (or equivalent) Gauges along with two digital gauges.
- b) Pressure Limit Switches (Enabling to idle the engines beyond the desired set pressure)
- c) Throttle control to all engines.
- d) Transmission Shifter for deck and road engine.
- e) Flow Control for hydraulic to run RCM tub agitators and pressurizer.
- f) Tachometer for road and deck engine.
- g) Engine oil pressure and temperature gauges, electrical power and pump oil pressure gauge along with warning lights for low pressure.
- h) Emergency kill for all engines.
- i) Control of working lights for night operations.
- J) Control valves actuated pneumatically for operating butterfly valves on the suction lines with schematic diagram engraved on the panel.


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2.8 DIGITAL DATA ACQUISITION SYSTEM

A digital data acquisition should be supplied with the unit to display and record the following parameters of cement slurries.

- (i) Density
- (ii) Flow rate
- (iii) Pressure & volume of the cement slurries/fluids.
- (iv) Mix water flow rate

The system should be able to store data (at least 100 GB). The data should be easily fetch able on a USB drive and convertible to MS excel sheet. It should have Wi-Fi connectivity. All the hardware required for full operation of DAQ system (display etc.) should be provided.

2.9 UNITIZATION AND COMPLETION

The unit should be fully assembled ready for utilization and completed to the specifications of the customer. This shall include the following items (if these items are already detailed above, they shall not be duplicated).

- (i) Pipe and fittings racks.
- (ii) Fittings basket and tool box.
- (iii) Installation of lights for 24 hour use.
- (iv) Installation of all other electrical systems.
- (v) Installation of all pneumatic systems.
- (vi) Installation of all hydraulic/lubrication systems.
- (vii) All oils, coolants and other operating fluids.
- (viii) All steel and misc. fittings to complete the unit.
- (ix) All labour to complete the unit.
- (x) Spare tire along with carrier assembly.
- (xi) General workmanship should be of good quality and appearance.
- (xii) Unit packed and prepared for under deck sea shipment.
- (xiii) Four (04) Nos. copies in English of complete operating maintenance and spare parts manuals of all type equipment mounted on the truck indicating their model numbers should be supplied.
- (xiv) Unit should be painted with OGDCL monogram which is attached at Annexure 'C'.

2.10 CODES AND STANDARDS

The following certificates should be provided, for the equipment/parts which require said certification, from authorized inspectors.

- (i) ASME

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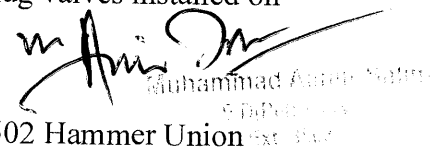
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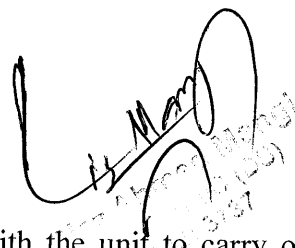
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3. TREATING IRON, FITTINGS & HOSES.

The following pipes, hoses and fittings should be available with each unit:-


- 3.1 10 (Ten) 2" x 10' long pipe joints Fig 1502 hammer union connections rated 15,000 PSI.
- 3.2 04 (Four) 2" x 5' long pipe joints with Fig 1502 hammer union connections rated 15,000 PSI.
- 3.3 10 (Ten) 2" Style 50 x 15,000 PSI long sweep swivel joints with integral Fig 1502 hammer union connections.
- 3.4 10 (Ten) 2" Style 10 x 15,000 PSI long sweep swivel joints with integral Fig 1502 hammer union connections.
- 3.5 06 (Six) 2" x 15,000 PSI Jackknives (Steel hose loops) with integral Fig 1502 hammer union connections.
- 3.6 08 (Eight) 4" x 15' long suction Rubber Hoses with Fig 100 M x F unions rated 100 PSI.
- 3.7 (04) Four Mud Rubber Hoses size 2" x 15' rated 3000 PSI with Fig.1502 Hammer Union Connections.
- 3.8 03 (three) Tees 2" rated 15,000 PSI, M x M x F, M x F x F, M x F x M (one each).
- 3.9 03 (three) Y's 2" rated 15,000 PSI, M x M x F, M x F x F, M x F x M (one each).
- 3.10 06 (Six) Plug Valves 2" x 2" rated 15000 PSI with 1502 Hammer Union Connections. (These are in addition excluding to the plug valves installed on pumper).
- 3.11 06 (Six) Plug Valves 2" x 1" rated 15,000 PSI. with 1502 Hammer Union Connections. (These are in addition excluding to the plug valves installed on pumper).
- 3.12 02 (two) Fig 1502 double wings.
- 3.13 02 (two) Fig 1502 double threads.


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The appropriate racks/provision to be attached with the unit to carry out these items during transportation. Separate cost to be mentioned for Treating Iron, Fittings & Hoses.


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4. TOOLS

Following Tools (Snapar, Facom or Proto with life time guarantee) (or equivalent) should be provided with each unit.

S.NO	DESCRIPTION	QTY
4.1	Heavy duty socket set with extension rods and adopters.	01 SET
4.2	Open end spanner set ranging 10-75 mm set.	01 SET
4.3	Ring spanner set ranging from 5/16"-2" with kit bag.	01 SET
4.4	Screw driver set consisting of (+) and (-) assorted sizes.	01 SET
4.5	Cutting pliers.	01 NO.
4.6	Adjustable joint pliers.	01 NO.
4.7	Needle nose pliers.	01 NO.
4.8	Vise-grip pliers.	01 NO.
4.9	Ball pin and claw hammer with suitable weight.	01 NO.
4.10	Engineering style hammer set including sledge hammer.	01 NO.
4.11	Punches.	01 SET
4.12	Chisels.	01 SET
4.13	Puller set (for triplex pump valve seats).	01 SET
4.14	Torque wrench up to 1-1/2" square drive with gauge reading dial and follow up pointer, with extension hand t-bar & torque adopters up to 2000 lbs-ft. Torque.	01 NO.
4.15	24" pipe wrench heavy duty Aluminum.	04 NOS.
4.16	36" pipe wrench heavy duty Aluminum.	04 NOS.
4.17	High pressure bucket type grease gun with assorted adopters.	01 NO.
4.18	20 m ton capacity truck hydraulic jack.	01 NO.
4.19	Tool box for storage of truck and other special tools.	01 NO.

Note: Any special tools required for triplex pump maintenance.

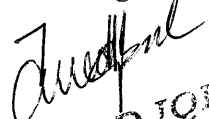
5. SPARES


- 5.1 Necessary spares for maintenance of units for a period of 02 years should be provided.
- 5.2 Spares should be quoted for each piece of equipment installed on the unit separately. For example, Engine, Chassis, Triplex Pumps, Centrifugal Mission Pumps, Hydraulic Motors and Allison Transmission etc with part numbers.

Note: - The quantity of spares can be reduced or increased according to the OGDCL requirement. Bidders are advised (In their own interest) to quote 100% true spares on basis of consumption. Cost of spares should not exceed 10% of the main equipment cost. Separate cost to be mentioned for spares (unpriced list of spares to be provided in Technical Bid & Priced list in Financial Bid). Spares will not be part of financial evaluation.

6. INSPECTION

Pre-shipment Third Party Inspection will be arranged by OGDCL. Bidder will show their willingness for TPI only. Bidder will also facilitate the TPI Inspector.


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7. COMMISSIONING OF UNITS IN PAKISTAN

Successful Commissioning of the equipment in Pakistan will be the responsibility of the bidder.

Note: Commissioning period should not be more than 03 weeks. Local training (during commissioning) for OGDCL officials to be done at OGDCL sites. All the materials, fluids, lubricants etc., required in this regard, to be provided by the supplier.

8. TERMS AND CONDITIONS

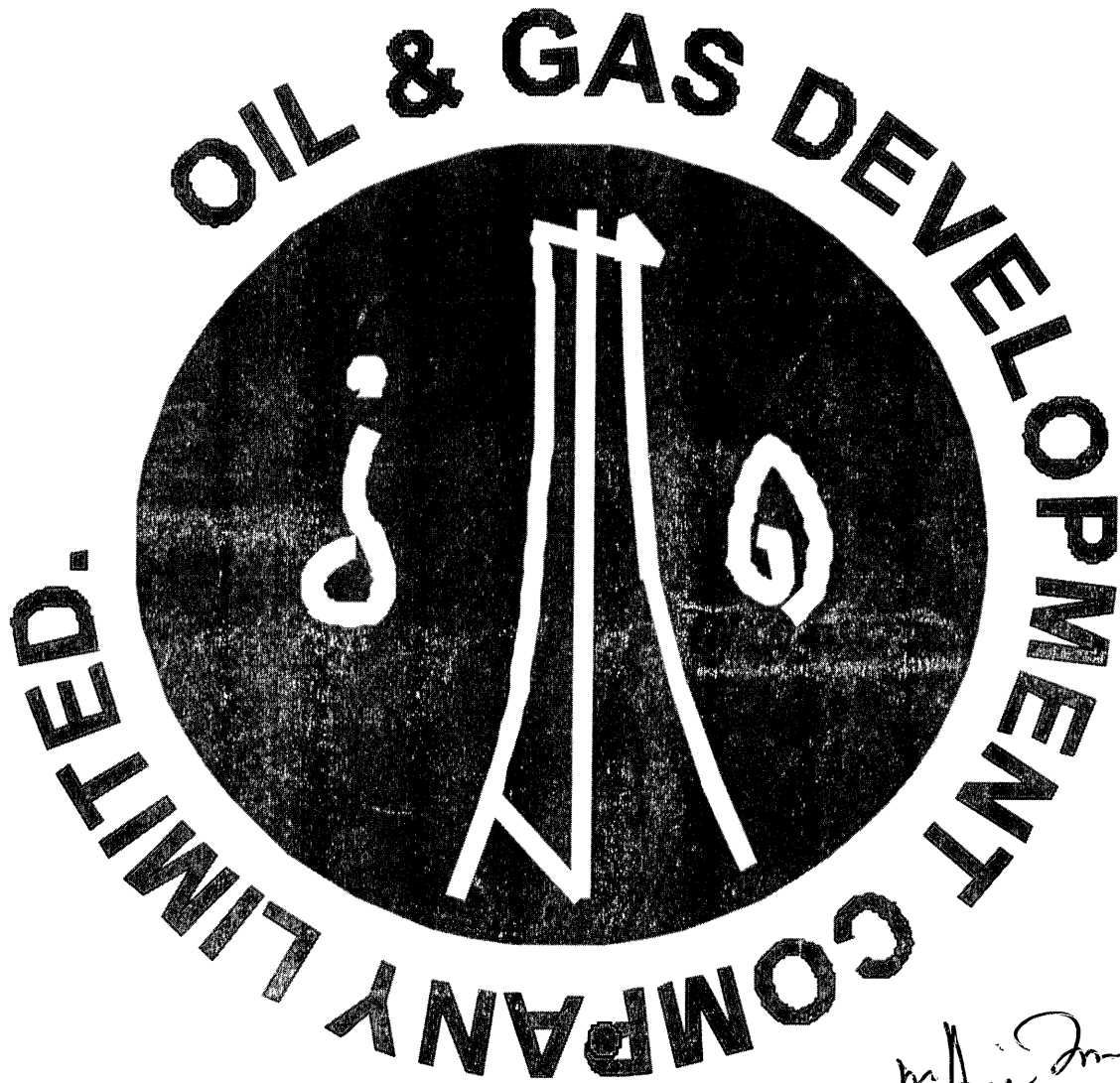
- 8.1 Supplier should provide the O.E.M. (Original Equipment Manufacturer) Certification of all major parts of the Truck Mounted Twin Cementing Units.
- 8.2 Supplier will warrant that all goods supplied against the contract should have no defect arising from design materials and manufacture and that the **supplier should rectify any defect at no cost for a period of one year** under normal use of supplied goods and conditions prevailing in Pakistan.
- 8.3 Supplier should provide the drawings, specifications and dimensions of the equipment mounted on Twin Cementer.
- 8.4 The bid to be submitted through two envelopes, one technical and other financial (single stage two envelope).
- 8.5 The manufacturing company will provide supply record for similar Twin Cementing Units to clients of international repute (from other than the manufacturer's country) and have 15 (fifteen) years manufacturing experience of the Twin Cementing Units. The manufacturer should provide the list with names, purchase order numbers with dates, address and e-mail addresses of clients to whom similar Twin Cementer Units have been supplied during last 15 (fifteen) years. OGDCL have right to contact these clients directly to know the performance. Manufacturer will provide the copy of the purchase orders for verification.
- 8.6 Manufacturer will provide performance certificates from "E&P and/or oilfield Services companies" of international repute (from other than the manufacturer's country). The certificates must be on the company letter head and should indicate the Name & Designation of the signing authority along with his complete contact details including his official email address. OGDCL reserves the right to obtain verification of these certificates. Certificates issued by supply houses etc. will not be acceptable.
- 8.7 Evaluation will be done on "full consignment wise" basis except spares.
- 8.8 Maximum **delivery period** of the Trucks is 50 weeks.
- 8.9 For Quality control the O.E.M should be ISO certified. Valid ISO certificate to be submitted with the bid.
- 8.10 All the parts of the units should be brand new.
- 8.11 Supplier will clearly mention the differences of specifications if any, with OGDCL specification.

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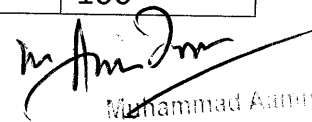
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Annexure A-2

CRITERIA FOR TECHNICAL QUALIFICATION

Evaluation of technically qualified bidder will be based on merit. The minimum selection criteria will be 85% aggregate and 75% for each discipline. The weightage percentage allocated for each discipline is shown below

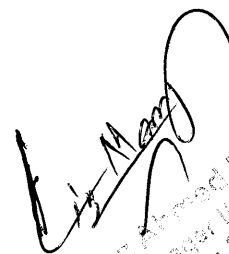
Sr. No.	Discipline	Weightage Ratio
1.	Bidder meets all the Technical specifications. Minor deviation 02 marks deducted (low pressure valves, unions, cooling system etc.). Major deviation will lead to disqualification (engine, transmission, pumps, hydraulic system, truck chassis etc.).	30
2.	The manufacturing company will provide supply record regarding supplied units to international clients (from other than the manufacturer's country) for similar Twin Cementing Units during last 10 years. (01 mark for 05 supplied units). Maximum marks 10.	10
3.	The manufacturing company will provide supply record regarding number of international clients (from other than the manufacturer's country) for similar Twin Cementing Units during last 10 years. (02 mark for each client). Maximum marks 10.	10
4.	The manufacturing company will provide supply record, regarding years of experience, to international clients (from other than the manufacturer's country) for similar Twin Cementing Units. (01 mark deducted for each year less than 15 years). Maximum marks 15.	15
5.	Performance certificates from "E&P and/or oilfield Services companies" of international repute (from other than the manufacturer's country). (05 marks for each verified certificate). Maximum marks 25.	25
6.	Manufacture will provide valid ISO certificate.	10
	TOTAL	100


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CRITERIA FOR FINANCIAL EVALUATION

Contract will be awarded to the bidder that will be financially Lowest and technically Responsive.


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