

23<sup>rd</sup> October, 2020.

REF: GDC/MSC/005/20-21/dk-fk

TO: ALL BIDDERS

Dear Sirs,

**ADDENDUM 3: CLARIFICATION/AMENDMENT**

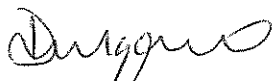
**RE: RE: TENDER FOR TENDER FOR PROVISION OF DRILLING RIG INSPECTION SERVICES FOR BARINGO- SILALI GEOTHERMAL PROJECT - GDC/DO/OT/011/2020:2021**

In response to bidder's request for clarification, GDC wishes to provide the following response;

S.N	BIDDER'S QUESTION	GDC'S RESPONSE
1.	Clarify minimum qualifications/certifications of inspectors for the 3 categories of inspectors i.e mechanical, electrical and QHSE	The three (3) categories of inspectors must have at least 5 years working experience as a certified rig inspector. The inspectors must be either a certified engineer, an NDT technician and NEBOSH certified QHSE or equivalent for the corresponding categories.
2.	Clarify whether the accreditation is for Company or for the inspectors	Accreditation is for the Company.
3.	Kindly clarify what is the duration of any arising contract.	The contract period is six (6) months
4.	GDC wishes to provide additional rigs specification as attached herewith.	

NB/ All other requirements/instructions remain unchanged.

Yours Faithfully



**DORIS KYAKA**  
**MANAGER, SUPPLY CHAIN**  
**FOR: GEOTHEMAL DEVELOPMENT COMPANY**



## RIGS (1-4) SPECIFICATIONS - LAND RIG

**DRILLING RIG ZJ70/4500D98, 2000HP ELECTRIC RIG**

**With 48000mm high Cantilevered JJ450/48-K3 Mast.**

**Year Manufactured: 2010/2011**

### 1. MAST and CROWN SECTION

#### 1.1 Mast

**Manufacturer: Baoji Oilfield Machinery Co. Ltd (BOMCO):** 48000mm high cantilevered mast.

Rated static hook load : 4500KN. at 12 lines

Clear Height : 48000mm above Rig Floor.

Mast type : K-type.

Max. Hook load (6x7, full set back, wind speed  $\leq 16.5\text{m/s}$ ): 4500kN.

Top open size (Front side): 2.5/2.2m

Bottom open size : 9m.

Monkey board height: 24.5m, 25.5m, 26.5m.

Setback capacity (28m standpipe  $\phi 127\text{mm}$  drill pipe), 227 Stands of 5" DP, 6300m

Security level: E2/U2

Mast wind loading rating:

-operating conditions (full hook load, full setback):  $\leq 16.5\text{m/s}$ .

-expected wind operating condition (no hook load and stands):  $\leq 47.8\text{m/s}$

-non-expected wind operating condition (no hook load, full stand)  $\leq 44.7\text{m/s}$

Rig up and down:  $\leq 16.5\text{m/s}$ .

#### 1.2 Crown Block : TC450-7

**Manufacturer: Baoji Oilfield Machinery Co. Ltd (BOMCO),** 6 sheave cluster, 60"(1524mm) outside diameter with 1-1/2"(38mm) wire rope sheave, 1 fast line (guide) sheave, 1-1/2"(38mm) wire rope diameter and 60"(1524mm) sheave diameter, 1 bailing sheave with diameter 30"(762mm), bailing rope diameter  $\phi 14.5\text{mm}$  (9/16"), hoist frame max. Load 49KN, 4 auxiliary sheaves with OD of  $\phi 400\text{mm}$  (15 3/8") and wire  $\phi 19\text{mm}$  (3/4").

Capacity, 500 Us Tons (4500KN)

### 2. SUBSTRUCTURE: DZA50/10.5-S15, API 4F, BOMCO.

Floor Height : 10.5m (34.5 ft.).

Drill floor area : 13.5m x 12.5m

Max Static hook load cap. : 1,000,000 lbs. / 500t (US), 4500kN

Max. Rated static rotary capacity : 1,000,000 lbs. / 500t (US), 4500KN

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Max. Rated Pipe Setback Capacity : 600,000 lbs. (2700KN (250 Stands of 4.5" drill pipe, 28m long each) or

Clear Height : 9M, 30 ft.

### 3. BOP handling unit

- FY-50Y BOP Handling System.
- Max. Lifting capacity: 2x250=500KN.
- Max. lifting Height: 4m
- Max. lifting speed: 1.5m/min
- Max. lowering speed: 3m/min
- Max. horizontal moving speed(Dual Direction): 12m/min
- Max. W.P Hydraulic System: 18MPa
- Max. Flow Hydraulic System: 120L/min
- Wire line diameter: 28mm

4. **Traveling Block**, Model YC-450, 4500KN (500Tons) block with six (6) sheaves grooved for 1-1/2"(38mm) diam. drilling line, theoretical weight 8300kg. (18299). Dimensions (L\*W\*H) = 3110x1600x840mm.

5. **Swivel, SL 450**: Static load 500T (4500KN). Maximum spinning torque 3000NM, Max pressure 35MPa.

6. **Kelly hose**; JingBo Petroleum Machinery Co. Ltd. 4" diameter, tested to 10,000Psi with a working pressure of 5000Psi. API Spec &K FSL1 ISO14693graded

### 7. DRAWWORKS (JC70D)

HP Rating: 2,000 HP (1470kW)

Drilling Depth Range: 7000m.

Hoisting Drum Size:  $\phi$ 770mm; length 1285mm.

Brake Rim Size:  $\phi$ 1650mm

Hoisting Speed: speed I, 0-0.35m/s; II, 0-0.54m/s; III, 0-0.98m/s and 0-1.51m/s.

Rotary Speed: Speed I, 0-83RPM; II, 0-127RPM; III, 0-229RPM; IV, 0-354RPM.

Max Pull at 12 lines : 4500kN; 500US tons.

Drilling Line Size : 1-1/2"O:  $\phi$ 38mm

Manufacturer : BOMCO

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8. **Auxiliary brake:** ELMAGCO Bohai Petroleum Equipment Manufacturing Co. Ltd  
Petroleum manufacturing Factory, Model DWS70. Water cooled electromagnetic eddy  
current brake, suitable depth 700m, max torque 110000Nm, speed 500RPM, cooling water  
rate 560L/min. Dimensions 1500x2100x2000mm, magnet exiting power 23kW,  
80Amperes. Weight 12000kg.

9. **Dead line Anchor.** Deadline anchor with 1-1/2" wire rope installed on substructure.

10. **Drilling line spooler,** Xianyang BOMCO steel tube & wire rope Co. Ltd; DSJ38B.  
Rotation speed 0-12RPM. Power of motor 7.5kW (10HP), max: loading 10,000kg; max.  
Output twisting distance 9kNM, weight 13000kg (2864lb).

11. **Winch**

9.1 **Man riding winch:** Ingersoll Rand, 90Psi, rope 0.5", man lift 2500lb. Model  
FA2BMR24MK1G.

9.2 **Utility winches,** two (2) units; Max: lift traction 50kN, rated power 16kW(21.5HP),  
max length of wire 120m, weight 600kg, max speed 0.58m/s, air pressure 0.8MPa,  
wire diameter 20mm and rated air consumption 0.21m<sup>3</sup>/s.

12. **Rotary Table**

Make:

Model ZP375

Maximum static load : 5,850 KN / 1,315,132 lbs.

Max. Working torque : 23,871 flubs

Rotating speed : 300RPM, gear ratio 3.56

With maximum table opening : 952.5mm (37.5 inches).

**Top drive system.**

Manufacturer: Baoji Oilfield Manufacturing Co.ltd

Model: DQS70BSC

Drill Mode: continuous

Forward RPM: 0-220r/min

Forward torque: max: 75kNm

Make up torque: 50kNm

Breakout torque: 75kNm

Reverse RPM: 0-110r/min.

**Power tong (Drill pipe):**

Make: JIAN YE, Jianhu Weili Hydraulic machinery manufacturing Co. Ltd.

Model: 345M-B20H-T

Capacity: Tong's torque: High 10kNM, Low 100kNM. Rated pressure 31.5MPa and  
100L/Min.

**13. Hydraulic Make-up/break-up (Hydraulic cathead)**

Max: Pressure 18MPa, Pulling stroke of wire rope 1500mm, maximum pull of wire rope 160kN.  
Model: Type YM16-11B2

**14. One (1) Standpipe, 5" 5000 Psi WP dual standpipe, off driller side, welded type hammer union, H style manifold.**

**15. TRIPLEX PUMPS**

**14.1 Three (3) Units,** Baoji Oil Field Machinery Co. Ltd. F-1600 model. Single acting triplex pump, 1600 HP, interchangeable fluid modules, max crank speed 120 RPM, pump weight 27,020kg.

Fitted with 7" liners, length of stroke : 12" (305mm)  
Gallons per stroke (gps) : 5.99  
Max spm : 120  
Max pressure : 3422 psi

**14.2 Each Triplex Pumps furnished with:**

- One (1) Pulsation Dampener 5000 Psi.
- One (1) Charging Pump centrifugal pump 340kg, 1489rpm, 200m<sup>3</sup>/h, with head of 36m.
- One (1) O' Drill MCM Type "C" 3" relief valve, manual reset, 1500-5000psi with flange connection.
- One (1) O' Drill Inc. Range 0 to 6,000 psi, Type F, Mud Gauge 0-6000 psi

**16. Mud Containment and Processing**

**15.1 Water tanks (6) 12140x3060x3000mm, 80m<sup>3</sup> (503bbls).**

**15.2 Reserve tank, 12600x3200x3000mm, 450bbls.**

**One (1) Suction Tank, 12600x3200x3000mm, 450bbls.**

**14.6 One (1) Unit Intermediate Mud Tank, 12600x3200x3000mm, 350bbls.**

**14.7 One (1) Shale Shaker Tank, 12600x3200x3000mm, 236bbls.**

**Accessories:**

- Four (4) Shaker Slides: model 12DL-002, dimensions 6250x2800x1500mm.
  - One (1) Mud cleaner with shale shaker, desander (2750x2000x2800)240m<sup>3</sup> & desilter.
  - One (1) Vacuum degasser, Make: ZLCQ240, 1400kg, 240m<sup>3</sup>/h, vacuum 35-50MPa, power, 15+22kW, 1935x1205x2150mm, CNPC Bottai Equipment co.ltd.
  - Mud agitator: 1232x565x645mm output rotation 73rpm, ZJW15.
- 14. Mud cooling tower: 9100x3200x3000mm, 222bbl, and 11300kg.**

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## 17. BLOWOUT PREVENTERS

### 15.1 Annular Bop

- One (4) 21-1/4"-2000psi **Annular BOP** Hydril with Flange Bottom and Top.
- One (2) 13-5/8"-3000psi **annular BOP** with Flange Bottom and Top.

### 15.2 Ram Type BOP

#### 15.2.1 One (1) 20-3/4 x 3M **Double Ram Bop** Flange Top and Bottom.

Ram Assemblies:

- One (1) Set Blind Ram
- One (1) Set 5" Pipe Ram

#### 15.2.2 One (1) 13-5/8" **Double Ram BOP** 25735-21, Flanged Top Bottom. Rated pressure 3000psi (2 sets), 5000psi (3 sets) and 10000 psi (2 sets)

Ram Assemblies:

- One (1) Set Blind Ram
- One (1) Set 5" Pipe Ram

#### 15.2.3 **Accumulator**, Model NXQ bag type. Accumulators working pressure, 3000psi.

#### 15.2.4 **Choke Manifold**

- Hydraulic choke manifold: JG-SY-5000PSI.

## 18. ELECTRICAL CONTROLS, POWER, AND EQUIPMENT

### 16.1 Electrical Power System

- Five generator set for ZJ70D drilling rig CAT3512B and an auxiliary generator, CAT3406.
- One (1) unit 2000HP Drawworks driven by two (2) DC Motors: CSR Zhuzhou motor Co. Ltd. Model, ZYD800-4 Rated 800kW two blowers.
- Three 1600HP Mud Pumps driven by two DC motors

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## 16.2 AIR COMPRESSORS

- Five units of Air compressors unit Atlas Copco XRHS1096.
- Three air boosters with CAT engines. Maximum pressure, 1750PSI; Atlas Copco.
- Air drier, Hangzhou Xiaoshan Xuri Dyeing Machinery Co. Ltd.

## 19. INSTRUMENTATION

### Drillers console:

- Electronic mud monitor;
  - Pit radar volume sensors- 6 units.
  - Trip tank radar volume sensor- One (1) unit.
  - Flow out sensor- One (1) unit.
  - Mud SPM sensors- Three (3) units
- Pump pressure gage.
- Cathhead pressure gages 0-25Psi.
- Driller's Console. Made of stainless steel case Driller's console.
  - One (1) Martin Decker Weight Indicator; Hubei jpim co.ltd. Weight indicator. range from 0 to 1,100,000 lbs. Max. Deadline load 92172lbf; 12 lines.
  - Load cell; Hubei jpim co.ltd.
  - Tong torque, make-up: Tong pull line gauge range from 0 to 16,000 lbs.
  - Tong torque, break-out : Tong pull line gauge range from 0 to 30,000 lbs.
  - Mud Pump SPM gauge & stroke counter: three (3) digital displays for three pumps.
  - Rotary torque gauge (Chongqing send oil technology development co.ltd):
  - Two (2) Gauges 0 - 40M Mud Pressure Gauges for Each Pump
- Deadline anchor: with 1-1/2" wire rope installed on substructure.

## 20. MISCELLANEOUS

### 18.1 Fuel tanks:

- Two tanks: type CYG50-C. (11100x3060x2600mm), 315bbls (50,000lts), 13000kg. CNPC Bohai Equipment Manufacturing co.ltd.
- One tank: Type CYG-40. (11100x3060x2600mm), 252bbls (40000lts). CNPC Bohai Equipment Manufacturing co.ltd.

18.2 Rig Warehouse: 11000kg, (12000x3100x2950mm).Guangzhou Huabei Petroleum Co.ltd.

18.3 Doghouse: TypeZJ70D, 10x2.8x2.8m, 10500kg, SERIAL No.2011PF68.