INVITATION TO SUBMIT TECHNICAL AND COMMERCIAL OFFERS

Coring Services

We hereby invite qualified and experienced companies to submit their technical and commercial proposals for the provision of Coring Services in accordance with the scope of work outlined in the attached document.

The scope includes, but is not limited to:

- - Provision of equipment, consumables, spare parts, and personnel for coring operations in accordance with the drilling program.
- - Execution of rotary coring operations with optional downhole motor support.
- - Cutting, labeling, and packaging of core samples in waterproof boxes with internal supports.
- - Delivery of core samples to the designated location in Tripoli.
- - Compliance with safety standards and provision of individual protective equipment for personnel.
- - Provision of experienced coring engineers to supervise operations and prepare detailed reports.
- - Core stabilization using polyurethane foam and packaging in polyethylene containers with foam spacers.

The coring operations are part of a program that includes re-entry into one well and drilling of two exploration wells in the Ghadames Basin, Block 95/96.

Submission Guidelines

- - Offers must be submitted in sealed envelopes waxed in red.
- - Both technical and commercial proposals must be included.
- - Pricing details must be confined to the commercial offer only.
- - Deadline for submission: within five (5) days from the date of this announcement.

We look forward to receiving your proposals.

SPECIFICATIONS DES EQUIPEMENTS ET SERVICES FOURNIS PAR L'ENTREPRENEUR

4.2.8 CORING SERVICES

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4.2.8.1. Work Description

To acquire reservoir data, it is planned to carry out coring in the reservoir formations that show promising indices. In order to specify the deposition model and perform various geomechanical and/or petrographic analyses for the different reservoir formations, core samples will be collected as follows:

For well 1

- 8''1/2 Phase:
  - Four (04) cores of 59.04ft (18 meters) respectively at the Awaynat Wanin reservoirs, Ouan Kasa (C3 Unit) reservoirs and Tadrart (C2-C1 Unit) reservoirs.
    - Coring Awaynat Wanin A to ± 7090ft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the second coring point at the top of Ouan Kasa (C3 Unit) at ± 7457ft, circulate hole clean, check for flow, and pull out to surface.
    - Coring Ouan Kasa (C3 Unit) to ± 7517ft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the third coring point at the top of Tadrart (C2 - C1 units) at ± 7552ft, circulate hole clean, check for flow, and pull out to surface.
    - Coring Tadrart (C2 - C1 units) to ± 7612ft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the fourth coring point at the top of Upper Mamuniyat at ± 8476ft, circulate hole clean, check for flow, and pull out to surface.
    - Coring Mamunyiat to ± 8476ft (± 60ft). Pull out and recover core.

For well 2

- 8''1/2 Phase:
  - Three (06) cores of 59.04ft (18 meters) respectively at the Tahara, Awaynat Wanin reservoirs, Ouan Kasa (C3 Unit) reservoirs, Tadrart (C2-C1 Unit) reservoirs , Tansouft Hot shale and Mamunyiat reservoir.

    - Coring Tahara to ± XXXXft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the second coring point at the top of Coring Awaynat Wanin A at ± XXXft, circulate hole clean, check for flow, and pull out to surface.
    - Coring Awaynat Wanin A to ± XXX ft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the second coring point at the top of Ouan Kasa (C3 Unit) at ± XXXft, circulate hole clean, check for flow, and pull out to surface.
    - Coring Ouan Kasa (C3 Unit) to ± XXXft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the third coring point at the top of Tadrart (C2 - C1 units) at ± XXXft, circulate hole clean, check for flow, and pull out to surface.
    - Coring Tadrart (C2 - C1 units) to ± XXXft (± 60ft). Pull out and recover core. Run drill string and drill ahead to the fourth coring point at the top of Mamunyiat at ± XXX ft, circulate hole clean, check for flow, and pull out to surface.

- Coring Mamunyiat to ± XXXft (± 60ft). Pull out and recover core.

XXX: Depths to be communicated later

Option 2:

- 6'' Phase:

- Coring Mamunyiat to ± 8476ft (± 60ft). Pull out and recover core.

The contractor must:

- Provide equipment, consumables, spare parts, personnel, and complete service in accordance with the programs that can be established between the Contractor and the Client.

To meet the Client's needs, the Contractor must:

- Provide, but not limited to:
  - Personnel and equipment necessary for the efficient and effective coring service.
  - Rotary coring mode being a minimum requirement; if downhole motors are used, the Contractor must provide suitable equipment.
  - Service in accordance with the program provided by the Client, who reserves the right to stop or modify an on-site operation at any time.
  - Minimize freezing during coring inside the fiberglass (consider the possibility of using aluminum tubes instead of fiberglass).
  - Ensure that all work is conducted professionally and in accordance with the safety rules practiced at drilling sites.

The Contractor must provide at their expense:

- Individual safety and protective equipment for their personnel.

The Contractor must:

- Provide the Client with an experienced engineer in tooling and equipment at no additional charge. This engineer will be responsible for monitoring all coring operations.

Operational Site Context:

- The core must be cut and labeled, and depth (Top and Bottom) must be done in the presence of a geological representative of the Client.
- Core boxes must be sturdy and waterproof with inside supports to secure the cores during transportation in case of vibration.
- Steel core cover plugs must be provided to ensure the cores are secured.

4.2.8.2. Equipment

The Contractor must:

- Provide a description of the core barrels to be used along with related equipment. This will include any specific aspects that may improve the quality of the service provided.

The equipment must include (but not limited to):

- Core barrels
- Core barrels equipped with adjustable bearings and safety joints

- Set of reductions
- Stabilizers and sleeves
- Inner tubes (fiberglass)
- Inner tube stabilization
- Core catcher
- Cutting tools (cutting saw and spare discs)
- Fishing equipment suitable for the corer used
- Toolbox
- Core packing boxes

In addition to the listed equipment, other equipment and spare parts to ensure continuity of operations will be necessary. The standard dimensions to be used are as follows:

- 6''3/4 x 4''
- 8''1/2 x 5''1/4
- Section 12''1/4: coring will be done at 8'1/2 and then interval enlargement
- Corer in 12''1/4

4.2.8.3. Personnel

Qty	Description
1	Technicien Carottage Sénior
1	Technicien Carottage Junior

4.2.8.4. Responsibilities

Responsibilities of the Coring Engineer include:

- Inspection of equipment, tools, and equipment on-site and confirmation of equipment availability for upcoming operations.
- Making recommendations regarding tool selection, equipment installation, and coring procedures.
- Assembly and preparation of equipment on-site.
- Sectioning and packaging of obtained cores.
- Providing continuous monitoring of operations with recommendations for optimization.
- Providing a diagram of the downhole equipment with dimensions in case of possible instrumentation.
- Presenting a report detailing start/end depths, parameters used, formations penetrated, core footage/recovery, crown used and wear, and any recommendations for improvements.
- Working closely with site personnel in compliance with HSSE rules for better performance.

Contractor responsibilities include (but not limited to):

- Maintenance operations of its equipment and the availability of spare parts.
- Mobilization/demobilization of all equipment/materials on Client sites or any other predefined location.
- Proper maintenance of its equipment (planned or otherwise) to ensure continuity of operations. Repair costs remain its responsibility.
- Certification/re-certification of the equipment used and maintenance of valid certification.

- Ensuring prompt return of its equipment from the site.
- Cleaning of equipment and disposal of any residue associated with its activity.
- Transport, safety, and accommodation of its local personnel to/from the site.
- Reconditioning, repairing, adjusting, or replacing all necessary equipment.
- Means of transport of equipment to and from the drilling site are the responsibility of the Contractor.
- Client Responsibilities:
- The Client will take all measures to remain compliant with the equipment status and will notify the Contractor of any foreseeable operational difficulty.
- The Client will not accept equipment that does not meet the already established program.
- The Client will not allow equipment movements outside approved sites without their consent.

4.2.8.5. Technical Specifications / Equipment

Core Barrel:

Made and model	BURINTEKH, SIBERIA
type	7 ¼" x 4"

Coring Bit:

Made and model	BURINTEKH, 81/2 /4 B 713 YC.251 or 81/2 /4 B 813 C251
type	PDC

4.2.8.6. Core Preservation Service

Handling of the core during its manipulation, treatment, and ascent to the surface to preserve the integrity of the core sample.

Core stabilization: achieved using polyurethane foam with rapid reaction polyols isocyanate resin.
Packaging and transport of cores: cores are placed in lightweight high-impact polyethylene Core Containers with preformed foam spacers to prevent inter-collisions during transport.

The cores will be transported by the Contractor to a location designated by the Client in TRIPOLI.

Core drilling service

Well	Section	N°	Description	Unité	Quantité	Unité (USD/ft)	Total (USD)
Well 1	8''1/2	1	Cost per feet for the Awaynat Wanin A (Emsian) core	ft	60ft (18m)		
		2	Cost per feet for U. Ouan Kasa (C3 unit) Siegenian core	ft	60ft (18m)		
		3	Cost per feet for Tadrart(C2&C1 unit) Gedinnian core	ft	60ft (18m)		
		4	Cost per feet for Mamuniyat(IV-3&VI-2&VI-1 unit) core	ft	60ft (18m)		

	Side Wall Core	5	Cost per plug set in the Aouinet Ouanine A (Emsian)	Plug	10		
		6	Cost per plug set in the U. Ouan Kasa (C3 unit) Siegenian	Plug	10		
		7	Cost per plug set in the Tadrart(C2&C1 unit) Gedinnian	Plug	10		
		8	Cost per plug set in the Mamuniyat (IV-3&VI-2&VI-1 unit)	Plug	10		
Well 2	8''1/2	1	Cost per feet for the Awaynat Wanin A (Emsian) core	ft	60ft (18m)		
		2	Cost per feet for U. Ouan Kasa (C3 unit) Siegenian core	ft	60ft (18m)		
		3	Cost per feet for Tadrart(C2&C1 unit) Gedinnian core	ft	60ft (18m)		
		4	Cost per feet for Mamuniyat(IV-3&VI-2&VI-1 unit) core	ft	60ft (18m)		
	Side Wall Core	5	Cost per plug set in the Aouinet Ouanine A (Emsian)	Plug	10		
		6	Cost per plug set in the U. Ouan Kasa (C3 unit) Siegenian	Plug	10		
		7	Cost per plug set in the Tadrart(C2&C1 unit) Gedinnian	Plug	10		
		8	Cost per plug set in the Mamuniyat(IV-3&VI-2&VI-1 unit)	Plug	10		