ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम) पंजीकृत कार्यालय: दुलियाजान, असम
Oil India Limited
(A Government of India Enterprise) Registered Office: Duliajan, Assam

Plot No. 19, Sector 16A,
Noida – 201301, U.P.
Phone: 0120 – 2516352
Fax: 0120 - 2488310
E-mail: cemg_c&p@oilindia.in

Web Site: www.oil-india.com

e- TENDER NO.: CCG9095L16 DT. 26.10.2015

For

HIRING OF SERVICE PROVIDER FOR HIRING OF BUNDLED SERVICE FOR OFFSHORE DRILLING OPERATION IN BLOCK CY-OSN-2009/2, GULF OF MANNAR

Date & time of closing of Tender : 27.11.2015 AT 11:00 AM (IST)
As mentioned in the of e-portal

Date & time of opening of Tender: 27.11.2015 AT 3:00 PM (IST)
As mentioned in the of e-portal

(RUPAK KALITA)
SENIOR MANAGER(C&P) (CEMG)
FOR EXECUTIVE DIRECTOR (E & D)
FOR CHAIRMAN & MANAGING DIRECTOR

Declaration:

SPECIAL NOTE TO THIS TENDER :

(A) The Tender as below has been addressed to 03(THREE) Parties arising out of Expression Of Interest (EOI). The other prospective and interested Parties may also participate against this Tender subject to the following:

(i) To forward their application for issue of Tender document along with documentary proof of meeting '**Bid Rejection Criteria' PART -2** of this Tender) to reach us within **5 days** of publication at OIL's website. The application may also be sent to e-mail IDs: **corp_c&p@oilindia.in and rupakkalita@oilindia.in**

(ii) The application must be complete in respect of meeting the qualifying criterion mentioned under Bid Rejection Criteria (BRC) as stipulated in this Tender.

(iii) The parties must note that if Oil India Limited (OIL) is satisfied with the documentary evidences (provided by the party) establishing them to be eligible for issuance of the subject tender, the tender documents will be issued to the eligible party(ies). However, if the documentary evidences submitted by the parties are not able to establish the eligibility of the party(ies) to the satisfaction of OIL, no further correspondence will be made/entertained against the subject tender.

(B) The last date of receipt of applications, complete in all respect is **04.11.2015**. It is to be noted by all concerned that no correspondence against the subject tender will be entertained after expiry of the schedule date i.e. **04.11.2015**. As indicated above, parties may send their complete applications (with scanned copies of documentary evidences) through e-mail to the email IDs as mentioned vide (i) under para (A) above. The hardcopies of application must be received by OIL within **07.11.2015** , without which their applications will not be considered.

(C) OIL will issue the tender documents to the eligible parties after detailed scrutiny of the documents submitted by the parties. The tender documents will be issued through e-mail to the eligible parties and therefore, it is necessary that the parties must mention their valid e-mail IDs. The formal letter with tender documents will be issued to eligible parties latest by **10.11.2015**. No correspondence will be made if the parties are not found to be eligible for the subject tender as per the BRC.

(D) No request for extension of the above mentioned dates will be entertained.

INDEX

S U B J E C T

PART & SECTIONS

(a)	Forwarding letter	-	-	Page 4-9
(b)	Instruction to Bidders	-	PART- 1	Page 10-23
(c)	Bid Evaluation Criteria/Bid Rejection Criteria	-	PART - 2	Page 24-52
(d)	General Conditions of Contract	-	Section I	Page 53-70
(e)	Terms of Reference/Technical specification	-	Section II	Page 71-297
(f)	Special Conditions of Contract	-	Section III	Page 298-319
(g)	Schedule of Rates	-	Section IV-	320 (Separate Document in MS Excel Format)

PROFORMAS/ANNEXURES

(i)	Integrity Pact	-	Annexure-A	Page 321-326
(ii)	Bid Form	-	Proforma C	Page 327
(iii)	Certificate of Compliance with respect to BRC	-	Proforma D	Page 328
(iv)	Statement of Non Compliance (Excepting BRC/BEC)	-	Proforma E	Page 329
(v)	Bid Security (BG) form	-	Proforma F	Page 330-331
(vi)	PBG Format	-	Proforma G	Page 332
(vii)	Agreement Form	-	Proforma H	Page 333-334
(viii)	Letter of Authority	-	Proforma I	Page 335
(ix)	Attending bid opening format	-	Proforma J	Page 336
(x)	e-tender help document	-	Annexure-B	Page 337-338

OTHER DOCUMENT

Attachment-IV	General HSE point to be incorporated in the Contract.	Page 339-342
Appendix- 5	Check List	Page 343-345
Proforma-B	List of Items to be Imported	Page 346

Forwarding Letter

HIRING OF SERVICE PROVIDER FOR HIRING OF BUNDLED SERVICE FOR OFFSHORE DRILLING OPERATION IN BLOCK CY-OSN-2009/2, GULF OF MANNAR.

Oil India limited (OIL), a Govt. of India Enterprise under Ministry of Petroleum & Natural Gas was awarded NELP VIII offshore block CY-OSN-2009/2 (area: 1621 km²) with 50% PI as Operator and Oil and Natural Gas Corporation (ONGC) with 50% PI in the Gulf of Mannar. The Production Sharing Contract (PSC) was signed on 30th June, 2010 and the Petroleum Exploration License (PEL) was granted on 2nd August, 2010 by the Government of India.

Oil India Limited (OIL), invite firm quotation for **HIRING OF SERVICE PROVIDER FOR HIRING OF BUNDLED SERVICE FOR OFFSHORE DRILLING OPERATION IN BLOCK CY-OSN-2009/2, GULF OF MANNAR),** under **Single Stage Two Bid** system from experienced and competent service providers meeting the BEC/BRC of the tender.

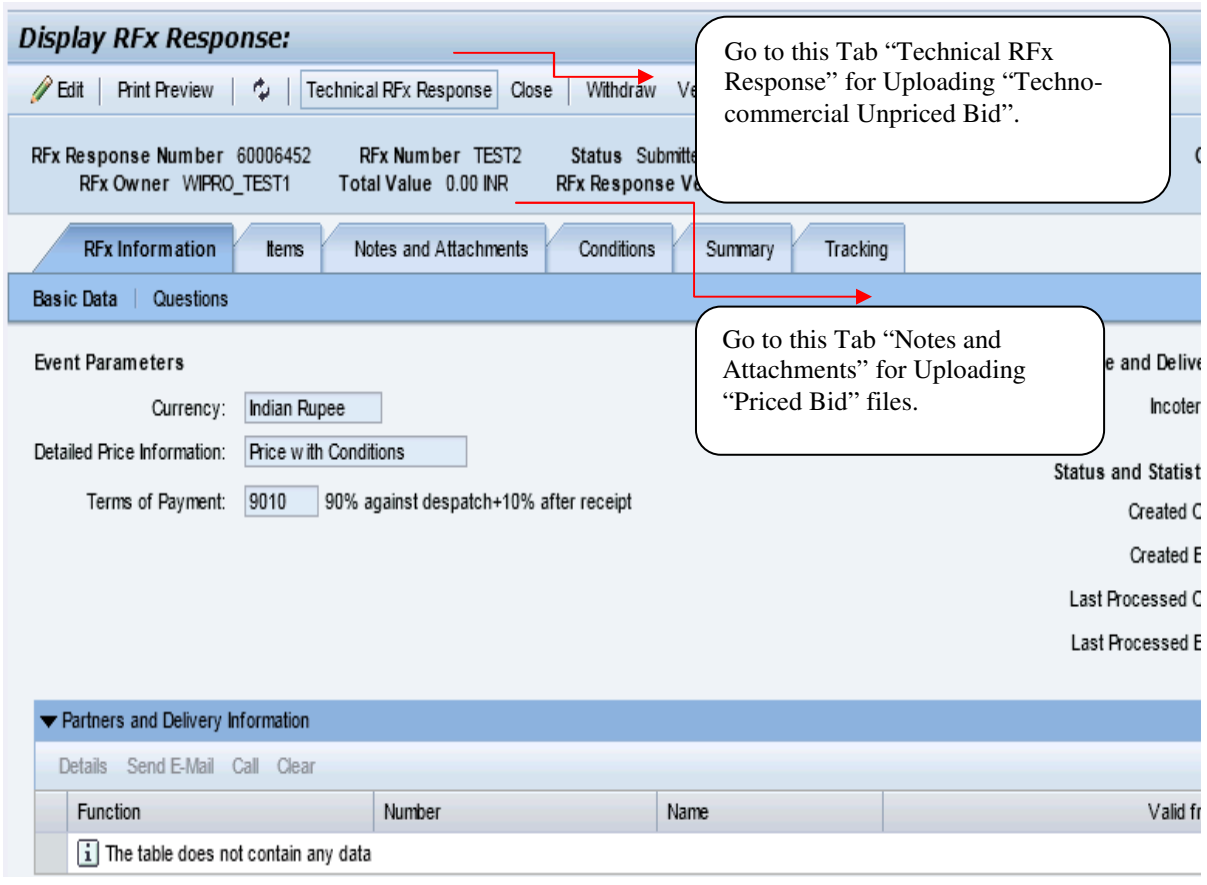
1.0 One complete set of bid document for hiring of above services is given herewith. You are requested to submit your most competitive bid through OIL's e-tender portal well before the scheduled bid closing date and time as mentioned in the portal against this tender. For your ready reference, few salient points (covered IN DETAIL IN THIS BID DOCUMENT) ARE HIGHLIGHTED BELOW*:*

(i)	Tender No	**:**	**CCG9095L16 DT. 26.10.2015**
(ii)	Type of Bid	**:**	**Limited Single Stage TWO Bid System**
(iii)	Bid Closing date & Time	**:**	**As Mentioned in the On-line Tender**
(iv)	Bid Opening date & time	**:**	**As Mentioned in the On-line Tender**
(v)	Bid Submission Place	**:**	**Bid to be submitted on line through OIL's e-tender portal. However, hard copies of voluminous documents like catalogue, company's profile and any othe volumetric technical literature as required as per tender can be submitted to the following address within the bid closing date and time :** OIL INDIA LIMITED CEMG / E&D Group FC-24, 5th Floor IT Infrastructure Building, Sector 16A, Noida – 201301, U.P
(vii)	Bid Opening Place	**:**	OIL INDIA LIMITED CEMG / E&D Group FC-24, 5th Floor IT Infrastructure Building, Sector 16A, Noida – 201301, U.P
(viii)	Bid Security	:	**Rs. 2,27,00,000 or USD 347,500 valid for 150 days from date of opening of**

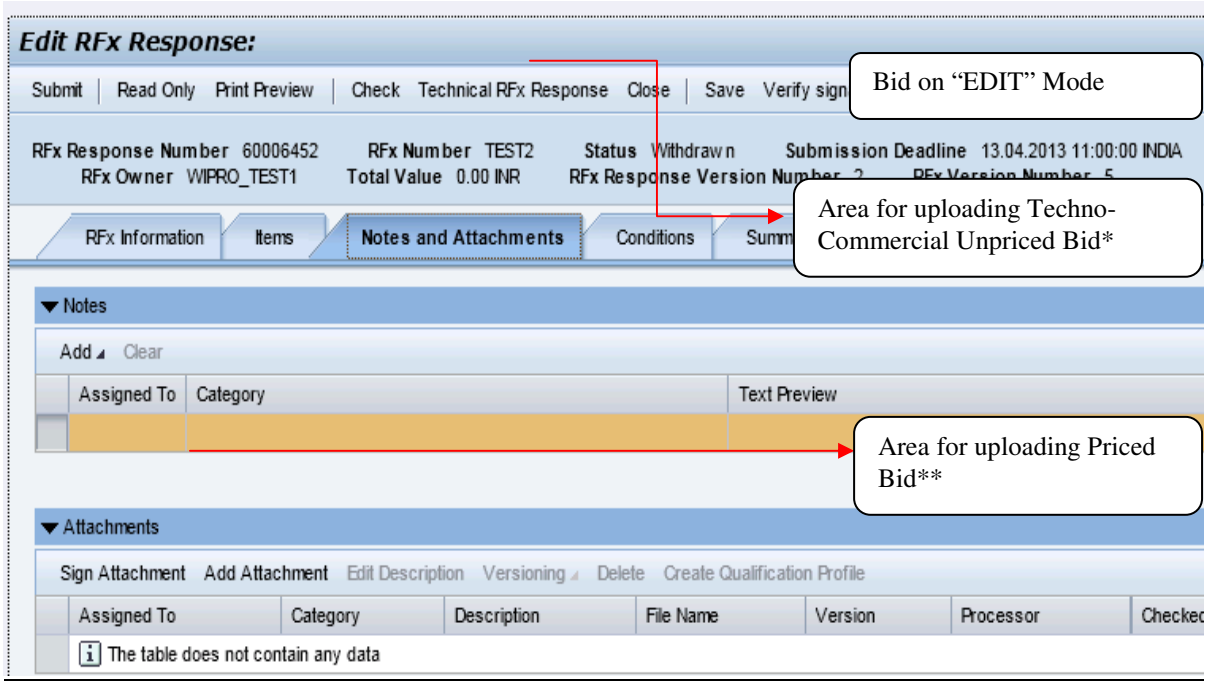
			technical bid.
(ix)	Amount of Performance Bank Guarantee & its Validity	:	@ 7.5% of Total Contract Value. The Validity of the PBG should be 06 months after completion of works or 03 months after completion of warranty obligation, whichever is later
(x)	Bid validity	:	120 days from the date of technical bid opening
(xi)	Completion period/Duration of the Contract	:	Duration of Contract shall be for an initial period of 90 days / 1 well from the date of commencement of contract for **Group I Service** and 30 days for **Group II service**. The contract shall commence as per the requirement of commencement of the contract of the deep water anchor-moored semi-submersible rig for 500 m water depth (contracted by the Company) and then continue till the completion of de-anchoring job of this rig at the end of the well of rig's contract. The Contract will be automatically extended for completion of jobs in the well as per the contract of this rig, on the same rates, terms & conditions.
(xii)	Quantum of Liquidated Damage for default in Timely Mobilization	:	1/2 % of total contract value for delay per week or part thereof subject to maximum of 7.5 %
(xiii)	Mobilization period	:	Bidders are required to confirm that, they shall mobilize the **Group I Services (Bundled Services)** along with crew so as to commence operations at the specified location "On or before 15.02.2016. However, 45 days mobilization time from date of issue of Letter of Award (LOA) will be given to the Contractor. For **Group II service (Well Testing service),** Mobilisation period is 30 days from date of issue of Mobilization Notice being Call Out service
(xiv)	**INTEGRITY PACT**: "OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide **Annexure - A** of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be returned by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Any bid not accompanied by Integrity Pact Proforma duly signed (digitally) by the bidder shall be rejected straightway. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact have been signed by the bidder's authorized signatory who sign the bid."		

	NAME OF INDEPENDENT EXTERNAL MONITOR: (a) SHRI RAJIV MATHUR, IPS(Retd.) Former Director, IB, Govt. of India E-mail Id : rajivmathur23@gmail.com

2.0 The tender is invited under **SINGLE STAGE-TWO BID SYSTEM**. The bidders are required to submit both the "**TECHNO-COMMERCIAL UN-PRICED**" and "**PRICED**" bids through electronic format in OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender. Detailed Guidelines to bidders for participating in OIL's e-Procurement tenders are given in website. Please ensure that **TECHNO-COMMERCIAL UN-PRICED BID / ALL TECHNICAL DOCUMENTS RELATED TO THE TENDER** are uploaded in the Technical RFX Response link only. **Please note that no price details should be uploaded in Technical RFX Response link.** Details of prices as per Bid format / Price-bid can be uploaded as Attachment in the attachment link under "**Notes and Attachments**". A screen shot in this regard is given below. However, we request bidders to go through OIL's e – Portal / Website before uploading their bids for updated information regarding participation requirements and procedure for OIL's e – tenders. Offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in Section – VI.



On "EDIT" Mode- The following screen will appear. Bidders are advised to Upload "Techno-Commercial Un-priced Bid" and "Priced Bid" in the places as indicated above:



Notes :

(i) The "Techno-Commercial Un priced Bid" shall contain all techno-commercial **details except the prices**.

(ii) The "Price bid" must contain the price schedule and the bidder's commercial terms and conditions. For uploading Price Bid, first click on Sign Attachment, a browser window will open, select the file from the PC and click on Sign to sign. On Signing a new file with extension .SSIG will be created. Close that window. Next click on Add Attachment, a browser window will open, select the .SSIG signed file from the PC and name the file under Description, Assigned to General Data and clock on OK to save the File.

(iii) The bid and all uploaded documents must be Digitally signed using "Class 3" digital certificate **with organization name** [e-commerce application (Certificate with personal verification and Organization name)] as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India.

(iv) The authenticity of above digital signature shall be verified through authorized CA after bid opening. If the digital signature used for signing is not of **"Class -3" with Organizations name**, **the bid will be rejected.**

(v) Bidder is responsible for ensuring the validity of digital signature and it's proper usage by their employee.

(vi) The bid including all uploaded documents shall be digitally signed by duly authorized representative of the bidding company.

4.0 Interested bidders may contact the following person to visit the site at their own expenses to have a realistic assessment of the requirement.

Mr. G.GOGOI
GM- DRLIING(PROJECT)
OIL INDIA LIMITED,
IT Infrastructure building, 5th Floor, FC – 24,
Sector 16A, NOIDA 201301
PH. NO. 0120-2511648
E-mail: cemg_c&p@oilindia.in

5.0 For any technical help in regards to uploading of bids in the OIL's e-tender portal, may please contact the following person :

Mr. A.J. Sarmah
Chief Manager- ERP, OIL INDIA LIMITED, DULIAJAN, ASSAM
Ph no. 09954486025, e-mail : ajsarmah@oilindia.in,
erp_mm@oilindia.in

6.0 Pre-Bid Meeting / Conference :

6.1 OIL will organize a pre-Bid conference on **05.11.2015** at Noida, India for providing clarifications to prospective bidders on Bid Rejection Criteria (BRC)/Bid Evaluation Criteria(BEC), Terms of Reference/Technical Specifications, Terms and conditions of the tender to enable them to understand the exact service requirement of the Company. Bidders interested to attend the pre-bid conference should contact/intimate well in advance for details of the venue, to **Rupak Kalita, Sr. Manager (C&P) (CEMG),OIL INDIA LIMITED,5th Floor, FC-24,IT Infrastructure Building, Sector 16A, NOIDA, UP E-MAILS : rupakkalita@oilindia.in;cemg_c&p@oilindia.in.**Foreign bidder may also request for an invitation letter, if required, for the purpose of visa for attending the conference.

6.2 At the most 2 (two) representatives from each prospective bidder shall be allowed to participate in the pre-bid conference. All costs for attending the pre-bid conference shall be to prospective bidders' account.

6.3 The prospective bidders shall submit their queries through E-mail to e-mail id **rupakkalita@oilindia.in; cemg_c&p@oilindia.in** prior to the date of pre-bid conference and such queries must reach OIL's office by **04.11.2015**. OIL shall either reply /clarify their queries through e-mail or in the pre-bid conference. OIL will not be responsible for non-receipt or late receipt of any bidder's query in OIL's office

We now look forward to your valuable offer through OIL's e – portal against the tender.

Thanking you,

Yours faithfully,
OIL INDIA LIMITED

(Rupak Kalita)
Senior Manager (C&P)(CEMG)
For Executive Director (E &D)
For Chairman & Managing Director
Ph no. 9910014067
rupakkalita@oilindia.in

PART – 1

INSTRUCTIONS TO BIDDERS

1.0 Bidder shall bear all costs associated with the preparation and submission of bid. Oil India Limited, hereinafter referred to as Company, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

A. BID DOCUMENTS

2.0 The services required, bidding procedures and contract terms are prescribed in the Bid Document. This Bid Document includes the following:

a) Forwarding Letter highlighting the following points:
   (i) Company's Tender No.
   (ii) Bid closing date and time
   (iii) Bid opening date and time
   (iv) Bid submission Mode
   (v) Bid opening place
   (vi) Bid validity, Mobilisation time & Duration of contract
   (vii) The amount of Bid Security with validity
   (viii) The amount of Performance Guarantee with validity
   (ix) Quantum of liquidated damages for default in timely mobilizations

b) Instructions to Bidders, (Part-1).
c) Bid Evaluation Criteria/Bid Rejection Criteria, (Part-2).
d) General Conditions of Contract, (Section-I).
e) Terms of Reference/Technical Specification,(Section-II).
f) Special Conditions of Contract, (Section-III)
g) Schedule of Rates, (Section-IV).
h) Integrity Pact Proforma, (Annexure-A).
i) Estimated CIF value of items at the time of import, **(Proforma- A)**
j) Price Schedule Format, (Proforma-B).
k) Bid Form, (Proforma-C).
l) Certificate of Compliance with respect to BRC(Proforma-D)
m) Statement of Non-Compliance, (Proforma-E)
n) Bid Security Form, (Proforma-F)
o) Performance Security Form, (Proforma-G)
p) Agreement Form, (Proforma-H)
q) Proforma of Letter of Authority, (Proforma-I)
r) Authorisation for Attending Bid Opening, (Proforma-J)

2.1 The bidder is expected to examine all instructions, forms, terms and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a bid not substantially responsive to the Bid Documents in every respect will be at the Bidder's risk & responsibility and may result in the rejection of its bid.

3.0 TRANSFERABILITY OF BID DOCUMENTS:

3.1 Bid Documents are non-transferable. Bid can be submitted only in the name of the bidder in whose name the Bid Document has been issued.

3.2 Unsolicited bids will not be considered and will be rejected straightway.

4.0 AMENDMENT OF BID DOCUMENTS:

4.1 At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Documents through issuance of an Addendum.

4.2 The Addendum will be uploaded in OIL's E-Tender Portal in the "Technical RFx Response" under the tab "Amendments to Tender Documents". All prospective bidders to whom Company has issued the Bidding Documents shall also be intimated about the amendments through post/courier or by Fax or e-mail. The Company may, at its discretion, extend the deadline for bid submission, if the Bidders are expected to require additional time in which to take the Addendum into account in preparation of their bid or for any other reason. Bidders shall also check from time to time the E-Tender portal ["Technical RFx Response" under the tab "Amendments to Tender Documents"] for any amendments to the bid documents before submission of their bids.

B. PREPARATION OF BIDS

5.0 LANGUAGE OF BIDS: The bid as well as all correspondence and documents relating to the bid exchanged between the Bidder and the Company shall be in English language, except that any printed literature may be in another language provided it is accompanied by an official and notarised English translated version, which shall govern for the purpose of bid interpretation.

5.1 **BIDDER'S/AGENT'S NAME & ADDRESS**:
Bidders should indicate in their bids their detailed postal address including the Fax/Telephone / Cell Phone Nos. and E-mail address. Similar information should also be provided in respect of their authorised Agents in India, if any.

6.0 DOCUMENTS COMPRISING THE BID:
Bids are invited under Single Stage Two Bid System. The bid to be uploaded by the Bidder in OIL's E-Tender portal shall comprise of the following components:

(A) TECHNICAL BID

(i) Complete technical details of the services as per the Terms of reference / Technical Specification.
(ii) Documentary evidence established in accordance with Clause 10.0.
(iii) Bid Security (scanned) in accordance with Clause 11.0 hereunder. Original Bid Security should be sent as per Clause No. 11.10 below.
(iv) Copy of Bid-Form **without indicating prices** in Proforma-C
(v) Statement of Non-compliance as per Proforma–E
(vi) Proforma-A: List of items to be imported **without** the CIF values.
(vii) Copy of Priced Bid ***without indicating prices*** (Proforma-B)
(viii) Integrity Pact digitally signed by OIL's competent personnel as **Annexure-A** attached with the bid document to be digitally signed by the bidder.

(B) PRICED BID

Bidder shall quote their prices in the following Proforma available in OIL's E-procurement portal in the **"Notes & Attachments" Tab**:

(i) Price-Bid Format as per **Proforma-B**

(ii) Bid Form as per **Proforma-C**

(iii) Proforma-A showing the items to be imported with the CIF values.

The Priced Bid shall contain the prices along with the currency quoted and any other commercial information pertaining to the service offered.

7.0 BID FORM:

The bidder shall complete the Bid Form and the appropriate Price Schedule furnished in their Bid.

8.0 BID PRICE:

8.1 Prices must be quoted by the Bidders online as per the price bid format available in OIL's E- Tender Portal in "Notes & Attachment" Tab. Unit prices must be quoted by the bidders, both in words and in figures.

8.2 Prices quoted by the successful bidder must remain firm during its performance of the Contract and is not subject to variation on any account.

8.3 All duties (except customs duty which will be borne by the Company) and taxes (excluding Service Tax) including Corporate Income Tax, Personal Tax, Assam Entry Tax etc. and other Cess/levies payable by the successful bidder under the Contract for which this Bid Document is being issued, shall be included in the rates, prices and total Bid Price submitted by the bidder, and the evaluation and comparison of bids shall be made accordingly. For example, personal taxes and/or any corporate taxes arising out of the profits on the contract as per rules of the country shall be borne by the bidder.

9.0 CURRENCIES OF BID AND PAYMENT:

9.1 A bidder expecting to incur its expenditures in the performance of the Contract in more than one currency, and wishing to be paid accordingly, shall so indicate in the bid. In such a case, the bid shall be expressed in different currencies and the respective amounts in each currency shall together make up the total price.

9.2 Indian bidders too can submit their bids in any currency (including Indian Rupees) and receive payment in such currencies on par with foreign bidders. However, currency once quoted will not be allowed to be changed.

10.0 DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATIONS:

10.1 These are listed in **BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC), PART-2** of the Bid document.

11.0 BID SECURITY:

11.1 The Bid Security is required to protect the Company against the risk of Bidder's conduct, which would warrant forfeiture of the Bid Security, pursuant to sub-clause 11.8.

11.2 All the bids must be accompanied by Bid Security in Original for the amount as mentioned in the "Forwarding Letter" or an equivalent amount in other freely convertible currency and shall be in any one of the following forms:

(a) A Bank Guarantee or irrevocable Letter of Credit in the prescribed format vide Proforma-F or in another form acceptable to the Company : Bank Guarantee/LC issued from any of the following Banks only will be accepted :

i) Any Nationalised / scheduled Bank in India or
ii) Any Indian branch of a Foreign Bank or
ii) Any reputed foreign Bank having correspondent Bank in India

The Bank Guarantee / LC shall be valid for 30 days beyond the validity of the bids asked for in the Bid Document.

Bank Guarantees issued by Banks in India should be on non-judicial stamp paper of requisite value, as per Indian Stamp Act, purchased in the name of the Banker.

(b) A Cashier's cheque or Demand Draft drawn on 'Oil India Limited' valid for 180 days from the date of issue and payable at Delhi / Noida,. In case of lesser validity, same will be deposited in OIL's bank account and will be returned by issuing an interest free demand draft of same amount after finalization of tender.

11.3 Any bid not secured in accordance with sub-clause 11.2 above shall be rejected by the Company as non-responsive.

11.4 The bidders shall extend the validity of the Bid Security suitably, if and when specifically advised by OIL, at the bidder's cost.

11.5 Unsuccessful Bidder's Bid Security will be discharged and/or returned within 30 days after finalization of IFB.

11.6 Successful Bidder's Bid Security will be discharged and/or returned upon Bidder's furnishing the Performance Security and signing of the contract. Successful bidder will however ensure validity of the Bid Security till such time the Performance Security is furnished.

11.7 Bid Security shall not accrue any interest during its period of validity or extended validity.

11.8 The Bid Security may be forfeited:

i) If any bidder withdraws their Bid during the period of bid validity
ii) If any bidder alters their Bid during the period of bid validity or if the bidder increases the price during the period of bid validity.
iii) If the bidder does not accept the LOA issued by Company within the validity of the bid
iv) If the bid is accepted by OIL, and work is awarded but the contractor does not furnish the Performance Security.

11.8.1 In case any bidder withdraws their bid during the period of bid validity, Bid Security will be forfeited and the party shall be debarred for a period of 2(two) years or as per OIL's banning policy.

11.9The scanned copy of the original Bid Security in the form of either Bank Guarantee or LC or Cashier Cheque or Bank Draft must be uploaded by bidder along with the Technical bid in the C-folder of OIL's E-portal. The **original Bid Security** shall be submitted by bidder to the office of **Executive Director (E &D), Attn: Sr. Manager (C&P) (CEMG), Oil India Limited, FC-24, 5th Floor, IT Infrastructure Building, Sector-16A, NOIDA–201301 , INDIA** in a sealed envelope which must reach in the aforesaid office before the Bid Closing date and Time failing which the bid shall be rejected.

12.0 **EXEMPTION FROM SUBMISSION OF BID SECURITY :**

Central Govt. offices and Central Public Sector undertakings of India. NSIC and SME vendor of India are exempted from submitting Bid Security.

13.0 PERIOD OF VALIDITY OF BIDS:

13.1 Bids shall remain **valid for 120** days from the date of closing of bid prescribed by the Company. Bids of shorter validity will be rejected as being non-responsive. If nothing is mentioned by the bidder in their bid about the bid validity, it will be presumed that the bid is valid for 120 days from Bid Closing Date.

13.2 In exceptional circumstances, the Company may solicit the Bidder's consent to an extension of the period of validity. The request and the response thereto shall be made in writing through Fax or e-mail. The Bid Security provided under Para 11.0 above shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request will neither be required nor permitted to modify their Bid.

14.0 SIGNING OF BID:

14.1 Bids are to be submitted online through OIL's E-procurement portal with digital signature. The bid and all attached documents should be digitally signed by the bidder using "Class 3" digital certificates with Organizations Name [e-commerce application (Certificate with personal verification and Organisation Name)] as per Indian IT Act 2000 obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India before bid is uploaded.

The bid including all uploaded documents shall be digitally signed by duly authorized representative of the bidder holding a Power of Attorney to bind the Bidder to the contract.

If any modifications are made to a document after attaching digital signature, the digital signature shall again be attached to such documents before uploading the same. The Power of Attorney in original shall be submitted by bidder as mentioned in Para 15.1 below.

The authenticity of above digital signature shall be verified through authorized CA after bid opening and in case the digital signature is not of "Class-3" with organization name, the bid will be rejected.

Bidder is responsible for ensuring the validity of digital signature and its proper usage by their employees.

14.2 The original and all copies of the bid shall be typed or written in indelible inks. Since bids are to be submitted ONLINE with digital signature, manual signature is NOT relevant. The letter of authorisation (as per **Proforma-I**) shall be indicated by written Power of Attorney accompanying the Bid.

14.3 Any person signing the Bid or any other document in respect of this Bidding Document or other relevant documents on behalf of the Bidder without disclosing his authority to do so shall be deemed to have the authority to bind the Bidder. If it is discovered at any time that the person so signing has no authority to do so, the Company (OIL) may, without prejudice to any other right or remedy, cancel his Bid or Contract and hold the Bidder liable to the Company (OIL) for all costs and damages arising from the cancellation of the Bid or Contract including any loss which the Company (OIL) may sustain on account thereof.

14.4 Any physical documents submitted by bidders shall contain no interlineations, white fluid erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such correction shall be initialled by the person or persons who has/have digitally signed the Bid.

14.5 Any Bid, which is incomplete, ambiguous, or not in compliance with the Bidding process will be rejected.

15.0 SUBMISSION OF BIDS

15.1 The tender is processed under single stage - Two bid system. Bidder shall submit the Technical bid and Priced bid along with all the Annexures and Proforma (wherever applicable) and copies of documents in electronic form through OIL's e-procurement portal within the Bid Closing Date & Time stipulated in the e-tender. For submission of Bids online at OIL's E-Tender Portal, detailed instructions is available in **"HELP DOCUMENTATION"** available in OIL's E-Tender Portal. Guidelines for bid submission are also provided in the "Forwarding Letter". The Technical Bid is to be submitted as per Terms of Reference/Technical Specifications of the bid document and Priced Bid as per the Price Schedule. The Technical Bid should be uploaded in the "Technical RFx Response" under "Techno-Commercial Bid" Tab Page only. Prices to be quoted as per Proforma-B should be uploaded as Attachment just below the "Tendering Text" in the attachment link under "Techno-Commercial

Bid" Tab under General Data in the e-portal. **No price should be given in the "Technical RFx Response", otherwise bid shall be rejected.** The priced bid should not be submitted in physical form which shall not be considered.

However, the following documents in two sets should necessarily be submitted in physical form in sealed envelope superscribing the "TENDER No., Brief Description of services and Bid Closing/Opening date & Time along with the bidder's name and should be submitted to SR. Manager (C&P), OIL INDIA LIMITED, CEMG / E&D Group, FC-24, 5th Floor IT Infrastructure Building, Sector 16A, Noida – 201301, U.P on or before the bid closing date and time indicated in the TENDER/ e-tender portal :

i) The Original Bid Security along with 2(two) copies
ii) Power of Attorney for signing of the bid digitally
iii) Any other document required to be submitted in original as per bid document requirement.
iv) Printed catalogue and literature if called for in the bid document.

Documents sent through E-mail/Fax/Telex/Telegraphic/Telephonic will not be considered.

15.2 All the conditions of the contract to be made with the successful bidder are given in various Sections of the Bid Document. Bidders are requested to state their non-compliance to each clause as per **Proforma-E** of the bid document and the same should be uploaded along with the Technical Bid.

15.3 Timely delivery of the documents in physical form as stated in Para 15.1 above is the responsibility of the bidder. Bidders should send the same through Registered Post or by Courier Services or by hand delivery to the Officer in Charge of the particular tender before the Bid Closing Date and Time. Company shall not be responsible for any postal delay/transit loss.

15.4 Bids received through the e-procurement portal shall only be accepted. Bids received in any other form shall not be accepted.

16.0 INDIAN AGENT/REPRESENTATIVE/RETAINER/ASSOCIATE:

Foreign bidders shall clearly indicate in their bids whether they have an Agent/Representative/Retainer/Associate in India. In the event the overseas bidder is having an Agent/Representative/Retainer/Associate in India, the bidder should furnish the name and address of their Agent/Representative/Retainer/Associate in India and clearly indicate nature and extent of services to be provided by such an Agent/ Representative/Retainer/Associate in India and also stating in their bids whether the Agent/Representative/Retainer/Associate is authorized to receive any commission. The rate of the commission included in the quoted rates of bidder should be indicated which would be payable to Agent/Representative/Retainer/Associate in non-convertible Indian currency according to Import Trade Regulation of India. Unless otherwise specified, it will be assumed that agency commission is not involved in the particular bid.

Further, overseas bidders shall submit their bids directly and not through their Agent/Representative/Retainer/Associate in India. Bid submitted by

Indian Agent/Representative/Retainer/Associate on behalf of their foreign principals will not be considered and will be rejected straightway. Moreover, one Indian Agent/Representative/Retainer/ Associate cannot represent more than one foreign bidder against the TENDER.

The Indian Agent/Representative/Retainer/Associate will not be permitted to submit any Bid Security and Performance Security on behalf of their foreign principals and also the Indian Agent/ Representative/Retainer/Associate will not be allowed to execute the contract and receive payment against bid submitted by their foreign principals. Such bids shall be rejected straightway.

17.0 <u>DEADLINE FOR SUBMISSION OF BIDS</u>:

17.1 Bids should be submitted on-line as per the online tender submission deadline. Bidders will not be permitted by System to make any changes in their bid/quote after the bid has been submitted by the bidder. Bidder may however request **SM (C & P), Oil India Limited, Noida**

17.2 for returning their bids/quote before the original bid closing date and time for resubmission. But no such request would be entertained once the submission deadline has reached or bids are opened.

17.3 No bid can be submitted after the submission dead line is reached. The system time displayed on the e-procurement web page shall decide the submission dead line.

17.4 The documents in physical form as stated in Para 15.1 must be received by Company at the address specified in the “Forwarding Letter” on or before the Bid Closing Date and Time as mentioned in the "Forwarding Letter". Timely delivery of the same at the address mentioned in the Forwarding Letter is the responsibility of the Bidders.

18.0 <u>LATE BIDS</u>:

Bidders are advised in their own interest to ensure that their bids are uploaded in system before the closing date and time of the bid. The documents in physical form if received by the Company after the deadline for submission prescribed by the Company shall be rejected and shall be returned to the Bidders in unopened condition immediately.

19.0 <u>MODIFICATION AND WITHDRAWAL OF BIDS</u>:

19.1 The Bidder after submission of Bid may modify or withdraw its Bid by written notice prior to Bid Closing Date & Time.

19.2 The Bidder's modification or withdrawal notice may also be sent by fax/e-mail but followed by a signed confirmation copy, postmarked not later than the deadline for submission of Bids.

19.3 No Bid can be modified or withdrawn subsequent to the deadline for submission of Bids.

19.4 Once a withdrawal letter is received from any bidder, the offer will be treated as withdrawn and no further claim/correspondences will be entertained in this regard.

19.5 No Bid can be withdrawn in the interval between the deadline for submission of Bids and the expiry of the period of Bid Validity specified by the Bidder on the

Bid Form. Withdrawal of a Bid during this interval shall result in the Bidder's forfeiture of its Bid Security and bidder shall also be debarred from participation in future tenders of OIL.

20.0 EXTENSION OF BID SUBMISSION DATE:

Normally no request for extension of Bid Closing Date & Time will be entertained. However, OIL at its discretion, may extend the Bid Closing Date and/or Time due to any reasons. In case of receipt of only one Bid on the Bid Closing Date and Time, OIL may extend the Bid Closing /Opening Date by 2(two) weeks. However, the bidder whose bid has been received within the bid closing date and time, will not be allowed to revise their Bid/prices. Withdrawal of such Bid is also not permitted.

21.0 BID OPENING AND EVALUATION:

21.1 Company will open the Technical Bids, including submission made pursuant to clause 19.0, in presence of Bidder's representatives who choose to attend at the date, time and place mentioned in the Forwarding Letter. However, an authorisation letter (as per **Proforma-J**) from the Bidder must be produced by the Bidder's representative at the time of Bid Opening. Unless this Letter is presented, the representative will not be allowed to attend the Bid Opening. The Bidder's representatives who are allowed to attend the Bid Opening shall sign a register evidencing their attendance. Only one representative against each Bid will be allowed to attend. In technical bid opening, only "Technical RFx Response" will be opened. Bidders therefore should ensure that technical bid is uploaded in the "Technical RFx Response" Tab Page only in the E-portal.

21.2 In case of any unscheduled holiday or Bandh on the Bid Opening Date, the Bids will be opened on the next full working day. Accordingly, Bid Closing Date / time will get extended up to the next working day and time.

21.3 Bid for which an acceptable notice of withdrawal has been received pursuant to clause 19.0 shall not be opened. Company will examine bids to determine whether they are complete, whether requisite Bid Securities have been furnished, whether documents have been digitally signed and whether the bids are generally in order.

21.4 At bid opening, Company will announce the Bidder's names, written notifications of bid modifications or withdrawal, if any, the presence of requisite Bid Security(if called for), and such other details as the Company may consider appropriate.

21.5 Company shall prepare, for its own records, minutes of bid opening including the information disclosed to those present in accordance with the sub-clause 21.3.

21.6 Normally no clarifications shall be sought from the Bidders. However, for assisting in the evaluation of the bids especially on the issues where the Bidder confirms compliance in the evaluation and contradiction exists on the same issues due to lack of required supporting documents in the Bid (i.e. document is deficient or missing), or due to some statement at other place of the Bid (i.e. reconfirmation of confirmation) or vise versa, clarifications may be sought by OIL. In all the above situations, the Bidder will not be allowed to change the

basic structure of the Bid already submitted by them and no change in the price or substance of the Bid shall be sought, offered or permitted.

21.7 Prior to the detailed evaluation, Company will determine the substantial responsiveness of each bid to the requirement of the Bid Documents. For purpose of these paragraphs, a substantially responsive bid is one, which conforms to all the terms and conditions of the Bid Document without material deviations or reservation. A material deviation or reservation is one which affects in any way substantial way the scope, quality, or performance of work, or which limits in any substantial way, in-consistent way with the Bid Documents, the Company's right or the bidder's obligations under the contract, and the rectification of which deviation or reservation would affect unfairly the competitive position of other bidders presenting substantial responsive bids. The Company's determination of Bid's responsiveness is to be based on the contents of the Bid itself without recourse to extrinsic evidence.

21.8 A Bid determined as not substantially responsive will be rejected by the Company and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

21.9 The Company may waive minor informality or nonconformity or irregularity in a Bid, which does not constitute a material deviation, provided such waiver, does not prejudice or affect the relative ranking of any Bidder.

22.0 OPENING OF PRICED BIDS:

22.1 Company will open the Priced Bids of the technically qualified Bidders on a specific date in presence of representatives of the qualified bidders. The technically qualified Bidders will be intimated about the Priced Bid Opening Date & Time in advance. In case of any unscheduled holiday or Bandh on the Priced Bid Opening Date, the Bids will be opened on the next working day.

22.2 deleted.

22.3 The Company will examine the Price quoted by Bidders to determine whether they are complete, any computational errors have been made, the documents have been properly signed, and the bids are generally in order.

22.4 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price (that is obtained by multiplying the unit price and quantity) the unit price shall prevail and the total price shall be corrected accordingly. If there is a discrepancy between words, and figures, the amount in words will prevail. If any Bidder does not accept the correction of the errors, their Bid will be rejected.

23.0 CONVERSION TO SINGLE CURRENCY:

While evaluating the bids, the closing rate of exchange declared by State Bank of India on the day prior to price bid opening will be taken into account for conversion of foreign currency into Indian Rupees. Where the time lag between the opening of the price bids and final decision exceeds three months, the rate of exchange declared by State Bank of India on the date prior to the date of final decision will be adopted for conversion.

24.0 EVALUATION AND COMPARISON OF BIDS:

The Company will evaluate and compare the bids as per **BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC), PART-2** of the Bid Documents.

24.1 **DISCOUNTS / REBATES**:

Unconditional discounts/rebates, if any, given in the bid will be considered for evaluation.

24.2 Post bid or conditional discounts/rebates offered by any bidder shall not be considered for evaluation of bids. However, if the lowest bidder happens to be the final acceptable bidder for award of contract, and if they have offered any discounts/rebates, the contract shall be awarded after taking into account such discounts/rebates.

24.3 **LOADING OF FOREIGN EXCHANGE**:

There would be no loading of foreign exchange for deciding the inter-se-ranking of domestic bidders.

24.4 **EXCHANGE RATE RISK**:

Since Indian bidders are now permitted to quote in any currency and also receive payments in that currency, Company will not be compensating for any exchange rate fluctuations in respect of the services.

24.5 **REPATRIATION OF RUPEE COST**:

In respect of foreign parties rupee payments made on the basis of the accepted rupee component of their bid, would not be repatriable by them. A condition to this effect would be incorporated by the Company in the contract.

25.0 CONTACTING THE COMPANY:

25.1 Except as otherwise provided in Clause 21.0 above, no Bidder shall contact Company on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded except as required by Company vide sub-clause 21.7.

25.2 An effort by a Bidder to influence the Company in the Company's bid evaluation, bid comparison or Contract award decisions may result in the rejection of their bid.

D. AWARD OF CONTRACT

26.0 AWARD CRITERIA:

The Company will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

27.0 COMPANY'S RIGHT TO ACCEPT OR REJECT ANY BID:

Company reserves the right to accept or reject any or all bids and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder, or bidders or any obligation to inform the affected bidder of the grounds for Company's action.

28.0 NOTIFICATION OF AWARD:

28.1 Prior to the expiry of the period of bid validity or extended validity, Company will notify the successful Bidder in writing by registered letter or by fax or E-mail (to be confirmed in writing by registered / couriered letter) that its Bid has been accepted.

28.2 The notification of award will constitute the formation of the Contract.

28.3 Upon the successful Bidder's furnishing of Performance Security pursuant to Clause 29.0 below, the Company will promptly notify each un-successful Bidder and will discharge their Bid Security, pursuant to Clause 11.0 hereinabove.

29.0 PERFORMANCE SECURITY:

29.1 Within 2(two) weeks of receipt of notification of award from the Company, the successful Bidder shall furnish to Company the Performance Security for an amount specified in the Forwarding Letter(and Letter of Award(LOA) issued by Company to Contractor awarding the contract) as per **Proforma-G** or in any other format acceptable to the Company and must be in the form of Bank Guarantee(BG) or an irrevocable Standby Letter of Credit(S L/C) from any of the following Banks :

i) Any Nationalised / Scheduled Bank in India OR
ii) Any Indian branch of a Foreign Bank OR
ii) Any reputed foreign Bank having correspondent Bank in India

The Performance Security shall be denominated in the currency of the contract or in equivalent US Dollars converted at the B.C. Selling rate of State Bank of India on the date of issue of LOA(Letter of Award). Bank Guarantees issued by Banks in India should be on non-judicial stamp paper of requisite value, as per Indian Stamp Act, purchased in the name of the Banker.

29.2 The Performance Security specified above must be valid for 3(three) months (covering the warranty period) plus 3 months to lodge claim, if any, beyond the contract period. The Performance Security may be discharged by Company not later than 30 days following its expiry. In the event of any extension of the Contract period, Bank Guarantee should be extended by Contractor by the period equivalent to the extended period.

29.3 The Performance Security shall be payable to Company as compensation for any loss resulting from Contractor’s failure to fulfill its obligations under the Contract.

29.4 The Performance Security will not accrue any interest during its period of validity or extended validity.

29.5 Failure of the successful Bidder to comply with the requirements of clause 29.0 and/or 30.0 shall constitute sufficient grounds for annulment of the award and forfeiture of the Bid Security or Performance Security. In such an

eventuality, the party may be debarred for a period of 2(two) years from the date of default or the period as per Company's banning policy.

30.0 SIGNING OF CONTRACT:

30.1 At the same time as the Company notifies the successful Bidder that its Bid has been accepted, the Company will either call the successful Bidder for signing of the agreement or send the Contract Form provided in the Bid Documents, along with the General & Special Conditions of Contract, Technical Specifications, Schedule of Rates incorporating all agreements agreed between the two parties.

30.2 Within 30 days of issue of LOA, the successful Bidder shall sign and date the contract and return it to the Company. Till the contract is signed, the LOA issued to the successful bidder shall remain binding amongst the two parties.

30.3 In the event of failure on the part of the successful Bidder to sign the contract within the period specified above or any other time period specified by Company, OIL reserves the right to terminate the LOA issued to the successful Bidder and invoke the Bid Security or the Performance Security if submitted by the successful Bidder. The party shall also be debarred for a period of 2(two) years from the date of default.

31.0 FURNISHING FRAUDULENT INFORMATION/DOCUMENTS:

If it is found that a bidder/Contractor has furnished fraudulent information / documents, the Bid Security/Performance Security shall be forfeited and the party shall be debarred for a period of 3(three) years from the date of detection of such fraudulent act besides the legal action.

32.0 CREDIT FACILITY:

Bidders should indicate clearly in the Bid about availability of any credit facility inclusive of Government to Government credits indicating the applicable terms and conditions of such credit.

33.0 MOBILISATION ADVANCE PAYMENT:

33.1 Request for advance payment shall not be normally considered. However, depending on the merit and at the discretion of the Company, advance against mobilisation charge may be given at an interest rate of 1% above the prevailing Bank rate (CC rate) of SBI from the date of payment of the advance till recovery/refund.

33.2 Advance payment agreed to by the Company shall be paid only against submission of an acceptable bank guarantee whose value should be equivalent to the amount of advance plus the amount of interest covering the period of advance. Bank guarantee shall be valid for 2 months beyond completion of mobilisation and the same may be invoked in the event of Contractor's failure to mobilise as per agreement.

33.3 In the event of any extension to the mobilisation period, Contractor shall have to enhance the value of the bank guarantee to cover the interest for the extended period and also to extend the validity of bank guarantee accordingly.

34.0 INTEGRITY PACT:

34.1 OIL shall be entering into an Integrity Pact with the Bidders as per format enclosed vide **Annexure-A** of the Bid Document. The Integrity Pact has been duly signed digitally by OIL's competent signatory and uploaded in the OIL's e-portal. The Integrity Pact shall be returned by the bidder (along with the technical Bid) duly signed by the same signatory who signed the Bid i.e. who is duly authorized to sign the Bid. Uploading the Integrity Pact in the OIL's E-portal with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who has signed the bid.

34.2 OIL has appointed as Independent Monitors (IEM) SHRI RAJIV MATHUR,IPS (Retd.) Former Director, IB, Govt. of India to oversee implementation of Integrity Pact in OIL. Bidders may contact the Independent Monitors for any matter relating to the TENDER at the following addresses:

SHRI RAJIV MATHUR,IPS(Retd.),
e-mail id ; rajivmathur23@gmail.com

35.0 LOCAL CONDITIONS:

It is imperative for each Bidder to be fully informed themselves of all Indian as well as local conditions, factors and legislation which may have any effect on the execution of the work covered under the Bidding Document. The bidders shall be deemed, prior to submitting their bids to have satisfied themselves of all the aspects covering the nature of the work as stipulated in the Bidding Document and obtain for themselves all necessary information as to the risks, contingencies and all other circumstances, which may influence or affect the various obligations under the Contract.

No request will be considered for clarifications from the Company (OIL) regarding such conditions, factors and legislation. It is understood and agreed that such conditions, factors and legislation have been properly investigated and considered by the Bidders while submitting the Bids. Failure to do so shall not relieve the Bidders from responsibility to estimate properly the cost of performing the work within the provided timeframe. Company (OIL) will assume no responsibility for any understandings or representations concerning conditions made by any of their officers prior to award of the Contract. Company (OIL) shall not permit any Changes to the time schedule of the Contract or any financial adjustments arising from the Bidder's lack of knowledge and its effect on the cost of execution of the Contract.

36.0 SPECIFICATIONS:

Before submission of Bids, Bidders are requested to make themselves fully conversant with all Conditions of the Bid Document and other relevant information related to the works/services to be executed under the contract.

END OF PART - 1

PART – 2

BID REJECTION CRITERIA (BRC)/BID EVALUATION CRITERIA (BEC)

Bidders are advised not to take any exception/deviations to the bid document. Still, if exceptions /deviations are maintained in the bid, such conditional/ non-conforming bids shall not be considered and may be rejected outright.

I. BID REJECTION CRITERIA (BRC):

The bid shall conform generally to the specifications and terms & conditions given in this bid document. Bids shall be rejected in case the services offered do not conform to the required parameters stipulated in the technical specifications. Notwithstanding the general conformity of the bids to the stipulated specifications, terms & conditions, the following requirements will have to be particularly met by the Bidders, without which the same will be considered as non-responsive and rejected.

A. TECHNICAL REJECTION CRITERIA:

The following vital technical conditions should be strictly complied with, failing which the bid will be rejected.

1.0 Scope of Work:

Bids should be complete and covering the entire scope of work / supply, and, should conform to the technical specifications indicated in the bid documents, duly supported with technical catalogues / literature wherever required. Incomplete and non-conforming bids will be rejected outright.
The Bidder shall be required to provide Bundled Services with capable and experienced service crew at the Rig / Base Personnel as per Contract Document, for Deep water Operations in Indian Offshore for one Anchor Moored Drilling Rig (MODU) to be hired by the Company for exploratory drilling / completion operations, including relief well drilling, in water depths up to 500 m and well depth up to 5200 m (below sea bed). The Services shall be capable of operating in the above specified water depths.

The Bidder shall provide all services listed under **Group-I** (Main Bundled Services) & **Group- II** (Well Testing Services). Each Group will be evaluated separately. Bidders having in-house capability of providing Well Testing Services should quote for **Group I & II** subject to fulfilling the qualification and experience criteria specified under para 2.0 below. **Group-II** services (well Testing Services) will be optional for bidders not having in-house capability of providing the same.

Bundled Services (Group-I):

a) Cementing Equipment & Services, including slurry design, supply of oil well cement, additives, floating & guiding equipment, casing jewelries along with Base Engineer for deepwater wells.
b) Mud Engineering Services including supply of mud chemicals along with Mud Engineers for deepwater wells.
c) LWD/MWD and Mud Motor and Directional Drilling Services along with Crew for deepwater wells. LWD/MWD data to be integrated with Rig's

communication system for real Time Data transmission from Rig to Operator's onshore base offices.

d) Wireline Logging Services along with Crew for deepwater well. Wireline data to be integrated with Rig's communication system for Real Time Data transmission from Rig to Operator's onshore base.

e) Mud Logging Unit Services along with crew for deepwater well. Mud Logging Data to be integrated with Rig's communication system for real Time Data transmission from Rig to Operator's onshore base.

f) Coring Services with supply of core barrels and core heads, Coring Expert, Core handling / preservation (at site and transportation to Company's Shore Base)

g) Complete Logistics support (marine, air, at shore base) for day to day operation of the deep water Rig. Sea logistics may be operated from Tuticorin Port and Air logistics may be operated from Madurai/ Tuticorin Airport.

h) Complete Shore based facilities at Tuticorin for loading/unloading, warehousing and handling of equipment and materials including bulk like cement, mud chemicals etc. The Contractor shall also provide drill water, pot water, etc. for Rig, OSVs, and AHTSVs.

i) Casing and Tubing Running Tools and Services

j) Drilling, Fishing, Milling, Plug and Abandonment tools and Services

k) Liner Hanger Equipment and Liner Running Services

l) Supply of Drill bits / bi-centered bits on consignment basis and hole enlargement tools and services

m) RTOC Equipment and Services

Optional Services (Group-II):

n) Well Testing Services along with crew for deepwater wells. Well Testing is required for carrying out production testing of exploratory and development wells drilled by Anchor Moored Mobile Offshore Drilling Rig at offshore locations. (In case the same bidder is awarded the contracts for Bundled Services as well as Optional Well Testing Services, then a single contract shall be signed for both Bundled Services as well as Well Testing Services).

This optional service will be emulated (cost comparison) separately without clubbing with **Group-I services**.

2.0. Eligibility and Experience of the Bidder:

(a) The Bidder must have experience of providing the indicated oil–field services under **Group-I & Group-II** (if opted for) with men and materials for a **minimum of 5 (five) years and at least 3 (three) wells** in deepwater environment (more than 400 m water depth and BHT 149 deg C) to reputed E&P companies in the last 5 years preceding the bid closing date.

(b) The Bidder should preferably be able to provide all the services in-house, however, in case of Consortium/JV, the Lead Bidder of the Consortium/JV Company must have in-house experience of providing **at least 3 (three) of the following 4 (four) major services** with experienced men and materials for **minimum 5 (five) years and at least 3 (three) wells in deep water environment (more than 400m water depth) to reputed E&P companies in the last 5 (five) years preceding the bid closing date.**

1. **Cementing Services with supply of cement and additives, floating and guiding, centralizers, etc., as given in the Scope of work.**
2. **Mud Engineering Services with supply of mud chemicals and additives**
3. **MWD/LWD, Mud Motor & Directional Drilling Services**
4. **Wire line Logging Services**

(c) The leader of the consortium must undertake to provide all the key personnel for the various services with required qualification, experience, etc. as given in Annexure-Man Power (PART-3, Section-II).

(d) Bidder should have well defined and documented QHSE policies/procedures to ensure quality and safe work performance during the operations. Bidder is required to provide a brief on Health, Safety, Environment and Quality Assurance systems followed in the last five years.

(e) Bidder should have adequate capabilities, resources and personnel to provide and execute the required services as per API and other guidelines. The Bidder shall provide details of work in hand and past contract details.

(f) The Bidder is required to have its own laboratory and testing facilities in India for the engineering, design and testing of equipment and systems wherever applicable.

2.1 (a) **Cementing Services**:

(i) The Bidder should have carried out well cementing with their own technology and own additives, and, by deploying experienced cementing operator(s) to operate and maintain cementing equipment of makes such as BJ/ Dowel Schlumberger/ Halliburton or any other reputed make at the Rig (Floater–semi sub).

(ii) **Service Crew :**

(ii-a) Base Cementing Engineer: The Contractor shall provide a Base Engineer for Cementing Services for the Rig. The Base Engineer should possess a Bachelor's Degree in Engineering preferably in Mechanical / Petroleum discipline. The Base Engineer shall be qualified and fully trained in cementing engineering to perform all cementing and testing, analysis and interpretation results of tests and take corrective measures in maintaining the required features of cement slurry. The Contractor shall depute his Base Cementing Engineer to supervise all critical cementing jobs at the Rig where the Contractor is providing cementing services. The Base Engineer should have an experience of 7 (seven) years in planning and supervising of cementing and stimulation jobs in offshore rigs with 3 deepwater wells in water depth of not less than 400 m. The Base Engineer should also have done planning and supervising of primary cementation jobs of at least one HPHT well having BHT of above 350 deg F.

(ii-b) Cementing Operator for the Rig; The Cementing Operator should have passed at least SSC or the equivalent and possess a trade certificate from a reputed vocational institute and should also have undergone basic training in Cementing in reputed cementing school, such as Halliburton/ Dowell Schlumberger/ BJ or any other reputed cementing school. The Cementing Operator to be deployed for the cementing services against this contract **should not be more than 60 years of age as on the Bid closing date** and should have an experience of more than 5 years of performing cementing services independently, out of which at least 3 years should be

in offshore areas on floater Rigs. The Cementing Operator should have carried out primary cementation of at least 3 wells in water depths of not less than 400 metres and at least one HPHT well having BHST above 350 deg F.

2.1 (b) **Mud Engineering Services:**

The Bidder should fulfill the following experience criteria:

(i) ***The Bidder should have executed at least 01 (one) Contract of Mud Engineering Services for each of the proposed mud system***s i.e. Water Base Mud system, SOBM system (BHT about 149 deg C) in Deep water in the last 5 years.

(ii) The Bidder should have requisite R&D facilities in India as well as Regional / Global back up capable of designing and trouble shooting of quoted mud systems in terms of detailed shale analysis, X-ray diffraction analysis, particle size analyzer, return permeability analysis, etc., to provide technical back up services to OIL in solving well/ bore hole related problems.

(iii) The Bidder should submit a laboratory test report (issued by OIL laboratory and any other laboratory of International repute including their own) of the formulations as per scope of work conforming to OIL's recommendation parameters along with the bid. The test report should not be older than one year from the date of opening of the tender. Bids not accompanied by a valid test report shall be rejected. Test reports as above received after the date of opening of the tender will not be accepted.

(iv) Service Crew :

(iv-a) Base Mud Coordinator: The Base Mud Coordinator exclusively assigned for the Rig should be experienced in planning, designing and supervising Mud Engineering services in at least 10 wells in the proposed mud system(s) in deep water.

(iv-b) Mud Engineer: Mud Engineers to be deployed by the Bidder should have a minimum of 10 years' mud engineering experience along with relevant work experience of at least 5 (five) deep water wells in using SOBM systems. The Mud Engineer should also have an experience of at least 3 HPHT wells. The Mud Engineers should also be well versed with the use of heavy weight brines.

(iv-c) Solids Control Engineer - The Solids Control Engineer should have experience in handling Waste Management in at least 5 wells in the last 3 years and should have experience in handling Cuttings dryer in at least 5 wells during the last 3 years.

(iv-d) Completions Fluid Engineer: The Completions Fluid Engineer should have a minimum experience of 3 wells in the proposed brines in case Formate or Bromide Brines are required for testing and completion of the well.

2.1 (c) **MWD/LWD, Mud Motor & Directional Drilling Services**

(i) Service Crew :

(i-a) MWD/LWD Engineer cum Operator: The Contractor shall provide one (1) well experienced and qualified MWD/LWD Engineer-cum-Operator at Rig at all times. As a minimum educational qualification, the MWD/LWD Engineer-cum-Operator should be a diploma holder. Additional LWD/ MWD Engineer-cum-Operator(s) as per operational needs are to be provided at no additional cost to the Company. The LWD/MWD Engineer-cum-Operator shall be a

qualified engineer with at least 3 years standing in the industry and experience of work in deep water LWD/MWD operations. LWD Engineer-cum-Operator should have a minimum experience of 5 wells in more than 400 m water depth & well depths of 3000 m or more (from Sea-bed), out of which at least two wells should be in more than 500 m water depth. The deployed engineer(s) shall be able to handle independent assignments, be adequately trained in Directional drilling and well versed in English (speaking, reading, and writing).

(i-b) SDMM Operator/Directional Engineer/ Driller: One qualified, experienced and competent Directional Engineer/ Driller shall also be provided on the rig at all times. Additional Directional Drillers, as per operational needs, are to be provided at no additional cost to OIL. Directional Engineer/ Driller should have 3 years relevant experience of working in Deepwater as Directional Engineer/ Driller and should have a minimum experience of drilling 5 wells in more than 400 m water depth & well depths of 3000 m or more (from Sea-bed), out of which at least two wells should be in more than 500 m water depth. The deployed engineer(s)/ drillers shall be able to handle independent assignments, be adequately trained in Directional drilling with MWD & LWD and well versed in English (speaking, reading, and writing).

2.1 (d) **Wire line Logging Services:**

(i) The Bidder should be an Offshore Oilfield Services Provider and must have in-house capability to provide Wire Line logging services as per the scope of work of the tender document.

(ii) **Service Crew :**

(ii-a) Wireline Logging Engineer: The Wireline Engineer shall be a qualified engineer with at least 3 years standing in the industry and experience of working in different capacities in wireline operations. The Wireline Engineer should have an experience of at least three wells in more than 400 m water depth preceding the date of submission of bid. The deployed Engineer shall be able to handle independent assignments and shall be adequately trained.

(ii-b) Data Processing Geoscientists / Engineers and Processing Centre :

(I) Bidder should have a data processing centre with experienced processing and interpretation geoscientists / engineers for carrying out detailed processing of the data.

(II) The Data Processing Geoscientists / Engineers must have minimum 4 (four) years experience in processing and interpretation job.

2.1 (e) **MUD LOGGING SERVICE:**

(i) Data Engineer: The Data Engineer shall have a Bachelor's degree in Engineering / Master's degree in Geology / Petroleum Technology or equivalent and should be able to perform all mud logging services/duties in accordance with the Scope of Work listed and to operate and maintain the Contractor's equipment in operational status at all times and shall have documented training and experience verifying their ability to operate the integrated on-line mud logging units. Data Engineers shall have a minimum

of 5 years relevant experience out of which 3 years of Offshore well in their position.

(ii) Mud Logger: Mud Loggers shall have Bachelor's degree in Engineering / Master's degree in Geology / Petroleum Technology or the equivalent respectively and should be able to perform all mud logging services/ duties in accordance with the Scope of Work listed and to operate and maintain the Contractor's equipment in operational status at all times and shall have documented training and experience verifying their ability to operate the integrated on-line mud logging units. Mud Loggers should have a minimum of 3 years relevant experience with 3 deep water wells in their position.

2.1 (f) **Other Services in the Bundle (Group-I) & Optional Services (Group-II)**:

(i) For all the other services mentioned in **Group-I & Group-II** above, the Bidder may sub-contract/ form a Consortium for providing the services from List of Vendors with relevant services as per Exhibit-11 of Annexure–III, but each individual service provider should meet the relevant crew/ company experience criteria as per BRC Clauses A.1.0, A.2.0, A.2.1 (a), A.2.1 (b), A.2.1 (c), A.2.1 (d), A.2.1 (e) and the detailed Scope of Work (Annexure-III of the tender & related Exhibits).

2.1 (g) Well Testing Services (Group-II):

(a) Bidder must have an experience in subsea and surface production testing operations in wells with BHP 10000 psi or greater & BHCT 350° F or greater, providing these tools for at least 5 years and must have experience in running Surface Production Testing Operations within the last 3 years. The SSTT equipment version to be supplied under this document should be of a proven design and technology and is to be actually in use in the oilfield industry for at least 5 years with industry recognized track record.

(b) **Crew Experience for (Optional) Well Testing Services (Group-II):** The experience of the personnel to be deployed under (Optional) Well Testing Services (Group-II) of this contract shall be as per requirements stipulated in the individual scope of work for this service.

(i) **TESTING SUPERVISOR**: Testing supervisor shall have a minimum of 8 years' experience in carrying out SSTT and production testing operations including 5 years as testing supervisor. CV to be submitted as part of technical bid.

The testing supervisor shall be able to work as an expert of well testing and shall be able to supervise operations, repair and maintenance of SSTT and PTS equipment during well testing. He shall have tested at least 3 wells or 10 objects in locations in water depth at least 500 metres.
He shall be well versed with the latest testing technology, work procedures, in accordance with internationally recognized safe well testing methodology.
The testing supervisor will also be responsible for preparing the different production testing plans as per the scope of work, for approval of the Company.

(ii) **SSTT CHIEF OPERATOR:** The SSTT Chief Operator shall have minimum 5 years of experience as SSTT Operator and must have worked on

SSTT for 3 wells or 10 objects in locations in water depth at least 500 metres. CV to be submitted as part of technical bid.

(iii) **SSTT OPERATOR**

The SSTT Operator shall have minimum 3 years' experience as SSTT Operator and must have worked on SSTT for 2 wells or 7 objects in locations in water depth at least 500 metres. CV to be submitted as part of technical bid.

(iv) **WELL TEST SPECIALIST**

Well test specialist shall have a minimum of 4 years' experience in carrying out production testing operations including 2 years as well test specialist. CV to be submitted as part of technical bid.

The well test specialist shall be able to carry out all well testing jobs as well as operations, repair and maintenance of PTS equipment. He shall have tested at least 2 wells or 07 objects in offshore.

(v) **WELL TEST OPERATOR**

Well test Operator shall have a minimum of 3 years' experience in operating production testing surface equipment on floater rigs. CV to be submitted as part of technical bid.

(vi) TCP SPECIALIST:

TCP specialist should have a minimum of 5 years experience in carrying out TCP operations including 2 years as TCP specialist. The TCP specialist should be able to carry out all TCP jobs as well as operations.

(vi) **DST SPECIALIST:**

DST specialist should have a minimum of 5 years experience in carrying out TCP operations including 2 years as DST specialist. The DST specialist should be able to carry out all DST jobs as well as operations.

(vii) **DST OPERATOR:**

DST Operator should have a minimum of 3 years experience in operating DST equipment.

Notes for para (2.1-g) :

(i) All the said personnel should possess valid training certificates from approved agencies under International Safety Management Code in respect of survival at sea, fire prevention and fire fighting and first aid in addition to medical fitness certificate for offshore jobs.

(ii) The Bidder /Contractor should submit a list of personnel who are likely to be deployed for the subject services to the Company for approval. They should fulfill the above qualifications and experience criteria.

(iii)The Bidder/ Contractor shall furnish a list of available personnel who will be deputed for providing services at the beginning of the contract

2.1 (h) Towards past experience, Bidders should submit along with the unpriced bid, in support of experience laid down at Para A.1.0, A.2.0, A.2.1 (a), A.2.1 (b), A.2.1 (c), A.2.1 (d) , A.2.1 (e) , A.2.1 (f) & A.2.1 (g) above, copies of respective contracts, along with documentary evidence in respect of

satisfactory execution of each of those contracts, in the form of copies of any of the documents (indicating respective contract number and type of services), such as

(i) Satisfactory Completion / Performance Report

(OR)

(ii) Proof of release of Performance Security after completion of the Contract.

(OR)

(iii) Proof of settlement / release of final payment against the Contract

(OR)

(iv) Any other documentary evidence that substantiates the satisfactory execution of each of the Contracts cited above.

2.2 In case the Bidder is a Consortium of Companies, the following requirement should be satisfied by the Bidder:

(i) The leader of the Consortium should satisfy the minimum experience requirement as per Para A.1.0, A.2.0, A.2.1 (a), A.2.1 (b), A.2.1 (c), A.2.1 (d), A.2.1 (e) A.2.1 (f) above.

(ii) The Leader of the Consortium should confirm unconditional acceptance of full responsibility of executing the "Scope of Work" of this bid document. The Confirmation should be submitted along with the Un-priced Bid.

(iii) All the members of the Consortium must undertake in their MOU that each party shall be jointly and severally liable to OIL for any and all obligations and responsibilities arising out of this Contract.

(iv) Only the Leader of the Consortium shall submit the bid and sign the contract, if awarded, on behalf of the Consortium. The Bid Security and Performance Security to be submitted shall be in the name of the leader of Consortium and on behalf of the Consortium with specific reference to Consortium bid and name & address of Consortium members.

2.3 Wherever Sub-contracting is envisaged, the Bidders should:

(i) Submit an MOU/Agreement with their Sub-contractor clearly indicating their roles under the Scope of work.

(ii) The MOU/Agreement conducted by the Bidder with their Sub-contractor should be addressed to OIL, clearly stating that the MOU/Agreement is applicable to this tender and shall be binding on them for the Contract period. Notwithstanding the MOU/Agreement, the responsibility of completion of job under this contract will lie with the Bidder.

2.4 In case the Bidder is an Indian Company/ Indian Joint venture company,

(i) Either the Indian Company/Indian Joint Venture Company or its technical collaborator/ joint venture partner should meet the criteria laid down in para 2.0 and its sub clauses above (Eligibility and Experience of the Bidder).

(ii) Details of experience and past performance of the bidder and the Collaborator (in case of collaboration) or of Joint Venture Partner (in case of Joint venture), on works/jobs done of similar nature in the past and details of current work in hand and other contractual commitments, indicating areas and clients are to be submitted along with the techno-commercial bid, in support of the experience laid down at Para 2.0 and its sub-clauses above (Eligibility and Experience of the bidder). The condition of proof of experience as per 2.1(f) above applies to consortium partners/sub-contractors wherever applicable.

(iii) Bidder should submit MOU (Memorandum of Understanding) Agreement with their technical Collaborator/ joint venture partner (in case of joint venture) clearly indicating their roles under the Scope of Work. MOU/ Agreement concluded by the Bidder with technical collaborate/ joint venture partner (in case of joint venture) should also be addressed to OIL, clearly stating that the MOU/ Agreement is applicable to this tender and shall be binding on them for the contract period. Notwithstanding the MOU/Agreement, the responsibility of completion of the job under this contract will be with the Bidder.

2.5 Offer of those Bidders who themselves do not meet the Experience and Financial Capability criteria as stipulated in the BRC, can also be considered provided the Bidder is a 100% subsidiary company of the parent Company which itself meets the experience and financial capability criteria as stipulated in the BRC. In such case, as the subsidiary company is dependent upon the experience and financial capability of the parent company, with a view to ensure commitment and involvement of the parent company for successful execution of the contract, the participating bidder should enclose: (i) an Agreement (as per format enclosed) between the parent and the subsidiary company and (ii) a Corporate Guarantee (as per format enclosed) from the parent Company to OIL for fulfilling the obligations under the Agreement.

2.6 Any party who is extending technical support by way of entering into technical collaboration with another party shall not be allowed to submit an independent Bid against the tender and such bids shall be rejected straightway. Further, all bids from parties with technical collaboration support from the same Principal will be rejected.

3.0. Mobilization:

Offers indicating mobilization time more than **Forty Five (45) days** from the date of issue of Letter of Award (LOA) for Group-I Services will be summarily rejected. Bidders are advised to indicate their best mobilization schedule in their bids.

For Group-II (Optional) Well Testing Services, mobilization time more than **thirty (30) days** from the date of Call-out for these Services will be summarily rejected. Bidders are advised to indicate their best mobilization schedule in their bids.

Mobilization of tools/equipment for Call out /Optional Services should be as mentioned in respective price schedule format.

4.0. Service Crew:

(a) The Bidder should confirm to deploy the minimum number and the category of the Crew personnel as indicated in the Bid Document. These personnel shall be included in the "List of (personnel) Crew" for the purpose of reduction of day rates due to short deployment.

(b) **Training to the Crew personnel**: All crew members should have undergone Personal Survival Training (PST), Fire Prevention & Fire Fighting (FPFF) Training / Basic Fire Fighting Training (BFF), Elementary First Aid (EFA) and Helicopter Underwater Egress Training (HUET). No personnel are allowed to go on offshore rigs without carrying out the above training.

(c) Confirmation in regard to Para 4(a), 4(b) above is to be submitted along with the un-priced bid. However, the details of all personnel i.e. Experience data, Proof of Qualification etc. shall be submitted within 15 days of issuance of LOA (Letter of Award) or 45 days prior to commencement of the Contract (whichever is later) for approval by OIL before commencement of work.

5.0. The bidder must confirm to comply with the applicable & prevailing provisions of MoEF, MOHA, MOD, DG Shipping, ICG (Indian Coast Guard) and OISD Guidelines on Safety in offshore Rig Operations.

6.0. Other Conditions:

6.1 **Air Logistics:**

(i) The bidder will arrange and submit NSOP and a copy of approval from DGCA-India for operation and maintenance of the type of helicopters offered in the bid for offshore operation before the same is mobilized and will give an undertaking for the same along with un-priced techno-commercial bid.
(ii) Bidders shall keep themselves abreast of and comply with latest DGCA guidelines while submitting their bid.
(iii) The bidder shall be solely responsible for obtaining **at its cost, before commencement of Services under the Contract** (if awarded to them) all statutory licenses from DGCA or any other Govt. Agency for operating the helicopters in India.
(iv) The offered helicopters shall have more than 400 flying hours available on for principal components at the time of commencement, failing which the bid will not be considered. Bidders to submit a confirmation to this effect along with their techno-commercial bid.
(v) The Air logistics Service Company as a company must be currently in business of helicopter services.
(vi) The helicopters should be fitted with floatation gear and should be suitable for offshore/maritime operations.
(vii) Foreign pilots and engineers required to operate and maintain the helicopters shall undergo necessary security clearances.
(viii) Indian regulations relating to operations and maintenance of the helicopters stipulated for leased aircraft operations shall be complied with by the helicopter operator.

(ix) Foreign helicopter operator(s) shall continue to hold a valid operating permit from their parent Country.

(x) Violations of Indian safety and operating regulations shall be subject to action by DGCA, India.

(xi) Requirement of helicopters shall be for around 60 hours per mensem. However, OIL may use the helicopters beyond 60 hours per mensem at no additional cost to the Company. The Contractor is to provide air logistics service as per the requirement of operations.

(xii) Back up helicopter - Bidder is required to confirm in their proposal that a suitable helicopter along with experienced pilots and crew shall be provided by the Contractor within 24 hours if there is any break down of helicopter to ensure uninterrupted air logistics services so that there is no shut down of rig operations. In case there is a shutdown of both the main helicopters, the Contractor shall arrange a second back-up helicopter as above within 48 hours of the breakdown of the second main helicopter.

(xiii) Fuel for Helicopters will be the responsibility of the Contractor at Contractor's cost.

(xiv) The Air Logistics Service Company shall have Air Logistic Support (helicopter Operations) experience for offshore helicopter operations for a minimum period of 3 years with satisfactory safety record to his credit for a twin engine CAT "A" certified Helicopter duly equipped for offshore operations for carrying a minimum of 10 passengers and 50 kg cargo one way at 35 deg C temperature to a distance of 190 NM without refueling.

(xv) **Logistics Controller**: The Logistics Controller should have at least 3 years experience in independent capacity in planning and controlling Air and Sea Logistics for offshore rigs and shall be responsible for coordination with various statutory authorities for operation of helicopter, PSVs, OSVs and AHTSVs.

6.2 **Sea Logistics Services:**

i) The Sea Logistics Service Company should own the OSVs and AHTSVs or possess the title through an MOU with the owner of the vessels. The owners are to submit Registry Certificates. Those Bidders possessing the title through an MOU are to produce the MOU along with a copy of Registry Certificate to establish ownership.

ii) The vessels (OSVs & AHTSVs) should meet the minimum technical specifications as per the Scope of Work of Sea Logistics Services.

iii) Bidders must confirm that they will obtain all necessary clearances, including all necessary licenses, for operations in Indian Waters, from the appropriate Indian Government Agencies, including DG (Shipping), at their own cost. The responsibility for obtaining all such clearances/licenses from Government Authorities including Customs shall rest exclusively with the Bidder.

iv) However should the Bidder(s) require any assistance in the form of recommendatory letter for expediting issue of license by DG (Shipping), the same shall be issued by OIL.

v) NAVAL SECURITY / DRDO CLEARANCE: Obtaining Naval Security / DRDO Clearance would be the Contractor's responsibility at Contractor's cost.

vi) Bidders should quote one OSV and one AHTSV for the 400+ m Anchor Moored Semi-submersible or Drill Ship Rig.

vii) Bidders should also quote one OSV for a short term period of one month separately.

viii) The Sea Logistics Service Company for OSVs must have experience and provide documentary evidence of having manned and operated Offshore vessels (OSVs/ PSVs/MSVs) of Minimum Capacity 4800 BHP & 1500 DWT (Dead Weight Tons) for a period of 3 (three) years and having operated OSVs in water depth ranges of 500 m or more.

ix) The Sea Logistics Service Company for AHTSV must have experience and provide documentary evidence of having manned and operated AHTSVs for a period of 3 (three) years out of which at least 3 (three) wells should be in water depth of 500 m or more.

7.0. Inspection Clause:

i) OIL shall get the equipment of various services inspected on its own or through any of the following internationally reputed Third Party Inspection Agencies as per tender specifications. OIL at its option, can nominate any of the following Third Party Inspection Agency for inspection of various services and the cost of the third party inspection will be borne by OIL.

   a) Lloyd's Register (MODU SPEC)
   b) ABS
   c) Oilfield Audit Services Inc.
   d) DNV GL
   e) Any other Agency nominated by the Company

ii) OIL will accept the services only after OIL nominated third party inspection agency confirms that the services are as per tender specification.

iii) The Contractor has to complete all inspection before the services are allowed to be positioned at the rig/ nominated locations.

iv) The Bidder shall confirm Completion of Inspection and complete readiness of the stipulated services in all respects to the satisfaction of OIL, including conformity to OIL's tender specifications certified by OIL/third party inspection agency prior to commencement of contract.

v) In case the Contractor fails to adhere to the time schedule, OIL reserves its right to invoke the performance bond and terminate the Contract without prejudice to any other right or remedy available as per Contract.

vi) Notice for inspection as per (iii) above is required to be given by the Contractor 15 days in advance.

vii) The Maximum time allowed for inspection of the services / tools / materials / vessels is 10 man-days. The Contractor has to offer the services for inspection on complete readiness of the stipulated services. In case this inspection takes more than 10 man-days, the cost of inspection beyond 10 man-days would be to the account of the Contractor. In case the Inspection Team is to be mobilized subsequently, for compliance of deficiencies during the first inspection, the entire cost towards second or subsequent inspections shall be to the account of the Contractor. However, for a cumulative of 10 man-days, the Inspectors' daily service charges shall be borne by OIL

8.0 Life saving equipment and Fire Fighting equipment:

The Bidder should confirm in the un-priced bid that, the vessels/helicopters/ units of services are equipped with all lifesaving equipment and firefighting equipment as per regulations of respective regulatory authorities like SOLAS, IMO, DGCA, etc. and valid certificates from regulatory bodies where the service are located at the time of inspection, shall be made available to OIL/ OIL nominated inspection team.

B. COMMERCIAL REJECTION CRITERIA:

1.0 Bids are invited under **"SINGLE STAGE-TWO BID SYSTEM**" i.e. the bidders are required to submit both the "**TECHNO-COMMERCIAL UN-PRICED**" and **"PRICED"** bids online through electronic format in OIL's e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender. The "Techno-Commercial Un priced Bid" is to be submitted as per Scope of Work & Technical Specifications of the tender and the "Price-Bid" as per the online Price Bid Format. Any offer not complying with the above will be rejected straightaway.

2.0 In **"Techno-Commercial Un priced Bid opening**", only the Technical RFX Folder will be opened. Therefore, the bidder should ensure that **TECHNO-COMMERCIAL UN-PRICED BID / ALL TECHNICAL DOCUMENTS RELATED TO THE TENDER** including **SCANNED COPY OF BID-SECURITY and SIGNED & SCANNED COPY OF INTEGRITY PACT PROFORMA** are uploaded in the Technical RFX Folder otherwise the offer will be rejected outright.

3.0 Prices/Rates should be quoted / maintained in the **"online price schedule format"** only. The rates quoted in the "**online price schedule format"** will only be considered. If no price is entered / maintained against any item, it will be considered that no charge is involved against that item.

4.0 Prices and rates quoted by the Bidders must be held firm during the term of the contract and not be subjected to any variation. Bids with adjustable price terms will be rejected.

5.0 Bid Security : Bid Security as mentioned in **Section II** in original must reach the office of the **ED (E&D), for Senior Manager (C&P)(CEMG Oil India Limited (OIL), 5th Floor, IT Infrastructure Building, Sector-16A, Noida-201301 UP, India**, before the **"Techno-Commercial Bid Opening Date and Time**". The amount of Bid Security shall be as specified in the "Forwarding Letter" and should be valid for **150 days** from the bid closing date. Scanned copy of this Bid-Security should also be submitted / uploaded online along with the "Techno-Commercial Un-priced Bid". Public Sector Undertakings and Firms registered with NSIC/Directorate of Industries in India are exempted from submission of bid security against this tender. If a proper Bid Security in ORIGINAL for an amount and validity as aforesaid is not received, within the Bid Opening date and Time at the office of **ED (E&D) for Senior Manager (C&P)(CEMG), 5th Floor, IT Infrastructure Building, Sector-16A, Noida-201301 UP, India**, the bid will be rejected without any further consideration.

6.0 Bid Validity : Validity of the bid shall be minimum **4 months (120 days)** from Bid closing date. Bids with lesser validity will be rejected.

7.0 All the Bids must be Digitally Signed using "Class 3" digital certificate (e-commerce application) as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than "Class 3" digital certificate, will be rejected.

8.0 OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide **Proforma-I** of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be returned by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Any bid not accompanied by Integrity Pact Proforma duly signed (digitally) by the bidder shall be rejected straightway. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the bid."

9.0 There must be no exception to the following Clauses including sub-clauses, otherwise the Bid will be rejected:

- Performance Guarantee Clause
- Liquidated Damages Clause
- Insurance Clause
- Force Majeure Clause
- Termination Clause
- Arbitration Clause
- Applicable Law Clause
- Integrity Pact

10. Bids received through the e-procurement portal shall only be acceptable. Bids received in any other form shall not be acceptable.

11. Offers of following kinds will be rejected:

(a) Offers made without Bid Security / Bid Bond / Bank Guarantee alongwith the offer

(b) Offer not submitted in e-form through OIL's e-procurement engine.

(c) Offers made by agents / consultants / retainers / representatives / associates of foreign principals.

(d) Offers which do not confirm unconditional validity of the bid for **120** days from the date of opening of techno-commercial un priced bid.

(e) Offers where prices are not firm during the entire duration of the contract and / or with any qualifications.

(f.i) Offers which do not conform to OIL's 'online price bid format' as given in the e-bidding engine.

(f.ii) Offers which do not conform filling of all relevant fields in the online bidding format for the items quoted by them.

(g) Offers which do not confirm to the mobilization period indicated in the tender.

(h) Offers which do not confirm to the contract period indicated in the tender.

(i.i) Offers received without Integrity pact duly signed by the authorized signatory of the bidder.

(i.ii) Offers of the bidders violating the provisions of Integrity pact.

(j) Offers and all attached documents not digitally signed using digital signatures issued by an acceptable Certifying Authority (CA) as per Indian IT Act 2000 by the person as per power of attorney submitted (The power of attorney or authorization, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder, in original, when the power of attorney is a special "Power of Attorney" relating to the specific tender of OIL only. A notarized true copy of the "Power of Attorney" shall also be accepted in lieu of the original, if the power of attorney is a general "Power of Attorney". However, photocopy of such notarized true copy shall not be accepted.)

(k) The offers of the bidders indicating / disclosing prices in techno-commercial (un-priced bid) or at any stage before opening of priced-bid.

(l) Offers not accompanied with a copy of valid registration certificate under Service Tax Rules or an undertaking for submission of copy of requisite service tax registration certificate alongwith the first invoice under the contract. (Not Applicable for Service providers from outside India, who do not have any fixed establishment or permanent address in India).Offers not accompanied with a declaration to the effect that the bidder do not have any fixed establishment or permanent address in India. (Applicable for Service providers from outside India, who do not have any fixed establishment or permanent address in India).

(m) Offers not accompanied with an undertaking to provide all the necessary certificates / documents for enabling OIL to avail Input VAT credit and CENVAT credit benefits (wherever applicable), in respect of the payments of VAT, Excise Duty, Service Tax etc. which are payable against the contract (if awarded), alongwith documentary evidence for payment of Excise Duty and Service Tax.

(n) Offers not accompanied with a declaration that neither the bidders themselves, nor any of its allied concerns, partners or associates or directors or proprietors involved in any capacity, are currently serving any banning orders issued by OIL debarring them from carrying on business dealings with OIL.

(o) Offers not accompanied with an undertaking that all conditions as contained in the tender document (including the 'Instructions to bidders' at **Section II and Model Contract Conditions' at Section -III**) are acceptable to them unconditionally.

12. Personnel Taxes :

Bidders shall bear, within the quoted rates, the personnel tax as applicable in respect of their personnel and their sub-contractor's personnel, arising out of execution of this Contract.

13. Corporate Tax:

Bidders shall bear, within the quoted rates, the Corporate tax as applicable, on the income from the contract.

14. Financial Criteria for the bidders

(i) Average annual financial turnover in last 3 (three) accounting years shall be minimum **INR 40.60 Crore (USD 6.2 Million).**

(ii) Net-worth of Bidder should be Positive (as per latest audited annual accounts).

Notes:

(i) In case the bidder is a newly formed company (i.e. one which has been incorporated in the last 5 years from the date of un-priced bid opening of the tender) who does not meet financial criteria (i.e. **Turnover INR 68.20 Crore (USD 10.44 Million)** by itself and submits his bid based on the financial strength of his promoter company, then following documents need to be submitted;

a) Turnover of the promoter company should be more than **INR 68.20 Crore (USD 10.44 Million).**

b) Net worth of the promoter company should be positive.

c) Corporate Guarantee on promoter company's company letter head signed by an authorized official undertaking that they would financially support the newly formed company for executing the project/job in case the same is awarded to them.

(ii) In case the bidder is a subsidiary company (should be a 100% subsidiary of the parent/ultimate parent/holding company) who does not meet financial criteria (i.e. Turnover Criteria) by itself and submits his bid based on the financial strength of his parent/ultimate parent/holding company, then following documents need to be submitted:

I) Turnover of the parent / ultimate parent /holding company should be more than **INR 68.20 Crore (USD 10.44 Million).**

II) Net worth of the parent / ultimate parent company should be positive.

III) Corporate Guarantee on parent/ultimate parent/holding company's letter head signed by an authorized official undertaking that they would financially support their 100% subsidiary company for executing the project/job in case the same is awarded to them, and

IV) The bidder is a 100% subsidiary company of the parent/ultimate /holding parent company.

(iii) If the bid is from a Consortium, then the net worth of all the consortium partners individually should be positive. Further, the consortium partners should individually meet the turnover limit in proportion to the percentage of work to be performed by them respectively in terms of the limit of turnover specified in the tender. For this purpose, the bidder should indicate in the un-priced bid, the percentage of work to be performed by

the respective consortium members. However, the financial capability of sub-contractors will not be taken into consideration.

15. <u>Consideration of Indian Agent</u>

Indian agent is not permitted to represent more than one foreign bidder (Supplier/Manufacturer/Contractor) in a particular tender. In case, an Indian agent represents more than one foreign bidder (Supplier/ Manufacturer/Contractor) in a particular tender, then offers of such foreign bidders (Suppliers/ Manufacturers/ Contractors) shall be rejected in that tender.

16. Proforma of Integrity Pact (which is issued along with the bidding document) shall be returned by the bidder along with technical bid, duly signed by the same signatory who signs the bid i.e. who is duly authorized to sign the bid. All the pages of the Integrity Pact shall be duly signed by the same signatory. Bidder's failure to return the Integrity Pact along with the bid, duly signed, shall lead to outright rejection of such bid.

C. GENERAL

1.0 In case bidder takes exception to any clause of Bid Document not covered under BEC/BRC, then the Company has the discretion to load or reject the offer on account of such exception if the bidder does not withdraw/modify the deviation when/as advised by Company. The loading so done by the Company will be final and binding on the bidders.

2.0 To ascertain the substantial responsiveness of the Bid the Company reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the Company, failing which the offer will be summarily rejected.

3.0 If any of the clauses in the BRC contradict with other clauses of the Bid Document elsewhere, then the clauses in the BRC shall prevail.

4.0 Documents:

Bidders must furnish documentary evidences with the specific chapters, separated by dividers, in the same order as set out here below (a) to (i) in support of fulfilling all the requirements along with their un-priced techno-commercial Bids.

(a) **Experience of consortium members:** Statement to be furnished by all consortium members in a tabular form along with copies of relevant documents like contracts/work-orders and/or completion certificates/ payment certificates issued by the clients etc. or any other documentary evidence that can substantiate bidders' experience pursuant to clause No. 2.0 and its sub clauses above.

(b) **Financial Turnover of Bidder**: Copy of audited Balance Sheets/ Profit and Loss Accounts etc. for the last thee (3) accounting years preceding the bid closing date in support of clause No. 14.0 above (under Financial Criteria)

above. In lieu of Balance Sheet/Profit and Loss Accounts, the Bidder may furnish a Chartered Accountants' Certificate as per following format duly signed and sealed by a Chartered Accountants' Firm incorporating their Membership Code/ Registration No. etc.

(c) MOU in support of consortium arrangements/technical collaboration/joint venture arrangements, if any in the prescribed format.

(d) **Document related to Experience of Service Provider(s)** as per para 2.1 (a) to (g)

(e) Contractor's general structure and organization, including the branch/sub-division dedicated to such activities.

(f) Details of bidder's Health, Safety and Environmental Management Policy Manual together with a copy of Safe Operating Practices (SOP) of all rig operations.

(g) Resume of key personnel to be involved as per Para 4.0 (a), (b) and its sub clauses under "Crew experience" in the services with relevant experience. Copies of certificates in regards to their professional qualification, experience, etc. should be furnished as per bio-data format.

(h) The power of attorney or authorization, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder, in original, when the power of attorney is a special "Power of Attorney" relating to the specific tender of OIL only. A notarized true copy of the "Power of Attorney" shall also be accepted in lieu of the original, if the power of attorney is a general "Power of Attorney". However, photocopy of such notarized true copy shall not be accepted.

Note: 1. Bid without the above listed documents or information shall be rejected.
2. All aforesaid documents to be submitted along with the un-priced Techno-commercial bid. OIL also reserves the right to verify with the original documents.

C. BID EVALUATION CRITERIA (BEC):

The bids conforming to the technical specifications, terms and conditions stipulated in the bidding document and considered to be responsive after subjecting to Bid Rejection Criteria will be considered for further evaluation as per the Bid Evaluation Criteria given below.

1.0 Bids shall be evaluated in Indian Rupees. While evaluating the bids, the closing B.C. Selling market rates of exchange declared by the State Bank of India one day prior to the price bid opening will be taken into account for conversion of foreign currency into Indian Rupees. Where the time lag between opening of price bid and final decision exceeds three months, the B.C. selling market rate of exchange declared by SBI on the day prior to date of final decision will be adopted for conversion of foreign currency into Indian Rupees.

2.0 In the event of computational error between unit price and total price, the quoted unit price shall prevail. Similarly, in the event of discrepancy between rates quoted in words and figures, the unit rates quoted in words will prevail.

3.0 Price Evaluation of bids submitted by the technically qualified bidders will be done separately for **Groups-I & II**, on the basis of rates quoted by them as per Annexure-V (for Group-I) & Annexure-VI (for Group-II).

4.0 The Bundled service package under this tender shall be used in NELP-VIII block: CY-OSN-2009/2 in the Gulf of Mannar for which the present rate of applicable customs duty is NIL. Bidders should take note of the same while bidding.

Note: Bidders offering to bring the bundled services package in to India on re-exportable basis for execution of this contract shall have to re-export the bundled services package after completion of the assignment. The bidder will be fully responsible to pay the customs duty in case the bundled services package is taken by them to area where customs duty is applicable on merit. This is applicable in case Oil India Limited issues Recommendatory Letter or EC application letter for obtaining Essentiality Certificate (EC) from DGH, Govt. of India for availing NIL rate of Customs Duty for import of goods.

5.0 For import of Equipment/tool in these areas, OIL will arrange necessary documents to the contractor so that they obtain Essentiality Certificate (EC) from DGH for availing concessional rate of Customs duty (presently zero against EC) for import of rigs/equipment/tools for deployment in PEL/ML/NELP areas where Customs duty is not applicable.

For spares, consumables and accessories required during the execution of the contract for operation and maintenance of equipment and equipment, OIL shall also issue requisite document to the contractor for obtaining EC for availing concessional rate of Customs duty.

No Customs duty for equipment/tools or for spares, consumables and accessories required for operation and maintenance of equipment to be built in the quoted price.

The responsibility of obtaining Essentiality Certificate from concerned authorities lies with Contractor and OIL will not be liable to the Contractor for whatsoever reasons.

6.0 It is, however, to be clearly understood that the assumptions made in respect of the number of days/parameters for various operations in the price bid format are only for the purpose of evaluation of the bid and the Contractor will be paid on the basis of actual utilization i.e., actual number of days/parameter, as the case may be.

7.0 To ascertain the inter-se-ranking, the price comparison of the responsive bids will be made on **EDR - Evaluated Day Rate (Operations + Well Materials) as mentioned below** separately for **Group-I & Group-II** on the rates quoted by the bidders in the **PRICE BID FORMAT** as per **Annexure-V (for Group-I) & Annexure-VI (for Group-II)**, as follows:

For Group-I Services:

EDR - Evaluated Day Rate (Operations + Well Materials)

= [MOB + TSC + TOC + DMOB + LSDR + LTOC + WM + LDW + LCCL + LBM + LBFU + LOSV + WL-I + WL-II] / 120

MOB - Mobilisation for Bundled Services
DMOB - De-Mobilisation for Bundled Services
TSC - Total Service Component for the whole Contract (Appendix-1)
TOC - Total Operating Component for the whole Contract (Appendix-1)
LSDR - Loading for total SDR Value for complete contract duration for LWD tools/Mud Motors (Appendix 6)
LTOC - Loading for total Operating Component for complete contract duration for LWD tools/Mud Motors (Appendix 6)
WM - Well Materials Cost (Appendix 2)
P1 - Price of Drill water per Metric Ton quoted by Contractor
LDW - Loading on account of Drill Water =P1 x 1000 x 4
LCCL - Loading on account of Various Callout-out services including Coring, Casing &
Tubing Running and Liner Hanger Services (Appendix 7)
LBM - Loading on account of Batch Mixer (Call-out) (Appendix-7A)
LBFU - Loading on account of Brine Filtration Unit (Call-out) (Appendix-7B)
LOSV - Loading on account of Offshore Supply Vessel (Call-out) (Appendix-7C)
WL-I - Perforation Package evaluated Cost (Appendix-8)
WL-II - Call Out Package evaluated Cost (Appendix-8A)

Note:
1. LDW = P1*1000*4
2. P1 = Price of Drill water per Metric Ton quoted by the Contractor
3. Figure 1000 is the estimated amount of Drill Water in Metric Tons required per month for evaluation purpose.
4. Figure 4 indicates the number of months for requirement of Bundled Services for 500 m water depth rig.
5. WM = Average cost of Well Materials for 1 well (applicable for duration of contract including cost of mud chemicals, cement & cementing additives, and, drill bits).

6. Figure 120 indicates the number of days for requirement of Bundled Services for 500 m water depth rig.

For Group-II Services:

EDR - Evaluated Day Rate (Operations + Well Material)

= [MOB + TSC + TOC + DEMOB + LWC + LWCO] / 30

MOB - Mobilization for Well Testing Services
DMOB - De-Mobilization for Well Testing Services
TSC - Total Service Component for the whole Contract
TOC - Total Operating Component for the whole Contract
LWC - Loading on account of Well Testing Consumables
LWCO - Well Testing call-out material cost

Note:
1. Figure 30 is the number of days for requirement of Well Testing Services for 500 m water depth rig.

NOTES:
(I) The above items are defined in Schedule of Rates/Price bid format.
(II) Mobilisation charge for the **bundled service (Group I)** should not exceed 7.5% of total quoted value for the **bundled service (Group I).**
(III) Mobilisation charge for the **Well Testing Service (Group II)** should not exceed 7.5% of total quoted value for the **Well Testing Service (Group II).**

FORMAT OF AGREEMENT BETWEEN BIDDER AND THEIR PARENT COMPANY / *100% SUBSIDIARY COMPANY (As the case may be)*

(TO BE EXECUTED ON STAMP PAPER OF REQUISITE VALUE AND NOTORISED)

This agreement made this ___ day of ____ month ____ year by and between M/s. _____ (Fill in the Bidder's full name, constitution and registered office address) hereinafter referred to as bidder on the first part and M/s. _____ (Fill in full name, constitution and registered office address of Parent Company/Subsidiary Company, as the case may be) hereinafter referred to as "Parent Company/ Subsidiary Company (Delete whichever not applicable)" of the other part:

WHEREAS

M/s. Oil India Limited (hereinafter referred to as OIL) has invited offers vide their tender No. _____ for _____ and

M/s. _____(Bidder) intends to bid against the said tender and desires to have technical support of M/s. _____ [Parent Company/ Subsidiary Company-(Delete whichever not applicable)] and whereas Parent Company/ Subsidiary Company (Delete whichever not applicable) represents that they have gone through and understood the requirements of subject tender and are capable and committed to provide the services as required by the bidder for successful execution of the contract, if awarded to the bidder.

Now, it is hereby agreed to by and between the parties as follows:

1. M/s._____(Bidder) will submit an offer to OIL for the full scope of work as envisaged in the tender document as a main bidder and liaise with OIL directly for any clarifications etc. in this context.

2. M/s. _____ (Parent Company/ Subsidiary Company (Delete whichever not applicable) undertakes to provide technical support and expertise, expert manpower and procurement assistance and project management to support the bidder to discharge its obligations as per the Scope of work of the tender / Contract for which offer has been made by the Parent Company/Subsidiary Company (Delete whichever not applicable) and accepted by the bidder.

3. This agreement will remain valid till validity of bidder's offer to OIL including extension if any and till satisfactory performance of the contract in the event the contract is awarded by OIL to the bidder

4. It is further agreed that for the performance of work during contract period bidder and Parent Company/Subsidiary Company (Delete whichever not applicable) shall be jointly and severely responsible to OIL for satisfactory execution of the contract.

5. However, the bidder shall have the overall responsibility of satisfactory execution of the contract awarded by OIL.

In witness whereof the parties hereto have executed this agreement on the date mentioned above.

For and on behalf of (Bidder) whichever not	For and on behalf of (Parent Company/Subsidiary Company (Delete applicable))
M/s. Witness: 1) 2)	M/s. Witness: 1) 2)

PARENT COMPANY/ SUBSIDIARY COMPANY GUARANTEE *(Delete whichever not applicable)*

(TO BE EXECUTED ON STAMP PAPER OF REQUISITE VALUE AND NOTORISED)

DEED OF GUARANTEE

THIS DEED OF GUARANTEE executed at ……. this …….. day of …….. by M/s …….. (mention complete name) a company duly organized and existing under the laws of …….. (insert jurisdiction/country), having its Registered Office at …….. hereinafter called "the Guarantor" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successors and permitted assigns.

WHEREAS

M/s Oil India Limited, a company duly registered under the Companies Act 1956, having its Registered Office at 8th floor, Jeevan Bharti, Tower-II, 124, Indira Chowk (Connaught Circus), New Delhi, India, and having an office, amongst others, at …… (insert purchase centre address) hereinafter called "the Corporation" which expression shall unless excluded by or repugnant to the context thereof, be deemed to include its successor and assigns, invited tender number …….. for …….. on ……..

M/s …….. (mention complete name), a company duly organized and existing under the laws of …….. (insert jurisdiction/country), having its Registered Office at …….. (give complete address) hereinafter called "the Company" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successor and permitted assigns, have, in response to the above mentioned tender invited by the Corporation, submitted their bid number …….. to the Corporation with one of the condition that the Company shall arrange a guarantee from its parent company guaranteeing due and satisfactory performance of the work covered under the said tender including any change therein as may be deemed appropriate by the Corporation at any stage.

The Guarantor represents that they have gone through and understood the requirement of the above said tender and are capable of and committed to provide technical and such other supports as may be required by the Company for successful execution of the same.

The Company and the Guarantor have entered into an agreement dated …….. as per which the Guarantor shall be providing technical and such other supports as may be necessary for performance of the work relating to the said tender.

Accordingly, at the request of the Company and in consideration of and as a requirement for the Corporation to enter into agreement(s) with the Company, the Guarantor hereby agrees to give this guarantee and undertakes as follows:

1. **The Guarantor (Parent Company / *100% Subsidiary Company (Delete whichever not applicable*) unconditionally agrees that in case of non-performance by the Company of any of its obligations in any respect, the Guarantor shall, immediately on receipt of notice of demand by the Corporation, take up the job without any demur or objection, in continuation and without loss of time and without any cost to the Corporation and duly perform the obligations of the Company to the satisfaction of the Corporation.**

2. The Guarantor agrees that the Guarantee herein contained shall remain valid and enforceable till the satisfactory execution and completion of the work (including discharge of the warranty obligations) awarded to the Company.

3. The Guarantor shall be jointly with the Company as also severally responsible for satisfactory performance of the contract entered between the Company and the Corporation.

4. The liability of the Guarantor, under the Guarantee, is limited to the 50% of the annualized contract price entered between the Company and the Corporation. This will, however, be in addition to the forfeiture of the Performance Guarantee furnished by the Company.

5. The Guarantor represents that this Guarantee has been issued after due observance of the appropriate laws in force in India. The Guarantor hereby undertakes that the Guarantor shall obtain and maintain in full force and effect all the governmental and other approvals and consents that are necessary and do all other acts and things necessary or desirable in connection therewith or for the due performance of the Guarantor's obligations hereunder.

6. The Guarantor also agrees that this Guarantee shall be governed and construed in accordance with the laws in force in India and subject to the exclusive jurisdiction of the courts of ……., India.

7. The Guarantor hereby declares and represents that this Guarantee has been given without any undue influence or coercion, and that the Guarantor has fully understood the implications of the same.

8. The Guarantor represents and confirms that the Guarantor has the legal capacity, power and authority to issue this Guarantee and that giving of this Guarantee and the performance and observations of the obligations hereunder do not contravene any existing laws.

For & on behalf of (Parent Company/Subsidiary Company (Delete whichever not applicable))

M/s _____

Witness:
1. Signature _____
   Full Name _____
   Address _____

Signature
_____
Name
_____
Designation
_____

Common seal of the
Company_____

Witness:
2. Signature _____
Full Name _____
Address _____

INSTRUCTIONS FOR FURNISHING PARENT/SUBSIDIARY COMPANY GUARANTEE

1. Guarantee should be executed on stamp paper of requisite value and notarized.

1. The official(s) executing the guarantee should affix full signature (s) on each page.

2. Resolution passed by Board of Directors of the guarantor company authorizing the signatory(ies) to execute the guarantee, duly certified by the Company Secretary should be furnished alongwith the Guarantee.

3. Following certificate issued by Company Secretary of the guarantor company should also be enclosed alongwith the Guarantee.

   "Obligation contained in the deed of guarantee No._____ furnished against tender No. _____ are enforceable against the guarantor company and the same do not, in any way, contravene any law of the country of which the guarantor company is the subject"

FORMAT OF AGREEMENT BETWEEN BIDDER THEIR SISTER SUBSIDIARY/CO-SUBSIDIARY COMPANY AND THE ULTIMATE PARENT/HOLDING COMPANY OF BOTH THE BIDDER AND THE SISTER SUBSIDIARY/CO-SUBSIDIARY (Strike out whichever is not applicable between Ultimate Parent and Holding Company. Similarly strike out whichever is not applicable between Sister Subsidiary and Co-subsidiary Company)

(TO BE EXECUTED ON STAMP PAPER OF REQUISITE VALUE AND NOTORISED)

This agreement made this ___ day of ____ month ____ year by and between M/s. _____ (Fill in Bidder's full name, constitution and registered office address) _____ hereinafter referred to as "Bidder" of the first part and

M/s. _____ (Fill in full name, constitution and registered office address of Sister Subsidiary/Co-subsidiary Company of the Bidder) herein after referred to as "Sister Subsidiary/ Co-subsidiary" of the second part and

M/s_____(Fill in the full name, constitution and registered office address of the Ultimate Parent/Holding Company's of both the subsidiaries) hereinafter referred to as "Ultimate Parent/ Holding Company" of the third part.

WHEREAS

M/s. Oil India Limited (hereinafter referred to as OIL) has invited offers vide their tender No. _____ for _____ and

M/s. _____(Bidder) intends to bid against the said tender and desires to have a technical support of M/s. _____(Sister Subsidiary/Co-subsidiary Company) and

Sister Subsidiary/Co-subsidiary Company represents that they have gone through and understood the requirements of subject tender and are capable and committed to provide the services as required by the bidder for successful execution of the contract, if awarded to the bidder.

Now, it is hereby agreed to by and between all the three parties as follows:

1. M/s._____(Bidder) will submit an offer to OIL for the full scope of work as envisaged in the tender document.
2. M/s. _____(Sister Subsidiary/Co-subsidiary Company) undertakes to provide technical support and expertise and expert manpower, material, if any, to support the bidder to discharge its obligations as per the Scope of work of the tender / Contract for which offer has been made by the bidder.
3. This agreement will remain valid till validity of bidder's offer to OIL including extension if any and also till satisfactory performance of the contract in the event the bid is accepted and contract is awarded by OIL to the bidder.
4. Sister Subsidiary/ Co-subsidiary Company unconditionally agrees that in case of award of contract to the Bidder, if the Bidder is unable to execute the contract, they shall, immediately on receipt of notice by OIL, take up the job

without any demur or objection, in continuation without loss of time and without any extra cost to OIL and duly perform the obligations of the Bidder/Contractor to the satisfaction of OIL.

5. The Ultimate Parent/Holding Company also confirms and undertakes that the commitment made by the Sister Subsidiary/ Co-subsidiary company in providing the technical support and technical expertise and expert manpower to support the bidder for execution of the contract are honoured.
6. The Ultimate Parent/Holding Company also takes full responsibility in getting the contract executed through the Sister subsidiary/ Co-subsidiary company in case the Bidder/Contractor is unable to execute the contract.
7. In witness whereof the parties hereto have executed this agreement on the date mentioned above.

For and on behalf of (Bidder)	For and on behalf of (Sister Subsidiary / Co-subsidiary)	For and on behalf of (Ultimate Parent / Holding Company)
M/s.	M/s.	M/s.
Witness	Witness	Witness
1)	1)	1)
2)	2)	2)

Note: In case of contracts involving - (a) manufacture/supply (b) installation and commissioning (c) servicing and maintenance of any equipment, as the bidding company can draw on the experience of their multiple subsidiary sister/Co-subsidiary company (ies) specializing in each sphere of activity, i.e. (a) manufacture/supply (b) installation and commissioning (c) servicing and maintenance, therefore, in that case, the above format shall be signed by all the sister/Co-subsidiary company(ies) and necessary modifications may be made in the above format to include all sister subsidiaries.

END OF PART – 2

SECTION-I
GENERAL CONDITIONS OF CONTRACT

1.0 **DEFINITIONS**:

1.1 In the contract, the following terms shall be interpreted as indicated:

(a) "**The Contract**" means agreement entered into between Company and Contractor, as recorded in the contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein;

(b) "**The Contract Price**" means the price payable to Contractor under the contract for the full and proper performance of its contractual obligations;

(c) "**The Work**" means each and every activity required for the successful performance of the services described in Section II, the Terms of Reference.

(d) "**Company**" or "OIL" means Oil India Limited;

(e) "**Contractor**" means the Contractor performing the work under this Contract.

(f) "**Contractor's** Personnel" means the personnel to be provided by the Contractor to provide services as per the contract.

(g) "Services" means the work specified in Section-II, Part-3 and all other obligations to be complied with by Contractor pursuant to and in accordance with the terms of this contract.

(h) "**Specification"** means the description of the Services and/or Equipment (if any) set out in Section-II

(i) "**Company's Personnel**" means the personnel to be provided by OIL or OIL's Contractor (other than the Contractor executing the Contract). The Company representatives of OIL are also included in the Company's personnel.

(j) "**Gross Negligence**" means any act or failure to act (whether sole, joint or concurrent) by a person or entity which was intended to cause, or which was in reckless disregard of or wanton indifference to, avoidable and harmful consequences such person or entity knew, or should have known, would result from such act or failure to act. Notwithstanding the foregoing, Gross negligence shall not include any action taken in good faith for the safeguard of life or property.

(k) "**Willful Misconduct"** means intentional disregard of good and prudent standards of performance or proper conduct under the Contract with knowledge that it is likely to result in any injury to any person or persons or loss or damage of property.

2.0 **EFFECTIVE DATE, MOBILISATION TIME, DATE OF COMMENCEMENT OF THE CONTRACT AND DURATION OF CONTRACT**:

2.1 **EFFECTIVE DATE**: The contract shall become effective as of the date Company notifies Contractor in writing (through Letter of Award) that it has been awarded the contract. Such date of notification of award of Contract will be the Effective Date of Contract.

2.2 **MOBILISATION TIME**: The Contractor shall mobilize all the services of **Group I Services (Bundled Services)** along with crew so as to commence operations at the specified location "On or before **15.02.2016**. However, 45 days mobilization time from date of issue of Letter of Award (LOA) will be given to the Contractor. For **Group II service (Well Testing service),** Mobilisation period is 30 days from date of issue of Mobilization Notice being Call Out service

In case delay on account of OIL for readiness of site, consumables and other services etc, mobilization period for the above delayed period will be extended without imposing Liquidated Damage.

In case the Contractor intends to mobilize the drilling unit earlier than **15.02.2016**, the Contractor shall inform the date on which the rig will be mobilized to the location and commence operations within 15 days from the date of firm order/letter of award. The Operator (OIL) reserves the right to accept or decline such mobilisation date without assigning any reason thereof, at its discretion.

2.3 **DATE OF COMMENCEMENT OF CONTRACT**: The date on which the mobilization is completed in all respects and the Contractor is in readiness to commence the work shall be treated as date of commencement of Contract.

2.4 **DURATION OF CONTRACT**: As mentioned in Special Terms and Conditions of this Tender.

3.0 **GENERAL OBLIGATIONS OF CONTRACTOR**: Contractor shall, in accordance with and subject to the terms and conditions of this Contract:

3.1 Perform the work described in the Terms of Reference (Section II) in most economic and cost effective manner.

3.2 Except as otherwise provided in the Terms of Reference and the special Conditions of the contract provide all labour as required to perform the work.

3.3 Perform all other obligations, work and services which are required by the terms of this contract or which reasonably can be implied from such terms as being necessary for the successful and timely completion of the work.

3.4 Contractor shall be deemed to have satisfied himself before submitting his bid as to the correctness and sufficiency of its bid for the services required and of the rates and prices quoted, which rates and prices shall, except insofar as otherwise provided, cover all its obligations under the contract.

3.5 Contractor shall give or provide all necessary supervision during the performance of the services and as long thereafter within the warranty period as Company may consider necessary for the proper fulfilling of Contractor's obligations under the contract.

4.0 **GENERAL OBLIGATIONS OF THE COMPANY**: Company shall, in accordance with and subject to the terms and conditions of this contract:

4.1 Pay Contractor in accordance with terms and conditions of the contract.

4.2 Allow Contractor and his personnel access, subject to normal security and safety procedures, to all areas as required for orderly performance of the work.

4.3 Perform all other obligations required of Company by the terms of the contract.

5.0 **PERSONNEL TO BE DEPLOYED BY CONTRACTOR**

5.1 Contractor warrants that they will provide competent, qualified and sufficiently experienced personnel to perform the work correctly and efficiently and shall ensure that such personnel observe applicable Company and statutory safety requirement. Upon Company's written request, Contractor, entirely at their own expense, shall remove immediately, from assignment to the work, any personnel of the Contractor determined by the Company to be unsuitable and shall promptly replace such personnel with personnel acceptable to the Company without affecting Company's work.

5.2 The Contractor shall be solely responsible throughout the period of the contract for providing all requirements of their personnel including but not limited to, their transportation to & fro, local boarding, lodging & medical attention etc. Company shall have no responsibility or liability in this regard unless specified otherwise elsewhere in bid/ contract document.

5.3 Contractor's key personnel shall be fluent in English language (both writing and speaking).

6.0 **WARRANTY AND REMEDY OF DEFECTS**

6.1 Contractor warrants that it shall perform the work in a professional manner and in accordance with their highest degree of quality, efficiency, and with the state of the art technology/inspection services and in conformity with all specifications, standards and drawings set forth or referred to in the Technical Specifications. They should comply with the instructions and guidance, which Company may give to the Contractor from time to time.

6.2 Should Company discover at any time during the tenure of the Contract or within 3(three) months after completion of the Contract that the work does not conform to the foregoing warranty, Contractor shall after receipt of notice from Company, promptly perform any and all corrective work required to make the services conform to the Warranty. Such corrective Work shall be performed entirely at Contractor's own expenses. If such corrective Work is not performed within a reasonable time, the Company, at its option may have such remedial Work performed by others and charge the cost thereof to Contractor subject to a maximum of the contract value payable for the defective work which needs corrective action which the Contractor must pay promptly. In case Contractor fails to perform remedial work, or pay promptly in respect thereof, the performance security shall be forfeited.

7.0 **CONFIDENTIALITY, USE OF CONTRACT DOCUMENTS AND INFORMATION**:

7.1 Contractor shall not, without Company's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing pattern, sample or information furnished by or on behalf of Company in connection therewith, to any person other than a person employed by Contractor in the

performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance with prior permission from Company. However, nothing hereinabove contained shall deprive the Contractor of the right to use or disclose any information:

(a) which is possessed by the Contractor, as evidenced by the Contractor's written records, before receipt thereof from the Company which however the Contractor shall immediately inform to Company ; or

(b) which is required to be disclosed by the Contractor pursuant to an order of a court of competent jurisdiction or other governmental agency having the power to order such disclosure, provided the Contractor uses its best efforts to provide timely notice to Company of such order to permit Company an opportunity to contest such order subject to prior permission from Company.

7.2 Contractor shall not, without Company's prior written consent, make use of any document or information except for purposes of performing the contract.

7.3 Any document supplied to the Contractor in relation to the contract other than the Contract itself remain the property of Company and shall be returned (in all copies) to Company on completion of Contractor's performance under the Contract if so required by Company. However, the above obligation shall not extend to information which:

i) is, at the time of disclosure, known to the public which Contractor shall immediately inform Company ;

ii) is lawfully becomes at a later date known to the public through no fault of Contractor subject to Contractor's undertaking that no information has been divulged by them to the public;

iii) is lawfully possessed by Contractor before receipt thereof from Company which should be immediately informed to Company;

iv) is developed by Contractor independently of the information disclosed by Company which should be shared with the Company;

v) Contractor is required to produce before competent authorities or by court order subject to prior permission from Company;

8.0 **TAXES**:

8.1 Tax levied on Contractor as per the provisions of Indian Income Tax Act and any other enactment/rules on income derived/payments received under the contract will be on Contractor's account.

8.2 Contractor shall be responsible for payment of personal taxes, if any, for all the personnel deployed in India by Contractor.

8.3 The Contractor shall furnish to the Company, if and when called upon to do so, relevant statement of accounts or any other information pertaining to work done under the contract for submitting the same to the Tax authorities, on

specific request from them in accordance with provisions under the law. Other than the information provided by the Contractor, the Contractor shall not be responsible for any inaccurate information provided by the Company to the Tax authorities and the Company shall indemnify the Contractor for all claims, expenses, costs or losses of any nature arising from such inaccuracy. Contractor shall be responsible for preparing and filing the return of income etc. within the prescribed time limit to the appropriate authority.

8.4 Prior to start of operations under the contract, the Contractor shall furnish the Company with the necessary documents, as asked for by the Company and/ or any other information pertaining to the contract, which may be required to be submitted to the Income Tax authorities at the time of obtaining "No Objection Certificate" for releasing payments to the Contractor.

8.5 Corporate income tax will be deducted at source from the invoice at the specified rate of income tax as per the provisions of Indian Income Tax Act as may be in force from time to time and Company will issue TDS Certificate to the Contractor as per the provisions of Income Tax Act.

8.6 Corporate and personnel taxes on Contractor shall be the liability of the Contractor and the Company shall not assume any responsibility on this account.

8.7 All local taxes, levies and duties, sales tax, octroi, etc. on purchases and sales made by Contractor (except customs duty) shall be borne by the Contractor.

8.8 **Service Tax**: The price excludes Services Tax and the service tax as applicable shall be to the Company account. The Service tax amount on the taxable part of the services provided by the Contractor shall be paid by the Company as per provisions of the Service Tax Act.

9.0 **INSURANCE**:

9.1 The Contractor shall arrange insurance to cover all risks in respect of their personnel, materials and equipment belonging to the Contractor or its sub Contractor (if applicable) during the currency of the contract including the third party items/consumables. For materials/equipment belong to the Contractor or its sub-Contractor, Contractor may self-insure the same.

9.2 Contractor shall at all time during the currency of the contract provide, pay for and maintain the following insurances amongst others :

a) Workmen compensation insurance as required by the laws of the country of origin of the employee.

b) Employer's Liability Insurance as required by law in the country of origin of employee.

c) General Public Liability Insurance or Comprehensive General Liability insurance covering liabilities including contractual liability for bodily injury, including death of persons, and liabilities for damage of property. This insurance must cover all operations of Contractor required to fulfil the provisions under this contract.

d) Contractor's equipment used for execution of the work hereunder shall have an insurance cover with a suitable limit (as per international standards) except when tools / equipment are below Rotary Table or in the well bore or Contractor may self-insure its tools/ equipment.

e) Automobile Public Liability Insurance covering owned, non-owned and hired automobiles used in the performance of the work hereunder, with bodily injury limits and property damage limits as governed by Indian Insurance regulations.

f) Public Liability Insurance as required under Public Liability Insurance Act 1991, if applicable.

9.3 Any deductible set forth in any of the above insurance shall be borne by Contractor.

9.4 Contractor shall furnish to Company prior to commencement date, certificates of all its insurance policies covering the risks mentioned above.

9.5 If any of the above policies expire or are cancelled during the term of this contract and Contractor fails for any reason to renew such policies, then the Company will renew/replace same and charge the cost thereof to Contractor. Should there be a lapse in any insurance required to be carried out by the Contractor for any reason whatsoever, loss/damage claims resulting there from shall be to the sole account of Contractor.

9.6 Contractor shall require all of his sub-Contractor to provide such of the foregoing insurance coverage as Contractor is obliged to provide under this Contract and inform the Company about the coverage prior to the commencement of agreements with its sub-Contractors.

9.7 All insurance taken out by Contractor or their sub-Contractor shall be endorsed to provide that the underwriters waive their rights of recourse on the Company and to the extent of the liabilities assumed by Contractor under this Contract.

10.0 **CHANGES**:

10.1 During the performance of the work, Company may make minor change to take care of any supplementary work within the general scope of this Contract including, but not limited to, changes in methodology, and minor additions to or deletions from the work to be performed. Contractor shall perform the work as changed. Changes of this nature will be affected by written order by the Company.

10.2 If any change result in an increase in compensation due to Contractor or in a credit due to Company, Contractor shall submit to Company an estimate of the amount of such compensation or credit in a form prescribed by Company. Such estimates shall be based on the rates shown in the Schedule of Rates (Section IV). Upon review of Contractor's estimate, Contractor shall establish and set forth in the Change Order the amount of the compensation or credit for the change or a basis for determining a reasonable compensation or credit for the change. If Contractor disagrees with compensation or credit set forth in the Change Order, Contractor shall nevertheless perform the work as changed, and the parties will resolve the dispute in accordance with Clause 13 hereunder.

Contractor's performance of the work as changed will not prejudice Contractor's request for additional compensation for work performed under the Change Order.

11.0 **FORCE MAJEURE**:

11.1 In the event of either party being rendered unable by `Force Majeure' to perform any obligation required to be performed by them under the contract, the relative obligation of the party affected by such `Force Majeure' will stand suspended for the period during which such cause lasts. The word `Force Majeure' as employed herein shall mean acts of God, war, revolt, agitation, strikes, riot, fire, flood, sabotage, civil commotion, road barricade (but not due to interference of employment problem of the Contractor), acts of government of the two parties, which makes performance impossible or impracticable and any other cause, whether of kind herein enumerated or otherwise which are not within the control of the party to the contract and which renders performance of the contract by the said party impossible.

11.2 Upon occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party in writing within Seventy Two (72) hours of the alleged beginning and ending thereof, giving full particulars and satisfactory evidence in support of its claim.

11.3 Should 'force majeure' condition as stated above occurs and should the same be notified within seventy two (72) hours after its occurrence the 'force majeure' rate shall apply for the first fifteen days. Parties will have the right to terminate the Contract if such 'force majeure' conditions continue beyond fifteen (15) days with prior written notice. Should either party decide not to terminate the Contract even under such condition, no payment would apply after expiry of fifteen (15) days force majeure period unless otherwise agreed to.

12.0 **TERMINATION**:

12.1 **TERMINATION ON EXPIRY OF THE TERMS (DURATION**): The contract shall be deemed to have been automatically terminated on the expiry of duration of the Contract or the extension period, if exercised by Company under the provision of the Contract.

12.2 **TERMINATION ON ACCOUNT OF FORCE MAJEURE**: Either party shall have the right to terminate this Contract on account of Force Majeure as set forth in Article 11.0 above.

12.3 **TERMINATION ON ACCOUNT OF INSOLVENCY**: In the event that the Contractor or its collaborator at any time during the term of the Contract, becomes insolvent or makes a voluntary assignment of its assets for the benefit of creditors or is adjudged bankrupt, then the Company shall, by a notice in writing have the right to terminate the Contract and all the Contractor's rights and privileges hereunder, shall stand terminated forthwith.

12.4 **TERMINATION FOR UNSATISFACTORY PERFORMANCE**: If the Company considers that, the performance of the Contractor is unsatisfactory, or not upto the expected standard, the Company shall notify the Contractor in writing and specify in details the cause of the dissatisfaction. The Company shall have the option to terminate the Contract by giving 15 days notice in writing to the

Contractor, if Contractor fails to comply with the requisitions contained in the said written notice issued by the Company.

12.5 **TERMINATION DUE TO CHANGE OF OWNERSHIP & ASSIGNMENT**: In case the Contractor's rights and /or obligations under this Contract and/or the Contractor's rights, title and interest to the equipment/ material, are transferred or assigned without the Company's consent, the Company may at its absolute discretion, terminate this Contract.

12.6 If at any time during the term of this Contract, breakdown of Contractor's equipment results in Contractors being unable to perform their obligations hereunder for a period of 15 successive days, Company at its option, may terminate this Contract in its entirely without any further right or obligation on the part of the Company, except for the payment of money then due. No notice shall be served by the Company under the condition stated above.

12.7 Notwithstanding any provisions herein to the contrary, the Contract may be terminated at any time by the Company on giving 30 (thirty) days written notice to the Contractor due to any other reason not covered under the above clause from 12.1 to 12.6 and in the event of such termination the Company shall not be liable to pay any cost or damage to the Contractor except for payment for services as per the Contract upto the date of termination including the De-mob cost, if any.

12.8 **CONSEQUENCES OF TERMINATION**: In all cases of termination herein set forth, the relative obligations of the parties to the Contract shall be limited to the period up to the date of termination. Notwithstanding the termination of this Contract, the parties shall continue to be bound by the provisions of this Contract that reasonably require some action or forbearance after such termination.

12.9 Upon termination of this Contract, Contractor shall return to Company all of Company's items, which are at the time in Contractor's possession.

12.10 In the event of termination of contract, Company will issue Notice of termination of the contract with date or event after which the contract will be terminated. The contract shall then stand terminated and the Contractor shall demobilize their personnel & materials.

13.0 SETTLEMENT OF DISPUTES AND ARBITRATION:

13.1 Arbitration(Applicable for Suppliers/Contractors other than PSU) :

Except as otherwise provided elsewhere in the contract, if any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, in connection with construction, meaning, operation, effect, interpretation of the contract or breach thereof which parties are unable to settle mutually, the same shall be referred to Arbitration as provided hereunder :

1. A party wishing to commence arbitration proceeding shall invoke Arbitration Clause by giving 30 days notice to the other party. The notice invoking arbitration shall specify all the points of dispute with details of the amount claimed to be referred to arbitration at the time of invocation of arbitration and not thereafter. If the claim is in foreign

currency, the claimant shall indicate its value in Indian Rupee for the purpose of constitution of the arbitral tribunal.

2. The number of arbitrators and the appointing authority will be as under:

Claim amount (excluding claim for interest and counter claim, if any)	**Number of Arbitrator**	**Appointing Authority**
Upto Rs. 5 Crore	Sole Arbitrator	OIL
Above Rs. 5 Crore	3 Arbitrators	One Arbitrator by each party and the 3rd Arbitrator, who shall be the presiding Arbitrator, by the two Arbitrators.

3. The parties agree that they shall appoint only those persons as arbitrators who accept the conditions of the arbitration clause. No person shall be appointed as Arbitrator or Presiding Arbitrator who does not accept the conditions of the arbitration clause.

4. Parties agree that there will be no objection if the Arbitrator appointed holds equity shares of OIL and/or is a retired officer of OIL/any PSU. However, neither party shall appoint its serving employees as arbitrator.

5. If any of the Arbitrators so appointed dies, resigns, becomes incapacitated or withdraws for any reason from the proceedings, it shall be lawful for the concerned party/arbitrators to appoint another person in his place in the same manner as aforesaid. Such person shall proceed with the reference from the stage where his predecessor had left if both parties consent for the same; otherwise, he shall proceed de novo.

6. Parties agree that neither shall be entitled for any pre-reference or pendente-lite interest on its claims. Parties agree that any claim for such interest made by any party shall be void.

7. The arbitral tribunal shall make and publish the award within time stipulated as under:

Amount of Claims and counter claims(excluding interest)	Period for making and publishing of the award(counted from the date of first meeting of the Arbitrators)
Upto Rs. 5 Crore	Within 8 months
Above Rs. 5 Crore	Within 12 months

The above time limit can be extended by Arbitrator, for reasons to be recorded in writing, with the consent of the other parties.

8. If after commencement of the arbitration proceedings, the parties agree to settle the dispute mutually or refer the dispute to conciliation, the arbitrators shall put the proceedings in abeyance until such period as requested by the parties.

9. Each party shall be responsible to make arrangements for the travel and stay etc. of the arbitrator pointed by it. Claimant shall also be responsible for making arrangements for travel/stay arrangements of the Presiding Arbitrator and the expenses incurred shall be shared equally by the parties.

   In case of sole arbitrator, OIL shall make all necessary arrangements for his travel, stay and the expenses incurred shall be shared equally by the parties.

10. The Arbitration shall be held at the place from where the contract has been awarded. However, parties to the contract can agree for a different place for the convenience of all concerned.

11. The Arbitrator(s) shall give reasoned and speaking award and it shall be final and binding on the parties.

12. Subject to aforesaid, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof shall apply to the arbitration proceedings under this clause.

13.2 <u>Arbitration(applicable in case of Contract awarded on Public Sector Enterprise)</u> :

In the event of any dispute or difference relating to, arising from or connected with the Contract, such dispute or difference shall be referred by either party to the arbitration of one of the Arbitrators in the Department of Public Enterprises, to be nominated by the Secretary to the Government of India, In-Charge of the Bureau of Public Enterprises. The Arbitration and Conciliation Act 1996 shall not be applicable to the Arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Deptt. of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference, the dispute shall be decided by the Law Secretary or the Special Secretary/Additional Secretary, whose decision shall bind the parties finally and conclusively. The parties in the dispute will share equally the cost of the arbitration as intimated by the Arbitrator.

The venue of all arbitrations under both 13.1 & 13.2 will be Delhi/ NOIDA. The award made in pursuance thereof shall be binding on the parties.

14.0 **<u>NOTICES</u>**:

14.1 Any notice given by one party to other, pursuant to this Contract shall be sent in writing or by telex or Fax and confirmed in writing to the applicable address specified below:

Company

a) **For contractual matters**

b) **For technical matters**

SM(C&P) **OIL INDIA LIMITED** **FC-24, 5TH FLOOR, SECTOR-16A,** **IT INFRASTRUCTURE BUILDING** **NOIDA – 201 301** **UTTAR PRADESH** **Fax No. 0120-2488327** **E-MAIL: corp_c&p@oilindia.in;** **cemg_c&p@oilindia.in**	**Mr. G. GOGOI** **GM - DRLIING(PROJECT)** **OIL INDIA LIMITED,** **IT Infrastructure building,** **5th Floor, FC – 24,** **Sector 16A, NOIDA 201301** **PH. NO. 0120-2511648** **E-mail:** cemg_c&p@oilindia.in

c) **Contractor**

_____

_____

Fax No. :

14.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

15.0 **SUBCONTRACTING/ASSIGNMENT**:

15.1 Contractor shall not subcontract, transfer or assign the contract, in full or any part under this contract, to any third party (ies). Except for the main services under this contract, Contractor may sub-contract the petty support services subject to Company's prior approval. However, Contractor shall be fully responsible for complete execution and performance of the services under the Contract.

16.0 **MISCELLANEOUS PROVISIONS**:

16.1 Contractor shall give notices and pay all fees at their own cost required to be given or paid by any National or State Statute, Ordinance, or other Law or any regulation, or bye-law of any local or other duly constituted authority as may be in force from time to time in India, in relation to the performance of the services and by the rules & regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the services.

16.2 Contractor shall conform in all respects with the provisions of any Statute, Ordinance of Law as aforesaid and the regulations or bye-law of any local or other duly constituted authority which may be applicable to the services and with such rules and regulation public bodies and Companies as aforesaid and shall keep Company indemnified against all penalties and liability of every kind for breach of any such Statute, Ordinance or Law, regulation or bye-law.

16.3 During the tenure of the Contract, Contractor shall keep the site where the services are being performed reasonably free from all unnecessary obstruction and shall store or dispose of any equipment and surplus materials and clear away and remove from the site any wreckage, rubbish or temporary works no longer required. On the completion of the services, Contractor shall clear away and remove from the site any surplus materials, rubbish or temporary works of every kind and leave the whole of the site clean and in workmanlike condition to the satisfaction of the Company.

16.4 Key personnel cannot be changed during the tenure of the Contract except due to sickness/death/resignation of the personnel in which case the replaced person should have equal experience and qualification, which will be again subject to approval, by the Company.

17.0 **LIQUIDATED DAMAGES FOR DEFAULT IN TIMELY MOBILISATION**:

17.1 Time is the essence of this Contract. In the event of the Contractor's default in timely mobilization for commencement of work within the stipulated period, the Contractor shall be liable to pay liquidated damages at the rate of 0.5 % of the total Contract value (i.e. Effective Day Rate based on which bids were evaluated x 120 days) for each week of delay or part thereof subject to maximum of 7.5% (Seven and half percent). Liquidated Damages will be reckoned from the date after expiry of the scheduled mobilisation period till the date of commencement of Contract as defined in Clause 2.0 of Section-I. The parties agree that this is a genuine pre-estimate of the loss/damage which will be suffered on account of delay/breach on the part of the contractor and the said amount will be payable on demand, without there being any proof of the actual loss or damages caused by such delay/breach.

17.2 If the Contractor fails to mobilise within 20 weeks after the stipulated date, then the Company reserves the right to cancel the Contract without any compensation whatsoever.

17.3 If the Contractor delays to mobilise the bundled service and commence the operations within the stipulated mobilization period, it may request Operator for extension of time with unconditionally agreeing for payment of Liquidated Damages. Upon receipt of such requests, Operator may, at its discretion, extend the period of mobilization and as its sole remedy can recover from Contractor as ascertained and agreed Liquidated Damages and not by way of penalty 0.5 % of the total Contract value (i.e. Effective Day Rate based on which bids were evaluated x 120 days) for each week of delay or part thereof subject to maximum of 7.5% (Seven and half percent)contract value i.e. (Effective Day Rate based on which bids were evaluated x 120 days).

Applicable L/D will be recovered from Mobilisation Bill. However, to avoid adverse impact on execution of Contract due to resource crunch on account of deduction of L/D in one go, OIL may consider deduction of LD in Instalments on monthly basis on request from the party.

17.4 The Company also reserves the right to cancel the Contract without any compensation whatsoever in case of failure to Complete the work within the stipulated period. In the event of non-completion of the jobs as per the provisions of this contract, the company reserves the right to claim back the amount already paid to the Contractor. Any part/phase completion, barring the final phase, will be regarded as non-completion of the contract and loss of time & cost to the company. Number of instalments can be decided on case to case basis not exceeding 10 months.

18.0 **PERFORMANCE SECURITY**:

The Contractor has furnished to Company a Bank Guarantee No. _____dated_____ issued by _____ for _____ (being 7.5 % of estimated Contract Price) valid till _____ towards performance security. The performance security shall be payable to Company as compensation for any loss resulting from Contractor's failure to fulfill their obligations under the Contract. In the event of extension of the Contract period, the validity of the bank guarantee shall be suitably extended by the Contractor. The bank guarantee will be discharged by Company not later than 30 days following its expiry.

19.0 **ASSOCIATION OF COMPANY'S PERSONNEL**: Company's engineer may be associated with the work throughout the operations. The Contractor shall execute the work with professional competence and in an efficient and workman like manner and provide Company with a standard of work provided by reputed bundled service Contractors to major international oil companies in the petroleum industry.

20.0 **LABOUR**: The recruitment of the labour shall be met from the areas of operation and wages will be according to the rates prevalent at the time which can be obtained from the District Authorities of the area. The facilities to be given to the labourers should conform to the provisions of labour laws as per contract Labour (Regulation and Abolition) Act, 1970.

21.0 **LIABILITY**:

21.1 Except as otherwise expressly provided, neither Company nor its servants, agents, nominees, Contractors, or sub-Contractors shall have any liability or responsibility whatsoever to whomsoever for loss of or damage to the equipment and/or loss of or damage to the property of the Contractor and/or their Contractors or sub-Contractors, irrespective of how such loss or damage is caused and even if caused by the negligence of Company and/or its servants, agent, nominees, assignees, Contractors and sub-Contractors. The Contractor shall protect, defend, indemnify and hold harmless Company from and against such loss or damage and any suit, claim or expense resulting there from.

21.2 Neither Company nor its servants, agents, nominees, assignees, Contractors, sub-Contractors shall have any liability or responsibility whatsoever for injury to, illness, or death of any employee of the Contractor and/or of its Contractors or sub-Contractor irrespective of how such injury, illness or death is caused and even if caused by the negligence of Company and/or its servants, agents nominees, assignees, Contractors and sub-Contractors. Contractor shall protect, defend, indemnify and hold harmless Company from and against such liabilities and any suit, claim or expense resulting there from.

21.3 The Contractor hereby agrees to waive its right of recourse and further agrees to cause its underwriters to waive their right of subrogation against Company and/or its underwriters, servants, agents, nominees, assignees, Contractors and sub-Contractors for loss or damage to the equipment of the Contractor and/or its sub-Contractors and/or their employees when such loss or damage or liabilities arises out of or in connection with the performance of the contract limited to the Contractor’s liabilities agreed to under this Contract.

21.4 The Contractor hereby further agrees to waive its right of recourse and agrees to cause its underwriters to waive their right of subrogation against Company and/or its underwriters, servants, agents, nominees, assignees, Contractors and sub-Contractors for injury to, illness or death of any employee of the Contractor and of its Contractors, sub-Contractors and/or their employees when such injury, illness or death arises out of or in connection with the performance of the contract limited to the Contractor's liabilities agreed to under this Contract.

21.5 Except as otherwise expressly provided, neither Contractor nor its servants, agents, nominees, Contractors or sub-Contractors shall have any liability or responsibility whatsoever to whomsoever for loss of or damage to the equipment and/or loss or damage to the property of the Company and/or their Contractors or sub-Contractors, irrespective of how such loss or damage is caused and even if caused by the negligence of Contractor and/or its servants, agents, nominees, assignees, Contractors and sub-Contractors. The Company shall protect, defend, indemnify and hold harmless Contractor from and against such loss or damage and any suit, claim or expense resulting there from.

21.6 Neither Contractor nor its servants, agents, nominees, assignees, Contractors, sub-Contractors shall have any liability or responsibility whatsoever to whomsoever for injury or illness, or death of any employee of the Company and/or of its Contractors or sub-Contractors irrespective of how such injury, illness or death is caused and even if caused by the negligence of Contractor and/or its servants, agents, nominees, assignees, Contractors and sub-Contractors. Company shall protect, defend indemnify and hold harmless Contractor from and against such liabilities and any suit, claim or expense resulting there from.

21.7 The Company agrees to waive its right of recourse and further agrees to cause its underwriters to waive their right of subrogation against Contractor and/or its underwriters, servants, agents, nominees, assignees, Contractors and sub-Contractors for loss or damage to the equipment of Company and/or its Contractors or sub-Contractors when such loss or damage or liabilities arises out of or in connection with the performance of the contract.

21.8 The Company hereby further agrees to waive its right of recourse and agrees to cause it underwriters to waive their right of subrogation against Contractor and/or its underwriters, servants, agents, nominees, assignees, Contractors and sub-Contractors for injury to, illness or death of any employee of the Company and of its Contractors, sub-Contractors and/or their employees when such injury, illness or death arises out of or in connection with the performance of the Contract.

22.0 **INDEMNITY AGREEMENT**:

22.1 Except as provided hereof Contractor agrees to protect, defend, indemnify and hold Company harmless from and against all claims, suits, demands and causes of action, liabilities, expenses, cost, liens and judgments of every kind and character, without limit, which may arise in favour of Contractor's employees, agents, Contractors and sub-Contractors or their employees on account of bodily injury or death, or damage to personnel/properly as a result of the operations contemplated hereby, regardless of whether or not said claims, demands or causes of action arise out of the negligence or otherwise, in whole or in part or other faults.

22.2 Except as provided hereof Company agrees to protect, defend, indemnify and hold Contractor harmless from and against all claims, suits, demands and causes of action, liabilities, expenses, cost, liens and judgments of every kind and character, without limit, which may arise in favour of Company's employees, agents, Contractors and sub-Contractors or their employees on account of bodily injury or death, or damage to personnel/properly as a result of the operations contemplated hereby, regardless of whether or not said claims, demands or causes of action arise out of the negligence or otherwise, in whole or in part or other faults.

23.0 **INDEMNITY APPLICATION**: The indemnities given herein above, whether given by Company or Contractor shall be without regard to fault or to the negligence of either party even though said loss, damage, liability, claim, demand, expense, cost or cause of action may be caused, occasioned by or contributed to by the negligence, either sole or concurrent of either party.

24.0 **PAYMENTS, MANNER OF PAYMENT, RATES OF PAYMENT, SET-OFF:**

24.1 Company shall pay to Bidder, during the term of the contract, the amount due calculated according to the rates of payment set and in accordance with other provisions hereof. No other payments shall be due from Company unless specifically provided for in this contract. All payments will be made in accordance with the terms hereinafter described.

24.1.1 Request for payment/part payment to third party i.e. other than the party on whom the contract has been awarded will not be entertained by OIL under any circumstances. The offers stipulating payment/part payment to such third party will be considered as non-responsive and such offers will be rejected.

24.2 **MANNER OF PAYMENT:** All payments due by Company to Bidder shall be made at Contractor's designated bank. All bank charges will be to Bidder's account.

24.3 Payment of any invoices shall not prejudice the right of Company to question the validity of any charges therein, provided Company within one year after the date of payment shall make and deliver to Bidder written notice of objection to any item or items the validity of which Company questions.

24.4 **INVOICES**: Bidder shall raise monthly invoices (except for Mobilization and Demobilization Charge which can be raised after completion of Mobilization & Demobilization as per Contract) for the work executed in the previous month for release of the payment as indicated in the Schedule of Rates of the contract. Payment of undisputed portion of the invoice shall be released within 30 (thirty) days of receipt of invoice.

24.5 Company shall within 30 days of receipt of the invoice notify Bidder of any item under dispute, specifying the reasons thereof, in which event, payment of the disputed amount may be withheld until settlement of the dispute, but payment shall be made of any undisputed portion. This will not prejudice the Company's right to question the validity of the payment at a later date as envisaged in sub- clause 24.3 above.

24.6 The acceptance by Contractor of part payment on any billing not paid on or before the due date shall not be deemed a waiver of Contractor's rights in respect of any other billing, the payment of which may then or thereafter be due.

24.7 Bidder shall maintain complete and correct records of all information on which Bidder's invoices are based upto 3 (Three) years from the date of last invoice. Such records shall be required for making appropriate adjustments or payments by either party in case of subsequent audit query/objection. Any audit conducted by Company of Bidder's records, as provided herein, shall be limited to Company's verification (i) of the accuracy of all charges made by Bidder to Company and (ii) that Bidder is otherwise in compliance with the terms and conditions of this Agreement.

24.8 **SET-OFF**: Any sum of money due and payable to the Contractor(including Performance Security refundable to them) under this or any other Contract may be appropriated by OIL and set-off against any claim of OIL(or such other person or persons contracting through OIL) for payment of a sum of money arising out of this contract or under any other contract made by the Contractor with OIL(or such other person or persons contracting through OIL).

25.0 **WITHHOLDING**: Company may withhold or nullify the whole or any part of the amount due to Contractor, after informing the Contractor of the reasons in writing, on account of subsequently discovered evidence in order to protect Company from loss on account of :-

a) For non-completion of jobs assigned as per Section-II.
b) Contractor's indebtedness arising out of execution of this Contract.
c) Defective work not remedied by Contractor.
d) Claims by sub-Contractor of Contractor or others filed or on the basis of reasonable evidence indicating probable filing of such claims against Contractor.
e) Failure of Contractor to pay or provide for the payment of salaries/ wages, contributions, unemployment compensation, taxes or enforced savings with-held from wages etc.
f) Failure of Contractor to pay the cost of removal of unnecessary debris, materials, tools, or machinery.
g) Damage to another Contractor of Company.
h) All claims against Contractor for damages and injuries, and/or for non-payment of bills etc.
i) Any failure by Contractor to fully reimburse Company under any of the indemnification provisions of this Contract. If, during the progress of the work Contractor shall allow any indebtedness to accrue for which Company, under any circumstances in the opinion of Company may be primarily or contingently liable or ultimately responsible and Contractor shall, within five days after demand is made by Company, fail to pay and discharge such indebtedness, then Company may during the period for which such indebtedness shall remain unpaid, with-hold from the amounts due to Contractor, a sum equal to the amount of such unpaid indebtedness.

Withholding will also be effected on account of the following:-

i) Order issued by a Court of Law in India.

ii) Income-tax deductible at source according to law prevalent from time to time in the country.

iii) Any obligation of Contractor which by any law prevalent from time to time to be discharged by Company in the event of Contractor's failure to adhere to such laws.

iv) Any payment due from Contractor in respect of unauthorised imports.

When all the above grounds for withholding payments shall be removed, payment shall thereafter be made for amounts so with-hold.

Notwithstanding the foregoing, the right of Company to withhold shall be limited to damages, claims and failure on the part of Contractor, which is directly/indirectly related to some negligent act or omission on the part of Contractor.

26.0 **APPLICABLE LAW**:

26.1 The Contract shall be deemed to be a Contract made under, governed by and construed in accordance with the laws of India for the time being in force and shall be subject to the exclusive jurisdiction of Courts situated in Delhi.

26.2 The Contractor shall ensure full compliance of various Indian Laws and Statutory Regulations, to the extent applicable, as stated below, but not limited to, in force from time to time and obtain necessary permits/ licenses etc. from appropriate authorities for conducting operations under the Contract:

a) The Mines Act 1952- as applicable to safety and employment conditions
b) The Minimum Wages Act, 1948
c) The Oil Mines Regulations, 1984
d) The Workmen's Compensation Act, 1923
e) The Payment of Wages Act, 1963
f) The Payment of Bonus Act, 1965
g) The Contract Labour (Regulation & Abolition) Act, 1970 and the rules framed there under
h) The Employees Pension Scheme, 1995
i) The Interstate Migrant Workmen Act., 1979 (Regulation of employment and conditions of service)
j) The Employees Provident Fund and Miscellaneous Provisions Act, 1952
k) ~~The AGST Act, WB & Bihar Tax Act~~
l) Service Tax Act
m) Customs & Excise Act & Rules
n) ~~Assam, West Bengal and Bihar Entry Tax Act~~

27.0 **RECORDS, REPORTS AND INSPECTION**: The Contractor shall, at all times, permit the Company and its authorised employees and representatives to inspect all the Work performed and to witness and check all the measurements and tests made in connection with the said work. The Contractor shall keep an authentic, accurate history and logs including safety records of each IP survey

section with major items consumed, which shall be open at all reasonable times for inspection by the Company designated representatives and its authorised employees and representatives. The Contractor shall provide the Company designated representatives with a daily written report, on form prescribed by the Company showing details of operations during the preceding 24 hours and any other information related to the said IP survey requested by the Company whenever so requested. The Contractor shall not, without Company's written consent allow any third person(s) access to the said survey, or give out to any third person information in connection therewith.

28.0 **SUBSEQUENTLY ENACTED LAWS**: Subsequent to the date of issue of letter of award if there is a change in or enactment of any law or change in application or enforcement or interpretation of existing law by any governmental authority or public body, which results in addition/ reduction in cost to Contractor on account of the operation contemplated under the Contract, the Company/Contractor shall reimburse the Contractor/pay Company for such additional/reduced costs actually incurred/saved by Contractor, subject to the submission of documentary evidence by Contractor/Company.

29.0 **ROYALITY AND PATENTS**: Each party shall hold harmless and indemnify the other from and against all claim and proceedings for or on account of any patent rights, design, trade mark or other protected rights arising from any use of materials, equipment, processes, inventions and methods which have not been imposed on the attending party by the terms of the contract or the specifications or drawings forming part thereof.

30.0 **LIMITATION OF LIABILITY**: Notwithstanding any other provisions herein to the contrary, except only in cases of willful misconduct and / or criminal acts,

(a) Neither the Contractor nor the Company (OIL) shall be liable to the other, whether in Contract, tort, or otherwise, for any consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs.

(b) Notwithstanding any other provisions incorporated elsewhere in the contract, the aggregate liability of the Contractor in respect of this contract, whether under Contract, in tort or otherwise, shall not exceed 100% of the Annualized Contract Price, provided however that this limitation shall not apply to the cost of repairing or replacing defective equipment by the Contractor, or to any obligation of the Contractor to indemnify the Company with respect to Intellectual Property Rights.

(c) Company shall indemnify and keep indemnified Contractor harmless from and against any and all claims, costs, losses and liabilities in excess of the aggregate liability amount in terms of clause (b) above.

31.0 **WAIVER**: Any delay in exercising and any omission to exercise any right, power or remedy exercisable by the Company under this contract shall not impair such right, power or remedy nor shall any waiver by the Company of any breach by the Contractor of any provision of this contract prevent the subsequent enforcement of that provision by the Company or be deemed a waiver by the Company of any subsequent breach by the Contractor.

END OF SECTION – I

SECTION II

TERMS OF REFERENCE / TECHNICAL SPECIFICATIONS/SCOPE OF WORK

Scope of Work for Bundled Services for Anchor-moored Deepwater Rig of 500 Metres Water Depth Capacity

The Contractor shall provide the following Services for the Anchor-moored Drillship / Semi-submersible Drilling Rig hired by the Operator for working in water depth upto 500 metres for drilling exploratory/development wells & workover/completion operations including re-entry anywhere in the Indian offshore. The services should be capable of operating in water depths up to 500 metres with well depths of 5200 metres from seabed or more.

Work under the scope of this tender, is divided into two separate groups viz. **(1) Main Bundled Services** & (**2) Well Testing Services** for which two independent Contracts may be awarded.

Bidders having in-house capability of providing Well Testing Services must necessarily quote for both **Group-I (Main Bundled Services)** & **Group-II (Well Testing Services).** Group-II (Well Testing Services) is optional for Bidders not having in-house capability for Well Testing Services. **The offers shall be evaluated separately for Group-I and Group-II.**

In case Contract for **Group-I (Main Bundled Services)** and **Group-II (Well Testing services)** are awarded to different bidders, then two separate contracts shall be awarded for these services. However, if Group-I (Main Bundled Services) and Group-II (Well Testing services) are awarded to one bidder, then the entire scope of work under Group-I & Group-II shall be covered under a single contract. However, LD shall be applicable for each of Group-I & Group-II separately.

For the execution of the Contract, the Contractor shall provide capable and experienced rig service crew/base personnel as per tender document and take-up the job in accordance with the various articles and Schedule of Responsibilities.

Group-I Services:

I. Cementing Services including slurry design, supply of cement, cement additives and casing hardware (floating & guiding equipment, centralizers, etc.), along with Base Engineer for deepwater wells in water depths up to 500 metres.

II. Mud Services including supply of mud chemicals and additives, along with Mud Engineers for deepwater wells in water depths up to 500 metres.

III. Directional Drilling with LWD/MWD & Mud Motor Services along with crew for deepwater wells in water depths up to 500 metres. Wireline/LWD/MWD data to be integrated with Rig's communication system for Real Time Data transmission from Rig to Operator's onshore base office / Real Time Drilling Operations Centre (RTOC).

IV. Wireline Logging Services along with crew for deepwater wells in water depths up to 500 metres. Wireline data to be integrated with Rig's communication system for Real Time Data transmission from Rig to Operator's onshore base office / Real Time Drilling Operations Centre (RTOC).

V. Mud Logging Services along with crew for deepwater wells in water depths up to 500 metres. Mud Logging data to be integrated with Rig's communication system for Real Time Data transmission from Rig to Operator's onshore base office / Real Time Drilling Operations Centre (RTOC).

VI. Core Handling, Preservation and Analysis Services for deepwater wells in water depths up to 500 metres.

VII. Complete Shore Based facilities for loading/unloading, warehousing and handling of equipment and materials including bulk. The Contractor is also to provide Drill water, Pot-water, etc. for rig and PSVs together with Complete Logistics support (marine, air, at shore base) for day to day operation of the deepwater rig.

VIII. Casing and Tubular Running Tools and Services

IX. Drilling, Fishing, Milling, Plug and Abandonment tools and services

X. Hole Enlargement Tools and Services

XI. Coring Services (with Core Barrel and & Core heads)

XII. Liner Hangers and Liner Running Services.

XIII. Real Time Operations Centre (RTOC) and Monitoring Services

XIV. Supply of Drill Bits on Consignment basis.

Group-II Services:

XV. Well Testing Services including DST, TCP and Slick-line Services along with equipment and crew for deepwater wells in water depths up to 500 metres.

Note: The details of individual services are as per **Exhibit 1 to 16** of Scope of Work. The Operator reserves the right to use these services for any other rig operating for the Operator as far as covered by Contractor's normal complement of equipment/tools/materials/personnel without any additional financial implication.

CEMENTING SERVICES

Responsibilities of the Bidder:

1.1 The Bidder under this contract shall provide the complete range of cementing services by providing their Engineers, Operators, Technology, Cement, Cement Additives, and Slurry Design on anchor-moored floater rigs.

1.2 The Bidder shall provide Cementing Services for offshore exploratory wells in offshore India having water depth of @ 500 m, BHST around 300^0F but not exceeding 350^0F and BHP around 10,000 psi but not exceeding 15,000 psi, respectively.

1.3 The Bidder shall be responsible for designing & planning the cement job and designing the cement slurry for deep water exploratory drilling wells as per the well requirement based on the data provided by the Company. The design should be based on latest applicable API standards and other relevant Deepwater cementing and barrier guidelines, with the Bidder's own chemicals and to execute the job as per their own plan duly approved by the Company with an objective to provide quality cementation jobs and reduce overall well cost by avoiding costly secondary repair jobs for bond improvement. The Bidder should also have the latest version of cementing software to simulate the cement job including centraliser placement software.

1.4 The Bidder shall also be responsible to carryout post job analysis of all critical cementation jobs in their simulator and to suggest ways and means to improve further on the quality of jobs so as to develop confidence to avoid CBL / VDL whenever necessary as also to avoid isolation repair jobs.

1.5 The Bidder shall take into account the availability of all requisite cementing equipment, cement and additives for the cementation jobs at the planning stage. The Bidder shall coordinate and recommend availability of additives for all critical jobs prior to commencement.

1.6 The Bidder shall collect the cement sample received from the rigs from the Operator's Helibase / Bulk Handling Plants and have it tested in their own labs to confirm the designed slurry parameters.

1.7 The Cementing Operators deployed by the Bidder shall be responsible for operation, maintenance and calibration of the Cementing Unit (ADC/PSM/RAM) and Batch Mixer, calibration of Data Recording System, densimeter controls installed at the rig. The Cementing Operator shall be responsible for checking the order of cement plug loading / releasing, final circulation prior to cementing, mixing of exact dose of chemical powders / liquid (preferred), in the mixing water at rig in the presence of Company Representative, control of slurry density during pumping, and monitoring the displacement followed by plug bumping.

1.8 The Bidder shall maintain a Log of operations to include cementing operation in progress, time break-up, density measurement, mixing rate, volume of fluid pumped, pumping pressure during cement pumping & displacement,

displacement rate, quantity of cement, additives & mechanical aids used. All specific events occurring throughout the cementation job should be recorded along with other relevant points for post job analysis.

1.9 The Bidder shall furnish detailed specific cementing programs, spacer design and cement hydraulics recommendations, and job reports, in respect of cement jobs executed by them as per format given by the Company for end of well Cementing Reports, summaries and system recommendation as a part of documentation, and any additional reports as may be requested by the Company within 15 days of completion of the well. The Bidder shall be responsible for providing a complete well report comprising of slurry design, computer aided programme, job execution parameter, complications if any, complete post job analysis & material consumption report so that accordingly necessary corrective measures/ improvements/ precautions for future operations may be taken up so as to avoid costly secondary repair jobs. The Bidder shall also familiarize Company personal with complete understanding of its software programmes to have meaningful interpretation of data.

1.10 The Bidder shall be responsible for providing one Operator on board the rig for carrying out all operations pertaining to Cementing.

1.11 A **The Bidder shall provide, the following equipment on the rig:**

Sl. No.	Description	Qty
1	Top Drive (TD) Sub-sea Cementing head complete with Sub-sea plug launching Mandrel to match drill string connection available with the Rig Bidder	1 Set
2	Batch Mixer 2 x 50 bbls (100 bbls), as per specification	1 No.
3	Cementing Circulating Swage with 2" Weco or equivalent Fig 1502 connection: a) 20" size, WP 2680 psi b) 13.5/8" size, WP 4700 psi c) 9.5/8" size, WP 6600 psi d) 7" size, WP 8000 psi	 1 No 1 No 1 No 1 No

1.11 B **The Bidder shall provide, the following consumables on Consignment basis:**

Quantities mentioned above is tentative requirement for 1 well and is for evaluation purpose only. Actual well requirement will be as per final approved cementing program / casing centralization plan. Adequate back up for above consumables as per final must be available on rig during the respective stage of operation.

Sl. No.	Description	Qty
1	**<u>Subsea Plug Set</u>** 16" Cementing Plug, Top & Bottom (Non-rotating type PDC drillable (300^0F), 84 ppf casing for the proposed launching mandrel 13.5/8" Cementing Plug, Top & Bottom (Non-rotating type	 1 No 1 No

	PDC drillable (300^{0}F), 88.2 ppf casing for the proposed launching mandrel 9.5/8" Cementing Plug, Top & Bottom (Non-rotating type PDC drillable (300^{0}F), 53.5 ppf casing for the proposed launching mandrel	1 No
2	Casing Centralizer (Bow Type) with stop collars as per API 10D latest edition: a) 20" b) 16" c) 13.5/8" d) 9.5/8" e) 7" f) 4.1/2" * 2 nos of stop collars per centralizer for each of above sizes	 10 No 20 No 30 No 50 No 30 No 10 No
4	Casing Spirolizers / Spirogliders with stop collars: a) 13.5/8" b) 9.5/8" c) 7" d) 4.1/2" Requirement is for Solid Body Floating Centralizers (Spirolizers) Material of Construction: ASTM B-26, Alloy 713, API approved	 30 No 50 No 30 No 10 No
5	All floating equipment which includes float shoe & float collar for casings & liners of sizes 20", 16", 13.5/8", 9.5/8", 7" & 4.1/2" and suitable for non-rotating cementing plugs for 13.3/8", 9.5/8" & 7" casings: a) Float shoe (Jetting type) for 36" x1.5" WT x API 5L X-56x RL-4B drive pipe b) Float shoe for 20" x 0.625" WT x API 5L X-56 x RL-4S Conductor pipe c) Stab-in Float collar for 20" x 0.625" WT x API 5L X-56 x RL-4S Conductor pipe d) Float shoe for 16" x 84 ppf x P-110 x Dino Vam casing e) Float collar for 16" x 84 ppf x P-110 x Dino Vam casing f) Float shoe for 13.5/8" x 88.2 ppf x P-110 x Vam Top SC-80 Casing g) Float collar for 13.5/8" x 88.2 ppf x P-110 x Vam Top SC-80 Casing h) Float shoe for 13.5/8" x 88.2 ppf x C-110 x Tenaris 513 flush joint Casing i) Float collar for 13.5/8" x 88.2 ppf x C-110 x Tenaris 513 flush joint Casing j) Float shoe for 9.5/8" x 53.5 ppf x P-110 x Atlas Bradford TC-II Casing k) Float collar for 9.5/8" x 53.5 ppf x P-110 x Atlas Bradford TC-II Casing	 1 No 1 No 1 No 1 No 1 No 1 No 1 No 1 No 1 No 1 No 1 No

	Note: 1. Necessary false rotary & other equipment to be made available for carrying out inner string cementation by the Bidder	
6	Crossover, Premium thread, 13.5/8" x 88.2 ppf x C-110 x Tenaris 513 Pin to 13.5/8" x 88.2 ppf x P-110 x Vam Top SC-80 Box; Length: 10 ft	2 Nos
7	Supply of Oilwell Cement as required for carrying out cementation jobs, as per Appendix-4, 4A, 4C	
8	Supply of Cement Additives as required for carrying out cementing jobs, as per Appendix-4, 4A & 4C	

Note:

1. Cementing Engineering services for DW operations shall be from BJ Services / Halliburton / Schlumberger.
2. All Oilwell Cement shall be Dalmia, Digvijay, Dyckerhoff make only.
3. All Cement Additives shall be BJ/Halliburton/ Schlumberger make only.
4. Make of casing consumables shall be of Davis/Weatherford/Baker Hughes/Downhole Product/BJ Services/Halliburton/Schlumberger

2.0 CEMENT, CEMENT ADDITIVES / CHEMICALS:

2.1 The Bidder will design the required slurry with the quoted chemicals against specific packages at Appendix-4, 4A & 4C of the Price Format as per the actual well conditions. All the testing should be carried out as per API Recommended Practice API RP 10B-2 (Recommended Practice for Testing Well Cements) & API RP 10B-3 (Recommended Practice on Testing of Deepwater Well Cement Formulations) as applicable.

Cement & Cement additives for packages I, II, III, IV, V, VI & VII shall be provided as per Cementing Service Provider design. The Bidder should submit their slurry design with their own additives in Appendix-4A for various packages no. I, II, III, IV, V, VI & VII as per test conditions and desired parameters given in Appendix-4C.

The Bidder should submit a copy of test reports in respect of each slurry design against each package as indicated in Annexure-II duly tested & certified by OIL's designated lab / Consortium partner, ONGC's IDT Lab, Dehradun or RGL Lab, Mumbai, along with techno-commercial bid.

Bidders must also quote standard chemicals in their product range, other than those specifically asked in the tender, which are available in their printed catalogue. These products will not be considered for evaluation, but may become part of the contract for supply to the Company in case of any operational requirement during the period of contract.

2.2 The Bidder shall be required to supply API Class-G Oilfield Cement & Cement Additives for the deep water well on F.O.R. prices on the Drilling Rig which shall be required to carry out cementing jobs on the rigs. Unit rates for API Class-G Oilfield Cement & Cement Additives for the duration of the contract shall be calculated as per Appendix-2 & Appendix-4, respectively. In

addition to the above, the Bidder has to provide all other additives, which are in their product line and attached at Appendix-4B, as and when required by the Operator for the slurry design of any specific well condition and the same shall become a part of the contract (not to be considered for evaluation). All such purchases will be based on the technical literature and case studies in consultation with the Bidder.

2.3 The Bidder is required to keep sufficient quantities of Cement & Cement Additives based on the well as per their slurry design/requirement given in Appendix-4, 4A & 4C at shore base / Drilling Unit**.** The Bidder should ensure & maintain in India a stock of such well materials sufficient to sustain well operations for minimum three months or a stock adequate for 2 wells, including the stock at the rig. The Bidder shall envisage the requirement well in advance & intimate the same to the Company to obtain necessary advice for maintenance of stock.

However payment will be made as per actual consumption of cement and additives on monthly basis.

2.4 The Bidder shall maintain the inventory of chemicals & materials both at the rig & at shore base.

2.5 In order to confirm the quality of bulk additives supplied by the Bidder, the Company reserves the right to check / test the quality of cement additives at the Company's / Bidder's cement test lab at random as per test reports which were submitted along with the tender for evaluation & submitted at any point during the duration of the contract. A variation of 10% on dosages to achieve the desired test parameter as given in Appendix-4, 4A & 4C shall be accepted without any penalty due to likely variation of quality of cement from batch to batch. For the excess dosages over the allowable 10% variation, the Company shall accept the package of chemicals up to additional 20% of dosages, but the cost impact for these 20% additional dosages for that particular package of chemical will be deducted from the Bidder's invoice. In case dosages of chemicals of any particular package is beyond 30% (10% + 20%) than the dosages of chemicals quoted in the bid against the particular package, the particular package shall not be accepted by the Company. The Bidder shall be asked to identify the faulty constituent additive(s) and replace the same chemical(s) at their own cost up to the Company's supply base for re-testing as above.

2.6 All cement additives / chemicals supplied by the Bidder should conform to international packaging standards and shall have shelf lives of minimum one year from the date the chemicals reach the ware house. All additives in sacks/ drum should be delivered at shore base in proper pallets / container for safe & smooth transportation to the rigs.

2.7 The Company and the Bidder will test slurry as and when mutually agreed upon between them to determine the cost of the slurry. The Bidder will invoice the Company on consumption basis. Consumption is defined as the opening of a sack / drum / pail.

2.8 The Bidder shall provide API Class-G Oilwell Cement in the form of bulk / sacks. Any special cement, if required due to specific well conditions, shall

also have to be provided by the Bidder and the same must be quoted for in their offer.

2.9 The Bidder shall also provide silica flour / liquid silica, silica fume, liquid weighting agent/ haematite / Micromax & Bentonite if required for cement slurry / spacer.

2.10 The Bidder agrees to carry out repeat test cement test design for packages I, II, III, IV, V, VI & VII from OIL's designated lab / Consortium partner, ONGC's IDT Lab, Dehradun or RGL Lab, Mumbai to reconfirm on the dosages of cement additives indicated by them in their test reports & these reports shall become reference for all cement test design during the period of the Contract.

2.11 **LEFT OVER CHEMICALS & ADDITIVES**: The Company shall not buy any leftover cement or additives brought by the Bidder. It would be the responsibility of the Bidder to re-export or dispose of the left over Cement and additives, as deemed fit, in accordance with existing regulations.

2.12 The Bidder has to provide their own ware house facilities for storage of cement, cement additives and other casing consumables.

3.0 <u>Base Engineer</u>:

The Bidder shall provide a Base Engineer for Cementing Services for 500 m water depth capacity rig exclusively for the Company at his base office. The Bidder shall depute his Base Engineer to supervise all critical cementing jobs at the rig where the Bidder is providing the Cementing Service. The Bidder shall submit CVs of the above personnel who shall be associated with the contract, in advance, for the Company's approval at the time of award of contract.

3.1 <u>Qualification & Experience of Base Engineer</u>:

3.1.1 The Base Engineer should possess a Bachelor's degree in Engineering, preferably in Mechanical / Petroleum. The Base Engineer shall be qualified and fully trained in cementing engineering to perform all cementing and testing, analysis and interpretation results of tests and take corrective measures in maintaining the required features of cement slurry.

3.1.2 The Base Engineer should have an experience of at least 5 (five) years in planning and supervising of cementing and stimulation jobs in offshore floater rigs with atleast 3 deepwater wells in water depths of not less than 500 metres, out of which at least one well should have been in water depth of 1000 metres or more. The Base Engineer should also have done planning and supervising of primary cementation of 3 wells having BHST above 300^0 F.

3.2 <u>Responsibilities of Base Engineer</u>:

To plan, design and coordinate with the Company for successfully carrying out all cementation jobs, provide technical support for all aspects of cementing, pressure testing and associated cementing units, equipment / tools and shall carry out all connected activities in accordance with the highest offshore standards. He will ensure overall supervision on all critical jobs at site, either directly by himself, or through a field supervisor. He will also submit a comprehensive well completion report within one month of completion of the well as explained at Clause 1.9 of the

Scope of Work, including post job analysis and recommended corrective measures, if any, for improvement of the job.

4.0 Cementing Operator:

The Cementing Operator to be provided by the Bidder shall have the following qualifications, experience and shall perform duties as detailed hereunder:

4.1 Qualification & Experience of Cementing Operator:

4.1.1 The Cementing Operator should have passed at least SSC or the equivalent with trade certificate from a reputed vocational institute and should have also undergone basic training in Cementing at a reputed Cementing School, such as Halliburton / Dowell Schlumberger / BJ / IDT or any other reputed Cementing School.

4.1.2 The Cementing Operator to be deployed for the Cementing Services against this contract should have an experience of more than five (5) years of performing cementing services independently, out of which at least 3 years should have been in offshore areas on floater rigs. The Cementing Operator should have carried out primary cementation of at least 3 wells in water depths of not less than 500 metres, out of which at least one well should have been in water depth of 1000 metres or more. The Cementing Operator should have carried out primary cementation of at least 3 wells having BHST above 300^0 F.

4.1.3 The Cementing Operator should have worked as a Cementing Operator and handled jobs as per scope of work item 1.7, 1.8 & 4.2 for at least 3 years during the last five years.

4.1.4 The Cementing Operator should be well conversant with all aspects of cementing and allied pumping jobs. The Cementing Operator should have good knowledge about the use of cementing additives both powder / liquid, their functions and factors influencing slurry design.

4.1.5 The Cementing Operator should also be well conversant and experienced in the operation and maintenance of reputed makes / types of Cementing units (ADC/PSM/RAM). He should also have knowledge and experience of using drillable and retrievable packers, cement retainers, ECPs, Subsea Cementing Heads, Mandrill Assembly and other tools and equipment generally used for cementing and allied pumping services for activation of well in the oil industry. The Cementing Operator should also be well conversant in operation and maintenance of Batch Mixers.

4.1.6 The Cementing Operator deployed should not be more than **60 years** of age.

4.2 Duties of Cementing Operator:

The Cementing Operator shall carry out all the cementing, stimulation and allied jobs carried out with a cementing unit during drilling of oil and gas wells. He shall be required to carry out the following jobs, but not limited to, as listed below:

(i) 20” Casing Cementation
(ii) 16” Liner Cementation
(iii) 13.5/8” Casing Cementation

(iv) 9.5/8” Casing Cementation
(v) 7” Liner / Casing Cementation
(vi) 4.1/2” Liner / Casing Cementation
(vii) BOP stack testing up to 15,000 psi or as required
(viii) Acid jobs and other stimulation jobs
(ix) Squeeze cementation jobs
(x) Diesel pumping, packer and other pressure pumping jobs
(xi) Leak-off test
(xii) Miscellaneous Pressure Testing up to 15,000 psi
(xiii) Assembly and disassembly of retainer stab tool and operation of cement retainer and other equipment mentioned at 1.11 A & 1.11 B.

The Cementing Operator shall also carry out all other jobs with the Cementing Unit not listed above but connected with drilling, production testing and work-over of oil and gas wells in offshore related to cementing units.

4.3 The Cementing Operator should be fluent in the English language.

5.0 <u>Job Simulation</u>:

The Bidder shall submit recommendations for mechanical aids and chemical aids such as centralizers placement, preflush design, cement slurry design (including requirement of additives), casing running in speed, regime of flow, job schedule based on u-tube simulator results, gas migration risk analysis, estimation of BHCT etc. based on computer aided design and computer simulation results for all the casing cementation jobs on which they are providing services.

6.0 <u>Testing Facility</u>:

The Bidder shall have a testing facility (lab) in India, at all times, conforming to requirements under API Specifications & Recommended Practices, viz. API Spec 10A, API RP 10B-2 & API RP 10B-3 for testing of oil well cements with chemicals and additives provided by the Bidder to formulate any treatment, design that may be required in the field. In case of any urgent / critical well requirement, the Bidder agrees to keep the cement test lab operative round the clock for carrying out cement slurry design.

The Bidder shall also carry out tests which need not necessarily be covered in API Spec 10A, API RP 10B-2 & API RP B-3 specifications for testing, but is found to be necessary by the Company.

At the minimum, the lab should have the following testing equipment:

i) High Temp High Pressure Cement Slurry Consistometer
ii) Curing Chamber
iii) Atmospheric Consistometer
iv) Fann Viscometer
(v) HTHP Fluid Loss Cell
(vi) Waring Blender
(vii) Destructive Compressive Strength Tester
(viii) Computerized UCA
(ix) Gas Migration testing cell (Gas flow module). This test facility should be available at the Bidder’s test lab or at the technology centre so as to provide test results within 10 days of request by the Company.

(x) Slurry Stability & Settling Tester.

End of Exhibit-1

Exhibit-2

SCOPE OF WORK FOR MUD ENGINEERING AND SOLID CONTROL EQUIPMENT SERVICES FOR DEEP WATER RIG (ANCHOR-MOORED DRILLSHIP / SEMI SUBMERSIBLE) OF 400 M to 500 M WATER DEPTH CAPACITIES:

The Bidder shall provide Mud Engineering Services for anchor-moored drillship / semi-submersible Drilling Rig of water depth capacity 400 m – 500 m hired by the Operator for drilling one Exploratory Well in the Gulf of Mannar. The Services shall be capable of operating in the proposed water depth of the Rig with well depths of 5200 m from sea bed or more.

1) Capable and experience Rig service crew/ based personnel as per contract documents.
2) Mud Services including Mud Chemicals supply and design as per international practices and API Guidelines along with Mud Engineers for Deep water wells. Maintaining and repairing mud testing equipment and Laboratory. Capability of handling and execution of SOBM as well as WBM system in deep water drilling environment.

A. SCOPE OF WORK FOR MUD SERVICES:

Providing Mud Engineering Services in all phase of Drilling, that is 36", 26", 17 ½"x20", 14.3/4"x17.1/2", 12.1/4", 8 ½" /6" phase of deep water wells including HPHT Wells. The Bidder shall also provide completion fluid services, comprising heavy weight brines along with brine filtration unit. The bidder shall provide:

(a) Personnel of Mud Engineering services,
(b) Supply of Chemicals, additives and mud testing equipment
(c) Provision of brine services and chemicals for well testing including well bore clean up and waste management services on hiring basis
(d) Supply of mud plant of approx. capacity 18000 bbl on hiring basis to cater both on rig and shore base.

B. TECHNICAL REQUIRMENT

The scope of work is defined and described by the following:-

(a) Design of Mud program (WBM & LT-SOBM & Brines)
(b) Mud Engineering Services.
(c) Supply of Mud Chemicals and additives.

(d) Well-site Laboratory and Mud Test Kit.
(e) Mud Plant Services at Base
(f) Well Completion fluid including brine filtration services.
(g) Mud management Services.
(h) Cuttings Drier Services (Integrated Cuttings drier with Centrifuge and a pair of Screw Conveyors).
(i) SOBM and Waste Management Services.
(j) Base Oil requirement
(k) Leftover Chemicals and Additives
(l) Safety health and Environment.
(m) Reporting Procedure.
(n) Mud Formulation, Properties and Volume

Each of these is defined in details in the following sections.

1.0 <u>DESIGN OF MUD PROGRAM</u> (WBM & LT-SOBM & Brines)

The Different sections of the well shall be drilled using following mud systems. The sections are indicative only and include water depth in the range from 400m to 500m.
36" & 26" hole up to 1200m – High Vis sweeps, pump and dump and hole displacement fluids.
20" hole up to 2000m – LTSOBM system, 17 ½" Hole up to 2900 – LTSOBM system
12 ¼" Hole up to 4200 – LTSOBM system, 8 ½" Hole up to 5600 LTSOBM System

1.1 Depending upon the given Geological data, Bidder shall design phase-wise mud program, including mud weights, detailed mud formulation, chemical used and recommended doses, total volume usage for each hole section.

1.2 Bidder shall submit detailed mud program for each section of hole, well in advance. The design mud program should be supported with software analysis.

1.3 Bidder shall provide the mud engineering services of the "*LTSOBM system*" supplement with gas hydrate inhibitor, suitable to deep-water environment with flat rheological characteristics.

1.4 The Bidder shall prove Low Toxic Synthetic Oil Based Mud System (LT-SOBM) suitable for Deep-water operation and environment. The design of FLAT RHEOLOGY SOBM should be based on cutting/core study to ensure suitable inhibition.

1.5 Bidder shall prepare contingency plan to meet deep-water hazards, anticipated contaminations etc. and have back up chemicals.

1.6 Bidder shall also plan for treatment of cement contamination, caving, hole pack off, differential sticking, Mud loss, H2S, hole erosion/ or any other bore hole problems.

1.7 Bidder shall keep provision for non-damaging LCM for pay zones. If required. The range of LCM to include polymer setting pills, high fluid loss squeeze slurries, Dilatant LCM, system LCM as well as advance particulate LCM.

1.8 Bidder shall ensure that composite mud system (LT-SOBM) is environment friendly as per existing environmental laws including environmentally friendly spotting fluids.

1.9 Bidder shall also provide suitable completion brines services for well testing as per well requirements with brine chemical supply and formulation of the brine pertaining to Deep water conditions.

1.10 The Bidder shall obtain all the necessary requisite environment clearance for erecting / installation of FLAT RHEOLOGY LT-SOBM mud plat including associated Civil work, front end Engineering, erection and commissioning with inspection from third party.

1.11 The Bidder is to submit the composition each of LT-SOBM is as per the parameter given in the sections above for WBM and SOBM in the dosage format with samples of chemicals, base Oil etc. The rheology of the composition is to be measured in 120 ^{0}F after hot rolling for 24 Hours at 240 ^{0}F & 300^{0}F for deep water wells. The composition of LT-SOBM shall be verified by Operator at Institute of Drilling Technology (IDT) or any other Institute for. Only those composition shall be technical acceptable which pass the parameters as required.

1.12 In order to meet the indicated mud properties, bidder must include against "any other Chemicals" in addition to the indicated Chemicals in the price format 3, 3A, 3B, 3C & 3D which will be taken in to consideration for evaluation.

2.0 <u>Mud Engineering Services.</u>

The Mud Engineer Service Provider:

2.1 ***The Bidder should have executed at least 01 (one) Contract of Mud Engineering Services for each of the proposed mud system***s i.e. Water Base Mud system, SOBM system (BHT about 149 deg C) in Deep water in the last 5 years.

2.2 Bidder should have requisite R&D facilities in India as well as regional/ Global back up capability of designing and trouble shooting of quoted mud system in terms of detailed shale analysis, X-Ray diffraction analysis, particle size analyser, return permeability analysis etc. to provide technical back up services to OIL in solving well / bore hole related problems. The bidder should have requisite facilities for designing and optimizing rheology properties for the proposed drilling fluid systems at high pressure and temperature. The bidder shall submit the documentary evidence for the same.

2.3 Bidder's representative / Base coordinator, exclusively assigned for both the rig and base should be experience in planning, designing and supervising mud engineering services in at least 10 wells in the proposed mud systems in Deep water. Base coordinator shall carry out mud planning, designing and monitoring and operation to drill all the sections of each wells and shall interact

with the local manager – Mud Service or his representative, on daily basis to plan technical back up in order to ensure successful completions of wells.

2.4 Mud Engineers to be deployed by the bidder should have minimum 10 years mud engineering Experience along with the relevant work experience of at least 5 Deep-water wells in using each of SOBM and High performance WBM systems. The Mud Engineers should have an experience as well as well-versed with the used of heavy weighted brines.

2.5 Solid control Engineer should have an experience in handling waste management in at least 5 wells in the last 5 years and should have an experience of handling cuttings drier in at least 5 wells in the last 5 years.

2.6 Bidder shall carry out Mud Engineer planning and designing, mud preparation and maintenance required for drilling and completing the all phases of wells by using rig equipment and details drilling planned by OIL.

2.7 The Wells in this contract shall be drilled using stated drilling fluids system.

2.8 Provide Well completion services along with brine filtration unit (one unit on call out basis).
The bidder shall operate & maintain Brine filtration unit at rig as and when service required.

2.9. Oil reserves the right to use SOBM/LTSOBM services in case well conditions warrant the same or otherwise.

2.10 Bidder shall provide all the required mud testing equipment for testing of drilling fluid & Completion fluid as per requirement of the well.

2.11 Bidder shall provide round the clock the Mud Engineering and completion fluid services by employing two site Mud Engineers at a time one each of 12 hours shift.

2.12. The Engineers and supervisors should be able to communicate in English.

2.13 The onsite Engineers shall communicate with OIL Coordinator on daily basis.

2.14 Recording, documentation, well program, complication report and drilling fluid recap of the well.

2.15 Bidder shall provide all technical literatures, hydraulic, surges, swap etc. and all other drilling fluid related calculations and detail mud history and mud programs.

2.16 Bidder shall provide at the rig site, software of daily mud report, mud recaps, hydraulic and hole cleaning optimization in real time.

2.17 Bidder shall be required to collect the various drilling fluid samples; water samples formation fluid samples (Oil, gas and condensate etc. at atmospheric pressure only) during the course of RFT, MDT or production testing of the objects as per OIL for onward dispatch to OIL laboratories.

2.18. Bidder may be required to collect various HSE related drilling fluid samples, drill Cuttings, effluent drill and waste water samples as per requirement of the Environment Regulations of OIL.

2.19. The Mud Engineers deployed should not be **more 55 Years** of age.

3. SUPPLY OF MUD CHEMICALS AND ADDITIVES

3.1 The Bidder shall submit detailed specification of all the offered Chemicals along with their bid. The specifications of each chemical should reflect the relevant parameters of that particular additive and indicate its performance required in the test report.

3.2 Bidder shall supply complete list of Chemicals and additives including Barites required for preparation and maintenance of the specific mud systems.

3.3 Bidder shall ensure sufficient quantities of Chemicals and additives shall be made available to allow smooth and uninterrupted operations.

3.4 Bidder shall furnish the test report as per specifications prior to delivery of chemicals at Shore supply base to OIL. All the test reports must reflect the brand name and manufacture as quoted in the bid and the Chemicals used in the wells shall be of same brand and manufacturer and shall be in no way inferior to the quality indicated in the test reports submitted in the bid document.

3.5 Bidder shall provide the complete Chemical product data including brand name and Manufacturer's name of Chemicals, specifications / test report of chemical and MSDS in respect of all chemicals proposed to be used along with bid.

3.6 Oil reserves the right to check the quality of Mud Chemicals at random as per test report / specification submitted by bidder at any point during the duration of contract at supply base and at rig.

3.7 Bidder shall arrange for storage area near supply base during the period of contract and shall deliver the chemicals and additives to shore base supply base as and when required at their own cost.

3.8 The Chemicals shall be in original packing of manufacturer. The packing of Chemicals shall be sea worthy, in bags of 25kg / 50 kg or Lbs, and in drums or jars of not more than 220 Ltr capacities which shall with stand the rigorous sea transportation. Chemicals susceptible to moisture shall be packed in moisture proof multiwall paper bags with chemical lining. Each container or pallet shall have clearly legible identification marks including the name of chemical, name and address of Manufacturer, date of manufacture and address of consignee. All Chemicals / drum shall be delivered at shore supply base in proper pallet/containers for safe & smooth transportation to rig. The barites of API specifications (min 4.2 sp gr) shall be supplied by bidder to the shore supply based.

3.9 Bidder shall be responsible for replacing the chemicals received in torn packing or leaky/broken drums as it will not be sent to rig. Bidder shall deliver all Chemicals, packed in water proof pallets, container ready for loading directly in to OSV's. No separate pallets / containers shall be provided by OIL.

3.10 Payment shall be made as per actual consumption of Chemicals certified by OIL Chemist /Representative.

3.11 **Quality Control:**

3.11(a) Bidder shall have an effective QC procedure that ensures that all chemicals and materials meet the design requirement and also comply with the relevant API standards as appropriate, and OIL reserves the right to Audit Bidder's QC operation.

3.11(b) To ensure quality of materials as per specifications, bidder shall submit the test report of each of chemical brought to their ware house prior to usage at the rig.

3.11(c) Bidder shall perform the QC test on mud samples and all mud related products on request.

3.11(e) Bidder shall perform laboratory testing of formulations on request to ascertain the performance of fluids and measure of rheology. After testing, bidder shall issue the report summery of test and test results.

3.11(f) If during the operations, any chemical is found to be substandard and or not conforming to the specifications, bidder shall replace the material immediately. The bidder shall pass on the credit to OIL for any such material used till the material is replaced with quality product. OIL reserves the right to terminate Contract, if chemicals or additives are found to be substandard.

3.11 (g) Bidder shall submit the details of QA/QC procedures as they pertain to supply of Chemicals.

4.0 WELLSITE LABORATORY & MUD TEST KIT

4.1 The bidder shall provide complete drilling fluid testing equipments, Chemical reagents and consumable for testing of mud system as indicated in the bid as per API standards.

List of the Laboratory equipment & Chemicals:-

The equipment package as indicated below shall be made available at each rig site for onsite testing/ Analysis. Drilling Fluid test kit should include but not limited to:-

Sl No	TEST EQUIPMENT PACKAGE	QUANTITY ON RIG
1	Mud Balanced Equivalent to model 14000 of Baroid	04
2	Pyknometer	02
3	Marsh Funnel with Cup equivalent to a model 20100 of Baroid	04
4	Multi Speed Fann VG-Meter Equivalent to a model 35 SA of Fann	02
5	API Filtrate test cell Equivalent to Model 30300 of Baroid	02
6	Mud Retort Kit Equivalent to model 87100 of Baroid	02
7	HP-HT Filtration test cell with spares	01
8	Sand Content set Equivalent to a model 40001 of Baroid	02
9	pH meter	02
10	pH paper	2 sets
11	Lubricity tester	01
12	Emulsion stability Tester	01
13	Low Shear Viscometer equivalent to Model LVT of BrookField	01
14	$AgNO_3$ Soln (Dark bottle) 0.282 N	3X500 ML
15	$AgNO_3$ Soln (Dark bottle) 0.0282 N	3X500 ML
16	Potassium Chromate Indicator solution	100 ml
17	Sulphuric Acid (H_2SO_4) 0.02N	3X500 ML
18	Sulphuric Acid H_2SO_4 0.1N	500 ML
19	Sulphuric Acid H_2SO_4 5N	500 ML
20	Nitric Acid	500 ML
21	Phenolphthalein Indicator soln	200ml
22	Methyl Orange Indicator soln	200 ml
23	Potassium Chromate Indicator	200 ml
24	Calcium Carbonate Precipitated, Chemically	500 gms

	pure	
25	Distilled water	As required
26	Hydrogen peroxide 3%	2X 500 ML
29	Potassium dichromate 0.5N	500ML
30	Graduated Pippetes – 1ml, 2ml, 5ml & 10ml.	2 each
31	Titration Vessels 100 & 150 ml	2 each
32	Stirring Rod	4 nos
33	Hydrochloric Acid 0.02N	3X250 ML
34	Sodium Hydroxide 0.1N	3X250 ML
35	Sodium Hydroxide 0.01N	3X250 ML
36	Barium Chloride solution	3 x 500 ML

Sl No	TEST EQUIPMENT PACKAGE	QUANTITY ON RIG
37	Versenate Solution	250 ML
38	Hardness Buffer Solution	250 ML
39	Hardness Indicator Solution	100 ML
40	Hatch test apparatus for H_2S with accessories	01
41	Methylene Blue test Kit	01
42	Hydroxy Naphthol Blue	100 ML
43	Saturated solution of Ammonium Oxalate	500 ML
44	Lead Acetate paper disk	25
45	Octanol Defoamer	500 ML
46	CO_2 Cartridge	12
47	Beakers (100ml, 200ml & 500ml)	04 Each
48	Graduated Cylinders (10ml, 25ml, 50ml, 100ml, 250ml & 500ml)	5 each
49	Syringes (1, 2, 5 & 10ml)	10 each
50	Volumetric Pippettes (0.5, 1, 2, 5 and 10 ml)	2 each
51	Sodium Sulphide soln	3x 500 ML
52	Starch Solution	250 ML
53	Potassium Iodide Solution – 5 %	100 ML
54	Potassium Iodide Solution – 0.00625 N KIO_3	100 ML
55	Refractometer for Glycol %	01
56	Centrifuge (Electric) with centrifuge tube capacity	01
57	Hamilton beach mixture with cup	02
58	Digital Balance	01
59	Glass thermometer -10^{0}C to 150 ^{0}C	04
56	Electronic heater stirring plate	01
57	Boric Acid	200 Gms.
58	Sodium Perchlorate Solution (150 gm/ 100 cc^3 H_2O)	500 ML
60	Hydrometer for Oil density range	1 Set
62	Methylene Blue Indicator	2 x 250 ml
63	Xylene	5 Ltrs

64	Iso Propyl Alcohol	5 Ltrs
65	Bromo Cresol Green	100 Ml
66	Cresol Red Indicator	100 ML
67	Stannic Chloride 0.5N	100 ML
68	Volumetric Flasks (100, 250, and 500 ml)	5 Each
69	Storage Bottle (White and Brown)	3 Each
70	Titration Vessel (150 ml)	04
71	Spray Bottle (for distilled water)	04
72	Dropper Bottle (50 & 100 ml)	04 Each
73	Buffer Solution pH 4.0	250 ml
74	Buffer Solution pH 7.0	250 ml
75	Buffer Solution pH 10.0	250 ml
76	Hydrochloric Acid 0.1 N	250 ml
77	EDTA Solution 0.02 N	2 X 250 ml
78	*Calver* II Indicator (Calcium)	250 gm
79		

4.2 **MUD PARAMETERS -**

The following Mud Parameters are to be indicated in the bid for each hole section requirements and for the mud system indicated.

- Specific gravity (Mud & Brines)
- Funnel Viscosity
- Plastic Viscosity.
- Yield Point.
- Gel Strength.
- RPM (3, 6, 100, 200, 300, 600)
- API Filtration Loss
- Solid %.
- pH
- Sand %
- Brook Field Viscosity
- HPHT Filtrate Loss @ 150 ^{0}C/ 500 PSI.
- Salinity.
- MBC
- Metal Concentration, if applicable.
- Behaviour for the quoted systems for 12 ¼" and 8 ½" Phase variable pressure / temperature Viscometer.
- Any other system specific deemed necessary or required by OIL

5.0 MUD PLANT SERVICES AT BASE

5.1 Bidder shall provide on rental basis a liquid mud plant and services for operation and maintenance of liquid mud capability of maintaining and storing based oil /LTSOBM / Brine with a capacity of 18000 bbls. Bidder shall be responsible for erection, installing, commissioning, maintenance and operation of mud plant including all equipment installed at liquid mud plant, Supply based. Bidder shall be responsible for obtaining all requisite environmental clearance for disposal of waste at mud plant at Govt approved disposal sites, and shall be responsible for disposal of waste generated during preparation and maintenance of LTSOBM at the mud plant and transportation of LTSOBM/Base oil as per

existing environment regulations. Bidder shall assume the responsibility of ascertaining that all the equipment of mud plant remains in proper operation conditions and available for 100% of the time. In case these equipment's are not available for operation, a penalty of $ 500 per hour subject to a maximum of 20 hrs in a month shall be levied.

5.2 Bidder / Bidder shall submit the following to Operator for approval prior to the commence date:-

- Preventive maintenance schedule and plant for all Bidders' equipment.
- SOP for all the equipment to be used in Mud Plant.
- Bulk handling Guidelines.
- Emergency procedures.
- Bidder/ Contract safety manual and procedures.

The LTSOBM – MP design blue print / CAD /CAM design soft copies as well as hard copies of the LTSOBM –MP design, specification, engineering drawing to be provided during the commissioning and QA/QC tests.

6.0 <u>Well Completion Fluid including Brine Filtration Services at Rig (On Call Out)</u>:

6.1 The bidder shall supply all the required chemicals to formulate well completion fluid consisting of clear brine up to a <u>range 13 ppg.</u>

6.2 The Bidder shall provide an experienced completion fluid engineer on call out basis having a minimum experience of 3 wells in deep water of the proposed brines in case of the formate or bromide brines are required for testing and completions of well.

6.3 The bidder shall provide and run a brine filtration unit to provide a clear completion fluid for well completion and well testing up-to 2μ in accordance with the prevalent standards of the Oil industry and as per well requirement on call out basis.

6.4 The filtration unit should be design for the easy transportation and be easy disembarked at site for fast commissioning with minimum possible time.

6.5 The Bidder shall submit detailed specification of all the offered Chemicals along with their bid. The specifications of each chemical should reflect the relevant parameters of that particular additive and indicate its performance required in the test report.

6.6 Bidder shall supply complete list of Chemicals and additives required for preparation and maintenance of the specific mud systems.

6.7 Bidder shall ensure sufficient quantities of Chemicals and additives shall be made available to allow smooth and uninterrupted operations.

6.8 Bidder shall furnish the test report as per specifications prior to delivery of chemicals at Shore supply base to OIL. All the test reports must reflect the brand name and manufacture as quoted in the bid and the Chemicals used in the wells shall be of same brand and manufacturer and shall be in no way inferior to the quality indicated in the test reports submitted in the bid document.

6.9 Bidder shall provide the complete Chemical product data including brand name and Manufacturer's name of Chemicals, specifications / test report of chemical and MSDS in respect of all chemicals proposed to be used along with bid.

6.10 Oil reserves the right to check the quality of Mud Chemicals at random as per test report / specification submitted by bidder at any point during the duration of contract at supply base and at rig.

6.11 Bidder shall arrange for storage area near supply base during the period of contract and shall deliver the chemicals and additives to shore base supply base as and when required at their own cost.

6.12 The Chemicals shall be in original packing of manufacturer. The packing of Chemicals shall be sea worthy, in bags of 25kg / 50 kg or Lbs, and in drums or jars of not more than 220 Ltr capacities which shall with stand the rigorous sea transportation. Chemicals susceptible to moisture shall be packed in moisture proof multiwall paper bags with chemical lining. Each container or pallet shall have clearly legible identification marks including the name of chemical, name and address of Manufacturer, date of manufacture and address of consignee. All Chemicals / drum shall be delivered at shore supply base in proper pallet/containers for safe & smooth transportation to rig.

6.13 Bidder shall be responsible for replacing the chemicals received in torn packing or leaky/broken drums as it will not be sent to rig. Bidder shall deliver all Chemicals, packed in water proof pallets, container ready for loading directly in to OSV's. No separate pallets / containers shall be provided by OIL.

6.14 Payment shall be made as per actual consumption of Chemicals certified by OIL Chemist / Representative.

6.15. **Quality Control:**

(a) Bidder shall have an effective QC procedure that ensures that all chemicals and materials meet the design requirement and also comply with the relevant API standards as appropriate, and OIL reserves the right to Audit Bidder's QC operation.

(b) To ensure quality of materials as per specifications, bidder shall submit the test report of each of chemical brought to their ware house prior to usage at the rig.

(c) Bidder shall perform the QC test on brine samples and all related products on request.

(d) Bidder shall perform laboratory testing of formulations on request to ascertain the performance of fluids as required. After testing, bidder shall issue the report summary of test and test results.

(e) If during the operations, any chemical is found to be substandard and or not conforming to the specifications, bidder shall replace the material immediately. The bidder shall pass on the credit to OIL for any such material used till the material is replaced with quality product. OIL reserves the right to terminate Contract, if chemicals or additives are found to be substandard.

(f) Bidder shall submit the details of QA/QC procedures as they pertain to supply of Chemicals.

7.0 Mud Management Services:-

Fluid management services encompasses all of the functions and requirements contained in the prior section on Fluid Engineering Services plus.

7.1 The inventory control both at the rig site and at the shore base. Bidder shall ensure that sufficient quantities of materials and Chemicals shall be available to allow for a smooth, uninterrupted operation, bidder shall also provide actual delivery verification.

7.2 The Bidder shall provide copies of daily progress report inclusive of drilling fluid hydraulic generated with the help of suitable software package to the OIL representative. The report should also incorporate drilling operations, complete

mud parameters analysis, chemicals consumed, volume of mud prepared and loss of mud and operation of solid control equipment as per standard practices.

7.3 Literature and details of software package for mud hydraulics, hole cleaning and engineering shall also be provided by the bidder.

7.4 Bidder shall provide details of Mud Engineering programs, including completion fluid design for the proposed well prior to commencement of well.

7.5 Bidder shall submit details mud Engineering program for the well at least three week prior to commencement of well.

The program shall include but not limited to the following:-

- The mud system proposed for different sections.
- Detailed mud system formulation for each section.
- Mud Weight range suggested for each section.
- Complete cost estimates of building and maintaining mud system as well as unit cost of each chemical used for each section and all standby chemicals.
- Chemicals proposed for curing losses and released pipe stuck and to liquidate other drilling fluid related down hole complications with detailed procedures.
- Based on the performance mud systems, the bidder shall undertake suitable studies for improving the performance of the mud system and shall submit the recommendations time to time to LMSS at base.

7.6 **Software and Technical support:**

Bidder shall provide technical support for customers and onsite Engineer along with a suite of software product suitability in the range of included data based program to the proprietary package of drilling fluid management, advanced drilling fluid Engineering, environment program and reference data based containing at least technical literature and product summaries. Bidder shall provide higher technical support and back up whenever required by field and shore based personnel.

8.0 Cuttings Drier Services at Rig :

Cuttings Drier Services encompass all of the functions and requirements contained in the prior section on Fluid Engineering Services plus:
CONTRACTOR shall maintain Integrated Cuttings drier and of Screw Conveyor. The scope of work with regard to Cuttings drier will include but not be limited to:

8.1 Installation and maintenance of cuttings drier with integrated Centrifuge and a pair screw conveyor on Deep-water Drilling Rig.

8.2 Provision of experienced cuttings drier engineer/s, conversant with this type of operation and equipment.

8.3 CONTRACTOR shall assume the responsibility of ascertaining that cuttings drier, integrated centrifuge and screw conveyor remain in proper operating condition and make it available for all the mud circulating time. The cutting drier installed by the contractor is required to bring down the oil on cuttings to <10%+ 1% level minimum.

8.4 **Cuttings Drier & Brine Filtration Operator (on call out basis for LT – FLAT RHEOLOGY SOBM)**

A qualified, skilled and experienced cuttings drier engineer, who must have at least two years' experience of running all cuttings drier, integrated centrifuge and screw conveyor. The cuttings drier engineer shall be responsible for running the

Integrated Cuttings drier with Centrifuge and a pair of Screw Conveyor as well as being responsible for the logistics of maintaining adequate stocks of spares and other related equipment.

9.0 **WASTE MANAGEMENT SYSTEM AT LTSOBM-MP FOR DISPOSAL OF LTSOBM CUTTINGS VIA WASTE DISPOSAL AGENCIES-**

The bidder will be having a waste management system for the disposal of LTSOBM-MP waste, cuttings, Lab waste, mud plant brine waste & General waste. The disposal of waste will be done through a CPCB approved waste management Agency for disposal of waste.

The working man at LTSOBM-MP is required to be provided with all personal safety kits suitable for LTSOBM and brine handling. The mud plant shall have the basic fire fighting systems all around the tank system, mixing area, centrifuge area, brine tank system, waste management area and in Lab. The area will be covered by general fire fighting aids like sand, water and dry powder, Canister based Carbon monoxide system, Foam based fire fighting aids which shall include A, B, C, D, E and F Class systems.

QA/QC inspection: As per acceptable ASME, AWE design code. Inspection of Mud Plant to be carried out by third party Inspection Agency like DNV or Equivalent / Govt of India's approved Inspection Agency, subsequently, the mud plant shall be jointly inspected by bidder's representative and OIL's representative prior to acceptance for use.

Specification of the Mud Plant:

9.1 Capacity: 18000 ± 1000 Bbls.

9.2 The tanks should consist of – Mixing tanks, brine tanks, Oil based tanks and SOBM tanks the volume of these tanks should be approx.: 18000 ± 1000 Bbls.

9.3 Hooper System: 2 nos Mixing Hooper, with one HP jet shearing unit. Flat Rheology mixing pump, brine mixing pump with 8" discharge & 6" delivery lines, containment wall and waste collection tanks.

9.4 Barytes bulk handling facilities with silos and vacuum unit.

9.5 Mud Plant Centrifuge 1 no.

9.6 Brine Filtration I No.

9.7 Mud Plant is required to provide brine solution of 14 ppg.

9.8 System should be available for Delivery system and receiving system for different fluids.

9.9 Function of Mud Plants.

- Design SOBM as per as per the basic composition and Operational requirements.
- Prepare, store SOBM for rig requirements.
- Design brines as per as per the basic composition and Operational requirements.
- Prepare, store Brines for rig requirements.
- Store base oil for Rig requirement.
- Refine and store received SOBM.
- Refine and store received Brines.

9.10 The return SOBM from rig to SOBM-MP after use in the well and store at SOBM – MP is property of Operator which will be re-processed by Mud Plant. While reprocessing the Bidder shall be paid for only those Chemicals and based

Oil, additives etc. which it shall be using to redesign the SOBM/ brines to obtain the requisite parameter as per basic composition.

10 Base Oil requirements:

10.1 The base oil quoted should be MOEF/NEERI approved for toxicity.

10.2 The base oil quoted should meet PARCOM/OSPAR criteria as synthetic base oil. The vendor has to provide a certificate from the manufacturer stating that it meets the PARCOM/OSPAR criteria and equivalent to synthetic base oil.

10.3 The proposed Low Toxic Synthetic oil based mud system should pass Government of India regulations including the Indian CPCB (Central Pollution Control Board) and MOEF board guidelines for toxicity levels and other limits.

10.4 The proposed Low Toxic Synthetic base oil should provide trouble free drilling hole, allow quality and extensive formation evaluation with minimum formation damage.

10.5 All the mud additives and chemicals should be of low toxicity and the levels shall be lower than specified by CPCB. The CONTRACTOR based on UK OCNS or PARCOM standards of low toxic chemicals or its lab test results should certify this.

10.6 The contractor also has to submit the bioassay report from the NEERI of India for certification of low toxicity of the base oil and the LTFLAT RHEOLOGY SOBM formulation.

10.7 Specification of base oil proposed by contractor has to be included in the bid.

10.8 **OPERATOR shall link the base oil price to the gas oil index (Platts gas oil index /MOPS Kero index / Brent crude oil price index etc. on the given date, based on the gas oil index indicated by the contractor). Base oil price shall contain fixed component as well as variable component. Only variable component shall be linked to gas oil index as mentioned above and both components together shall be considered as the price of base oil on a given date i.e. on the date of issue of final pre bid clarifications, for the purpose of Evaluation. Fixed price component once quoted shall remain in force till completion of the contract period and payment shall be made accordingly.**

10.9 The Contractor shall operate & maintain the SOBM-MP to supply SOBM, SOBM-Base oil and to the Rig as per the operational requirement and basic composition laid down in the Contract.

10.10 The SOBM-MP shall also supply SOBM, Base oil, & Brines to other OPERATOR Rigs as per the operational requirement.

10.11 Contractor shall also provide suitable completion Brines services for well testing as per the well requirements with Brine chemicals supply and formulation of the brines pertaining to Deep water conditions.

10.12 The function of the SOBM–MP is to –

- Design SOBM as per the basic composition and operational requirement

- Prepare, store SOBM for Rig requirement
- Design Brine as per the basic composition and operational requirement
- Prepare, store Brine for Rig requirement
- Store Base oil for Rig requirement
- Refine & store received SOBM for further use.
- Refine & store received Brine for further use

10.13 The returned SOBM from rig to SOBM-MP after use in a well and stored at the SOBM-MP is property of OPERATOR which will be reprocessed by the mud plant. While reprocessing the contractor shall be paid for only those chemicals and Base Oil, Barytes etc., which it shall be using to redesign the SOBM / Brine to obtain the required parameters as per the Basic composition & Basic parameter formula.

10.14 The payment for the chemicals used at the SOBM –MP for supplying SOBM & Base oil to the Rigs will be charged as per actual consumption based on the dosage fixed to obtain the Basic composition to a unit volume multiplied by the total volume.

10.15 The payment for the Brine chemicals will be made as per the dosage to obtain the brine density and other additives as per the dosage on unit volume multiplied by the total volume.

11.0 LEFTOVER CHEMICALS AND ADDITIVES

11.1 The Bidder shall lift the unused / left over Chemicals after completion of contract from shore supply based and rig, **within 15 days** from the intimation about the same. If due to any reason the left over/ unused chemicals are not lifted from the shore supply base, Bidder will be liable to pay warehouse charges as decided by OIL.

11.2 Containers belonging to the Bidder used to transport materials to the rig shall be return back to Bidder. **All unused/ left over materials (Chemicals) on the rig shall be transported back from the rig to the shore supply base at Bidder's expense.**

11.3 It would be the responsibility of the Bidder to re-export or dispose off as deemed fit, as per existing regulations, the left over Chemicals and additives within **20 days** after the completion / expiry of Contract under intimation to OIL.

12 SAFETY, HEALTH AND ENVIRONMENT:-

Bidder shall ensure safe conditions and methods of work, and maintained the same throughout the period of contract. Bidder shall carry out all the activities in accordance with the highest international standards practices of the Off-shore oil and gas Industries, ensure safe conditions and methods of work and maintained the same for the entire period of contract.

12.1 Bidder shall comply with the applicable environmental law, regulations and practices, and is required to perform work so as to minimize the generation of hazardous waste to the extent technically feasible.

12.2 In-order to determine the validity thereof, OIL shall have the right to require all bidder/Bidder personnel travelling to a worksite to produce originals or at corporation's discretion, copies of the following documents as applicable-

- Passport.
- Work Permit.
- Employer's Liability Insurance Certificate.
- Safety Training Certificates including sea survival and HUET Certificates.
- Medical Examination Report.

Any Bidder personnel do not produce the documents listed above when so requested by OIL shall not be allowed to travel to or work at the worksite. Any cost arising directly or indirectly from such event will be bone solely by the Bidder.

12.3 Bidder shall comply with and shall ensure the Bidder personnel comply with the OIL requirements in relations to its weapons, alcohol and drug free policy as-

- Alcohol and drugs, except those prescribed by qualified medical practitioner, are prohibited from any offshore installation, worksite or other locations.
- Bidder shall ensure that any Bidder personnel who are either temporarily or permanently taking drugs under medical supervision are able to produce to OIL on request an appropriate letter from the recognised Medical practitioner. Such individuals shall immediate on arrival to the work place report to the Medical Officer or if not available, Oil representative and lodge with them a copy of their Medical practitioner's letter.
- Any person travelling Off-shore with prescribed drugs/medications shall surrender them to the Embarkation Officer who will forward them directly to Medical Officer who in-turn will supervise the use of drugs/medications while the person is on Offshore.
- Bidder/Bidder shall obey all local rules, regulations and custom pertaining to Alcohol and drugs prevailing in the country where the work is to be performed.
- Any person reporting to work either under or appearing to be under the influence of alcohol or drugs shall not be allowed to commence work or travel to worksite. Bidder shall be responsible for all costs relating to the replacement of such persons.
- Bidder shall provide OIL representative with copies of any report or statements or written evidence incident or dangerous events which occurs during the performance of work or any other incident indicating the existence of adverse safety conditions of which Bidder personnel may become aware.
- Bidder shall supply with the copies of all reports and documents regarding safety matters upon request by OIL as it is required by Legislation to Comply or maintain together with such other reports as OIL may require.
- If Bidder shall consider it is necessary to suspend the work any time of the reason (s), Bidder shall immediately do so and inform OIL of such reasons.
- Bidder shall provide appropriate protective clothing where necessary for the protection of Bidder personnel whilst performing the work. The cost of providing such protection shall be deemed to be included in the rates contained in this Contract.
- Bidder shall ensure all standard safety practices are adhered to during loading and unloading base oil/LTSOBM from tanker to supply vessels /

Liquid mud plant vice versa. Bidder shall also ensure that persons being deployed for loading/unloading of based Oil/LTSOBM are well versed in standard safety practices.

- Bidder shall ensure that tankers transportation Based Oil/LTSOBM are approved for transportation of such type of Fluids.

12.4 <u>ENVIRONMENT PROVISION</u> –

The Bidder shall in connection with the work hereunder.

12.4.1 Observed all local customs, rules and regulations, where unclear, prior consultation must be conducted with OIL.

12.4.2 Protect environment resources by applying best available techniques to eliminate or minimize any direct or indirect impact from operations.

12.4.3 Ensure that all activities are planned in a manner that will not create unnecessary danger, disturbance or effects on the environments or to other users.

12.4.4 Ensure that all the Chemicals and formulation used under this contract comply with any corporation standards and/or Legislation concerning the Environment in the location where the work is to be carried out.

12.4.5 Ensure that all persons affected or likely to be affected by executions of the work are not exposed to the substances or agents which may give rise to adverse health effects. Bidder shall ensure that all Bidder personnel are fully trained in appropriate control measures to be implemented and have been provided with and use the correct personal protective equipment.

12.4.6 Ensure that notice is given to OIL with the reasonable time prior to the delivery or removal from the work site of any substance which is Toxic and Hazardous to Health or potentially harmful to the Environment. The notice shall identify the hazards and effect and assess the risk to personnel and the environment. Details of precautions to be taken when using, handling, transportation, storing or any other means of contact will also be provided. Bidder shall ensure that the substance is suitably packaged and labelled at all times.

12.4.7 Make available for all inspection by OIL upon request all registers, records or any other documentary or environmental aspects of the activity being carried out or on the environmental management system implemented by Bidder.

12.4.8 Bidder shall Prepare and maintain a plan documentary requirements, responsibilities and organisation for environment management. The plan should be readily understandable by all personnel and shall cover routine, non-routine and emergency operations and be agreed in advance with OIL.

12.4.9 If applicable, ensure that prior to the commencement of work all Companies, Organisations and Communities that could potentially be affected by the activity have been notified:

12.4.10 Minimize, where reasonably practicable, nuisance, disturbance or interference to the community, their activities and local fishing and any other forms of Aquaculture, agriculture and other users of the environment.

12.4.11 Unless otherwise directed by OIL, avoid conducting activities in protected areas or where there is intolerable risk of damage to the sensitive environmental resources.

12.4.12 Ensure that Bidder personnel shall not engaged in Fishing, hunting and gathering of Flora and Fauna or any other environmental resources.

12.4.13 Be fully accustomed with Corporation's OIL Spill emergency procedure and plan.

12.4.14 Document and report immediately to OIL any incident of Environment damage, any unforeseen activity or event, released of Hydrocarbons, breaches of Environmental regulations or complaint from local groups, Organizations or individuals.

12.4.15 Establish, maintain and document any contract with the authorities and other interested parties, be reasonable for ensuring the acceptable disposal of waste in accordance with all local requirements and for the activities conducted Offshore and maintain waste log books.

12.4.16 Where Bidder is responsible for disposal of waste produced or occurring as a consequence of its activities under the Contract, all such disposals shall be in accordance with the OIL Industries standards, Legislation and best practices where ever same is for Hazardous and non-hazardous waste. Bidder/Bidder shall be responsible for ensuring all necessary approvals or licences are obtained and that any sub-Bidders utilised for this purpose shall fully comply with the requirements.

12.4.17 Maintain a logbook where in the waste generated from the mud system is recorded.

13. <u>REPORTING PROCEDURES:</u>

13.1 Bidder shall comply with the following minimum reporting requirements. Bidder shall also provide additional report to the OIL representative at Rig and OIL Chemist at rig as may be requested during the work.

13.2 Daily mud reports on daily basis to Company representative and OIL Chemist at Rig and to the OIL mud services section at base.

13.3 End of Well Recap: A detailed well completion report shall be prepared and submitted within 14 days of completion of well.

13.4 Complication Report. In-case of any complications, such as pipe stuck, loss circulation, Well Kick, unusual caving, undesirable cutting bed formations etc. The Bidder / on site Mud Engineer of the bidder shall notify the OIL Chemist immediately. A detail draft report shall be submitted by the bidder, within 24 Hours of the incident (Operation permitting), with full details and reason of the same and remedial measures / recommended that shall be followed to ensure safe and complication free drilling.

The tentative Mud Policy to be followed as per given below-

Hole Size (Inch)	MUD SYSTEM	Planned Mud Weight (ppg)	REMARKS
36"	SW – HVG Sweeps	SW – HVG Sweeps	Pump and Dump Policy may be adopted to drill a section 26" Hole
26"	SW – HVG Sweeps	SW – HVG Sweeps	
20"	LTSOBM (Flat Rheology)	9.3 – 9.8	Supplements with Hydrate inhibitors. Emulsion stability > 400 Volts at 120 ^{0}F for SOBM
17 ½"	LTSOBM (Flat Rheology)	9.8 – 10.4	Supplements with Hydrate inhibitors Emulsion stability > 400 Volts at 120 ^{0}F for SOBM
12 ¼"	LTSOBM (Flat Rheology)	11.0 – 11.4	Supplements with Hydrate inhibitors Emulsion stability > 400 Volts at 120 ^{0}F for SOBM
8 ½"	LTSOBM (Flat Rheology)	Upto 11.5 ppg	Supplements with Hydrate inhibitors Emulsion stability > 500 Volts at 120 ^{0}F for SOBM

Note:

1) **The mud system (LTSOBM) should be suitably supplements with hydrate inhibitors.**

14.0 MUD FORMULATION, PROPERTIES AND VOLUME:

(A) Spud mud for 36" & 26" phase (500m – 1200m)

Spud mud shall comprise of High Vis Sweeps, displacement volume and heavy mud required for pumps and dump system.
Total Volume required – 15000 bbs.
Reference Mud WT: 10.0 ppg (1.20 Sp. Sr).
The spud mud shall be prepared and aged at room temperature for 24 Hrs. The Rheology of Drilling Fluid to be measured at 24 $\pm$ 2 ^{0}C.

Sl No	Mud Parameters			
1	Mud Wt PPG / SG	10.0 PPG (1.20 Sp.gr)		
2	PV	ALAP		
3	YP	25-40		
4	Gel (0'/10'/30/60')	8-12/12- 18/18 – 30/ 30 – 60		
5	PH	8.5 – 9.5		
6	3 RPM Reading	> 10		
Sl No	Variable Component	Brand name / Manufacturing Sources	Dosage % / ppb	Quantity for phase as per DF Volume (MT)
1	Bentonite	-		
2	Barytes	-		
3	Caustic Soda	-		
4	Soda Ash	-		
5	Any Other Additives	-		
	1	-		
	2	-		
	3	-		

(B) MUD SYSTEM FOR 20" (1200M – 2000M) SECTION: (LTSOBM System)

Total Mud Volume Required = **7000 bbls.**
Ref Mud WT: 10.0 ppg (1.20 Sg. Gr)

Fluid Properties	Flat Rheology LTSOBM for deep Water Wells
Density (ppg)/Sg. Gr	10.0
PV (cp)	ALAP
YV (Lbs/100ft^2)	10 – 25
Gel 0'/10' (Lbs/100ft^2)	8 – 12 / 12 – 20
O:W ratio	75:25
HPHT Fluid Loss cc/ 30 min, 300 ^{0}F	$\leq$ 5 cc
Emulsion Stability: Volt at 120^{0}F	> 400

WPS (Chloride) g/l	180 ± 10
6 RPM	12 ± 4
Free Lime (lb/bbl)	> 2

LTSOBM for deep water well

Description	Brand Name / Manufacturing Source	Dosage (%/ ppb)	Quantity for phase as per DF Volume (MT)
Primary Emulsifier			
Secondary Emulsifier			
Fluid Loss Additive I			
Fluid Loss Additive II			
Viscosifier I			
Viscosifier II			
Chemical for alkalinity (Lime)			
Chemical for brine phase			
Chemical for Brine phase Salinity (25 % by wt, $CaCl_2$ brine purity by 96 %)			
Weighing Materials			
Base Oil (MOEF Compliance, NEERI/NIO approved)			
Any Other Additives 1. 2. 3. 4.			

(C) MUD SYSTEM FOR 17 ½" (2000M – 2900M) SECTION: (LTSOBM System)

Total Mud Volume Required = **7000 bbls.**
Ref Mud WT: 10.0 ppg (1.20 Sg. Gr)

Fluid Properties	Flat Rheology LTSOBM for deep Water Wells
Density (ppg)/Sg. Gr	10.0
PV (cp)	ALAP
YV (Lbs/100ft^2)	15 – 25
Gel 0'/10' (Lbs/100ft^2)	8 – 12 / 12 – 20
O:W ratio	75:25
HPHT Fluid Loss cc/ 30 min, 300 ^{0}F	≤ 5 cc
Emulsion Stability: Volt at 120^{0}F	> 400
WPS (Chloride) g/l	180 ± 10
6 RPM	12 ± 4
Free Lime (lb/bbl)	> 2

LTSOBM for deep water well

Description	Brand Name / Manufacturing Source	Dosage (%/ ppb)	Quantity for phase as per DF Volume (MT)
Primary Emulsifier			
Secondary Emulsifier			
Fluid Loss Additive I			
Fluid Loss Additive II			
Viscosifier I			
Viscosifier II			
Chemical for alkalinity (Lime)			
Chemical for brine phase			
Chemical for Brine phase Salinity (25 % by wt, $CaCl_2$ brine purity by 96 %)			
Weighing Materials			
Base Oil (MOEF Compliance, NEERI/NIO approved)			
Any Other Additives 1. 2. 3. 4.			

(D) <u>MUD SYSTEM FOR 12 ¼" (2900M – 4200M) SECTION:</u>
<u>(LTSOBM System)</u>

Total Mud Volume Required = **6000 bbls.**
Ref Mud WT: 11.0 ppg (1.32Sg. Gr)
Parameters for LTSOBM System (After hot rolling for 24 Hrs at 120 ^{0}C)

Fluid Properties	Flat Rheology LTSOBM for deep Water Wells
Density (ppg)/Sg. Gr	11.0
PV (cp)	ALAP
YV (Lbs/100ft^2)	15 – 25
Gel 0'/10' (Lbs/100ft^2)	8 – 12 / 12 – 20
O:W ratio	75:25
HPHT Fluid Loss cc/ 30 min, 300 ^{0}F	$\leq$ 5 cc
Emulsion Stability: Volt at 120^{0}F	> 400
WPS (Chloride) g/l	180 $\pm$ 10
6 RPM	10 $\pm$ 2
Free Lime (lb/bbl)	> 2

Description	Brand Name /	Dosage (%/	Quantity for phase

	Manufacturing Source	ppb)	as per DF Volume (MT)
Primary Emulsifier			
Secondary Emulsifier			
Fluid Loss Additive I			
Fluid Loss Additive II			
Viscosifier I			
Viscosifier II			
Chemical for alkalinity (Lime)			
Chemical for Brine phase Salinity (25 % by wt, $CaCl_2$ brine purity by 96%)			
Weighing Materials			
Chemical for brine phase			
Base Oil (MOEF Compliance, NEERI/NIO approved)			
Any Other Additives 1. 2. 3. 4.			

(E) MUD SYSTEM FOR 8 ½" (4200M – 5600M) SECTION: (SOBM System)

Total Mud Volume Required = **5000 bbls.**
Ref Mud WT: 11.0 ppg (1.32Sg. Gr)
Parameters for LTSOBM System (After hot rolling for 24 Hrs at 148.9 ^{0}C)

Fluid Properties	Flat Rheology LTSOBM for deep Water Wells
Density (ppg)/Sg. Gr	11.0
PV (cp)	ALAP
YV (Lbs/100ft^2)	15 – 25
Gel 0'/10' (Lbs/100ft^2)	8 – 12 / 12 – 20
O:W ratio	80:20
HPHT Fluid Loss cc/ 30 min, 300 ^{0}F	$\leq$ 5 cc
Emulsion Stability: Volt at 120^{0}F	> 400
WPS (Chloride) g/l	180 $\pm$ 10
6 RPM	10 $\pm$ 2
Free Lime (lb/bbl)	> 2

Description	Brand Name / Manufacturing Source	Dosage (%/ ppb)	Quantity for phase as per DF Volume (MT)
Primary Emulsifier			
Secondary Emulsifier			

Fluid Loss Additive I			
Fluid Loss Additive II			
Viscosifier I			
Viscosifier II			
Chemical for alkalinity (Lime)			
Chemical for brine phase			
Chemical for Brine phase Salinity (25 % by wt, $CaCl_2$ brine purity 96 %)			
Weighing Materials			
Base Oil (MOEF Compliance, NEERI/NIO approved)			
Any Other Additives 1. 2. 3. 4.			

Note:

1. Bidder has to design LTSOBM with the minimum fixed component dosage and obtain the parameters as stated by dosing the variable components.
2. Cost of making one barrel of mud will be calculated on the basis of dosages specified by the Bidder to obtain the above mud parameters for each section of the hole based on which cost of 7000 bbl of LTSOBM will be for cost comparison purpose.
3. The above name of the basic Chemicals may vary firm to firm in terms of their trade names.
4. Total Mud Volumes and Dosages for different section as given above for bid evaluation only.
5. Bidder has to fill the dosages as per their own formulation for all variable chemicals to achieve the required parameters.
6. The indicated quantity is tentative only and payment will be made on actual consumption basis.

13. COMPLETION FLUID / WORK OVER FLUIDS-

The bidder is required to provide completion fluids for production testing of objects of oil & gas. Brine weights may range from **10.0 ppg to 13.5 ppg**. Hence the Conductor shall provide clear brines. The following Chemicals are proposed for brine preparation.

Sl No	CHEMICAL	BRINE WEIGHT (ppg)
1	SODIUM FORMATE	11.0
2	POTASSIUM FORMATE	13.1

7.0 CONTINGENCY CHEMICALS -

Sl No	Product	Requirement	Brand Name of	Bidder's packaging

			Product	**Size**
1	Calcium Carbonate (FMC)	10 MT		
2	Kwikseal (F,M,C) or equivalent	3.0 MT		
3	MIX II (F,M,C) or equivalent	3.0 MT		
4	Wall nut shell (F,M,C)	1.0 MT		
5	Oxygen Scavenger	1.0 MT		
6	Biocide	1000 LT		
7	Citric Acid	1.0 MT		
8	Defoamer	1000 LT		
9	Sodium Bi-Carbonate	1.0 MT		
10	Corrosion Inhibitor Brine	5 DRUM		
11	Corrosion Inhibitor Mud	10 DRUM		
12	MGO	1.0 MT		
13	CMC (LVG)	2.0 MT		
14	CMC (HVG)	2.0 MT		
15	Guar Gum	2.0 MT		

8.0 SPECIALITY CHEMICALS –

Sl No	**Product**	**Requirement**	**Brand Name of Product**	**Bidder packaging Size**
1	Synthetic graphite sized	1 MT		
2	H2S Scavenger for brine	200 LT		
3	Poly amine based Shale stabilizer	3.0 MT		
4	FLC-2000 or Equivalent	3.0 MT		
5	Resinated Lignite	5.0MT		
6	Cross Linked based Non Damaging LCM Pill	100 BBL		
7	OIL Wetting Agents (For SOBM)	2.0 MT		
8	Rheology Modifier (For SOBM)	2.0 MT		
9	Low Temp Clouding Glycol (Cloud Point 25 to 35 ^{0}C)	20 KL		
10	Thinner for Flat Rheology SOBM	3 MT		

Key Performance indicators:

1. Bidder shall provide mud Engineering Services under this contract with respect to the following key performance Indicators:-

a. NPT (Mud Loss)
b. NPT (Stuck-Pipe)
c. NPT (Logging)
d. Incidence/frequency of hole packing off.
e. Drilling Fluid Cost/meter
f. NPT (Supply of Chemicals)
g. Quality of additives
h. Hole cleaning efficiency
i. Caliper
j. Productivity of Well

End of Exhibit-2

LWD-MWD, MUD MOTOR, JAR & JAR INTENSIFIER SERVICES FOR VERTICAL & DIRECTIONAL DRILLING

Bidder/ Contractor shall be responsible for providing the Tools & Equipment and Services as described hereunder in order to drill Vertical and/ or Directional well / hole in deep-water deep drilling environment in efficient manner following best and safe practices.

The Bidder/ Contractor shall provide State-of-the-art Logging While Drilling unit meeting the following requirements:

1.1 The unit should be an Integrated Computer system providing Drilling Evaluation and Logging system. The unit should have complete redundancy in acquisition system and tool modules. The Surface unit should be capable of integrating MWD/LWD data with Rig's communication system provided by Rig Contractor, for Real Time Data transmission from Rig to operator's onshore base offices.

1.2 The unit should be able to collect surface signals and process them real time. The unit should have provision to provide real time and post processed output products as color Hard copies.

The unit should be able to provide Rig Floor color Terminal and one Personal Color terminal in Tool Pusher / Company man's Cabin on rig.

1.3 The MWD-LWD system should be combinable and compatible with each other and meet the following services requirements, capability and features to be run in for 26", 171/2", 12 ¼" & 8½" Hole Sections:

A. Direction and Inclination (DI): Measurement While Drilling (MWD) services for Hole Direction & Inclination, Gravity (high side) and Magnetic Tool Face and Bottom Hole Temperature at real time.

B. Integrated Vibration, Shock, Stick-Slip (IVSS) : Integrated vibration Sub-three/ four axes measurement and superior measurement analysis of vibration, shock, Stick slip and backward rotation as integral part of each MWD-LWD suite/ combination irrespective of size/ hole section for drilling dynamics optimization.

C. Gamma Ray (GR): Azimuthal GR (Natural), 0-250API with minimum dual detector for reliability and redundancy, Accuracy +/- 3%.

D. Resistivity & Temperature (R & T): Multi Depth Electromagnetic Resistivity and Temperature Caliper

E. Annular Pressure While Drilling (APWD) : Annulus Pressure & Annulus circulating temperature while drilling

F. Density-Neutron porosity-Caliper (DNC) : Azimuthal Densities, Comp. Neutron porosity, Ultrasonic Caliper

G. Sonic While Drilling (SWD) : LWD Sonic (Monopole) tool for Formation Compressional slowness (Delta T) as well as Shear Slowness (Delta T)

H. Formation Pressure while Drilling (FPWD) as optional

I. MWD & LWD Compatible and combinable with each other

J. No restriction for Loss Circulation Materials to pump through MWD-LWD system

K. Memory Mode & Real Time Mode

L. Tool quantities will need to be provided as stated in "Important Notes" following the technical specifications below.

M. Should be able to run slick (optional) except Density Neutron and FPWD measurement (as per Industry practice.)

N. Data Transmission rates for LWD strings is 5 bits / second or better to cover real time data transmission of all the quoted tools / services.

O. The LWD unit should have the capability to link with the rig VSAT for real time data transmission.

P. The MWD tool should be compatible and combinable with LWD tools with measurement accuracy: TF+/- 3.0 deg, AZ +/- 1.5 deg, INC +/- 0.2 deg or better with a surface programmable MTF/GTF (Magnetic Tool face/ Gravity tool face) switch.

Q. Stabilizers (tool specific) of appropriate size/ specification for different hole sizes as applicable are to be provided and utilized as part and parcel of specific tool/ tools.

Section-wise MWD-LWD requirement features and Specifications are as furnished below. Please refer IMPORTANT NOTES following Technical Specifications for other details/ terms and conditions.

2. TOOLS SPECIFICATIONS (Short forms of tools indicated are OIL codes only):

2.1) <u>SET-A: For 26", 17.1/2" & 14.3/4" Hole Sections</u>:

The followings MWD-LWD suites/ packages are to be provided for the said sections and as practicable anyone/ slick or any combination of the tools below will be utilized in any hole section/ sections as per requirement of OIL (operator).

i) **Direction, Inclination with Temperature (DI)**
ii) **Gamma Ray (GR),**
iii) **Resistivity & Temperature (R & T)**
iv) **Annular Pressure While Drilling (APWD)**
v) **Sonic while Drilling (SWD)**

In addition to the features and requirements stated above, the LWD-MWD System should have the following features and capability to be run in 26", 17.1/2" x 20" & 14.3/4" x 17.1/2" hole sections.

i) **Direction, Inclination with Temperature (DI):**

a) MWD Tools (DI) should be of 9.50" API Collar size as applicable with respect to hole size, rated to minimum 150 deg C and 10,000 psi and operate in flow range of minimum 300GPM or less and maximum 1500GPM or more.
b) Combined with suitable IVSS for measurement and analysis of drill-string vibration, shock, stick & slip.
c) Real-time telemetry for Direction & Inclination of hole, Gravity (high side) & Magnetic Tool Face and Bottom Hole Temperatures.
d) Maximum Tool Curvature/ Dogleg Severity: Rotation- 3.5^0/ 100ft, Sliding- 10^0/ 100ft

ii) **Gamma Ray (GR)** :

a) Tool size: 9" – 9.1/2" suitable for hole size up to 17.1/2"or more
b) Azimuthal GR (Natural), 0-250API with minimum dual detector for reliability and redundancy, Accuracy +/- 3%.
c) Maximum Tool Curvature/ Dogleg Severity: Rotation- 3.5^0/ 100ft, Sliding- 10^0/ 100ft
d) Suitable for operating Pressure of 10000PSI and temperature of 150 deg C
e) Maximum allowable Flow rate: 1500 GPM or more

iii) **Resistivity & Temperature (R & T)** :

a) Tool Size: 9" – 9.1/2" suitable for hole size up to 17.1/2"or more
b) Max Tool Curvature/ Dogleg Severity: Rotation- 3.500 / 100 ft, Sliding 100/100 ft
c) Temperature & pressure Rating: 150 deg C, 10,000 psi
d) Maximum allowable Flow Rate: 1500 GPM or better
e) Tool should be able to record resistivity in multiple frequencies (minimum 2 frequencies).
f) Bore-hole compensated phase & attenuation measurement systems with multiple depths of investigation (minimum 5).
g) Resistivity measurement range: 0.2 to 2000 Ohm-m.
h) Invasion Profile from curve separations.
i) Temperature caliper to record at least up to 1500 C.

iv) **Annular Pressure While Drilling (APWD):**

a) Tool Size: 9” - 9.1/2” suitable for hole size up to 17.1/2”or more
b) Max Tool Curvature/ Dogleg Severity: Rotation- 3.50^0/ 100 ft, Sliding 10^0/100 ft
c) Maximum allowable Flow Rate: 1500 GPM or better
d) Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density) in real time
e) APWD pressure and temperature resolution should be 5 psi or less and 1 deg C or less respectively
f) APWD pressure range 0-10000 psi and temperature range should be 150 deg C or more.
g) Should be able to provide measurements in both OFF and ON conditions of the pumps.
h) Should be able to take multiple pressure measurements during LOT.
i) Should be able to measure internal and external string pressure and temperature
j) APWD should be Combinable or integrated part of MWD & Induction Resistivity tools. If separate combinable tool then separate rate is to be quoted. If it is integral part then only one rate is to be quoted for integral tool and APWD data to be provided along with the integral tool at no additional cost to OIL (Oil India Limited- operator).

v) **Sonic while Drilling (SWD):**

To refer the specification provided in “**SET-B for 12 ¼” HOLE SECTION**” for the SWD tool.

NOTE: The same tool shall be suitable for hole sizes of 12.1/4” to at least 17.1/2” dia and may be utilized for any size/ section of the holes in the range at the discretion of Operator (OIL).

2.2 SET-B for 12 ¼” HOLE SECTION:

The followings MWD-LWD tools/ suites/ packages are to be provided for the said sections and as practicable anyone/ slick or any combination of the tools below will be utilized in the hole section as per requirement of OIL (Operator).

i) **Direction, Inclination with Temperature (DI)**
ii) **Gamma Ray (GR),**
iii) **Resistivity & Temperature (R & T)**
iv) **Annular Pressure While Drilling (APWD)**
v) **Density-Neutron porosity-Caliper (DNC)**
vi) **Sonic while Drilling (SWD)**

i) **Direction, Inclination with Temperature (DI):**

a) MWD Tools (DI) should be of 8.0” - 8.50” API Collar size/ Nominal OD as applicable with respect to hole size, rated to minimum 150 deg C and 15,000 psi and operate in flow range of minimum 300 GPM or less and maximum 1000 GPM or more.
b) Combined with suitable IVSS for measurement and analysis of drill-string vibration, shock, stick & slip.

c) Real-time telemetry for Direction & Inclination of hole, Gravity (high side) & Magnetic Tool Face and Bottom Hole Temperatures.
d) Maximum Dogleg: Rotation- 4.0 degree/ 100ft, Sliding- 10 degree/ 100ft

ii) **Gamma Ray (GR)** :

a) Tool size: 8.0" - 8.50" OD suitable for hole size up to 12.1/4" or more
b) Azimuthal GR (Natural), 0-250 API with minimum dual detector for reliability and redundancy, Accuracy +/- 3%.
c) Maximum Dogleg: Rotation- 4.0 degree/ 100ft, Sliding- 10 degree/ 100ft
d) Suitable for operating Pressure of 15000 PSI and temperature of 150 deg C
e) Maximum allowable Flow rate: 1000 GPM or more

iii) **Resistivity & Temperature (R & T)** :

a) Tool Size: 8.0" – 8.50" O.D suitable for hole size up to 12.1/4"or more
b) Max Tool Curvature: Rotation- 4.0 degree / 100 ft, Sliding 10 degree/100 ft
c) Temperature & pressure Rating: 150 deg C, 15,000 psi
d) Maximum allowable Flow Rate: 1000 GPM or better
e) Tool should be able to record resistivity in multiple frequencies (minimum 2 frequencies).
f) Bore-hole compensated phase & attenuation measurement systems with multiple depths of investigation (minimum 5).
g) Resistivity measurement range: 0.2 to 2000 Ohm-m.
h) Invasion Profile from curve separations.
i) Temperature caliper to record at least up to 1750 C.

iv) **Annular Pressure While Drilling (APWD):**

a) Tool Size: 8.0" - 8.1/2" suitable for hole size up to 12.1/4"or more
b) Max Tool Curvature/ Dogleg severity: Rotation- 4.00/ 100 ft, Sliding 100/100 ft
c) Maximum allowable Flow Rate: 1000 GPM or better
d) Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density) in real time
e) APWD pressure and temperature resolution should be 5 psi or less and 1 deg C or less respectively
f) APWD pressure range 0-15000 psi and temperature range should be 150 deg C or more.
g) Should be able to provide measurements in both OFF and ON conditions of the pumps.
h) Should be able to take multiple pressure measurements during LOT.
i) Should be able to measure internal and external string pressure and temperature
j) APWD should be Combinable or integrated part of MWD & Induction Resistivity tools. If separate combinable tool then separate rate is to be quoted. If it is integral part then only one rate is to be quoted for integral tool and APWD data to be provided along with the integral tool at no additional cost to OIL (Oil India Limited- Operator).

v) **Density-Neutron porosity-Caliper (DNC)**

a) Tool Size: 8.0" – 8.50" suitable for hole size up to 12.1/4"or more
b) Max Tool Curvature/ Dogleg Severity: Rotation- 40 / 100 ft, Sliding- 100/100 ft
c) Temperature & Pressure Rating: 150 deg C, 15,000 psi
d) Maximum allowable Flow Rate: 1000 GPM or better
e) Average Neutron Porosity: Environmentally corrected for mud salinity. Range - 6 to 54 P.U. or 0 to 60 P.U. Azimuthal Bulk Density - Corrected for environmental factors. Range 1.8 to 2.8 g/cc or better.
f) Pe factor: 1- 10 units or better
g) Azimuthal density from four quadrant and images are to be provided as per the operational requirement with 16 BINS measurement and real time transmission at a rate of 4 BINS / 4 Sectors or more.
h) Ultra Sonic/ Density derived Caliper Log to be provided.
i) Standoff binned density / Image Derived Density based on the sector with which the tool is in contact with the formation while drilling, is to be provided as a processed recorded mode output.

vi) **Sonic While Drilling (SWD)**

a) Shall be combinable and compatible to run along with above mentioned LWD/LWD tools to record sonic log in non-HTHP environment up to 150 deg C & 15,000 psi.
b) Tool Size: 8" – 8.1/2" suitable for hole size up to 17.1/2"
c) Maximum allowable Flow Rate: 1000 GPM or better (Hi-flo)
d) Max Tool Curvature/ Dogleg Severity: Rotation- 4.000/ 100 ft, Sliding 100/100 ft
e) Tool should be capable of monopole excitation mode to deliver real-time delta-T compressional and interval transit time.
f) Tool should be able to provide formation shear slowness (delta-T) where mud velocities are slower than formation shear arrival.
g) Tool should be able to transmit a quality factor in real-time (coherence).
h) Tool should be able to detect top of cement from memory processed data.
i) Post Job Deliverables: Quality check of Compressional Delta T delivered at the rig-site with reprocessing to be done if required.

NOTE: The same tool shall be suitable for hole sizes of 12.1/4" to 17.1/2" dia and shall be utilized for any size/ section of the holes in the range at the discretion and requirement of operator (OIL).

2.3 SET- C for 8 ½" HOLE SECTION (including Investigative Hole) :

The followings MWD-LWD tools/ suites/ packages are to be provided for the said sections and as practicable anyone/ slick or any combination of the tools below will be utilized in the hole section as per requirement of OIL (Operator).

i) **Direction, Inclination with Temperature (DI)**
ii) **Gamma Ray (GR),**
iii) **Resistivity & Temperature (R & T)**
iv) **Annular Pressure While Drilling (APWD)**
v) **Density-Neutron porosity-Caliper (DNC)**
vi) **Sonic while Drilling (SWD)**
vii) **Formation Pressure while Drilling (FPWD)- Optional under Callout**
viii) **Lateralog Resistivity & Gamma Ray (LR &GR) for 8 ½" hole size (Optional under Callout)**
ix) **Sigma and Spectroscopy (S&S) measurement for 8 ½"hole size (Optional under Callout)**

i. **Direction, Inclination with Temperature (DI):**

a) MWD Tools (DI) should be of 6.50" - 6.75" API Collar size/ Nominal OD/ OD as applicable with respect to the hole size, rated to minimum 150 deg C and 15,000 psi and operate in flow range of minimum 200GPM or less and maximum 700GPM or more.
b) Combined with suitable IVSS for measurement and analysis of drill-string vibration, shock, stick & slip for optimization of drilling dynamics.
c) Real-time telemetry for Direction & Inclination of hole, Gravity (high side) & Magnetic Tool Face and Bottom Hole Temperatures.
d) Maximum Tool Curvature/ Dogleg Severity: Rotation- 4.50/ 100ft, Sliding- 100/ 100ft

ii. **Gamma Ray (GR),**

a) Tool size: 6.50" - 6.75" OD suitable for hole size up to 8.1/2" or more
b) Azimuthal GR (Natural), 0-250API with minimum dual detector for reliability and redundancy, Accuracy +/- 3%.
c) Maximum Tool Curvature/ Dogleg Severity: Rotation- 4.50/ 100ft, Sliding- 100/ 100ft
d) Suitable for operating Pressure of 15000PSI and temperature of 150 deg C
e) Maximum allowable Flow rate: 700 GPM or more

iii. **Resistivity & Temperature (R & T)** :

a) Tool Size: 6.50" - 6.75" OD suitable for hole size up to 8.1/2" or more
b) Max Tool Curvature/ Dogleg Severity: Rotation- 4.50/ 100ft, Sliding- 100/ 100ft
c) Temperature & pressure Rating: 150 deg C, 15,000 psi
d) Maximum allowable Flow Rate: 700 GPM or more
e) Tool should be able to record resistivity in multiple frequencies (minimum 2 frequencies).
f) Bore-hole compensated phase & attenuation measurement systems with multiple depths of investigation (minimum 5).

g) Resistivity measurement range: 0.2 to 2000 Ohm-m.
h) Invasion Profile from curve separations.
i) Temperature caliper to record at least up to 1750 C.

iv. **Annular Pressure While Drilling (APWD):**

a) Tool Size: 6.50" - 6.75" OD suitable for hole size up to 8.1/2" or more
b) Max Tool Curvature/ Dogleg severity: Rotation- 4.50/ 100 ft, Sliding 100/100 ft
c) Maximum allowable Flow Rate: 700 GPM or better
d) Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density) at real time
e) APWD pressure and temperature resolution should be 5 psi or less and 1 deg.C or less respectively
f) APWD pressure range 0-15000 psi and temperature range should be 150 deg C or more.
g) Should be able to provide measurements in both OFF and ON conditions of the pumps.
h) Should be able to take multiple pressure measurements during LOT.
i) Should be able to measure internal and external string pressure and temperature
j) APWD should be Combinable or integrated part of MWD & Induction Resistivity tools. If separate combinable tool then separate rate is to be quoted. If it is integral part then only one rate is to be quoted for integral tool and APWD data to be provided along with the integral tool at no additional cost to OIL (Oil India Limited- operator).

v. **Density-Neutron porosity-Caliper (DNC)**

a) Tool Size: 6.50" - 6.75" OD suitable for hole size up to 8.1/2" or more
b) Max Tool Curvature/ Dogleg Severity : Rotation- 4.50/ 100 ft, Sliding 100/100 ft
c) Temperature & Pressure Rating: 150 deg C, 15,000 psi
d) Maximum allowable Flow Rate: 700 GPM or better
e) Average Neutron Porosity: Environmentally corrected for mud salinity. Range - 6 to 54 P.U. or 0 to 60 P.U. Azimuthal Bulk Density - Corrected for environmental factors. Range 1.8 to 2.8 g/cc or better.
f) Pe factor: 1- 10 units or better
g) Azimuthal density from four quadrant and images are to be provided as per the operational requirement with 16 BINS measurement and real time transmission at a rate of 4 BINS / 4 Sectors or more.
h) Ultra Sonic/ Density derived Caliper Log to be provided.
i) Standoff binned density / Image Derived Density based on the sector with which the tool is in contact with the formation while drilling, is to be provided as a processed recorded mode output.

vi. **Sonic While Drilling (SWD)**

a) Shall be combinable and compatible to run along with above mentioned LWD/LWD tools to record sonic log in non-HTHP environment up to 150 deg C & 15,000 psi.
b) Tool Size: 6.50" - 6.75" OD suitable for hole size up to 8.1/2" or more
c) Maximum allowable Flow Rate: 700 GPM or better

d) Max Tool Curvature/ Dogleg Severity: Rotation- 4.5^0/ 100 ft, Sliding 10^0/100 ft
e) Tool should be capable of monopole excitation mode to deliver real-time delta-T compressional and interval transit time.
f) Tool should be able to provide formation shear slowness (delta-T) where mud velocities are slower than formation shear arrival.
g) Tool should be able to transmit a quality factor in real-time (coherence).
h) Tool should be able to detect top of cement from memory processed data.
i) Post Job Deliverables: Quality check of Compressional Delta T delivered at the rig-site with reprocessing to be done if required.

vii. **Formation Pressure while Drilling (FPWD)- Optional under Callout**

a) To run along with above tools to record multiple formation pressure in same run in non - HTHP environment up to 150^0 C/ 15,000 psi.
b) Formation Pressure while drilling tool should be capable of making probe based formation pressure pretest measurements.
c) Tool should be MWD turbine powered / Battery powered. Tool should be able to provide tool status and battery status in RT.
d) Maximum allowable Flow Rate: 700 GPM or better

viii. **Lateralog Resistivity and Gamma Ray (LR&GR) for 8 ½" hole size (Optional under Callout):**

a) Lateralog Resistivity tool should provide multiple resistivity measurements (minimum 5) at multiple depths of investigation.
b) Resistivity measurement range – 0.2 to 2000 Ohm-m.
c) Must provide resistivity images IN REAL TIME AND ALLOW Dip computations through these images.
d) Should provide azimuthal Gamma Ray with Gamma Ray range between 0-250 API unit.
e) Pressure & Temperature rating: 15,000 PSI & 150 deg C.
f) Maximum allowable Flow Rate: 700 GPM or better

ix. **Sigma and Spectroscopy (S&S) measurement For 8 ½"hole size (Optional under Callout):**

a) Tool should be able to provide Neutron capture gamma ray spectroscopy and Formation Sigma measurement with multiple depth of investigation along with Resistivity, Density Neutron Porosity.
b) Pressure & Temperature rating: 15,000 PSI & 150 deg C.
c) Maximum allowable Flow Rate: 700 GPM or better

Deliverables:
- Integrated Petrophysical viewer with volumetric analysis and matrix density corrected porosities (both real time and memory mode).
- Processed deliverable should include mineralogy based permeability estimation based on spectroscopy and log based volumetric analysis.

2.4 SET-D for MWD-LWD TOOLS FOR 6" HOLE SIZE (On Call-out Basis):

MEASUREMENT WHILE DRILLING (MWD) TOOL:

i. **Direction & Inclination (D&I):**

Measurement while drilling electronic package consisting of hole inclination, direction and Temperature measurement, with API quality continuous Gamma Ray measurement in real time, directional survey response in less than 120 seconds. The system to complete with pulsar, electronic sensors, power source etc. for transmitting down-hole data in real time with tool face update every 20 second or less.

Further specifications are:

a) Tool curvature: 7° / 100' (Rotary) and 10° / 100' (Sliding) or better.
b) Mud flow rates allowable: 250 gpm or better.
c) Data transmission rate 5 bits/sec. or more and should be suitable to transmit data of various tools quoted in different segments of the tender
d) Gamma ray, inclination and azimuth measurements.
e) Combinable with LWD tools.
f) Measurement accuracy : TF+/- 3.0 deg, AZ +/- 1.5 deg, INC +/- 0.2 deg
g) MTF/GTF switch: Programmable at surface.
h) The distance from bit for directional measurement should not be more than 19.0 Mtrs.
i) **Ratings – 150 deg C , 15000 psi**

LWD MEASUREMENT:

Resistivity and Gamma ray logging are required for 6" hole size and should be combinable & compatible with MWD described above and other LWD equipment.

The provision of real time data transmission should exist. Data is to be recorded in memory mode as well. Data also is to be recorded while pulling out by back reaming / with pump-on.

Maximum allowable Flow Rate for all the MWD-LWD tools for 6" hole shall be 250 GPM or better

ii) **Resistivity & Temperature (R&T):**

a) Resistivity to be recorded in Single/Multiple frequencies and in multiple depth of investigations
b) Bore-hole compensated phase & attenuation measurement systems with multiple depths of investigation
c) Resistivity measurement: 0.2 to 2000 Ohm-m & Temperature to record at least up to 1750 C
d) Invasion Profile
e) Ratings – 150 deg C , 15000 psi

iii) **Gamma Ray (GR):**

a) Gamma Ray range between 0-250 API unit
b) Should be recorded at a maximum of 13.0 mtrs. from bit.
c) Ratings – 150 deg C , 15000 psi

iv) **Density-Neutron porosity-Caliper (DNC)**

a) Azimuthal Density Range = 1.8 to 2.8 gm/cc or better
b) Pe = 1 to 10 units
c) Neutron porosity = -6 to 54 P.U. or o to 60 P.U.
d) Azimuthal density from four quadrant and images are to be provided as per the operational requirement with 16 BINS / 16 Sectors measurement and real time transmission at a rate of 4 BINS / 4 Sectors or more.
e) Ultra Sonic/ density derived Caliper Log to be provided.
f) Ratings – 150 deg C , 15000 psi

v) **Annulus Pressure & Annulus Circulating Temperature While Drilling (APWD)**

a) Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density)
b) APWD pressure and temperature resolution should be 5 psi or less and 1 deg.C or less respectively
c) APWD pressure range 0-15000 psi and temperature range should be 150 degC or more.
d) Should be able to provide measurements in both OFF and ON conditions of the pumps.
e) Should be able to take multiple pressure measurements during LOT.
f) Should be able to measure internal and external string pressure and temperature
g) APWD should be Combinable or integrated part of MWD & Induction Resistivity tools. If separate combinable tool then separate rate is to be quoted. If it is integral part then only one rate is to be quoted for integral tool and APWD data to be provided along with the integral tool at no additional cost to OIL.

vi) **SWD-Multipole (Sonic While Drilling):**

a) Tool should be combinable with other LWD Tools
b) Tool should be capable of quadrupole excitation mode to deliver real-time delta-T compressional and interval transit time and should be able to provide formation shear slowness (delta-T shear).
c) Tool should be able to transmit a quality factor in real-time (coherence).
d) Tool should be able to detect top of cement from memory processed data.
e) Ratings – 150 deg C, 15000 psi

Post Job Deliverables:-
Quality check of Compressional and Shear Delta T delivered at the rigsite with reprocessing to be done if required.

2.4.1 LWD TOOLS FOR 6" HOLE SIZE (Optional under Callout):

(A) Lateralog Resistivity and Gamma Ray (LR & GR) - Optional:

a) Lateralog Resistivity tool should provide multiple resistivity measurements (minimum 5) at multiple depths of investigation.
b) Resistivity measurement range - 0.2 to 2000 Ohm-m.
c) Must provide resistivity images in real time and allow Dip computations through these images

d) Should also provide bit resistivity by using bit as an electrode.
e) Should provide azimuthal Gamma Ray with Gamma Ray range between 0-250 API unit.
f) Tool should provide multi-depth 56 sector resistivity images in real-time and recorded mode.
g) Ratings – 150 deg C , 15000 psi

(B) Formation Pressure While Drilling (FPWD) – Optional:

a) Should be combinable with other LWD tools.
b) Should be able to carry out measurement irrespective of the tool orientation.
c) Stabilizers should be an integral part of the tool.
d) Power source should be MWD turbine
e) Ratings – 150 deg C, 15,000 psi

3. MUD MOTORS, STABILIZERS AND ACCESSORIES

Contractor to provide stabilized positive displacement Steerable down hole mud motors, and other equipment along with services of Operator as detailed below on rental basis for drilling 26", 17 ½', 14.3/4", 12 ¼" and 8 ½" hole. The set would be used for drilling vertical/directional wells. Contractor should have necessary standby and back up tools for the set to meet situations like tool failure/ loss of equipment down hole etc. for uninterrupted operation. For 17 ½" holes SDMM's should be rated to operate in temperatures up to 150 deg C and pressures of 10,000 psi. For 12 ¼' and 8 ½" holes SDMM's should be rated to operate in temperatures up to **150 deg C and pressures of 15,000 psi.**

3a. SDMM (Steerable Downhole Mud Motor)

(i) 9-5/8" / 9-1/2" OD High Torque, low to medium speed, stabilized positive displacement steerable multi-lobe mud motor for high angle drilling in 17 1/2" and 12-1/4" hole sizes with provision for 17-3/8" screwed-on bearing housing stabilizer for drilling 17-1/2" hole and thread protection sleeve on bearing housing when drilling 12-1/4" hole along with adjustable kick off sub with 7 5/8" API Regular Box down (bit box) and 6 5/8" API Regular Box Up assembly complete with lifting sub and having following specifications.

Min. Flow Rate: 600 GPM or less & Max. Flow Rate: 1150 GPM or more, Bit Speed: not less than 50 RPM to 200 RPM approx. or more, Operating differential pressure 550-1200 PSI, Operating torque 14600 NM minimum. Power output 400 HP minimum. Motors shall be able to provide 4° / 30 M or more build up rate and will be able to rotate where BUR of 4° / 30 m is obtained.

(ii) 7¾" / 8" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle to horizontal drilling in 12 1/4" hole with 12 1/8" screw-on / built-in bearing housing stabilizer and adjustable kick off sub with 6 5/8" API Regular Box down (bit box) and 6 5/8" API Reg. Box Up assembly complete with lifting sub and having following specifications.

Min. Flow Rate: 300 GPM or less & Max. Flow Rate: 900 GPM or more, Bit Speed not less than 50 to 140 RPM approx. or more, Operating differential pressure

600 PSI (max) or more, Operating torque 10,000 NM minimum. Power output 212 HP minimum. Motors shall be able to provide 5.5° / 30 m or more build up rate and will be able to rotate where BUR of 5.5° / 30 m is obtained.

(iii) 6 ½" / 6 ¾" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle to horizontal drilling in 8 ½" hole with 8 3/8" screw-on/built-in bearing housing stabilizer and adjustable kick off sub with 4 ½" API regular box down (bit box) and 4" API IF Box up assembly complete with lifting sub and having following specifications.

Min. Flow Rate: 250 GPM or less, Max. Flow Rate: 600 GPM or more, Bit Speed: not less than 60 RPM to 200 RPM approx. or more, Operating torque: 6500 NM minimum, Power output 173 HP minimum, Operating differential pressure 900 PSI (max) or more. Motors shall be able to provide 6° / 30 M or more build up rate and will be able to rotate where BUR of 6° / 30 m is obtained.

3b. Mud Motors (on Call-out)

4 ¾" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle to horizontal drilling in 6" hole with 5 7/8" screw on/built in bearing housing stabilizer and adjustable kick off sub with 3 ½" API Regular box (bit box) and 3 ½" API IF Box assembly with lifting sub having following specifications.

Minimum Flow rate 100 GPM or less, Maximum Flow Rate:250 GPM or more, Bit Speed: Not less than 60 RPM to 180 RPM approx. or more, Operating torque 3000 NM minimum, Power output 100 HP minimum, Operating differential pressure 700 PSI (max) or more. Motors shall be able to provide 7.0° / 30 M build up rate (Rotation) and will be able to rotate where BUR of 7.0° / 30 m is obtained. Mud Motor should be rated to operate in temperatures up to 150 deg C and pressures of 15,000 psi.

NOTE: Contractor shall provide required quantity of suitable stabilizers for the drill string required for drilling vertical/ directional wells with SDMM during the period of the contract for uninterrupted operation. The following sizes of stabilizers are to be provided.

String Stabilizers (size in inch)	**Near Bit Stabilizers** (size in inch)
26"	-
17 3/8"	17 3/8"
14.1/2"	14.1/2"
12 1/8"	12 1/8"
8 3/8"	8 3/8"
5.7/8"	5.7/8"

NOTES FOR MUD MOTORS (SDMM)

Bidders can provide SDMM only from any of the following manufacturers as given below. However, QA/QC is the sole responsibility of the service provider. Appropriate redundancy/ spares are to be maintained for uninterrupted operation.

a) Baker Hughes
b) Halliburton
c) Nationa l Oilwell Varco
d) Schlumberger
e) Bico
f) Weatherford

Please refer to ANNEXURES – M1, M2, M3 & M4 at the end of this section for detailed specifications. Bidders need to fill-up their offered SDMM in the format with additional features/information (if any).

4. DRILLING JARS ALONG WITH COMPATIBLE JAR INTENSIFIERS AND SERVICES:

The details of equipment to be provided by bidder which will form part of one set will be two numbers of every item (one main tool and one back up) are as under:

JARS:

1) 7.3/4"/ 8.0" OD Double Acting Hydro Mechanical about 30ft maximum length with minimum ID 2.13/16", tool joint 6⅝" API Regular box x pin connection with Torsional Yield 100,000 ft-lbs (approx.), jar up stroke 260,000 pounds and down stroke 42,000 pounds. Stroke length (up /down): 12" approx. Tensile Yield: 10, 00,000 lbs. minimum

2) 6½"/6¾" OD Double Acting Hydro Mechanical about 30ft maximum length with minimum 2.3/8" ID having 4½" API IF Box x Pin connection for both upward & downward jarring action with Torsional yield 50,000 ft-lbs (approx.). Jar up stroke 160,000 pounds and down stroke 35,000 pounds. Stroke length (up & down): 12" (approx.), Tensile Yield: 700,000 Lbs. minimum.

3) 4½"/ 4¾" OD (**call out basis**) Double Acting Hydro Mechanical about 12ft-18ft long with minimum 2¼" ID having 3½" API IF Box x Pin connection for both upward & downward jarring action with Torsional yield 18,000 ft-lbs (approx.). Jar up stroke 80,000 pounds and down stroke 22,000 pounds. Stroke length (up & down): 10" approx, Tensile Yield: 360,000 Lbs. minimum.

Bidders should provide JARs of any of the following makes given below:

a) Halliburton Sledgehammer
b) Baker Hughes/ Baker Oil Tools (if available)
c) National Oilwell Varco (Griffith)
d) Bowen
e) Weatherford
f) Smith International
g) ITS
h) Bico
i) Houston Engineers

JAR INTENSIFIERS:

1) 7.3/4"/ 8.0" O.D Double Acting Hydraulic about 30ft maximum length with minimum 2¾" ID having 6⅝" API Regular box x pin connection, compatible with 7.3/4"/ 8.0" OD Double Acting Hydro Mechanical Jar with

Torsional yield 60000 ft-lbs (approx.). Stroke length (up/ down): 12" (approx.) and Tensile yield: 1,000,000 lbs. minimum.

2) 6½"/6¾" OD Double Acting Hydraulic about 30 ft long with minimum 2¾" ID having 4½" API IF Box x Pin connection compatible with 6½"/6¾" OD Double Acting Hydro Mechanical Jar with Torsional yield 41,000 ft-lbs (approx.). Stroke length (up/ down): 12" (approx.) and Tensile Yield: 700,000 lbs. minimum.

3) 4½"/ 4¾" OD (**call out basis**) Double Acting, Hydraulic, about 12 ft-18ft long with minimum 2¼" ID having 3½" API IF Box x Pin connection compatible with 4¾" OD Double Acting Hydro Mechanical Jar with Torsional yield 18,000 ft-lbs (approx). Stroke length (up/ down): 10" (approx.) and Tensile Yield: 360,000 lbs. minimum.

NOTE FOR JAR & JAR INTENSIFIER:

- JARs of makes other than the aforesaid companies will not be accepted.

- JAR Intensifiers have to be of same make as that of the JARS and 100% compatible with each other to effectively use together.

- Values of Torsional yield, Tensile load and JAR/JAR Intensifier Up and Down Strokes as indicated in the relevant spec are minimum requirement unless specified otherwise. Lengths are tentative and may vary as per specific product.

- J
ARs & Jar Intensifiers should be provided with effective placement program of offered make. Contractor's personnel on rig shall be competent enough and responsible for effective place with the Drill-string and its utilization. Bidder needs to confirm the features mentioned above.

- Please refer Annexures – J1 & J2 for detail specifications. Bidders need to fill-up their offer in the format with additional feature/information (if any).

IMPORTANT NOTES:

(A) LWD-MWD, Mud Motors, Jars & Jar Intensifiers Mobilisation:

1. For all firm MWD & LWD services the mobilization of tools will be as per the below schedule along with compatible MWD-LWD Unit for all the tools. Operator shall reserve the right to use anyone of the tools/ suites/ package standalone or in combination in any hole-section as required and as far as practicable as per terms and conditions. OCDR will be paid against the used tools/ set of tools/ package (as applicable) only during the period of utilization and functioning of the tools as per stipulated terms & conditions. If any one of the intended pack/ set of tools in run does not function or malfunction no OCDR & SDR shall be paid for the same pack/ set of tools for the period in hole.

Hole Size/ Section	MWD-LWD Service	Payable	Payable
All Sections	Compatible MWD-LWD Unit for all the tools & MWD-LWD Services	NA	NA
26", 17.1/2" & 14.3/4"	SET- A: DI, GR, R&T, APWD, *SWD	SDR	OCDR
12.1/4"	SET- B: DI, GR, R&T, APWD, DNC, *SWD	SDR	OCDR
8.1/2"	SET-C: DI, GR, R&T, APWD, DNC, SWD	SDR	OCDR
8.1/2" Optional under Callout	FPW , LR&GR, S&S	SDR	OCDR
6"- Callout	SET-D: DI, GR, R&T, APWD, DNC & SWD-Multipole	SDR	OCDR
6" Optional under Callout	FPW, LR&GR	SDR	OCDR

*SWD Tool: The same tool will be utilized for 12.1/4" hole also and hence single SDR will be applicable irrespective of hole-section.
SDR: Service Day Rate, OCDR: Operating Component of Day Rate (payable in addition to SDR)

2. For all firm Mud Motor (SDMM), Stabilizers and Accessories the mobilization of tools will be as per the below schedule.

Hole Size/Section	Services for Mud-Motors, Stabs & Accessories	Quantity on Rig	Payable	Payable
26", 17.1/2" & 14.3/4"	9-5/8" / 9-1/2" SDMM with accessories	1+1	SDR	OCDR
	26" String stabilizer	1+1		
	17 3/8" String stabilizer	1+1		
	17 3/8" near bit stabilizer	1+1		
	14.1/2" String stabilizer	1+1		
	14.1/2" Near bit stabilizer	1+1		
12.25"	7¾" / 8" SDMM with accessories	1+1	SDR	OCDR
	12 1/8" String stabilizer	1+1		
	12 1/8" Near bit stabilizer	1+1		
8.50"	6 ½" / 6 ¾" SDMM with accessories	1+1	SDR	OCDR
	8 3/8" String stabilizer	1+1		
	8 3/8" Near bit stabilizer	1+1		
6.0" (**Callout**)	4.3/4" SDMM with accessories	1+1	SDR	OCDR
	5.7/8" String stabilizer	1+1		
	5.7/8" near bit stabilizer	1+1		

["1+1" in the above table means one in use plus one as backup on rig, which is considered as one set]

3. Mobilizations of Jar & Jar Intensifiers are to be done as per the schedule below.

Hole Size/Section	Jar & Jar Intensifier Service	Quantity on Rig	Payable	Payable
12.1/4" to 26"	7.3/4"/ 8.0" Jar	1+1	SDR	OCDR
	7.3/4"/ 8.0" Jar Intensifier	1+1	SDR	OCDR
8.50"	6.50"/ 6.3/4" Jar	1+1	SDR	OCDR
	6.50"/ 6.3/4" Jar Intensifier	1+1	SDR	OCDR
6.0" (**Callout**)	4½"/ 4¾" Jar	1+1	SDR	OCDR
	4½"/ 4¾" Jar Intensifier	1+1	SDR	OCDR

["1+1" in the above table means one in use plus one as backup on rig, which is considered as one set]

4. Detail Specification of all the offered Tools and Equipment and Accessories beside the indicated particulars/ features, are to be provided with the bid.

5. Mobilization (except Callout items): All the tools, equipment and accessories required for '26", 17.1/2" & 14.3/4"; 12.1/4" and 8.1/2" hole sections are to be mobilized on board along with initial mobilization of other services.

6. Service Day Rates (SDR) and/ or Operating Component Day Rate (OCDR) as applicable will be effective/ chargeable only on completion of mobilization and tool/ equipment is ready in all respect to render the service. No SDR and / or OCDR is payable against demobilized tools/ equipment.

7. **Callout/ Optional items** are to be mobilized on board (rig) within 15 days from the date of intimation or by the date required by OIL, whichever is later. Applicable respective charges will be effective only upon completion of mobilization on the Rig and tool/ equipment is ready in all respect to render the service. OIL reserves the right to opt for any one or more of the Callout/ Optional items/ tools/ equipment/ services which contractor shall be liable to provide.

8. OIL at its discretion will have option to demobilize any individual tool/ equipment or set/ package of tools, equipment & accessories when felt such tools/ equipment/ accessories are no more required. No charge shall be payable for any demobilized tools/ equipment/ accessories.

9. Mobilization and Demobilization shall be treated as complete when items are mobilized on to the rig and out of rig respectively.

10. No separate Mobilization and Demobilization charges for the entire "MWD-LWD, Mud Motor, Jar & Jar Intensifier Services" (including Callout/ Optional items) is applicable.

11. Only for the "Optional Items under Call-out items/ services", Service Day Rates (SDR) are to be quoted per tool and Operating Component Day Rate (OCDR) is to be quoted per usage. **Service Day Rates will be prorated if more than one tool is mobilized (as per operator's advice) subject to a maximum of two tools.**

12. The Contractor shall provide sufficient back up tools, equipment & accessories to meet the workload and for situations such as tool failure/lost in hole etc. and ensure uninterrupted operations. **At least one backup is to be kept always on rig for immediate replacement against failure/ loss/ non-performance/ mal-functioning etc. at no extra cost to OIL**. **The same methodology is also applicable in case of Callout items but except the Optional items under callout.**

13. As part and parcel of the stipulated tools/ equipment/ services, all the required quantity of compatible & suitable NMDC (Non Magnetic Drill-collars), Stabilizers, Float subs, Restrictor Sub, Crossover Subs etc. for entire package/ suite/ assembly and from Operator's drill string/ assembly to Contractor's part of drill string or any other special crossover, tools, accessories etc. would be identified and furnished by the contractor as appropriate at no extra cost to operator (OIL).

14. Contractor shall ensure that the equipment is delivered and maintained in a fit condition for the intended work and shall, at its cost and expense, man, operate, replace, supply, repair and maintain the equipment as per the contract.

15. The SDMM Operator should measure and caliper all his tools (motors, subs, stabilizers, etc.) upon arrival at the rig, and also prior to running it in the hole.

16. Placement of stabilizers at different positions in the rotary assemblies should not be a constraint while running with the LWD tool.

17. The tool should have no restriction to pump LCM material (at least up to 40 ppb of fine to medium nut plug) in case of any mud loss or situation arises during the course of drilling operations.

18. The primary measurements of MWD tool should include D&I and T/F with an accuracy of +/- 0.2degrees for inclination, +/-1.5 degrees for azimuth and +/- 1.5 degrees for tool face. Survey time in static survey should be <2min and T/F update in <20 sec whereas dynamic survey time should not be more than 180 sec.

19. The replacement of "Resistivity & Temperature" (R&T/ HRAI/ equivalent) and "Density-Neutron Porosity-Caliper" (DNC/ DDN/ equivalent) with a compact tool for the same measurements provided by "R&T or HRAI" and "DNC or DDN" will be acceptable.

20. Measurement and Analysis of Vibration, Shock and Stick-Slip for optimization of drilling dynamics shall be integral part of MWD-LWD system irrespective of combination/ suite/ package/ tools utilized and section of the well/ hole even if it not mentioned elsewhere. It will not be paid as independent item. Bidders to note the same and take into consideration.

21. If any tool is run additionally as integral part of any suite/ package with the tools to be run as per instruction / requirement of operator, it will not be chargeable to the operator and the data recovered/ recorded thereof shall be made available to OIL (operator).

22. Some of the items/ services mentioned as **"Callout/ Optional**". It may or may not be required by OIL. If OIL opts for the items/ services, the bidder/ contractor shall be liable to provide the item/ items & render services as required by OIL as per Terms and conditions of the tender/ contract with in stipulated mobilization period.

23. Contractor to confirm if the radioactive source can be fished from the tools carrying radioactive materials including the name/ details of the tools. If contractor has the capability, then he has to provide dedicated source fishing equipment at the rig-site.

(B) The following shall apply to LWD/MWD & Mud Motor Services

INSPECTION OF EQUIPMENT / UNITS / TOOLS ETC.

Operator shall inspect at Contractor's base/Rig in India, the units along with surface equipment and accessories as well as tools to be mobilized for providing the services and satisfy itself that the same are as per requirement and in proper working condition and will be adequate to provide the services as per requirement.

CREW:

LDW Engineer:

Contractor shall provide well experienced, competent and qualified 1 no. LWD Engineer-cum-Operator on Rig at all times. The LWD Engineer-cum-Operator should be an Engineering Diploma holder as minimum educational qualification. Additional LWD Engineers as per operational needs are to be provided at no additional cost to OIL. The LWD Engineer(s)-cum-Operator(s) shall be a qualified engineer with at least 3 years standing in the industry and relevant experience of work in Deepwater & deep-well LWD operations. LWD Engineer-cum-Operator should have a minimum experience of 5 wells in more than 500 m water depth & well depth of 3000m (from Sea-bed), out of which at least two wells should be in more than 800m water depth. The deployed engineer(s) shall be able to handle independent assignments and shall be adequately trained in Directional drilling and well versed in English (speaking, reading, and writing).

Directional Engineer/ Driller:

One qualified, experienced and competent Directional Engineer/ Driller shall also be provided on rig at all times. Additional Directional Driller as per operational needs are to be provided at no additional cost to OIL. Directional Engineer/ Driller should have 3 years relevant experience of working in Deepwater as Directional Engineer/ Driller and should have a minimum experience of drilling 5 wells in more than 500 m water depth & well depth of 3000m (from Sea-bed), out of which at least two wells should be in more than 800m water depth. The deployed engineer(s)/ drillers shall

be able to handle independent assignments and shall be adequately trained in Directional drilling with MWD& LWD and well versed in English (speaking, reading, and writing).

NOTE: The crew shall be competent and responsible for designing of BHA with MWD-LWD & SDMM for drilling including effective placement of Jar & Jar Intensifiers and also for uninterrupted services of the entire suite of tools & equipment. For such services if additional competent person is required in addition to LWD Engineer & Directional Engineer, contractor shall deploy one additional competent person on rig at no extra cost to OIL (operator) with consent/approval from operator.

RESPONSIBILITY FOR COMPLIANCE WITH AERB REGULATIONS:

Contractor will obtain necessary licenses for storage of radioactive sources/materials for providing the services. However, Operator shall provide necessary assistance in the form of recommendatory letters for availing licenses /permissions. Contractor shall comply with the relevant sections of the Atomic Energy Act 1962, Radiation Protection Rules 1971, Atomic Energy Safe Disposal Rules 1987 and all such statutory regulations as may be imposed by the Atomic Energy Regulatory Board, in respect of all operations pertaining to the handling of radioactive sources and storage transportation of the same

STATUS REPORTS:

Contractor shall submit to the Operator quarterly status report in respect of all the radioactive sources imported and utilized by them during that quarter. The statement will be verified and retained by the Operator. The Contractor shall provide to the Operator all facilities for verification and inspection of stocks as and when required.

EQUIPMENT FOR DEEP-WATER RIGS:

LWD Surface Units deployed for Deep-water must be equipped for the conduct of logging operations with wave motion compensator for dynamic position Deep-water Rigs. The Unit should have Direct Data Transmission Equipment and facility in real time from Rig to Operator base / Contractor's base.

ENVIRONMENT CORRECTION CHARTS:

Latest Environment Correction Charts for the different types of logs used in log analysis must be provided by Contractor. Also the Contractor will make available the Environmental Correction Charts in Hard-copy format and as Software installable on different systems if requested. The Environmental Correction Software is also to be available in Contractor's Data Services Centres.

LWD Unit must have the capability to transmit data from the Rigs over satellite/telephone lines to the Operator's base. LWD Unit must have capabilities of processing log data at site for quick look analysis. Two copies of Log data must be provided on DVD, in LIS or DLIS format for each operation.

Number of hard copies/films to be provided after each operation: 6 Prints in 1:500 & 1:200 scale. For image logs processed data will be provided in 1:20 scale.

REPORTING OF HAZARDS:
While carrying out operations at the Operator's well, the Contractor shall report as soon as possible any evidence, such as, mud loss, over-flow, gasification, caving, heaving shale, and or any other complication in the well which may indicate or is likely to an abnormal or dangerous situations and to immediately take first emergency control steps conforming to good industry practice and safety regulations.

DATA PROCESSING:

The Contractor will maintain a centre for Data Processing and Interpretation in India or have the basic support of a Data Processing and Interpretation centre at no cost to the Operator during the contract period. These centres must have facilities / capabilities of log data processing for tools under this contract. Such data processing facilities shall be available to the Operator to process well logging data acquired as per requirement. DP&I centre should be located in India. The turnaround time shall be three working days from the time of arrival of data in base.

DATA PROCESSING SUPPORT:

At any time when the Operator and the Contractor consider it necessary or beneficial, then the Contractor shall receive at its data processing centre(s), owned or controlled by it, the Operator's specialists, to supervise and approve parameters adopted for processing of data recorded by the Contractor. For this purpose the Contractor shall provide facilities, such as adequate workspace, secretarial assistance, telex, telephone, to such specialists during the course of their work at such processing centre(s).

REALTIME DATA:

Contractor should be capable of integrating with Rig Contractor's VSAT for transmitting data real-time using Rig Contractor's VSAT to OIL offices at "Sector-16A, Noida in NCR.

SPECIFICATION OF 4¾" STEERABLE DOWNHOLE MUD MOTOR (Callout)

MOTOR FEATURES	**OIL'S** REQUIREMENT	**BIDDER'S** OFFER	REF: PAGE NO. BY BIDDER
Flow Range in GPM	Minimum Flow rate: 100 GPM or less Maximum Flow rate: 250 GPM or more		
AKO/ABH Range	0° - 3°		
Bit speed	Not less than 60 RPM to 400 RPM approx or more.		
Type	Steerable with Adjustable Kick off /Adjustable Bend		
Bearing type	Mud Lube or Oil sealed		
Length (Maximum)	35 feet		
Type of Connection	3½" API IF Box down and 3½" API IF Box up		
Lifting Sub	3½" API IF		
Operating Differential	700 psi (max) or more		
Power Output	100 HP minimum		
Torque Operating	3000 NM minimum		
DLS Maximum Achievable	7° / 30m or more		
Pass Through DLS:			
Rotary	7° / 30m or more		
Sliding	10° / 30m or more		
Stabilization	5⅞" screwed-on/built-in		
Manufacturer / Model	From the manufacturers		

Additional features/information (if any) are to be provided by the bidder.

ANNEXURE – M2

SPECIFICATION OF 6½" / 6¾" STEERABLE DOWNHOLE MUD MOTOR

MOTOR FEATURES	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: PAGE NO. BY BIDDER
Flow Range in GPM	Min. Flow Rate: 250 GPM or less Max. Flow Rate: 500 GPM or more		
AKO/ABH Range	0° - 2.5° or more		
Bit speed	Not less than 60 RPM to 200 RPM		
Type	Steerable with Adjustable Kick off /Adjustable		
Bearing type	Mud Lube or Oil sealed		
Length (Maximum)	35		
Type of Connection	4½" API regular Box down and 4½"/4" API IF		
Lifting Sub	4½"/4" API IF		
Operating Differential Pressure (Psi)	900 psi (max) or more		
Power Output	173 HP minimum		
Torque Operating	6500 NM minimum		
DLS Maximum Achievable	6° / 100′ or more		
Pass Through DLS:			
Slidin	10° / 100′ or more		
Rotar	6° / 100′ or more		
Stabilization	8⅜" screwed-		
Manufacturer / Model	From the manufacturers specified in NIT.		

Additional features/information (if any) are to be provided by the bidder.

SPECIFICATION OF 7¾" / 8" STEERABLE DOWNHOLE MUD MOTOR

MOTOR FEATURES	**OIL'S** REQUIREMENT	**BIDDER'S** OFFER	REF: PAGE NO. BY BIDDER
Flow Range in GPM	Min. Flow Rate: 300 GPM or less Max. Flow Rate: 900 GPM or more		
AKO/ABH Range	0° - 2.5° or more		
Bit speed	Not less than 50 to 140		
Type	Steerable with Adjustable Kick off /Adjustable		
Bearing type	Mud Lube or Oil sealed		
Length (Maximum)	37 feet		
Type of Connection	6⅝" API Regular Box down and 6⅝" API Reg.		
Lifting Sub	6⅝" API Reg.		
Operating Differential Pressure (Psi)	600 psi (max) or more		
Power Output	212 HP minimum		
Torque Operating	10000 NM minimum		
DLS Maximum Achievable	5.5° / 100′ or more		
Pass Through DLS:			
Slidin	10° / 100′ or more		
Rotar	5.5° / 100′ or		
Stabilization	12⅛" screwed-on/built-in		
Manufacturer / Model	From the manufacturers specified in NIT.		

Additional features/information (if any) are to be provided by the bidder.

ANNEXURE – M4

SPECIFICATION OF 9½" / 9⅝" STEERABLE DOWNHOLE MUD MOTOR

MOTOR FEATURES	**OIL'S** REQUIREMENT	**BIDDER'S** OFFER	REF: PAGE NO. BY BIDDER
Flow Range in GPM	Min. Flow Rate: 300 GPM or less Max. Flow Rate: 1150 GPM or more		
AKO/ABH Range	0° - 2° or more		
Bit speed	Not less than 50 RPM to 140 RPM approx or more.		
Type	Steerable with Adjustable Kick off /Adjustable Bend Housing		
Bearing type	Mud Lube or Oil sealed		
Length (Maximum)	37 feet		
Type of Connection	7⅝" API Regular Box down and 6⅝" API Reg. Box up.		
Lifting Sub	6⅝" API Reg.		
Operating Differential	600 psi (max) or more		
Power Output	400 HP minimum		
Torque Operating	14000 NM minimum		
DLS Maximum	4° / 100′ or more		
Pass Through DLS:			
Sliding	8° / 100′ or more		
Rotary	4° / 100′ or more		
Stabilization	17⅜" screwed-on/built-		
Manufacturer / Model	From the manufacturers specified in NIT.		

Additional features/information (if any) are to be provided by the bidder.

ANNEXURE – J1

SPECIFICATION OF DRILLING JARS

	JAR FEATURES	**OIL'S** REQUIREMENT	**BIDDER'S** OFFER	REF: PAGE NO. BY BIDDER
7.3/4" / 8.0" OD Drilling Jar	Length (Maximum)	About 30 feet		
	ID (Minimum)	2.13/16"		
	Tool Joint	6⅝" API Reg. Box x		
	Torsional Yield	100,000 ft- lbs (approx.)		
	Jar Up-stroke minimum	260,000 pounds		
	Jar Down-stroke minimum	42,000 pounds		
	Stroke Length (Up/Down)	12" (approx.)		
	Tensile Yield (minimum)	1,000,000 lbs		
	Manufacturer / Model	From the manufacturers		

	JAR FEATURES	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: PAGE NO BY BIDDE
6½"/6¾" OD Drilling Jar	Length (Maximum)	30 feet (about)		
	ID (Minimum)	2.3/		
	Tool Joint	4½" API IF Box x Pin		
	Torsional Yield	50,000 ft- lbs (approx.)		
	Jar Up-stroke minimum	160,000 pounds		
	Jar Down-stroke minimum	35000 pounds		
	Stroke Length (Up/Down)	12" (approx.)		
	Tensile Yield (minimum)	700,000 Lbs		
	Manufacturer / Model	From the manufacturers specified in NIT.		

	JAR FEATURES	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: PAGE NO BY BIDDER
4¾" OD Drilling Jar (on call out)	Length	About 12-18 feet		
	ID (Minimum)	2¼"		
	Tool Joint	3½" API IF Box x Pin		
	Torsional Yield	18,000 ft-lbs (approx)		
	Jar Up-stroke minimum	80,000 pounds		
	Jar Down-stroke	22,000 pounds		
	Stroke Length (Up/Down)	10" (approx.)		
	Tensile Yield	360,000 Lbs		

	Manufacturer / Model	From the manufacturers specified in NIT.		

Additional features/information (if any) are to be provided by the bidder.

ANNEXURE – J2

SPECIFICATION OF DRILLING JAR INTENSIFIERS

	JAR INTENSIFIER FEATURES	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: PAGE NO BY BIDDER
7.3/4"/ 8.0" OD Drlg. Jar Intensifier	Length (Maximum)	30 feet (about)		
	ID (Minimum)	2¾"		
	Tool Joint	6⅝" API Reg. Box x Pin		
	Torsional Yield (approx)	60,000 ft-lbs		
	Jar Up-stroke minimum	As per OEM		
	Jar Down-stroke minimum	As per OEM		
	Stroke Length (Up/Down)	12" (approx)		
	Tensile Yield (Minimum)	1,000,000 lbs		
	Manufacturer / Model	Same make as that of the JARS and 100% compatible with JAR		

	JAR INTENSIFIER FEATURES	OIL'S REQUIREMENT	BIDDER'S OFFER	REF: PAGE NO BY BIDDE
6½"/6¾" OD Drlg Jar Intensifier	Length (Maximum)	30 feet (about)		
	ID (Minimum)	2.3/8"		
	Tool Joint	4½" API IF Box x Pin		
	Torsional Yield (approx)	41,000 ft-lbs		
	Jar Up-stroke minimum	As per OEM		
	Jar Down-stroke minimum	As per OEM		
	Stroke Length (Up/ Down)	12" (approx.)		
	Tensile Yield (Minimum)	700,000 Lbs		
	Manufacturer / Model	Same make as that of the JARS and 100% compatible with		

	JAR INTENSIFIER	OIL'S	BIDDER'S OFFER	REF: PAGE NO BY
4¾" OD Drilling Jar Intensifier	Length	About 12-18 feet		
	ID (Minimum)	2¼"		
	Tool Joint	3½" API IF Box x Pin		
	Torsional Yield (approx)	16,000 ft-lbs		
	Jar Up-stroke minimum	As per OEM		
	Jar Down-stroke minimum	As per OEM		
	Stroke Length (Up/ Down)	10" (approx.)		
	Tensile Yield (Minimum)	360,000 Lbs		

	Manufacturer / Model	Same make as that of the JARS and 100% compatible with JARS		

Additional features/information (if any) are to be provided by the bidder

End of Exhibit-3

Exhibit-4

Wire Line Logging Services

Scope of Work

1.0 WIRELINE SERVICES: Bidder to provide1 (one) skid mounted offshore wireline logging unit with hi-tech tools along with crew for carrying out both open hole & cased hole logging, perforation and data processing services for deep water wells compatible in Semisubmersible Drilling Rig.

1.1 Three categories of services, viz., **Essential**, **Call-Out and Optional** are required for logging service under this tender. Tools, equipment, etc. under Essential Services category will have to be mobilized by the successful bidder during initial mobilization. Tools, equipment, etc. under Call-Out Services category will be mobilized by the successful bidder at a later date as per written advice issued by the Company. The bidder has to quote for all Call-out tools listed in Table-2. List of services, tools, equipment, etc. required with corresponding OIL's code (a reference code defined for each service, tool, equipment, total quantity of each service/ tool required) is given in Table-1 (a & b) & Table-2 below:

TABLE-1(a & b) List of Service Required

Sl No.	SERVICE CODE	List of Service Required	No of tools / service required
a) Standard Equipment Table 1(a)			
1	SLU	Skid Mounted Logging Unit fitted with dual/split drum with logging cables and other accessories	1
2	WCE-BOP	Wellhead Control Equipment (BOP)	1
3	PCE	Pressure Control Equipment	1
4	FISH-EQUIP	Fishing Equipment	1
5	DATA-TX	Data Transmission	1
b) Essential Services Table 1(b)			
6	AIS	Array Induction services (minimum shallow , Medium and deep) for resistivity services with spontaneous potential	1
7	DSN	Dual spaced compensated neutron services	1
8	FDS	Formation density and photo-electric absorption cross-section services	1

Sl No.	SERVICE CODE	List of Service Required	No of tools / service required
9	NGR	Natural Gamma ray services	1
10	SWCS	Percussion type side wall core sampling services with GR Positioning	1
11	FPD-BO	Free Point Detection and Back-off Services	1
12	DTD	Down-hole Tension Services	1
13	CDL-BCS	i) Cement Bond evaluation and variable density type services ii) Borehole compensated sonic service	1
14	BST-JB-CDBS	a) Bridge plug Setting	1
		b) Retainer Packer Setting	1
		c) Junk Basket	1
		d) Cement Dump Bailer	
15	CCL	Casing Collar Locator(CCL) Services	1
16	SH-GR	Shooting Gamma Ray Services for:	1
		i) Through Tubing Logging	1
		ii) Casing survey	1
17	CUT-COLLIDING	Tubing, Drill Pipe, Casing cutting & Drill collar severing services using	1
		i) Explosive jet cutter	1
		ii) Severing/colliding tool	1
18	TUB-PUN	Tubing Puncture Services for 2.7/8" tubing to 5" OD D/pipe	1
19	FORM-TESTER	Dynamic Formation Testing Services (MDT/RDT or equivalent) with Pump-out Module AND (either of) Optical/Fluid Density/ Magnetic Resonance based Fluid analyzer , Resistivity Based Probe for contamination monitoring, Quartz Pressure Gauge and Fluid samplers(PVT)	1
20	PCL	Pipe Conveyed Wire line Logging Services (TLC/TPL or equivalent)	1
21	RWCH-E	Releasable Wireline Cable Head	1
22	DSSI	Dipole Shear Sonic Imager Services	1
23	VSP	Triaxial Borehole Seismic Services for vertical seismic profiling (VSP) with energy source, surface equipments and accessories.	1
24	CG-BH	Casing gun perforation tool for **big hole**	1
25	GR-SS	Gamma Ray Spectroscopy Services	1
26	TEMP	Cased hole Tempurature Logging services	1

Table 2: Call-out tool/Services

Sl No.	Service Code	CALL-OUT Equipment/Services	No of tools / service required
1	ACT	Acoustic scanning tool for cement evaluation and pipe inspection	1
2	CAP-HT	High Tension Wireline Logging using capstan and related equipment	1
3	DLLS-IZRS	Dual Laterolog logging services+ Invaded zone resistivity service	1
4	PVT-SB	PVT sample transfer bottles (3 nos.)	1
5	PVT-ANLY	PVT and sample analysis at lab	1

Note 1: Details of the required tool specifications are given in Annexure –A

Note 2: Callout/ Optional items are to be mobilized on board (rig) within 10 days from the date of intimation or by the date required by OIL, whichever is later. Applicable respective charges will be effective only upon completion of mobilization on the Rig and tool/ equipment is ready in all respect to render the service. OIL reserves the right to opt for any one or more of the Callout/ Optional items/ tools/ equipment/ services which bidder shall be liable to provide.

Note 3: Bidder must quote price for all the tools/services. All the Call out tools (listed in table-2 above) shall be considered for evaluation of bid. Tools/services offered under call out services will be utilized only if Company require. Bidder has to supply those tools to be utilized using already mobilized Logging Unit of successful bidder.

Note 4: Standard Equipment and all tools under Essential Services under table 1(a) & Table 1(b) will be mobilized onboard along with initial mobilization with other services.

Note 5: Service Day Rates (SDR) and/ or Operating Cost Day Rate (OCDR) as applicable will be effective/ chargeable only on completion of mobilization and tool/ equipment is ready in all respect to render the service. No SDR and / or OCDR is payable against demobilized tools/ equipment.

Note 6: OIL at its discretion will have option to demobilize any individual tool/ equipment or set/ package of tools, equipment & accessories when felt such tools/ equipment/ accessories are no more required. No charge shall be payable for any demobilized tools/ equipment/ accessories.

Note 7: Mobilization and Demobilization shall be treated as complete when items are mobilized on to the rig and out of rig respectively.

Note 8: The Bidder shall provide sufficient back up tools, equipment & accessories to meet the workload and for situations such as tool failure/lost in hole etc and ensure uninterrupted operations. At least one backup is to be kept always on rig for immediate replacement against failure/ loss/ non-performance/ mal-functioning etc at no extra cost to OIL. The same methodology is also applicable in case of Call out items.

Note 9: Bidder shall ensure that the equipment is delivered and maintained in a fit condition for the intended work and shall, at its cost and expense, man, operate, replace, supply, repair and maintain the equipment as per the contract.

Note 10: For Analysis of PVT sample bidder has to provide the results of analysis within 60 days from the day the PVT sample has been handed over for analysis. Bidder has to arrange transportation of the samples to the PVT lab on its own.

1.2 <u>OPTIONAL Tools on Call-Out (OPTIONAL Tools NOT UNDER EVALUATION):</u> Successful bidder may mobilize the tools indicated in Table-3 below on Call-Out basis as Optional Tools as and when required by OIL. Bidder may quote for any or all the tools mentioned in Table-3 as per availability of these tools with them. A separate notice for such mobilization shall be provided to mobilize these tools. For below tool category company shall give 20 days mobilization period for bidder to provide such service.

Table-3(Optional Tools on Call-Out)

Sl No.	Service Code	CALL-OUT Equipment/Services	No of tools / service required
1	OBM-HRMI	Oil Base Mud high resolution bore hole imager	1
2	SCBL	Slim holeCement Bond evaluation and variable density type services.	1
3	RSWC	Rotary Side wall core services	1
4	ECSS	Elemental Capture Spectroscopy logging	1
5	NMRL	Nuclear Magnetic Resonance Logging Services	1

Note-1: Bidder should quote price for all of the tools/services, as per price proforma. These tools (listed in Table-3 above) shall not be considered for evaluation of bid. However, those tools/services offered by successful bidder in their bid shall be kept as OPTIONAL Tools/services required on Call-Out basis and if company require, bidder has to supply those tools to

be utilized using already mobilized Logging Unit of successful bidder.

Note2: Bidder has to give rate reasonability of the prices quoted for OPTIONAL Tools /services, which will be compared with those of existing/ running contracts with other E&P companies in India at which the bidder has supplied the same items / services prior to the date of tender opening. For this purpose the bidder will be asked to provide the copy (ies) of orders executed / currently in hand.OIL reserves the right to take only those Optional tools/services for which rate reasonability is established as per the above methodology.

2.0 VINTAGE OF THE TOOLS EQUIPMENTS:

2.1 All Tools, Equipment and Unit required for the services should be of latest generation and should not be more than 7 (seven) years old as on the techno-commercial bid closing date.

2.2 Units/tools/equipment deployed /to be deployed can be replaced by their latest upgrade /new version at the same rates, terms and conditions of the Contract after approval of OIL to that effect subject to the condition that they meet or exceed the mentioned technical specification and performance.

3.0 TOOL SPECIFICATION:

3.1 The Bidder must provide detailed specification of equipment and sensors along with catalogues and also all the features available in their system. The Bidder shall indicate limitations of their tools and sensors such as temperature, pressure and measurements limitations in abnormal hole conditions etc.

3.2 Units/tools/equipment deployed/ to be deployed can be replaced by their latest upgrade / new version at the same rates, terms and conditions of the Contract after approval of OIL to that effect subject to the condition that they meet or exceed the Contract specifications and performances.

4.0 OTHER REQUIREMENTS FOR LOGGING UNIT, TOOLS & SERVICES:

The logging unit must have the following general facilities/capabilities:

i. The Bidder shall be required to install software for real time data transmission for the well Site to the Company office as well as their interpretation base.

ii. Logging speed, tension and tool current curves must be recorded on all logs. Bidder need to provide logging speed of the all their tools with best combination for logging.

iii. 100% redundancy (Dual logging system) on recording to avoid loss of Rig time.

iv. Tools and equipment must have minimum temperature rating as given in the specifications.

v. Down-hole device with pipe conveyed and wire-line assemblies for measuring tension & compression.

vi. Required bridle/ stringers with weak point breaking system as per Bidder system.

vii. Facilities for logging of deviated wells with deviation upto 40 degrees. Therefore, the logging unit must have all required accessories like flexi/ knuckle joints and hole finders etc.

viii. Online digital image recording and digital data processing capability.

ix. Environmental correction charts for different tools should be provided.

x. The required calibration equipment and verifiers for calibrating all the tools/ equipment mobilized against the Contract must be made available at Bidder's base where unit is asked to mobilize throughout the Contract period.

xi. All radioactive sources, storage and handling tools/equipment in accordance with International safety standards and also the AERB's guidelines on safety and security of the radioactive sources.

xii. Perforation charges, power charges, detonators, detonating cords and explosive materials to be available in the form of sizes and packing in accordance with IATA rules and standard for air freighting.

xiii. Bidder must keep the necessary fishing tools/kits for carrying out fishing operations of their all down hole tools.

xiv. Bidder must keep the necessary cable splicing kit to repair the cable as and when required.

xv. Tools and equipment must have minimum temperature rating of 175°C (350°F) and minimum pressure rating of 15,000 psi

xvi. Unit, Tools and equipment provided must be capable carrying out open hole, cased hole and pipe conveyed loggingand perforation services underWB/SOBM mud system up to a depth of 5600m.

5.0 <u>LOG DATA SUBMISSION REQUIREMENTS</u>: Log data recorded have to be submitted as follows:

i. **<u>Well site data submission</u>:** Immediately after recording:

a) Digital data have to be submitted in CD/DVD/USB in LIS/DLIS and LAS format.

b) Paper prints of each log suite to be submitted in 1:500 & 1:200 scale, two sets in each scale.

c) All shop calibrations, before survey and after survey checks have to be provided on the log prints. Shop calibrations of Tool and down hole equipment should be up to date.

NOTE:

The logs produced at the well site needs to be certified by company representatives after due quality checks and operating cost day

rate (OCDR) shall be applicable only after the job is completed successfully and company representatives has certified the logs. In case of unsuccessful jobs no OCDR shall be payable.

ii. **Final data submission**: Final data to be submitted within 7(days) days of recording as follows:

a) Two sets of digital data in CD/DVD in LIS/DLIS and LAS format with proper label showing well name, service run etc.

b) Paper prints of each log suite in 1:500 & 1:200 scale, three sets in each scale showing acquisition/calibration information & header information.

c) Three print of each log suite on film, both in 1:500 & 1:200 scale.

d) All shop calibrations, before survey and after survey checks have to be provided on the log prints. Shop calibrations of Tool and down hole equipment should be up to date.

e) PVT sample analysis report needs to be submitted within 60 days from day the sample handed over for analysis.

6.0 Other Essential Equipment & Conditions to be fulfilled:

CUSTOMER INSTRUMENT SERVICE (CIS) : Customer Instrument Service (CIS) charges are payable for running tools and/or services of OIL and/or other bidders utilizing Bidder's unit and/or cable or vice versa, under mutual agreement between Bidder and other bidder/OIL duly endorsed by the Company. CIS shall be availed under operational exigency, subject to technical suitability. For each CIS run 25% OCDR rate will be applicable.

7.0 PERSONNEL AND THEIR ROLES:

7.1 The Bidder shall specify a logging service coordinator to liaise with the Geo-science group, the Company drilling team and operations team members at the wellsite. Such an engineer has to be made available at any operational location to provide support on logging and related issues and updates on their tool status.

7.2 The Bidder shall provide at all the time one qualified and skilled logging engineer and 2 operators with experience as specified under BEC/BRC of tender document. The logging engineer needs to be assisted by other specialist(s) in operations and maintenance for specific operations. The logging engineer shall be the team leader of the crew shall be responsible including but not limited to the following:

- Prepare logging plan and discuss the program with geo-science team
- Run, maintain and manage the logging tools and unit;
- Co-ordinate with drilling supervisor and other drilling services personnel at site.
- Maintain adequate stock and inventory of tools and spares of the logging Unit

- Prepare and plan for jobs well in advance to avoid down time.
- Ensure that logs are transmitted to respective base at the earliest

7.3 Bio-data of proposed field engineers and crew personnel showing required experience and expertise **must be submitted with bid document as well as before mobilization.**

8.0 DATA PROCESSING REQUIREMENT:

8.1 The list of data processing services with interpretation reports required is given in **Table-4(a,b)** below:

Table-4(a): Date Processing Required for Essential Services

Sl. No.	Service Code	Service	Post Processed data requirements
2	P-ES1	Basic Log interpretation	Basic log Interpretation (probabilistic method viz. ULTRA or ELAN Plus or equivalent) for lithology/ mineralogy, effective & total porosity, permeability, fluid saturation & fluid type from log data acquired by the bidder or by a third party including OIL's in-house logging services for OIL's wells originating from any part of the world.
2	P-ES2	Dipole Shear sonic imager	i) Compresional, Shear (both X & y direction) and stonely slowness with integrated travel time, Vp/Vs & gas zone detection ii) Evaluation of formation anisotropy around borehole, anisotropy map iii) Borehole stability analysis and prediction of safe mud weight window. iv) Permeability from Stoneley, Stoneley fracture identification
3	P-ES3	Dynamic Formation Testing Services	Processing of Pretest data for a) Identification of fluid pressure gradient, fluid contacts, permeability/mobility, Viscosity, GOR, bubble point and any other answer product relevant to acquisition mode.
4	P-ES4	Tri-axial Borehole Seismic Services for vertical seismic profiling (VSP) with energy	Processing of Borehole Seismic Services (VSP) data in open hole& cased hole i) Composite Display of Down-going waves, corridor stack (repeating 6-7 times) with check-shot corrected Sonic, Density, Gamma and Formation Tops. This display is to be with respect to SRD (seismic reference

Sl. No.	Service Code	Service	Post Processed data requirements
		source, surface equipments and accessories	datum). ii) Display of original Down-going (i.e. after separation) waves and display of Down-going waves after Deconvolution. iii) Details of velocity filter and Deconvolution parameters as part of processing note. iv) VSP Velocity Listing Table: The primary use of VSP is for accurate well – to- seismic ties. Seismic sections are always based on the SRD (seismic reference Datum). Therefore, velocity listing table should have a column mentioning SRD so that the average velocity and interval velocity can be seen w.r.t. SRD. v) Time-Depth Curve: The Depth axis should start from SRD level. At right hand side, there should be a color bar indicating the Formation Tops and Thickness. vi) Time-Depth Table: Interval velocity and Average velocity should be mentioned along with TWT. vii) Checkshot data viii) Report on acquisition and processing

Table 4(b): Data Processing Required for Call-Out and Optional Services

Sl. No.	Service Code	Service	Post Processed data requirements
1	P-ACT	Acoustic scanning tool for i. Cement Evaluation and ii. Pipe Inspection	Processing of data of Tool for Cement Evaluation & Pipe Inspection. a) Azimuthal mapping of Casing to cement bond, Micro Annulus b) Casing ID/OD for pipe corrosion
2	P-NMRL **(Optional)**	Nuclear Magnetic Resonance	i) Determination of total and effective porosity, capillary and clay-bound water & free fluid volume, pore size distribution, permeability

Sl. No.	Service Code	Service	Post Processed data requirements
			ii) Hydrocarbon typing and quantification.
3	P-OBM-HRMI **(Optional)**	Oil Base Mud high resolution bore hole imaging services using microelectric arrays	i) Processing of data for Static and dynamic image, image enhancement for structural, sedimentological study ii) Structural analysis from dip and image data (Using Interactive Dip Picking) for presence of fault fracture and other structural features and their nature, borehole breakout pattern and indicated pattern etc. iii) Sedimentological analysis from dip and image data (Using Interactive Dip Picking) for identification of beds, bedding internal structure like cross laminations, broad depositional environment indicated integrating other basic log data. iv) Automatic dip picking.
4	P-ECSS **(Optional)**	Elemental Capture Spectroscopy logging	Lithology from Elemental Capture Spectroscopy from corrected clay model and dry weights. Determination of Silicon, calcium, Iron, Gadolinium, Titanium, mica feldspar composite and other minerals for accurate clay volume estimation and clay typing. Output should be in PDS/Tiff/PDF & LAS file.

Note 1: Bidder has to process/interpret standard log data (Gamma ray - Resistivity - porosity - density - DTC suite) or other special logs acquired in OIL's Wells at their own processing center.

Note 2: SDR/OCDR will be inclusive of Data processing charges for Essential and Call out tools and no extra processing charges will be applicable the processing of the same. However bidders are required to quote for processing charges of Optional tools under Proforma 8C Answer product.

8.2 Other Requirements for Data Processing: Bidder should have a data processing centre with experienced processing and interpretation geoscientists / engineers for carrying out detailed processing of the data. Details of data processing services required are given in Table- 4a & 4b above.

i. The data processing and interpretation Geoscientists / Engineers will have to carry out detailed processing of the data and submit the preliminary result within 48 hours for which crucial decision on well logged has to be taken by OIL from the time the survey is completed. Other products can be completed and submitted within 7 (seven) days after handing over the recorded data to Co. at Noida.

ii. Transfer of raw and processed data between wellsite and processing/ interpretation centre is bidder's responsibility and Company will not pay any additional charge for it.

iii. Details of the data processing facilities at the processing centre and its location must be submitted along with the bid.

iv. OIL's Geoscientist may time to time visit bidder data processing centre for input during data processing and knowledge exchange/work association. Company shall bear the cost of travel and accommodation for its Geoscientist to bidders processing center. Bidder has to provide working space and facility to company's Geoscientist at their data processing centre free of cost during the period of visit.

v. Bio-data of the processing personnel showing required experience and expertise **must be submitted with bid document.**

vi. The requirement of detailed processing of the services is given in Table-3. The processed data should be submitted both in hard copies (three sets) and soft copies (two set). The scale of the hard copies should be as per industry standard**.** Processed output (digital data) should be of LAS and LIS/DLIS to be submitted in DVD. Soft copy of the reports, figures, processed log etc. should be presented in PDF/Tiff or similar format and should be submitted in DVD.

vii. In case of processing where second opinion is required for interpretation, the same must be made available by the bidder from their other bases in India/abroad. Company will not provide equipment (viz. licensed satellite/Electronic media/Landlines etc.) necessary to transmit data to and from its Computer Center. Data transmission will be the responsibility of the Bidder.

8.0 END OF JOB REPORTING:

The Bidder is to provide a complete and detailed report to the Company's representative on completion of each logging operation, including, but not limited to:

- Equipment damage report
- Operation reports
- All acquired electric logging data
- End of job report.

9.0 COMMUNICATIONS AND DATA TRANSFER: The Bidder should be capable of integrating the wireline data for real time data transmission to the Company's base office / RTOC Centre at NOIDA using the Rig Bidder's VSAT as well as to the bidder's interpretation center in India

10.0 **PENALTY:** In the event, the unit/tools/equipment malfunctions and fail to provide the desired satisfactory service as required under the terms of the Contract, no SDR and OCDR shall be paid to the Bidder till the unit/tools/equipment are rectified and the unit/tools/ equipment give satisfactory performance. If the unit /tools / equipment becomes operational (certified by company representative) within 3 hour duration no penalty will be imposed however on the event of more than 3 hour duration no charges will be paid till the time the unit/ tools/ equipment becomes fully operational or evidenced by demonstration of operation in actual tests or use to the satisfaction of Company.

11.0 **FISHING:** In case it is necessary for Company to "fish" for any of Bidder's instruments or equipment, Company assumes the entire responsibility for such operations. However, Bidder will, if so desired by Company and without any responsibility or liability on Bidder's part render assistance, if required, for the recovery of such equipment and/or instruments. None of Bidder's employees are authorized to do anything other than assist/ advise and consult with Company in connection with such "fishing" operations, and any fishing equipment furnished by Bidder is solely as an accommodation to Company and Bidder shall not be liable or responsible for a damage that Company may incur or sustain through its use or by reason of any advice or assistance rendered to Company by Bidder's agents or employees irrespective of cause.

12.0 **Tentative Logging Plan**: Tentative logging plan for open hole and cased hole wire line logging operation is given in table 5below. The well will be drilled vertically to a depth of 5600m. Water depth measured is around 400m. SOBM will be used for drilling from 17.1/2" section till TD.

Sl. No	**Section**	**Casing size**	**Depth Range (RKB m)**	**MWD+LWD**	**Wireline Logging**	**Remarks**
1	Pilot Hole (12 ¼" / 8 ½")	--	0-1200	Gamma Ray +Resistivity	Gamma Ray+ Resistivity(optional)+ Density+ Neutron+ Sonic	Pilot Hole for shallow gas
2	36"	36"	0-500	---	---	Covered in Pilot hole
3	26"	20"	500-1200	---	---	Covered in Pilot hole
4	17 ½"	16" Liner	1200-2000	Gamma Ray +Resistivity	Gamma Ray+ Resistivity(optional)+ Density+ Neutron+ Sonic+ CBL+VDL/Temperature log(optional)	---

5	14 ¾”	13 5/8”	2000-2900	Gamma Ray+ Resistivity	Gamma Ray+ Resistivity(optional)+ Density+ Neutron+ Sonic + CBL+VDL (optional)	--
6	12 ¼”	9 5/8”	2900-4200	Gamma Ray+ Resistivity + Density+ Neutron+ Sonic	Gamma Ray+ Resistivity+ Density+ Neutron(optional) Dynamic Formation Tester + SWC+ Dipole Shear Sonic imager+ Gamma Ray spectroscopy+ NMR(optional) + CBL+VDL + Acoustic imaging(Optional)	Zone of Interest
7	8 ½”	7” Liner	4200-5600	Gamma Ray+ Resistivity + Density+ Neutron+ Sonic	Gamma Ray+ Resistivity+ Density+ Neutron(optional) Dynamic Formation Tester + Dipole Shear Sonic imager+ Gama Ray Spectroscopy +NMR(optional)+SWC + CBL+VDL + Acoustic imaging(Optional)+VSP	Zone of interest
8	6” (Contingent)	4 ½” Liner	5150-5600	Gamma Ray+ Resistivity + Density+ Neutron+ Sonic	Gamma Ray+ Resistivity+ Density+ Neutron(optional) Dynamic Formation Tester+ Dipole Shear Sonic imager+ Gamma Ray Spectroscopy + NMR(optional)+SWC+ +CBL+ VDL + VSP	**Contingent plan** Tools will be on call Optional

Table 5: Tentative Logging Plan for Cauvery offshore well.

ANNEXURE-A

1. TECHNICAL SPECIFICATIONS:

The technical specifications of the tools/services required are given below

(Annexure- 1.1 to Annexure-1.37):

NOTE :

A: All the Bidders must fill up the tables below and declare their tool specifications against OIL's required specification for each service and mention compliance/non-compliance to OIL's required specifications.

B: Technical literature / brochures must be submitted in support of the required features of tools / equipments and the same must be referred with compliance/non-compliance declaration. If any required feature is not appearing in the technical literature / brochures, the bidder need to specifically confirm availability of the same feature with suitable reference. Bidder should indicate their offered feature including additional features where ever required.

ANNEXURE -1.1

SERVICE: Skid Mounted Logging Unit fitted with logging cables, Dual/Split drum and other accessories

Service Code : SLU	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
1. The offshore logging unit must be skid mounted logging unit with state-of-the-art digital recording system, should have minimum 7000m(Seven thousand meters) of high strength cables (new & un-spliced cable at the time mobilization).		
2. The unit must be capable of carrying out all open hole, cased hole and pipe-conveyed logging and perforation services available with bidder upto a maximum depth of 5600m in deep water semisubmersible drilling rig..		
3. Unit should have latest version of surface recording system to meet operational requirement along with printer and DVD writer. The system must have 100% redundancy (dual logging system) for central processor, power supply to tools, operating system software and data acquisition software.		
4. The unit must have Double drum/ split drum fitted with multiconductor and monoconductor cables. The Unit should be capable of pulling 9500 lbs during open hole logging operation. [i] Minimum 7000 m of 7/32" mono cable (new &unspliced cables at the time of mobilization). [ii] Minimum 7000mmulticonductor cable having minimum breaking strength of 28000 lbs (new & un-spliced cables at the time of mobilization). [iii] One spare hepta cable drum with cable length of 7000m and		

ANNEXURE -1.1 SERVICE: Skid Mounted Logging Unit fitted with logging cables, Dual/Split drum and other accessories		
one mono cable drum with cable length 7000m should be available at the rig. Both the cables need to be rated for standard operations (Temp rating up to min of 350^{o}F).		
5. The unit must have quick look Processing capability		

ANNEXURE – 1.2 SERVICE: WELLHEAD CONTROL EQUIPMENT (BOP)		
Service Code: WCE-BOP	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Wellhead Control Equipment (BOP) for Standard Logging Cable coupled with grease injection for its use in CBL under pressurized condition and for casing gun perforations: Rated 5 K psi.		

ANNEXURE – 1.3 SERVICE: PRESSURE CONTROL EQUIPMENT FOR THROUGH TUBING OPERATIONS		
Service Code: PCE	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Wellhead Pressure Control Equipment coupled with Grease injection for standard mono cable operation–Rated 10K psi		

ANNEXURE – 1.4 SERVICE: FISHING EQUIPMENTS		
Service Code: FISH-EQUIP	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
i)Fishing Equipment for all tools of unit both for Open Hole and Cased Hole. ii) Fishing kit (including adaptors) for fishing of down -hole tools for cut and thread method and open ended fishing.		

ANNEXURE – 1.5

SERVICE: DATA TRANSMISSION AND COMMUNICATION

Service Code: DATA-TX	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Continued onlinereal time data transmission by bidder to OIL's office/RTOC centre at Noida through rig VSAT.		

ANNEXURE – 1.6

SERVICE:HIGH RESOLUTION ARRAY INDUCTION SERVICE

Service Code: AIS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Induction based high-resolution formation resistivity measurement tool with seven or more induction Coil arrays. All array curves should be induction-based measurements only It should provide invasion profiling reflecting radial responses independent of formation resistivity so as to model a ramp invasion profile i.e. flushed zone diameter and invaded zone diameter. Should work in non-conductive mud environment.		
Vertical Resolution: 1, 2 and 4 ft Depth of investigation (from centre of borehole) 10" to 90" (50% of Integrated Radial response) – 10", 20", 30", 60" & 90" measurements		
Measurement Range: 1 to 1000 ohm-m Resistivity		
Tool diameter: Suitable for well 6 inches to 17 $^{1}/_{2}$ inch diameter or more.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: Resistivity profiles at 10, 20, 30, 60 & 90 inch for 1, 2, 4 ft vertical		

resolution Combinable with nuclear porosity and spectral gamma ray tools.		

ANNEXURE -1.7

SERVICE: DUAL SPACED COMPENSATED NEUTRON SERVICES

Service Code: DSN	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Formation porosity measurement using Dual Spaced Compensated Neutron Services		
Investigation Depth: 1.0-5.5 inches minimum		
Range: 0 to 60 PU (Limestone) with a linear response in 0-40 PU range.		
Accuracy: +/- 1 PU for 0-14 PU +/- 2 PU for 20-45 PU +/- 6 PU for 45 PU		
Sampling rate: 2-8 samples/ft		
Vertical resolution: Standard : 36 inch		
Tool diameter: Industry standard to log wells drilled with 6 inches to $17^{1}/_{2}$ inch bit		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: i) Provision to record high resolution data. ii) Provision to correct neutron porosity when recorded in cased hole.		

ANNEXURE -1.8

SERVICE: FORMATION DENSITY & PHOTO ELECTRIC ABSORPTION CROSS SECTION MEASUREMENT SERVICES

Service Code: FDS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Tool to measure Bulk Density, Density Correction, Photo-electric Absorption Cross-section, caliper.		
Depth of investigation: 1.5-4.0 inches minimum		
Range: RHOB: 1.3-3 gm /ccminimum or as per tool standard		
Resolution: **Density**: +/- 0.01 gm/ccor as per tool standard **PE** : +/- 6% or as per tool standard		
Accuracy: **Density**: **Density**: +/- 2% for 1.0-1.6 gm/ccor as per tool standard : +/- 1.5% for 1.6-3gm/cc		
Sampling rate: 2, 4, 8 samples/ft		
Vertical resolution: Standard : 19 inches or as per tool standard Enhanced Mode : 9.0 inches or as per tool standard		
Tool diameter: Industry standard to log wells drilled with 6 inches to $17^{1}/_{2}$ inch bit		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: i) Provision to record high sampling rate for high resolution data through software control. ii) Resolution enhancement through post processing or as per tool standard		

ANNEXURE -1.9

SERVICE: NATURAL GAMMA RAY SERVICE

Service Code: NGR	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Tool to measure total GR in API units using Scintillation counter (NaI Thallium activated)		
Range: 0 to 400 API, linear response from 0 to 200 API		
Accuracy: +/- 7% of the reading or as per tool standard		
Tool diameter: Industry standard to log wells drilled with 6 inch to 17 ½" bit in open holelogging and inside 2 7/8" tubing in cased hole.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE -1.10

SERVICE: PERCUSSION TYPE SIDE WALL CORE SAMPLING GUN SERVICES WITH GAMMA RAY POSITIONING

Service Code: SWCS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: i) Side wall core recovery in soft, medium and hard formation. ii) Depth positioning of SWC by Gamma ray.		
Range: Atleast 24 samples from single run extended upto 48 samples or more. Gamma ray positioning 0 to 200 API		
Tool diameter: Industry standard to recover side wall cores in wells drilled with 6 inch to 12 ¼ inch Bit.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: Core sample		

ANNEXURE -1.10 SERVICE: PERCUSSION TYPE SIDE WALL CORE SAMPLING GUN SERVICES WITH GAMMA RAY POSITIONING		
should be minimum 0.85 dia. with minimum 1.4 inch length.		

ANNEXURE -1.11 SERVICE: FREE POINT DETECTION AND BACK-OFF SERVICES		
Service Code: FPD-BO	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: Percentage free in stretch and in torque (including log presentation) for tubing, casing and drill pipe.		
Tool diameter: Suitable for pipe sizes 2 $^{7}/_{8}$inches to 5"/5.1/2 inches Tubulars/drill pipes.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: Should be run with CCL		

ANNEXURE-1.12 SERVICE: DOWNHOLE TENSION SERVICES		
Service Code: DTD	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: down hole tension and compression during logging		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE -1.13

SERVICE: i) CEMENT BOND EVALUATION SERVICES INCLUDING VARIABLE DENSITY TYPE OF LOGGING
ii) BOREHOLE COMPENSATED SONIC SERVICE

Service Code: CBL-BCS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: i) Cement Bond Evaluation Surveys including variable density type of logging based on sonic arrival amplitude. Recording under pressurized condition is also required. ii) Delta T compressional (formation slowness) if used in open hole.		
Range: i) Acoustic amplitude 0-100 mv ii) VDL 200-1200 micro-sec iii) GR 0-200 API, CCL. Travel time.		
Vertical resolution: 3 feet or better		
Tool diameter: Suitable for 7" $9^{5}/_{8}$" casing/liner for CBL/VDL and hole drilled with 6 inch to 17 ½" inch bit for Delta T compressional.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE -1.14

SERVICE: A) BRIDGE PLUG SETTING B) RETAINER PACKER N
C) JUNK BASKET d) Cement Dump Bailer

Service Code: BST-JB-CDBS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
a) Bridge plug setting in 4.1/2" , 7" & 9.5/8" Casing b) Retainer packer setting for 4.1/2" OD, 7" & 9.5/8" Casing c) Junk Basket for 4.1/2" OD, 7" Liner & 9.5/8" casing d) Cement Dump Bailer service for 4.1/2" , 7" liner & 9.5/8"		

ANNEXURE -1.14

SERVICE: A) BRIDGE PLUG SETTING B) RETAINER PACKER N C) JUNK BASKET d) Cement Dump Bailer

Casing		
Tool diameter: Industry standard to carry out in casing/liner sizes 4.1/2", 7" & 9.5/8" Casing		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: i) Necessary Adapter kit for the above services will be provided by the bidder. ii) Combinable with CCL		
Note: The Bidder should note that Easy Drill Cement Retainer Packer may be set in above Casing/Liner		

ANNEXURE -1.15

SERVICE: CASING COLLAR LOCATOR SERVICES (CCL)

Service Code: CCL	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Casing Collar Locator (CCL) Services (Depth determination) for : a) Through tubing operations b) Inside casing operations.		
Tool diameter: Tool must be capable of running in through, 2.7/8 inch tubing and 7" and 9.5/8" casing.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Others: Combinability to all cased hole services.		

ANNEXURE -1.16

SERVICE: SHOOTING GAMMA RAY SERVICES

Service Code: SH-GR	**Bidder's Code:**	

ANNEXURE -1.16

SERVICE: SHOOTING GAMMA RAY SERVICES

OIL's Required Specifications	Bidder's Specification	Compliance/ Non-compliance
Shooting Gamma Ray Services for : i) Through Tubing Logging ii) Casing Survey		
Tool diameter: Tool must be capable of running in through : a) $2^{7}/_{8}$inch , 3.1/2 inch OD tubing, and b) 7inch and 9 5/8" OD casing		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE – 1.17

SERVICE: TUBING, DRILL PIPE, CASING CUTTING AND DRILL COLLAR SEVERING/COLLIDING SERVICES

Service Code: CUT-COLLIDING	Bidder's Code:	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
i) Explosive Jet/Split shot Cutter/Radial Cutting Torch for $2^{7}/_{8}$ inch OD tubing 7 inch OD Liner(Jet/Split shot cutter) $9^{5}/_{8}$ inch OD casing(Jet/Split shot cutter) **ii) Severing Tool for** a) $2^{7}/_{8}$ inch SLH 90 drill pipe b) 3.1/2 inch OD Drill Pipe b) $4^{1}/_{2}$ OD drill-pipe c) 5 inch OD drill-pipe d) $6^{1}/_{2}$ inch OD drill collar e) 8 inch OD drill collar		
Tool diameter: Suitable for above service		
Temperature rating:350° F Minimum for Radial Cutting Torch and Severing Tools Minimum 330 deg F for Jet cutters and Split shot cutters.		
Pressure rating: Minimum15000 psi for Radical Cutting Torch		

ANNEXURE – 1.17

SERVICE: TUBING, DRILL PIPE, CASING CUTTING AND DRILL COLLAR SEVERING/COLLIDING SERVICES

and Severing Tools. Minimum 12000 psi Split shot cutters and for 7" and 9.5/8" Jet Cutters if 15,000 psi cutters not available.		
Radial Cutting Torch should be plasma type.		

ANNEXURE -1.18

SERVICE: PUNCTURE SERVICES FOR 2.7/8" OD TUBING TO 5" OD DRILL PIPE

Service Code: TUB-PUN	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Services to puncture $2^{7}/_{8}$ inch OD tubing to 5 inch OD drill pipe		
Tool diameter: Tool must be capable of running in through above tubulars and drill pipe.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE -1.19

SERVICE: DYNAMIC FORMATION TESTING SERVICES WITH PUMP OUT MODULE AND (EITHER) OPTICAL/FLUID DENSITY/RESISTIVITY/MAGNETIC RESONNANCEFLUID ANALYZER , RESISTIVITY BASED PROBE AND FLUID SAMPLERS(PVT)

Service Code: FORM-TESTER	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Dynamic formation testing and fluid sampling service with 1.Single probe tool sections with either of optical/magnetic resonance/fluid density modules for differentiating fluid type, GOR etc. & fitted with resistivity based fluid analyzer to differentiate between mud filtrate, water, oil & gas for contamination monitoring. 2. Any number of pressure test		

ANNEXURE -1.19

SERVICE: DYNAMIC FORMATION TESTING SERVICES WITH PUMP OUT MODULE AND (EITHER) OPTICAL/FLUID DENSITY/RESISTIVITY/MAGNETIC RESONNANCEFLUID ANALYZER , RESISTIVITY BASED PROBE AND FLUID SAMPLERS(PVT)

with single Probe. 3. Formation and mud pressure with quartz pressure gauge(QGS) pressure gradient, flow rate and mobility. 4. To collect three(3) PVT samples of minimum 450 cc each, and two or more normal sample using normal sample chambers of 1000cc(combinable) or more each 5. Pump out module with ability to control flow rate down hole while sampling.		
Resolution: Quartz Gauge:0.01 psi (0-15000 psi) SG : 0.2 psi (0–20000 psi)		
Tool diameter: Industry standard to log wells drilled by 6",$8^1/_2$ inch & 12.1/4" bit and bigger hole, Washout max size possible to log.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: Provision to provide mobility values at drill site and bring out gradient plots. Pre-test summary sheet with details of pre-test data and as per format provided by company.		

ANNEXURE -1.20

SERVICE: PIPE CONVEYED WIRE LINE LOGGING SERVICES

Service Code: PCL	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Pipe conveyed wire line logging equipment(TLC/TPL or equivalent) with following minimum features: i) Tool protection in holes with large and medium radius of curvature ii) Mud circulation through drill pipe iii) Multiple wet connections without tripping tools		
Tool diameter: Industry Standard to log wells mostly drilled with 6", 8-1/2" and 12 ¼" bit and cased with 4-1/2", 7 inch OD casing/Liner		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE -1.21

SERVICE: RELEASEABLE WIRELINE CABLE HEAD

Service Code: RWCH-E	**Bidder's Code**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/Non-Compliance**
1) The tool must use Electrically activated wireline release system mechanism controlled from the surface. 2) The tool must be compatible to run with other tools in open hole. 3) Tool should have downhole tension capability within the tool.		
Tool diameter: Tool capable of running in hole size 6" to 12 ¼ inch.		
Temperature rating:350 deg F		
Pressure rating: 15000 psi		

ANNEXURE – 1.22

SERVICE: DIPOLE SHEAR SONIC IMAGER

Service Code: DSSI	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/Non-compliance**
i)Delta T shear in cross dipole mode (fast slowness & slow slowness with direction) ii)Delta T Stoneley iii) Delta T Compressional		
Hole size limit: 6 inch to 17.5 inch dia.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: i) Minimum 2 dipole transmitter orthogonally placed ii) Two dipole measurement for redundancy. iii) Direction measurement with anisotropy measurement in single run. vi) Measurement to compute absolute value of effective permeability from Stonely. v) Measurements to compute formation anisotropy, identification of fracture orientation, geomechanical property and borehole stability		

ANNEXURE –1.23

SERVICE: TRIAXIAL BOREHOLE SEISMIC SERVICES FOR VERTICAL SEISMIC PROFILING (VSP) WITH ENERGY SOURCE, SURFACE EQUIPMENTS AND ACCESSORIES.

Service Code: VSP	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
1. Tri axial data acquisition to provide high quality VSP compressional and shear event. 2. At least five shuttle arrays to save measurement time, adjustable distance between shuttles from 10 meter to 20 metre or more 3. Energy source (air gun) 4. Surface equipment and		

ANNEXURE –1.23

SERVICE: TRIAXIAL BOREHOLE SEISMIC SERVICES FOR VERTICAL SEISMIC PROFILING (VSP) WITH ENERGY SOURCE, SURFACE EQUIPMENTS AND ACCESSORIES.

accessories as required. 5. Suitable for Data acquisition in cased hole and openhole		
Measurements: Seismic stacks travel time v/s depth plots and raw seismic traces of individual shots		
Resolution: +/- 1 m sec for shots at same level, +/- 2 m sec for shots fired in up and down passage on the same level		
Hole size limit: 6 inches to 17.5 inches diameter in openhole		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: Triaxial measurement data must be made available in SEG-Y		
Other features: Triaxial measurement data must be made available in SEG-Y		

ANNEXURE -1.24

SERVICE: CASING GUN PERFORATION USABLE WITH BIG HOLE AND DEEP PENETRATION CHARGES

Service Code: CG-BH	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Casing Guns perforations for 4 ½ inch &7" OD liner with different shot densities (4 spf/6 spf/12spf) using Deep and Bighole penetrating charges(4/6spf)		
Range: i) EHD of minimum0.85 inch and penetration of maximum in the range 5-8 inches for Big Hole charges(4/6 spf) used in 7" Liner. (Refer Note below: API 19B, compressive strength normalized to 5000 psi.) ii) 3.3/8"- 3.5" Casing Gun (6spf and Gun Phasing of 60 deg)With		

ANNEXURE -1.24 **SERVICE: CASING GUN PERFORATION USABLE WITH BIG HOLE AND DEEP PENETRATION CHARGES**		
EHD of minimum 0.30 inch and penetration of minimum 36 inches for deep penetration charges in 5.1/2" Casing. iii)4.1/2"-4.5/8" Casing Gun (5spf-6 spf/12spf and Gun Phasing of 60 deg/72 deg)With EHD of minimum 0.30 inch and penetration of minimum 45 inches for deep penetration charges in 7" Liner.		
Tool diameter: Industry standard for wells of $4^1/_2$ inch& 7" OD casing/Liner.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: i) Necessary Adapter kit for the above services will be provided by the bidder. ii) Combinable with CCL		
Note: The bidder must quote preferably for perforating charges tested as per API RP-19B standard to be used under the above service code in the bid. Charge performance certificates for the above perforating charges to be provided by the bidder.		

ANNEXURE -1.25 **SERVICE: GAMMA RAY SPECTROSCOPY SERVICES**		
Service Code: GR-SS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: i) Total GR 0-1500 API ii) U, Th, K concentration measurements separately iii) Minimum 2 sample per ft		
Tool diameter: Industry standard to log wells drilled with 6 inch to 12 ¼" bit		
Range: Minimum of : 0 to 400 API Total GR 0-40 PPM (U) 0-40 PPM (Th),		
Accuracy: +/- 5 % of measurement (GR) +/- 4 % PPM max (for U,Th and		

ANNEXURE -1.25 SERVICE: GAMMA RAY SPECTROSCOPY SERVICES		
K)		
Temp: 350 deg F minimum		
Pressure: 15000psi minimum		
Remarks: Combinable with all standard tools		

ANNEXURE -1.26 SERVICE: CASED HOLE TEMPERATURE LOGGING SERVICES		
Service Code: TEMP	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Borehole Temperature measurement. The tool should be capable of detecting top of cement in cased hole.		
Tool diameter: Industry standard to log wells with 13. 5/8" to 16" Casing & Liner.		
Range: Minimum of : 0 to 350 °F		
Accuracy: +/- 1°F		
Temp: 350 deg F minimum		
Pressure: 15000 psi minimum		
Remarks: Combinable with all cased hole standard tools		

ANNEXURE -1.27 SERVICE: ACOUSTIC TOOL FOR i)CEMENT EVALUATION & ii)PIPE INSPECTION		
Service Code: ACT	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
360° evaluation of cement bonding with casing/liner, using ultrasonic signal / pulses.		
Measurements: Cement: i) Acoustic impedance image with resolution to distinguish, liquid, cement slurry behind casing. ii) Identification of cement channels or voids of width 1.25		

ANNEXURE -1.27 **SERVICE: ACOUSTIC TOOL FOR i)CEMENT EVALUATION & ii)PIPE INSPECTION**		
inch or better. iii) Cement strength. iv) **Mud attenuation and acoustic velocity (optional; only if needed for cement map)** Pipe Inspection v) Casing corrosion evaluation		
Tool diameter: Industry standard to log wells completed with 7" & $9^5/_8$ inch casing/liner		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: Processed data is required to be provided at well site as a standard presentation along with field logs. Note: Both Cement Evaluation and Pipe Inspection services must be carried out in a single run, using single tool or combination of tools.		

Annexure1.28 **SERVICE: CAPSTAN FOR HIGH TENSION WIRELINE LOGGING WITH RELATED ACCESSORIES**		
Service Code: CAP-HT	**Bidder's Code**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/Non-Compliance**
Wireline Capstan for hi-tension wire line logging (using required equipment & ultra strength cable capable of pulling up to 14000 lbs or more safely, ***Cable BS 28,000 lbs minimum***) for logging in deeper wells(~ 5600 m measured depth) where normal wire line tension at TD will be close to or more than the safe working load of logging cable. All related accessories including **powered sheaves** with other necessary equipment.		

ANNEXURE -1.29

SERVICE: PVT SAMPLE TRANSFER BOTTLES

Service Code: PVT-SB	Bidder's Code:	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
[1]Three PVT sample transfer bottles –Sample bottles to meet DOT transportation regulations for airfreight of pressurized vessels. [2] Minimum volume 450cc each		

ANNEXURE -1.30

SERVICE: PVT SAMPLE TRANSFER BOTTLES

Service Code: PVT-ANLY	Bidder's Code:	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Complete PVT Analysis and Fluid Analysis of the formation samples recovered from sample bottles at Laboratory.		

ANNEXURE -1.31

SERVICE: DUAL LATERO LOG (DEEP AND MEDIUM FOCUSED LETEROLOG RESISTIVITY) SERVICES + INVADED ZONE RESISTIVITY SERVICE WITH SPONTANEOUS POTENTIAL

Service Code: DLLS-IZRS	Bidder's Code:	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
1. Deep and medium focused laterolog resistivity measurement of formation for simultaneous deep 2nd shallow depths of investigation. 2.Spontaneous potential measurements. 3. Invaded Zone Resistivity for Rxo measurement with borehole Calliper.		
Depth of investigation: LLD : 55-84 inches minimum LLS : 18-36 inches minimum MSFL: 0.5-1.5 inches minimum		
Range:		

ANNEXURE -1.31

SERVICE: DUAL LATERO LOG (DEEP AND MEDIUM FOCUSED LETEROLOG RESISTIVITY) SERVICES + INVADED ZONE RESISTIVITY SERVICE WITH SPONTANEOUS POTENTIAL

LLD: 0.2–40,000 ohm m LLS: 0.2-2,000 ohm m MSFL: 0.2-2000 ohm m		
Accuracy: +/- 20 % at 0.2 ohm m +/- 5 % at 1-1000 ohm m +/- 10 % at 1000-2000 ohm m		
Sampling rate: Minimum 2 samples/ft		
Vertical resolution: 24 inches or better, for MSFL 3 inch or better.		
Tool diameter: Industry standard to log wells drilled with 6 inches to $17^1/_2$ inch bit		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE -1.32

SERVICE: OIL BASE MUD TOOL FOR HIGH RESOLUTION BORE HOLE IMAGING SERVICES USING MICRO-ELECTRIC ARRAYS(Optional)

Service Code: OBM-HRMI	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: Should provide micro-resistivity borehole images in non-conductive environments, such as Oil Based Mud (OBM). i) High resolution micro-resistivity based borehole imaging for formation image extraction with direction in open hole to characterize sedimentary bodies, sedimentary dips, structural analysis, secondary porosity evaluation, reservoir characterization etc. ii) About 55% coverage in 8 ½" inch hole in one pass. Optionally two tools can be run in tandem to increase borehole coverage. iii) Each calliper arm must have independent electronics.		
Measuring range: Micro resistivity : 20 to 2000		

ohm m Azimuth : 0 to 360 degree Rotation : 0 to 360 degree Deviation : 0 to 90 degree Caliper : 6.25 to 16 inch		
Vertical resolution: 1.2 inch in resistivity measurements or better		
Hole size limit: 6 inch to 12 1/4 inch dia. Or more.		
Temperature rating: 320° F Minimum.		
Pressure rating: 15000 psi minimum		
Other features: One copy Static colour image at well site product in 1:20 scale.		
Processing of Borehole Imaging data		
a) Static and dynamic image b) Automatic and manual dip picking c) Structural interpretation for presence of fault, fracture and other structural features and their nature, borehole breakout pattern and indicated pattern etc. d) Stratigraphic interpretation: identification of beds, bedding internal structure like cross laminations and depositional environment indicated integrating other basic log data.		

ANNEXURE -1.33

SERVICE: SLIM CEMENT BOND EVALUATION SERVICES INCLUDING VARIABLE DENSITY TYPE OF LOGGING (Optional)

Service Code: SCBL	Bidder's Code:	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: ii) Cement Bond Evaluation Surveys including variable density type of logging based on sonic arrival amplitude. Recording under pressurized condition is also required.		
Range: i) Acoustic amplitude 0-100 mv ii) VDL 200-1200 micro-sec4iii) GR 0-200 API, CCL. Travel time.		
Vertical resolution: 3 feet or better		
Tool diameter: Suitable to run in r 4.1/2" casing/liner		

ANNEXURE -1.33

SERVICE: SLIM CEMENT BOND EVALUATION SERVICES INCLUDING VARIABLE DENSITY TYPE OF LOGGING (Optional)

Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		

ANNEXURE –1.34

SERVICE: Rotary Sidewall Coring Service(Optional)

Service Code: RSWC	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: i) Core drilling tool with diamond coring bit for hard formation to be run wireline. ii) Core size cut should be of 1.75" or more X 0.90" or more size. iii) Capability to cut at least 20 cores in one run.		
Hole size limit: 6 inch to 12.25 inch dia.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum.		
Other features: Capable to cut the core and extract the same undisturbed even in hard rock condition. Tool combinable with GR used in essential services. **The tool should be combinable with GR tool.**		

ANNEXURE -1.35

SERVICE: ELEMENTAL CAPTURE SPECTRSCOPY LOGGING(Optional)

Service Code: ECSS	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: Concentration of elements from single neutron induced Gamma ray spectrometer for the determination of Silicon, calcium, Iron, Gadolinium, Titanium, mica feldspar composite and other		

ANNEXURE -1.35 **SERVICE: ELEMENTAL CAPTURE SPECTRSCOPY LOGGING(Optional)**		
minerals for accurate clay volume estimation and clay typing.		
Tool diameter: To be capable of running in minimum 6 inch to max. 12.25 inch.		
Temperature rating: 350° F Minimum.		
Pressure rating: 15000 psi minimum		
Processing		

ANNEXURE -1.36 **SERVICE: NUCLEAR MAGNETIC RESONANCE LOGGING SERVICES(Optional)**		
Service Code: NMRL	**Bidder's Code:**	
OIL's Required Specifications	**Bidder's Specification**	**Compliance/ Non-compliance**
Measurements: i) T2 distribution from 0.5 milli-second or less to 3.0 seconds. ii) Formation lithology independent porosity, pore size distribution & permeability measurements. iii) Free fluid index, clay& capillary bound fluids. iv) Hydrocarbon typing and quantification in continuous/ stationary recording mode.		
Vertical resolution: 2 feet or better		
Hole size limit: 6" to 12 ¼".		
Temperature rating: Maximum 350° F		
Pressure rating: 15000 psi minimum		
Other features: NMR porosity, T2 distribution, free fluid index as well site product.		
Processing of data		
Processing of data of Nuclear Magnetic Resonance Logging Services for a) Determination of total and effective porosity, capillary and clay-bound water & free fluid volume, pore size distribution, permeability, b) Hydrocarbon typing and quantification.		

Annexure-B

REQUIRED ENVIRONMENT CORRECTION CHARTS

I. **Resistivity tool:**

a) Borehole correction charts for various resistivity tools e.g. deep, shallow, medium focused laterologs/induction logs.
b) Shoulder-bed correction chart for deep and shallow resistivity logging tools.
c) Pseudo-geometric factor charts for laterolog tool. Charts for determining true resistivity invasion diameter and resistivity of flushed zone for a combination of deep, shallow and micro-resistivity tools for different borehole sizes.
d) Thickness correction charts for various resistivity logging devices.

II. **Micro-resistivity tool:**

a) Mud cake and bore hole correction charts.
b) Geometric factor charts.

III. **Natural Gamma-ray tools**: Bore-hole size, mud weight and tool size correction charts.

IV. **Compensated spectral density tool:**

a) Mud and gas filled bore-hole correction charts.
b) Correction curve for getting bulk density from log density values.
c) Porosity, lithology and matrix identification determination charts.
d) Density-sonic travel time cross plot for fresh salt water filled holes.
e) Density-neutron porosity cross-plots for fresh salt water filled holes.
f) Hydrocarbon correction charts.

V. **Compensated neutron porosity tools:**

a) Hole size, mud-cake thickness, mud weight, formation and mud salinity, stand off distance, pressure and temperature correction charts.
b) Equivalent chart for different lithologies.
c) Function format curve for converting count ratio into porosity.
d) Litho porosity cross-plots, neutron-porosity VS density, VS sonic travel time cross-plots for fresh and salt-water filled holes.
e) Correction charts for excavation effect for different lithologies.
f) Hydrocarbon correction charts.

VI. **Spectral natural Gamma-ray log tool** : Mineral identification charts.

VII. **Compensated acoustic logging tool and cement bond tool:**

a) Compaction correction charts, Charts for different lithologies, Delta T Vs porosity.
b) BL amplitude Vs Bond Index transformation and compressive strength chart.

VIII. **ENVIRONMENTAL CORRECTION CHART FOR OTHER TOOL**: ENVIRONMENTAL CORRECTION CHART FOR OTHER TOOLS.

End of Exhibit - 4

SUPPLY OF DRILLING BITS ON CONSIGNMENT BASIS

The successful bidder shall supply the drill bits indicated below on consignment basis under the following terms and conditions.

1.0 Terms & Conditions:

i. The bit are to be supplied in one lot and stored at Shore-base facility at Tuticorin, Tamil Nadu from where the same are to be sent to the designated offshore rig as per requirement by supply vessel (to be hired by OIL). All the drill bits are to be supplied together in one lot on consignment basis for ready availability so that any of the bits can be picked and used by OIL.

ii. OIL (Oil India Limited, Operator) will use the bits from the lot/ consignment as required and the remaining unused bits shall be taken back by the service provider at their own cost. OIL's hired supply vessel will be used for to and fro Shipment between Shore-base and the Rig.

iii. The bidder shall quote 'FOR, Destination-Tuticorin' basis in the attached prescribed Schedule of Rate (Appendix-5 of Annexure-V). Payment will be made on actual consumption only at the rate firmed up in the contract.

iv. All the bits on consignment (as per tentative quantities mentioned) will be taken into consideration for Price Evaluation. No Mobilisation and/or Demobilisation for the Bit-consignment is applicable.

v. The whole lot of bits (as per tentative quantities mentioned) are to be delivered within the stipulated mobilisation period for all other services under the Tender/ contract (except the callout services).

vi. The Contractor may be called upon to provide at short notice additional quantities of the above types of bits to meet OIL's actual operational requirements. In case of additional requirement in addition to the stipulated quantity of bits, Service provider shall be liable to supply the same within 10 days from the receipt of such advice from OIL.

vii. The bits are to be kept under custody of the service provider at Tuticorin and keep account of the bits i.e. record of movement; inventory at Shore-base (Tuticorin), on transit to & from the Rig & inventory at Rig etc.

Bits to be quoted and supplied:

Bit/ Hole Size	Section length to drill (m)	Sl. No.	Drill Bit Type	Qty (nos)	Other Details
26"	440-1200 = 760	1	TCR, IADC 1-1-5	2	PIN connection: 7.5/8 API Regular, API Monogramed- API Spec. 7-1
		2	TCR, IADC 1-3-5	1	
17.1/ 2"	1200-2000 = 800	1	TCR, IADC 1-1-5M	1	• PIN connection: 7.5/8 API Regular, • API Monogramed- API Spec. 7-1, • Motor compatible up to 250 RPM • Gauge protection with legs and heels having suitable protection for motor application
		2	TCR, IADC 1-2-7M	2	
		3	TCR, IADC 1-3-7M	1	
		4	PDC: IADC- M222 , 5 Blades x 19mm Cutter Cutter density: Medium	1	• All the bits should be suitable for Rotary as well as Motor application, • RPM range: Min about 50 to Max 250 and above, • PIN connection: 7.5/8 API Regular • Replaceable Nozzles
		5	PDC: IADC- M322, 5 Blades x 19mm Cutters Cutter density: Medium	1	
14.3/ 4"	2000-2900 = 900	1	TCR, IADC 1-1-7M	2	• PIN connection: 7.5/8 API Regular, • API Monogramed- API Spec. 7-1, • Motor compatible up to 250 RPM • Suitable Gauge protection with legs and heels having suitable protection for motor application
		2	TCR, IADC 1-3-7M	2	
		3	PDC: IADC- M222, 5 Blades x 19mm Cutters Cutter density: Medium	1	
		4	PDC: IADC- M322, 5 Blades x 19mm Cutters Cutter density: Medium	1	• All the bits should be suitable for Rotary as well as Motor application, • Motor compatible @ 250 RPM min. • Back Reaming & Low Torque features • PIN connection: 7.5/8 API Regular • Replaceable Nozzles

Bit/ Hole Size	Section length to drill (m)	Sl. No.	Drill Bit Type	Qty (nos)	Other Details
12.1/ 4”	2900-4200 = 1300	1	TCR, IADC 1-3-7M	2	• PIN connection: 6.5/8 API Regular, • API Monogramed- API Spec. 7-1, • Motor compatible @ 250 RPM min. • Bearing seal- Metallic • Suitable Gauge protection with legs & heels having suitable protection for motor application
		2	TCR, IADC 5-3-7M	1	
		3	TCR, IADC 6-3-7M	2	
		4	PDC: IADC- M323, 5 or 6 Blades x 19mm Cutters with high thermal mechanical integrity, Cutter density: Medium to Heavy	1	•All the bits should be suitable for Rotary as well as Motor application, •Motor compatible @ 250 RPM min. •Back Reaming & Low Torque features •Gauge Protection with thermally stable diamond inserts •PIN connection: 6.5/8 API Regular •Replaceable Nozzles
		5	PDC: IADC- M433, 6 or 7 Blades x 13 or 16mm Cutters with high thermal mechanical integrity, Cutter density: Medium to Heavy	1	
8.1/2”	4200-5600 = 1400	1	TCR, IADC 1-3-7M	1	• PIN connection: 4.1/2” API Regular, • API Monogramed- API Spec. 7-1, • Motor compatible @ 300 RPM min. • Bearing seal- Metallic • Suitable Gauge protection with legs & heels having suitable protection for motor application
		2	TCR, IADC 4-3-7M	2	
		3	TCR, IADC 5-3-7M	2	
		4	TCR, IADC 6-3-7M	2	
		5	TCR, IADC 7-3-7M	2	
		6	PDC: IADC- M333, 6 to 8 Blades x 13 mm Cutters with high thermal mechanical integrity Cutter density:	2	•All the bits should be suitable for Rotary as well as Motor application, •Motor compatible @ 300

Bit/ Hole Size	Section length to drill (m)	Sl. No.	Drill Bit Type	Qty (nos)	Other Details
			Medium to Heavy		RPM min.
		7	PDC: IADC- M433, 6 to 8 Blades x 13 mm Cutters with high thermal mechanical integrity, Cutter density: Medium to Heavy	2	• Back Reaming & Low Torque features • Gauge Protection with thermally stable diamond inserts • PIN connection: 4.1/2" API Regular • Replaceable Nozzles
6.0" (contingency)	450 m (contingency)	1	TCR, IADC 1-3-7M	1	• PIN connection: 3.1/2" API Regular, • API Monogramed- API Spec. 7-1, • Motor compatible @ 300 RPM min. • Bearing seal- Metallic • Suitable Gauge protection with legs & heels having suitable protection for motor application
		2	TCR, IADC 4-3-7M	1	
		3	TCR, IADC 5-3-7M	1	
		4	TCR, IADC 6-3-7M	1	
		5	TCR, IADC 7-3-7M	1	
		6	PDC: IADC- M333, 6 to 8 Blades x 13 mm Cutters with high thermal mechanical integrity, Cutter density: Medium to Heavy	1	• All the bits should be suitable for Rotary as well as Motor application, • Motor compatible @ 300 RPM min. • Back Reaming & Low Torque features • Gauge Protection with thermally stable diamond inserts • PIN connection: 3.1/2" API Regular • Replaceable Nozzles
		7	PDC: IADC- M433, 6 to 8 Blades x 13 mm Cutters with high thermal mechanical integrity, Cutter density: Medium to Heavy	2	

Above mentioned Section lengths are the depths from RKB where RKB to MSL: 25m & Water Depth: 415m.

2.0 IMPORTANT NOTES ON BITS:

1. The Drill-Bits (both TCR & PDC) shall be offered and supplied from any one of the following manufacturers.
   a) Schlumberger-Smith
   b) Baker Hughes-Christensen
   c) Halliburton Security-DBS
   d) NOV-Reed Hycalog
   e) Varel, USA
   f) TIX-TSK, Japan
2. Each TCR Bit is to be supplied with 2 sets of nozzle of two different sizes to meet two different Bit-hydraulics. Out of two sets, one set should be fitted with the bit. Each set consists of 3 nozzles (4 nozzles in case of centre jet) with required O-ring & circlip for each nozzle. Bit cost shall be inclusive of the set of nozzles.
3. Each PDC Bit is to be supplied dressed with one set of replaceable nozzles of required sizes as per requirement of Bit Hydraulics for optimum bit performance and effective hole cleaning. Bit cost shall be inclusive of the set of nozzles.
4. Each PDC bit is to be supplied with respective Bit breaker, Nozzle Replacement Kit and spare set of nozzle suitable for alternative Bit Hydraulics. Bit cost shall be inclusive of these items.
5. Nozzles (numbers and size) are to be designed and provided as by the bidder/ contractor as per hydraulics requirement for the respective bit size and hole section. Hydraulics are to be designed by the service provided for optimum bit performance.
6. Equivalent IADC Codes against each quoted bit (TCR as well as PDC) are to be categorically mentioned in the offer. All the features including special feature (if any) are to be provided against each type of bit offered.
7. Bit catalogue & Spec Sheet of each type of quoted bit are to be provided along with the bid, which must include bit specific operating parameters and characteristics.

3.0 OPTIONAL BITS:

1. In addition to the afore said bits the bidders are requested to quote Hybrid/High Performance , Specially featured TCR & PDC bits against each section/ size of the hole. In case such bits of larger sizes like 26" & 17.1/2" are not available, other sizes particularly for 12.1/4", 8.1/2" & 6" should be quoted.
2. OIL at its discretion will have the right to choose and order any number and type of the bits either along with order of the other bits on consignment or any time thereafter till completion of the well/ wells or validity of contract whichever is later.

3. The price is to be quoted FOR-Tuticorin (destination) basis in the same Schedule of Rate Format (Appendix-5A of Annexure-V) but separately under heading OPTONAL BITS.
4. Stock of such bits is to be maintained in such a way so that on demand it will be delivered at Tuticorin (Shore base) with in maximum 10 days from the date of receipt of LOA.
5. All the conditions (as far as practicable) indicated before under heading "IMPORTANT NOTES ON BITS" will apply.
6. The Optional bits will not be taken into consideration for Price Evaluation. No Mobilisation and Demobilisation is applicable.

End of Exhibit- 5

MUD LOGGING SERVICES

SCOPE OF WORK

The Contractor shall provide a Mud Logging Unit in operating condition with services suitable forworking in deepwater (Water Depth upto 500 meters). The Contractor shall provide Mud Logging Services as outlined in the Scope of Work and Technical Specification.

1.0 EXPERIENCE OF BIDDER:

The bidder should have a minimum 5 (five) years of corporate experience in providing Mud Logging Services to E&P companies including experience of at least 3 (three) deepwater wells in water depths upto 500 metresas on bid closing date of this Tender.

2.0 SCOPE OF SERVICES:

OIL INDIA LIMITED is planning to hire one Mud Logging Unitwith state of art technology from reputedMud Logging Service Company to provide Mud Logging services in the **NELP VIII Block CY-OSN-2009/2** of Gulf of Mannar, Cauvery basin. The contract shall be for a period of **3-4 months for drilling and completion of 1 well.** The Contractor shall provide Mud Logging Units in full operating condition suitable to work in the deepwater environment. Contractor will, as a minimum, adhere to the latest international standards and practices. Contractor will provide the following mud logging services as outlined below, but not limited to the following:

- Collect, examine and describe drilled cuttings / cores including fluorescence.
- Utmost care should be taken for the drill cutting samples (while washing) due to oil base mud system.
- Monitor all Drilling parameters, Mud parameters, Flow line gases and advise on abnormal behaviour.
- Prepare Geological Mud Log, Drilling Log, Gas Log, Pressure log and Time Log.
- Provide Mud log outputs regularly and as desired by Wellsite Geologist.
- Provide summary detailing estimation of mud losses and gains. Maintain pit sheets, trip sheets, kill sheets, flow back finger print sheets regularly.
- Provide with hydraulics package calculating hole volume, lag time and other drilling computations.
- Plotting of D-Exponent, Calcimetry and Shale Density

measurements, Pore Pressure and Fracture Pressure Evaluation

- Collection of LWD, MWD, Wireline data and preparation of Composite Logs as and when required.
- Supply, installation, operation and maintenance of necessary hardware/ software interface with Company provided communication equipment to allow transmission of real time data from well site to Company base office and vice versa.
- Calibrate and maintain all peripherals, sensors and gas equipment.
- Assist Company personnel in handling cores and cuttings and other samples.
- Real-time data transmission to client office.

To the extent required and requested by the Company, the Contractor shall furnish and maintain the necessary equipment, personnel and supplies as described here below.

3.0 SPECIFICATIONS FOR MUD LOGGING UNIT

3.1. Mud Logging Unit shall be PC based for continuous online data acquisition, display, process, storage & real-time transmission of various drilling, mud, gas and geological and calculated parameters. The unit should be air conditioned, pressurized and certified for placement in Zone 1 hazardous area. The unit is required to be fully insulated and having sufficient work place for technical personnel to work safely inside the unit. The unit should be installed with LEL gas detector, smoke, fire, H2S detectors with an automatic shutdown system in case of loss of unit pressure or presence of any combustible gas. The units should not be more than **3 years** old on the bid closing date.

3.2. The Mud Logging Unit should be suitable for anchor moored Rigs of water depth capability of upto 500 metres.

3.3. The Mud Logging Unit should be suitable for AC-SCR/VFD Rigs. The unit is required to be equipped with isolation transformer and online UPS system having modern filter circuits (linear power supply for all the sensitive equipment connected with MLU) to eliminate spikes generated by SCR power converter and harmonics during operations. COMPANY will not be responsible for damage to any equipment/computer system of the MLU due to spikes and harmonics arising out of power supplied from rig. **Mud Logging Unit should have 100% redundancy with backup server.**

3.4. The Contractor shall provide all equipment, materials, consumables, literature etc. in the Mud Logging Unit and shall ensure good industrial quality. The Contractor at its cost shall provide suitable accessories and mountings for all sensors and detectors and to be compatible with provisions of the rig.

3.5. The Contractor should be an ISO certified company following OMR and all oilfield HSE standards. All field mounted sensors to be

intrinsically safe and connected via explosion proof junction boxes meeting safety standards of Zone "0" hazardous as per API and OMR & OISD. All electrical wiring & fixtures, breakers, relays, plugs, earthing, etc. confirm to industrial regulations & standards. (**Necessary certificates to be provided**).

3.6. The Contractor has to provide environmentally suitable Mud Logging Unit complete with all intrinsically safe and explosion proof sensors and detectors having digital display, audio/visual alarm & external alarms. The Mud Logging Unit should be equipped to record the following parameters:-

3.6.1 Rate of Penetration (ROP)(m/hr and min/m) and Depth (m)

a)	Accuracy	:	0.1% (+/-0.5m)
b)	Recording interval	:	0.5 meter
c)	Sensor	:	Proximity/Roto encoder
d)	Drilling break alarm	:	User defined

3.6.2 Heave Sensor

a)	Accuracy	:	0.1% (+/-0.5m)
b)	Recording interval	:	0.5 meter
c)	Sensor	:	Roto Encoder/Potentiometer

3.6.3 Total Hydrocarbon Gas Detection

a)	Sensitivity	:	1-100 ppm
b)	Range	:	0 to 100%
c)	Detector	:	FID/TCD type
d)	Sampling mode	:	Automatic / manual
e)	Methane gas for	:	calibration should be 99.9% pure

3.6.4 Weight on Hook and Weight on Bit

a)	Accuracy	:	± 1%
b)	Sensor	:	Hydraulic /Pressure Transducer
c)	Range	:	0 to 1000 Tons

3.6.5 Mud Pump Strokes (As per rig provisions) and Cementing Unit Pump strokes

a)	Accuracy	:	± 1 Stroke
b)	Range	:	0 to 200 SPM
c)	Sensor	:	Proximity

3.6.6 Rotary RPM

a)	Accuracy	:	± 1% (+/- 1 RPM)
b)	Sensor	:	Proximity
c)	Range	:	0 to 200 RPM

3.6.7 Mud Pit & Trip tank Volumes (As per provisions on rig) including Sand Traps

a)	Sensor	:	Ultrasonic
b)	Accuracy for Mud Pits	:	± 1.25bbl in a tank of

			2.5mx 2m
c)	Accuracy for Trip Tank	:	± .5 bbl in a tank of 2.5m x 2m
d)	Range	:	0 to 700 bbl per pit

3.6.8 Flow Rate In and Out

a)	Flow rate in Accuracy	:	± 1%
b)	Range	:	0 to 1200 gall./min. (calculated)
c)	Flow rate out Sensor	:	Potentiometric, paddle type, Proximity
d)	Flow rate out Accuracy	:	(+/-1%)
e)	Range	:	0 to 100% flow.

3.6.9 Early Kick Detection

a)	Type	:	Coriolis sensor
b)	Process Fluid	:	Liquid, slurry, gas
c)	Flow rate volume	:	10000 gpm
d)	Flow rate Accuracy	:	(+/-0.1%) of flow rate
e)	Process volume	:	Mass, Volume, density temperature.
f)	Density Accuracy	:	+/- 0.05 gm/cc

3.6.10 H2S Detection (Four Channels)

a)	Accuracy	:	± 1 ppm
b)	Detector	:	Solid state semiconductor/electro chemical sensing element
c)	Range	:	0 to 100 ppm
d)	Calibration ampoules	:	15 ppm and 60 ppm

3.6.11 CO2 Detection

a)	Sensor	:	Non Dispersive Infra red
b)	Accuracy	:	5% of reading
c)	Range	:	0-20 (non diluted), 100% (Diluted 5X)

3.6.12 **On-line Data Acquisition**

a) The state-of-art PC with its peripherals viz. color monitor, mouse, keyboard and color printers for on-line data acquisition shall be capable of on-line real time processing, monitoring, printing, plotting of mud, drilling and gas parameters, storing and retrieval of processed and organized data (database) at **0.1m/0.2m, 0.5m & 1m** interval with Audio/Visual alarm settings and calibration of parameters.

b) All software for on-line data acquisition shall be licensed version. These should include but not limited to the following: Software for on-line calibration of sensors and detectors, continuous signal acquisition from sensors and detectors, processing, color printing, plotting, displaying on color monitor, storing, organization and retrieval of the processed data to monitor all gas, drilling, mud, geological and calculated parameters.

c) Software should have input / output provisions in standard formats such as ASCII / LIS / LAS.

d) Software for online D-Exponent log, hydraulic calculation and Gas composition.

e) Bidder must provide necessary software(s) with multiple user ids (minimum 10 nos.) for remote viewing of mud logging data at operator's office/remote location with scroll back facility. Bidder must ensure that all the data generated must be transferred via rig VSAT and compatible with WITS ML format.

f) Software for online data acquisition should be state-of art as per latest international industrial standard practice. The software should support all the parameters mentioned in the bid document. **Software should accommodate different dedicated channels for Total Gas out, Total Gas in and the difference between them (delta) with chromatograph analysis for both gas out as well as gas in should be recorded and displayed.**

g) **MLU Data Integration**:

The Mud Logging Data is to be integrated with the rig's real time data communication system for transmission to base.

3.6.13 Gas Chromatography

a)	Sensitivity	:	1-100% (1-5ppm)
b)	Detector	:	FID/TCD type
c)	Sampling mode	:	Automatic / manual
d)	Cycle time	:	45 sec or below
e)	Accuracy	:	10ppm
f)	Range	:	0-100%

g) Percentage analysis of Methane, Ethane, Propane Butane (ISO and Normal) and Pentane in automatic/manual

mode.

h) Methane Gas for calibration shall be 99.9% pure. Mixture gas shall be as C1=10%, C2= 1%. C3= 1%, nC4= 1%, iC4= 1%, iC5=0.5% and rest being Hydrogen and Nitrogen

i) **Gas analysis systems should be capable of measuring and analyzing (C1-C5) gas outand gas into the well bore.**

ii) **Mud Degasser system**

Mud degasser system should be a **Constant Volume Degasser** type so as to maintain constant volume of mud during degassing process irrespective of fluctuation in mud level in flow line. The constant volume of mud ensures that Gas liberated is not dependent on the level of mud on the flow line and that all factors including volume, flow rate are maintained constant. The Constant Volume Degasser should be based on proven design so that it extracts gas from mud and ensures that the cuttings do not choke the outlet. Two independent gas traps to be installed one to measure gas out and the other to measure gas in to the well bore.

iii) **Hydrogen carrier gas for FID/TCD equipment-Hydrogen Generator**

For back up a Gas Chromatography with explosion proof electric or pneumatic degasser motor with agitator mounted on degasser trap with facility to prevent mud and moisture from entering the gas suction line should stand by along with a backup bottle of hydrogen carrier gas or a backup hydrogen generator.

3.6.14 Rotary Torque

a)	Accuracy	:	± 1%
b)	Sensor	:	Electric / Hydraulic
c)	Range (Electric)	:	0 to 1000 Amps
d)	Range (Hydraulic)	:	As suitable

3.6.15 Stand Pipe Pressure, Casing Pressure and Cementing Unit Pressure.

a)	Accuracy	:	± 1%
b)	Sensor	:	Electric/Hydraulic/Pressure Transducer
c)	Range	:	0 to 15000 psi
d)	Linearity	:	0.5%

3.6.16 Mud Weight In and Out

a)	Mud specific gravity range	:	6 to 24ppg
b)	Sensor	:	Differential Pressure
c)	Accuracy	:	± 0.5%

3.6.17 Mud Temperature In and Out

a)	Range	:	0 to 150°C

b) Sensor : Platinum Resistance
c) Accuracy : ± 1%

3.6.18 Mud Conductivity In and Out

a) Range : 0 to 300 m Mhos/Cm
b) Sensor : Toroidal Transformer
c) Accuracy : ± 1%

3.6.19 **Off-line Data Processing**

a) A state-of-art processor Pentium I3 2nd generation or higher based stand-alone PC, not at all related to On-line Data acquisition, shall have the following peripherals viz. colour monitor, mouse, keyboard, and continuous colour printers. The On-line and Off-line PC should be compatible for interchange. The Off-line PC shall be loaded with on-line software and off-line software.

b) All Off-line software shall be of licensed version and available in CGS system. These shall include but not limited to the following:

Software for Master log, Well Deviation, Well Construction, Kick Control, Gas Composition, Leak-off Test, Fracture Gradient, Pore Pressure Gradient, Hydraulics, Daily Progress Report, Word Processor, MS Access system for WCR, and Anti-virus Package shall be upgraded yearly.

3.6.20 Calcimetry(Auto Calcimeter)

a) DetectionRange : 0 to 100%
b) Sensitivity : ± 1%
c) Balance : As suitable

3.6.21 Microscopy jobs shall be carried out by utilizing Binocular zoom microscope with wide field eyepieces of minimum 10X a magnification and objective of 1X and 6X zooming magnification with transmitted and direct light illuminators with focus control. Additional optic fiber illuminators are also preferable with spare bulbs. Microscope should be equipped with dedicated phototube, digital camera & fitting for Digital photomicrography (minimum 3MP digital imaging) with colour bar and grain size reference for all images. Microscope should have facility to transfer image to online computer and logs.

3.6.22 Fluoroscopy jobs shall be carried out by utilizing minimum three UV tubes of different wave lengths and one white tube with guarded viewing glassand shall have built-in adjustable convex lens of 5X magnification.The tube arrangement shall be detachable. Sample chamber doors on left and right side with opening size of 12 cm x 12 cm. Each tube shall have separate on-off switch. Bulb section to be detachable for use in scanning of cores.

3.6.23 Geolograph

a) Sensor Encoder/Potentiometer	:	Roto
b) Accuracy	:	+/- 10 cm
c) Sensitivity	:	10cm
d) Range	:	0 to 50m

3.6.24 Shale Density measurement by utilizing suitable balance/ column method shall be provided.

3.6.25 Flow back finger printing for quick detection of well ballooning, volume variation should be provided.

3.6.26 Lithology Description and testing of sample cuttings by utilizing appropriate chemicals and glassware shall be provided. For each chemical corresponding MSDS charts should be provided.

3.6.27 Drying Facility for sample cuttings in an oven accommodating ten sample plates of 6” diameter in its chamber shall be provided.

3.6.28 Sample and Core Collection by utilizing (i) Sieves Set, size range 0.063 – 5mm, (ii) SS Spot Trays, (iii) SS Probes, (iv) SS Tweezers (big and small), (v) PET Bottles for packing wet sample cuttings and Paper Bags for packing dry sample cuttings, (vi) Glass bottles(scot duran) having capacity of 30 ml, 500 ml and 1000ml(vii) stainless steel sample trays(viii) Permanent Marking Pens shall be provided (ix) grain size comparison chart (x) colour chart (xi) pestle mortar(xii) Paint Marker pens (xiii) 9" diameter Core Sleeve.

3.6.29 Drafting equipment, Master Log sheets and Core Report sheets shall be provided.

4.0 SAMPLE COLLECTION AND PACKAGING:

The bidder should give special attention in collecting drill cutting samples due to the use of SOBM. Proper cleaning of the samples need to be done first in base oil than with detergent. The samples should be collected in sufficient quantity and packaged in the proper order as per Company's requirement. Items required for collection of samples and packaging are specified below:

ITEM	**PURPOSE**
Plastic bags, Cloth	Unwashed and Washed samples
Boxes, Cardboard	Storage, Shipment of dried samples
Envelopes, paper with fold over closure	Packing of individual washed and dried samples
Glass bottles	Mud Sample and other Liquid Samples
Sieves	Standard (ASTM Sieve No. 25, 40, 80, 170, 230 and 270)
Isotubes with gas sampling equipment	**For collection of Gas samples during drilling as and when required**

5.0 ACCESSORIES:

The Contractor shall make available the following accessories in the Mud Logging Unit:

5.1. An explosion proof purged LCD monitor with real time display should be installed at the Rig floor.

5.2. Backup state-of-the-art PC with completely loaded Online and Offline software

5.3. Suitable numbers of LCD monitors (3 or more) to display various real time sensor signals and parameters and also to represent graphical display of parameters in the mudlogging unit.

5.4. CD/DVD writer with necessary software to back up all recoded time based mudlogging data for the entire well operations

5.5. One online repeater LCD monitor to be installed in each of Drilling Engineer / Geologist's office, mud engineer's office, Company Supervisor's office & at mud pit area.

5.6. Air compressor with regulator/alternate arrangement like filtration system using rig air, for providing carrier air for Gas Chromatograph.

5.7. Balance for Calcimetry and Shale density measurement.

5.8. Sufficient nos. of tools and spares for smooth day to day

operations.

5.9. UPS for backup power for the data processing / acquisition systems. UPS capable of supplying 15 minutes of electrical power to the equipment within the unit in the event of a power failure.

5.10. Intercoms with minimum 6 (six) terminals connecting derrick floor, mud attendant, Company representative office, Wellsite Geologist office, mud engineer office, drilling engineer's office, LWD/ MWD engineer's office and MLU.

5.11. Fire Extinguishers, One (1) EyeWash Station, First Aid Kit and Safety Harness (Full-Body Type).

5.12. Ditch Magnet of 1 meter length.

5.13. All other supplies as required to complete the SERVICES, including, but not limited to bactericide for samples intended for geochemistry and paleontological analysis, aluminium foil, plastic cling wrap, wax, packing tape, indelible maker pens, gas sampling balloons, detergent/ soap solution for washing oil contaminated drill cutting samples, etc.

6.0 BACK-UP EQUIPMENT AND MATERIALS: Bidder is responsible for supplying all back-up equipment, materials in order to provide smooth and uninterrupted mud logging services to Oil India Ltd**.**

7.0 GEOLOGICAL SURVEILLANCE WORK: Geological surveillance work is required to be carried out round the clock at drilling site in Mud Logging Unit as detailed below:

7.1 Examination / Analysis:

A) During Sample Analysis/Examination, MLU personnel must be concerned about the followings:

1. Perform microscopic examination of samples to identify rock types, percentages and visual characteristics using comparator colour and grain chart to determine colour, grain size, sorting, roundness and standard classification system. Additionally, the lithology description should include the followings:
   - Colour, Fabric / Texture, Fossil identification
   - Grain Size
   - Mineral identification (calcite, clay, silica, metallic minerals etc)
   - Visual Porosity/Permeability estimation
2. On lithology work sheet, to write sample description for each new lithology, using standard terms and order.
3. If necessary, to perform selectively Calcimetry study, Shale Density and any other analysis required by Company.

4. The foreign materials should not be included in lithology description. Foreign material includes caving from the hole, and where identifiable, mud additives, loss circulation material, cement and pipe dope etc. If any foreign materials are observed then it should be noted on the Master Log.MLU personnel have to take care of the following hydrocarbon detection method:
    - UV fluorescence
        - Direct
        - Cut
        - Residual
    - Intensity of any petroleum odor.
    - Staining and Bleeding.
    - Oil reaction in acid.
    - Wettability
    - Gas composition

B) Gas analysis: Detection of gas from C_1 through C_5 along with volume percentage.

7.2 Detection of Down-hole Problems / Anomalies, etc. :

- High / Abnormal Pressure Prediction: Analysis / Computation of relevant data for detection of high pressure zones based on D_c Exponent, Shale Density, Sigma log and detection of H_2S, CO_2 etc.
- Immediate detection of kick and monitoring of pipe pressure.
- Detection of mechanical failure of bit, drill string and pumps.

7.3 Determination of Geological / Drilling Parameters:

- Determination of Shale Density
- Determination of kill mud weight, volume, etc.
- Real time plots of continuous recording of gas and FID/TCD based analysis of gas (C_1-C_5).
- Determination of volume of mud loss in case of circulation loss.
- Determination of pressure drops in mud circuit, jetting velocity, bottom dynamic pressure and Equivalent Circulation Density.

7.4 Plotting and Preparation of Data:

7.4.1 Mud Log:

i. To use an industry standard mudlog format, generate and maintain current mudlogs in the computer and prepare their plots

as requested by Company geologists in 1:500 scale including the followings -

ii. The mud log should display lithological information in two ways, they are – i) **Percentage,** in which the rocks are described as a percentage of an aggregate sample over a specified interval and ii) **Interpretative,** in which recovered rocks are correlated with drill rate and gas. An abbreviated lithology description is to be given in the remarks column.

iii. Plotting should be - both the Total Gas curve and the Component Gas curves on log scales in units of ppm. Plot on gas track should include formation gas, normalized gas, connection gas, trip gas and carbide lags.

iv. Mud weights need to be recorded as a comment every 12 hours while drilling and whenever a mud weight change is made. Also to record and plot all trip gas, bottom-up gas and connection gas.

v. To record hole problems (for example lost returns, drill pipe sticking etc.) on the log.

vi. To record all casing and logging points on the Master log.

vii. To record all bit trips, bit number, bit size and type on the Master log.

viii. To record deviation data in case of well deviation.

ix. Mud additive information on the log (as Remarks) should be:

   a. Mud additives name

   b. The depth range of different additives used

x. To plot the bit penetration rate (ROP) as meter/hour and weigh on bit. Gamma ray (from MWD/Wireline) plot should be increasing towards right side.

xi. **Also, at the end of drilling a well, bidder will provide "Composite Logs" at 1:500 scalecontaining the mud logging data together with basic wire-line logs (gamma, resistivity, porosity, density etc) and interpreted lithology. To compute and plot the drilling "D_c" Exponent, Equivalent Circulation Density (ECD) calculation**.

7.4.2 A **Gas Ratio log** should be prepared in 1:500 scale with a summary interpretation displaying the following ratios:

- Wetness Ratio (Wh) = $(C_2+C_3+C_4+C_5)$ / $(C_1+C_2+C_3+C_4+C_5)$
- Balance Ratio (Bh) = (C_1+C_2) / $(C_3+C_4+C_5)$
- Character Ratio (Ch) = (C_4+C_5) / C_3

7.4.3 Lag times:

- Carbide lag is to be recorded every shift or 500 meter while drilling or whenever required. Record resultant gas show on chromatograph mud log as response per gram of carbide.

- To Indicate time of bottom-up and method of determining that time on the Master Log (to include total number of strokes and time in minutes).

7.4.4 Other Requirements.

i) Pressure log: To prepare in 1:500 scale.

ii) Deviation drilling: In case of a deviated well (both J & S Bend), deviated section of the hole to be plotted (plan and vertical section) after computation of the data

iii) Hole profile and drilling progress chart: To be plotted on regular basis/ daily.

iv) Plotted data to be routinely (as advised) dispatched to the Company's office : E&D and CEMG Department, Noida.

v) Daily progress reports (including hydraulic report) to be submitted to Company's geologist every morning as well as to Company operational office or as advised by the geologist.

vi) An updated PDF file of the Mud log, Pressure log, Drilling log, Gas log and Time log are to be given to Company's well-site geologist as well as send to Company's operational office daily. Print out of Mud log to be provided as when required by Company Geologist.

7.4.5 A **Drilling log** should be prepared with a summary of important drilling events in 1:500 scale.

7.4.6 Core Log should be prepared in 1:200 scales during coring.

7.5 Digital Data Storage: To store acquired, measured and observed data digitally Bidder has to provide the digital data on compact disk in LAS or ASCII format to the Company, immediately after completion of the well. All the time based data to be stored and provided to the Company at the completion of well in DVD/ External Hard Drive.

8.0 FINAL WELL REPORTS:

One original plus three copies of Well History or Well Completion Report must be submitted to Company in hard copies and also all the data in CD/ DVD/ External Hard Drive within 7 (seven) days from completion of rig down of the Unit.

9.0 CONTRACTOR'S PERSONNEL:

9.1 The Contractor shall provide well qualified and competent crew to operate efficiently and maintain MLU round the clock on board the rig to perform the work.

9.2 Data Engineer: The Data Engineer shall have a Bachelor's degree in Engineering / Master's degree in Geology / Petroleum Technology or equivalent and should be able to perform all mud logging services/duties in accordance with the Scope of Work listed and to operate and maintain the Contractor's equipment in operational status at all times and shall have documented training and experience verifying their ability to operate the integrated on-line mud logging units. Data Engineers shall have a minimum of 5 years relevant experience out of which 3 years of Offshore well (minimum 3 deepwater well) in their position.

9.3 Mud Logger: Mud Loggers shall have Bachelor's degree in Engineering / Master's degree in Geology / Petroleum Technology or the equivalent respectively and should be able to perform all mud logging services/ duties in accordance with the Scope of Work listed and to operate and maintain the Contractor's equipment in operational status at all times and shall have documented training and experience verifying their ability to operate the integrated on-line mud logging units. Mud Loggers should have a minimum of 3 years relevant experience with 3 deep water wells in their position.

9.4 Sample Catcher: (12th Pass / BSc / M.Sc. in Geology), having experience of working preferably in oil base mud system as on bid closing date.

All the above personnel needs to be properly trained in HSE/ HUET and other safety requirements involving in offshore Drilling Rigs.

9.5 List of Personnel: The Contractor shall provide the following personnel to ensure smooth running of operations:

S. No.	Description	Nos.
1	Data Engineer per Unit	2 (1 day + 1 night)
2	Mud Logger per Unit	2 (1 day + 1 night)
3	Sample Catcher	2(1 day + 1 night)

The Contractor will provide a listing of personnel with detail resume performing the mud logging services described earlier and get approval from Company to deploy that crew. The Company reserves the right to accept or reject the Contractor's proposed personnel. **The Contractor shall assign one set of mudlogging crew for operations in the Company rig for a particular well and will follow on/off pattern.**

Mud Logging Unit crew shall report to the Company Geologist for necessary instructions and related job requirements.

10.0 DGMS Approval certificate:

Contractor has to obtain clearance / approval from Director General of Mines & Safety (DGMS) against their electronic / electrical equipments to be used in the well-sites under hazardous zone 1 & 2 as per Indian Oil Mines Regulation Act, 1984 and satisfy any other statutory requirements from DGMS**.**

Successful Contractor has to provide valid DGMS approval for all such electronics and electrical equipment/junction box/ motors at the time of mobilization. Contractor has to confirm the same in their Technical Bid.

11.0 MAINTENANCE :

The Mud Logging Units are to be maintained in proper working condition during operation to deliver uninterrupted service. MLU personnel must be competent and experienced enough to carry out routine maintenance of the Unit to provide trouble free service. Any breakdown, defect, malfunction, etc. of any item / equipment will need to be attended immediately and, if required, to be replaced. For this purpose necessary spares and consumables to carry out repair / maintenance will need to be kept readily available at the Units so that the drilling, mud and other related parameters are available online / on continuous basis.

12.0 HEALTH SAFETY AND ENVIRONMENT

The Contractor shall submit the safety manual and operating procedure manual in advance to the Company for review and comment. The Contractor shall also submit a tool preventive maintenance system. Contractor also needs to submit their Corporate HSE policy. Contractor has to strictly follow all the HSE rules and regulation and follow safety rules practiced in a well-site and provide safety gears to their personnel. MLU should be fitted with safety equipment as per international practice. Contractor detailed MSDS sheets for all the chemicals that may be used in the MLU.

13.0 POLLUTION CONTROL

The Contractor undertakes that substances or rubbish in any form originating from Contractor's equipment shall not be dumped or discharged in sea, or around the well location. However, in the event of such dumping or discharge by Contractor, Contractor shall immediately assume all responsibility for the cost of the removal of items, substances or rubbish so dumped or discharged and for any resulting pollution or contamination in any form, in and near the well location.

14.0 INSPECTION AND CERTIFICATES

14.1 Company reserves the right to inspect the complete Mud Logging Unit, Sensors and other related accessories at Contractor's Works/ workshop or any other suitable place (to be arranged by the Contractor) before its mobilization to the drilling location under this contract to ascertain & certify its suitability and completeness. For this purpose, Contractor will notify Company regarding its readiness for mobilization **at least fifteen days in advance**, so that Company can depute its competent personnel for this pre-dispatch inspection in time. All expenses of Company's personnel towards the pre-dispatch inspection will be borne by Company. However, Contractor will arrange for testing facilities etc. to the satisfaction of Company personnel. Any complain/rectification/ replacement etc. as may be advised during such inspection must be set right before mobilizing the Unit to site. Company will not assume any responsibility in this regard whatsoever, leading to delay in completion of mobilization. Therefore, it is the prerogative of the Contractor to satisfy themselves and plan mobilization schedule before offering the Unit for pre-dispatch inspection by Company representatives.

14.2 Contractor shall acknowledge that Company may audit/inspect tools and equipment used by the Contractor at any time during the Contract period. Contractor's personnel at wellsite will ensure free access for Company's inspectors/geologists to the MLU at any time during the currency of the contract and will co-operate in carrying out random testing of the tools used for its operation. Upon successful commissioning of MLU at the designated drilling locations, Company representative/ Wellsite Geologist will provide MLU commissioning certificates to the Contractor after proper inspection. Additionally, the Contractor must generate a Monthly working certificate of MLU operations and obtain signature thereon of the Company's well site Geologist. The MLU Commissioning Certificate and Monthly working certificates as aforesaid must be submitted alongwith all monthly running invoices/ bills of Contractor for release of payment by Company.

15.0 The Bidder shall provide sufficient back up tools, equipment & accessories to meet the workload and for situations such as tool failure and ensure uninterrupted operations. At least one backup is to be kept always on rig for immediate replacement against failure/ loss/ non-performance/ mal-functioning etc at no extra cost to OIL.

16.0 PENALTY:

i) For payment of the Service Day Rate, the Contractor must ensure that the computer systems and sensors mentioned in "Scope of Work" remain functional during the invoice period. Contractor must submit the Performance Report of the sensors duly certified by Company representative along with the invoice.

ii) If the performance of the computer systems and sensors viz. mentioned in "Scope of Work" of tender is below 70% during the invoice period, only 80% of the Service Day Rate shall be payable to

the Contractor. If the performance of the sensors is above 70% and below 90% during the invoice period, then only 90% of the Service Day Rate shall be payable to the Contractor. The Contractor must ensure that the defective sensors are repaired within 3 hours. Otherwise, penalty will be applied as above

iii) If Contractor's computer systems, tool/ equipment fails to perform totally resulting halt of mud logging operations, for any reason during the operations and the same could not be repaired within 3 hours' time then no charges, whatsoever, shall be payable to Contractor until the equipment/ tool is put back in to operating condition or evidenced by demonstration of operation in actual tests or use to the satisfaction of Company.

iv) Any malfunctioning / non-availability of instruments/ equipment will attract pro-rata deduction of bill and penalty.

v) The functioning of all the sensors will be jointly checked and certified by Company Personnel to ensure that the data collected is authentic. Any unit/ equipment found not working as per specification will be treated non-operational attracting pro-rata deduction in payment as well as penalty.

vi) Following penalty charges shall apply in case of malfunctioning of tools /equipment.

Name of Sensor	**Deduction in percentage**
1. Depth	20%
2. Gas	20%
3. Any other sensor	5%

End of Exhibit- 6

Exhibit-7

SHORE BASE SERVICES

The Bidder shall establish one shore base facility at Tuticorin (near Tuticorin Port) with both open and covered spaces of adequate size to set up cement bulking plant, store mud chemicals, cements, bits, and all other consumables which the successful Bidder is to supply and transfer to the rig site as per this bundled service Contract to support the supply chain management to and fro the Rig with all rig consumables, for uninterrupted operations at the Rig.

1. General Conditions

a) The operating area shall be in Offshore Indian waters in the Gulf of Mannar. The Bidder shall locate and establish Shore Base with berth facilities at Tuticorin Port, as per the requirement, at his cost to support the Company's drilling operations at offshore deep-water drilling rig. The Bidder shall ensure that vessels working under this Bundled Services Tender are given immediate berth and shore base facilities without any waiting.

b) The Bidder shall provide all-weather Port Operations capability including Night Berthing and Pilots.

c) The Bidder shall be solely responsible to provide complete Shore base facilities for its OSVs and AHTSVs for loading/unloading, ware housing and handling of equipment & materials including bulk, diesel, mud, water etc. for supplying and receiving materials to/from the rig.

d) It shall be the Bidder's responsibility to obtain all necessary clearances from local and statutory authorities to set up the shore base and to ensure smooth flow of material in and out of shore base both from/to onland and offshore.

e) There should be sufficient storage warehouses and spaces to store well materials and tools provided by the Company and Company's third parties consisting of, but not limited to, chemicals, well heads, tubings, liner hangers, bits, tools etc. The shore base shall be adequately manned at all times to provide round the clock support of Company's rig operations.

f) The Bidder should follow and employ modern shore base management practices including sound storage and warehousing techniques to safeguard Company's materials.

g) The Bidder shall be responsible for maintenance/cleaning/upkeep of tools and materials meant for Company's use that are stored at the shore base.

h) The Bidder shall be responsible for and make arrangements to provide drill water, pot water etc. to the drilling rig from shore base as per the operational requirements of the rig.

i) The shore base shall be equipped with all equipment and machinery for pumping water, cement, mud, mud chemicals to OSV's/AHTSVs/vessels, bulk handling plants, silos, cranes, fork lifts, palletisation and packing facilities etc. for efficient and safe operations.

j) The Bidder shall be responsible for obtaining Statutory clearances from respective government agencies for :

- Radioactive and Explosive cargo
- Waste Management
- Pollution Control Equipment
- Hazardous Cargo handling facilities
- Engineering Workshop
- Cementing Plant along with pumping facilities
- Chemical Batch Mixing Plant along with pumping facilities

k) The Bidder shall practice and implement all the Govt. of India regulations in the Storage Spaces at Bases and shall indemnify the Company in respect of any claims made by any of the Govt. of India agencies.

2. Material Handling Equipment / Transportation Services:

2.1 All requirements of transport fleet/services including but not limited to cranes, tractor-trailers, trucks, etc. at the shore base for loading rig materials and transporting to Port jetty for loading on to the OSVs/AHTSVs are to be arranged by the Bidder.

2.2 The successful Bidder has to liaise with the Port authorities of Tuticorin Port and arrange in advance for timely transferring of materials to rig site. Any additional requirement of transport fleet/services for any specific purpose at shore base/ jetty during well operation shall also be provided by the Bidder.

2.3 The Bidder shall arrange transfer of Company material like casings, well heads and any other materials required at well site from its Godown/ casing yard at Tuticorin.

2.4 Notwithstanding any clause(s) mentioned elsewhere in this tender/contract document, transportation of all drilling consumables, tubulars, Bidder's manpower, etc. shall also be the sole responsibility of the successful Bidder. The Bidder shall arrange all vehicles & equipment viz. passenger vehicles, trucks, tractor-trailer units, cranes, etc. and the manpower required for such transportations services. For safe, secure & timely transportation, the Bidder shall ensure that only suitable good condition proper vehicles & equipment are engaged; engagement of any makeshift arrangements/units shall not be allowed and the decision of the Company to that effect shall be final and binding on the Bidder.

2.5 The Service Provider of above transportation services (for drilling consumables, tubular, etc. - para.2.1, 2.2 & 2.3 above) to the Bidder must have minimum 2 (two) years' experience in providing Road Transportation Services of industrial goods and equipment.

2.6 The drilling consumables like, well head, casings, tubular, etc. and other items as stated elsewhere in this document shall be issued

from Company's godown / stores primarily at Tuticorin yard, Tamil Nadu. However, on occasions the same may have to be lifted from any other sites like railway yard, godowns in Tuticorin or other nearby places as per operational requirement. For loading of tubular and other heavy items, at Company's godown at Tuticorin, crane services shall be provided by the Bidder 'Free of cost' to Company.

2.7 On completion of drilling all leftover Company's items / equipment including but not limited to well heads, casings, tubular, shall be collected and transported back to Company's godown/stores at Tuticorin by the successful Bidder as directed by the Company.

(Note: Approximate distance between Tuticorin port to offshore Well Site (Location 4A is 56 NM)

2.8 The Bidder is to provide material handling equipment of adequate capacity and numbers as may be required at the shore base site (both at Company's yard as well as successful Bidder's yard) for handling the equipment & tubular items at Bidder's yard as well as Company's yard. The following is the minimum requirement of material handling equipment at the shore base:

a) **Cranes**:

i) Crane with 60 ton lifting capacity at 15m radius for loading/unloading heavy lifts in/from OSVs / AHTSVs like 75 ft risers with buoyancy modules, 65 ft stroke slip joint, BOP bodies, X-mas trees etc. This crane may be required many times during the contract for a very limited period every time. Hence the Bidder must ensure availability of such crane at required times as per operational plans.

ii) 30 ton crane – 1 no.

iii) 10 ton crane – 1 no.

b) **Forklifts**:

i) 10 ton Fork lift – 1 no. with big tyres to easily move in slushy areas/areas with loose soil/powdered chemicals etc.

ii) 3/5 ton fork lift – 1 no. with big tyres to easily move in slushy areas/areas with loose soil/powdered chemicals etc.

c) **Heavy Trucks**:

The Bidder is to provide an adequate number of heavy trucks with trailers to transfer casings (26", 20", 16", 13.5/8", 9.5/8", 7" and 4.1/2" sizes), Well Heads etc from Company's yard at Tuticorin as well as other heavy materials from the successful Bidder's yard to the Port jetty.

d) **Trailer/Mini-truck**:

Contractor to provide Truck/Trailer/Mini-truck as per requirement for movement of material within the shore base and from shore base to Tuticorin Port as per operational requirements.

3. Cement/barites Bulking Plant, SOBM plant and Transport Silos:

3.1 The Bidder is to establish a cement and barites bulking plant at their shore base yard at Tuticorin for cutting and dry blending of

cement (if required) and barites, and, transfer the same to the port jetty through an adequate number of transport silos.

3.2 The Bidder is to keep necessary arrangement/ facilities at Port jetty to transfer cement/ barites to OSVs.

3.3 Transfer of SOBM from Kakinada Port: The Bidder is to transfer SOBM and base oil as and when required from Kakinada base plant.

3.4 Bidder is to provide necessary facilities to load SOBM from their plant to OSVs/AHTSVs at Kakinada Port.

3.5 The Bidder is to provide necessary facilities for Supply of Drill water and Pot water to the Rig.

4. Storage Facilities

a) The shore base should have sufficient open (approx.. 6000 sq. m) /closed spaces for storage of materials. There should be enough space to store well materials as required under this Bundled Service Tender.

b) Minimum covered space for bulk materials like barite/bentonite/chemical sacks and miscellaneous materials should be at least 12,000 sq. ft.

c) Bulk silos – Min. 5 nos with capacity of 35 cu. m. for barite, neat cement and blended cement with bulk handling plant.

5. Procurement & Logistics Coordinator

a) The Bidder shall appoint a Logistics Controller to meticulously plan and control the operations of Air and Sea Logistics to avoid any shut down of Company's deepwater rig as well as Contractor provided services for want of any material, services or manpower.

b) He shall be responsible to plan movement of men and material belonging to Operator, Rig Contractor as well as Bundled Services Contractor.

c) The Logistics Controller shall have at least three years' experience in independent capacity in planning and controlling Air and Sea Logistics for offshore rigs and shall be responsible for coordination with various statutory authorities for operation of helicopters and OSVs/AHTSVs.

d) The following shall be the main responsibilities of the Logistics Controller:

i) To plan for movement of well materials like casings, well heads, mud chemicals, cement, drill water, pot water, etc. phase-wise for rig operations.

ii) To plan for movement of OSVs/Vessels for smooth uninterrupted operations for the rig.

iii) To coordinate with various service providers/rig for proper planning of materials.

iv) To coordinate with Company Personnel at Tuticorin /Shore Base Personnel/Authorities for smooth arrival/departure of boats with minimum turn-around time.

v) To coordinate with various service providers / rig for planning the air logistics (helicopter movements) for personnel and urgent materials.

vi) To coordinate with Air Logistics Contractor/Airport Authorities for safe and efficient helicopter operations.

End of Exhibit-7

Exhibit -8

AIR LOGISTICS SERVICES

The Bidder shall provide complete Air Logistics Support for airlift of crew including Operator's personnel and essential cargo required at the Rig. The Bidder shall also ensure helicopter support in the event of medivac and other operational exigencies within least response time. In the event of failure, the Operator shall arrange requisite helicopter support in emergency as an alternative at the sole risk & cost of the Contractor.

The Bidder may note that helicopter services to support uninterrupted rig operations at the drilling Location 4A (Longitude: 79^0 04' 57" E; Latitude: 08^0 56' 47" N) the nearest airport is Tuticorin which is 56 NM from the well location. Tuticorin Airport does not support night operations and operates only two small flights from Chennai every day. The other nearby Airport is Madurai which is 63 NM from Tuticorin where refuelling facilities are available.

The Operator (OIL) plans to operate helicopter services from Madurai for regular sorties and Tuticorin for Medivac and any other emergency situation. Accordingly, the Bidder should arrange regulatory permissions to operate either from Madurai or Tuticorin as the case may be. The Bidder shall arrange necessary Radio facilities for helicopter operations.

It is anticipated to have 4 crew changes per week.

1. EXPERIENCE OF AIR LOGISTICS SERVICE PROVIDER:

The Air Logistics Service Company shall have Air Logistic support (Helicopter operations) experience for offshore helicopter operations for a minimum period of 3 years with satisfactory safety record to his credit for a twin engine Cat 'A' certified Helicopter duly equipped for offshore operations for carrying minimum 10 passengers and 50 kg Cargo one way at 35°C temperature to a distance of 190 NM without refuelling.

2. AIR LOGISTICS SERVICES SHOULD MEET THE FOLLOWING REQUIREMENTS:

2.1 The helicopter shall be Twin engine, passenger version, IFR rated helicopter with floatation gear duly equipped for offshore operations with IFR rated night flying qualified crew for the type of helicopter to be used. The helicopter shall have the capacity for carrying minimum 10 passengers and 50 kg cargo one way distance of 190 NM and back at 35°C temperature without refuelling. The weight of each passenger is to be taken as 85 kg (including 10 kg baggage). The offered helicopters shall have more than 400 flying hours available on for principal components at the time of commencement. The following conditions shall apply:

a) The Bidder shall be responsible to equip the helicopter with all requisite equipment, appliances for the safe operation as per DGCA requirements.

b) Requirement of helicopters shall be for around 60 hours per mensem, considering 4 crew changes in a week. However, the Operator may use the helicopter beyond 60 hours per mensem at no additional cost to the Operator. The Bidder is to provide the air logistics service as per the requirement of operations including Medivac.

c) Suitable Back up helicopter along with experienced pilots and crew shall be provided by the Bidder within 24 hours if there is a breakdown of any helicopter to ensure uninterrupted air logistics services so that there is no shut down of rig operations.

d) Fuel for Helicopter will be the responsibility of the Bidder at Bidder's cost.

2.2 Two pilots operation of helicopters is a must.

2.3 2 seats in every crew change sortie shall invariably be kept reserved for Operator's visiting officers i.e. other than normal crew change personnel.

2.4 DGCA Regulations no. AIC 4/98 dated 17.07.98 titled "Guidelines for foreign equity participation in the domestic air transport sector" (including any revisions/replacements thereof) shall be strictly adhered to by the Bidder and all other applicable rules and regulations for operations in India.

2.5 The helicopter, intended to be used by the Bidder, shall be certified under CATA and shall be acceptable to the DGCA for offshore operations in India.

2.6 The Bidder shall be under obligation to comply with the guidelines, limitations, restrictions, rules and regulations, issued from time to time, by the Director General Civil Aviation, India and any other regulatory authority and Environmental Clearance Authorities, including but not limited to Helicopters Company's Flight Manual, Standard Operating Procedures / and ICAO.

2.7 The Bidder will arrange and submit (Non Scheduled Operator's Permit) NSOP and a copy of approval from DGCA, India for operations and maintenance of the type of helicopters offered in the bid for offshore operations before the same is mobilised.

2.8 Foreign pilots and engineers required to operate and maintain the helicopters, shall undergo the necessary security clearances as per relevant regulatory rules for Civil Aviation.

2.9 Indian regulations relating to operations and maintenance of the helicopters stipulated for leased aircraft operations shall be complied with by the helicopter operator.

2.10 Foreign helicopter operator(s) shall continue to hold a valid operating permit from their parent company.

3. RESPONSIBILITIES OF THE BIDDER:

3.1 The Bidder shall be solely responsible to comply with DGCA Rules, Regulations and Aviation requirements issued from time to time in respect of operation and maintenance in India.

3.2 Settlement of dispute with the DGCA or any other Regulatory authority, related to violation of any Environmental, Safety & Operation Regulation shall be the sole responsibility of the Bidder.

3.3 Bidder shall be responsible to arrange special sorties as and when required by Operator for reasons other than directly connected with the Rig operation, at Operator's cost as per programme notified by the Operator to the Contractor.

3.4 Fuel, lubricants, spares, taxes, levies, duties and Customs duty on components, if any, will be the responsibility of the Bidder.

3.5 Radio services at base, if required, will be provided by the Bidder at his risk and cost. The Bidder shall cause the designated helicopters for operations under their contract and its base of operations to be equipped with appropriate, sufficient and functional communication equipment / appliances so as to maintain continuous two-way communication system during flight operation between the helicopter, the base of operations and the onshore and offshore destination and departure locations.

3.6 The Bidder shall provide hangar, tarmac facilities and base facilities for the conduct of operation including facilities for cargo / passenger handling their security checks, passengers briefing facilities on the use of life saving appliances on board, in flight emergency procedure and if the flight involves extended over water operation, well in advance before boarding the helicopter.

3.7 The Bidder shall be responsible for obtaining any certificate / clearance necessary to avail exemption of the component of the payment of import duties etc. including essentiality certificate, if required.

3.8 The Bidder shall have valid insurance policy for the aircraft with special reference to Hull, third party liability, passengers and cargo liabilities. Passenger liability for Operator's personnel: Rs. 7.5 lacs per passenger as on date. Any change thereof in future will be intimated to the Bidder by the Operator to modify the Insurance cover accordingly in meeting the legal liability.

3.9 Air Logistics Services should comply with the Aviation Safety Standard (AS-4) of the Operator.

NOTE

(1) Day rate for the Air Logistics support shall be inclusive (Daily rate/ Hourly rate) of all requisite services for providing Air Logistics support including Helicopter services charges, Aviation fuel etc.

These charges shall be inclusive of all related Airport charges (i.e. RNFC, Parking, landing, housing, run way charges, passengers fees, capital AAI charges, security check liabilities, radio communication facilities at base etc.), as per aviation established procedural practices.

Chartered Helicopters to be equipped as Per Mandatory Requirement

The Bidder will at its own expense, equip helicopter(s) for IFR Operations as follows (but not limited to):-

1. Mapping Radar

2. Emergency Equipment comprised of
   a) Life Vests,
   b) Life Rafts,
   c) Emergency Rations,
   d) Signalling Equipment,
   e) Under Water Emergency Locator Beacon or CPL.
   f) Automatic Inflatable type floats to land on water.
   g) Ear Defenders.

3. Standard IFR Instruments.

4. Avionic/Navigation Equipment comprised of -
   a) One (1) ADF's
   b) One (1) VHF Multi Channel Transceiver
   c) One(1) Radio Altimeter.
   d) CVR/FDR

6. Comfortable cushioned seats for 10 to 12 passengers.

7. Long Range auxiliary fuel tanks if required.

End of Exhibit-8

Sea Logistics

A. EXPERIENCE

The Marine Logistics Service Company for AHTSV (Anchor Handling Tug Supply Vessel) should have experience of operating AHTSVs for a period of three years with at least one Anchor handling operation in the water depth as defined.

Scope of work

Bidder shall be solely responsible to provide marine logistics support for transportation of essential cargo including Operator, Operator's sub-contractors and Rig Contractors' material & personnel required at the Rigs.

Bidder shall provide AHTSVs for anchor handling services/rig towing services for the anchor moored rig in up to 500m of water depth. Contractor will also ensure marine logistics support in the event of any operational exigencies within the least response time.

B. Technical Specification & Scope of Work

B.1 Bidder to provide and operate with adequate skilled Crew for 1 no. of 180 Metric ton & 1 no. of 150 Metric ton Bollard Pull capacities for the entire period of the campaign (120 days). The Minimum Continuous Bollard Pulls of AHTSVs should not be less than 180 Metric Ton and 150 Metric Ton, respectively.

B.2. Apart from above two AHTSVs, the Bidder is to provide one more OSV on call out basis of 1500 DWC capacity with adequate bulking space to transfer liquid SOBM or other materials from Kakinada port / elsewhere for about 30 days.

B.3. Bidder to carry out the following minimum but not the least of jobs as prescribed by the Operator time to time while the MODU is in Operation.

i) To carry men & materials between shore base & offshore rig, as well as other assignments as instructed by Operator to support operations.
ii) To carry out standby & rescue operations in offshore, if required
iii) To assist in exigencies arising out of mud loss, blow out, etc. occurred in offshore
iv) To carry out routine surveillance in offshore for safety and security reason
v) To carry out operation related fieldwork as instructed by Operator
vi) The vessels shall be available for offshore work round the clock, 24 hours a day, during the term of contract
vii) Ultimate responsibility of selection of the requisite type of vessel rests with the Bidder. However minimum to be provided broad specifications of AHTSVs, suitable for deepwater operational requirements mentioned above, are attached for guidance only. Contractor may provide for higher specifications as per its requirements.
viii) The responsibility for obtaining all statutory clearance like DG Shipping, Clearance for operating the vessels on the Indian

Coast, Naval clearance from Ministry of Defence, Custom clearance etc. rests with the Bidder.

ix) Security of the items at the base also is the responsibility of the Contractor.

x) Minimum of two (2) AHTSVs as specified above shall be provided at all times during the contract period. 1 day per calendar month of maintenance time shall be allowed per AHTSV payable at SDR. This maintenance time can be accrued to maximum 2 days including the month in which maintenance is done. However, Contractor to plan maintenance schedule in such a manner so that sea logistics support services to the rig are not affected.

xi) One no. of vessel shall always be standby at the rig at the time of helicopter landing/taking off from the rig.

xii) The AHTSVs shall have enough deck space to accommodate long items like 50 ft riser joints with buoyancy material, 13.5m casing joints, 50 feet stroke length telescopic joints, items like horizontal X-mas trees and other standard oilfield service units, materials etc.

xiii) There shall be separate tankage available on vessels for bulk items like barite, cement, diesel, water, liquid mud, base oil etc to support the rig operations. The vessels shall have to handle water based mud a well as SOBM. To provide all tools necessary for handling of anchor handling jobs such as J-type chain chaser, grappling hook, spear etc.

C. The AHTSVs shall meet minimum technical specifications as under:-

Tender requirement: 2 nos (1 no. 180 MT Bollard Pull & 1 no. 150 MT Bollard Pull) for 120 days
Vintage: Manufactured / constructed not earlier than 1990

Bidder to submit duly filled-in technical specifications sheet separately for each of the offered vessels		
Vessel Name	:	
IMO No	:	
Hull No	:	

Sl	**Parameter**	**Specification**	**Bidder to fill up**
1.	Classification	ABS/BV/DNV/GL/ IRS/LRS/NK/RIN	
2.	Draught [meters]	Maximum 5.95 M in S.W, when vessel is on even keel	
3.	Clear Deck Area [sq. meters]	Minimum 300 sq. Meters	
4.	Number of Main Engines	Minimum 2 [two]	
5.	Year of build of Main Engines	Maintained as per Class requirement	

6.	Main Propulsion Number of propellers	Minimum 2 [two]	
7.1	Main Propeller Type	Shrouded CPP(Kort Nozzle) or Z-peller or Zip Drive or better	
8	Number of bow thrusters	Minimum two	
9	Number of stern thrusters	Minimum one	
10	Number of generators	At least two independent generators other than main shaft generators.	
11	Steering Gear Type	Hydraulic	
12	Number of rudders	Minimum 2 [two] However in case of availability of Z-peller or Zip Drive propeller system, the rudders are not mandatory.	
13	Cruising speed [knots]	Minimum 12 at 100% DWT	
14	Bollard pull [Max cont]	Minimum continuous BP not less than 180 / 150 Metric Ton (as applicable for respective AHTSV)	
15	Winch Type	Double drum water fall hydraulic/electric or better	
16	Drum capacity	Sufficient to carry anchor handling operations in offshore in deep waters between 400-500 metres at anchor drop point which will cater both anchor handling & towing operations.	
17	Work wire	Adequate for the anchor handling in the water depth specified	
18	Winch stall capacity	Minimum 360 T / 300 T for 180 MT BP & 150 MT BP AHTSV respectively	
19	Chain lockers	Should be adequate	
20	Chain locker capacity [cubic meters]	Sufficient to carry out Anchoring operations in the water depth range as specified	
21	Tow pins and shark jaws	Be remote control with minimum safe working load of 360 T / 300 T for 180 MT BP & 150 MT BP AHTSV respectively	
22	Stern Roller	Dimension is to be 5 metres length *2.4 metres dia with at least safe working load of 350 T	
23	Tugger/ **Deck** winches	At least 2 tugger winches of minimum of 10 T each capacity capable of heaving in at the speed of minimum of 15 metres per minute	
24	Capstans [on aft	Required	

	deck]		
25	Cargo discharge pumps	1 Fuel Oil cargo pump each minimum capacity each 100 mtrs. Cub. Per Hr. at 70 mtr. Head and 1 no. of FW/Drill water pump having capacity not less than 100 Mtr. Cu/hr. at 75 mtr head.	
26	NAVIGATION AND COMMUNICATION EQUIPMENT	Conforming to DG Shipping/IMO Guidelines. Vessel should have all communication and navigational equipment.	
27	Accommodation for Operator's use	Suitable accommodation for five persons required in addition to the crew compliment. .	
28	Eco-Sounder	To be fitted with Eco- sounder to be capable of measuring a minimum of 500 mts. Water depth.	
29	Anchor Handling	Capable of carrying out round the clock Anchor handling operation**.** Capable of receiving and returning 40 meters pennant to the rig during hours of darkness.	
30	**CAPACITIES**		
	Deck cargo	Minimum 500 Tons	
	Deck loading [T/sq mtrs]	Min 5T	
	Fuel (m^3)	Min 300 KL (One month operation & 100 Hrs running on full power including DP & Fire fighting)	
	Drill water (m^3)	Required, Indicate	
	Pot water (m^3)	Minimum 200 Tonnes	
	Base Oil (m^3)	Required, to indicate the available volumetric capacity.	
	Liquid mud (m^3)	Required, to indicate the available volumetric capacity.	
	Brine	Required, to indicate the available volumetric capacity.	
	Dry bulk (m^3)	Required, Indicate	
	Dead weight	Minimum 1000 Tons at 5.95 M Draft	
	4" Cam lock couplings	Required on all hoses with reducers of appropriate size	
31	***RIGGING EQUIPMENT***		
	Rigging Equipment: To provide all tools necessary for handling of anchor handling jobs such as J-type chain chaser, grappling		

	hook, spear etc. All tools are to be in good and safe working order Equipments is to be capable of handling 70/76 mm anchor chain/wire		
32	**FIFI**	**FI-FI Class-I required**	
33	Dynamic Positioning	DP I system should maintain position with +/- 5 Metre in Sea State 3. DP-I is to be used as per requirement of field on supply at installation, in FIFI & SAR mode. The DP system should have at least one DGPS as reference system. Two DGPS with signals for differential corrections from two independent sources will be considered as two reference systems. No additional/ Separate payment will be made for DGPS signal during D P operation.	
34	Water maker	Capable of making minimum 10 T/day of water.	
35	Search & Rescue (SAR)	The vessel should comply with requirement of SOLAS convention of 2001 for cargo ships as amended till date and UKOOA guidelines for "Standing by Duty" Offshore Installations (Group C), as per the following; i) All crew should be provided with high visibility armbands, waist coats or other means for use in emergencies, which clearly identify them as vessels crew members. ii) Every Vessel should be provided with a system to aid personnel climbing the ship's side from sea or from rescue craft alongside. This system should provide a more rigid, non slip climbing and grip surface. iii) Temporary refuge for survivors should be supplied by a rescue basket. iv) Vessels of all groups should carry at least 12 lifebuoys. Two of the twelve lifebuoys should be fitted with self-igniting electric lights and smoke signals and two with self igniting electric light. The remaining eight should be provided with 30M buoyant lines and conveniently situated for easy access by the crew engaged in recovery of survivors. v) A bridge operated "Man	

		Overboard" alarm should be installed which clearly audible throughout the vessels and is separate & distinct from all other alarms. In areas of high ambient noise levels, audible alarms may be supplemented by visual alarms. vi) A day light signalling lamp, mains and/or battery powered, plus a portable battery –operated loud hailer should be provided on the bridge. vii) At least two directional searchlights should be provided that together provide a capability of illuminating any area of the sea over a 360-degree arc and for a distance of at least 75M. Such lights should be capable of remote operation from within the bridge and the designated to illuminate as large as an area of the sea as possible. viii) Rescue nets shall be not less than 5M wide, weighted at the bottom and long enough to extend at least below the waterline with the vessel at light draft. ix).Medical inventory- An inventory of all medical equipment should be maintained on board in a format that permits rapid confirmation of current stock levels and expiry dates. The followings are to be provided and maintained. 1. Stretcher- Basket type with straps suitable for transporting patients within the vessels-2 Nos 2. Blanket -20 Nos 3. Bandages and dressings sufficient quantity for 20 Nos survivors. 4. Anti hypothermia blankets of heat reflective and heat retaining material for 20 survivors. 5. Sufficient quantity of	

		emergency medicines. Fast Rescue Boat 1. The vessel is to be equipped with at least one fast rescue boat(FRC) of capacity of 9 persons in addition to the rescue boat (as per SOLAS Convention). FRC should meet UKOOA Guidelines for "Standing by Duty" for Offshore Installations arranged and maintained to be permanently ready for use under all weather conditions. 2. Vessel should have 1 No. Aero VHF of suitable frequency for communication with helicopters.	
36	Breathing Apparatus	Min 18 Nos for rescue operation for 15 minutes durations.	
37	Oil Pollution Certificate	Required to comply MARPOL regulation	
38	Flow meter	Turbine type or superior type flow-meter duly calibrated (accuracy +/- 0.5%) with printer output.	
39	***OTHER CAPABILITIES*** Not with standing what may have been stated elsewhere, the following documents/certificates should also be enclosed with the un -priced bids so as to allow us to assess the capabilities of the offered Anchor Handling Tug.		
40	Documents to be submitted with un priced bid: 1. General arrangement plans: These should be sufficiently detailed to show deck area including the towing and anchor handling equipment 2. Registry Certificate 3. First Registry Certificate with date of issue of registry certificate to confirm the age of vessel as on date of Techno commercial bid opening (TBO) 4. Data Sheet to be filled in for the offered vessel		
41	Certificates	Copies of the following should be submitted with the Technical Bid as well as at the time of TPI : I. Class Certificate. II. Cargo-ship Safety Construction Certificate. III. Cargo-ship Safety Equipment Certificate.	

		IV. Cargo-ship Safety Radio Certificate V. International Load Line Certificate. VI. International Oil Pollution Prevention Certificate. VII. Safety Management Certificate as per ISM Code. VIII. Registry Certificate. IX. International Ship Security Certificate as per ISPS Code. X. International air pollution prevention certificate XI. International sewage pollution prevention certificate XII. Bollard Pull Certificate: This should be valid at the time of TPI and valid till the period of contract, acceptable to Marine Warranty Surveyor or certificate issued by recognized inspection bodies approved by DG Shipping. The contractor shall submit Bollard Pull Test Certificates not more than 24 months old on award of contract. The bollard pull test is required to be undertaken by the bidders every two years at their own risk and cost. OIL at its discretion may witness such tests). Line pull/brake load and stall capacity certificate(s) of the Anchor/towing Winch from manufacturers / Classification/any reputed third party agencies should be attached in the bid. Certificate from reputed Third Party regarding capability of offered AHTS for Anchor Handling	

		jobs upto 500 metres water depth at anchor drop point. XIII. Dead weight scale	
42	Notwithstanding anything specified above, the bidder must ensure that: The vessels, offered by them, shall be able to provide the required services. The vessels must be fitted with Communication, Navigation and LSA/FFA equipment as per the latest applicable regulations.		

D. GUIDELINES:

The following guidelines are given for use by Bidder for safe and effective anchor handling operations. The onus of providing satisfactory services in a sound and prudent manner rests entirely with the owners:
The vessel shall be equipped with both main and spare towing/work wire, each of adequate strength and length.

1. The main towing /work wires should be spooled onto the winch drum using adequate tension. The end of the wires must be adequately secured to the winch drum, though a method of quick release may be provided.

2. The spare towing/work wire should be stowed on the second winch drum. Additional lengths may be reverse stowed on a reel. The reel stowed wires should be readily accessible even in heavy weather and should be in such a position that transfer to the main drum can be easily and quickly affected.

3. The vessel should have at least two towing pennants of not less than the required breaking load and of the same construction and lay as the main towing/work wire.

4. If synthetic stretchers are used at least two shall be carried. The min dry breaking load of the synthetic stretchers should be not less than 1.5 times the min required BL of the main tow/work wire. The stretchers should have heavy-duty gusseted thimbles at each end.

5. The vessel should have at least six towing shackles of adequate SWL.

6. The main winch and its connections to the vessel should be strong enough to withstand a force equal to the BL of the main work wire acting at its max height above deck.

7. If power to the main winch is provided by a main engine shaft generator during normal operations, then a standby power source should be available in case of Main Engine failure.

8. Each drum of the winch should be capable of independent operations.

9. The winch brake should be capable of preventing the towing/work wire from paying our when the vessel is towing at its max continuous static bollard pull and should not be released automatically in case of a power failure.

10. There should be adequate means of communication between the winch control station, the engine control station and the bridge.

11. Sufficient protection should be provided to the towing/work wire against damage by abrasion and chafing.

12. The cargo protection rail, bulwarks, stern rail, tail gate, stern roller etc should be free of edges, corners or obstructions that could damage or prevent the free lateral movement of the towing/work wire.

13. Whichever system of control and protection of the towline is used, the arrangement should be such that the risk of girding is minimised.

14. The stability of the vessel should not be less than that required by IMO Resolution.

Notwithstanding anything specified above, the bidder must ensure that:

(ii) The vessels, offered by them, shall be able to provide the required services.

(iii) The vessels must be fitted with Communication, Navigation and LSA/FFA equipment as per the latest applicable regulations.

E. Technical Specifications SCOPE OF WORK FOR OSV (Offshore Supply Vessel) 1500 DWT (1 no for 30 days)

a) To carry men and material between base and offshore installations, as well as between offshore installations only where such facilities are available.

b) To carry out stand by and rescue operations in offshore, if required.

c) To assist in exigencies arising in offshore.

d) To carry out routine surveillance in offshore for safety and security reasons.

e) To carry out any other field work which may be within the natural capabilities of the chartered vessel, as instructed by Operator's own operations and that of JV/NELP partners in cases of emergency.

f) The Vessel should available for offshore work round the clock, 24 hours, a day, during the term of the Charter Party.

g) The above work shall always be performed within the vessel's natural capabilities and within safe parameters.

h) In case of OSV shall have enough deck space to accommodate long items like 50/75 ft. riser joints with buoyancy material, 13.5m casing joints, 55 feet stroke length telescopic joints, items and other standard oilfield service units, materials etc.

i) There shall be separate tankage available on vessels for bulk items like barite, cement, diesel, water, liquid mud (Water based and SOBM), base oil etc to support the rig operations. The vessels shall have to handle water based mud a well as SOBM.

Technical Specification: OSV of not less than 1500 DWT
Category :
Tender Requirement : 1 no for 30 days (On call Out)
Vintage: Manufactured / constructed not earlier than 1990

Bidder to submit duly filled-in technical specifications sheet separately for each of the offered vessel		
Vessel Name	:	
IMO No	:	
Hull No	:	

	PARAMETER	**SPECIFICATION**	**Bidder to fill**
	Classification	ABS/BV/DNV/GL/ IRS/LRS/NK/RINA	
	Draught [meters]	Maximum 5.95 M in S.W, when vessel is on even keel	
	Clear Deck Area [sq. meters]	Minimum 250 sq. Meters	
	Number of Main Engines	Minimum 2 [two]	
	Max. continuous rating (For all the main engines together)100%	Not less than **4800 BHP**	
	Year of build of Main Engines	New at the time of installation onboard the Vessel	
	Main Propulsion Number of propellers	Minimum 2 [two]	
	Main Propeller Type	Shrouded CPP (Kort Nozzle) or Z-peller or Zip Drive or better	
	Number of bow thrusters	Minimum two	

	Number of stern thrusters	Min 1 no. In case of Z-peller/ Zip drive stern thruster is not required	
	Number of generators	At least one independent generators other than main shaft generators	
	Steering Gear Type	Hydraulic	
	Number of rudders	Minimum 2 [two] However in case of availability of Z-peller or Zip Drive propeller system, the rudders are not mandatory.	
	Cruising speed [knots]	Minimum 12 at 100% DWT	
	Tow pins and shark jaws	Not Required	
	Tugger winches	Required	
	Capstans [on aft deck]	Required	
	Cargo discharge pumps	1 Fuel Oil cargo pump each minimum capacity each 100 mtrs. Cub. Per Hr. at 70 mtr. Head and 1 no. of FW/Drill water pump having capacity not less than 100 Mtr. Cu/hr. at 75 mtr head.	
	Navigation and communication equipment.	Conforming to DG Shipping/IMO Guidelines. Vessel should have all communication and navigational equipment.	
	Accommodation for charterer's use	Suitable accommodation for five persons required in addition to the crew compliment.	
	CAPACITIES		
	Deck cargo	Minimum 400 Tons	
	Deck loading [T/sq mtrs]		
	Fuel (m^3)	Min300 KL(One month operation & 100 Hrs running on full power including DP & Firefighting)	
	Drill water (m^3)	Required, Indicate	
	Pot water (m^3)	Minimum 200 Tonnes	
	Liquid mud (m^3)	Required, Indicate	
	Dry bulk (m^3)	Required, Indicate	
	Dead weight	Minimum 1500 Tons at S.W.Draft	
	4" Cam lock couplings	Required on all hoses with reducers of appropriate size	

	FIFI	**FiFi class-1 required**	
	Dynamic Positioning	DP I system should maintain position with +/- 5 Metre in Sea State 3. DP-I is to be used as per requirement of field in FIFI & SAR mode. The DP system should have at least one DGPS as reference system. Two DGPS with signals for differential corrections from two independent sources will be considered as two reference systems. No additional/ Separate payment will be made for DGPS signal during D P operation.	
	Search & Rescue (SAR)	The vessel should comply with requirement of SOLAS convention of 2001 for cargo ships as amended till date and UKOOA guidelines for "Standing by Duty" Offshore Installations (Group C), as per the following; i) All crew should be provided with high visibility armbands, waist coats or other means for use in emergencies, which clearly identify them as vessels crew members. ii) Every Vessel should be provided with a system to aid personnel climbing the ship's side from sea or from rescue craft alongside. This system should provide a more rigid, non-slip climbing and grip surface. iii) Temporary refuge for survivors should be supplied by a rescue basket. iv) Vessels of all groups should carry at least 12 lifebuoys. Two of the twelve lifebuoys should be fitted with self-igniting electric lights and smoke signals and two with self-igniting electric light. The remaining eight should be provided with 30M buoyant lines and conveniently situated for easy access by the crew engaged in recovery of survivors. v) A bridge operated "Man Overboard" alarm should be installed which clearly audible throughout the vessels and is separate & distinct from all other alarms. In areas of high ambient noise levels, audible alarms may be supplemented by visual alarms. vi) A day light signalling lamp, mains	

		and/or battery powered, plus a portable battery –operated loud hailer should be provided on the bridge. vii) At least two directional searchlights should be provided that together provide a capability of illuminating any area of the sea over a 360-degree arc and for a distance of at least 75M. Such lights should be capable of remote operation from within the bridge and the designated to illuminate as large as an area of the sea as possible. viii) Rescue nets shall be not less than 5M wide, weighted at the bottom and long enough to extend at least below the waterline with the vessel at light draft. ix) Medical inventory - An inventory of all medical equipment should be maintained on board in a format that permits rapid confirmation of current stock levels and expiry dates. The followings are to be maintained. 1. Stretcher - basket type with straps suitable for transporting patients within the vessels - 2 Nos 2. Blanket - 20 Nos 3. Bandages and dressings sufficient quantity for 20 Nos survivors. 4. Anti-hypothermia blankets of heat reflective and heat retaining material for 20 survivors. 5. Sufficient quantity of emergency medicines. **Fast Rescue Boat** 1.0 The vessel is to be equipped with at least one fast rescue boat of capacity of 9 persons in addition to the rescue boat (as per SOLAS Convention) which meets UKOOA Guidelines for "Standing by Duty" Offshore Installations arranged and maintained to be permanently ready for use under severe weather	

		conditions. The launching arrangement should be SOLAS approved type. 2.0 Vessel should have 1 No. **Aero VHF** of suitable frequency for communication with helicopters.	
	Breathing Apparatus	Min 18 Nos for rescue operation for 15 minutes durations.	
	Oil Pollution Certificate	Required to comply MARPOL regulation	
	Flow meter	Turbine type or superior flow-meter duly calibrated (accuracy +- 0.5 %) with printer output	
	Documents to be submitted with unpriced bid: 1. General arrangement plans: These should be sufficiently detailed to show deck area. 2. Current Registry Certificate 3 First Registry certificate with date of issue of registry certificate to confirm the age of vessel as on date of Techno commercial bid opening (TBO). 4 Data Sheet to be filled in for the offered vessels.(as enclosed)		
	Certificates	Copies of the following should be submitted with the Technical Bid as well as at the time of TPI: (i) Class Certificate. (ii) Cargo-ship Safety Construction Certificate. (iii) Cargo-ship Safety Equipment Certificate. (iv) Cargo-ship Safety Radio Certificate (v) International Load Line Certificate. (vi) International Oil Pollution Prevention Certificate. (vii) Safety Management Certificate as per ISM Code. (viii) Registry Certificate. (ix) International Ship Security Certificate as per ISPS Code. (x) International air Pollution prevention Certificate. (xi) International sewage Pollution prevention Certificate. (xii) Dead weight scale	
	Notwithstanding anything specified above, the bidder must ensure that: The vessels, offered by them, shall be able to provide the required services. The vessels must be fitted with Communication, Navigation and LSA/FFA equipment as per the latest applicable regulations.		

F. GUIDELINES:

The following guidelines are given for use by Bidder for safe and effective anchor handling operations. The onus of providing satisfactory services in a sound and prudent manner rests entirely with the owners:

The vessel shall be equipped with both main and spare towing/work wire, each of adequate strength and length

1. The main towing /work wires should be spooled onto the winch drum using adequate tension. The end of the wires must be adequately secured to the winch drum, though a method of quick release may be provided
2. The spare towing/work wire should be stowed on the second winch drum. Additional lengths may be reverse stowed on a reel. The reel stowed wires should be readily accessible even in heavy weather and should be in such a position that transfer to the main drum can be easily and quickly affected.
3. The vessel should have at least two towing pennants of not less than the required breaking load and of the same construction and lay as the main towing/work wire.
4. If synthetic stretchers are used at least two shall be carried. The min dry breaking load of the synthetic stretchers should be not less than 1.5 times the min required BL of the main tow/work wire. The stretchers should have heavy-duty gusseted thimbles at each end.
5. The vessel should have at least six towing shackles of adequate SWL.
6. The main winch and its connections to the vessel should be strong enough to withstand a force equal to the BL of the main work wire acting at its max height above deck.
7. If power to the main winch is provided by a main engine shaft generator during normal operations, then a standby power source should be available in case of Main Engine failure.
8. Each drum of the winch should be capable of independent operations.
9. The winch brake should be capable of preventing the towing/work wire from paying our when the vessel is towing at its max continuous static bollard pull and should not be released automatically in case of a power failure.
10. There should be adequate means of communication between the winch control station, the engine control station and the bridge.
11. Sufficient protection should be provided to the towing/work wire against damage by abrasion and chafing.
12. The cargo protection rail, bulwarks, stern rail, tail gate, stern roller etc should be free of edges, corners or obstructions that could damage or prevent the free lateral movement of the towing/work wire.
13. Whichever system of control and protection of the towline is used, the arrangement should be such that the risk of girding is minimised.
14. The stability of the vessel should not be less than that required by IMO Resolution.

Notwithstanding anything specified above, the bidder must ensure that:

(i) The vessels, offered by them, shall be able to provide the required services.

(ii) The vessels must be fitted with Communication, Navigation and LSA/FFA equipment as per the latest applicable regulations.

G. DETAILS OF PERSONNEL FOR AHTS OF 180 MT & 150 MT BP (Spec. 1)

Throughout the period of the contract, the Bidder is obliged to man the vessel with Master and Crew. Crew complement to be not less than:

Sl.no	Category of Crew	Number required
1	Master	One
2	1st Mate (Chief officer)	One
3	Chief Engineer	One
4	Second Engineer	One
5	Sea man /Engine room	Six
6	Cook	One
7	Mess Room	One
8	Mess man	One
9	Radio officer/ GMDSS operator	One
	TOTAL	13 (Thirteen)

H. The AHTSV Crew should be capable and competent to:

1. Undertake anchor handling operation in deep waters of up to 500 metres water depth at anchor drop point, involving laying of mooring legs consisting of 76 mm wire rope, 76mm stud link chain and 15 T anchor. The duties include handling of chain and 15 T anchor, insertion & removal of a length of chain between the anchor and the wire rope on the deck of the AHTS.

2. To undertake operations as detailed in Scope of Work/Operations for AHTS-180 T & 150 T BP.

Note:

1. The Master / Chief Officer should be capable and competent to undertake the scope of work as stated at **Schedule-B** & should have at least 01 (One) year experience in operating the requisite bollard pull class of vessel.
2. During the currency of the contract, if it becomes mandatory to position additional crew, the same will be provided by the contractor at his own cost.
3. The crew and master proposed to be deployed for the vessel should have undergone training for Survival at sea and H2S evacuation training from a reputed maritime institute.

I. DETAILS OF PERSONNEL FOR OSV

Throughout the period of the contract, the Bidder is obliged to man the vessel with Master and Crew. Crew complement to be not less than:

Sl.no	Category of Crew	Number required
1	Master	One
2	1st Mate (Chief officer)	One
3	Chief Engineer	One
4	Second Engineer	One
5	Sea man /Engine room	Six
6	Cook	One
7	Mess Room	One
8	Mess man	One
9	Radio officer/ GMDSS operator	One
	TOTAL	13 (Thirteen)

Note:

1) Only respective Service Day Rate (SDR) as per Appendix-1 (For AHTSVs) & Appendix-7C (For OSV) of Price Bid Format will be applicable for the logistics services of AHTSVs & OSV (on Call-out).
2) No other charge including mob / demob charge is applicable.
3) Meals and accommodation: Contractor shall be required to provide accommodation and meals for up to 4 Company Employee / Company deployed third party Contractor employee during emergency evacuation or anchor handling jobs or for rig movement or any other requirement up to a maximum of 30 days per vessel during the period of contract. In the event of exceeding the specified persons / days, Company will reimburse the Contractor at the rate of USD 15 per person per day for meal and accommodation and USD 6 per person per day for meal only.
4) OIL shall get the AHTSVs & OSVs to be mobilised under this service inspected by itself or through any one of the internationally reputed third party agencies at its option, as specified in the Special Terms & Conditions of the contract. However, OIL reserves the right to do away with such inspection at its discretion.

End of Exhibit 9

Exhibit-10

Casing Running in Tools and Services

The Bidder shall provide casing running in tools and services with torque turn services and competent service personnel for carrying out jobs at the rig under this service.

1.0 Casing Running Tools & Equipment including required consumables:

1.1 The following tools and equipment for casings of various sizes from 36" to 4.1/2" are to be provided by the successful Bidder:

Description : Casing Running Services				
Sl. no.	**Description**	**Details**	**UOM**	**Qty**
1	Torque-Turn Equipment c/w components & backup to monitor & record torque turns applied to tubulars with independent power source if required	C.A.M. Data Trek Torque Turn C/w purges System 10k Load Cell (10,000) Ibs range Of Load Cell and Cable to transfer all data to the floppy with encoder.	Sets	2
2	500 Ton Spider c/w 3 set of inserts for 13 5/8", 9 5/8", 7", casing & tubing c/w top & bottom guides		Sets	1
3	500 Ton 24" Spider elevator c/w 3 set of inserts for 20" & 16" casings c/w top & bottom guides		Sets	2
4	21" HT Casing Hydraulic Power Tongs c/w jaws & spares for 20" & 16".	Hydraulic power tongs c/w torque gauge return line spring hanger (Tongs offered max torque output 50,000 Ft/lbs. 20" jaws for 20" power tong 16" jaws for 20" power tong	Sets	2
5	14" HT Casing Hydraulic Power Tongs c/w jaws & spares for 13 5/8", 9 5/8", 7"		Sets	2
For 36" Casing, X-56, 553 ppf, RL-4RB Connection				
1	150 Ton 36" bowl & slips		Sets	1
2	150 Ton 36" side door elevator c/w spare		Sets	2
For 20" Casing, X-56, 133 ppf, RL-4S				
1	250 Ton bowl & slips	20" 200 ton Bowl & slips	Sets	2

	for 20" casing	BJ/Bloom Voss-Bash Ross		
2	250 Tons, 20" side door elevator c/w spare	20" 250 Ton Side door Elevator BJ/Varco Blohm Voss	Sets	2
3	20" Casing safety clamp c/w spares	20" C Type safety clamp c/w spares and wrench can be REDUCED TO 4.1/2"	Sets	2
For 16" Casing, P-110, 84 ppf, DINO VAM				
1	16" Single Joint Pick-Up Elevator c/w Slings		Sets	1
2	150 Ton bowl & slips for 16" casing		Sets	1
3	150 Tons 16" side door elevator c/w spare		Sets	1
4	Casing drift for 16", 84 ppf		Nos.	2
For 13-5/8" Casing, P-110, 88.2 ppf, Vam Top SC-80 & C-110 Tenaris 513 Flush Joint				
1	13-5/8" Single Joint Pick-Up Elevator c/w Slings for **Vam Top SC-80 casing**		Sets	1
2	150 Tons Slips for 13-5/8" casing in API bowl		Sets	1
3	250 Tons, 13-5/8" side door elevator c/w spare **for Vam Top SC-80 casing**		Nos.	1
4	13-5/8" Casing safety clamp c/w spares		Nos.	2
5	13-5/8" Quick Release (Klepos) Casing Thread Protectors (Each set of 4 Nos.)		Nos.	2
6	Casing drift for 13-5/8", 88.2 ppf		Nos.	2
7	Stabbing Guides for 13-5/8" Casing		Sets	1
8	13-5/8" Single Joint Pick-Up Elevator c/w Slings for **Tenaris 513 flush joint casing**		Nos.	2
9	250 Ton, 13-5/8" Side Door Elevator c/w spare for **Tenaris 513 flush joint casing**		Nos.	2
10	Suitable lifting plugs (if applicable) for single joint / side door elevator to be used for 13.5/8", 88.2 ppf ,		Nos.	2

	Tenaris 513 flush joint casing			
For 9-5/8" Casing, P-110, 53.3 ppf x ABTC-II (special drift: 8.500")				
1	9-5/8" Single Joint Pick-Up Elevator c/w Slings		Nos.	1
2	150 Tons Slips for 9-5/8" casing in API bowl		Nos.	1
3	250 Tons, 9-5/8" side door elevator c/w spare		Nos.	1
4	9-5/8" Casing safety clamp c/w spares		Sets	2
5	9-5/8" Quick Release (Klepos) Casing Thread Protectors		Sets	2
6	Casing drift for 9-5/8", 53.3 ppf		Nos.	2
7	Stabbing guide for 9-5/8" casing		Sets	1
For 7" Casing / Liner, P-110, 32 ppf x ABTC-II				
1	7" Single Joint Pick-Up Elevator c/w Slings		No.	1
2	150 Tons Slips for 7" casing in API bowl		No.	1
3	150 Tons, 7" side door elevator c/w spare		No.	1
4	7" Casing safety clamp c/w spares		Sets	2
5	7" Quick Release (Klepos) Casing Thread Protectors (Each set of 4 Nos.)		Sets	2
6	Casing drift for 7", 32 ppf		Nos.	2
7	Stabbing guides for 7"casing		Sets	2
For 4.1/2" Casing / Liner, P-110, 13.5 ppf x ABTC-II				
1	4 1/2" Single Joint Pick-Up Elevator c/w Slings		No.	1
2	150 Tons Slips for 4 1/2" casing in API bowl		No.	1
3	150 Tons, 4 1/2" side door elevator c/w spare		No.	1
4	4 1/2" Casing safety clamp c/w spares		Sets	2
5	4 1/2" Quick Release (Klepos) Casing Thread Protectors (Each set of 4 Nos.)		Sets	2

6	Casing drift for 4 1/2", 15.1 ppf		Nos.	2
7	Stabbing guides for 4.1/2"casing		Sets	2
Casing Circulating Tools				
1	4-1/2" IF Box x 13-5/8" x 88.2 ppf x P-110 x Vam Top SC-80 casing		Nos.	2
2	4-1/2" IF Box x 9-5/8" x 53.5 ppf x P-110 x ABTC-II (special drift: 8.500") Casing		Nos.	2
3	4-1/2" IF Box x 7" x 32 ppf x P-110 x ABTC-II Casing		Nos.	2
Miscellaneous				
1	Workshop for makeup of float equipment, service & repair the tools & to comply with the Scope of Work including personnel for operating & maintaining the same	Service to be provided at shore base	no.	1
2	Bucking Unit consisting of :		Nos.	1
2A	Bucking System enabling Make-Up & Break-Out of Tubular and Casings including Floats and other accessories as per drilling plan			1
3	Bull Tong back-up to suit above diameters	4" - 16" Bull Tong Max Torque 25,000	Set	1
4	Bull Tong for 36" to 16" with back-up for each size	36" - 16" Bull Tong	Set	1
5	API 500 ton 20 ft bails (1 set = 2 bail arms)	API 500 ton 20 ft bails	Set	1
6	API 500 ton 22 ft bails (1 set = 2 bail arms)	API 500 ton 22 ft bails	Set	1
7	55 Ton Slings – 60 ft long		No.	2
8	55 Ton Shackles		No.	2
9	Any other tools, accessories		Set	1

Note: Rotary Table Size: 49.1/2

1.2 **Consumables for Casing Running Services:**

The Bidder shall provide all required consumables such as thread sealing compound, thread locking compound, thread dope, etc. for casing / liner running operations at the rig as per tentative casing program. The thread sealing, locking and doping compounds should be suitable for the casing grades and connections specified. **No separate payment other than Service Day Rate (SDR) for Casing Running Services will be made for such consumables**.

A tentative requirement of consumables is provided below:

Sl No.	Description	UOM	Tentative Requirement
1	API Modified High Pressure & High Temperature Thread Sealing Compound	25 kg pail	15 pails
2	API Modified Thread Locking Compound ½ lb kits	½ lb kit	40 (½ lb kits)
3	API Casing Dope Applicator (Brush)	Nos.	10

2.0 Personnel for Casing Running & Torque Turn Services on Call-out Basis:

The Bidder shall provide the following competent personnel on call-out basis within 10 days' notice from the Company for providing services at the rig / shore-base under this tender.

2.1 Personnel for casing Running & Torque Turn Services on 24-hr basis during casing running operation:

a. Power Tong Operator(s)
b. Casing Stabber(s)
c. Torque Turn Service Expert

2.2 Personnel for Workshop with Bucking Machine: Personnel required for operation and maintenance of Workshop with Bucking Machine for makeup of float equipment, service & repair of tools & to comply with the Scope of Work are to be provided on callout basis.

3.0 Important Notes:

5) Only Service Day Rate (SDR) will be applicable for the tools, equipment, workshop with Bucking Machine and consumables as stipulated above.
6) No separate mob-demob charges will be payable for tools, equipment, workshop, etc. to be mobilized under this service.
7) No separate mob-demob charges will be payable for Personnel who are on a call out basis.
8) Payment for personnel shall be made at the rates quoted at Appendix-7 of the Price Format for the period of stay of Engineers/Operators/Crew on board the rig / shore-base as applicable.
9) Full payment shall be made for day of arrival on the rig. No payment shall be made for the Engineers/Operators for the day of departure.

End of Exhibit 10

CORING, CORE HANDLING & PRESERVATION SERVICES

1.0 Coring Services including Supply of Coring Tools & Consumables for taking Conventional Cores using Core Barrel in 12.1/4" & 8.1/2" Hole:

1.1 Scope of Work:

a) The successful Bidder shall provide a complete set of coring equipment including but not limited to Core Barrel & orientation Assembly, handling tools, circulating sub on top of core barrel, core heads and coring services with all required accessories for taking oriented conventional cores in 12¼" & 8½" hole sections of the wells.

b) It is the responsibility of the Bidder to plan and provide core barrels, core-heads with accessories and Coring Service Engineer / Specialist in timely manner as per requirement of the wells, in coordination with the Company so that rig operations do not suffer.

c) The Bidder shall provide one experienced Coring Service Engineer / Specialist, as and when required, for coring operations at the 400 - 500 m water depth rig.

d) The Coring Service Engineer / Specialist shall have minimum cumulative experience of 3 years for carrying out coring operations successfully in deep-water applications.

e) The Bidder shall maintain all equipment in good operating condition.

1.2 Tentative Coring Programme:

The Tentative Coring Program for the initial proposed wells is highlighted below:

Sl. No.	Operation	Qty	Tentative Depth Range
1	In 12¼″ Hole: 9 m core in single run	2	2840-4200 m
2	In 8½″ Hole: 9 m core in single run	4	4200-5600 m

Note: The quantities mentioned above are tentative and may vary based on actual requirement which will be decided nearer the time.

1.3 Specification of Coring Tools & Equipment:

(a) Core Barrels to be provided is as follows:

(i) One set of 8″ x 4-¾″ x 30 ft long Core barrel for 12.¼" hole

OR

One set of 8″ x 5-¼″ x 30 ft long Core barrel for 12.¼" hole

(ii) One set of 6¾″ x 4″ x 30 ft long Core barrel for 8.½" hole

The core barrels should be complete with aluminum metal inner barrel liner system, core catcher, circulating sub on top, handling tools, stabilizers, safety joint and all required accessories. The core barrels should also be equipped with suitable stabilisers according to the size of the core heads to ensure proper stabilisation during coring operation.

Accessories: End Caps, Clamps and Core Boxes, core handling tools, required x-over subs, etc. are to be provided. Bidders to specify all such equipment / items required for carrying out the oriented coring services.

(b) Core Heads: The Bidder shall also provide suitable PDC/Diamond core bits (for taking cores in 12-¼″, 8-½″holes) with bit breaker as per requirement and formation characteristics. The PDC / Diamond core-heads shall be suitable for soft, medium and hard formations as per requirement at the rig.

The equipment and tools should be suitable for anticipated temperature and pressure as given in the tender. Detailed specifications of equipment / sensors along with technical literature / drawings, etc. indicating the features available in their system should be provided with techno commercial bid. The Bidder should also indicate limitations of their tools/sensors such as temperature, pressure and discharge limitations with ability to pump LCM materials in mud loss conditions through the tools.

Note:

(i) Core bits should be so selected that it can take the core of desired length (maximum 9 metres) in a single run (in medium & medium-hard formations) in different hole sections.

(ii) Tools/ equipment deployed should not be older than three (3) years as on the bid closing date and shall be of the latest versions/ technologies, so that, the project can be completed in the shortest possible time and execution of the jobs shall be of state of the art technology.

(iii) Coring equipment & tools shall be mobilized at site in perfectly working order and Contractor must maintain the same in operational condition (without any downtime) throughout the stay at Rig site.

(iv) Coring equipment should be complete in all respect & in ready to use condition as & when required.

(v) Tools / equipment package should include necessary fishing equipment for all the above core barrels.

(vi) The Bidder should indicate any other consumables or parts required, but not listed above.

(vii) Core has to be cut as per advice of the Company.

(ix) The wells are planned to be drilled either with polymer based Mud system or SOBM.

(x) The Contractor has to make all arrangements and take necessary precautions for maximizing recovery of cores. The well bores are expected to be near vertical and deviated or may be side tracked due to any down-hole problems.

(xi) The Bidder is to provide all the equipment, accessories and services as may be required for cutting, orientation & extraction of the cores at site.

(xii) The Bidder will carry out mobilization and demobilization of their equipment and personal to and from the well Location 4A in the Gulf of Mannar. However, transportation to & fro rig site / shore-base will be provided the Company.

1.4 Coring Service Engineer / Specialist and Responsibilities:

a) Contractor must provide one (1) Coring Specialist as & when required by the Company on call-out basis for carrying out the coring operations at the designated well.

b) The Coring Specialist shall have minimum three 3 years' experience of performing coring services independently in oil/gas wells as on the bid closing date and should have successfully carried out core cutting jobs in the depth ranges of 2000-3000 m in at least 3 wells.

(c) The Coring Specialist shall be responsible for (but not limited to) the following activities:

- Prepare Coring plan and program.
- Establish co-ordination with Company's representative and rig superintendent/rig-manager of the rig and Core Analysis group if deployed in the field.
- Run, maintain and manage the Coring tools.
- Cut oriented cores and extraction of the same to the surface, Core catching, handling, marking, preparation including cutting into 1-metre or similar sections.
- Submit Coring report to the Company Representative at the Drilling Rig site.
- Maintain adequate stock and inventory of tools, spares and consumables at site to perform the Coring program;
- Ensure availability of adequate spares for all the equipment and tools at site to carry out any repairs without downtime.

1.5 Reporting:

A Report on completion of each coring operation and thereafter, a comprehensive well-wise report of all coring operations undertaken in a particular well consisting of the following must be submitted to Company.

- An evaluation of the Core Bit, BHA and their performance;
- An analysis and recommend optimum parameters for future wells;
- A detailed list of spares and tools used and Consumables consumed in each hole section;
- A comparison of planned Vs actual tools used in each hole section;
- A detailed study on the coring problems encountered and mitigation strategies adopted;
- The Contractor will make recommendations for future coring design based on the lessons learned and its analysis.

2.0 Well Site Core Handling and Preservation Services:

These services shall include but are not limited to the following:

i) Recording of Spectral Core Gamma

ii) Oriented coring services by using Electronic Magnetic Surveyor (EMS) Tool

iii) Core catching, handling, marking, preparation including (cutting) into 1-metre or similar sections.

2.1 Description of Service:

2.1.1 Well site Spectral Core Gamma: Contractor shall perform Spectral Core Gamma measurements using suitable portable, pre-calibrated

equipment. Hard and soft copies (ASCII format) of the data shall be presented to the well site Geologist of Company at the rig site in a timely manner.

2.1.2 Oriented Coring Services: Through Scribe Mechanism / Electronic Magnetic Surveyor (EMS) Tool.

2.1.3 Preparation: Core catching, handling, marking, preparation (including cutting) into 1-metre or similar sections or as advised by Company.

The Contractor shall perform above activities under guidance / supervision of Company's well site Geologists.

Note:

(a) The Bidder shall record core gamma log at wellsite.

(b) The Bidder shall provide all necessary equipment, personnel & services for cutting, orientation & extraction of core as desired by OIL.

(c) All handling equipment and materials required for cutting, orientation & extracting and preparation (included but not limited to core catching, handling, marking, cutting into 1-metre or similar sections) of the core samples should be readily available at respective well site.

(d) The Bidder shall maintain all equipment in good operating condition.

3.0 Provision for Back-up Tools & Services:

The Bidder should keep sufficient tools as back-up to ensure smooth operations. However, Company will not pay any fixed charges for such back-up tools.

4.0 Safety Compliance:

The Contractor shall have to comply with the applicable standards and prevailing provisions of Mines Act, 1952, OISD (Oil Industry Safety Directorate) guidelines and MoEF (Ministry of Environment and Forest) and Central/State Pollution Control Board's directives as in vogue in India.

End of Exhibit 11

SCOPE OF WORK FOR PROVIDING 7" & 4.1/2" LINER HANGER EQUIPMENT, ACCESSORIES AND SERVICES

As described hereinafter the following Liner Hanger System & Services as per requirement of OIL are to be provided for deep water, deep well and Floater Rig environment. Water depth is expected to be more than 400 m.

i) 7" & 4.1/2" Liner Hanger System with Packer & Associated Accessories (consumables) are to be provided on callout basis and actual consumption basis.

ii) Services on call out basis with Tools/ Equipment & expert manpower for Lowering & Setting of the Liner Hangers, successful cementation of liners, setting of Packers and Retrieval of Running-Setting tools as described further. The Tools/ Equipment & Accessories for the services shall be taken back by the bidder/ contractor after successful execution of respective jobs.

iii) The Service provider will provide all the consumables and rental tools/ equipment/ accessories required for successful lowering of the Liner String to setting depth, Setting of Hanger & Packer, Cementing of Liner string and Retrieval of Running-Setting tools.

iv) *The scope of supply does not include the equipment/ materials for cement slurry preparation & pumping, Liner handling tools/ equipment and Liner-Centralizers & Scratchers. It is essential to read the Important Notes stipulated at the end.*

A). SCOPE OF WORK FOR 7" LINER HANGER SYSTEM & SERVICES FOR DEEP WATER, DEEP DRILLING APPLICATION:

1.0 **SUPPLY OF LINER HANGER SYSTEM & ASSOCIATED ACCESSORIES**

The scope of work is for hiring of complete package services for Liner Hanger & Packer with equipment and accessories (including floating/ guiding equipment except Liner-centralizers) for Lowering of 7" liner in 8.1/2" open hole through 9.5/8" casing, Setting of Hanger & Packer inside 9.5/8" casing, Cementing of Liner string and Retrieval of Running-Setting Tool by using proven liner hanger technology.

Scope of Supply

Scope of Supply shall include but not be limited to Supply of Liner Hanger with Packer and associated accessories (including floating/ guiding equipment except liner-centralizers, scratchers) that are consumable for 7" liner hanger & packer. Liner hanger & packer should be rated for 10000 psi, 150 deg C. (BHCT).

2.0 <u>Equipment & Associated Accessories:</u> Successful Bidder shall supply the followings.

2.1 **SYSTEM DETAILS**:

Liner Hanger System with the following specification to mate the following tubular:

i) <u>Details of 9.5/8" casing in which 7" liner is to be run and set</u>:

<u>PIPE PROPERTIES</u>:
Nominal O.D: 9.5/8" inch (244.48mm)
Weight: 53.50 ppf (79.687 kg/m)
Grade: P110, API 5CT
Type: API, Seamless steel, Threaded & Coupled, Length- Range 3
Special/ Alternate Drift Diameter: Not less than 8.50" (215.90mm)

<u>CONNECTION PROPERTIES</u>:
Connection Type: Atlas Bradford TC-II (Premium, Metal to Metal Sealing, Gas tight connection)
Connection I.D: Not less than the Special Drift dia of Pipe (8.50"/ 215.90mm).
Minimum Tensile Yield Strength: 1710klbs
Minimum Compression Resistance: 1710 klbs
Minimum internal Yield Pressure: 10900 PSI
Minimum External Pressure Resistance: 7950 PSI

ii) 7" Liner Hanger fully compatible and having minimum physical characteristics & performance properties in compliance with the 7" Liner specified below.

<u>LINER/ PIPE PROPERTIES</u>:
Nominal O.D: 7.00" inch (177.80mm)
Weight: 32.00 ppf (47.663 kg/m)
Grade: P110, API 5CT
Length: Range 3 (maximum length restricted to 12.19 mtrs./40 ft.)
Type: API, Seamless steel, Threaded & Coupled, Length- Range 3
Special/ Alternate Drift Diameter: Not less than 6.00" (152.40mm)

<u>CONNECTION PROPERTIES</u>;
Connection Type: Atlas Bradford TC-II (Premium, Metal to Metal Sealing, Gas tight connection)
Connection I.D: Not less than the Special Drift dia of Pipe (6.00"/ 152.40mm).
Minimum Tensile Yield Strength: 1025klbs
Minimum Compression Resistance: 615 klbs
Minimum internal Yield Pressure: 12810 PSI
Minimum External Pressure Resistance: 10780 PSI

Quantity required - minimum 2 set on rig. One as mandatory requirement and one as contingency)

The system shall be comprised of following items but not limited to the list below:

I. To suit 7" Liner length up to 2500 m to be run in 8.50" hole of vertical or directional well.

II. Liner Hangers shall be of the Hydraulically set type, Mechanical/ Hydraulic release with Mechanical/ Hydraulic set Top Packer. No Weld part & only solid body design.

III. Liner Hangers shall be supplied with a complete set of Tools/ equipment & accessories for Running and setting of Liner Hanger with Packer, Cementing of the Liner string and Retrieval of Running-Setting tool.

IV. The Liner Hanger & Packer System tool shall have RPOV (Retrievable Pack off Bushing) which is to be retrieved simultaneously with retrieval of the Running/ Setting tool so that drilling out of Pack off bushing is eliminated.

V. Reamer shoes with dual Float valves, Landing Collar with Ball Catcher and any other item/ accessories required with the 7" Liner string for cementing process. These shall be drillable both by PDC bit as well as conventional TCR bits.

VI. The Liner Hanger & Packer System shall have minimum I.D/through bore (drift dia) not less than 6.0" so that any 6" O.D tool can be run through after drilling the Floating Guiding equipment & landing Collar.

VII. Working Pressure of Float equipment shall be 10000 psi minimum and meet API 10 specifications

VIII. Latch-down Liner Wiper plugs for 7", 26-35 ppf liner with feature to get latched and positively locked into the Landing Collar upon landing.

IX. 5"/5.5" combination Dart/ Pump-down Plug suitable with available Drill pipe of 5/5.5"Size.It shall have latch-down feature to get latched and positively locked into the Liner wiper Plug.

X. Both the Plugs shall be rotationally locked upon latching into the Landing Collar and drillable both by PDC bit as well as conventional TCR bits.

XI. Setting balls to pass through 5" HWDP of 50 ppf and required X-overs.

XII. Crossovers from running/setting tool to drill pipe and drill pipe to Cementing head/manifold.

XIII. Other accessories specific to contractors proposed equipment

XIV. All Running, Setting and Releasing tools necessary to install the Liner Hanger & Packer system and to retrieve Running-Setting tools/system.

XV. A Rotating Cement Manifold (top drive compatible, 10K psi rating) including flag sub and ball dropping sub with Flag capable of simultaneous cementation and hoisting operations.

3.0 Scope of Services

3.1 **Personnel**: Bidder shall provide a qualified, skilled and experienced Service/Field engineer with minimum 3 years of working experience in carrying out Liner hanger & packer jobs in deep water, deep wells and Floater rig application. He must have experience of carrying out of at least 5 (five) similar jobs in last three years (from date of bid opening) in deep water, deep wells and Floater rig environment.

3.2 **Personnel Mobilization**: It is responsibility of the Contractor to plan and provide Liner Hanger Service Engineers in timely manner as per requirement of the wells, in coordination with Operator.

3.3 OIL shall be using 7" liner in 8 1/2"open hole section (300-2000m long) of Vertical or directional wells.

3.4 Pre-Planning of the job is critical and OIL will work closely with supplier to supply data such as drilling survey, mud data etc to allow supplier to properly set up tools for deployment. The bidder will provide the detail program -running in procedure for liner hanger along with drawing(s) & sizes for complete liner hanger assembly.

3.5 Bidder will provide all necessary materials, tools, equipment, accessories and expertise to land the liner to desired depth, deploy the Liner hanger & packer system and cement the Liner string. The details may also include overlap of 7" Liner in 9.5/8" casing in the program.

3.6 The cementation job will be carried out as per slurry design and job plan recommended by the bidder in consultation with "Cementing Service Provider"& approved by OIL.

3.7 A positive liner test shall be completed prior to tools being POOH. The test pressure will be 2000-2500 psi or as per pressure requirement of the Well.

3.8 Bidder will provide the details of operational procedures being followed while running in liner hanger, cementing and its expansion along with related technical literature.

3.9 Bidder shall provide awareness training to the concern personnel for expandable/ mechanical/ hydraulic liner hanger operation prior to commencement of each job.

B). SCOPE OF WORK FOR 4.1/2" LINER HANGER SYSTEM & SERVICES FOR DEEP WATER, DEEP DRILLING APPLICATION:

1.0 SUPPLY OF LINER HANGER SYSTEM & ASSOCIATED ACCESSORIES

The scope of work is for hiring of complete package services for Liner Hanger & Packer with equipment and accessories (including floating/ guiding equipment except Liner-centralizers) for Lowering of 4.1/2"" liner in 6" open hole through 7" casing/ liner, Setting of Hanger & Packer inside 7" casing/ liner, Cementing of Liner string and Retrieval of Running-Setting Tool by using proven liner hanger technology.

Scope of Supply

Scope of Supply shall include but not be limited to Supply of Liner Hanger with Packer and associated accessories (including floating/ guiding equipment except liner-centralizers, scratchers) that are consumable for 4.1/2" liner hanger & packer. Liner hanger & packer should be rated for 10000 psi, 150 deg C. (BHCT).

2.0 Equipment & Associated Accessories: Successful Bidder shall supply the followings.

2.1 **System Details**:

Liner Hanger System with the following specification to mate the following tubular:

iii) Details of 7" casing/ liner in which 4.1/2" liner is to be run and set:

PIPE PROPERTIES:
Nominal O.D: 7.00" inch (177.80mm)
Weight: 32.00 ppf (47.663 kg/m)
Grade: P110, API 5CT
Type: API, Seamless steel, Threaded & Coupled, Length- Range 3
Special/ Alternate Drift Diameter: Not less than 6.00" (152.40mm)

CONNECTION PROPERTIES;
Connection Type: Atlas Bradford TC-II (Premium, Metal to Metal Sealing, Gas tight connection)
Connection I.D: Not less than the Special Drift dia of Pipe (6.00"/ 152.40mm).
Minimum Tensile Yield Strength: 1025klbs
Minimum Compression Resistance: 615 klbs
Minimum internal Yield Pressure:12810 PSI
Minimum External Pressure Resistance: 10780 PSI

iv) 4.1/2"" Liner Hanger fully compatible and having minimum physical characteristics & performance properties in compliance with the 4.1/2"" Liner specified below.

LINER PROPERTIES:
Nominal O.D: 4.50" inch (114.30mm)
Weight: 13.50 ppf (20.108 kg/m)
Grade: P110, API 5CT
Length: Range 3 (maximum length restricted to 12.19 mtrs./40 ft.)
Colour Code: As per API 5CT

CONNECTION PROPERTIES;
Connection Type: Premium, Metal to Metal Sealing, Gas tight connection
Connection I.D: Not less than Special Drift dia of Pipe (3.795"/ 96.39mm).
Minimum Tensile Yield Strength: 422klbs
Minimum Compression Resistance: 422 klbs
Minimum internal Yield Pressure: 12410 PSI
Minimum External Pressure Resistance: 10680 PSI

Quantity required - Minimum 2 set on rig. One as mandatory requirement and one as contingency)

The system shall be comprised of following items but not limited to the list below:

I. To suit 4.1/2" liner length not less than 1000 m to be run in 6" hole of vertical or directional well.
II. Liner Hangers shall be of the hydraulically set type, Mechanical/ Hydraulic release with Mechanical/ Hydraulic set Top Packer. No Weld part & only solid body design.
III. Liner Hangers shall be supplied with a complete set of Tools/ equipment & accessories for Running and setting of Liner Hanger with Packer, Cementing of the Liner string and Retrieval of Running-Setting tool.
IV. The Liner Hanger & Packer System tool shall have RPOV (Retrievable Pack off Bushing) which is to be retrieved simultaneously with retrieval of the Running/ Setting tool so that drilling out of Pack off bushing is eliminated.
V. Reamer shoes with dual Float valves, Landing Collar with Ball Catcher and any other item/ accessories required with the 4.1/2" Liner string for cementing process. These shall be drillable both by PDC bit as well as conventional TCR bits.
VI. Working Pressure of Float equipment shall be 10000 psi minimum and meet API 10 specifications
VII. Latch-down Liner Wiper plugs for 4.1/2", 13.5ppf liner with feature to get latched and positively locked into the Landing Collar upon landing.

VIII. Combination drill pipe darts 3.5” to 5.5” 3.5 to 5” as per string available. Minimum required I.D of cross-overs, sleek joint & running string for pumping down the combination dart/ drill-pipe wiper plug through the whole string and sleek joint shall be mentioned in the bid and must be crosschecked by bidder/contractor prior to the job.

IX. Both the Plugs shall be rotationally locked upon latching into the Landing Collar and drillable both by PDC bit as well as conventional TCR bits.

X. Bidder to ensure that Setting balls to pass through 3.5” DP (on rig) and required X-overs.

XI. Crossovers from running/setting tool to 3.5” drill pipe and 5”/ 5.5” drill pipe to Cementing head/manifold.

XII. Other accessories specific to contractors proposed equipment

XIII. All Running, Setting and Releasing tools necessary to deploy the Liner Hanger & Packer system and to retrieve Running-Setting tools/system.

XIV. A Rotating Cement Manifold (top drive compatible, 10K psi rating) including flag sub and ball dropping sub with Flag capable of simultaneous cementation and hoisting operations

3.0 Scope of Services

3.1 **Personnel**: Bidder shall provide a qualified, skilled and experienced Service/Field engineer with minimum 3 years of working experience in carrying out Liner hanger & packer jobs in deep water, deep wells and Floater rig application. He must have experience of carrying out of at least 5 (five) similar jobs in last three years (from date of bid opening) in deep water, deep wells and Floater rig environment.

3.2 **Personnel Mobilization**: It is responsibility of the Contractor to plan and provide Liner Hanger Service Engineers in timely manner as per requirement of the wells, in coordination with Operator.

3.3 OIL shall be using 4.1/2” liner in 6"open hole section (up to about 1000m long) of Vertical or directional wells.

3.4 Pre-Planning of the job is critical and OIL will work closely with supplier to supply data such as drilling survey, mud data etc. to allow supplier to properly set up tools for deployment. The bidder will provide the detail program running in procedure for liner hanger along with drawing(s) & sizes for complete liner hanger assembly.

3.5 Bidder will provide all necessary materials, tools, equipment, accessories and expertise to land the liner to desired depth, deploy the Liner hanger & packer system and cement the Liner string. The details may also include overlap of 4.1/2” liner in 7" casing/liner in the program.

3.6 The cementation job will be carried out as per slurry design and job plan recommended by the bidder in consultation with “Cementing

Service Provider"& approved by OIL.

3.7 A positive liner test shall be completed prior to tools being POOH. The test pressure will be 2000-2500 psi or as per pressure requirement of the Well.

3.8 Bidder will provide the details of operational procedures being followed while running in liner hanger, cementing and its expansion along with related technical literature.

3.9 Bidder shall provide awareness training to the concern personnel for expandable/ mechanical/ hydraulic liner hanger operation prior to commencement of each job.

C. <u>SCOPE OVERVIEW:</u>

Liner Hanger category	**Consumables to supply**	**Services to render**
7" Liner Hanger & Packer System for 7", 32ppf, P-110 Liner String with Atlas Bradford TC-II Premium, Metal to Metal Gas tight connections; to be set inside 9.5/8" x 53.5ppf, P-110 casing	7" x 9.5/8" Liner Hanger & Packer System	Running-Setting Tool for 9.5/8" x 7" Liner Hanger & Packer System
	Retrievable Pack off Bushing (RPoB) for 7" Liner Hanger	Rotating, Top-drive Compatible Cementing Manifold for 7" Liner string & 5"/ 5.5" Drill-pipe running string
	7" Landing Collar with Ball Catcher	Handling Nipple/ Joint
	7" Reamer shoes with dual Float valves	Job-specific Handling tools/ equipment (if any)
	5" x 5.5" Combination Drill pipe Wiper Plug/ Dart	Any other spares/ accessories/ cross-overs etc. as required in addition to above for the Liner Hanger & Packer System and Cementation
	7" x 26-32 ppf Liner Wiper Plug	Experienced & qualified Field/ Service engineer as an expert for execution of Liner Hanger job in deep well and deep water, Floater rig environment
	Setting Balls	
	Any other item as/ if required in addition to above for the Liner Hanger & Packer System and Cementation	
4.1/2" Liner Hanger & Packer System for 4.1/2" x	4.1/2" x 7" Liner Hanger & Packer System	Running-Setting Tool for 4.1/2" x 7" Liner Hanger & Packer System
	Retrievable Pack off Bushing	Rotating, Top-drive compatible

13.5ppf, P-110 Liner String with Atlas Bradford TC-II Premium Metal to Metal Gas tight connection to be set inside 7" x 32ppf, P-110 liner/casing	(RPoB) for 4.1/2" Liner Hanger	Cementing Manifold for 4.1/2" Liner string, 5"/ 5.5" & 3.5" combination Drill-pipe running string
	4.1/2" Landing Collar with Ball Catcher	Handling Nipple/ Joint
	4.1/2" Reamer shoes with dual Float valves,	Job-specific Handling tools/ equipment (if any)
	3.5"- 5.5" Combination Drill pipe Wiper Plug/ Dart	Any other Spares/ accessories/ cross-overs etc as required in addition to above
	4.1/2" x 13.ppf Liner Wiper Plug	Experienced & qualified Field/ Service engineer as an expert for execution of Liner Hanger job in deep well and deep water, Floater rig environment
	Setting Balls	
	Any other item as/ if required in addition to above for the Liner Hanger & Packer System and Cementation	

Note: ***Drill pipe details will be available once the rig is firmed up. It is contractor's responsibility to gather the information from the operator at appropriate time to plan ahead requirement of compatible items and supply the same to avoid operational delay/ inconvenience/ interruption.***

D. <u>REPORTING</u>:

The successful Bidder shall adhere to the following reporting requirements.

I. To maintain an up to date inventory of all tools and equipment held on the well site and the supply base and to submit a report prior to and after running the liner hanger in the well.

II. To prepare a detailed plan for running and setting liner hanger for the well.

III. To perform a detailed post job evaluation after each liner running operation. This should be submitted to the OIL Representative within 24 hours of completion of the job.

IV. To perform a detailed recap of the liner running operation at the end of the well. The recap should include as a minimum the following:

(a) An evaluation of each operation performed on the well including recommendations to improve future performance

(b) A detailed review of any problems encountered including any recommendations to avoid reoccurrence

This recap should be submitted to OIL within 15 days at the end of operations on the well.

E. <u>IMPORTANT NOTES:</u>

1. Supply of Liner Hanger & Packer System include Liner Hanger, Top Packer, Drill Pipe Wiper Plugs/ Darts, Liner Wiper Plug, Landing collar, Ball Catcher, Reamer Shoe with dual Float valves, Setting Balls and any other consumable accessories/ items that may be required for successful deployment of Liner Hanger & packer and Liner cementation.

2. The Liner Hanger & Packer System shall be supplied on call out and paid on actual consumption basis as per firm quote (Schedule of Rate). Minimum two sets of each size (7" & 4.1/2") are to be mobilized and kept on rig against requirement of one set each for the one well campaign. One set (out of indicated two) of each size is to be kept as contingency backup.

3. Unconsumed materials (of the Liner Hanger & Packer system) are to be taken back by the contractor at their own arrangement, cost and responsibility. Transportation from rig to shore-base will be provided by OIL.

4. Scope of Supply & Services do not include-
   - Supply of Liner joints, Liner-centralizers, scratchers
   - Supply of cement & additives, preparation and pumping of cement-slurry
   - Liner handling tools & equipment and service thereof

5. Both 7" & 4.1/2" Liner Hanger and Packer system are to be mobilized together with all the tools, equipment, accessories required for the services for lowering, setting, cementing of Liner hanger & packer systems, on call out basis. These are to be mobilized on the rig on callout notice as per the date that will be intimated to the service provider. However, minimum 30 (thirty) days prior callout notice will be provided for mobilization.

6. Under services, Bidder/ contractor shall provide services of Running-Setting tools, Cementing Manifolds, Handling Nipple/ Joint, Special purpose/ Job specific tools if any, Spares required (if any) and also services of Liner Hanger Service/ Field Engineer for each (7" & 4.1/2") Liner Hanger & Packer job.

7. It is responsibility of the Contractor to plan, mobilize and provide Liner Hanger Service Engineers on rig in timely manner as per requirement of the well, in coordination with Operator.

8. Rental (Standby Day Rate) will be paid for the entire Service package of Tools, Equipment & accessories from the day the same is mobilized on the rig till demobilized from the rig.

9. Liner Hanger Service/ Field engineer shall be paid Day Rate during his period of stay on the rig for the Liner Hanger job. Separate call will be made for 7" and 4.1/2" Liner Hanger jobs.

10. Service Tools, Equipment & Accessories are to be taken back by the contract at their own arrangement, cost and responsibility. Transportation from rig to shore-base will be provided by OIL.

11. One mobilization fee shall be paid for mobilization of entire systems & packages (Equipment & Services) and one demobilization fee shall be paid for demobilization of all the left over items (Equipment & Services).

12. For the Service Engineer, only actual to and fro fare (economy class by air, 2-tier Ac train, AC-taxi fare by road as applicable) through shortest route from place of departure/ posting to rig will be paid by OIL on submission of valid supporting document. En-route expenditures, costs towards en-route delay (if any) will not be borne by OIL.

13. If the Service engineer does not report on the scheduled day, Rental for the Services will be on Zero rate till Liner hanger is made ready to be lowered.

14. 7" Liner is part of well completion casing/ liner program whereas 4.1/2" liner has been provisioned as contingency plan.

End of Exhibit -12

Exhibit-13

Drilling, Fishing, Milling, Plug and Abandonment Tools and Services

The Bidder is to provide the services of fishing, drilling, milling tools, plug and abandonment and other tools as specified herein-below, along with Downhole Tools / Fishing Expert for providing services under this tender:

(I) Fishing Tools:

All items mentioned below shall be provided by the Bidder. The Fishing tools should be in proper working condition at all times. Hence, adequate back-up tools and spares are to be kept & maintained accordingly by the Bidder.

a) **Overshots & Accessories**: Series 150 Bowen or Equivalent releasing and circulating overshots suitable for operation in 26", 20", 17.1/2", 14.3/4", 12.1/4" & 8.1/2" OD open hole and for operation inside 20", 16", 13.5/8", 9.5/8" & 7" OD casings to catch all sizes of drill collars, heavy weight drill pipes, drill pipes, tubings and substitutes as provided by the Contractors, with various sizes of spiral grapple, basket grapple, grapple control, mill control packers, lock rings, suitable extension sub and standard & oversized lipped guide.

b) **Overshots & Accessories for Operation Inside 7" Casing / 6" Hole:**

	Overshots for operation in 7" Casing / 6" Hole:	
1	**Slim Hole Overshot 5-7/8" OD SH Series 150 Overshot w/ 3-1/2" IF Box** Accessories: (i) 5-7/8" OD SH Overshot Extension 3' Long (ii) 5-7/8" OD SH Overshot Wall Hook Guide (iii) 5-7/8" OD SH Overshot Cutlip Guide Extra (iv) 5" Spiral Grapple C/W Packer & Spiral Grapple Control (v) 4-7/8" Spiral Grapple C/W Packer & Spiral Grapple Control	2 sets
	Full Strength Overshot	
2	**5-3/4" OD FS Series 150 Overshot w/ 3-1/2" IF Box** Accessories: (vi) 5-3/4" OD FS Overshot Extension 3' Long (vii) 5-3/4" OD FS Overshot Wall Hook Guide (viii) 8-1/4" OD Oversize Guide for 5-3/4" FS Overshot (ix) 15" OD Oversize Guide for 5-3/4" FS Overshot (x) 4-3/4" Spiral Grapple C/W Packer & Spiral Grapple Control (xi) 4 5/8" Spiral Grapple C/W Packer & Spiral Grapple Control (xii) 4-1/2" Basket Grapple C/W Packer & Spiral Grapple Control (xiii) 4 3/8" Basket Grapple C/W Packer & Spiral Grapple Control	2 sets

	(xiv) 4 1/4" Basket Grapple C/W Packer & Spiral Grapple Control (xv) 3 21/32" Basket Grapple C/W Mill Control Packer (xvi) 3-7/8" Basket Grapple C/W Mill Control Packer (xvii) 3 5/8" Basket Grapple C/W Mill Control Packer (xviii) 3-1/2" Basket Grapple C/W Mill Control Packer (xix) 3-3/8" Basket Grapple C/W Mill Control Packer (xx) 3-3/32" Basket Grapple C/W Mill Control Packer (xxi) 3" Basket Grapple C/W Mill Control Packer (xxii) 2-7/8" Basket Grapple C/W Mill Control Packer (xxiii) 6" OD oversized lipped guide (xxiv) 3-3/4" OD Die Collar - 2-3/8" Reg Box	

c) **Safety Joints**: One (1) No. of Bowen or equivalent for operating in the following hole sizes.

Safety Joints	
8-1/4" OD x 6-5/8" Reg Box x Pin	2
8" OD x 6-5/8" Reg Box x Pin	2
8" OD x 5-1/2" FH Box x Pin	2
6 3/4" OD x 4-1/2" IF Box x Pin	2
6-1/2" OD x 4-1/2" IF Box x Pin	2
4-3/4" OD x 3-1/2" IF Box x Pin	2
3-1/8" OD x 2-3/8" Reg Box x Pin	2

d) **Other Fishing Tools**:

i) **Reverse Circulating Junk Basket**: two (2) Nos. each Bowen or equivalent R.C.J.B complete with accessories like top sub, catcher assembly, mill shoe, magnet insert for the various sizes of open hole i.e. 17.1/2", 12.1/4", 8.1/2" etc. and for 13.3/8", 9.5/8" & 7" OD casings.

Reverse Circulating Junk Basket (RCJB)	
15" body Bowen reverse circulating junk basket w/ shoe w/ 7-5/8" Reg Box, Lift bail, Steel ball for above hole sizes	2
Mill Shoe w/ catcher for 36" Hole	2
Mill Shoe w/ catcher for 30" Hole	2
Mill Shoe w/ catcher for 26" / 24" Hole	2
Mill Shoe w/ catcher for 17-1/2" / 16" Hole	2
11" OD Reverse Circulation Junk Basket w/ 6-5/8" Reg Conn C/W Steel Ball, Lift Bail for 13-1/2" / 12-1/4" hole	2
Mill Shoes w/ catchers for 13-1/2" /12-1/4" hole size	2
Junk Catcher for 11" OD RCJB	2
7-7/8" OD Reverse Circulating Junk Basket w/ 4-1/2" Reg Conn C/W Steel Ball & Lift Bail for 8-1/2" & 9-1/2" hole	2
Mill Shoes w/ catchers for 9-1/2" / 8-1/2" hole	2
Junk Catcher for 7-7/8" OD RCJB	2
5-3/4" OD Reverse Circulating Junk Basket w/ 3-1/2" Reg Pin, Steel Ball & Lift Bail for 7" / 6-5/8" / 6-1/2" Hole	2
Mill Shoes w/ catchers for 7" / 6-5/8" / 6-1/2" Hole	2
Junk Catcher for 5-3/4" OD RCJB	2

	2
5-1/8" OD Reverse Circulating Junk Basket w/ 3-1/2" Reg Pin C/W Steel Ball, Lift Bail for 6" Hole	2
Mill Shoes w/ catchers for above	2
Junk Catcher for 5-1/8" OD RCJB	2

ii) **Boot Basket / Junk Subs**:

Boot Basket / Junk Subs	
Boot Basket / Junk Sub w/ 7-5/8" Reg Box x Pin for 17-1/2", 20", 24", 26", 30" & 36" Hole Sizes	2
Boot Basket / Junk Sub w/ 6-5/8" Reg Box x Pin for 12-1/4" Hole Sizes	2
Boot Basket/ Junk Sub w/ 4-1/2" Reg Box x Pin for 8-1/2" Hole Sizes	2
Boot Basket/ Junk Sub w/ 3-1/2" Reg Box x Pin for 6" Hole Sizes	2

iii) **Fishing Magnet**: One (1) No. each fishing magnet with standard fishing neck for operating in 8.1/2" OD open hole.

iv) **Ditch Magnet**: One (1) No. of ditch magnet suitable for placement in mud ditch for collection of ferrous materials in mud.

v) **Impression Block**: One (1) No. each impression block with standard fishing neck & circulating port suitable for 12.1/4" & 8.1/2" OD open hole and to operate inside 7" OD casings. (Note: Provisions should be kept for redressing the impression block at well site)

(vi) **Junk Mill**: One (1) No. each flat bottom junk mill with standard fishing neck & circulating port for operation in 12.1/4" & 8.1/2" open hole and 7" OD casings. All materials required for redressing of mills shall be provided by the Contractor. Redressing of mill shall be carried out by the Bidder at well site.

(vii) **Full Circle Releasing Spear**: One (1) each for handling 7", 9.5/8" & 13.3/8" casing. The spear should be complete with all accessories including the required guide. Suitable cross-over sub for connecting the same to drill pipe string should be provided.

e) **Super Fishing Jar** : Straight pull, capable of transmitting full torque in either direction, ability to deliver rapid series of blows when desired, easy closing or resetting, complete with circulation hole & cone type piston assembly of the following sizes:

	Fishing Jars	
1	8" OD / 7-3/4" OD Fishing Jar w/ 6-5/8" Reg Pin x Box	2
2	6-1/2" OD-6-1/4" OD Fishing Jar w/ 4-1/2" IF Pin x Box	2
3	4-3/4" OD Fishing Jar w/ 3-1/2" IF Pin x Box	2
4	3-1/8" OD Fishing Jar w/ 2-3/8" Reg Pin x Box	2
	Accelerator Jars	
1	8" OD / 7-3/4" OD Accelerator w/ 6-5/8" Reg Pin x Box	2
2	6-1/2" OD/ 6-1/4" OD Accelerator w/ 4-1/2" IF Pin x Box	2
3	4-3/4" OD Accelerator w/ 3-1/2" IF Pin x Box	2
4	3-1/8" OD Accelerator w/ 2-3/8" Reg Pin x Box	2

	Fishing Bumper Subs (Minimum of 5 ft of stroke)	
1	8" OD / 7-3/4" OD Fishing Bumper Sub w/ 6-5/8" Reg Pin x Box	2
2	6-1/2" / 6-1/4" Fishing Bumper Sub w/ 4-1/2" IF Pin x Box	2
3	4-3/4" Fishing Bumper Sub w/ 3-1/2" IF Pin x Box	2
4	3-1/8" OD Fishing Bumper Sub w/ 2-3/8" Reg Pin x Box	2

(II) DRILLING JAR: Hydro mechanical drilling jar to provide upward and downward jarring blows, consisting of two separate sections – Up & Down Jar sections:

i) OD: 6.1/4", ID: 2.3/4", NC 50 (4.1/2 IF) RH: One (1) No. with accessories

ii) OD: 7.3/4", ID: 3.1/16", 6.5/8 Reg RH: One (1) No. with accessories

(III) Casing Scraper / Rotovert: One (1) No. each casing scrapper / rotovert for casing size of 7" (32 ppf), 9.5/8" (53.5ppf) and 13.5/8"(88.2 ppf) complete with suitable cross-over sub for connecting the same to tubing & / or drill pipe string.

(IV) Plug & Abandonment Tools: After initial testing and based on the results of tests, the well shall be abandoned as per guide lines of OISD. Bidder is to provide all services with tools for plug and abandonment of the well except the installation of well Corrosion Cap.

(V) Important Notes:

1. All the tools for drilling, fishing, milling, P&A tools, etc. together with specified personnel are to be mobilized along with the Bundles Services package for which only Service Day Rate (SDR) will be applicable (Ref. Appendix-1 of Price Format). No other charges will be applicable for providing the above services.
2. All tools with back-up and adequate quantity of spares are to be mobilized together with all accessories required for the services.
3. Service Day Rate (SDR) will be paid for the entire scope of Service including Tools & Equipment and Personnel from the day the same is mobilized on the rig till demobilized from the rig / shore-base, as applicable.
4. No separate mobilization / demobilization charges shall be paid for mobilization / demobilization of the tools & equipment, personnel, etc. for rendering the above services. The same shall be covered under the Mob & Demob charges applicable for the entire Bundled Services package.
5. Service Tools, Equipment & Accessories are to be taken back by the Bidder at their own arrangement, cost and responsibility. Transportation from rig to shore-base will be provided by OIL.
6. One competent Downhole Tools / Fishing Expert with 3 years' relevant experience in deepwater floater rigs is to be provided for technical guidance, assistance and supervision of fishing / other downhole operations during the contract period. The Expert must be fully conversant with the tools and equipment to be provided under this service.
7. Service personnel / technician, as required shall also be provided to service and maintain the above tools. The person must have experience of

working with various fishing and other downhole tools, their maintenance, dismantling & assembly, re-dress with spares. He must have at least 3 years' experience in fishing tools.

8. The Bidder shall maintain an up to date inventory of all tools and equipment held on the well site and the supply base and is to submit a report prior to and after running the tools.

9. Tools/ equipment deployed should not be older than three (3) years as on the bid closing date and shall be of the latest versions/ technologies, so that, the project can be completed in the shortest possible time and execution of the jobs shall be of state of the art technology.

End of Exhibit - 13

UNDER REAMING / HOLE ENLARGEMENT SERVICE

The successful Bidder shall provide Under Reaming/ Hole Enlargement service in two sections of hole under the terms and conditions as described hereunder.

1.0 <u>17.1/2" x 20" Section</u>:

1. After Cementation of 20" Casing String (20" OD x 133 ppf, 0.635 wall thickness, Grade-X56) high performance hole enlargement (under reaming) service is to be provided for a section length of about 1000m (i.e. tentatively from 1100m to 2100m from RKB) to enlarge hole from 17.1/2" to 20". Drift of **17.1/2"** is to be taken onto consideration for the said casing and the Hole Enlargement tool/ Reamer due to restriction in the collate I.D of 20" x 16" Liner hanger receptacle & 18.3/4" Subsea Well Head (VETCO-GE, DWHC, MS700, 15000PSI MWP) through which only 17.1/2" drift/ bit can pass.

2. The Tool must safely pass through the said casing & Casing accessories having 17.1/2" drift diameter (through which 17.1/2" Bit only can pass)causing no internal damage to the casing/ casing accessories.

3. The Tool must be compatible to run in tandem together with 17.1/2" bit ahead of it and enlarge/ under ream hole from 17.1/2" to 20" simultaneously and leaving minimum Rathole.

2.0 <u>14.3/4" x 17.1/2" Section</u>:

1. After Cementation of 16" Casing String (16" OD x 84 ppf, 14.823" API Drift, 0.635 wall thickness , Grdae-P110) high performance hole enlargement (under reaming) service is to be provided for a section length of about 1000m (i.e. tentatively from 2100m to 3100m from RKB) to enlarge hole from 14.3/4" to 17.1/2". Drift of **14.810** is to be taken onto consideration for the said casing and the Hole Enlargement tool/ Reamer due to restriction in the I.D of 16" Liner hanger of 18.3/4" Subsea Well Head (VETCO-GE, DWHC, MS700, 15000PSI MWP) through which only 14.3/4" (max) drift/ bit is recommended to pass through.

2. The Tool must safely pass through the said casing & Casing accessories having 14.810" drift diameter (through which maximum 14.3/4" Bit is recommended) causing no internal damage to the casing/ casing accessories.

3. The Tool must be compatible to run in tandem together with 14.3/4" bit ahead of it and enlarge/ under ream hole from 14.3/4" to 17.1/2" simultaneously and leaving minimum Rathole.

3.0 OTHER IMPORTANT CONDITIONS:

1. The Tool must have the feature to ensure safe drill out of Casing Float Collar & Shoe with bit without causing any internal damage/ hindrance inside casing and Floating guiding equipment (i.e. Cementing Plugs, Stop collar, Float Collar, Shoe etc.).

2. The Hole enlargement tool must be featured with hydraulically/ hydro-mechanically traversing cutter Blocks with versatile PDC cutters in place of cutter arms (like **Rhino XS Reamer or Gaugepro XPR or Anderreamer** or **equivalent**) suitable for wide range of formations (Soft to Medium, IADC PDC equivalent of 2 to 4) to cover a section of about 1000m (plus).

3. The desired Under Reamer shall be offered and supplied from any one of the following manufacturers only.

   a. Schlumberger-Smith
   b. Baker Hughes-Christensen
   c. Halliburton Security-DBS
   d. NOV-Reed Hycalog

4. If one particular tool or cutter is not adequate or featured to cover the whole section/ sections and the range of formations, additional suitable tools/ cutters must be available on board to complete hole enlargement/ under reaming efficiently.

5. The tools (17.1/2" x 20" & 14.3/4" x 17.1/2") must be compatible in all respect to run and perform efficiently with the 17.1/2" & 14.3/5" bits respectively provisioned for supply on consignment basis under this contract.

6. The Hole Enlargement tool/ Under Reamer shall be of hydraulically activated and deactivated type for concentric hole-enlargement and also fully reliable and of proven technology suitable for deep water drilling application.

7. The Tool shall be compatible both for Water Base Mud as well as SOBM.

8. The section length and range may vary in actual based on operational requirement during the course of drilling activities.

9. Appropriate and adequate provision/ backup arrangement in form of replaceable suitable cutter-blocks or complete additional tools (complete Under Reamer), accessories and spares as required are to be kept on board for uninterrupted operation and complete under reaming/ hole enlargement operation of both the sections as stipulated.

10. Service provider shall provide any substitute/ crossover, accessories, tools, spares, dedicated stabilizer etc. that are required for the Under Reamer/ Hole Enlargement Tool.

11. String Stabilization & BHA design for under reaming / hole opening operation will be service provider's responsibility.

12. Rental/ Standby Day Rate (SDR) will be paid from the time of completion of mobilisation at Shore-base and will cease on demobilisation. In addition to SDR, Operating Component –Day Rate (OCDR) will be paid when the tool in working condition is run below Rotary till it comes out of hole after accomplishment of the objective for the trip. However, if the tool fails to perform, ZERO Rate (both SDR & OCDR) will be applicable from the time it was lowered below Rotary till the same tool or its replacement tool starts performing at bottom after solution.

13. No separate Mobilisation or Demobilisation cost for such tools & services are applicable.

14. Competent, well experienced and qualified service engineer/ operator on callout basis shall be provided by the service provider for 24hrs of availability of service on board. He must be OEM trained expert on the tools having thorough appropriate knowledge and experience on the tools & services. He should have at least **THREE YEARS** of relevant experience in under-reaming tools and its operations out of which minimum **one year** should be on the specific tools & services offered/ mobilised for the application. He should be fluent in English and well versed of deep water drilling environment.

15. The Service Engineer/ Operator shall be made available at Shore-base on call out basis within 10 days from the day of intimation. Daily Rate will be paid from the day of reporting at Shore base till demobilisation/ de-hiring. No Mobilisation or Demobilisation or travel expenses for such person/ personnel will be borne by OIL.

16. Only one Rate i.e. Day Rate is applicable against the service of the Engineer/ Operator irrespective of working/ idle period and number of such person kept on board for uninterrupted operation. However not more than two person can be kept at a time on board for the services.

17. Operator at its cost will arrange transportation from Shore-base to Rig and back for the Service Engineer/ Operator. Food and accommodation for him will also be provided on board by OIL.

18. In case the Service Engineer/ Operator's service is not made available as per the Company's (OIL) need and the operation is hampered due to his absence, all the applicable payable charges against the entire Hole Enlargement/ Under reaming service will

cease with immediate effect till the service(s) is/are made available/restored.

End of Exhibit - 14

Exhibit-15

RTOC (Real Time Operations Centre) Equipment and Services

The Company plans to operate a Real Time Operations centre (RTOC) for its well operations at Location 4A in the Gulf of Mannar deep water well through third party equipment and services to monitor drilling operations in real time from its base office at Noida, Sector 16A, IT Infrastructure Building. The service provider shall provide the service for continuous monitoring and analysis of G&G and drilling data, in two daily shifts of 12 hrs each, in full collaboration with the OIL team. The Consulting Contractor will also comprise of a RTOC Coordinator/Manager and Drilling Application Engineer with solid well Engineering background to meet the requirement and scope of works set here forth.

1.0 Bidder's Experience for Services:

The Bidder must have a minimum of 5 (five) years' experience in providing RTOC services and at least one RTOC set up and management for any major Offshore E&P Operator. Period in this regard shall be reckoned prior to the schedule closing date of submission of this tender.

2.0 Scope of work:

The Scope of Work will include but not be limited to the following:

2.1 To set up with IT Hardware, software, Connectivity and associated services for Real time data transmission to and from the rig – Offshore rig and New Delhi base Operational centre.

2.2 Acquiring, collecting and transmitting real time surface and sub surface parameters from the designated offshore rig to the RTOC at OIL's office in NOIDA. On the rig, data will be collected from rig contractor and service companies in industry standard format (WITS / WITSML 1.3) and will be aggregated, replicated and transmitted directly to RTOC, OIL's office at NOIDA, Sector-16A, IT Infrastructure Building in real time using Rig provided V-SAT. The data must be quickly buffered in case of communication failure and must be securely stored and distributed at RTOC Centre.

2.3 Monitoring of rig operations on a 24x7 basis using real time data transmission and real time drilling optimization software with Domain Experts for predicting pore pressure, drilling optimization, MIS as per Industry formats.

2.4 Pre drill and Real Time Application and analysis of Well Engineering issue for drilling optimization like Real Time Data Monitoring and Optimization, ECD Management and provide the Real Time Pore Pressure Prediction.

2.5 Wellbore Stability Surveillance, Monitoring and management of ECD/ESD and its trend. Analysis of Pore Pressure and Fracture Pressure trends, Surge/Swab, Hydraulics analysis, Real time LOT and FIT, Pick up and Slack off weight and trend analysis, down hole WOB, Torque, Drag and hydraulics, down hole RPM, Vibration, shocks, Stick-slip etc.

2.6 Real time Mud Volume management with the help of logging parameters like Active and Reserve Pit Volumes, Trip tank, Gas volumes and interpretations, Mud density, Temperature and Conductivity (In and out)

2.7 Monitoring of LWD/MWD/WL log parameters like Resistivity, Gamma ray, Density and Porosity, Sonic Delta Time and Formation Pressure etc.

2.8 Drilling optimization software by importing real time data to get the following

• Optimization of drilling parameters such as WOB, RPM, Flow in, SPP and Mud Weight etc.

• Elimination of Stick-Slip, Torque and Drag issues

• Monitoring and analysis of drill string Vibrations

• ECD management with respect to Pore and fracture Pressures by optimizing mud properties and flow rates etc.

• Bit Hydraulics for better ROP and Hole Cleaning.

2.9 Tripping Speed and Casing Speed Optimization by swab and surge analysis

2.10 Training and development of OIL in-house engineers in Drilling Optimisation, model building, well engineering applications and Pore pressure prediction

3.0 RTOC System Features:

The RTOC system should have the following features:

(i) An established application must be utilized by the Service provider with proven performance in their MWD, LWD and SDL operations as the basis of their Real Time Operations strategy.

(ii) The system must be able to acquire, database, and display data from any source. The application must have the capability to acquire data from any number of rig-site data sources such as third party mud-logging services. Rig Data, third party LWD/MWD data, and third party Wire line data.

(iii) The Application must have the ability to communicate with a variety of applications from both Landmark Software and Solutions and third party suppliers via WITSML and WITS.

(iv) The Application should be designed to handle and display data not just from drilling and geological applications but also for other wellsite operations such as cementing, and well testing.

The operations phase of the RTOC process involves the real time 24 x 7 monitoring (or on an as needed basis) of the operations and the interaction between the rigs and the RTOC. The 24 x 7 monitoring and optimization workflow must be enabled using Industry recommended Application.

The following minimum parameters will be monitored and optimized:

- Drilling surface parameter surveillance like Rate of Penetration, WOB, Torque, Hook load, Stand Pipe Pressure.
- ECD, ESD and Surge/Swab
- Wellbore friction surveillance, torque and drag
- Hydraulics
- Wellbore Stability surveillance – with support from ADT Engineer
- Real Time Leak-off Test and Formation Integrity Test

- Directional drilling data and Wellbore Trajectory (Deviation from plan, Tortuosity, DLS, etc.)
- Casing running and Cementing operations

4.0 RTOC Key Personnel:

4.1 The following key personnel are to be deployed by the Service Provider:

1. RTOC Coordinator – on 8 hour shift during General office hours and 24x7 on call
2. Drilling Monitoring Specialist – on 12 hr shift to cover 24 x 7 Operation
3. Drilling Optimisation Engineer – on 12 hr shift to cover 24 x 7 Operation
4. Applied Drilling Technology Engineer – on 8 hour shift during General office hours and 24x7 on call
5. Pore Pressure Specialist – on 12 hr shift to cover 24x7 Operation
6. IT Support Engineer – on 8 hour shift during General office hours and 24x7 on call

4.2 The above personnel to be deployed should have at least 5 years' experience in working in Real Time Operations Centre (RTOC) of deep water offshore wells and Narrow Drilling Margin wells and be conversant in the following:

- Prepare precise Torque & Drag, Hydraulic &Surge Models
- Analysis of real time rig operations and recommended drilling parameters
- Detailed After Event Analysis for non-conformance events and suggest changes in drilling program
- Optimization of well design for high inclination / narrow mud weight window Deepwater wells
- Buckling analysis for Liner Landing String to set Packer in highly deviated wells
- Optimization of Mud Rheology to drill an otherwise un-drillable well
- Optimization of Casing Running Operation for surge effects in Narrow Drilling Margin Wells

4.3 Educational Qualification of Personnel: The personnel to be deployed under this tender shall be at least a BE / B Tech in Mechanical/ Petroleum, or any branch of Engineering.

4.4 **Drilling Monitoring Specialist**: The Drilling Monitoring Specialist shall monitor rig operations on 24 x 7 basis using real time data transmission and real time drilling optimization software.

Responsibilities of the Monitoring Specialist**:**

- The Monitoring Specialist will monitor trends based on digital transmitted data from the rig site and also via the trend analysis from the data points collected at the rig site.

- The Monitoring Specialist is the first point of contact for observing and highlighting trends. Where deviations from the

roadmap trends are identified the Monitoring Specialist will raise an intervention and informed OIL's base Coordinator/ OIL's RTOC Engineer.

- The Monitoring Specialist may also request support from the RTOC ADT Optimisation Engineer and / or Drilling Applications Engineer Consultant for further interpretation of the roadmap. This will involve both pre and post drilling analyses, whenever applicable.

- The RTOC will provide guidance and recommendations to the rig.

- The roadmap interpretation and use is designed to predict either changes in friction factor or other deviations from a plan, which could be indicative of hole cleaning, washout, plugged nozzles.

- The Monitoring Specialist should observe the trend change and suggest appropriate measures to OIL.

- Roadmaps are also to be planned for ECD modelling and should be used to gauge the efficiency of the drilling and circulating system.

- The road maps should show with ADT Optimization Engineers feedback to determine the acceptable drilling rate.

5.0 Interpretation and RTOC Interaction

- Roadmaps to be used to guide to the hole condition during an operation such as tripping BHA or casing, running lines, completions.
- Road maps should be designed to model aspects of drilling process such as ECD modelling for various flow rate, mud density and ROPs or expected torque at surface and at depth for given BHAs and drilling operating parameters.
- Roadmaps to be used to predict the torque at bit and along the string component.
- The roadmap output should show a series of trend lines for a particular operation.
- The roadmap is used as a guideline for the operating trend. The roadmap will be given to:
  - RTOC monitors for real-time monitoring
  - Offshore team (Company Man, etc.)
  - Onshore engineering and support team

6.0 Applied Drilling Technology (ADT) Engineer: Optimization of drilling parameters in real time against predictive models to be developed by the Bidder prior to and during drilling.

- Drill String Integrity, Down hole RPM, WOB, Torque,

- Vibration and Shock: Complete drill string vibration analysis consisting of Stick & Slip analysis, Whirl & Twirl analysis, bit bounce analysis
- Wellbore Stability surveillance – with support from Monitoring Engineer

If excessive vibration is encountered, then alarms are activated and recommended changes to the drilling parameters are to be displayed.

7.0 Drilling / Well Engineering Application Support and Optimization

Specialist will assist with preparation of cohesive & detailed engineering modeling such as Pre-drilling and Post drilling Analyses comprising Torque & Drag, Hydraulics, Swab, Surge, Critical Speed and Well Control on every hole section (except riser less).

- Casing and BHA running (Tripping Speed analysis and Swab & Surge analysis) for every run.
- Directional drilling data and Wellbore trajectory (Deviation from plan, Tortuosity, DLS etc.)
- Hydraulics (i.e. ECD Management)
- Well bore friction surveillance, torque and drag while drilling and running casing
- Pick up and slack off weight and trends analysis, Down hole weight on bit and torque, computed surface torque and weight vs. down hole torque and weight
- Kick Tolerance
- Critical Speed

8.0 Geomechanics, Pore and Fracture Pressure Estimation & Monitoring:

The Bidder should provide real-time pore-pressure analysts during drilling operations to monitor and update the geo-mechanical and drilling performance models in real-time. The well site models include full utilization of geopressure-related data from LWD, surface logging, and well test sources. Continuous communication between the analyst and the drilling team on the rig, along with regular interaction with the Operator's shore-based team, provide the feedback for taking real time preventative actions, should these be required.

Additionally, if required peer reviews with the global team and the subject matter experts are to be conducted on a regular basis. These services should be part of the daily services rate for real-time analysts. All services described should be included in the day rate.

8.1 Core Daily Responsibilities:

1. Calculate vertical stress, from RHOB and or velocity data. Ensure vertical stress profile is supported by all available data.

2. Calculate shale pore pressures from LWD (Res and/or Sonic) using the current model

3. Calculate fracture gradient from real-time pore pressure and vertical stress using the current model.

4. Calculate shear failure pressure using the current model

5. Gather and summarize all other relevant pore/pressure indicators (back ground vs. connection gas, ROP, cavings, etc.) This data should be sued to support the pore pressure models.

6. Gather and summarize all indicators of losses, and determine from LWD (if possible) where the losses are occurring, and the mechanism of losses. The data is used to calibrate the fracture gradient model.

7. Using ESD and ECD, inform drilling supervisor if wellbore pressure is outside the PP-SFG-FG window in the open hole.

8. If the analyst is at the rig site: monitor wellbore stability at shakers, Diagnose cavings (if present) and recommend corresponding remedial action. Photograph cavings and send to Company's drilling team.

9. *Issue summary report to Company's Drilling and Sub-surface team once a day or as often as required to communicate all relevant pressure management information (this report should be customized to meet requirements of the Company drilling team).

10. Attend calls to shore-based Company Drilling and Sub-surface teams (e.g. morning call) or at an agreed upon time as specified by the Company.

*This report should also include a measure of the Analyst's confidence in the model operation.

9.0 Deliverables:

The Contractor should provide the following deliverables in report form:

a) Real time Pore Pressure Monitoring:

Delivery of Daily PP/FG reports per standard format)

One (1) hardcopy of the end-of-well report and presentation including but not limited to:

- Executive summary
- Data used
- Description of work performed
- Details of the methodology
- Findings/results
- Conclusions and recommendations

b) Issuing daily summary report to operations team before 0700 hrs

c) Operations time break down for last 24 hours, connection time, and equipment downtime. This will be provided I the form of Pie Chart on real time basis on the screen.

- Analysis activities into operational components (30 types of activities)
- Tripping activities: Trip In Hole and Pull Out of Hole breakdown
- Drilling activities: Rotating Drilling, Sliding and Connection Drilling
- Casing activities
- Completion activities
- User able inputted time interval for breakdown
- Daily breakdown any hour
- Break down by Rig Operation Activity
- Breakdown per Tour
- 24 hour reporting
- Reporting by Run / BHA / Hole sections
- Well analysis
- Analyze wells within a field / crews / rigs

d) Drilling Contractor and service companies down time and performance analysis

e) Non-productive time (NPT and root cause analysis

f) Lesson learnt, decisions and best practices would be communicated to superintendent of the respective rig

g) Total number of identified hazards reported

h) Total number of recommendations

i) Number of recommendations adopted

j) Number of Stored Lesson Learned

k) Time savings

l) End of well reports containing

- Documentation of the entire well history
- NPT analysis, Plan vs Actual variation, Recommendation, Lessons learnt, Rig performance and benchmarks attained. Non-Productive Time (NPT) and root cause analysis phase wise and at Target depth.
- Total number of recommendations, drilling hazards, adopted recommendations and Time saving.
- Dynamic and Static Young's Modulus, Poisson's ratio, UCS, Friction angle, Tensile strength.
- Pore pressure Profile and Velocity vs. Effective vertical stress plot
- Stress Profile: Vertical, Minimum & Maximum horizontal stresses , Stress Orientation using Sonic Anisotropy and Borehole Images

- Stable Mud Weight Window: Breakout EMW and Mud loss EMW

10.0 Infrastructure: Hardware & Software

a) Hardware

The Bidder will utilize the display monitors supplied by OIL for RTOC Centre at OIL's NOIDA office, while server and all other required hardware will be provided by the Service Provider to carry out the scope of work under this tender.

b) Software

Software required for providing the above services are to be provided by the Bidder.

10.1 <u>RTOC Rig Server Minimum Specification:</u>

HP Elitebook or equivalent Mobile Workstation (Laptop):

Operating System: Microsoft Windows 7 / 8 Professional 64-bit edition

Processor: Min. Intel Core i7 3520M CPU 2.9 GHz

Memory (RAM): 8 GB

Hard Disk Space: Minimum 80 to 150 GB

10.2 <u>RTOC Monitoring Workstation</u>:

Operating System: Microsoft Windows 7 / 8 Professional 64-bit edition

Processor/Chipset: Min. CPU Intel Core i5 (2nd Gen) 2410M / 2.3 GHz

Memory (RAM): 8 GB to 16 GB

Hard Disk Space: Minimum 120 to 500 GB

10.3 <u>RTOC Town Server Station</u>:

Operating System: Microsoft Windows 7 / 8 Professional 64-bit edition

Processor/Chipset: Min. CPU Intel Core i5 (2nd Gen) 2410M / 2.3 GHz

Memory (RAM): 8 GB

Hard Disk Space: Minimum 80 to 150 GB

11.0 Mobilization Period: The services, complete in all respects, with all necessary permissions and clearances, and in ready to operate condition, is to be mobilized within 45 days from the date of issuance of LoA.

<u>End of Exhibit- 15</u>

Exhibit-16

SCOPE OF WORK FOR WELL TESTING SERVICES

SUB SEA TEST TREE (SSTT) & PRODUCTION TESTING SURFACE (PTS) EQUIPMENT AND SERVICES FOR WELLS IN WATER DEPTH UP TO 500 meters.

REFERENCE STANDARDS:
The total design and service shall be governed by the following reference standards wherever applicable –

✓	API Spec 5CT	Specifications for tubulars and threads
✓	API Spec 6A	Specifications for valves and wellhead equipment
✓	API Spec RP 17B	Recommended practice for flexible pipes
✓	API RP 44	Recommended practice for sampling petroleum reservoir fluids.
✓	API RP 520	Recommended practice for sizing, selection and installation of pressure relieving devices.
✓	API RP 521	Recommended practice for pressure relieving and depressuring systems
✓	ASME-Section-VIII Divn. I and II	Rules for construction of pressure vessels
✓	ANSI/ASME B 31.3	Chemical plant and petroleum refinery piping.
✓	API RP 54	Recommended practice for Safety and health for oil & gas well drilling and servicing operation.
✓	IRP-4	Industry Recommended Practices – Volume 4 (2012) for Well Testing and Fluid Handling
✓	API RP 19B Section-1	Recommended practice for well perforators

- All International practices for equipment and personnel with respect to HSE standards needs to be strictly complied for deepwater operations.

TECHNICAL SPECIFICATIONS AND SCOPE OF WORK

1.0 SCOPE OF WORK:

The successful Bidder (Contractor) shall provide Sub Sea Test Tree (SSTT), Drill Stem testing (DST) , Tubing Conveyed Perforation (TCP) and Production Testing Surface (PTS) equipment (along with accessories) in operating condition and services suitable for carrying out production testing of exploratory and development wells drilled by floater drilling rigs at offshore locations in water depth up to 500 meters. The contractor must have experience in subsea and surface production testing operations, providing these tools for at least 5 years and must have experience in running surface production testing operations within the last 3 years.

The SSTT equipment version supplied under this document should be of a proven design and technology and to be actually in use in the oilfield industry for at least 5 years with industry recognized track record.

2.0 ITEM AND QUANTITIES REQUIRED for SSTT and PTS Services:

2.1 The details of the required SSTT equipment and accessories, suitable for 15,000 psi working pressure, sour service as per NACE MR-0175 (Latest Applicable Edition) are as follows:

Sr. No.	Item	Qty
2.1.1	SSTT assembly suitable for operation in water depth up to 500 meters	01 set + 01 set (Back up) Details of Back up tools given at 4.1.1.18
2.1.2	Retainer Valve suitable for operation in water depth up to 500 meters	01 No + 01 No (Back up)
2.1.3	Sub Sea Hydraulic control system - Hydraulic control panel -Hose Reeler for Hydraulic system	01 No
2.1.4	Lubricator Valve	01 No + 01 No (Back up)
2.1.5	All necessary Cross-overs required for connecting SSTT, Retainer Valve, Lubricator valve, fluted hanger, slip joints etc. with the production string and landing string.	1+1(back up)=02 sets
2.1.7	Chemical Injection Pump for hydrate prevention	01+01 no

2.2 The details of the required Production Testing Surface (PTS) Equipment and accessories suitable for 15,000 psi working pressure, sour service as per NACE MR-0175 (Latest Applicable Edition) are as follows:

Sr. No.	Item	Qty
2.2.1	Surface Flowhead /Control Head with hydraulic actuator for flow valve, Swivel & Cross-overs	01 set
2.2.2	Choke Manifold & accessories	01 set
2.2.3	Data Header	01 no.

2.2.4	3" Flexible Flowline (Coflexip hose) of suitable length for connecting Flowhead with stand pipe	01 no.
2.2.5	Steam Heat Exchanger with Steam Generator	01 no.
2.2.6	Three Phase Test Separator-1440 psi WP	01 no.
2.2.7	Surge Tank	01 no.
2.2.8	Transfer Pump	01 no.
2.2.9	Piping Package. 3" 1502 for high pressure; 3" hammer unions for downstream, Straight pipes & Swivel/Elbows of suitable length for connecting surface equipment.	01 set
2.2.10	Chemical Injection Pump	01 no
2.2.11	Surface Pressure & temperature Recorder	01 no.
2.2.12	Dead Weight Tester	01 no.
2.2.13	ESD Panel for shutdown	01 set
2.2.14	Oil Manifold/ Diverter	01 no.
2.2.15	Gas Manifold/ Diverter	01 no.
2.2.16	Lab Cabin	01 no.
2.2.17	Air Compressor	02 nos.
2.2.18	Sand Trap / Desander System with electronic sand detection facilities	01 no.
2.2.19	Surface Safety Valve	01 no.
2.2.20	Well Test Workshop Container with Accessories	01 no.
2.2.21	Surface Testing Acquisition Network	01 no.
2.2.22	Acquisition Computer	01 no.

3. Age of Equipment:

3.0 The age of all SSTT equipment, as per clause no. 2.1, shall not be more than 8 years on the closing date of the tender. The equipment shall have been re-certified by surveyors – DNV-GL/LLOYDS/BV etc. if age of equipment is more than 5 years. All credentials such as manufacturing documents, linking serial nos. embossed on the equipment offered with detailed specifications, must be submitted before mobilizing the equipment and also at the time of on-hire survey.

3.1 The age of all the PTS equipment, as per clause no.2.2, shall not be more than 8 years as on closing date of the tender. The equipment shall have been re-certified by surveyors – DNV-GL/LLOYDS/BV etc. if age of equipment is more than 5 years. All credentials such as manufacturing documents, certificates, linking serial nos. embossed

on the equipments offered with detailed specifications, must be submitted before mobilizing the equipments and also at the time of on-hire survey.

4 TECHNICAL SPECIFICATIONS OF ITEMS

4.1 SSTT EQUIPMENT AND ACCESSORIES

4.1.1 **SSTT – 1 SET + 1SET (Back up) – Details of the backup tools at Sr.no. 4.1.1.18**

4.1.1.1 The SSTT should be suitable for operations in water depth up to 500 meters and should have necessary hose length along with hydraulic system required for its operation and control.

4.1.1.2 The SSTT assembly shall be complete with fluted hangers (with ports for fluid by-pass in landed condition) suitable for wear bushings of required size of wellheads, Ported type Slick joint to be compatible with rig BOP ram configuration and spacers, valve assembly, latch and un-latch assembly, gauge carrier with real time monitoring of pressure and temperature ,centralizer, hose reel with sufficient control line for water depth of 500m, accumulator, control panel etc.

4.1.1.3 The SSTT should be suitable for Sour Service as per NACE Specifications MR-0175 (latest applicable edition).

4.1.1.4 The SSTT should have Acid resistance up to 30% HCI with suitable acid inhibitor.

4.1.1.5 The Nominal Size of SSTT should be minimum 3.00”

4.1.1.6 The Working and Test pressures of the SSTT should be 15,000 psi and 22,500 psi respectively.

4.1.1.7 The design temperature shall be -4^{o} F to 350^{o} F.

4.1.1.8 The end connections of SSTT assembly should be suitable for connecting 3.½” premium tubing/drill pipe as production string below and premium landing string above. The Bidder has to pre-check the end connection of tubings/drill pipe and mobilize end connections accordingly.

4.1.1.9 The response time for operating SSTT in water depth up to 500 meters shall be as follows :

- Time to close ball valve - 15 seconds maximum
- Total time for complete closure of valves and unlatching of SSTT assembly - 20 seconds maximum (To check)

Contractor must specify actual response time and the maximum unlatch angle and normal recommended unlatch angle.

4.1.1.10 The SSTT should have either two ball valves or a ball valve and a flapper valve. The valves should be surface controlled, normally closed and pressure to open, with fail-safe closure.

4.1.1.11 The design feature of the valves should be such that in an emergency it is possible to pump and kill the well even when valves are closed or the hydraulic control of valves is ineffective.

4.1.1.12 The ball valve should be capable of cutting 1-1/4” coil tubing and 5/16” wireline cable.

4.1.1.13 Minimum yield strength should be 5,20,000 lbs at zero pressure and 255,000 at 15000 psi.

4.1.1.14 The SSTT should be able to be unlatched both hydraulically and mechanically under down-hole conditions.

4.1.1.15 The length of SSTT shall be sufficiently short to accommodate in standard BOP stack with two pipe rams closed below it and allow the shear rams to close above it (across a shear sub) even in the latched condition. Contractor must provide actual space-out diagram.

4.1.1.16 The SSTT shall be suitable for injection of chemicals such as glycol, Methanol, paraffin inhibitor, PPD, diesel etc. up to maximum pressure of 10,000 psi in between the two valves.

4.1.1.17 The hydraulic control hoses shall be suitable to withstand hydrostatic pressure of the mud column in the riser and complete with suitable riser sealing mandrill in order to protect the control hoses as well as to prevent leakage of hydrocarbon in to the long risers.

4.1.1.18 In addition to the complete set of equipment as specified in the scope of work in clause 2.1, following SSTT Back up tools are to be provided by the contractor:
Subsea Test Tree along with slotted type fluted hangers compatible with rig BOP wear bushings, slick joints, spacers (if required), valve assembly, latch unlatch assembly and centralizers etc and any other equipment required for the operation

4.1.1.19 The Contractor shall have testing facility in India to test the entire SSTT under vertical conditions for all functionalities including the unlatch.

4.1.2 RETAINER VALVE – 1 No + 1 No (Back up)

4.1.2.1 The unit should be suitable for operations in water depth up to 500 meters

4.1.2.2 The unit should be suitable for Sour Service as per NACE specifications MR-0175 (latest edition).

4.1.2.3 The unit should have Acid resistance up to 30% HCI with suitable acid inhibitor.

4.1.2.4 The Nominal Size of SSTT should be minimum 3.00”

4.1.2.5 The working and test pressures should be 15,000 psi and 22,500 psi respectively.

4.1.2.6 The design temperature shall be -4^0 F to 350^0 F.

4.1.2.7 The bottom of retainer valve should be connected to shear sub and top should be connected to landing string, using suitable cross-overs, if required.

4.1.2.8 The design feature of the valve should be such that in an emergency it is possible to pump, kill and circulate through the retainer valve, even when the hydraulic control lines of the Retainer ball valve is ineffective. Also it should be possible to pressure test the landing string from the surface to the retainer valve up to 15,000 psi.

4.1.2.9 Minimum yield strength should be 5,20,000 lbs at zero pressure.

4.1.3 LUBRICATOR VALVE – 1 No + 1 No (Back up)

4.1.3. The unit should be suitable for Sour Service as per NACE

1 specifications MR-0175 (latest edition).

4.1.3.2 The unit should have Acid resistance up to 30% HCI with suitable acid inhibitor.

4.1.3.3 The Nominal size should be 3.00”

4.1.3.4 The working and test pressure should be 15,000 and 22,500 psi respectively.

4.1.3.5 The end connections should be suitable for connecting with landing string using suitable cross-overs, if required.

4.1.3.6 The ball valve shall be surface controlled, opened and closed by surface pressure. The design should be such that the valve opens or closes when pressurized and remains in the same position when pressure is bled off.

4.1.3.7 The design feature of the valve should be such that in an emergency it is possible to pump, kill and circulate through the lubricator valve, even when the ball valve is closed and hydraulic control of the ball valve is ineffective. Also it should be possible to pressure test the string from surface up to lubricator valve at 15,000 psi.

4.1.3.8 The minimum hose length should be as per operational requirement

4.1.3.9 Minimum yield strength should be 5,20,000 lbs at zero pressure.

4.1.4 CROSS-OVERS – 2 SETS.

4.1.4.1 All cross-overs should be suitable for sour service as per NACE Spec MR-0175 (latest edition).

4.1.4.2 All cross-overs should have Acid resistance up to 30% HCI with suitable acid inhibitor.

4.1.4.3 The minimum ID should compatible with the Tubing string and as per the API recognized standards

4.1.4.4 The working and test pressure should be as per API-5CT standards

4.1.4.5 The minimum length should be 18 inches.

4.2 PRODUCTION TESTING SURFACE (PTS) EQUIPMENT AND ACCESSORIES.

4.2.1 SURFACE FLOW HEAD / CONTROL HEAD / SURFACE TREE -1 set

Surface flow head should have heavy duty swivel and hydraulic actuator. The item should have the following specifications.

a) Solid block integral unitized body.
b) Minimum bore 3.1/16”
c) Working pressure 15,000 psi.
d) Test pressure 22,500 psi.
e) Temperature range: 32 Deg F to 320 Deg F
f) Complete unit should be suitable for Sour Service as per NACE Spec MR-0175 (latest edition)
g) Consisting of 04 nos. of 3.1/6” gate valve (1 no. master valve, 1 no. swab valve and 2 nos wing valves with one hydraulic actuator for

flow line valve).

h) Acid resistance up to 30% HCI with suitable acid inhibitor.
i) Tensile strength 600,000 lbs at zero pressure.
j) Complete with lifting sub of suitable length,
k) Wing end connections should be 3", 1502 , rated to 15 K Psi
l) Above flow head should be provided with one no. of wing valve hydraulically controlled and actuated with remote control system including pump and hydraulic hose etc. Functioning of the valve should be pressure to open.
m) Suitable cross-overs should be provided for connecting flow head bottom with landing string and lifting sub top with wire line/slick line BOP/ stuffing box. All the cross-overs should have specifications as per clause no 4.1.5 above.

4.2.2 CHOKE MANIFOLD AND ACCESSORIES – 1 Set

4.2.2.1 CHOKE MANIFOLD

a) Size 3" dual choke manifold with both positive and adjustable choke.
b) Working pressure 15,000 psi.
c) Test pressure 22,500 psi.
d) Working temp. 32 to 320 Deg F
e) Suitable for sour service as per NACE specs MR 0175 (Latest Edition).
f) Wing end connections should be 3", 1502 , rated to 15 K Psi
g) Choke Manifold should have 2 upstream, 2 downstream 3.1/16" Gate valves with hand wheels.
h) All the valves should be rated for same working pressure and temp as specified above.
i) Positive choke (Tungsten Carbide or Ceramic Lining) from 1/8" to 1.½".

4.2.2.2 ESSENTIAL ACCESSORIES FOR ONE CHOKE MANIFOLD

a) Set of positive chokes (tungsten carbide or ceramic lined) from 1/8" to 1.½" in with increment of 1/16" upto 1" and with increment of 1/8" up to 1 ½ "
b) Pressure gauge with ½" NPT Connection
   (i) 0-15000 psi- 2 nos.
   (ii) 0-10000 psi - 2 nos.
   (iii) 0-1000 psi - 2 nos.
   (iv) 0-500 psi - 2 nos.
   (v) 0-100 psi - 2 nos.
c) Choke bean wrench - 1 no.
d) Hand wheel for valve - 2 nos.
e) Steel braided rubber tube with connection ½" NPT size 10' long suitable for 15,000 psi for sampling purpose - 1 no.

4.2.3 DATA HEADER -1 No.

a) End connection 3", 1502 rated upto 15K psi
b) Suitable for Sour service as per NACE Specification MR-0175 (Latest Edition).
c) Minimum 4 nos of NPT ports for pressure and temp recording and chemical injection.
d) Sufficient no. of NPT type needle valves (15000 psi WP) and ½" thermowells or strap-on thermo-transducers.

4.2.4 3” FLEXIBLE (COFLEXIP HOSE) - 2 No.

a) Should be of single length, suitable for connecting flow head with stand pipe even in stabbed out condition if permanent packer is used.
b) Suitable for sour service as per NACE Specification MR-0175 (latest Edition).
c) WP 15,000 psi
d) Working Temp. 32 Deg F to +266 Deg F
e) Inlet and outlet connection should be 3”1502 rated upto 15K psi

4.2.5 STEAM HEAT EXCHANGER WITH STEAM GENERATOR – 1 No.

a) Skid mounted, suitable for offshore transportation
b) Unit should be suitable for sour service as per NACE Specification MR-0175 (latest Edition)
c) Working temperature – 0 Deg F to + 250 Deg F
d) Working pressure: 10000 psi
e) Minimum heat capacity: 4 MM BTU/hr
f) Unit should be complete with bypass manifold for bypassing exchanger.
g) Inlet and outlets are to be fitted with 3”, WECO hammer union.
h) Unit should be complete with adjustable/Fixed choke system.
i) The unit should have suitable temperature sockets with thermometers fitted to indicate actual temperature of fluid at inlet & outlet.

Steam generator with following specification :

j) Steam output of 2000KG/hr or 4.5 MMBTU
k) Working pressure – 150 psi
l) Fuel Tank capacity of 1500 liters

4.2.6 THREE PHASE HORIZONTAL TEST SEPARATOR - 1 No.

a) Nominal WP: 1440 psi
b) Test pressure : 2150 psi
c) Sour service as per NACE Specification MR-0175 (latest Edition)
d) Liquid rate 100 to 10,000 BPD
e) Gas rate: 60 MM SCF/Day
f) Water rate: 100 to 2000 BPD
g) Retention time = 1 Min
h) Fitted with two safety relief valves.
i) Should be fitted with shrinkage tester
j) Complete with Barton flow recorder range 0-400" differential pressure of water or electronic differential pressure measurement device
k) The gas outlet should have a Daniel orifice fitting with a full set of orifice plates or Coriolis gas meter
l) Unit should be as per API Spec 12-J / ASME Section VIII.Div. 1

4.2.7 SURGE TANK – 1 No.

a) WP 150 psi.
b) Shall have 2 single / 1 dual compartments with total capacity of 100 bbls, minimum. Must have the provision to divert the flow

through either of the compartments without disturbing the flow from the well, through a suitable manifold.
c) Sour service as per NACE Specification MR-0175 (latest Edition).
d) Shall have high and low alarm.
e) Complete with level gauge and bypass manifold.

4.2.8 TRANSFER PUMP - 1 No.

a) Driven by flame proof electric motor.
b) Delivery rate 2,000 BOPD.
c) Should be hooked up in the manifold of surge tank for direct suction and delivery to Burner.

4.2.9 PIPING PACKAGE – 1 Set

a) 3", 15,000 psi WP St. Pipes and Elbows for connecting flow head to choke manifold, with a temperature rating in the range of -20 deg F to 320 deg F.
b) 3", Fig 1502 St. Pipes and Elbows for connecting choke manifold to heat exchanger
c) 3", Fig 602 St. Pipes and Elbows for connecting all liquid lines downstream of the separator.
d) 4" Fig 602 St. Pipes and Elbows for connecting all gas lines downstream of the separator.
e) Change overs for end connections, wherever necessary, provided in sufficient quantity.
f) All the above piping package should be suitable for sour service as per NACE MR-0175 (latest Edition) and should have Acid resistance up to 30% HCI with suitable acid inhibitor.

Note: The upstream lines connecting the flow head to the choke manifold should be in sufficient length to facilitate the string to be picked up by about 40' for stabbing out of the packer, without disconnecting the flowline. Also, the downstream lines should be in sufficient quantity for completing the surface hook-up from choke manifold to the Burner Booms.

4.2.10 CHEMICAL INJECTION PUMP – 1 No

a) Pump should be pneumatically driven, positive displacement.
b) Fluid discharge capacity = 85 GPD (minimum) at 15,000 psi.
c) WP 15,000 psi
d) Provided with sufficient length of high pressure hose (15,000 psi WP) with 1/2" NPT connectors
e) Pump to be provided with check valve.

4.2.11 SURFACE PRESSURE & TEMPERATURE RECORDER - 1 No

a) Recorders should have only mechanical input and operation.
b) Suitable for sour service as per NACE Specification MR-0175 (latest Edition).
c) Pressure to be tapped from 1/2" NPT needle valve box.
d) Temperature to be measured from 1/2" NPT weld neck pocket or strap-on thermotransducer
e) Chart drive mechanical, one revolution in 24 hrs.

4.2.12 DEAD WEIGHT TESTER - 1 No

a) Mainly required for accurate measurement of pressure in the pipelines
b) Pressure range 50-10000 psi.
c) Pressure intervals 1 psi.

4.2.13 ESD PANEL FOR SHUT DOWN - 1 Set

a) Each set should have 3 nos. of high-low pilots
b) One no. high-low pilot each between
   - Flow head & Choke manifold
   - Choke Manifold & Heater
   - Heater & separator
c) To control hydraulic valve on the flow head and the surface safety valve

4.2.14 OIL MANIFOLD - 1 No

a) Sour service as per NACE Specification MR-0175 (latest Edition)
b) WP 1440 psi.
c) Should have 3" ball/plug valves.
d) Should have 3" WECO H/U inlet/outlet connections.

4.2.15 GAS MANIFOLD - 1 No

a) Sour service as per NACE Specification MR-0175 (latest edition)
b) WP 1440 Psi.
c) Should have 3" ball/plug valves.
d) Should have 3" WECO H/U inlet/outlet connection.

4.2.16 LAB CABIN - 1 No

Should have lab equipment like gas gravitometer, centrifuges, H_2S detection pump etc.

4.2.17 AIR COMPRESSOR - 2 Nos

a) Should be able to supply sufficient quantity of air (500-600 scft at 100 psi) to burner for complete combustion of well effluents.
b) Rugged enough for offshore use.
c) Electrical/diesel powered, flame proof.
d) Provided with flexible hose and suitable end connection to connect with air line of burner.

4.2.18 SAND FILTER/ DESANDER SYSTEM - 1 No.

a) Suitable for removing sand from crude oil and / or gas flow.
b) Sour service as per NACE Specification MR-0175 (latest applicable edition).
c) WP 15,000 psi.
d) Should have double isolated accumulation vessel for continuous operation with filter size of 100 microns and 200 microns.
e) Sand hold up volume at least 75 lts.
f) Inlet/outlet connection 3" 1502 connection.
g) Interconnecting piping with by-pass and drain
h) Clampon type electronic sand detection system, which needs to be clamped on upstream elbow.

4.2.19 SURFACE SAFETY VALVE – 01 No

a) Line Size 3" to be rigged up between flowhead and choke manifold.
b) Working pressure 15,000 psi.
c) Test pressure 22,500 psi.
d) Working temp. 32 to 300 Deg F
e) Suitable for sour service as per NACE Specification MR 01-75 (Latest Edition).
f) Inlet and outlet to be 3" 1502 rated to 10000 psi
g) Gate valve, hydraulically operated and fail safe configuration – to close in case of hydraulics line failure
h) Remote shut in with the help of ESD control panel

4.2.20 Burner with ignition system – 02 No

a) 3 headed Burner for burning oil and condensate, to be rigged up at port side and star board side
b) Designed to handle gas/ oil volumes in accordance with the separator handling capacity with minimum of total flow rate capacity: 30MMSCFD of gas and 6000 BOPD
c) Air supply pressure 50 to 100 psi. The oil and compressed air inlet on the burner shall be equipped with NRV
d) Shall be equipped with a pilot ignition system and a pilot light for each atomized fluid stream
e) Includes propane pilot and propane bottles and rack
f) Shall be capable of complete combustion of produced hydrocarbon without fall-out i.e. Environmentally friendly, zero liquid drop out

4.2.21 WELL TEST WORKSHOP CONTAINER WITH ACCESSORIES: 01 No.

Workshop container should include following minimum items

- Pressure gauges, ranges to include at minimum 0-10000 psi, , 0-5000 psi, 0-2000 psi, 0-200 psi
- Thermometers
- Gas gravitometer
- Centrifuge (manual)
- Hydrometer set
- Dead weight tester
- Gas sniffers
- Portable H2S (range 10 ppm) and CO2 detection equipment
- Tests on Oil / Gas samples should include:

o Density / Specific gravity
o pH
o Measurement of the Hydrogen Sulfide (H2S) Carbon Dioxide (CO2) by Draeger tubes.

- Fittings and needle valves required for the operation
- All tools required and necessary spares required for PTS operation.
- Equipment to collect well fluid at surface for PVT analysis

4.2.22 SURFACE TESTING ACQUISITION NETWORK: 01 No.

a) Means of recording and displaying following minimum parameters
- Wellhead Pressure
- Wellhead Temperature
- Annulus Pressure

- Separator Pressure
- Upstream & Downstream choke pressure
- Separator temperature
- Separator gas temperature
- Separator liquid temperature
- Separator gas differential pressure

b) Capability of producing real time plots of Pressure vs. Time and of Flow rate vs. Time.

c) Acquisition Computer

4.2.23 Real Time Data Transmission (Optional)

The Real Time Data Transmission should have the following:

a) Software package to properly store, organize and display all the data collected during the well test program in industry standard formats and transmit the same over internet so that the same can be downloaded or viewed online in realtime.

b) The package should have the facility for online communication between site and office to discuss any related matters.

c) The real time data transmission system over the internet should have standard security systems to protect any data theft / unwarranted manipulation.

4.2.23 ADDITIONAL ITEMS

1. TUBING & PUP JOINTS, CROSSOVER, DRIFT MANDRELS

a. 3.1/2" OD x 12.7 ppf x P-110 Vam Top Tubing – 6000 m

b. 3.1/2" OD x 12.7 ppf x P-110 Vam Top Tubing Pup Joints (1m, 2m, 3m) – 2 nos each

c. 2.7/8" OD x 10.5 ppf x P-110 Vam Top Tubing – 500 m

d. 2.7/8" OD x 10.5 ppf x P-110 Vam Top Tubing – 500 m (1m, 2m, 3m) – 2 nos each

e. Drift mandrels for above tubings

2. TUBING HANDLING EQUIPMENT (for above 3-1/2" Vam Top Tubing, 2-7/8" Vam Top Tubing)

a. Elevators (For 3.1/2" Tbg - 150 Ton; For 2.7/8" Tbg – 50 Ton) – 2 each

b. Rotary Slips (For 3.1/2" Tbg - 150 Ton; For 2.7/8" Tbg – 50 Ton) – 2 each

c. Manual Tongs (Min. 10,000 ft lb torque rating for pipe body & coupling) for each of above tubing sizes

d. Torque turn system (inclusive of Power Tongs & hydraulic power unit)

3. FISHING TOOLS

Fishing tools for tubings, pup joints, crossovers of the above sizes (3.1/2" & 2.7/8" OD Vam Top tubing)

4. CHEMICALS

a. Methanol/ Glycol for hydrate control

b. Poor Point Depressant (PPD)

c. Defoamer

d. Demulsifier

5. **BRIDGE PLUGS AND SETTING TOOL ALONG WITH SETTING SERVICES**

Bridge plugs, along with personnel for setting the same, for isolation in

- 7" x 32 ppf x P-110 x Atlas Bradford TC-II,
- 9-5/8" x 53.5 ppf x Atlas Bradford TC-II,
- 4.1/2" x 13.5 ppf x P-110 x Atlas Bradford TC-II liner / casing.

Bridge plugs should have a -

- differential pressure rating of 15,000 psi from both above & below (for 4.1/2" & 7") and 10,000 psi (for 9-5/8")
- temperature rating of 350^0 F (for 4.1/2" & 7") and 300^0 F (for 9-5/8")
- Should be able to be set by wireline / drillpipe

5.0 OPERATING PERSONNEL FOR SSTT and PRODUCTION TESTING SURFACE EQUIPMENT:

5.1.0 The contractor shall provide a team of technically qualified and experienced personnel as mentioned below:-

a) Testing supervisor - 1 no.
b) SSTT Chief Operator - 2 no.
c) SSTT Operator - 2 nos.
d) Well test specialist - 2 nos.
e) Well test Operator - 4 nos.
f) Data acquisition specialist - 2 nos.
g) Tubing torque turn operator - 1 no.

The above personnel will be responsible for operation and maintenance of SSTT and PTS equipment and also for carrying out well testing safely and successfully.

The scope of well testing will include the following points:-

i) To recommend Well testing plan including string design and PTS equipment layout to the Company for approval.
ii) To suggest well testing methodology and string design to test successfully gas hydrate formations, oil and/or gas formations just below gas hydrate formations.
iii) To carry out SSTT and well testing operations, flow studies, data acquisition etc.
iv) To overcome operational complications such as hydrate formation, paraffin problem, sand incursion, high concentration of H_2S etc.
v) To prepare and submit well testing reports.

5.2.1 TESTING SUPERVISOR

Testing supervisor shall have a minimum of 8 years' experience in carrying out SSTT and production testing operations including 5 years as testing supervisor. CV to be submitted as part of technical bid.

The testing supervisor shall be able to work as an expert of well testing and shall be able to supervise operations, repair and maintenance of

SSTT and PTS equipment during well testing. He shall have tested at least 3 wells or 10 objects in locations in water depth at least 500 metres.

He shall be well versed with the latest testing technology, work procedures, in accordance with internationally recognized safe well testing methodology.

The testing supervisor will also be responsible for preparing the different production testing plans as per the scope of work, for approval of the Company.

5.2.2 SSTT CHIEF OPERATOR
The SSTT Chief Operator shall have minimum 5 years of experience as SSTT Operator and must have worked on SSTT for 3 wells or 10 objects in locations in water depth at least 500 metres. CV to be submitted as part of technical bid.

5.2.3 SSTT OPERATOR
The SSTT Operator shall have minimum 3 years' experience as SSTT Operator and must have worked on SSTT for 2 wells or 7 objects in locations in water depth at least 500 metres. CV to be submitted as part of technical bid.

5.2.4 WELL TEST SPECIALIST
Well test specialist shall have a minimum of 4 years' experience in carrying out production testing operations including 2 years as well test specialist. CV to be submitted as part of technical bid.

The well test specialist shall be able to carry out all well testing jobs as well as operations, repair and maintenance of PTS equipments. He shall have tested at least 2 wells or 07 objects in off shore.

5.2.5 WELL TEST OPERATOR
Well test Operator shall have a minimum of 3 years' experience in operating production testing surface equipment on floater rigs. CV to be submitted as part of technical bid.

5.3 All the said personnel should possess valid training certificates from approved agencies under International Safety Management Code in respect of survival at sea, fire prevention and fire fighting and first aid in addition to medical fitness certificate for offshore jobs.

5.4 The Contractor should submit a list of personnel who are likely to be deployed for the subject services to the Company for approval. They should fulfill the above qualifications and experience criteria.

5.5 The Contractor shall furnish a list of available personnel who will be deputed for providing services at the beginning of the contract

5.6.6 Project Coordinator
The Project Coordinator shall be the single point of contact between the Company and the Contractor and shall be responsible for working closely with the Company to apply the appropriate planning, design and execution to benefit both the Company and the Contractor by offering

specific solutions to cater to requirements. He shall be responsible for ensuring the preparation and dispatching of equipment and the execution of services in the field. The Project Coordinator shall also be responsible for planning, organizing, leading and controlling the HAZID, HAZOP, and Service Delivery Process, to ensure that the Contractor delivers consistent and superior service quality. The coordinator shall provide draft testing program to the company prior to commencement of operation. Project coordinator should have experience of minimum 10 years of Deepwater operations.

6.0 Basic Well Test Design and Interpretation

Basic well test interpretation to be provided along with final test report consisting of following

- QA/QC of downhole pressure and surface rate data.
- Analytical modeling using well test software EcrinTM or equivalent to estimate wellbore model, well model, reservoir model and boundary model.
- Perform Nodal Analysis considering available reservoir parameters and propose on completion design.

7.0 OTHER CONDITIONS

7.1 The Contractor should agree to maintain the equipment in good operational condition throughout the contract period. The Contractor shall provide and maintain sufficient quantities of spare parts, tools, consumables etc. that are necessary for maintenance and operation of the equipment at no extra cost to Operator.

7.2 The Contractor must provide SSTT and PTS services confirming to good oil field practices comparable to international standards.

7.3 The Contractor shall supply any additional item as indicated as optional requirement at agreed rates, terms and conditions during the contract period.

7.4 The Contractor shall ensure that the equipment quoted is complete in all respects to carry out the operations specified in the Tender documents. The Contractor shall also quote for any additional item which is not listed in the Tender document but is essential for operation.

8.0 Well Testing Services Optional Items

8.1 Multiphase flow meter:

The MPFM should be rated to minimum 5000 psi. All measurements without separation should be at the same plane with accuracy level of +/- 2 to 5% for well having GVF upto 95%. Should be able to handle clean up flow of wells from first opening, i.e. when the well opens for clean-up.

8.2 Oil and gas sample kits:

Conventional oil sample bottles to collect separator oil samples with sample capacity of 600 cc

Conventional gas sample bottles to collect separator gas samples with capacity of at least 3750 cc

8.3 Onsite Well Fluid Analysis:
On site analysis for the Wireline Formation Tester or DST PVT Samples should be available to measure, at the minimum, the following:

- Saturation Pressure (Bubble point / Dew point)
- Oil/Gas compressibility
- Fluid density at bubble point / dew point
- Constant composition expansion
- Flash GOR, molecular mass (sp. gravity)
- Stock tank oil / condensate density / composition upto C36 / molecular mass
- Flash Gas composition upto C12.
- On site analysis of H_2S and Mercaptan.
- Reservoir fluid composition upto C36
- Stock tank and reservoir oil / condensate viscosity

8.4 Advance Well Test design services:

7.5.1 Well Test Process Design and Simulation:
Well Test Process Design and Simulation that provides a realistic steady-state simulation of actual field conditions to facilitate surface well test planning, to enhance safety of the well test environment. Shall include flow velocities and pressure in each section, heat radiation and noise calculation.

7.5.2 Clean up Planner:
Determine flow profile during cleanup, considering completion and reservoir fluids and recommend the optimal cleanup sequence and also determine optimal drawdown, suggest max cleanup efficiency and time needed.

7.5.3 Flow / Build up Sequence:
Design flow buildup sequence & duration with flow rates based on available reservoir parameters using well test software EcrinTM or equivalent to optimize well test flow and buildup duration.

7.5.4 Advance Well Test Interpretation

- Perform Numerical modeling using well test software EcrinTM or equivalent to validate part of static reservoir model in complex reservoirs.
- Use Pressure-Rate Deconvolution technique to determine the boundary model even though individual build-ups may not allow it. To verify that features seen during buildups are reservoir features or not and help define the interpretation model.

7.5.6 Sr. Reservoir Engineer and Operations Support
Well Test Reservoir Engineer shall be based in NOIDA and support the Company in Well Test design services.

The Contractor shall provide Operations Support Center to monitor real time data during well test operations.

8. **Scope of Work for Tubing Conveyed Perforation and Drill Stem testing**

The Bidder must have experience in downhole shut-in testing operations for at least 5 years and must have experience in running downhole shut-in testing operations in at least 5 wells within the last 3 years.

All the downhole sub-assemblies of the TCP- DST string should be rated to 15,000 psi WP (with 25,000 psi absolute pressure rating for both OD and ID) and 350 deg F and should be NACE certified across all temperature ranges (i.e. 0 to 350° F). The DST tools should have OD 5" and ID 2.25" so as to be able to run in 7" and 9 5/8" liner / casings, tensile strength at min. yield should be 160-320 klbf. The contractor must demonstrate that the critical sealing components of all tools are manufactured using Corrosion Resistant Material. All tools should have premium end connections without elastomers.

Items Required for Drill Stem testing

Sl. No.	SUB ASSEMBLIES	BIDDERS CODE	QUANTITY FOR STRING
1.	Single shot safety circulating valve		1
2.	Down hole safety valve with Pump Through		1
3.	Annulus / Tubing pressure operated , re-closable circulating valve		1
4.	Pressure control tester valve with hold open assembly		1
5.	Pipe tester valve with auto fill flapper		1
6.	Gauge carrier (to carry at least 4 quartz gauges)		1
7.	Quartz gauge (15000 psi and 350° F) with down hole batteries for carrying out 180 hrs tests.		4
8	Radioactive marker sub		1
9	Retrievable or permanent packer (with option of hold down for pumping thru tubing) for 7" casing / Liner. -Packer setting should not require rotation which may damage the subsea umbilical -Packer should be able to hang the TCP guns below -Compatible with TCP perforation operation		1
10	Retrievable or permanent packer (with option of hold down for pumping thru tubing) for 9-5/8" Casing / Liner. -Packer setting should not require rotation which may damage the subsea umbilical -Packer should be able to hang the TCP guns below -Compatible with TCP perforation operation (Min 350 deg F)		1

11	Surface read out facility for reading the quartz gauge data at the surface while recording down hole using Wire line LINC system for connection to gauges down hole for on-line pressure data transmission to surface. *		1
12	INLINE Fullbore downhole single phase multi sample carrier with all necessary equipment and accessories to assist in down hole sampling. Ability to collect up to 2.4 liter sample. *		1
13	Tools and Parts		1
14	Subs and X-overs		1+1 Back up

Items required for Tubing Conveyed Perforation			
1	Redundant firing head (HDF/HDF) and (HDF/BHF)		1
2	Hydraulic Firing Head Stand Alone		1
3	Mechanical Firing head Stand Alone		1
4	Automatic gun release assembly activated with gun firing action		1
5	Mechanical gun release assembly		1
6	Pressure operated under balance valve for use with hydraulic firing head, actuated by applying pressure through tubing without exposing the casing to applied pressure.		1
7	Portable surface shot detection kit with data acquisition system		1
8	Pup joints for TCP		2
9	Safety spacer for vertical shock absorption		1
10	Bull plug		1
11	PORTED FLOW SUB WITH GLASS/CERAMIC DISK BELOW PORTS ALONG WITH REDRESS KIT		1

<u>Perforation Guns and Charges</u> **Minimum Charge Performance required as per API 19B Sec-1**			
1	Perforating guns for 7” Casing Casing Gun Size - 4.5” or 4.72” Shot Density-12 spf ,135/45 deg EHD – 0.34 in Penetration – 30 in		10 meters
2	Perforating guns for 9 5/8” Casing – Casing Gun Size -7” Shot Density -12 spf , 135/45 EHD – 0.44 in		10 meters

	Penetration – 43 in		
3	Perforating guns for 4 1/2" Casing **(Optional)** Casing Gun Size -2 7/8" Shot Density-6 spf , 60 deg EHD – 0.38 in Penetration - 25 in		10 meters
	Casing Gun Size -3 3/8" **(Optional)** Shot Density-6 spf , 60 deg EHD – 0.37 in Penetration – 36 in		10 meters

* Surface read-out tools shall be minimum 300^0 F rated.

Provision for suitable fishing for DST-TCP other than standard tubular sizes. The quantity per string indicated is the minimum number. If any bidder indicates requirement of any addition, element / quantity in the string for performing the job the same be indicated which will be considered for evaluation.

Permitted variation in OD of DST +0.5"/-0.25". Packers shall have OD to match the casing size-weight. Permitted variation in ID of DST tools +0.5"/-0.1".

In order to meet the requirement of availability of DST tools all the time for successive tests that Bidder should keep one set of all tools as listed from S. No. 1-25 with mandatory back-ups (1 for 1). However, the payments shall be made for only one set of TCP-DST tool.

All the DST tools should be readily available for use all the time. No extra time shall be provided for redressing / repair of the tools between two successive tests.

ATTACHMENT – "B"

(OPTIONAL Tools and services)

Sl. No.	SUB ASSEMBLIES	BIDDERS CODE	QUANTITY FOR STRING
1.	Electro-mechanical dual valve -10,000 psi, 350 deg F, 300-320 klbf -Shall have dual feature of a tester valve and a multi cycle circulating valve -Shall operate through annulus applied low press pulses, detected by pressure sensor and decoded with a downhole microprocessor implementing the commands electro-mechanically -All tool operation log recorded in tool memory for diagnostics at surface -Ability to spot nitrogen or liquid cushion in tubing.		1
2.	High Performance Retrievable packer for 7" casing / liner -15,000 psi, 350 deg F -Annulus pressure operated hydraulic setting mechanism not requiring pipe manipulation -Capability to be run, set and retrieved with DST string -Double grip slips design -Floating Seal Assembly type design not requiring drill collar weights or slip joints for keeping the packer set -Integrated bypass to prevent surge / swab while RIH / POOH Integrated below packer circulating valve for reversing out any gas from below packer		1
3.	Electronic firing head for TCP -10,000 psi, 350 deg F -Activated by coded low pressure pulses in tubing -Two downhole microprocessors to independently interpret the pressure pulse commands to initiate firing sequence after a pre-specified delay of 5min to 8 hours. -Incorporating Radio Frequency and Stray Voltage immune detonator -Not affected by pressure tests and other pressure operations in tubing -Ability to abort firing by sending "Abort Command" from surface -Combinable with Automatic Gun Release assembly		1
4.	Pressurized bottles for sample storage - Monophasic sample storage - Positive displacement operation - Ability to transport samples - Positive displacement operation - Minimum 15,000 psi, 375^0 F - 600 cc capacity (liquid)		Maximum 12
5.	Single phase bottom hole Sampler: - Temperature rated to 400^0 F - Pressure rated to 20,000 psi - Capacity to take 3.6 liters downhole samples.		2

	- Samples collect are in single phase. - To be run with slickline		
6.	Additional Gauge Carrier with additional 4 quartz Gauges to be run in memory mode below Tester Valve		1

Backup required for Items 1, 2 and 3 above.

9.0 OPERATING PERSONNEL FOR TCP and PRODUCTION TESTING DST EQUIPMENT:

The successful Bidder (Contractor) shall provide a team of technically qualified and experienced personnel as mentioned below:-

a) TCP Specialist - 1 No.
b) DST Chief Operator - 1 No.
c) DST Operator - 1 No.

The above personnel will be responsible for operation and maintenance of SSTT and PTS equipment and also for carrying out well testing safely and successfully.

TCP SPECIALIST:
TCP specialist should have a minimum of 5 years experience in carrying out TCP operations including 2 years as TCP specialist. The TCP specialist should be able to carry out all TCP jobs as well as operations.

DST SPECIALIST:
DST specialist should have a minimum of 5 years experience in carrying out TCP operations including 2 years as DST specialist. The DST specialist should be able to carry out all DST jobs as well as operations.

DST OPERATOR:
DST Operator should have a minimum of 3 years experience in operating DST equipment.

10. Detail Technical Specification of Items

Cased Hole DST Service FOR 7" AND 9-5/8" CASING

The tools should have the following specifications:

- Maximum OD: 5.5"
- Minimum ID: 2.25"
- Minimum tensile strength: 110K lbs
- Maximum differential working pressure: 15,000 psi
- Maximum temperature rating: 350 ˚F

10.1 **Single Shot Circulating Valve**

- Annulus pressure activated rupture disc by applying predetermined annulus pressure
- The flow ports shall have sufficient area and resistance to erosion to permit circulation at an efficient rate with a pressure that does not cause operation of other tools.

10.2 **Downhole Safety Valve With pump through**

- The full opening downhole safety valve should be run in open position and should be able to close permanently with a flapper/ball valve once rupture disc is activated by applying pressure in the annulus.
- Once the valve is closed, there should be provision to pump through this valve from the top to allow well kill operations through the tubing.
- Can be of either ball or flapper type

10.3 **Annulus / Tubing pressure operated, re-closable circulating valve**

- The multi-cycle circulating valve is a re-closable valve operated by tubing pressure and is used to spot fluids and nitrogen.
- The tool should be able to be run in lock open position during run-in-hole.
- Once tool is at depth, the tool should be activated by annulus pressure.
- The tool should be able to operate by a pre-set number of pressure cycles in the tubing
- Able to accommodate forward circulating and reverse circulating operations
- The flow ports shall have sufficient area and resistance to erosion to permit circulation at an efficient rate with a pressure that does not interfere with the operation of other tools.

10.4 **Pressure control tester valve with hold open assembly**

- The pressure control tester valve should be operated by annulus pressure.
- It is the primary downhole valve used to control downhole formation flows and shut-ins.
- The tool should have a hold-open module to allow running-in-hole with the ball valve in open position.

10.5 **Pipe tester valve with auto fill flapper**

- This tool should be used for pressure testing the DST string above the valve while running in hole.
- The tool should have a flapper valve run normally closed and should open permanently on application of annulus pressure to rupture the disc.
- While running in hole, the flapper valve should allow automatic filling up of cushion from below or it shall be possible to open the tester valve with a pressure differential of 50% of working pressure from below.

- Should be annulus pressure operated to lock fully open upon completion of pressure testing

10.6 **Gauge Carrier**

- Gauge carrier shall be internally concentric
- Externally mounted gauge housing
- Gauges shall be installed in the carrier while on deck and pressure integrity tested. It must be possible to connect the gauge carrier to the string without breaking tested seals
- Outside of carrier shall not have any sharp edges that can get hung up
- To be run between packer and tester valve.
- Shall be able to carry up to four (4) gauges
- Three gauges to sense tubing pressure and one gauge to sense annulus pressure.

10.7 **Quartz Gauge with battery**

Minimum requirements are as follows:

- Accuracy ± 5 psi and ± 1 °C
- Resolution 0.01 psi and 0.01 °C
- Pressure range 0 – 10,000 psi minimum
- Temperature range including battery pack 0 – 150°C
- Scanning rate 0.1 sec to 10 minutes
- Quartz type
- Temperature rating inc battery pack, 150°C
- 100,000 datasets minimum capacity
- Calibration certificate not older than 1 year.

10.8 *Radioactive Marker Sub*

- Should have high visibility on gamma ray log compared to natural gamma ray response from the formation.

10.9 **7" Retrievable Packer/Permanent Packer**

The packer used shall comply with the following:

- The packer shall be capable of holding pressure differential 10000 psi from above as well below and temperature rating: 300 ˚F
- Packer setting should not require rotation which may damage the subsea umbilical -Packer should be able to hang the TCP guns below -Compatible with TCP perforation operation
- Shall have Hydraulic hold down
- Shall be suitable for 7", casing
- Compatible with TCP gun operation
- Able to support tailpipe and TCP gun weight

10.10 **9 5/8" Retrievable Packer/Permanent Packer**

The packer used shall comply with the following:

- The packer shall be capable of holding pressure differential 10000 psi from above as well below and temperature rating: 300 ˚F

- Packer setting should not require rotation which may damage the subsea umbilical -Packer should be able to hang the TCP guns below -Compatible with TCP perforation operation
- Shall have Hydraulic hold down
- Shall be suitable for 9 5/8" casing
- Compatible with TCP gun operation
- Able to support tailpipe and TCP gun weight

10.11 **Surface Read Out**

- Read the quartz gauges data at surface while recording downhole using Wireline LINC tool for connection for connection to gauges down hole for on-line pressure data transmission to surface
- LINC tool should be compatible with available Wireline adapters
- LINC tool should pass through DST string with ID 2.25 without any restriction.

10.12 **INLINE bottom-hole sample chamber**

- Annulus operated tool for collecting bottom hole samples from the tubing, either during flow or shut-in conditions.
- Min 8 chambers with 300 cc capacity in each
- Single Phase Sample Bottles -16 nos for transfer of samples from samplers to single phase sample bottles

10.13 **Tools and Parts**

- Containerized workshop/store with power and lighting
- Includes all hand tools, spare parts, test subs, test pump, elastomers for DST tools, handling subs, crossovers etc. required for DST operations
- Tool racks

10.14 **SUBS AND CROSS OVERS**

The Contractor shall mobilize all subs & cross over required for running in operation.

11 TUBING CONVEYED PERFORATION

11.1 **PORTED FLOW SUB WITH GLASS/CERAMIC DISK BELOW PORTS ALONG WITH REDRESS KIT**

Top Connection:	2.875" 6.5 ppf EUE Box
Bottom Connection:	2.875" 6.5 ppf EUE Pin
Material:	L-80
Minimum ID:	2.44"
Maximum OD:	3.67"
Glass Description:	Minimum 0.375" thick

Other:	The flow area of the ports must be greater than the flow area of the tubing
Temperature Rating:	300°F

11.2 **Safety spacer for vertical shock absorption**

Maximum OD:	Same as that of loaded gun
Top Connection:	As required to make up to firing head
Bottom Connection:	As required to make up to safety spacer and or ERHSC
Material:	As required to meet the conditions described in Preamble
Length:	10 ft minimum
Temperature Rating:	300^0 F minimum

11.3 **PERFORATING GUN FOR 7" CASING**

Maximum OD:	4.5"/4.72"
Charge Type:	HMX or other suitable for use at 300°F.
Charge Size:	The largest possible that will fit the 4.5" gun
Shot Density:	12 spf
Shot Phasing:	135/45 deg
Entry Hole Diameter:	0.34 inches minimum (in 7" 32 ppf)
Penetration Depth:	30 inches minimum (in 7" 32 ppf)
Prima Cord:	HMX or other suitable for use at 300°F.
Temperature Rating:	300°F minimum
Top Connection:	As required to make up to safety spacer and or ERHSC
Bottom Connection:	As required to make up to safety spacer and or ERHSC
Material:	As required to meet the conditions described in Preamble

11.4 **PERFORATING GUN FOR 9-5/8" CASING**

Maximum OD:	7"
Charge Type:	HMX or other suitable for use at 300°F.
Charge Size:	The largest possible that will fit the 7" gun

Shot Density:	12 spf
Shot Phasing:	135/45 deg
Entry Hole Diameter:	0.44 inches minimum (in 9 5/8")
Penetration Depth:	43 inches minimum (in 9 5/8")
Prima Cord:	HMX or other suitable for use at 300°F.
Temperature Rating:	300°F minimum
Top Connection:	As required to make up to safety spacer and or ERHSC
Bottom Connection:	As required to make up to safety spacer and or ERHSC
Material:	As required to meet the conditions described in Preamble

2.4 PRESSURE ACTIVATED FIRING HEAD WITH REDUNDANT HYDRAULIC FIRING HEAD FOR PERFORATING GUN ALONG WITH REDRESS KIT

Maximum OD:	3.68"
Top Connection:	As required to make up to tubing/ ported flow sub above.
Bottom Connection:	As required to make up to safety spacer
Material:	As required to meet the conditions described in Preamble
Temperature Rating:	300°F minimum

Charge Type/Percussion Detonator/Booster: HMX or other suitable for 300°F

2.5 SUB ASSEMBLY SPACE OUT TUBING PUP JOINTS

Top Connection:	2.875" 6.5 ppf EUE Box. Equipped with special clearance EUE coupling
Bottom Connection:	2.875" 6.5 ppf EUE Pin.
Material:	L-80
Minimum ID:	2.441"
Maximum OD:	2.875" (Nominal Pipe body OD)
Coupling:	Special clearance with taper ends (3.68" OD)
Length:	4 ft/3ft/1 ft

NOTE:

A. OPERATING COMPONENT OF DAY RATE CHARGES [OCDR] [MANPOWER/ TOOLS / EQUIPMENT/ CONSUMABLES WITH ALL ACCESSORIES]:

i. The Operating component of day Rate **(OCDR)** for DST /TCP shall be payable for the period starting from the DST/TCP Tool is lowered below Rotary Table till it is pulled out of hole above rotary table.

ii. The **OCDR** for the Production Testing Services shall be payable for the period when the equipments are connected with surface flow head and the Production Testing Services equipment are put in operation.

vi. The **OCDR** will be quoted per day of 24 hours basis. However, payment for part of a day shall be computed on pro-rata basis rounding upto the nearest full hour of operation.

vii. If the Contractor's tool/equipment fails to perform, for any reason during the course of operation, then no **OCDR** shall become payable for the entire unit of the service until the equipment/tool is put back in to operating condition to the satisfaction of OIL's representative.

B. STANDBY DAY RATE CHARGES [SDR] (MANPOWER/ TOOLS/EQUIPMENT/CONSUMABLES WITH ALL ACCESSORIES)

i) The Standby Day Rate **(SDR)** for tools & equipment shall be payable from the date & time of completion of Mobilization at site till the notice of demobilization is issued by the company.

C. ZERO/NIL RATE

Notwithstanding any provision in this Contract, no charges shall be payable for the period, the job or activity assigned to the Contractor is halted due to break-down of Contractor's tools/equipment, non-availability of contractor's personnel or for any other reason whatsoever attributable to the Contractor.

D. Penalty:

i) If there is Shut down/break down of any Tool(s) / Equipment(s) during any operation then Zero rate as per clause no. "C" above will be applicable for the period of shut down on pro-rata basis plus penalty @ 15% of the OCDR rate of all the services under operation will be levied. if the equipment is not brought into operation within 2 (two) hrs

ii) If there is Shut down of any operation due to non-availability of Equipment(s) /manpower/ tools/ spares /consumables etc then Zero rate will be applicable for entire unit(s) for the period of shut down on pro-rata basis plus penalty @ 15% of the OCDR rate of all the services under operation will be levied.

End of Exhibit - 16

Exhibit - 17

VENDORS LIST FOR WELL MATERIALS

Sl. No.	Description of Materials	Vendors
1	Drill Bits	1. Schlumberger-Smith 2. Baker Hughes-Christensen 3. Halliburton Security-DBS 4. NOV-Reed Hycalog 5. Varel, USA 6. TIX-TSK, Japan
2	Floating Equipment and Cementing Accessories	1. Weatherford 2. Davis Lynch 3. Topco, Canada 4. Halliburton 5. Baker
3	Cement (API Class G)	1. Dalmia 2. Digvijay 3. Dyckerhoff
4	Cementing Additives	1. BJ Services 2. Halliburton Services 3. Dowell Schlumberger
5	Mud Chemicals / additives	1. Baroid 2. MI Swaco 3. BJ Hughes
6	Subsea Top & Bottom Plugs (Non Rotating Type) with compatible plug launching mechanism system & cementing head	1. BJ Services 2. Halliburton Services 3. Schlumberger 4. Weatherford
7	Casing Centralisers & Spirolizers of all sizes	1. Weatherford 2. Halliburton 3. Davis 4. Topco
8	Liner Hangers	1. Halliburton 2. Weatherford 3. Baker Hughes 4. Smith International 5. TIW
9	Bridge Plugs	1. Baker 2. Halliburton 3. Weatherford

End of Exhibit- 17

Exhibit-18

LIST OF (PERSONNEL) CREW

1. Personnel (Crew):

The following is the minimum category and number of Personnel required to be provided by the
Contractor at rig and base. The Contractor may have more personnel with the prior approval of
The Operator or its representative, if considered necessary for the operations.

Sl. No.	Personnel	Minimum Present on board at any time for two Shift operations
1	Procurement & Logistics Controller	1 (Base)
2	Base Cementing Engineer	1 (Base)
3	Base Mud Coordinator	1 (Base)
4	Cementing Operator	1
5	Mud Engineer	2
6	Solids Control Engineer (On call out)	1
7	Completions Fluid Engineer (On call out)	1
8	Cuttings Drier operator cum Brine Filtration operator	1
9	Mud Logger	2
10	Data Engineer for MLU	2
11	Sample Catcher (As and when required)	2
12	Wireline Logging Engineer	1
13	Well Logging Operator	2
14	LWD Engineer -cum -Operator	1
15	SDMM Operator / Directional Driller (When SDMM is in use)	1
16	Coring Service Engineer	1
17	Core Handling Expert	1
18	Torque Turn Service Expert	1
19	Power Tong Operator	1
20	Casing Stabber	1
21	Bucking Machine Operator	1
22	Downhole Tools / Fishing Tools Expert	1
23	Liner Hanger Expert	1
24	Hole Enlargement Service Engineer	1
TOTAL:		**29**

The above list is not exhaustive. Manpower is to be provided as described in details in the tender document for respective service.

2. Experience of Personnel:

Procurement & Logistics Controller, Base Mud Coordinator, Onsite Mud Engineer, Completions Fluid Engineer, Solids Control Engineer, Base Cementing Engineer, Wireline Logging Engineer, LWD Engineer-cum-Operator, SDMM Operator / Directional Driller, Mud Logger, Data Engineer, should have experience as detailed out in the Scope of Work of the respective Service.

a) All the above personnel should be fluent in English.

b) The details of all personnel, i.e. CVs, Proof of Qualification, etc. shall be submitted within 15 days of issue of Letter of Award or 30 days prior to commencement of contract (whichever is later) for approval by the Operator before commencement of work.

3. Training to the Crew Personnel:

a) All the crew members should have undergone Personnel Survival Training (PST), Fire Prevention & Fire Fighting (FPFF) Training / Basic Fire Fighting Training (BFF), Elementary First Aid and Helicopter Underwater Egress Training (HUET). No personnel are allowed to go on offshore rigs without carrying out the above training.

End of Exhibit- 18

Exhibit-18 A

LIST OF (PERSONNEL) CREW (Well Testing Services)

1. PERSONNEL (CREW)

The following is the minimum category and number of Personnel required to be provided by the Contractor for 500m water depth rig and at base (as indicated). The Contractor may have more personnel with the prior approval of Operator or its representative, if considered necessary for the operations.

Sl No.	Personnel	Minimum present on board at any time for two shift operations.
	Crew for Well Testing	
1.	Testing Supervisor (As and when required)	**1**
2.	SSTT Chief Operator (As and when required)	**1**
3.	SSTT Operator (As and when required)	**2**
4.	Well Test Specialist (As and when required)	**2**
5.	Well Test Operator (As and when required)	**2**
6.	Slickline Specialist (As and when required)	**2**
7.	TCS Specialist (As and when required)	**1**
8.	DST Chief Operator (As and when required)	**1**
9.	DST Operator (As and when required)	**1**
10.	Reservoir Engineer (Optional)	**1**
11.	Project Coordinator (Optional)	**1**
TOTAL:		**15**

The above list is not exhaustive. Manpower is to be provided as described in details in the tender document for respective service.

2. THE EXPERIENCE OF PERSONNEL:

All above personnel should have experience as detailed out in the Scope of Work of respective services.

All above personnel should be fluent in English.

The details of all personnel i.e. CVs, proof of qualification etc., shall be submitted within 15 days of issue of Letter of Award or 30 days prior to commencement of contract (whichever later) and got approved by ONGC before commencement of the work.

3. Training to the Crew personnel.

1) All the crewmembers should have undergone Personal Survival Training (PST), Fire Prevention & Fire Fighting (FPFF) Training/Basic Fire Fighting Training (BFF), Elementary first Aid and Helicopter Underwater Escape Training (HUET). No personnel are allowed to go on offshore rigs without carrying out the above training.

End of Exhibit -18A

Exhibit-19

SHORT DEPLOYMENT RATES FOR BUNDLED SERVICE (MAIN) CREW PERSONNEL

Sl. No.	Category	Minimum Crew on board for 2 Shifts	Short Deployment Day-Rate (US$)/Person
1	Procurement & Logistics Controller	1 (Base)	750
2	Base Cementing Engineer	1 (Base)	750
3	Base Mud Coordinator	1 (Base)	750
4	Cementing Operator	1	350
5	Mud Engineer	2	600
6	Solids Control Engineer (On call out)	1	450
7	Completions Fluid Engineer (On call out)	1	350
8	Cuttings Drier operator cum Brine Filtration operator	1	350
9	Mud Logger	2	350
10	Data Engineer for MLU	2	350
11	Sample Catcher (As and when required)	2	100
12	Wireline Logging Engineer	1	600
13	Well Logging Operator	2	300
14	LWD Engineer -cum -Operator	1	600
15	SDMM Operator / Directional Driller (When SDMM is in use)	1	400
16	Coring Service Engineer	1	400
17	Core Handling Expert	1	400
18	Torque Turn Service Expert	1	400
19	Power Tong Operator	1	350
20	Casing Stabber	1	300
21	Bucking Machine Operator	1	350
22	Downhole Tools / Fishing Tools Expert	1	450
23	Liner Hanger Expert	1	500
24	Hole Enlargement Service Engineer	1	400

End of Exhibit -19

Exhibit-19 A

SHORT DEPLOYMENT RATES FOR CREW PERSONNEL
(Well Testing Services)

Sl No.	Category	Minimum Crew on board for 2 Shifts	Short Deployment Day-Rate (US$)/Person
1.	Testing Supervisor (As and when required)	1	600
2.	SSTT Chief Operator (As and when required)	1	500
3.	SSTT Operator (As and when required)	1	300
4.	Well Test Specialist (As and when required)	2	500
5.	Well Test Operator (As and when required)	2	300
6.	Slickline Specialist (As and when required)	2	400
7.	TCS Specialist (As and when required)	1	500
8.	DST Chief Operator (As and when required)	1	500
9.	DST Operator (As and when required)	1	300
10.	Reservoir Engineer (Optional)	1	500
11.	Project Coordinator (Optional)	1	750

End of Exhibit-19 A

END OF SECTION - II

Section - IIII

SPECIAL TERMS & CONDITIONS OF THE CONTRACT

1.0 Duration of Contract

Duration of Contract shall be for an initial period of 90 days / 1 well from the date of commencement of contract for **Group I Service and 30 days for Group II service.** The contract shall commence as per the requirement of commencement of the contract of the deepwater anchor-moored semi-submersible rig for 500 m water depth (contracted by the Company) and then continue till the completion of de-anchoring job of this rig at the end of the well of rig's contract. The Contract will be automatically extended for completion of jobs in the well as per the contract of this rig, on the same rates, terms & conditions.

2.0 Commencement Date

This Contract is effective from the date of issue of firm fax order/LOA by the Company and shall commence when any of the services viz. Sea Logistics (at the Contractor's or Company's third party shore base/rig as required by Company) and Air Logistics (at the designated location) are mobilized ready in all respects to commence operations as per respective Scope of work including but not limited to obtaining all statutory clearances, Naval clearance, DRDO clearance, Customs clearance, any other requisite clearances etc., herein referred to as "Commencement date".

3.0 **Payment terms**: Payment will be made on Monthly basis except Mobilization and Demobilization which may be made on completion of Mobilization and Demobilization as per Contract.

The Company agrees to pay the Contractor for Bundled services as per Scope of work and Rate Schedule attached. Daily rates are based on 24 (twenty-four) hours work day, calculated from 0000 hrs to 2400 hrs or as per shift schedule. No interest shall be payable on delayed payments / disputed claims.

4.0 The services are primarily being hired for the 500 m water depth deepwater anchor-moored semi-submersible rig.

5.0 Mobilisation / De-Mobilisation Of Equipment:

The Contractor shall mobilize all Bundled Services (Group-I) except Well Testing Services (Group-II) to commence operations as per Scope of work of individual services, within 45 days from the date of instructions for mobilisation by Operator at the designated locations detailed below. If the mobilisation of the rig is more than 45 days from the firm fax order/LOA of this Contract, the Contractor has to plan and keep the services ready for mobilisation for the rig, as per Company's requirement, for which the Contractor may interact regularly with the Company.

Sl. No.	Name of the Services	Designated Location
1.	Shore Base	Shore Base of the Contractor
2.	Sea Logistic Services	Shore Base of the Contractor / at Rig / Company's third party base / as required by OIL
3.	Air Logistic Services	Madurai / Tuticorin Airport
4.	(a) Mud Services along with chemicals (b) SOBM Plant	: At the Drilling Unit : Shore base (Kakinada / Tuticorin)
5.	Mud Logging Services	At the Drilling Unit
6.	LWD/MWD/Mud Motor and Directional Drilling Services	At the Drilling Unit
7.	Cementing Services	At the Drilling Unit
8.	- Wireline Logging Services	At the Drilling Unit
9.	- Liner Hanger Running Services	At the Drilling Unit
10.	- Casing Running Services	At the Drilling Unit
11.	- Coring Services	At the Drilling Unit
12.	- Core Handling & Preservation Services	At the Drilling Unit
13.	Hole Enlargement Tools & Services	At the Drilling Unit
14.	Drilling, Fishing, Milling, Plug and Abandonment tools and Services	At the Drilling Unit
15.	- Supply of Drill Bits	At the Drilling Unit / Tuticorin Shore base
16.	- RTOC & Monitoring Services	At Rig & OIL's CEMG Office in NOIDA

The succeeding day of issue of mobilisation notice shall be counted as Day 1 for the purposes of Mobilisation period. For the purposes of LD, the mobilisation would be deemed complete from the date and time equipment is complete in on-hire survey by the Company (Operator).

The Contractor has to submit the copies of import documents like B/L and assessed Bill of Entry & custom assessed invoice at the time of mobilisation, which clearly show the F.O.B. & C.I.F. values. For items available in India also, the Contractor will have to submit relevant import and customs clearance documents. For indigenous items if any, Contractor may submit the copy of relevant purchasing document. For payment of lost in hole, these documents are absolutely necessary.

Mobilization charges shall become payable after the Bundled Services, ready in all respects as per scope of work, including

obtaining all statutory clearances viz. Naval, DRDO, Customs, MOHA, IB, Police clearances etc. is mobilised to the respective locations as above and after on-hire survey by the Company Representative & provided it is certified by the Contractor and accepted by Company Representative that all items are in good working condition.

However, if the Contractor mobilises most of the Bundled Services with which the rig can start operations, the Contractor shall be paid 90% of the lumpsum mobilisation fee quoted, upon mobilisation of equipment & the Bundled Services. The balance mobilisation fee shall be payable after mobilisation of remaining equipments and services as per the Contract. In the event, the Drilling Unit cannot perform its intended operations for reasons due to non-mobilisation of the outstanding equipments/tools/materials/services/helicopter etc, then no rate whatsoever shall be payable to the Contractor except the cost of the well consumables till the time the rig resumes its normal intended operations after mobilisation of such equipment / tools / materials / services / helicopter, etc.

De-mobilization charges shall become payable on clearance of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base. However, the Company (Operator) shall not be obliged to pay de-mobilization charges of unit / equipment, if on completion of Contract / termination, Contractor does not remove the unit/ equipment from the area of operation i.e. East Coast of Indian waters and also if the Contractor commences operation against any other contract(s) either for Operator or other contractor(s) in India.

For import and re-export, EXIM policy of Govt. of India should be followed. However the Contractor has to check the latest position themselves as per the law of the land. Contractor should submit all the relevant documents regarding re-export of all the equipment / material if re-exported, within 60 days after completion of the Contract, failing which the Company (Operator) will have option to invoke the performance guarantee submitted by the Contractor.

6.0 Individual Service Day Rate (SDR)

Contractor shall be paid Individual Service Day Rate (SDR) for all the services covered under Bundled Services from the time they are mobilized / commissioned and made ready in all respects to start operations at the respective designated locations as per Mobilization clause during entire period of the Contract, except when specifically otherwise provided for in this Contract as per the rates given at rate schedule. However, the SDR for Sea Logistics and Air Logistics Service shall be payable till completion of de-anchoring job of deepwater anchor-moored semi-submersible rig for 500 m water depth at the end of the well of the Rig's contract.

7.0 Operating Component Day Rate (OCDR)

Contractor shall be paid Operating component day rate (OCDR) whenever applicable for Wireline Logging Services, LWD/MWD & Mud Motor Services, Coring Services, Hole Enlargement Services, including optional, call out items, except when specifically otherwise provided for in this Contract as per the rate given at rate schedule. For Coring Services, Hole Enlargement Services and LWD/MWD & Mud Motor Services, the OCDR shall commence when the tool/ first tool (as applicable) for each of these services shall be lowered below rotary and shall end when the same tool is out of rotary on rig floor. For Wireline Logging Services, the OCDR shall commence when the first tool is lowered below rotary after rigging up Wireline Logging services during any Wireline Logging operations. The OCDR shall end when the last tool is out of rotary prior to rigging down of Wireline Logging services for that particular set of logging runs. However, no OCDR shall be payable when SDR is not payable for Wireline Logging Services.

8.0 Bundled Service Break Down

The Service Day Rate (SDR) quoted for any particular service covered in the Bundled Services shall not be paid for such period, that service either

i. Breaks down
   Or
ii. is not operating or not available as per its intended operations due to which the Drilling unit cannot perform its intended operations
   Or
iii. is not operating or not available as per its intended operations due to which the operation quality is compromised

9.0 Short Deployment Rates

In case, particular crew personnel of rig or base is not available, corresponding quoted short deployment charges for that category shall be deductible for that period and Contractor shall invoice the Company (Operator) accordingly.

10.0 Drill Bits, Hole Enlargement / Under-reaming Services, Coring services, Liner hanger and Casing Running Services

The Contractor has to make available the Drill Bits, Tools & Equipment for Hole Enlargement / Under-reaming Services, Coring services, Liner hanger and Casing Running Services as per the scope of work for respective service, all the time on the Drilling Unit/Operator's or Operator's third party shore base, as applicable.

In conjunction to Clause no. 8.0 above, in case there is shut down / interruption in operations at the Drilling unit on account of non-availability of either drill bits, equipment, tools and services for the

above mentioned services, the Contractor will not be eligible for any of the Service Day Rates pertaining to these services.

11.0 Inspection Clause

i) OIL (Company) shall get the equipment of various services inspected on its own or through any of the following internationally reputed third party inspection agency as per the tender specifications. OIL at its option, can nominate any one of the following third party inspection agency for inspection of various services and the cost of the third party inspection will be borne by OIL:
   a) MODU SPECS
   b) ABS
   c) Oilfield Audit Services Inc.,
   d) DNV-GL
   e) Any other agency nominated by Operator.

ii) OIL will accept the services only after OIL/nominated third party inspection agency confirms that the services are as per tender specification.

iii) The Contractor has to complete all inspection before the services are allowed to be positioned at the rig/nominated locations.

iv) Bidder shall confirm Completion of inspection and complete readiness of stipulated services in all respects, to the satisfaction of OIL including conformity to OIL tender conditions and specification certified by OIL/third party inspection agency prior to commencement of contract.

v) In case the Contractor fails to adhere to the time schedule, OIL reserves its right to invoke the performance bond and terminate the contract without prejudice to any other right or remedy available as per contract.

vi) Notice for inspection as per (iii) above is required to be given by the Contractor 15 days in advance.

vii) Maximum time allowed for inspection of the services/tools/materials is 2 man-days for initial mobilisation. The Contractor has to offer the services for inspection on complete readiness of the stipulated services. In case this inspection takes more than 2 man-days, the cost of inspection beyond 2 man-days would be to the account of the Contractor. In case inspection team is to be mobilized subsequently, for compliance of deficiencies during the first inspection, the entire cost towards second or subsequent inspections shall be to the account of the Contractor. However, for cumulative 2 mandays, inspectors' daily service charges shall be borne by OIL.

12.0 **Diesel:**

The Company shall supply diesel for the AHTSVs and the Rig. The Contractor shall arrange transportation & Delivery of Diesel to the Rig.

13.0 **Well Materials / Drill Bits:**

For well materials and Drill Bits, the reimbursement shall be as per actual consumption as per the rate schedule.

14.0 **Permits, Clearances and Licenses**

Contractor agrees that it shall secure permits, clearances and licenses for operations of the Bundled services in Indian waters, if required and Contractor shall pay any expenses in this regard. Contractor shall take required License(s) from the appropriate regulatory agencies of Govt. of India at Contractor's cost.

15.0 **INSURANCE**

(In addition to that specified in clause 16 of General Conditions of Contract)
Contractor shall procure at Contractor's expense and maintain with respect to and for the duration of this Contract the insurance policies with policy limits indicated in this clause:

Compliance with Sec 25(1) of The General Insurance Business (Nationalization) Act, 1972:

Attention is drawn to section 25(1) of The General Insurance Business (Nationalization) Act, 1972, which is reproduced below:

"No person shall take out or renew any policy of Insurance in respect of any property in India or any ship or other vessel or aircraft registered in India with an Insurer whose principal place of business is outside India save with prior permission of the Central Government."

The above requirement of the aforesaid Act need to be complied with by the Contractor wherever the aforesaid provisions of Act applies.

a. Workmen's Compensation And Employees Liability Insurance

All of Contractor's/ sub-contractor's personnel shall be covered under Contractor's/ sub-contractor's Workmen's compensation and Employers liability Insurance for statutory benefits and any damages or compensation payable in respect of accident or injury as required by applicable law in the area of operation or such other jurisdiction under which Contractor/ sub-contractor may become obliged to pay benefits.

b. Comprehensive General Liability Insurance

Comprehensive General Liability Insurance shall cover premises, operations, independent Contractors and blanket contractual liability including but not limited to the insurable liabilities assumed under the indemnity agreements:-
Coverage shall indicate that marine operations are covered unless such operations are covered by insurance referred to as below:-

Bodily injury/ property damage: Rs. 10.00 Crores single limit per accident per occurrence.

This coverage shall be endorsed to waive all rights of subrogation against Corporation. This policy also shall cover contingent and contractual liability.

c. Marine Insurance

Marine Insurance Policy shall be `All risk London Standard Drilling Barge' form and other comparable forms or coverages used in American and Foreign markets on the drilling unit owned or chartered by Contractor and utilized in the performance of this Contract with policy limits equal to the value of the equipment.

Comprehensive General automobile liability:

Comprehensive General Automobile Liability shall cover all owned, hired and non-owned vehicles.

Bodily Injury	:	According to local laws.
Property damage	:	According to local laws.

Protection and Indemnity liability:

Protection and indemnity liability insurance policy shall cover each occurrence of bodily injury including death and property damage payable in India.
Protection &Indemnity (P&I) cover for the vessel.

Insurance by Contractor/ Sub-contractor / consortium partner is agreed subject to Contractor/ Sub-contractor / consortium partner having insurable interest.

The Contractor/ sub-contractor/ consortium partner shall carry P&I cover for the vessel deployed by them and the indemnification under the P&I cover shall include, but not limited to, crew liability, indemnification of damage/ loss to Corporation's existing property and the property of any other party, damages or compensation for loss of life or personal injury or illness to third parties, caused by the Contractor's vessel. The above P&I cover shall also indemnify the Corporation

against any pollution liability caused by the vessel(s). The indemnity limits for the above coverages shall be as per standard limits offered by International P&I clubs.

Third party liability insurance to insure Contractor against any liability it may incur to any person for not less than Rupee Equivalent of US$20,000,000/- (US$ Twenty Million only) for each and every occurrence.

For the Helicopter

Insurance by Contractor/ Sub-contractor / consortium partner is agreed subject to Contractor/ Sub-contractor / consortium partner having insurable interest.

Helicopter Passenger & crew liability insurance to insure Contractor in respect of injury or death to/or any person caused whilst a passenger is in a helicopter or in the course of any of the operations of embarking or disembarking for each occurrence subject to maximum amount as per statutory liability or admitted liability upto Rs. 7.5 Lakhs per passenger, whichever is higher.

Property personnel baggage liability insurance to insure contractor in respect of damage to or loss of any property caused whilst being carried by a helicopter or in the course of any of the operations of loading or unloading to the extent of Rs. 100/-per kg of all registered baggage and a total of Rs. 1000/- per unregistered baggage for each and every occurrence.

Aircraft Hull (including spares and equipments) insurance against all risks including war and allied perils with policy limits equal to the value of the Aircraft.

Third party liability insurance to insure Contractor against any liability it may incur to any person for not less than Rupee Equivalent of US$20,000,000/- (US$ Twenty Million only) for each and every occurrence.

The Contractor shall also maintain throughout the period of Contract, at its own expenses insurance(s) against hijacking.

The limit of insurance shall in no way relieve Contractor from their duty, obligations or full liabilities in tort under contract or statute and in the event of any under insurance or inadequate limit, the Contractor shall be self-insurers for any policy deductibles, short-fall/deficiency and they alone shall bear the residual liability/resultant consequences.

Waiver of subrogation to be incorporated in the insurance policies & certificate of insurance to be submitted shall be as detailed at cl 16.0 of the Model Contract conditions- Annexure-II

Sub-contractor

Contractor shall require all of its sub-contractors to provide such of the foregoing insurance coverages as Contractor may consider necessary.

Contractor should take such other Insurance policies which are not listed above, which a prudent business man would take. Similarly, if the limits of Insurance policies mentioned in the above clause needs to be increased based on prudency, the Contractor needs to act accordingly.

In addition to above, Contractor has to take all necessary insurance policies required by the law of the land or otherwise to keep OIL harmless. Alternatively, the Contractor can self insure the risks except the obligatory insurances that need to be taken compulsorily as per the law of the land. Contractor's liability shall not decrease on account of self insurance and further, contractor shall protect, defend, indemnify and hold harmless OIL from and against all claims , liabilities, costs, damages and expenses of every kind and nature with respect to damage or loss of property self insured regardless of the clause.

* Wherever the limits of various policies mentioned in the tender are in Indian rupees can be equivalent amount in US Dollars".

16.0 **Inspection Clause**

16.1 **INSPECTION OF MATERIALS**

INSPECTION BY CONTRACTOR

CONTRACTOR agrees to perform a visual inspection, using its personnel, of all materials and appliances furnished by Operator when delivered into CONTRACTOR's possession and shall notify Operator's representatives of any apparent defects observed therein so that Operator may replace such defective materials or appliances. If CONTRACTOR fails to notify Operator of any apparent defects as provided above, it shall be conclusively presumed that such materials and appliances, are free from such apparent defect. CONTRACTOR shall not be liable for any loss or damage resulting from the use of materials or appliances furnished by Operator containing latent defects. Upon the termination of this Contract, CONTRACTOR shall return to Operator at the well site all machinery, equipment, tools, spare parts and supplies received by CONTRACTOR from Operator or purchased by CONTRACTOR for Operator's account and not used or consumed in the operations, in as good condition as when received by CONTRACTOR. If damage to any Operator's equipment is caused due to sole negligence of the CONTRACTOR same will be repaired or replaced at CONTRACTOR's cost. CONTRACTOR shall, if requested by Operator, also maintain or repair, at its cost, any of Operator's items, on board the Drilling Unit which CONTRACTOR is qualified to and can maintain or repair with CONTRACTOR's normal

complement of personnel and the equipment on board the Drilling Unit, provided however that Operator shall at its cost provide all spare parts and materials required to maintain or repair Operator's items. However, it shall remain the Operator's basic responsibility and liability to ensure that such items are always in good workable condition.

INSPECTION BY OPERATOR

Operator shall have the right to inspect and reject for any valid cause any items furnished by CONTRACTOR and CONTRACTOR, shall replace or repair at its sole expense such items so rejected with items free of defects, to the satisfaction of Operator.

17.0 **Deficiencies**

CONTRACTOR's all equipments shall be maintained by CONTRACTOR in sound and efficient operating condition at all times. Should the performance of CONTRACTOR's equipment and Bundled services becomes unsatisfactory or performance of work hereunder be reduced because of defective CONTRACTOR's furnished equipment or by reason of CONTRACTOR's incompetence or negligence, OIL shall give CONTRACTOR written notice specifying the causes of its dissatisfaction to correct the specified deficiency within 15 days failing which OIL shall have the right to terminate this Contract by giving thirty (30) days advance written notice to the CONTRACTOR, unless the specified deficiency is corrected within such thirty (30) days period. In this event no demobilization fees will be payable by the Operator notwithstanding the provision contained in the Contract. OIL shall recover the mobilization charges, if any, paid in terms of clause 5.0 in case the deficiency occurs during pendency of the Contract, on pro-rata basis for the period of performance, in addition to invoking of performance bond due to failure of the CONTRACTOR in not executing the Contract faithfully.

Should CONTRACTOR be denied access to the location of drilling operations due to lack of compliance of any permits or licenses required by the Operator pursuant to Article 13.0 hereof, time lost as a result thereof shall be compensated at the SDR and OCDR for any particular service (s) if being utilized during any such period.

18.0 **Loading of Operator's Equipment**

Operator shall mobilize all of Operator's/ Operator's third party equipment and make available at CONTRACTOR's shore base. CONTRACTOR agrees to transport these equipment provided by Operator to the drilling location nominated by Operator for loading on board the Drilling Unit at CONTRACTOR's cost.

19.0 Personnel

(a) CONTRACTOR will at all times at its sole expense and under its exclusive responsibility arrange supervisory, technical and other personnel to properly perform the work, in the numbers and

categories as set forth at Exhibit- 18 & 18A hereof. CONTRACTOR shall be responsible for securing work permits and security passes for CONTRACTOR's employees and personnel, if required, as per the Indian Government laws. Operator shall issue necessary documentary assistance in this regard, if required.

All of CONTRACTOR's supervisory key personnel, as per the list at Exhibit-18 & 18A shall be easily understandable in English language.

NDA / Warranty surveyors shall be provided transportation by Helicopter, by the CONTRACTOR at no cost to the Operator.
In the event a member of crew as listed in Exhibit- 18 & 18A is not deployed on duty then the daily rate will be reduced as detailed at Exhibit – 19 & 19A to reflect reduction in costs of CONTRACTOR, for such short deployment. However, if such short deployment is on account of sickness/ accident on location or as per Operator's instructions due to disciplinary reasons, 7 days will be allowed for replacement without any reduction in the daily rate.

20.0 **List of Expatriates:**

List of Expatriates and Indian personnel with their bio-data and experience in respective areas of work shall be furnished 15 days of issue of letter of award.

21.0 **Materials, supplies, equipment, services & personnel to be furnished by operator.**

Materials, supplies, equipment, services & personnel

(a) i) All items of equipments, materials, supplies, service personnel required for operations hereunder, other than items to be supplied by CONTRACTOR as set forth in Exhibit - 12, will be furnished by Operator at CONTRACTOR's shore base and CONTRACTOR agrees to transport these equipments, materials and supplies provided by Operator to the well site at CONTRACTOR's cost.

ii) All items of equipment, materials, supplies, services and service personnel required for operations hereunder, other than those to be provided by the CONTRACTOR or otherwise required to be replaced or furnished by Operator, will be furnished by Operator, or at Operator's request, such items or any other items which Operator is required to furnish under this Contract may be furnished by CONTRACTOR and billed to and be reimbursed by Operator at actual invoice cost provided that if the item is furnished out of CONTRACTOR's inventory the lowest quote from two reputable vendors/ suppliers will establish the replacement cost less any cash discount obtained by CONTRACTOR, plus actual documented freight, packing and insurance costs of such items obtained outside the area of operations.

When such items are sent by air, at the specific request of Operator the entire cost thereof shall be for the account of Operator, including Air freight. In the event CONTRACTOR is requested to furnish any single item of equipment, materials or supplies which, Operator is required to furnish under this Contract, CONTRACTOR's fee of 7.5% will be payable by Operator on FOB value less discount if any, for each procurement costing upto US$ 60,000 and 5% for each procurement costing more than US$ 60,000 to cover total costs, to CONTRACTOR on account of such procurement and actual cost of services against documents.

iii) For all services rendered or materials supplied to CONTRACTOR by Operator at CONTRACTOR's request, which services or materials are the obligations of the CONTRACTOR, the Operator shall charge the CONTRACTOR for actual costs as supported by vendor's invoice plus 7.5% fee on FOB value for each procurement costing up to US$ 60,000 and 5% for each procurement costing more than US$ 60,000, thereon to cover costs on account of such procurement and actual cost for services.

Operator will provide recommendatory letter to the CONTRACTOR for the items ordered / brought by the CONTRACTOR under the Contract and CONTRACTOR shall obtain EC from DGH for availing custom duty exemptions. In case, customs duty becomes applicable the same would be reimbursed at actuals against documentary evidence, in addition to transportation charges for the ordered items.

(b) Any equipment, materials, or supplies purchased by CONTRACTOR on account of Operator shall thereafter become the property of Operator upon payment by Operator.

22.0 OPERATOR'S INSTRUCTIONS

Operator may from time to time through its authorized representative or representatives, issue written or oral (to be followed by writing) instructions to CONTRACTOR concerning operations.

23.0 Samples & Formation Tests

Samples

CONTRACTOR shall have and preserve for Operator, samples of formation penetrated and properly prepare and label Operator's containers. The frequency at which samples are to be obtained shall be designated by Operator.

Formation Tests

If during the course of drilling any well, CONTRACTOR encounters evidence of oil or gas, CONTRACTOR shall immediately notify Operator and, should Operator decide to carryout a test to determine the productivity of the formation so encountered , CONTRACTOR shall carry out such test under existing conditions, as mutually agreed.

24.0 **Ware-house record to be furnished by CONTRACTOR**

CONTRACTOR shall deliver to Operator delivery receipts, boat manifests, and other warehouse records received by CONTRACTOR covering any material or supplies furnished by Operator. The quantity, description and apparent condition of materials and supplies so received shall be confirmed by CONTRACTOR.

25.0 **Service tax**

The Contractor will have to bear all Service tax liability, as applicable.

The Contractor should quote the applicable Service Tax, clearly indicating the rate and the amount of Service Tax included in the bid (as per Service Tax rules).

In the contracts involving multiple services or involving supply of certain goods / materials alongwith the services, the Contractor should give separate break-up for cost of goods and cost of various services, and accordingly quote Service Tax as applicable for the taxable services.

In case the applicability of Services Tax is not quoted explicitly in the offer by the Contractor, the offer will be considered as inclusive of all liabilities of Service Tax. OIL will not entertain any future claim in respect of Service Tax against such offers.

In case, the quoted information related to various taxes and duties subsequently proves wrong, incorrect or misleading:-

a) OIL will have no liability to reimburse the difference in the duty/tax, if the finally assessed amount is on the higher side.

b) OIL will have the right to recover the difference in case the rate of duty/tax finally assessed is on the lower side.

The service provider (other than the Service providers from outside India, who do not have any fixed establishment or permanent address in India) should have a valid registration with the concerned authorities of Service Tax department and a copy of such registration certificate should be submitted alongwith the offer. In case the registration certificate for the quoted category of service is not available at the time of submission of offer, an undertaking should be furnished for submission of copy of

requisite service tax registration certificate alongwith the first invoice under the contract.

Import of Services: As per Service Tax rules, for Services received by OIL in Indian Territory from a Service provider from outside India, who does not have any fixed establishment or permanent address in India, the liability to pay Service Tax lies with OIL. Therefore, such Bidder shall not include Service Tax in the quoted prices, but shall submit a declaration to the effect that they do not have any fixed establishment or permanent address in India. However, at the time of evaluation, Service Tax as applicable shall be loaded on the portion of services which attract Service Tax. In case the Bidder does not give break-up of the quoted prices, indicating the components of taxable services separately, the Service Tax will be loaded on entire quoted / Contract value for evaluation.

Contractor, while quoting against this tender, must take cognizance of all concessions permissible under the statutes including the benefit under Central Sales Tax Act, 1956, failing which it will have to bear extra cost where Contractor does not avail exemptions/concessional rates of levies like customs duty, excise duty, VAT/sales tax, etc. OIL will not take responsibility towards this. However, OIL may provide necessary assistance, wherever possible, in this regard.

Contractors must also consider benefits of CENVAT credit under the CENVAT Credit Rules 2008 as amended from time to time, for excise duty, service tax etc against their Input materials/Services, while quoting the prices. Similarly, the benefits of input VAT credit against their Input materials, under the relevant VAT Act of the State, should also be duly considered by the Bidders while quoting the prices.

Undertaking to provide necessary documents, for enabling OIL to avail Input VAT credit and CENVAT credit benefits (wherever applicable),

Further, the Contractors shall undertake to provide all the necessary certificates / documents for enabling OIL to avail Input VAT credit and CENVAT credit benefits (wherever applicable), in respect of the payments of VAT, Excise Duty, Service Tax etc. which are payable against the contract (if awarded). The Contractor should provide tax invoice issued under rule-4A of Service Tax for the Services; and tax invoice issued under Central Excise rule-11 (indicating education cess and Secondary & Higher Education Cess) for Excise Duty and tax invoice under respective State VAT Act for VAT separately for the indigenous goods.

Service Tax on contracts for transportation of goods by road in a goods carriage (Applicable for Goods Transport where the contract is for transportation / logistics and not the service/ turnkey contracts where transportation is a part):

In this case, since the liability to pay Service Tax is on OIL as receiver of the service, the Bidder shall not include Service Tax in the quoted prices.

26.0 **Loss or damage to CONTRACTOR's down hole equipment**

Operator shall reimburse CONTRACTOR for loss of or damage to CONTRACTOR's down hole equipment, as under, provided that such loss or damage is not occasioned by normal wear and tear or negligence on the part of the CONTRACTOR or due to defective material.

(a) In the case of CONTRACTOR's down hole equipment being damaged, Operator shall reimburse CONTRACTOR such repair cost, provided however, that Operator shall not be required to reimburse CONTRACTOR any amount greater than that which would have been due had such equipment been lost and, therefore, calculated under sub-section (b) herein below: -

(b) In the case of CONTRACTOR's down hole equipment being lost, Operator will reimburse CONTRACTOR an amount limited to the original cost (FOB nearest port) reduced by depreciation at the rate of 10% per year to be proportioned for each completed month or part thereof from the date of purchase of the lost equipment / tool subject to maximum depreciation of 50%. The CONTRACTOR should provide the cost along-with the date of purchase of each equipment Unit with documentary evidence along with the invoice for Lost in Hole items. The above cost and date of purchase shall be taken for working out their claim for Lost in hole items.

27.0 Fishing of Equipment

"In the event any of the CONTRACTOR'S Equipment is lost / stuck in the well or at Site, then the CORPORATION shall, at its expense, attempt to recover or retrieve the same.

As and when the CORPORATION decides to fish for any of the CONTRACTOR'S Equipment, then the CORPORATION shall have full responsibility and liability for such Operations but the CONTRACTOR shall render assistance in an advisory capacity at all times in connection with such fishing operations.

It is expressly understood between the Parties that the CONTRACTOR's personnel are not authorized or entitled to do anything other than to advise the CORPORATION in connection with such fishing operations and about any fishing tools which may be furnished by the CONTRACTOR at the CORPORATION's request. Furnishing of such fishing tools is solely as an accommodation to the CORPORATION and the CONTRACTOR shall not be responsible or liable for any loss or damage which may result with the use of such tools or by reason of any advice or

assistance provided to the CORPORATION by the CONTRACTOR or its personnel regardless of the cause of such loss."

28.0 Liability for the Well or reservoir

Notwithstanding anything else contained herein to the contrary, in accepting an order to perform any services and or to furnish any Equipment, the CONTRACTOR does so with the understanding that they do not guarantee results. Further notwithstanding anything else contained herein to the contrary, the CONTRACTOR shall not be liable or responsible for or in respect of:

(i) any sub-surface damage (including but not limited to damages or loss of a well or reservoir or formation, the loss of any oil or gas therefrom), or any surface loss or damage or injury or death arising out of a sub-surface damage; and/or (ii) blowout, fire, explosion of other uncontrolled well condition; and/or

(ii) damage to, or loss of oil or gas from, any pipelines, vessels or storage or production facilities; and/or

(iii) any loss or damage or injury or death whatsoever, direct or consequential, including liability arising from pollution originating below the surface and any clean-up costs, whether caused by their personnel or Equipment or otherwise arising from or in any way connected with such sub-surface Operations or in performing or attempting to perform any such Operations

Irrespective of the cause and the CORPORATION agrees that it shall absolve the CONTRACTOR and protect, defend, indemnify and hold the CONTRACTOR and its co-lessees, its sub-contractors, its agents and its parents, subsidiaries and affiliates, its other CONTRACTORs and/or its and their directors, officers, employees, consultants and invitees harmless from and against all claims, suits, demands and causes of actions, liabilities, expenses, costs and judgements of every kind and character (including without limitation for the loss or damage of any property, or the injury or death of any person), without limit, in favour of any person, party or entity, resulting from any of the above, except on account of any Gross Negligence on the part of CONTRACTOR, its Sub-Contractor, their employees or equipment and tools, including costs incurred by CORPORATION in this respect."

29.0 Interpretation Liability

In making any interpretation of logs, whether directly or by means of electronic transmission or data processing or otherwise, or in making any recommendations based on interpretation of logs or otherwise, the CONTRACTOR'S employees shall give the CORPORATION the benefit of their best judgment. Nevertheless, since all interpretation and or recommendations are only opinions,

based in part on inferences from electrical or other measurements and since all electronic transmission and data processing is subject to error which may be beyond their control, the CONTRACTOR cannot and does not guarantee the accuracy or correctness of any such interpretations or recommendations and, except in case of willful misconduct and or Gross Negligence on the part of the CONTRACTOR, the CONTRACTOR shall not be liable for and the CORPORATION shall indemnify and hold the CONTRACTOR harmless against any loss or damage whatsoever, whether incurred by the CORPORATION or any other person, resulting from, or arising out of, directly or indirectly, any such interpretation or recommendation or resulting from logs being interpreted by others when transmitted by electronic process."

30.0 Radio Active Sources

The CORPORATION acknowledges, that it is aware that the radioactive sources used in Operations by the CONTRACTOR are potentially dangerous both to humans and to animals and should any such source be lost in the well, special precautions must be taken in fishing operations in order that the container of the source is not broken or damaged, and that such source if not recovered must be isolated by cementing it in place or by some other appropriate means; and the CORPORATION by requesting the CONTRACTOR to perform any service involving the use of radioactive material accepts the possibility of such risks and agrees that the CONTRACTOR shall not be liable or responsible, except in case of willful misconduct and or Gross Negligence on the part of the CONTRACTOR for any injury to or death of persons or damage to property (including but not limited to, injury to or loss of a well or reservoir) or any other loss or damage whatsoever, direct or consequential, irrespective of the cause, whether caused by the CONTRACTOR'S personnel or Equipment or otherwise, arising from or in any way connected with the use or placing by the CONTRACTOR of radioactive material in a bore hole, and the CORPORATION agrees that it shall absolve, indemnify and hold the CONTRACTOR harmless except in case of willful misconduct and or Gross Negligence on the part of the CONTRACTOR from and against all liability for any and all losses, costs, damages and expenses incurred or sustained by the CORPORATION or any other person resulting from any such use of radioactive material. The CONTRACTOR shall provide the CORPORATION complete information on the construction of radioactive sources, pressure vessels and shields and certificates on usability and safety. The CONTRACTOR shall not use any material, which is not certified by the International Atomic Energy Agency (I.A.E.A) for use under the conditions prevailing in the well."

31.0 Servicing of Bore hole

The CORPORATION understands that the CONTRACTOR'S cables, bridles and down hole Tools are designed to operate under conditions normally encountered in the well bore. Such Equipment may be seriously damaged by excessive well temperature and pressure, gas cut, drilling mud, deviated bore, corrosive gases or chemicals and other hazardous conditions existing in the bore hole. The CORPORATION will make advance arrangements for servicing the wells in which any such conditions may exist. Notwithstanding the above, the CORPORATION accepts full liability and shall reimburse the CONTRACTOR for damages to its materials as per Clause No.25.

32.0 Hazardous waste

The Contractor shall not be liable for the storage, transportation, manifest and disposal or any spent or used chemicals or other hazardous waste resulting from or incident to a job, title to which has passed to the Corporation or which is/was owned by the Corporation.

33.0 Pollution

Contractor shall be responsible for any pollution or contamination limited to the extend caused by it and originating above the surface of the ground or above the well head from materials brought onto the customer's site by Contractor or from materials under Contractor care, custody and control on the surface at the work site.

For Well Testing Services

1.0 Duration of Contract

Duration of Contract shall be for a minimum period of 30 days / 1 well from the date of commencement of contract. The contract shall commence as per the requirement of testing in the well to be drilled by deepwater anchor-moored semisubmersible rig for 500 m water depth (contracted by Operator for 1 well) and then continue till the end of well testing operations in the well.

2.0 Commencement Date

This Contract is effective from the date of issue of firm fax order/LOA by Operator and shall commence when Well Testing Services are mobilized on rig ready in all respects to commence operations as per Scope of work including but not limited to obtaining all statutory clearances, Customs clearance, any other requisite clearances etc., herein referred to as "Commencement date".

3.0 Payment terms: Payment will be made on Monthly basis except Mobilisation and Demobilisation which may be made on completion of Mobilisation and Demobilisation as per Contract

Operator agrees to pay Contractor for Well Testing Services as per Scope of work and Rate Schedule attached. Daily rates are based on 24 (twenty four) hours work day, calculated from 0000 hrs to 2400 hrs or as per shift schedule. No interest shall be payable on delayed payments / disputed claims.

4.0 The services are primarily being hired for the 500 m water depth deepwater anchor-moored semisubmersible rig. However, Operator at its discretion reserves the right to use any or all of these services, in part or whole, under this contract at any rig in Indian waters.

5.0 Mobilisation / De-Mobilisation Of Equipment:

The Contractor shall mobilize Well Testing Services at drilling rig to commence operations as per Scope of work, within 30 days from the date of instructions for mobilisation by Operator. Well Testing Services shall tentatively be mobilised on the rig between 91st day and 120th day after commencement of the contract of 500 m water depth deepwater anchor-moored semi-submersible rig. The Contractor shall plan and keep the Well Testing Services ready for mobilisation for the rig, as per Operator's requirement, for which Contractor may interact regularly with Operator. After initial mobilisation, the Well Testing Services shall be kept mobilised till the end of the Contract. However, the testing services equipment/material shall be kept at rig/shore base as per operational requirements of the rig.

The succeeding day of issue of mobilisation notice shall be counted as Day 1 for the purposes of Mobilisation period. For the purposes of LD, the mobilisation would be deemed complete from the date and time equipment is complete in on-hire survey by Operator.

Contractor has to submit the copies of import documents like B/L and assessed Bill of Entry & custom assessed invoice at the time of mobilisation, which clearly show the F.O.B. & C.I.F. values. For items available in India also, Contractor will have to submit relevant import and custom clearance documents. For indigenous items if any, Contractor may submit the copy of relevant purchasing document. For payment of lost in hole, these documents are absolute necessary.

Mobilization charges shall become payable after the Well Testing Services, ready in all respects as per scope of work, including obtaining all statutory clearances viz. Customs, MOHA, IB, Police clearances etc. is mobilised to the rig and after on-hire survey by Operator representative & provided it is certified by the Contractor and accepted by Operator representative that all items are in good working condition.

However, if the contractor mobilises most of the Well Testing Services with which the rig can start testing operations, the contractor shall be paid 90% of the lumpsum mobilisation fee quoted, upon mobilisation of equipment & the Well Testing Services. The balance mobilisation fee shall be payable after mobilisation of remaining equipments and services as per the Contract. In the event, the Drilling Unit cannot perform its intended operations for reasons due to non-mobilisation of the outstanding equipments/tools/materials/services etc, then no rate whatsoever shall be payable to the Contractor except the cost of the well consumables till the time the rig resumes its normal intended operations after mobilisation of such equipments/tools/materials/services etc.

De-mobilization charges shall become payable on clearance of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base. However, Operator shall not be obliged to pay de-mobilization charges of unit / equipment, if on completion of Contract / termination, Contractor does not remove the unit/ equipment from the area of operation i.e. East / West Coast of Indian water and also if the Contractor commences operation against any other contract(s) either for Operator or other contractor(s) in India.

For import and re-export, EXIM policy of Govt. of India should be followed. However Contractor has to check the latest position themselves as per the law of the land. Contractor should submit all the relevant documents regarding re-export of all the equipment / material if re-exported, within 60 days after completion of Contract, failing which Operator will have option to invoke the performance guarantee submitted by Contractor.

6.0 Service Day Rate (SDR)

Contractor shall be paid Service Day Rate (SDR) for Well Testing Services from the time they are mobilised/ commissioned and made ready in all respects to start operations at the rig as per Mobilization clause during entire period of the Contract, except when specifically otherwise provided for in this Contract as per the rates given at rate schedule. The SDR shall be payable till OCDR is payable in the testing operations in the well of 500 m water depth deepwater anchor-moored semisubmersible rig. After that, no further SDR shall be payable under this Contract.

7.0 Operating Component Day Rate (OCDR)

Contractor shall be paid Operating component day rate (OCDR) whenever applicable for Well Testing Services including optional, call out items, except when specifically otherwise provided for in this Contract as per the rate given at rate schedule. The OCDR shall commence when the first tool of Well Testing Services shall be lowered below rotary and shall end when the same tool is out of rotary on rig floor.

8.0 Service Break Down

The Service Day Rate (SDR) quoted for Well Testing Services shall not be paid for such period, when Well Testing Services either

i. Breaks down

Or

ii. is not operating or not available as per its intended operations due to which the Drilling unit can not perform its intended operations

Or

iii. is not operating or not available as per its intended operations due to which the operation quality is compromised

9.0 Short Deployment Rates

In case, a particular crew personnel of rig or base (as specified at Appendix-18A) is not available, corresponding short deployment charges for that category as indicated at Appendix-19A shall be deductible for that period and Contractor shall invoice Operator accordingly.

10.0 Inspection Clause

i) OIL shall get the equipments of Well Testing Services inspected on its own or through any of the following internationally reputed third party inspection agency as per the tender specifications. OIL at its option, can nominate any one of the following third party inspection agency for inspection of various services and the cost of the third party inspection will be borne by OIL:

a) MODU SPECS
b) ABS
c) Oilfield Audit Services Inc.,
d) DNV
e) Any other agency nominated by Operator.

ii) OIL will accept the Well Testing Services only after OIL/nominated third party inspection agency confirms that the Well Testing Services are as per tender specification.

iii) Contractor has to complete all inspection before the Well Testing Services are allowed to be positioned at the rig location.

iv) Bidder shall confirm Completion of inspection and complete readiness of Well Testing Services in all respects, to the

satisfaction of OIL including conformity to OIL tender conditions and specification certified by OIL/third party inspection agency prior to commencement of contract.

v) In case the contractor fails to adhere to the time schedule, OIL reserves its right to invoke the performance bond and terminate the contract without prejudice to any other right or remedy available as per contract.

vi) Notice for inspection as per (iii) above is required to be given by the Contractor 15 days in advance.

vii) Maximum time allowed for inspection of the Well Testing Services tools/materials is 2 man-days for initial mobilisation. The Contractor has to offer the Well Testing Services for inspection on complete readiness of the Well Testing Services. In case this inspection takes more than 2 man-days, the cost of inspection beyond 2 man-days would be to the account of the Contractor. In case inspection team is to be mobilized subsequently, for compliance of deficiencies during the first inspection, the entire cost towards second or subsequent inspections shall be to the account of the Contractor. However, for cumulative 2 mandays, inspectors' daily service charges shall be borne by OIL.

The services are primarily being hired for 1 well to be drilled by the 500 mtrs water depth deep water anchor moored semi-submersible Rig.

END OF SECTION III

SECTION IV

SCHEDULE OF RATES

This has been separately given in MS Excel Format as under :

(i) Price Bid Format - Main Bundled Service (Group-I)
(ii) Price Bid Format - Well Test (Group-II)

End of Section IV

PROFORMA-A

INTEGRITY PACT

Between

Oil India Limited (OIL) hereinafter referred to as "The Principal"

And

(Name of the bidder).....hereinafter referred to as "The Bidder/Contractor"

Preamble:

The Principal intends to award, under laid down organizational procedures, contract/s for **TENDER NO. CCG9095L16.**The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s.

In order to achieve these goals, the Principal cooperates with the renowned international Non-Governmental Organization "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an external independent Monitor who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section: 1 -Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

1. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

2. The Principal will, during the tender process treat all Bidders with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder could obtain an advantage in relation to the tender process or the contract execution.

3. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a Page 2 of 6 substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section: 2 -Commitments of the Bidder/Contractor

(1) The Bidder/Contractor commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

1. The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which h e/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2. The Bidder/Contractor will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, Subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

3. The Bidder/Contractor will not commit any offence under the relevant Anticorruption Laws of India; further the Bidder/Contractor will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

4. The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

(2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 -Disqualification from tender process and exclusion from future Contracts

If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or risibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

1. If the Bidder/Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is entitled also to exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressions within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

2. The Bidder accepts and undertakes to respect and uphold the Principal's Absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

3. If the Bidder/Contractor can prove that he has restored/recouped the Damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

4. A transgression is considered to have occurred if in light of available evidence no reasonable doubt is possible.

Section 4 -Compensation for Damages

1. If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to 3 % of the value of the offer or the amount equivalent to Earnest Money Deposit/Bid Security, whichever is higher.

2. If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

3. The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder/Contractor can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount or the liquidated damages, the Bidder/Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

Section 5 -Previous transgression

1. The Bidder declares that no previous transgression occurred in the last 3 years with any other Company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section: 6 -Equal treatment of all Bidders/Contractor/Subcontractors

1. The Bidder/Contractor undertakes to demand form all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.

2. The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section: 7 -Criminal charges against violating Bidders/Contractors/ Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section: 8 -External Independent Monitor/Monitors
(three in number depending on the size of the contract)
(to be decided by the Chairperson of the Principal)

1. The Principal appoints competent and credible external independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.

3. The Contractor accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Subcontractor with confidentiality.

4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
6. The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.

7. If the Monitor has reported to the Chairperson of the Board a Substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8. The word 'Monitor' would include both singular and plural.

Section:9 -Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairperson of the Principal.

Section:10 -Other provisions

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi.

2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

3. If the Contractor is a partnership or a consortium, this agreement must be, signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

(RUPAK KALITA)

……	**……**
For the Principal	**For the Bidder/Contractor**
	Witness 1: ……
	Witness 2: ……

Place. NOIDA.
Date . 27.10.2015

PROFORMA - C

BID FORM

To
The Senior Manager (Contracts & Purchase)(CEMG)
OIL INDIA LIMITED,
FC-24, 5th Floor, IT Infrastructure Building,
Sector-16A, NOIDA–201301 , INDIA

Sub: Tender No. : _____

Gentlemen,

Having examined the General Conditions of Contract , the Terms of Reference including all attachments thereto, the receipt of which is hereby duly acknowledged, we the undersigned offer to perform the services in conformity with the said conditions of Contract and Terms of Reference for the sum of _____ (Total Bid Amount in words and figures) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to commence the work within ( ) days calculated from the date of award of Contract.

We agree to abide by this Bid for a period of 150 days from the date fixed for Bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof in your notification of award shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this _____ day of _____ 2015.

Signature

_____
(In the capacity of)

PROFORMA-D

CERTIFICATE OF COMPLIANCE WITH RESPECT TO BRC

We _____(Name of the bidder) hereby confirm that all the conditions given in the Bid Rejection Criteria(BRC) of the Bid document of Tender No. --------- are acceptable to us and we have not made any deviations from the same or put forward any additional condition in our offer in this respect. It is also confirmed that the supporting documents with regard to Eligibility Criteria of the bidder, laid down in the Bid Document are duly submitted in the Envelope 'C' containing the Techno-commercial Bid. **Name of the authorised signatory: ----------**

Designation: ----------

Name of the bidder/firm/service provider: ----------

PROFORMA-E

STATEMENT OF NON COMPLIANCE (Excepting BRC)

(Only exceptions/deviations to be rendered)

SECTION NO. (PAGE NO.)	CLAUSE NO. SUB-CLAUSE NO.	NON COMPLIANCE	REMARKS

NOTE:

OIL INDIA LIMITED expects the bidders to fully accept the terms and conditions of the bid document. However, should the bidders still envisage some exceptions/ deviations to the terms and conditions of the bid document, the same should be indicated as per above format and submit along with their technical bids. If the proforma is left blank or not submitted, then it would be construed that the bidder has not taken any exception/deviation to the terms and conditions of the bid document

PROFORMA-F

FORM OF BID SECURITY (BANK GUARANTEE)

To:
The Senior Manager (C & P) (CEMG)
OIL INDIA LIMITED,
FC-24, 5th Floor, IT Infrastructure Building,
Sector-16A, NOIDA–201301 , INDIA

WHEREAS, (Name of Bidder) _____ (hereinafter called "the Bidder") has submitted their offer Dated _____ for the provision of certain oilfield services (hereinafter called "the Bid") against OIL INDIA LIMITED, Sector -16A, Noida (hereinafter called the Company)'s IFB No. _____. KNOW ALL MEN BY these presents that we (Name of Bank) _____ of (Name of Country) _____ having our registered office at _____ (hereinafter called "Bank") are bound unto the Company in the sum of (*) for which payment well and truly to be made to Company, the Bank binds itself, its successors and assignees by these presents. SEALED with the common seal of the said Bank this ____ day of ____ 2015 .

THE CONDITIONS of these obligations are:

(1) If the Bidder withdraws their Bid during the period of Bid validity specified by the Bidder; or

(2) If the Bidder, having been notified of acceptance of their Bid by the Company during the period of Bid validity:

   (a) Fails or refuses to execute the form of agreement in accordance with the Instructions to Bidders; or
   (b) Fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

We undertake to pay to Company up to the above amount upon receipt of its first written demand (by way of letter/fax/cable), without Company having to substantiate its demand provided that in its demand Company will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date (**) and any demand in respect thereof should reach the Bank not later than the above date.

SIGNATURE AND SEAL OF THE GUARANTORS _____
Name of Bank & Address _____

Witness _____
Address _____
_____

(Signature, Name and Address)
Date: _____
Place: _____

* The Bidder should insert the amount of the guarantee in words and figures.
** Date of expiry of Bank Guarantee should be **minimum 30 days after the end of the validity period of the Bid**.

PROFORMA-G

FORM OF PERFORMANCE BANK GUARANTEE

To:
The Senior Manager (C&P)(CEMG)
OIL INDIA LIMITED,
FC-24, 5th Floor, IT Infrastructure Building,
Sector-16A, NOIDA–201301 , INDIA

WHEREAS _____ (Name and address of Contractor) (hereinafter called "Contractor") had undertaken, in pursuance of Contract No. _____ to execute (Name of Contract and Brief Description of the Work) _____ (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee as security for compliance with Contractor's obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are Guarantors on behalf of the Contractor, up to a total of (Amount of Guarantee in figures) _____ (in words _____), such amount being payable in the types and proportions of currencies in which the Contract price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of guarantee sum as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein. We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or the work to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way cease us from any liability under this guarantee, and we hereby waive notice of such change, addition or modification.

This guarantee is valid until the date _____ (calculated at **6 months** after Contract completion date).

SIGNATURE AND SEAL OF THE GUARANTORS _____
Designation _____
Name of Bank _____
Address _____

Witness _____
Address _____
Date ..... Place _____

PROFORMA - H

AGREEMENT FORM

This Contract is made on _____ day of _____ between Oil India Limited, a Government of India Enterprise, incorporated under the Companies Act 1956, having its registered office at Duliajan in the State of Assam, India hereinafter called the "Company" which expression unless repugnant to the context shall include executors, administrators and assignees on the one part, and M/s. _____ (Name and address of Contractor), hereinafter called the "Contractor" which expression unless repugnant to the context shall include executors, administrators and assignees on the other part.

WHEREAS the Company desires that Services _____ (brief description of services) should be provided by the Contractor as detailed hereinafter or as Company may requires.

WHEREAS, Contractor engaged themselves in the business of offering such services represents that they have adequate resources and equipment, material etc. in good working order and fully trained personnel capable of efficiently undertaking the operations and is ready, willing and able to carry out the said services for the Company as per **Section- II** attached herewith for this purpose.

WHEREAS, Company issued a firm Letter of Award No. _____ based on Offer No. _____ submitted by the Contractor against Company's Tender No. _____.

WHEREAS Contractor has accepted Company's Letter of Award vide their letter no. _____.

All these aforesaid documents shall be deemed to form and be read and construed as part of this Contract. However, should there be any dispute arising out of interpretation of this contract in regard to the terms and conditions with those mentioned in Company's tender document and subsequent letters including the Letter of Award and Contractor's offer and their subsequent letters, the terms and conditions attached hereto shall prevail. Changes, additions or deletions to the terms of the contract shall be authorized solely by an amendment to the contract executed in the same manner as this contract

NOW WHEREAS, in consideration of the mutual covenants and agreements hereinafter contained, it is hereby agreed as follows –

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract referred to.

2. In addition to documents hereinabove, the following Sections and Annexures attached herewith shall be deemed to form and be read and construed as part of this agreement viz.:

(a) Section-I indicating the General Conditions of Contract,

(b) Section-II indicating the Terms of Reference/Technical Specifications,

(c) Section-III indicating the Special Terms and Conditions

(d) Section-IV indicating the Schedule of rates.

3. In consideration of the payments to be made by the Company to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Company to provide the Services and to remedy defects therein in conformity in all respect with the provisions of this Contract.

4. The Company hereby covenants to pay the Contractor in consideration of the provision of the Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of this Contract at the times and in the manner prescribed by this Contract.

IN WITNESS thereof, each party has executed this contract at Noida/Delhi, India, as of the date shown above.

Signed, Sealed and Delivered,

For and on behalf of Company (Oil India Limited)	For and on behalf of Contractor(M/s._____)
Name:	Name:
Status:	Status:
In presence of	In presence of
1.	1.
2.	2

PROFORMA – I

PROFORMA LETTER OF AUTHORITY

To
The Senior Manager (C&P)(CEMG)
OIL INDIA LIMITED,
FC-24, 5th Floor, IT Infrastructure Building,
Sector-16A, NOIDA–201301 , INDIA

Sir,

Sub: OIL's Tender No. _____

We _____ confirm that Mr. _____ (Name and address) as authorised to represent us to Bid, negotiate and conclude the agreement on our behalf with you against Tender Invitation No. _____ for hiring of services for _____.

We confirm that we shall be bound by all and whatsoever our said representative shall commit.

Yours Faithfully,

Signature: _____

Name & Designation: _____

For & on behalf of: _____

Note: This letter of authority shall be on printed letter head of the Bidder and shall be signed by a person competent and having the power of attorney (power of attorney shall be annexed) to bind such Bidder. If signed by a consortium, it shall be signed by members of the consortium

PROFORMA– J

AUTHORISATION FOR ATTENDING BID OPENING

TO Date :
The Senior Manager Materials
OIL INDIA LIMITED,
FC-24, 5th Floor, IT Infrastructure Building,
Sector-16A, NOIDA–201301 , INDIA

Sir,

Sub : OIL's IFB No. _____

We authorise Mr. /Mrs. _____ (Name and address) to be present at the time of opening of the above IFB due on _____ at NOIDA on our behalf.

Yours Faithfully,

Authorised Person's Signature: _____

Name: _____

Designation: _____

Seal of the Bidder:

Note: This letter of authority shall be on printed letter head of the Bidder and shall be signed by a person who signs the bid.

ANNEXURE-B

Guidelines to bidders for participating in OIL's e-Procurement tenders

Bid invitations (Tenders)

The details of e-Procurement tenders can be accessed from our e-Procurement site. https://etender.srm.oilindia.in/irj/portal /!

To view e-Procurement tenders you need to login using your login id & password to view all tenders available for you.

If you do not have a user id, please click on Guest login button to view available open tenders.

Pre-requisites to submit tenders on line through e-Procurement Portal

Bidders should have a valid User Id to access OIL e-Procurement site.

Bidders should have a legally valid Class 3 digital certificate with Organizations Name as per Indian IT Act from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India.

Tender fee must have been paid, if applicable for the Bid Invitation. If Bidder is exempt from paying tender fee, Bidder must hold exemption from the Tender Officer.

Bidder should fulfill any other pre-requisites mentioned in the tender documents of a specific tender.

Obtaining User Id to access OIL e-Procurement site

Initially user id and password will be assigned to you.

Please send your updated mailing address with pin code, phone number, fax number and

email ID to the us at erp_mm@oilindia.in.

Bidders interested in a particular bid invitation should apply for user id at least 7 days prior to the last date mentioned (Last Date for Tender Fee Payment, if exists or Submission Deadline) in the bid invitation.

Instructions for obtaining Digital Certificate

In order to bid for OIL e-tenders all the vendors are required to obtain a legally valid digital certificate as per Indian IT Act from the licensed Certifying Authorities (CA) operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. (http://www.cca.gov.in/)

Steps for obtaining Digital Certificate

Visit the site of the licensed CA using internet browser.

Apply online for a class 3 digital certificate for the designated individual with organization name. Ensure the Digital Certificate is legally valid in India.

For making payment and submission of documents required for issue of the Digital Certificate, follow the instructions on the CA's website.

Use the class 3 Digital Certificate thus obtained for online bidding on OIL e-Procurement site.

Links to some licensed CA's are provided below

1. TCS
2. Safescrypt
3. MTNL Trustline
4. (n)Code Solutions
5. e-mudhra

Technical Settings

1. **Web Browser Supported**: Microsoft IE Ver 6.0 or higher recommended
2. **Java:** To view some of the components, you need to install Java Internet component JDK 5.0 from http://java.sun.com/javase/downloads/index.jsp
3. **Proxy**: If you are unable to access OIL e-Procurement site or Bid Documents, check if you are using proxy to connect to internet or if your PC is behind any firewall. Contact your system administrator to enable connectivity. Please note that standard Port for HTTPS (443) connectivity should be enabled on your proxy/firewall. Dial-up internet connectivity without Proxy settings is another option.
4. **Pop-ups**: Pop-ups should be enabled on OIL e-Procurement URL and Bid Documents URLs. This is required to view tender documents.
5. **Recommended Screen Resolution**: 1024 by 768 pixels.
6. **Internet Speeds**: If you are experiencing slow connectivity to OIL e-Procurement, then contact your system administrator/ISP provider for desirable speeds.
7. **Active-x controls**: Maintain the settings as described in Internet Explorer settings document to enable digital signature signing and verification.

Parameter	**Value**
Allow Scrip lets	Enable
Automatic prompting for ActiveX controls	Enable
Binary and script behaviors	Enable
Download signed ActiveX controls	Enable
Download unsigned ActiveX controls	Enable
Initialize and script ActiveX controls not marked as safe	Enable
Run ActiveX controls and plug-ins	Enable
Script ActiveX controls marked safe for scripting	Enable
Use Pop-up Blocker	Disable

8. **Digital signature client SW/component** : To use Digital Signature, a client level Software is required. This is third party software from Safescrypt. This is installed automatically, once you start working on OIL's e-procurement system. A popup will come before it starts installation. You need to ensure you have administrative rights on the PC or the laptop. This installation is one time activity for a PC or Laptop.
9. **Please go through OIL's e – Portal / Website before uploading your bids for updated information regarding participation requirements and procedure for OIL's e – tenders.**

Attachment – IV

GENERAL HSE POINTS TO BE INCORPORATED IN THE CONTRACT

1. It will be solely the Contractor's responsibility to fulfil all the legal formalities with respect to the Health, Safety and Environmental aspects of the entire job (namely; the person employed by him, the equipment, the environment, etc.) under the jurisdiction of the district of that state where it is operating. Ensure that all sub-contractors hired by him comply with the same requirement as the contractor himself and shall be liable for ensuring compliance all HSE laws by the sub or sub-sub contractors.

2. Every person deployed by the contractor in a mine must wear safety gadgets to be provided by the contractor. The Contractor shall provide proper Personnel Protective Equipment as per the hazard identified and risk assessed for the job and conforming to statutory requirement and company PPE schedule. Safety appliances like protective footwear, Safety Helmet and Full Body harness has to be DGMS approved. Necessary supportive document shall have to be submitted as proof. If the Contractor fails to provide the safety items as mentioned above to the working personnel, the Contractor may apply to the Company (OIL) for providing the same. OIL will provide the safety items, if available. But in turn, OIL will recover the actual cost of the items by deducting from Contractor's Bill. However, it will be the Contractor's sole responsibility to ensure that the persons engaged by him in the mines use the proper PPE while at work. All the safety gears mentioned above are to be provided to the working personnel before commencement of the work.

3. The Contractor shall prepare written Safe Operating Procedure (SOP) for the work to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOP should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed.

4. The contractor shall provide a copy of the SOP to the person designated by the mine owner who shall be supervising the contractor's work.

5. Keep an up to date SOP and provide a copy of changes to a person designated by the Mine Owner/Agent/Manager.

6. Contractor has to ensure that all work is carried out in accordance with the Statute and SOP and for the purpose he may deploy adequate qualified and competent personnel for the purpose of carrying out the job in a safe manner. For work of a specified scope/nature, he should develop and provide to the mine owner a site specific code of practice in line.

7. All persons deployed by the contractor for working in a mine must undergo Mines Vocational Training, initial medical examination, PME. They should be issued cards stating the name of the contractor and the work and its validity period, indicating status of MVT, IME & PME.

8. The contractor shall submit to DGMS returns indicating - Name of his firm, Registration number, Name and address of person heading the firm, Nature of work, type of deployment of work persons, Number of work persons deployed, how many work persons hold VT Certificate, how many work persons undergone IME and type of medical coverage given to the work persons.

9. The return shall be submitted quarterly (by 10th of April, July, October & January) for contracts of more than one year. However, for contracts of less than one year, returns shall be submitted monthly.

10. It will be entirely the responsibility of the Contractor/his Supervisor/representative to ensure strict adherence to all HSE measures and statutory rules during operation in OIL's installations and safety of workers engaged by him. The crew members will not refuse to follow any instruction given by company's Installation Manager / Safety Officer / Engineer / Official / Supervisor/Junior Engineer for safe operation.

11. Any compensation arising out of the job carried out by the Contractor whether related to pollution, Safety or Health will be paid by the contractor only.

12. Any compensation arising due to accident of the Contractor's personnel while carrying out the job, will be payable by the contractor.

13. The contractor shall have to report all incidents including near miss to Installation Manager / departmental representative of the concerned department of OIL.

14. The contractor has to keep a register of the persons employed by him/her. The contractor's supervisor shall take and maintain attendance of his men every day for the work, punctually.

15. If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc) the contractor will not have any objection to any such training.

16. The health check up of contractor's personnel is to be done by the contractor in authorized Health Centres as per OIL's requirement & proof of such test(s) is to be submitted to OIL. The frequency of periodic medical examinations should be every five years for the employees below 45 years of age and every three years for employees of 45 years of age and above.

17. To arrange daily tool box meeting and regular site safety meetings and maintain records.

18. Records of daily attendance, accident report etc. are to be maintained in Form B, E, J (as per Mines Rules 1955) by the contractor.

19. A contractor employee must, while at work, take reasonable care for the health and safety of people who are at the employee's place of work and who may be affected by the employee's act or omissions at work.

20. A contractor employee must, while at work, cooperate with his or her employer or other persons so far as is necessary to enable compliance with any requirement under the act or the regulations that is imposed in the interest of health, safety and welfare of the employee or any other person.

21. Contractor's arrangements for health and safety management shall be consistent with those for the mine owner.

22. In case Contractor is found non-compliant of HSE laws as required company will have the right for directing the contractor to take action to comply with the requirements, and for further non-compliance, the contractor will be penalized prevailing relevant Acts/Rules/Regulations.

23. When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE Measures Company will have the right to direct the contractor to cease work until the non-compliance is corrected.

24. The contractor should prevent the frequent change of his contractual employees as far as practicable.

25. The contractor should frame a mutually agreed bridging document between OIL & the contractor with roles and responsibilities clearly defined.

26. For any HSE matters not specified in the contract document, the contractor will abide the relevant and prevailing Acts/rules/regulations/ pertaining to Health, Safety and Environment.

Appendix – 5

CHECK LIST

The Bidder are advised in their own interest to ensure that the following points / aspects in particular have been complied with in their offer failing which the offer is liable to be rejected.

1. Please tick whichever is applicable and cross whichever is/are not applicable.
2. Please sign each sheet.
3. The check-list duly filled in must be returned along with the offer.

COMMERCIAL

GROUP 'A'

1. Have the rates, prices and totals, etc. been checked thoroughly before signing the tender?

   Yes No

2. Has the bidder's past experience been carefully filled and enclosed with the offer?

   Yes No

3. Whether firm prices have been quoted

   Yes No

4. Whether rates have been quoted exactly as per the price bid format?

   Yes No Not applicable

5. Whether the period of validity of the offer is as required in bidding document ? If not, mention the extent of variation.

   Yes No Extent of variation in days

6. Whether the offer has been signed indicating full name and clearly showing as to whether it has been signed as

   Secretary Manager Partner

   Sole Proprietor Active Partner Pre procurateriu m

7. If the Bidder is seeking business with OIL for the first time, has he given the details of the parties to whom the offered items/services have been provided in past along with their performance report ?

Yes No

8. Are the pages of the offer consecutively numbered and an indication given on the front page of the offer as to how many pages are contained in the offer?

Yes No

9. Has the offer been prepared in sufficient details/ clarity so as to avoid post tender opening clarifications / amendments?

Yes No

10. Whether all the clauses of the bidding document are accepted?

Yes No

11. Confirm that all documents required in unpriced techno-commercial bid without prices are placed in unpriced fold.

Yes No

12. Confirm that bid and all documents are signed using valid digital signatures issued by acceptable Certifying Authority (CA) as per Indian IT Act 2000 (as amended from time to time.

Yes No

Signature of the Bidder

GROUP 'B'
(Applicable to foreign Bidder only)

1. Has the Bidder clearly indicated Income Tax Liability both for corporate and personal tax?

Yes No Not applicable

2. Whether Bidder has Agent / Representative / Consultant / Retainer / Associate in India and if so whether the Bidder has indicated in the offer the commission/amount payable to him and scope of services to be rendered by him?

Yes No Not applicable

3. Whether the Bidder has enclosed with the offer/already sent to OIL an authority letter / Agreement of his Agent / Representative / Consultant / Retainer / Associate in India spelling out clearly

therein the scope of functions and services to be rendered by him and the commission/remuneration to be paid to him in rupees in terms of above referred Agreement on his behalf ?

Yes No Not applicable

4. Whether the percentage of total payment in non-convertible Indian currency acceptable to you has been indicated.

Yes No Not applicable

PROFORMA –B

LIST OF ITEMS (EQUIPMENT, TOOLS, ACCESSORIES, SPARES & CONSUMABLE) TO BE IMPORTED IN CONNECTION WITH EXECUTION OF THE CONTRACT SHOWING CIF VALUE.

Sl No	Item Description	Qty/ Unit	Rate FOB value	Total	Freight & Insurance	CIF ,Chennai Value	Port & other charge	Landed Cost	Is it re-exportable? YES or NO	Year of Mfg.	HSN Code
A	B	C	D	E = CxD	F	G = F+E	H	I = G+H	J	K	L

(1) The items which are not of consumable in nature and required to be re-exported outside India after completion of the Contract should be indicated as "YES" in column "J".

(2) The items, which are of consumable in nature should be indicated as "PARTLY" in column "J".

(3) For estimation of applicable customs duty, the CONTRACTORs are required to indicate customs tariff code (i.e. HSN Code) of each item in column "L".

Authorised Person's Signature: _____

Name: _____ Seal of the Bidder:

END OF TENDER

ENQUIRY HAS BEEN ADDRESSED TO THE FOLLOWING PARTIES THROUGH OIL'S E-TENDER PORTAL :

(i) M/S. SCHLUMBERGER ASIA SERVICES LIMITED, GURGAON.
(ii) M/S. BAKER HUGHES SINGAPORE PTE LTD, INDIA PROJECT OFFICE, MUMBAI.
(iii) M/S. HALLIBURTON OFFSHORE SERVICES INC, MUMBAI