

**NOTICE INVITING PARTICIPATION**  
**IN**  
**PRE-TENDER MEETING**  
**FOR TENDER PROPOSED TO BE FLOATED FOR HIRING**  
**OF**  
**TWO (02) DP-3 DRILLSHIPS**  
**UNDER INTERNATIONAL COMPETITIVE BIDDING (ICB) PROCESS**

Dear Sirs,

**1.0** OIL INDIA LIMITED (OIL), a “**Maharatna**” Category, Government of India Enterprise, is a premier Oil Company engaged in the exploration, production and transportation of crude oil & natural gas with its Headquarters at Duliajan, Assam. Oil India Limited (OIL)’s Project office located at Kakinada is presently entrusted to coordinate activities related to the exploration and production of oil and natural gas from the Krishna Godavari onland and offshore, Mahanadi onland and offshore, Andaman offshore and Kerala-Konkan offshore basins in India. The Project Office of OIL at Kakinada is well connected by road, rail and air.

**2.0** OIL has been awarded four offshore exploration blocks, namely MN-UDWHP-2023/2, MN-UDWHP-2023/3, KG-UDWHP-2023/1, and KG-UDWHP-2023/2, located in the Mahanadi and Krishna-Godavari (KG) basins under the OALP-IX bidding round. OIL is the sole participating company in all the above-mentioned blocks, holding 100% participating interest. Apart from the above blocks, the Company will also be participating in future OALP bidding rounds for exploration in other offshore blocks in the near future. For deployment of Drillships in the above offshore blocks, including any other operational areas along the Indian East and West Coasts, a tender is proposed to be floated under an International Competitive Bidding (ICB) process. In this regard, a Pre-Tender Meeting is scheduled to discuss the requirements of OIL with interested prospective bidders and to understand the bidders’ perspectives, including exchange of views, suggestions, and clarifications, if any.

**Details of the pre-tender meeting:**

**Date:** 27.03.2026

**Venue:** OIL’s KG Basin Project Office at D. No. 11-4-7 Nookalamma Temple Road, Ramarao Peta, Kakinada, Andhra Pradesh-533004, India

**Time:** 11:00 HOURS IST onwards.

At most three (03) representatives from each prospective bidder shall be allowed to participate in the Pre-Tender Meeting. All costs for attending the Pre-Tender Meeting shall be to the account of the prospective bidders. Foreign bidders may also request OIL for an invitation letter, if required, for the purpose of obtaining a visa to attend the Pre-Tender Meeting.

Prospective bidders may also attend the Pre-Tender Meeting through Video Conference (VC). The VC link for the Pre-Tender Meeting shall be communicated to the nominated representatives closer to the scheduled date of the Pre-Tender Meeting, against a request sent to the e-mail ID: [kgbasin@oilindia.in](mailto:kgbasin@oilindia.in) .

**3.0** A draft of the **Terms of Reference / Technical Specifications / Scope of Work** is enclosed as **Annexure-I** for the reference of the prospective service providers.

**4.0** OIL now looks forward to active participation of service providers in the pre-tender meeting.

Thanking you.

Yours faithfully,  
**OIL INDIA LIMITED**

**Sd/-**

**(Mr. A L Bora)**  
**Chief Manager-C&P (KGB)**  
**for Chief General Manager (C&P)**

**Date: 17.03.2026**

**for Executive Director (Offshore) OALP, MBP, KGB DSF**

## ANNEXURE-I

### TERMS OF REFERENCE / TECHNICAL SPECIFICATIONS / SCOPE OF WORK

#### 1. INTRODUCTION:

This section establishes the scope and schedule for the work to be performed by the Bidder and describes the specifications, instructions, standards and other documents including the specifications for any materials, tools or equipment, which the Bidder shall satisfy or adhere to in the performance of the work.

The requirement is for two (2) DP-3 Drill ships. The first drillship is expected to commence operations by June / July 2027 and the second drillship by April 2028.

#### 2. OIL INDIA LIMITED'S OBJECTIVES

##### (A) CORPORATE OBJECTIVES

- Provide a safe workplace for its employees and Bidders.
- Conduct its operations in a way that minimizes waste and minimizes impact on the environment.
- Adherence to the highest standards of business ethics and employment practices.

##### (B) WELL OBJECTIVES

- Drill well without LTI
- Drill the exploration wells as outlined in the summary Drilling Program.
- Evaluate potential hydrocarbons as per Evaluation Program.
- Complete, Test and Abandon the wells as per the Drilling/Completion/ Testing Program' requirements.

##### (C) PROGRAMME DESCRIPTION

Following Table indicates tentative program covering drilling, evaluation, plug and abandonment of few initial wells by deploying the Drillship(s):

<b>Tentative TD and Water Depth for MN-KG Blocks</b>		
<b>Well Name</b>	<b>Tentative TD (m)</b>	<b>Water Depth (m)</b>
KG_UDW_01	7200	2830
KG_UDW_02	7100	2960
MN_UDW_02	7450	2775
MN_UDW_03	7400	2675
MN-PARAM-4 (Mahanadi Stratigraphic Well)	7400	2876

**Note:** Well depth and water depth for the locations other than stratigraphic well are tentative.

Note: Drilling Program will be finalized nearer the time of commencement of Work.

(D) **TENTATIVE DRILLING SCHEDULE**

<b>Deployment at first location</b>	First Drillship by June / July 2027 Second Drillship by April 2028
<b>Duration of each Drillship deployment (Phase-1)</b>	2 (two) years from commencement date of service, extendable up to 1 (one) year at same rates, terms and conditions.
<b>Tentative Drilling Program per Drillship</b>	Six (6) exploratory wells
<b>Logistical Support/Supply Bases</b>	Company shall operate from a third party operated shore base at Kakinada, Andhra Pradesh, from which all well materials such as casing, wellheads, bits, mud chemicals, liquid mud, cement, potable water and fuel shall be transported by OIL hired vessels.  Kakinada is well connected by road, train, air, and sea from all parts of India.  Helicopter services will be operated from Visakhapatnam /Bhogapuram/ Bhubaneswar airports.

(E) **PROGRAM AREA**

The work is to be performed in **offshore Blocks MN-UDWHP-2023/2, MN-UDWHP-2023/3, KG-UDWHP-2023/1 and KG-UDWHP-2023/2, offshore Mahanadi and KG Basins, India**, referred to as the Contract Areas in accordance with the drilling program and anywhere in East Coast of Indian waters.

The Company was awarded the four offshore blocks MN-UDWHP-2023/2, MN-UDWHP-2023/3, KG-UDWHP-2023/1 and KG-UDWHP-2023/2 in the Mahanadi and KG basins under the OALP-IX bidding round. The Company is the sole participant in these four blocks with 100% participating interest.

Apart from above Blocks, the Company will also be participating in future OALP bidding rounds for exploration in other offshore blocks in the near future. In the event of award, Company may deploy the contracted Drillship(s) in other offshore Blocks in Indian East/ West Coasts that it may be required to explore.

(F) **WELL DETAILS**

The position of the firm identified well location is furnished below:

- Location name: MN-Param-4
- Type: Firm
- Water Depth: 2855m
- Target Depth: 7430m TVD-RT
- Latitude: 16° 07' 47.4705"N

- Longitude: 85° 02' 22.5803"E
- Expected pore pressure at TD is 9.0 lb/gal EMW
- Expected BHT at TD – approx. 126-153° C
- Presence of H<sub>2</sub>S and CO<sub>2</sub> - Unlikely

Remaining wells' program will be confirmed nearer the time of commencement of Work.

**(G) PROPOSED CASING PROGRAM (SUBJECT TO CHANGE)**

The table below shows the casing program for the MN-Param-4 well.

Table 1: Tentative Casing Program, well MN-Param-4 Water Depth = 2855m

Casing Size (inch)	Hole Size (inch)	Shoe Depth from RT (m)
36 jetted	Jetted	3900
16	20	4900
13 3/8	17 1/2"	5900
9 7/8	12 1/4"	6700
7 liner	8 1/2"	7430

Well engineering is in progress at this time for remaining wells and same will be shared with successful bidder nearer the time.

**(H) TENTATIVE MUD PROGRAMME:**

Casing and Hole Size	Mud program
36" hole jetting with 26" drill ahead tool	Sea water and sweeps
26" hole x 20" casing	Sea water and sweeps
21" hole x casing 16"	9.0 -9.2 lb/gal SOBМ
17 1/2" hole x casing 13 3/8"	9.2 -10.8 lb/gal SOBМ
12 1/4" hole x casing 9 7/8"	12.0-12.5 lb/gal SOBМ
8 1/2" hole x 7" liner	13.0 – 13.5 lb/gal SOBМ

**(I) DESIGN AND OPERATING CRITERIA:**

The design and operating criteria of the offered DP-3 Drillship drilling unit should be submitted along with the unpriced bid, and it should include the allowable variable load of the drilling unit during drilling and moving.

**(i)** The Bidder shall be required to carry out Deep Water Operations in Indian offshore, in water depth from 500 meters to 3,400 meters.

**(ii)** The Bidder shall provide DP-3 Drillship Drilling unit and associated services along with equipment conforming to the broad technical specifications as mentioned in the tender document along with Personnel required for drilling exploratory wells, well testing including re- entry if any in water depth in the areas as specified with drilling depth capability up to minimum 9000 meters.

**(iii)** The offered DP-3 Drillship Drilling unit(s) as mentioned above, should be suitable for drilling wells and to undertake well testing and abandonment operations in the water

depth and environmental criteria as mentioned in the bid document.

**(iv)** The bidders should offer only Serviceable DP-3 Drillship Drilling Units.

**(v)** The bidder will be required to undertake offline activities which are within the technical design limits of the Drilling unit, without any additional cost to OIL. The bidder will have to list out the activities which can be carried out off-line by the offered drilling unit.

**(vi)** The wells are to be drilled vertically; however, if required operationally, side tracking hole may be required to reach target depth.

**(vii)** The well depths are expected to be around 7500m (including water depth). The depths of the wells may somewhat increase or decrease at the discretion of OIL within the rated capacity of the DP-3 Drillship Drilling Unit.

**A. DRILLING RIG**

1. The Bidder shall be required to provide DP-3 Drillship Drilling unit(s) along with equipment conforming to the broad technical specifications as specified required for drilling exploratory wells, well testing, abandonment including re-entry in water depth of 500m to 3,400m with drilling depth capability up to minimum 9,000 m in the Indian offshore conditions as specified.
2. The detail requirement of the Drilling unit (MODU) with associated tools, equipment and services is given in the subsequent paragraphs. The wells are to be drilled vertically; however, if required, side tracking hole may be required to reach target depth.
3. The well depths are expected to be around 7,500 m (including water depth). The depths of the wells may somewhat increase or decrease at the discretion of the Company within the rated capacity of the rig.
4. Bidder shall be required to provide capable and experienced rig crew personnel as per NIT.
5. In addition to the usual rig equipment and services (Exhibit 1), the Bidder shall be required to provide the following tools, equipment and services:
  - Remote Operated Vehicle (ROV) along with crew for operation in water depths up to 3400 m. (Exhibit 2)
  - H<sub>2</sub>S services, on call-out basis. (Exhibit 3)
  - Voice and data communications from rig to Company's onshore base. (Exhibit 4)
  - Hull mounted or over-the-side ADCP current measurement system. (Exhibit 5)
  - MPD Services, on call-out basis. (Exhibit 6)
  - Weather forecasting services. (Exhibit 7)
  - Medical evacuation services, inclusive of pre-booked arrangements with suitable ambulances and hospitals in Visakhapatnam/ Bhubaneswar. (Exhibit 8)
  - Additional drilling tools include stabilizers, drilling jars, accelerators, shock tools, hole openers (Exhibit 9)

Details of each of the additional services listed above can be found in the appropriate exhibits.

6. Bidder shall be required to take-up the Work in accordance with the various articles and Schedule of Responsibilities.

**B. Technical Deliverables and other details**

**1.0** To drill the above offshore wells in the Mahanadi and KG basins, the Company is inviting suitable offers from prospective bidders to hire two (2) Nos. DP-3 Drillship Drilling Rig units (MODU) capable of drilling in the above range of water depths to the specified target depths of the wells, with staggered mobilisation schedule, under 2 categories.

The detailed requirement of the Drilling units (MODU) with associated tools, equipment and services is given in the subsequent paragraphs. The wells are to be drilled vertically; however, if required, side tracking hole may be required to reach target depth.

The maximum well depths are expected to be around 7,500 m (including the water depth). The depths of the wells may somewhat increase or decrease at the discretion of the Company within the rated capacity of the rig.

**2.0** Bidder shall provide the services of DP-3 Drillship (MODU) Packages along with all necessary equipment and personnel as listed and to carryout drilling operations including but not limited to coring, round tripping, running and setting of casings, abandonment, production testing as and when required, and all other associated operations including, but not limited to, rig move and inter-location movement etc. in accordance with the Work program to be furnished by the Company before commencement of the operation, such Work program may be amended from time to time by reasonable modification as deemed fit by the Company.

Apart from this, the Bidder shall also provide spares for the entire rig package, tools and equipment, lubricant and shall carry out drilling with tools and expertise supplied by the Bidder. The Bidder shall keep adequate stock of spares at all times for uninterrupted progress of work and make available all items listed in this document ready for use.

Bit program, Mud program, Casing policy based on the well design and drilling program will be decided by Company.

### **C. Bidder's Equipment and Procedures**

1. Bidder to ensure that the DP-3 Drillship Drilling Rig and all associated equipment furnished by the Bidder under this Contract meet the requirement of Classification society, Indian Statutory / Regulatory requirement at all time during the Contract period.

2. Drilling unit(s) shall comply with applicable Petroleum and Natural Gas (Safety in Offshore Operations) Rules, 2025. The Drilling Unit (s), with assistance from Company, must obtain fitness certificate of Drilling rig, meeting requirements of Oil Industry Safety Directorate (OISD) Bidder to note that **Drilling Unit shall not be accepted unless "consent to operate" from Oil Industry Safety Directorate (OISD) is in place prior to start of operation.**

2.1 Bidder may note that OISD is a technical directorate under the Ministry of Petroleum and Natural Gas (MoPNG), Government of India, that formulates and coordinates the implementation of a series of self-regulatory measures aimed at enhancing the safety in the oil and gas industry in India.

2.2 It is a mandatory requirement to submit all relevant documents required under Schedule IV and other applicable rules for compliance of Petroleum and Natural Gas (Safety in Offshore Operations) Rule 2025 issued by MoPNG, including Guidance Notes for compliance are available on OISD website [www.oisd.gov.in](http://www.oisd.gov.in). Bidder, through Company OIL, is required to obtain a "Consent to Operate" certificate from OISD prior to commencement of operations offshore. Hence, Contractor is to ensure submission of all documents at least 45 days prior to start of operations.

2.3 Bidder is advised to take note of all the requirements of OISD for the Drilling Unit from the OISD official website prior to start of operations and during the Contract period.

2.4 OISD guidance on Well Control Equipment, specifically, is given in Appendix 10.

2.5 Bidder to note that OISD "Consent to Operate" involves the Close-out report of the final Drilling Unit acceptance by Company nominated Third Party Inspector (TPI), Bridging document as part of Schedule IV of Company and Bidder HSE Management system and other elements such as but not limited to:

- Rig moving, rig positioning and station keeping, marine riser analysis.
- Drilling recommended practices, including tripping, reaming, tight holes, stuck-pipe, lost circulation, flow checking, kick detection, well shut-in and monitoring procedures.
- Assessment of BOP minimum requirements, including activation systems and ram configurations for each stage of drilling operations.
- Rigging up and rigging down BOP systems, including prior risk-assessment and mitigation.
- Pressure and function testing of BOP and diverter systems, wellheads and casing.
- Well control operations including the use of trip tanks, stripping tanks, and diverter systems.
- Assessment of non-routine drilling operations.
- Emergency procedures during adverse weather conditions.
- Emergency procedures for gas, fire, and blowout.
- Emergency procedures for man overboard, rig evacuation, flooding of compartments, damage stability, stability control, emergency actions following power and control system failure, including measures for survival, etc.

2.6 Bidder will ensure that the Drilling Unit equipment and accessories comply with the regulatory requirements in the operating Area and the Industry Recommended Practices. Bidder shall follow all statutory guidelines and recommended practices as per OISD and API standards. A complete list of all required Drilling Unit equipment can be found in **Appendix 2, Exhibit A**.

2.7 Company shall, prior to the Commencement Date, conduct a Pre-Spud Meeting. This meeting will be held in Kakinada, India on a date to be mutually agreed. It is expected to last for one full day and will be attended by Senior Company, Bidder and Third-Party Service personnel. Required attendees from Bidder's side will include at a minimum the Rig Manager, Rig Superintendent(s), and Safety Officer(s) and senior rig leadership such as OIM / Captain / Tool Pusher.

2.8 Company shall, prior to spud of each well, provide Bidder with a Drilling Program together with any supporting design that Company considers relevant to the performance and safety of the drilling operations. Bidder shall prepare and submit to the Company a drilling program review, which shall include the following:

- Pre-spud check list.
- Drilling activity program showing the anticipated sequence of operations detailed at Bidder level, including diverter and BOP installation and pressure test proposals, wellhead installation and pressure test proposals and any other relevant procedures.
- Contingency programs detailing the procedures for handling unplanned events, for example shallow gas, or well kick etc.

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## REMOTE OPERATED VEHICLE (ROV)

The Bidder shall provide a complete work class ROV, Personnel and Services to support deep water drilling operations in water depths from 500 m up to 3,400 m. The ROV, Personnel and Services offered shall be capable of providing uninterrupted drilling support and performing work tasks as detailed below on continuous basis as and when operation demands.

### WORK TASKS

The ROV offered must be capable of performing the following minimum tasks:

Sl. No.	Work Tasks
1.	Seabed inspection for inclination and debris
2.	Recording events in PAL/VHS or advance format
3.	Observe bulls eye, Gauges
4.	Assist in Spudding the well
5.	Monitor different drilling activities
6.	Monitor return during cementation and displacement, Collect cement samples and measure distances
7.	Observe shallow gas / shallow water flow during drilling
8.	Assist with drilling activity & completion activity and also for x-mas tree installation/removal whenever required
9.	Assist in re-entry of Drill String, Casing, Setting guide bases
10.	Assist while running and landing casing and guide bases
11.	Observe and assist during Running and pulling out of BOP & LMRP.
12.	Observe and record leaks in hydraulic system
13.	Assist in cement top up job
14.	General inspection and Wellhead cleaning Tools
15.	Cut wire ropes and soft slings
16.	Removal of protection caps and covers
17.	Provide hot stab BOP intervention system for minimum 3 functions including all the suitable tools, fittings, male & female steps and manifold and intervention pump etc. The output pressure of the step shall be adjusted within the operating pressure range of the BOP control unit of the rig over ambient pressure.
18.	Install and remove AX, VX, Laurent ring gaskets and other minor repair jobs.
19.	Operate ROV hooks and shackles
20.	Operate mechanical locking mechanisms with manipulator
21.	Operation of various valves with manipulator

22.	Inspect and clean guidepost receptacles if required
23.	Install and retrieve guideposts and guide wires if required
24.	Inspection and cleaning of wellhead.
25.	Observe and assist when running and recovering various equipment and tools.
26.	Locate and recover lost items
27.	Current Recording
28.	Temperature Recording
29.	Laying and retrieval of Transponders
30.	Any other subsea related tasks felt necessary by Operator for drilling and completing wells efficiently which are within the capabilities of ROV.
31.	Identifying and facilitating spudding of the well at exact coordinate at seabed with the help of Transponder/Beacon
32.	Onboard ROV team should have appropriate floats to be used during sub-sea completion of well and ROV should be capable enough / having required tooling for use with float operations
33.	ROV should have adequate capability to pump Methanol/Glycol at BOP / well head area

#### **OPERATING LIMITS FOR ROV**

The ROV and the launch and recovery system shall be capable of launching ROV, undertaking operations as required and recovering the ROV in operating limits of drilling rig as specified below:

##### **Operating Limits for ROV**

<b>Operation</b>	<b>ROV Launch and Recovery</b>	<b>ROV Operation</b>
<b>Heave (m) (Double Amplitude)</b>	<b>4</b>	<b>4</b>
<b>Pitch° (Single Amplitude)</b>	<b>5</b>	<b>5</b>
<b>Roll° (Single Amplitude)</b>	<b>5</b>	<b>5</b>
<b>Sea Current (Knots)</b>	<b>3</b>	<b>3</b>

#### **1. ENVIRONMENTAL PARAMETERS**

The ROV and the launch and recovery system must be capable of launching ROV, undertaking operations as required and recovering the ROV in operating environmental conditions of drilling rig.

## **2. EQUIPMENT SPECIFICATIONS**

The ROV shall be capable of completing the Scope of Work as mentioned above under the specified conditions and should include, but need not be limited to the equipment and features as under:

### **2.1 MANIPULATORS**

1x7 function manipulator

1x5 function manipulator

Note: If Bidder provides both the manipulator (Right & Left Hand) of 07 functions, then also it is acceptable.

### **2.2 CAMERA**

2x color and 1x black and white low light video camera with pan and tilt

### **2.3 SCANNING SONAR SYSTEM**

Lighting system is adjustable to suit the range of underwater visibility.

Depth sensor accurate to +/- 0.5 m

Certified explosion proof color video monitor for drill floor to allow observation

### **2.4 Tether Management System (TMS) and Cage**

### **2.5 Probe to measure temperature**

### **2.6 Current Meter**

Note: Bidder shall furnish complete technical details about the proposed ROV, current meter, probe to measure temperature and environmental parameters up to which the system can be deployed and used.

## **3. ACTUAL JOB EXECUTION**

- a. Bidders shall undertake all the jobs but not limited to as mentioned in scope of work by providing a suitable ROV and services, associated equipment, required tools and personnel.
- b. Bidder shall be solely responsible for equipment, materials and supplies, for its adequacy, inspection, testing, maintenance and replacement and shall also provide all necessary software and/or programs required for the proper performance of the Work.
- c. Bidder shall maintain adequate stock of spare parts and consumable for the ROV systems on board the rig to ensure continuous operations.
- d. Bidder shall engage minimum 1 x supervisor and 2 x technicians on board the rig for safe and uninterrupted operation of ROV during the entire duration of contract.
- e. Bidder shall maintain ROV and equipment at his cost and shall always keep his equipment in good working condition.
- f. Bidder should make arrangements to supervise any ROV services related material movement at Company base as and when required.

Note: In the event of loss or unrecoverable ROV for whatever reason, the Bidder shall provide at his cost a replacement unit to complete the scope of work.

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**H2S SERVICES - ON CALL OUT BASIS**

<b>Description of Equipment or Service</b>	<b>Qty</b>
Gas Detection Monitor with 8 channels H <sub>2</sub> S detector c/w Calibration Kit, UPS and Voltage Stabilizer	1
H <sub>2</sub> S sensors on the rig floor, bell nipple, mud pumps, mud tanks, shale shaker and choke manifold	1 lot
Explosion proof Alarm units, dual light and siren system, activated at 10 ppm and 20 ppm, installed at rig floor, mud tanks, mud pumps, engine room and sack room	6
Non-explosion proof alarms, dual light and siren system, activated at 10 ppm and 20 ppm, installed in accommodation and SCR room	2
Entry/egress SABA 5 min/10 min	20
30 min SCBA with case	50
4/6 Cylinder Cascade	8
Air manifold 4 / 6 man	8
High pressure breathing air compressor c/w refill line	2
Bug Blowers with explosion proof motor	2
Gastec draw pump c/w tubes	1
Portable multi-gas detector (H <sub>2</sub> S, LEL, O <sub>2</sub> , CO)	2
Portable H <sub>2</sub> S detector	8
Windsock c/w frame and pole	2
H <sub>2</sub> S Signs - Safe Briefing Area, Poison Gas, Well Condition	1 set
Air Quality Test Kit of minimum 500 cc/min test pump and air tech test tubes for water vapour, oil vapour, Carbon monoxide, Carbon Dioxide	1
ELSA emergency escape breathing devices	150
Installation Materials, Training booklets,	As required
Bidders shall provide suitably trained engineers for the rig up and maintenance of the above equipment complement, for training and drills and other H <sub>2</sub> S assistance.	

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## VOICE AND DATA COMMUNICATIONS

It shall be the turnkey responsibility of the Bidder to provide Voice and Data Communication between the Drilling Rig and Company offices at Kakinada/ Bhubaneswar/Duliajan/Delhi. Functional requirement of Voice and Data Communication between the Drilling Rig and base offices shall be as follows:

1. Voice and Data shall be VSAT based through C-band/ Extended C-Band through DOT authorized Indian service provider or combination of VSAT and leased lines. The Bidder shall arrange necessary equipment like Antenna, redundant RF equipment, IF equipment, Switches, Routers, Interfaces and cabling, firewalls (wherever required) at Drilling Rig end and base offices of OIL at Kakinada/ Bhubaneswar/Duliajan/Delhi. Suitable spares, modules and accessories should be maintained to ensure availability of the link. OIL shall be responsible only for providing a point of contact for LAN at Kakinada and other OIL offices.
2. The VSAT connectivity at drilling rig needs to be integrated with the captive network of OIL for providing voice and data applications like SAP/RTDMA/WEBICE/Intranet, and other business applications through backbone from its office at Kakinada/ Bhubaneswar/Duliajan/Delhi.
3. It is the responsibility of the Bidder for installation, configuration, tuning, testing, commissioning and making operational a two way, interactive IP based VSAT (for OIL use) network service (which is in the scope of the Bidder) in a secured Closed User Group (CUG) configuration for OIL and a backhaul link from the service provider's hub to the OIL Offices at Kakinada/ Bhubaneswar/Duliajan/Delhi. Necessary firewalls for data security of the CUG network to be provided by the Bidder at the OIL Offices at Kakinada/ Bhubaneswar/Duliajan/Delhi.
4. Operation & Maintenance for seamless availability of the VSAT equipment and the CUG network including the satellite links shall be the responsibility of the Bidder.
5. The network topology will be star connectivity to OIL offices at Kakinada/ Bhubaneswar/Duliajan/Delhi from the drilling rig. The drilling rig is to be connected through VSATs, and service provider's shared Hub, with a backhaul provided to the OIL office at Kakinada/ Bhubaneswar/Duliajan/Delhi.
6. The network shall provide end-to-end IP solution and integration with the existing network implemented in OIL. The IP addresses will be provided by OIL and the same are to be configured in the remote VSAT sites
7. **Backhaul:** Implementing the backhaul connectivity from service provider's Hub site to the OIL office at Kakinada/ Bhubaneswar/Duliajan/Delhi. OIL shall provide an Ethernet port/ high speed serial port in the router at each office at Kakinada/ Bhubaneswar/Duliajan/Delhi.
8. In case leased line connectivity is not feasible, VSAT links can also be established from service provider's hub site to the OIL's offices at Kakinada/ Bhubaneswar/Duliajan/Delhi.
9. Integration of the VSAT links and backhaul connectivity with the existing OIL Voice/Data network so as to have cohesive network connection with other Equipment/ Systems installed in OIL network including network management shall be in the scope of Bidder.

10. The Bidder must comply with all rules and regulations set by Department of Telecommunication under Ministry of Communications & IT, Government of India for providing the communication network. WPC/SACFA clearances shall be obtained with all formalities without involving OIL. However, if required, OIL shall co-operate to issue requisite letters to the authorities.
11. Fast auto tracking gyro-based VSAT antenna at the Drilling Rig end is required to provide un-interrupted communication to take care of roll and pitch of the Rig and inclement weather conditions.
12. **Data Bandwidth:** Online Data communication shall cater to the need of drilling surface /subsurface data like Rig Instrumentation data, well logging, Mud Logging and MWD/LWD data transmission, SAP, Web-ice, RTDMA ( Real Time Data Management and Analytics) data, E-mail and Intranet applications, for which required bandwidth **10mbps** shall be provided by the Bidder. Internet connections should be provided separately and not to be provided on the network providing **10mbps** Bandwidth exclusively for other OIL applications. Minimum Eight 8 or more port RJ-45 LAN network to be established at Rig and each OIL Base offices for Voice & data communication. Bidder to ensure exclusive availability of the **02mbps** bandwidth for OIL applications other than internet connectivity.
13. **Voice Communication:** Voice Communication at the Drilling Rig shall be for 2 users. At the Rig end, a 16-line Mini VoIP EPABX System, initially configured for 6–8 users but supporting additional 6-8 subscribers shall be provided. Required number of VoIP phones along with VoIP handsets (in consultation with OIL) to be provided for connectivity at Rig & OIL Offices at Kakinada/ Bhubaneswar/Duliajan/Delhi.
14. Connectivity at the base office at Kakinada/ Bhubaneswar/Duliajan/Delhi Interfacing voice circuits through VSAT with the above-mentioned Mini EPABX Systems and providing connectivity to the extensions desired by OIL shall be the responsibility of the Bidder.
15. Number of phones to be installed along with locations is as follows.
  - Kakinada- 01 No.
  - Bhubaneswar – 01 No.
  - Duliajan – 01 No.
  - Delhi – 01 No.
  - On Rig-02 Nos. (Company Man & Geologist/ Mud logger)
  - One IP Phone to be provided at the rig for extending Kakinada IP Exchange number. (Phone number and IP address will be provided by OIL).
  - 4 Number of PC's, 02 nos. of Printers and 01 numbers of Scanner to be provided to OIL personnel on board rig. The consumables (cartridge, stationery etc) for printers also need to be provided by Bidder.
  - Internet to be provided on minimum three numbers of PCs.
16. A bandwidth of **10mbps** to be provided for all OIL applications and other requirements
17. A separate VLAN to be created for OIL requirements for connecting all the PC, IP Phone, RTDMA, third party and for providing connectivity to various IT applications such as SAP, Intranet, OIL Mail, etc
18. Bidder should provide access to NMS for visualization rights for online real time monitoring of the OIL VLAN bandwidth utilization.
19. Bidder should ensure that video conferencing facility is available between, Rig floor and

20. The allocation of bandwidth should be in following manner. The complete **02mbps** bandwidth should only be allocated to OIL VLAN ports in pool. The bandwidth should not be distributed/restricted port wise (Ethernet port of the VLAN) and should be available dynamically as per demand of the ports of OIL VLAN.
  21. **Data Security:** The service provider should ensure end-to-end security of data transmission through their network so that OIL's data is protected from external hacking. The Network should adhere to the following security aspects.
  22. Encryption mechanisms in place on technology such as VPN with firewall to ensure adequate logical separation between OIL Network and other systems/networks at the Hub. This tunnel may not be subjected to TCP acceleration.
  23. Voice and Data Communication system should adhere to OIL security policy. OIL will have the right to conduct post-implementation audits of the Network to ensure that the security controls are in place.
  24. Bidder needs to extend all kinds of support for establishing RTDMA (Real Time Data Management and Analytics) Network like routing, laying of LAN cabling (LAN cable to be provided by RTMA service provider).
  25. Bidder system / Server at rig site should be capable of sending real-time data in industry standard format (WITS/ WITSML). The said data in industry standard format shall be available on port of Bidder system / server at rig for sharing the data with OIL along with parameter mapping details as and when required.
  26. Access to Network Management System (NMS) shall be provided to Operator for monitoring bandwidth.
  27. **Response time:** OIL shall intimate with the Bidder about the problem occurrence in case it is required. A maximum time of 12 hours to respond from the time of intimation excluding journey time, and a maximum problem resolution time of 6 hours shall be allowed.
  28. **CCTV:** Bidder to install IP based Digital CCTV camera. The access for the cameras shall be available at OIM & company man office. Live Feed for helideck/main deck will be given to radio room & Monkey board to driller's cabin. Also, the functionality/additional port shall be available to share live video footage to OIL Base at Kakinada and OIL Offices at Kakinada/ Bhubaneswar/Duliajan/Delhi.
- The Specifications of IP based CCTV cameras are as under:
    1. Explosion -Proof Fixed IP (IECEX/ ATEX/PESO) camera: Min 1/2.8" CMOS Sensor, Min 2 MP Resolution, 30x Optical Zoom, with Wiper, IP67, ONVIF Compliant, H.265/264 Compliant.
    2. Weather-Proof Fixed IP camera: Min 1/2.8" CMOS Sensor, Min 2 MP Resolution, 5-50mm +/-5mm motorized varifocal, IP67, ONVIF Compliant, H.265/264 Compliant.
    3. Weather-Proof PTZ IP camera: Min 1/2.8" CMOS Sensor, Min 2 MP Resolution, 30x Optical Zoom, with Wiper, IP67, ONVIF Compliant, H.265/264 Compliant.
    4. Video Management cum recording server software specifications
    5. The IP Video Management Software should allow Live Viewing, Recording and Management solutions of Network Video surveillance systems.
    6. VMS Software should be ONVIF S, G, and T Profile Compliant.

7. Should record H265, H.264, MPEG4 or MJPEG at minimum 5 fps to 30 FPS at minimum CIF to Full HD (1080p).

29. Bidder to install IP based Digital CCTV camera at the below-mentioned locations.:

<b>S. No</b>	<b>Location</b>	<b>Qty OF CAMERAS (Minimum)</b>	<b>Weatherproof/ Ex- Proof</b>	<b>Hazardous Zone type</b>	<b>Type of Camera Fix/PTZ</b>
1	Main SCR Room	1	Weatherproof	Safe	Fix Type
2	Main Deck Aft	1	Weatherproof	Safe	Fix Type
3	Engine Room 1st camera	1	Weatherproof	Safe	Fix Type
4	Engine Room 2nd camera	1	Weatherproof	Safe	Fix Type
5	Anchor winch aft	1	Weatherproof	Safe	Fix Type
6	Propulsion Room 1st camera	1	Weatherproof	Safe	Fix Type
7	Propulsion Room 2nd camera	1	Weatherproof	Safe	Fix Type
8	Helideck	1	Weatherproof	Safe	Fix Type
9	Monkey Deck	1	Ex-Proof	Zone 2	Fix type
10	Rig Floor 1st camera	1	Ex-Proof	Zone 2	Fix type
11	Rig Floor 2nd camera	1	Ex-Proof	Zone 2	Fix type
12	Shale shaker area	1	Ex-Proof	Zone 1	Fix type
13	Mud pump room	1	Weather-Proof	Safe	Fix Type
14	Mud pump room	1	Weather-Proof	Safe	Fix Type
15	Mud pit room	1	Ex-Proof	Zone 1	Fix Type
16	Pipe Hold no-1	1	Weather-Proof	Safe	Fix Type
17	Pipe Hold no-2	1	Weather-Proof	Safe	Fix Type
18	Tool storage room	1	Weather-Proof	Safe	Fix Type
19	Subsea compressor room	1	Weather-Proof	Safe	Fix Type
20	BOP handling area/Cellar deck	1	Ex-Proof	Zone 2	Fix Type
21	Cement room	1	Weather-Proof	Safe	Fix Type
22	Main Deck fwd	1	Weather-Proof	Safe	Fix Type
23	Port & STBD side Muster stations	2	Weather-Proof	Safe	Fix Type

24	Anchor winch fwd	1	Weather-Proof	Safe	Fix Type
25	Sewage room	1	Weather-Proof	Safe	Fix Type
26	HVAC room	1	Weather-Proof	Safe	Fix Type
	Total Cameras	28			

Note:

1. UPS with battery bank for back-up on Full load for min 15 minutes-01 qty
2. Recording back-up for 30 days: 01 qty
3. VMS and VA server: 01 set

## DETAILS OF COMMUNICATION/ NAVIGATION EQUIPMENT COMPLIANCE

### I. MAIN RADIO STATION

S. No.	Equipment	Quantity	Remarks
1	VHF/DSC	2 NOS WITH BOTH ANTENNA	
2	INMARSAT-C	2 NOS. WITH GPS KIT+LRIT COMPLIANT	
3	MH/HF-DSC+SSB	1 NOS. WITHOUT NBDP KIT	
4	BATTERY CHARGER	1 NO	WITH VOLT/AMP METER + AUDIO ALARM
5	RADIO BATTERIES 24 V-200 AH	1 SET (HEAVY DUTY AND M.F)	
6	DEDICATED INDIVIDUAL POWER SUPPLIES FOR ALL EQUIPMENT	1 NO	
7	MH/HF- DSC +SSB +NBDP	1 NO	OPTIONAL (THIS CAN BE CONSIDERED IN PLACE OF ONE INMARSAT-C AT SR. NO. 2 ABOVE)
8	GMDSS CONSOLE	1 NO	

### II. BRIDGE/CONTROL ROOM:

S. No.	Equipment	Quantity	Remarks
1	NAVTEX RECEIVER	1 NO.	
2	EPIRB	1 NO.	
3	SART	2 NOS.	
4	TWO WAY GMDSS WALKIE/TALKIES	2 NOS.	
5	AIS	1 NO.	
6	SSAS	1 NO.	
7	GPS FOR POSITION FEED	1 NO.	
8	NAVTEX RECEIVER	1 NO.	

### III. LIFEBOAT:

S. No.	Equipment	Quantity	Remarks
1	TWO WAY GMDSS WALKIE / TALKIES	2 NOS. (ONE FOR EACH LIFEBOAT)	
2	RADAR TRANSPONDERS-SART	2 NOS. (ONE FOR EACH LIFEBOAT)	

#### System Design & Operation Philosophy:

1. Drilling Instrumentation consists of the parameters required by the Driller, Chemist and Geologist at the time of Drilling, Tripping, Cementing and Well Control.
2. The system shall be Server based compatible for data transfer from the Rig Instrumentation Server to any other system deployed by OIL in WITSML Format. The same Rig Instrumentation Server to supply DATA to clients at the Driller's cabin, Tool Pusher, Chemist & Geologist.
3. The PLC/DAQ will send data to Drilling Instrumentation Server and Discrete Digital Display Unit (DDDU) (Drill watch or equivalent) on the rig floor.
4. DATA and/or trend graphs of all selected parameters are to be displayed on 15-inch Color LCD TFT Touch Screen Monitor for Driller in the Driller's Cabin.
5. Dedicated Data Base Management System (DBMS) viz., DB2, Oracle, MS SQL, etc., shall be used as backend software.
6. Tamper proof database with password protection.
7. Data extraction and backup facility.
8. In the event of failure of Drilling Instrumentation Server, current drilling parameters data should be available to the driller through Discrete Digital Display Unit (DDDU).
9. In the event of failure of PLC/DAQ the following current drilling parameters should be available to the driller on the driller's panel to continue with drilling operations.
  - a. Hook Load & Weight on Bit, through Hydraulic Weight Indicator.
  - b. Standpipe Pressure, through Hydraulic Pressure Gauge.
  - c. Tong Torque, through Hydraulic Gauge.
  - d. Pump SPM1, SPM2, SPM3 and total strokes through Digital Gauge.
  - e. Return Flow %, through Digital Gauge.

#### Parameters for Display:

1. The system shall Display the drilling parameters on Discrete Digital Display Unit for viewing continuously in a fixed window on the
2. Driller's panel. Applicable for main & auxiliary

S. No.	Parameter	Required Display
1	Hook load	LCD, Digital
2	W.O.B.	LCD, Digital
3	Standpipe Pressure	LCD, Digital
4	Casing Pipe Pressure	LCD, Digital
5	Tong Line Pull	LCD, Digital, with High set point, Audio & Visual alarm.
6	SPM#1	LCD, Digital
7	SPM#2	LCD, Digital
8	SPM#3	LCD, Digital

9	SPM # 4	LCD, Digital
10	SPM #1 + #2+#3 +#4	LCD, Digital
11	Total Strokes up to 4 Pumps	LCD, Digital
12	Pump#1 ( Fill)	LCD, Digital
13	Pump#2 ( Fill)	LCD, Digital
	Pump#3 ( Fill)	LCD, Digital
14	Pump#4 ( Fill)	LCD, Digital
15	RPM, Rotary Table	LCD, Digital (Single display should show whichever is active)
16	RPM, Top Drive	
17	Rotary Torque, Rotary Table	LCD, Digital (Single display should show whichever is active)
18	Top Drive Torque	
19	ROP	LCD, Digital
20	Hole Depth	LCD, Digital
21	Bit Position	LCD, Digital
22	Loss/Gain Volume	LCD, Digital, Loss & Gain set points with Audio & Visual alarm
23	Tank Volume1 to 6 Selectable	LCD, Digital
24	Total tank volume	LCD, Digital, with Tank selection status
25	Return Flow	LCD, Digital & High Low set points with Audio & Visual Alarm,
26	Trip Tank Volume	LCD, Digital & High Low set points with Audio & Visual Alarm,
27	Total Gas	0 to 100% by Volume in air.
28	H2S	0 to 20 PPM by Volume in air.

**Note: a. Provision for the following features**

Bit Weight Zero Set

- i) Loss/Gain Zero Set
- ii) Tank Select
- iii) Total Strokes Reset

Alarm set points are to be displayed in digital form when being set without obscuring the current reading.

**Printing Device**

Colour Ink Jet Printer for taking Printouts in A3 Size Sheets in the following modes. To be installed with Workstations.

**GRAPHICAL PRINTOUTS**

- I. Selected Parameters are to be recorded.
- II. Feature of Time Base and Parameter Range selection. The Printout should show the time on hourly basis and Parameter Range on each page. The Time selection feature should facilitate the Printout to cover 24 hours of drilling activity in user selectable A3 or super B sheets.
- III. The Printouts should cover the normal Print Area of the paper. Well Name and Date to be printed in every sheet. Date format shall be dd-mmm-yyyy or Month-dd-yyyy

**Parameter to be Measured & Sensor Details:**

<b>S. No.</b>	<b>Parameters</b>	<b>Sensor Type</b>	<b>Description</b>	<b>Quantity</b>
1	Hook load	Hydraulic, E80	Hydraulic Electronic Pressure to current transducer 0 to 1000	1 No. 1 No.
2	Standpipe Pressure.	Electronic &Hydraulic	1. Direct mount on standpipe, electronic sensor suitable for 2-inch WECO Union Female Sub & Hammer Lug Nut Type 1502. Range for SPP-1, 0 to 5000 PSI. 2. Piston Separator 1:1(Suitable for 2-inch WECO Union Female Sub & Hammer Lug Nut Type 1502) on standpipe & Pressure to current transducer 0 to 5000 PSI to be installed in the driller's panel. For SPP-2.	1 Set  1 Set
3	Casing Pipe Pressure	Electronic	Direct mount on standpipe, electronic sensor suitable for 2-inch WECO Union Female Sub & Hammer Lug Nut Type 1502. Range 0 to 10000 PSI.	1 Set
4	Tong Line Pull	Hydraulic	Hydraulic Tension Cylinder& Pressure to current transducer to be mounted in driller's console. 0 to 20000 Pounds pull.	1 Set
5	SPM	Proximity Sensor	Proximity Sensor	3 Nos
6	RPM, Rotary Table	Proximity Sensor	Proximity Sensor	1 No
7	ROP/Ton mile/ Depth/Block Speed/ Block Position/Pipe Tally	Proximity Sensor	Optical encoder. Suitable for mounting on draw- works counter shaft.	1 No
8	Rotary Torque, Rotary Table	Hall Effect Sensor	Hall Effect Sensor. Input Range 0 to 1000 Amps.	1 No

			Output 4 to 20mA OR 0 to 2.9 V.	
9	Mud Pit Level	Ultrasonic Sensor	Ultrasonic Sensor (5 No Mud Tank + 1 No for Trip Tank). Range 0 to 10 feet.	6 Nos.
10	Return flow	Paddle type	Ultrasonic Sensor or any other type based on reliable technology. Range 0 to 48 inches.	1 No
11	Mud-In conductivity	Electronic	Range 0 to 200 millisimense/cm.	1 No
	Mud-Out conductivity		Range 0 to 200 millisimense/cm.	
12	Mud-In density	Electronic	Electronic Output. Range 5 to 22 PPG.	1 No
	Mud-Out density		Electronic Output Range 5 to 22 PPG.	
13	Mud-In Temperature	Electronic	RTD, Electronic Output Range 0 to 100 Deg Celsius.	1 No
	Mud-Out Temperature		RTD, Electronic Output Range 0 to 100 Deg Celsius.	
14	Total Gas	Infrared	0 to 100% by Volume in air.	1 No
15	H2S	Catalytic	0 to 20 PPM by Volume in air.	1 No

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**ADCP CURRENT MEASUREMENT**

The Bidder is required to provide an Acoustic Doppler Current Profiler device (ADCP) to continuously measure current speed and direction in the sea water column adjacent to, or below, the Drilling Unit.

Requirements are as follows:

- Device to measure current velocity and direction via down-looking ADCP mounted in suitable position on rig hull or portable ADCP current meter.
- Measurement frequency for current speed, current direction and water level every 10 minutes
- ADCP parameters 10 pings/ensemble, with 20m bin size
- Software to process and visualize current profile
- Data output from software as a minimum must contain:
  1. Raw data in ASCII or CSV format
  2. Tabular data of current speed statistics for each week of deployment
  3. Time series stacked cells
  4. Continuous current velocity profiles
  5. Plots of speed/direction for each depth level
  6. Statistical current profiles
  7. Speed/direction distributions for each depth level, with polar scatter plots, current rose and exceedance plot

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## **MPD SERVICES – ON CALL OUT BASIS**

Rig Contractor to provide complete MPD service package (MPD Well Engineering, equipment, and personnel) on call out basis for the following MPD variants:

1. PMCD: Pressurized Mud Cap Drilling and
2. CBHP: Constant Bottom Hole Pressure Drilling

Rig shall be MPD ready (rig shall have all surface piping and other modifications ready to receive MPD equipment) prior to Rig Mobilisation. As & when required, OIL shall issue Mobilisation notice for MPD services (Engineering, equipment and personnel).

### **Brief scope of MPD services**

#### **A. MPD Ready Prior to Rig Mobilisation:**

Rig should be modified to accommodate MPD systems (PMCD and CBHP) prior to their installation and to facilitate MPD operations. Rig modifications are to be in accordance with applicable codes and standards, such as API RP 92S and RP 92M.

#### **B. Pre-Job Engineering & MPD Well Planning**

Contractor shall be responsible for Pre Job Engineering, FEED analysis, MPD Risk Assessment (HAZID/HAZOP) , MPD Well Planning for the phase/section to be drilled, cemented, or cased using MPD equipment covering Well-specific MPD Hydraulic Modelling (ECD/ESD, surge/swab, influx/loss simulations), Development of MPD Matrix & Influx Management Envelope (IME), Design of contingency procedures (kick tolerance, loss circulation, riser gas handling). Contractor to submit MPD Well Engineering reports as per Scope of Work and accordingly mobilise all resources & equipment as per submitted report prior to start of Well.

#### **C. MPD Equipment:**

1. Consisting of Integrated Riser Joint (IRJ) with RCD/ACD, Riser Gas Handler / Annular, Diverter lines, valves, swivels, API 17K hoses, rig integration scope and riser crossovers required to install the MPD Riser Joint etc

2. RCD/ACD should be tested and have conformance as per API-SPEC-16-RCD with minimum bore ID of 18 ¾”.

3. All MPD Equipment's should be as per API norms and stds viz. API-16-RCD, API 16C, API 6AF2, API RP 53 and API 6A as applicable.

4. All equipment & Piping shall be Certified as API RP 92M/92S, and MPD package should be of pressure rating of minimum 2000 psi (tested as per API Standards)

5. Control System & Software: MPD choke automation software, Integration with rig's control systems & driller's cabin, Remote monitoring & real-time data transmission.

6. The MPD package and riser system should be compatible with Base Oil, SOBMs and Water Base Mud. MPD systems exposed to wellbore fluids are to be compatible with all fluids, including H<sub>2</sub>S which may be encountered within the scope of intended operations and service conditions.

7. Means of providing isolation below the RCD/ACD is required to allow replacing the Sealing/Bearing assembly without having to close the BOP. When this is not provided as a part of the MPD system, justification is to be provided through risk assessment.

8. MPD equipment is to be installed in such a way as to not interfere with, compromise or impact on the secondary well control functionality of the rig's BOP well control system.

9. Consumables: Contractor shall be responsible for all consumables required during operations.

10. All equipment & Piping shall be Certified as API RP 92M/92S and MPD package should be of pressure rating of minimum 2000 psi (tested as per API Standards).

#### 11. Details of Major Equipment

**(i) Rotating Control Device (RCD)/ACD:** The RCD/ACD body, connections and individual bearing/sealing assembly are to be designed, manufactured, and tested in accordance with the latest version of API Spec 16RCD and the additional requirements as follows:

a) Pressure Ratings. The body/shell, static (non-rotating), dynamic (rotating), and the stripping pressure ratings are to be specified by the manufacturer and validated in accordance with API Spec16RCD.

b) RCD/ACD are to be designed to maintain the MPD operating envelope.

c) RCD/ACD to be provided with a minimum of two packing elements for wellbore fluids.

d) The packing elements of RCD/ACD can be safely changed without retrieving the entire RCD/ACD assembly in the drilling riser.

e) A means of equalizing or bleeding trapped pressures below the packing element is to be provided.

f) The accumulator, control, and/or power system used to operate the RCD are to be independent of the rig's standard BOP accumulator system.

#### **(ii) MPD Annular**

a) MPD annular is to be installed below the RCD/ACD and above the flow line spool as part of a modified riser joint (IRJ) to isolate the RCD/ACD from wellbore and to facilitate RCD/ACD sealing element change-out or maintenance. The MPD annular can be used to isolate the RCD during emergencies such as a gas in riser event. Additionally, the following are to be complied with:

b) The MPD annular and its control system are to be designed and constructed per requirements found for an "annular preventer" or "annular BOP" as per API Spec 16A, and API Spec 16D, except this device is not required to close on the open hole (i.e., without pipe being in the well). The minimum pipe diameter to close is to be specified by the contractor. Any other exception to API Spec 16D is to be documented and submitted.

**(iii) PRV and Discharges:** Each part of the MPD system upstream of the choke manifold which may be exposed to a pressure greater than its design pressure is to be protected from overpressure by a relief valve. All components between BOP and MPD choke are to be protected from overpressure by a relief valve. All PRV(s) are to be sized, designed, fabricated, tested, and installed in accordance with the following principles, as applicable:

- Designed, fabricated, and tested to API Spec 6A
- Safety principles of API RP 14C
- Relieving capacity are to be sized per API Standard 520 (iv) MPD Manifold

**(iv) MPD manifold**

a) MPD Manifolds are to be designed, manufactured, and tested in accordance with the latest versions of API Spec 6A and API Spec 16C, as applicable.

b) The following manifold instrumentation is to be provided to allow remote monitoring of the manifold(s): Flow rate, flow density, pressure, temperature, choke position, and valve status.

**(v) Debris Catcher/Junk Catcher**

**(vi) Piping**

**(vii) Back Pressure Pump (BPP):** A dedicated back-pressure pump skids, or the drilling unit's mud pumps or riser booster pumps may be used. The following are to be considered if a BPP is provided:

- a) The pump is to be suitable for both continuous and intermittent use, including
  - Sufficient output volume to operate chokes and function flow meters
  - Speed control to allow varying output during connections
- b) A back-up power supply, independent of the main power supply, is to be provided to maintain back-pressure (in case of dedicated BPP).

**(viii) Control Systems:** The MPD system is to have the ability to be controlled from at least two locations to allow for any unforeseen conditions. One panel is to be located as near as possible to the driller's console.

**D. MPD Operations:**

1. All equipment included in the MPD system is to be designed to withstand the maximum system pressure for all MPD operational modes:

- Routine drilling ahead
- Making a connection
- Tripping pipe into or out of the well
- Running casing
- Running a liner
- Pumping a sweep
- Pumping cement
- Logging

2. The MPD system should be capable of providing closed loop circulation system diverting the returns through the MPD fully automated pressure control system while Drilling, Cementing and Running Tubulars and should maintain back pressure to control BHP at desired levels. All well fluids to be discharged either to the shale shaker for solid removal and further mud cleaning or diverted to the MGS.

3. Operator may choose to use the MPD system with CBHP with returns through choke or PMCD mode based on the geological prognosis of the hole section. MPD Team to consult Operator on the MPD mode selection for drilling the particular hole section.

4. MPD Service should be capable to -

a) Maintain CBHP in fully automated mode during drilling operations. To allow quicker & automatic establishment of desired BHP. The PLC should be responsible for the movement of the choke positions, block valves etc. MPD automated control system should utilize a real-time hydraulics model which incorporates actual data such as pump rate, standpipe pressure, back pressure & Mud density to constantly control BHP.

b) The capability should be of being able to set in the user interface the desired pressure in any part of the well profile (Surface, Annular Pressure, Heel, or Toe) and the system should be able to automatically, immediately, and constantly maintain the desired pressure in relevance to the well conditions, or as needed by the drilling team on location, to ensure critical well condition safety. The hydraulics model/program should be able to constantly recalculate the pressure required to be maintained and automatically adjust the set points.

c) Enable earlier kick detection by accurately measuring the influx from the formation with acceptable sensitivity and accuracy.

d) Enabling drilling with lower density drilling fluids, with a proven reliable closed loop system at surface.

e) Enabling Dynamic Formation Integrity Testing (DFIT) Dynamic Pressure Testing (DPPT) without stopping circulation or shut in the Well.

f) Enabling Tripping in/out (Drilling, Tubular, Logging, or as drilling operations require) while asserting the required pressure at surface, to ensure safe and stable wellbore conditions

g) MPD contractors should have proprietary software for managing automated pressure control systems and hydraulic monitoring software for drilling, circulation and cementing operations.

h) To enable conventional drilling mode, on requirement i.e bypassing of all MPD equipment.

5. To provide MPD equipment conforming to but not limited by the broad and general standards as mentioned above.

6. The facility should be able to provide MPD services and other operation related technical backup services to OIL in order to successfully implement the MPD project. Which may cater to Pre-Job Engineering & Planning : Covering Risk Assessment (HAZID/HAZOP), Well-specific MPD Hydraulic Modelling (ECD/ESD, surge/swab, influx/loss simulations), Development of MPD Matrix & Influx Management Envelope (IME), Design of contingency procedures (kick tolerance, loss circulation, riser gas handling), Preparation of MPD Well Program in alignment with Operator's drilling plan etc.

## **E. CONTRACTOR'S PERSONNEL**

Contractor shall be responsible for providing all crew viz MPD Wellsite Supervisors, MPD Field Engineer, RCD Operators or any other category of personnel in sufficient number to carry out operations. Responsibility of Contractor's MPD personnel

a) Maintain all Contractor's Equipment in operating condition and ensure their repair, refurbishment or replacement whenever required.

- b) Operate all Contractor's Equipment in performance of the Work.
- c) Ensure sufficient spare parts at the Work Site(s) to maintain the Equipment in good working order.
- d) Observe at all times, Company's Safety Regulations and Standards and ensure that WORKS in progress is performed in accordance with those regulations.
- e) Contractor shall ensure that all its Personnel engaged under the Contract are medical fit and healthy and properly trained at Contractor's cost. If so, requested by Company, Contractor shall provide health and/or training certificates for such Personnel.
- f) Contractor's Personnel shall prepare and submit to Company Representative supervising the works at Work Site(s), a Service Ticket and Timesheet, listing all Contractor's Personnel activities on the Work Site since arrival, make recommendations for inspection, repair or replacement of equipment, upon completion of each work and prior to leaving the Work Site(s).
- g) Upon completion of works, Contractor's Personnel shall make ready all Contractor's Equipment for offloading onto the Work Site(s).
- h) The Contractor shall conduct efficient MPD operations including but not limited to managing and supervising the installation, testing and operating MPD Equipment.
- i) Contractor shall be overall responsible for the planning & designing of the MPD well/phases, Process & Instrumentation drawings, mid-course corrections, if any, taking into account MPD considerations.
- j) The Contractor shall be responsible for the well design/Engineering evaluation, recommend design input/modifications, material/equipment requirement etc. as per MPD considerations, prior to commencement of the well.
- k) The Contractor shall be responsible for laying down MPD specific drilling procedures, to develop MPD contingency plans and writing a bridging document for operations: responsibility between Company, MPD Contractor and the Drilling Contractor.
- l) The Contractor shall be responsible for operating and troubleshooting of the MPD system in the automated mode, or in any mode that is deemed required during the operation.
- m) The Contractor shall be responsible for well control & safety of the well during MPD operations and for maintaining the agreed ECD/BHP. All the MPD crew deployed by the Contractor shall possess relevant and valid well control certificates.

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## **WEATHER FORECASTING**

The Bidder will provide weather forecasting services for the drilling operations and vessel movements between the Drilling Unit and Company Supply Base at Kakinada. Forecasts will commence when the Drilling Unit is ready to commence the ocean tow from its mobilization point to the first drilling location and cease when the Drilling Unit has completed the tow to the agreed demobilization location.

The services to be provided by the Bidder are listed below:

### **1. Rig Move and / or Site-Specific Forecasts**

The Site-Specific Forecasts for 5 to 7 days shall comprise of minimum:

- Meteorological Situation
- Warnings
- Weather Summary
- Tabular forecast at 6 hourly intervals out to 5-7 days ahead
- Graphical presentations of waves and surface winds
- Sunrise & sunset times
- 24-hour weather consultation by phone
- Web access to the forecast via the Internet

The reporting should be twice (daily) for a standard 5-to-7-day forecast. In case of critical phases of operation, the service provider must be capable of increasing the frequency of reports to a minimum of six times daily.

Bidder shall provide sample report formats along with the proposal and also provide the radius of forecast the reporting will include for site specific forecast.

### **2. Bay of Bengal Sea Marine and Wind charts**

The details shall include supply of Wind and Significant Wave Height Charts covering the work locations and should include but not be limited to

- Significant Wave height
- Swell height, period and direction
- Tide information

Bidder shall provide sample reports along with the proposal.

### **3. Services – Satellite Charts**

Supply of the latest high resolution Infra-red satellite picture covering the work location.

Bidder shall provide sample reports along with the proposal

#### **4. Services – Supply of 10-15-day Look-Ahead Long-Range Forecast Charts**

- Supply of Wind Speed and Significant Wave Height in graphical format
- Used for the longer-term planning of operations

Bidders shall provide sample reports along with the proposal.

#### **5. Services – Supply of Tidal Prediction (Tabular and Graphical)**

- Supply of site-specific hourly tide tables covering a month at a time
- Colour coded to indicate high and low tide times

Bidders shall provide sample reports along with the proposal.

#### **6. Reporting**

All forecasts can be delivered to the specified addressees via e-mail and/or by the dedicated website of the service provider so that the detailed weather report may be viewed from anywhere. The Bidder will be intimated about the list of personnel to be reported and the timing of reports on successful award of Contract.

Bidders shall provide sample report formats for email and website-based reporting along with the proposal.

Bidders will be provided with regular updates of the Drilling Unit and vessel locations along with route information.

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## **MEDICAL EVACUATION SERVICES**

The Bidder is required to provide facilities for emergency medical services, in Visakhapatnam, for the wells to be drilled in Blocks MN-UDWHP-2023/2, MN-UDWHP-2023/3, KG-UDWHP-2023/1 and KG-UDWHP-2023/2.

The purpose of the Medical Evacuation Services is to provide trauma care for any person injured during the drilling operations being conducted in the above-mentioned four blocks. The facilities will include, but not be restricted to, transportation in suitable vehicles from the designated helicopter base in Visakhapatnam/Rajahmundry/ Bhubaneswar to the nearest hospital which can provide trauma care, together with appropriate medical services at the hospital. The Bidder is required to make prior arrangements with both the ambulance services and the selected hospitals to ensure that there are no delays in the event of a medical emergency.

If the injuries are such that they cannot be treated at the local hospitals, the Bidder is required to have made prior arrangements with an air ambulance service to transport the injured person to a suitable hospital facility.

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**DRILLING TOOLS**

<b>Lifting Subs</b>	
Lifting sub for 9-1/2" D/C, 7-5/8" Reg	2
Lifting sub for 8" D/C, 6-5/8" Reg	2
Lifting sub for 6-1/4" or 6-1/2" or 6-3/4" D/C, 4" IF or 4-1/2" IF	2
Lifting sub for 4-3/4" D/C, 3-1/2" IF	2
<b>Stabilisers (all with connections to suit Bidder's drilling tubulars)</b>	
26" NB Stabiliser - spiral welded blade	2
26" String Stabiliser - spiral welded blade	2
17-1/2" NB Stabiliser - integral blade	2
17-1/2" String Stabiliser - integral blade	2
12-1/4" NB Stabiliser - integral blade	2
12-1/4" String Stabiliser - integral blade	2
8-1/2" NB Stabiliser - integral blade	2
8-1/2" String Stabiliser - integral blade	2
<b>Crossover Subs</b>	
Box to pin cross over	
7-5/8" Reg pin x 6-5/8" Reg box	2
6-5/8" Reg pin x 4" IF box box	2
6-5/8" Reg pin x 4-1/2" IF box	2
4" IF or 4-1/2" IF pin x Thread Connection as per supplied Drill Pipes for box	2
4" IF or 4-1/2" IF box x 3-1/2" IF pin	2
4" IF pin x 4-1/2" IF box	2
4" IF box x 4-1/2" IF pin	2
Thread Connection as per supplied Drill Pipes for box x 3-1/2" IF pin	1
3-1/2" IF pin x 4-1/2" Reg pin	1
7-5/8" Reg pin x Thread Connection as per supplied Drill Pipes for box	1
6-5/8" Reg pin x Thread Connection as per supplied Drill Pipes for box	1
<b>Box to box crossovers</b>	
Thread Connection as per supplied Drill Pipes for box x 4" IF or 4-1/2" IF box	1
6-5/8" Reg box x Thread Connection as per supplied Drill Pipes for box	1
<b>Pin to pin Crossovers</b>	
7-5/8" Reg pin x pin	1
6-5/8" Reg pin x pin	1
Thread Connection as per supplied Drill Pipes for pin x pin	
4-1/2" Reg pin x pin	1
3-1/2" Reg pin x pin	1
4" IF or 4-1/2" IF pin x pin	1
3-1/2" IF pin x pin	1

3-1/2" IF pin x 4-1/2" Reg pin	2
Bit Subs (bored for float)	
3-1/2" IF box x 3-1/2" Reg box	2
Bit breakers for all commonly used hole sizes (26", 17-1/2", 12-1/4", 8-1/2", 6")	1 lot
<b>Casing Scrapers</b>	
13-3/8" Casing scraper for rotating application with 6-5/8" Reg connections for 13-3/8" 68 lb/ft	2
9-5/8" Casing scraper for rotating application with 4-1/2" Reg connections for 9-5/8" 47 lb/ft	2
7" Casing scraper for rotating application with 3-1/2" Reg connections for 7" 29 lb/ft	2
<b>Float Valve - Ported Type</b>	
Float valve - 6-5/8" Reg (specify type and model)	2
Float valve - 4-1/2" Reg (specify type and model)	2
Float valve - 3-1/2" Reg (specify type and model)	2
<b>Float Valve - Non-Ported Type</b>	
Float valve - 7-5/8" Reg (specify type and model)	2
Float valve - 6-5/8" Reg (specify type and model)	2
Float valve - 4-1/2" Reg (specify type and model)	2
<b>Short Drill Collars</b>	
8" Pony Drill Collars, 10 to 15 ft long with 6-5/8" Reg connections	2
6-1/2" Pony Drill Collars, 10 to 12 ft long with 4" or 4-1/2" IF connections	2
Handling tools for Drilling Tubulars	2
Handling equipment compatible with drilling tubulars listed above	
DC elevators for all collar sizes	1
Single joint elevator for all collar sizes	1
Drill collar safety clamp, for drill collar sizes 3-1/2" to 9-1/2"	1 lot
Hand slips for all drill collar sizes	1 lot
5"/5-1/2"/5-7/8" drill pipe 500-ton elevator	2 Sets
3-1/2" drill pipe 200-ton elevator	2 Sets
5"/5-1/2"/5-7/8" drill pipe 500-ton elevator	2 Sets
3-1/2" drill pipe 200-ton elevator	2 Sets
Hand slips for 5-1/2" and 3-1/2" drill pipe.	1 lot
Handling tools for 2-7/8" EUE 8rd tubing (elevators, slips)	1 lot
<b>Full Opening Safety Valve (FOSV)</b>	
5" or 5-1/2" or 5-7/8" (Thread Connection as per supplied Drill Pipes)	1
3-1/2" IF pin x box	1
Short Sized Cross overs for FOSV (makeup length not more than 30cm)	
7-5/8" Reg pin x Thread Connection as per supplied FOSV for Box	1
6-5/8" Reg pin x Thread Connection as per supplied FOSV for Box	1
<b>Containers and Baskets</b>	
Suitable containers and cargo baskets for offshore usage with slings and shackles	1 lot

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**DRILLING UNIT TECHNICAL SCOPE OF WORK AND INFORMATION TO BE PROVIDED BY BIDDER**

Sl.No.	Equipemet Parameter	Company Minimum Technical Requirement	Details of the Rig / Equipment to be filled by Bidder as per Technical Specification requirements
1	Type, details of Rig	<p>i. The DP-3 Mobile Offshore Drilling Unit (MODU) must be a Drillship capable of operating in the Indian offshore environment as specified and for drilling depth as specified.</p> <p>ii. Bidder to confirm that Survey/Recertification requiring docking of the Drilling Unit must not fall within the Contract period.</p> <ul style="list-style-type: none"> <li>• Bidder to provide the updated and latest Class Survey report</li> <li>• Bidder to confirm the Rig mobilization origin location and its present location along with ongoing contract details</li> </ul> <p>A. Main Technical Specification of the Rig</p> <ol style="list-style-type: none"> <li>1. Name of the Bidder</li> <li>2. Rig Name</li> <li>3. IMO Number</li> <li>4. MODU Code / Upgrade: Min. 1989 Compliant</li> <li>5. Registered Owner of the Rig</li> <li>6. Type and Design</li> <li>7. Classification Agency</li> <li>8. Class Notations:</li> <li>9. Flag</li> <li>10. Yard / Builder</li> <li>11. Year of Construction</li> <li>12. Year of Upgradation (If applicable)</li> <li>13. Major Dimensions               <ol style="list-style-type: none"> <li>a. Length (m):</li> <li>b. Beam (m):</li> <li>c. Depth (m):</li> </ol> </li> </ol>	Bidder to provide details

d. Moon Pool (ft x ft):

14. Loading Data

Lightship Displacement: -----

Maximum Loaded

Displacement: -----

Maximum Variable Load: -----

15. Load Line draft

16. Operating Draft

17. Survival (station keeping) & operating design parameters of rig should be:

Parameters	Survival Condition	Operating Condition
Wind Speed 3 Sec (Knots)	100	50
W/Sp 1 min mean (Knots)	100	40
Wave Height (m)	15	6
Wave Period (s)	12	9
Wave Crest Height (m)	12	6
Surface Current (Knots)	3.5	3

The operating conditions mentioned above are minimum. However, rig to operate beyond these operating conditions if weather conditions / parameters permit.

Operating surface current condition for operations such as Riser & BOP running/pulling: 2 knots

18. Limiting Factors (If any)

a. For field Movement

b. For Ocean Movement

c. Fuel Consumption (in KL/day):

		<p>d. During Normal Drilling Operation in DP mode:</p> <p>e. During short distance/in field/ adjacent field Rig move at Transit speed of 4 Nm/hr:</p> <p>19. Any damage to vessel recorded in past and any repairs/rectification carried out</p> <p>20. Date of last Classification survey:</p> <p>21. Date of next Classification survey:</p> <p>22. State all Major Inspection and Certifications planned that will or may render the Drilling Unit Non-Operational that fall within Contract Period.</p> <p>23. All statutory certification details are to be provided including validity dates.</p> <p>B. Another specific technical requirement for the Rig</p> <p><b>1. Dry-dock Related</b></p> <p>Bidder must submit an undertaking that any scheduled dry docking of the Drilling Unit shall not fall within the Contract period.</p> <p><b>2. SOBM Compatibility Related</b></p> <p>The rig shall be capable of drilling deepwater wells with Synthetic Oil Based Mud (SOBM) system.</p> <p><b>3. MPD services</b></p> <p>Contractor to provide the MPD services on call out as per Scope of work. Rig Contractor will carry out all required modifications (if any) to the rig from beginning i.e. prior start of contract. The Rig</p>	
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		Contractor will provide this as an optional service from third party service contractor.	
2	Water Depth and Rig particulars	<p>1. The rig must be capable of working in water depth range from minimum 500 meters up to 3,400 meters in the Indian offshore environment as specified.</p> <p>2. Moon Pool: Minimum clear opening of 24 m(L) x 10 m(W) required</p> <p>Note: OIL can deploy the rig up to the minimum &amp; maximum rated water depth capacity of the rig (as per Rig Operating Manual) as and when required.</p>	Bidder to specify
3	Station Keeping	<p>The Rig shall be able to operate in 500 m of min WD to 3,400 m water depth round the year in weather conditions prevailing in East coast of Indian Offshore. At least 35 MW power should be available at all the Azimuth Thrusters taken together.</p> <p><b>The rig shall be originally designed for minimum rating of DP-3)</b></p> <p><b>Note:</b></p> <p>1. Confirm that Riser analysis shall be provided by the Bidder for each location based on riser system with 17.0 ppg of mud.</p> <p><b>Report on Riser analysis shall be certified from recognized organization of DG Shipping</b></p> <p>2. Confirm that DP capability plot is provided.</p> <p>Confirm Rig having continuous recording Current meter to support weather related operational data.</p>	Bidder to Specify
4	Drilling Depth and Capability	Rig shall be capable of drilling exploratory wells including directional & high angle wells up to a depth of 7500m from MSL.	Bidder to provide the details

		<p>Rig shall have sufficient setback racking capacity to rack stands of drill string as well as 3 ½” tubing string (tubing string including testing landing string of 4 ½”/7” tubing) each of 7500m together on rig floor during operations of production testing. Bidder to provide detail on number of stands of all drill string, casing &amp; tubing sizes that the rig is capable of rack back simultaneously as per geometry &amp; load design of derrick. Bidder to provide details of fingerboard configurations that are available under this contract.</p> <p>All the offered equipment should be compatible with the drilling depth and water depth rating of the rig.</p> <p>Bidder to list various simultaneous offline activities which rig is capable of carrying out i.e., activities other than those done on the main load path of well like building stands of pipes using auxiliary equipment, dual activity (full or partial) with twin load path, two draw-works and two tackle systems, parallel operations on various decks etc.</p> <p>Bidder to list offline activities if any available on rig under following 2 categories:</p> <p>(i) Offline Dual handling capability for making / breaking of stands of only drill pipes or drill pipes and casing pipes up to 13 3/8” in derrick: -----</p> <p>(ii) Other offline activities: -----</p> <p>1.Entire rig package must be following all safety and regulations and Oil Industry</p>	
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		<p>Safety Directorate of India (OISD) standards guidelines and recommendations.</p> <p>2.Rig must have Emergency hooter, Emergency shut-off system and Emergency Alarm at driller's panel.</p> <p>3.Bidder to confirm that all the drilling equipment offered are compatible with the drilling depth, water depth and proposed well program for safe operations of the rig.</p> <p>4.Mast (Derrick) Gross nominal capacity must be minimum 1,200,000 lbs and must be capable of handling loads as per the environment conditions such as Wind speed as per the Rig Marine Operations Manual.</p> <p>5.The entire travelling system must be of minimum 750 MT capacity (Crown Block / Travelling Block / Top Drive / Swivel / associated systems).</p> <p>6.Gooseneck and wash pipe minimum ID must be 3 inches or greater.</p> <p>7.Access fitting for wireline entry on top of Gooseneck required.</p> <p>8.Minimum 3000 HP rated Electrical motor driven Draw-works system is required and Auxiliary Brake system is required to have independent back-up system for Floater operations in water depth and drilling depth as specified.</p> <p>9.Rotary table is required to be minimum 49-1/2" opening and Independent Electric motor driven with 1000 HP output</p>	
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		<p>power or hydraulically driven and rated capacity of minimum 800 T and with # 1/2/3 Bushings.</p> <p>10. Hydraulic Cathead, such as Drilco Ezy-Torque or equivalent, complete with motor etc.</p> <p>11. Rig must have Drift Indicator (Totco 0-16 degree) with baffle plates and complete with wire line retrieving tool and Wire line winch for carrying out directional surveys.</p> <p>12. Rig must have calibrated instrumentation including as a minimum weight indicator complete with suitable wire line anchor, mud gauge assembly, tong torque indicating system, rotary rpm, rotary torque, mud pump SPM tachometer system, mud volume totalizer, mud flow fill and stroke indicating system, pit level indicator, recorder to record weight, mud pressure, rotary torque and RPM, mud pump SPM, rate of penetration (ROP) and online gas monitoring system.</p> <p>13. Rig must have an electronic data recorder (EDR) which measure and stores essential drilling parameters including, but not limited to, hole depth, bit depth, hook load, hook position, weight on bit, top drive RPM, top drive torque, standpipe pressure, pump rate, flow rate, pit volumes, trip tank volumes and ROP. Such EDR must make data available in commonly used electronic format.</p> <p>14. Rig must have provision for hooking up rig drilling instrumentation systems with Mud Logging/ LWD/ MWD/ Directional Drilling requirement.</p>	
5	Power Management	The rig shall have Power Packs having adequate power for	Bidder to provide the details

	<p>and Distribution system</p>	<p>Station keeping, drilling and living quarters' loads to operate efficiently in dynamically positioned (DP-3) mode in 3400 m water depth.</p> <p>Rig shall supply power (230 V &amp; 440 V) to Operator's third-party equipment during exploration and development well testing operations.</p> <p>Emergency power backup shall be in accordance with all Class/Flag requirements.</p> <p>Note:</p> <p>i. The engines and alternators should be new, or capital overhauled and not pending as per norms of OEM.</p> <p>ii. The Power pack (Rig Engines) shall be equipped with system that shall provide HSD consumption, load factors, and running hours for each individual engine. The system should provide the required data to rig instrumentation system and should be available to OIL in WITSML format from Rig instrumentation system.</p> <p>1. Bidder to confirm that the rig is equipped with adequate number of Engines, Generators, Compressors and Power Management system to supply power to Rig equipment and station keeping system and associated systems to suit the Scope of Work requirement.</p> <p>2. The rig must have power packs having minimum power of 7500 HP.</p> <p>3. Rigs must have AC-SCR or VFD Power management system.</p>	
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		<p>4. The engines and generators must be in condition that no OEM specified overhauls will be required during the contract term. Bidder to submit documentary evidence.</p> <p>5. Rig must have adequate and separate high- pressure air system for the entire Rig Motion Compensating System for the drilling depth and water depth as specified in the SOW.</p> <p>6. Rig must have Emergency Shutdown System (ESD) as per the rig specific MODU code and requirement of Classification society.</p> <p>7. Rig must have suitably powered and distributed emergency generator as per the rig specific MODU code and requirement of Classification society. Bidder to specify the number of functions that could be carried out by the Emergency Generator.</p> <p>8. As a minimum, Rig emergency power system must be able to run the Trip Tank, at least one Mud transfer pump to be able to provide water/mud to Cement unit, one BOP Control system motor</p> <p>9. Bidder to provide last updated Engine and Power management system maintenance and repair records.</p>	
6	1. Variable Deck Load and Draft	1. Rig must have sufficient Variable Deck Load (VDL) capacity. Bidder to provide details of VDL during: Drilling/Transit/Survival. Bidder to provide relevant sections from the Marine Operations Manual on VDL and other load characteristics. <b>Minimum Drilling VDL required is 10,000 tons.</b>	Bidder to provide details

	<p>2. Bulk Capacities</p> <p>3. Bulk Loading Station</p>	<p>Maximum Deck Variable load capacity to be indicated below</p> <ol style="list-style-type: none"> <li>1. Operating condition: _____</li> <li>2. During voyage: _____</li> <li>3. During Survival conditions: _____</li> </ol> <p>Bidder to provide variable load calculation sheet(s) for the above figures</p> <ol style="list-style-type: none"> <li>2. Rig must have a storage space capacity for the following to allow uninterrupted operations in the remote areas and also during bad weather season when supply vessels cannot deliver material / bulk to the Rig (around) <ol style="list-style-type: none"> <li>a. Drill water: 10,000 bbls</li> <li>b. Potable water: 2000 bbls</li> <li>c. Fuel oil: 5,000 bbls</li> <li>d. Total Liquid Mud system volume: Minimum 12,000 bbls</li> <li>e. Active and Liquid Mud excluding volume of Base oil Tanks, Sand trap Tanks, Slug pit Tank and Trip tank: Minimum 4,000 bbls</li> <li>f. Bulk Cement and Baryte: 300M3 (in minimum 4 silos)</li> <li>g. Brine: 3,000 bbl (minimum)</li> </ol> </li> <li>3. Rig must have Marine/Bulk Loading hoses on both Port and Starboard side of the Rig. Bidder to provide details of Marine/Bulk loading Hoses (Port and Starboard required) Potable Water Hose/ Drilling Water Hose/Gas Oil Hose/Barite/Bentonite Hose/Cement Hose/ Brine Hose.</li> <li>4. Calibrated flow meter for Water/Diesel is required</li> </ol> <p>The rig should accommodate all Risers; Bidder's provided all tubular &amp; handling tools/equipment/ other material all the time on board during the</p>	
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		<p>Contract period. The rig should be capable to accommodate Company's and Company's service provider equipment/tubulars &amp; handling tools/other material on board the rig without compromising variable load criteria.</p>	
7	Accommodation	<p>A minimum of accommodation for 180 personnel shall be required.</p> <p>Bidder to indicate maximum available POB and following capacities:</p> <ol style="list-style-type: none"> <li>1. Quarters</li> <li>2. Galley</li> <li>3. Hospital with minimum 2 no. of beds</li> <li>4. Office accommodation</li> </ol> <p>OIL's Requirement:</p> <p>Accommodation:</p> <p>The Bidder shall provide Air-conditioned accommodation for 40 OIL and OIL service personnel in addition to the minimum crew as per Appendix-5.</p> <p>Office: The Bidder shall also provide minimum two Air-conditioned Offices for OIL as below:</p> <ol style="list-style-type: none"> <li>1. Office of Company Man: The office shall be equipped with PC peripherals and communication equipment as specified in SoW</li> <li>2. Office for Geologist/ Chemist/ Well Service/Well Test Team Leader</li> </ol> <p>The office shall be equipped with PC peripherals and communication equipment as specified in SoW</p>	Bidder to provide details

		OIL 3rd Party: The Bidder shall also provide minimum two Air-conditioned Offices for OIL 3rd Party in addition to above, for Well Engg DSV / Bundle Services Field Personnel/Directional Drilling Lead Engineer etc. (Internet and communication are covered in Communication Scope)	
8	High Pressure (HP) Mud system	<p>1. Minimum 4 nos 1600/1700 HP Mud pumps and arrangements for any of the pumps to work as Booster pump. Rated Working Pressure (RWP) of the High Pressure (HP) system, HP lines from Pump to Top Drive, to be 7500 psi or greater. Bidder to provide details complete with suitable supercharging pumps and suitable pulsation dampeners. Provision must be there for one of the mixing pumps to be able to work as supercharger for the mud pumps if required.</p> <p>Bidder must provide 5 1/2", 6", 6 1/2" and 7" Liners along with Mud Pumps for the entire drilling program as per the hole size and discharge requirement.</p> <p>2. Minimum Two Rotary Hoses are always required (one for use and one as standby). Need for Auxiliary derrick too.</p> <p>3. Cement lines and manifold: 15000 psi RWP cement line and manifold are required. Two Hoses are always required (one for use and one as standby).</p> <p>4. HP pumping schematic in between the Standpipe Manifold/Choke and Kill manifold and Cementing manifold to be provided.</p>	Bidder to provide details

		<p>Bidder must submit the data sheet of the Mud Pumps.</p> <p>Bidder must ensure the availability of rated pressure of 7500psi lines and manifolds.</p> <p>Rigs should be equipped with strainers on suction side of Mud pumps.</p> <p>Note: Rigs with combination mud pumps (1600-1700 HP &amp; 2200 HP) will not be accepted.</p> <p>The Rig shall be originally designed with 4 mud pumps (documentary evidence to be submitted in bid).</p>	
9	Mud Mixing and Transfer system	<p>The Mud Mixing system shall consist of the following: -</p> <p>a) Low Pressure Hoppers: 2 Nos. complete with surge tanks over hoppers for Baryte and Bentonite and electric motor driven suitable centrifugal pumps with separate suction and discharge lines from / to each mud tank.</p> <p>b) High pressure Jet shearing device - This device, attached to a chemical hopper as well as mud tanks, should serve the purpose of wetting and mixing effectively and efficiently mixing dry materials with liquids, blend, emulsify and stabilize liquid/liquid phases.</p> <p>c) Slug Tank</p> <p>d) Chemical mixing tanks</p> <p>e) Suitable transfer pumps</p> <p>f) All mud tanks to be provided with mud agitators, bottom guns and drill water, Seawater &amp; Base Oil supply lines. Diesel supply lines may also be provided but are not mandatory</p> <p>1. Water Based Mud (WBM) / SOBM systems are proposed to be used.</p>	Bidder to provide details

		<p>2. Mud Shear System: Rig must be equipped with Jet Shearing device including arrangement in the pits for fast shearing of WBM/SOBM polymers and Chemical mixing tank</p> <p>3. Hoppers: Minimum 2 nos. of hoppers for mixing chemicals and a deck hopper for mixing Salt along with suitable centrifugal pumps must be provided. Line arrangement must enable suction from and discharge to each tank.</p> <p>4. Sack Room: Adequate capacity sack storage room to store mud chemicals and LCM material along with Forklift for shifting the material. 5000 sacks capacity</p> <p>5. Trip Tank: Trip tank of at least 50 barrel capacity complete with centrifugal pump and mud level indicator having sensitivity of ½ bbl readable from Driller’s station must be provided. Driller must be able to start and stop the Trip tank.</p> <p>Bidder to confirm Provision of separate slug pit, chemical mixing tank.</p>	
10	Mud Processing system	<p>Mud Handling Equipment shall include the following:</p> <p>a) Shale shaker system: Two (2) or more Scalping type Shakers cascading into a minimum of four (4) shakers, or alternatively a minimum of four (4) Shakers with in-built Scalping deck. The Shale shaker system shall be capable of handling a minimum of 1400 GPM together at a time when fitted with API No. 120 screens while running 12.0 ppg water base mud (OEM specifications must conform to required specifications).</p> <ul style="list-style-type: none"> <li>• All replacement Screens from API Screen No. 20 to 270 of</li> </ul>	Bidder to provide details

		<p>OEM/ OES supplied only to be always made in sufficient quantities.</p> <ul style="list-style-type: none"> <li>• All shakers referred to above must be Linear / Balanced Elliptical / Progressive Elliptical / Tuned Elliptical Motion Shakers capable of generating a 'G' force of 7G or more.</li> </ul> <p>Ditch magnet must be provided in the flow channel.</p> <p>b) Mud Cleaner: Additionally, "One Mud Cleaner System" comprising of a shaker fitted with a Desander with at least two 12" hydro cyclone assemblies and Desilter with at least sixteen 4" hydro cyclone assemblies with a minimum capacity of 1000 GPM.</p> <p>c) Centrifuges: "Two mud Centrifuges" for low gravity solid control and barite recovery with minimum Bowl diameter of 14", variable, bowl speed of 3000rpm or more, a feed rate of about 240gpm and a maximum G force of at least 1900G. Bidder to provide holding tank of sufficient size and required piping system to clean cutting dryer effluent.</p> <p>d) Cutting dryer package: One cutting dryer package including an augur-based delivery system, cuttings dryer, dry solids discharge system, centrifuge to process cutting dryer effluent, mono pump to transfer processed liquid, broad specification of mono pump as follows:</p> <ul style="list-style-type: none"> <li>• Minimum 1 no. of Mono pump for Cutting dryer</li> <li>• Explosion proof body</li> <li>• Maximum speed (rpm) - 450</li> </ul>	
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		<ul style="list-style-type: none"> <li>• Flow rate (max) – 40 m<sup>3</sup> /hr (water)</li> <li>• Drive system: Variator with motor</li> </ul> <p>The cuttings dryer shall have a processing capacity of 60MT/hr and having G Force up to 400 with screw conveyor. Rigs should be equipped with Verti G Cutting Dryer capable of reducing oil on cuttings to less than 10%. One of the two mud centrifuges may also be used to clean the cuttings dryer effluent in which case, a holding tank of sufficient size and required piping system must be provided.</p> <p>e) Screen Washer: Min 2 nos of High Pressure, low volume water spray unit. Portable / handheld HP washer is also acceptable. It should also be capable of spraying base oil when working with SOBMs</p> <p>f) Vacuum Degasser: Minimum capacity of 1000 GPM</p> <p>g) Mud Gas Separator (Poor Boy Degasser) with Gas discharge line of at least 10 inches going to the Crown block for safe discharge and liquid seal of at least 15 psi.</p> <p>h) MOTF: Equipment for Mud mixing on the fly (MOTF) equipment for Pump &amp; Dump operations.</p> <p>i) All solid control equipment, mud centrifuge and cuttings dryer will be maintained and operated by the rig Bidder</p> <p>j) AC Mud lab with IT facility for Operator's 3rd party mud service personnel. (Tool kit shall</p>	
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		<p>be provided by 3rd party service provider).</p> <p>k) Any alternative superior system to shale shakers and mud cleaners capable of handling the desired flow rate and cleaning capability is acceptable.</p> <p>l) Trip Tank: One trip tank of adequate capacity (50bbl), complete with dedicated centrifugal pump and electronic mud level indicator readable from the driller's station. Sensitivity ½ bbl.</p> <p>m) High pressure mud shearing system.</p>	
11	Top Drive (Main & Auxiliary)	<p>Top Drive System</p> <ol style="list-style-type: none"> <li>1. Electric or hydraulic "Top Drive System" with all accessories including pipe handler to drill safely up to required capacity.</li> </ol> <p>The Top Drive Capacity (minimum) 750T, Torque rating continuous 65,000 ft-lbs (minimum) with IBOP Rated Working Pressure of 15000 Psi.</p> <p>Pipe Handler: With minimum 85000 ft-lbs capacity</p>	Bidder to provide details
12	Pipe Handling Equipment and arrangement (Main & Auxiliary)	<ol style="list-style-type: none"> <li>1. Rig must be equipped with Pipe Handling/Casing handling/ Riser handling</li> <li>2. Rig must be equipped with Casing Stabbing arrangements with all safety measures.</li> </ol> <p>CCTV must be available in Driller's cabin to view Derrick operations at Monkey Board and Casing stabbing operations.</p>	Bidder to provide details
13	Deck Cranes	<ol style="list-style-type: none"> <li>1. Rig must be equipped with minimum 3 nos of Deck Cranes with adequate capacity and Boom length to cover all deck area and Rig floor.</li> </ol> <p>Cranes must be able to offload from boats to lift standard Well</p>	Bidder to provide details

		<p>material / Consumables / Third Party Equipment / Company material including containers from both sides of the rig.</p> <ol style="list-style-type: none"> <li>Rig must have suitable Crane reach and arrangement for efficient handling of Riser joints (Slick as well as Buoyant) from deck to Rig floor or vice versa while running in or pulling out Risers.</li> <li>One of the cranes shall be of minimum 85 MT SWL of lifting capacity at port or starboard side, Other Cranes should be of minimum 45 MT SWL Capacity</li> <li>In case the cranes are not part of Cargo Gear Register, the Bidder shall carry out and submit Annual inspections according to API RP 2D by a Qualified Crane Inspector and the respective inspection company should be approved by the relevant flag state under which the asset is registered.</li> </ol> <p>Bidder to provide details and load charts of Crane (Load radius/Boom length/Loads).</p>	
14	BOP	<ol style="list-style-type: none"> <li>The Drilling Unit must be equipped with a <b>TWO sets</b> of 18¾", 15000 psi sour treated / H2S trim Subsea BOP stack c/w <b>one main and other as back up</b> and in accordance with API Std. 53 with minimum five Ram cavities of 15000 psi and two Annular Preventers of 10000 psi rating with one Annular placed in the Lower Marine Riser Pack (LMRP)</li> <li>A minimum of 2 sets of Blind shear rams should be available in BOP stack for shearing the drill pipe and tubing in use out of which one shall be capable of sealing.</li> </ol>	Bidder to provide details

		<p>3. Bidder to indicate if 2 complete BOP stacks are available on the rig.</p> <p>4. If the BOPs are older than 5 years, then the same must have OEM or OEM authorized facility recertification; Re-certification shall not be due during the entire period of the contract. The date of last OEM or OEM authorized facility re-certification of all BOPs is to be provided with documentary evidence.</p> <p>5. If BOP requires mid-term re-certification for any other reason during the term of the contract, then the same shall be acceptable, provided the Bidder replaces the BOPs at its cost during the contract period but prior to expiry of the five yearly re-certification, with those having valid recertification from OEM or OEM authorized facility. However, in such a case, Bidder shall bear all the cost(s) of the other services which are hired by OIL separately and are dedicated to the operations of wells drilled by this rig apart from zero-day rate being applicable for the drilling unit during the period operations are materially affected due to replacement of BOP. Cost of such other services as intimated by OIL, based on the rates at which the services contracts specific to this rig have been concluded, shall be accepted by Bidder and shall be binding on them Also, Bidder shall replace the old BOP with re-certified BOP only during the period between the pull-out of BOP from one well and lowering of BOP in next well. For this purpose, Bidder shall pre-plan with Operator depending upon the expiry of re-certification of existing BOP and</p>	
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		<p>drilling schedule of rig. The BOP stack shall be manufactured and re-certified as per relevant API standards. Configuration, Installation and Testing of the BOP stack shall be as per API STD 53.</p> <p>6. Also, the BOP Stack should have the following minimum Ram Assemblies:</p> <p>Pipe Ram Assemblies - 2 Sets Blind Shear Ram Assembly - 2 Sets Variable Ram Assembly - 1 Set availability of Test Ram facility</p> <p>7. BOP Ram Preventers have locking arrangements to meet the requirement of API Std. 53 and should have adequate hang-off capacity. There shall be at least 4 Nos. of Choke &amp; Kill line outlets with two valves in each line as per API Std 53 requirement.</p> <p>8. The stack connector shall have Vetco H-4 profile (compatible for mandrel size of 27" dia) with bending capacity of 5.25 million ft-lbs or more and shall be equipped with hydrate protection mechanism. Bidder has to submit confirmation in this regard.</p> <p>9. All control systems and associated equipment should follow API Spec 16D Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment.</p> <p>10. Maintenance of BOP equipment is the responsibility of the Bidder at its cost. BOP repairs should be Conducted to API Std 16AR Standard for Repair and Remanufacture of Drill-through Equipment, Latest Edition, Includes Errata 1 (2017)</p>	
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		<p>11. Rig shall be equipped with BOP Pressure Testing Unit for 15000 psi Stack along with Chart Recorder and Charts to meet relevant API requirement.</p> <p>12. The rig shall be Equipped with Multiplex /Electro-hydraulic BOP Control System for operating all BOPs, Hydraulic Choke &amp; Kill line Valves.</p> <p>13. The rig shall be equipped with two nos. of BOP Remote Control Panels located on the drill floor &amp; Tool Pusher's office. The control system shall meet relevant edition of API SPEC 16D</p> <p>14. If BOP control system is older than 5 years, then the same should be re-certified and the certification should be valid throughout the entire period of contract. Bidder to submit copy of recertification from OEM and OEM authorized facilities offered at the time of third-party inspection by OIL nominated third party inspection agency.</p> <p>15. Details of BOP carriage / handling system in moon pool area.</p> <p>16. The rig should be equipped with a suitable Emergency Disconnect Sequence (EDS) system ie provision of "Auto shear" and "Deadman" system and there shall be a minimum of two separate locations from where the EDS can be operated in compliance with the API Std 53.</p> <p>17. The rig should provide 18-3/4" BOP drift</p> <p>18. Riser must have provision of minimum 3 lines for Choke, Kill, and Booster lines (4" ID). Choke, kill lines must have minimum 3" ID and with rated working pressure to match BOP stack. The equipment must meet the requirement of latest API</p>	
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		<p>19. Choke and Kill Manifold: Sour treated/ H<sub>2</sub>S trim C &amp; K manifold and lines with rated working pressure to match BOP stack along with Control Panel as per API standard.</p> <p>20. Rig to be equipped with BOP handling system and moon pool size so as to be able to safely run and pull BOP stack, Industry standard Mud Mats and other subsea wellhead components and well testing equipment. Minimum moon pool opening must be 25ft x 10ft.</p> <p>21. Inside BOP, Landing Sub and Drop-in check valves and Drill Pipe Safety Valves of 15,000 psi RWP (2 nos each) for the main drill pipe and Landing string of the Bidder.</p> <p>22. The Rig provides Methanol and Glycol to prevent hydrate formation on BOP.</p>	
15	Marine Riser and Riser Tensioner Systems	<ol style="list-style-type: none"> <li>1. Rig shall be equipped with suitable Riser System, Telescopic Joint, Flex/Ball Joint etc., along with required Handling Tools and Accessories for 18¾" Wellhead System and shall be capable to operate in 3400 m of water depth in environmental and met oceanic condition prevailing in east coast offshore India. Electronic Riser Angle measurement system should be provided.</li> <li>2. Marine Drilling Riser System shall meet the requirements of latest edition of API RP-16Q - Design, Selection, Operation, Maintenance and Certification of Marine Drilling Riser Systems.</li> <li>3. Rig to provide Telescopic joint with inner barrel ID not less than 19" and min. ID at connector not to be less than 19".</li> <li>4. Rig to provide Risers (21" OD) with Riser ID not to be less than</li> </ol>	Bidder to provide details from the OEM Equipment manufacturer.

		<p>19" and min. ID at Riser connector not to be less than 19".</p> <p>5. Rig to provide min. 2 Risers of 21" OD and 19.25" ID / 0.875" WT and min, ID at Riser connector not to be less than 19".</p> <p>6. All other equipment like Flex joint etc. ID not to be less than 18.75".</p> <p>7. Note: In case ID of riser body of all risers (21" OD) of rig is equal to or greater than 19.25" with min ID at riser connector not less than 19", then separate requirement of 2 risers of 21" OD/19.25" ID of riser body with min ID at riser connector not less than 19" shall not be applicable.</p> <p>8. If Riser and Telescopic Joint are older than 5 years then the same should have re-certification from OEM and OEM authorized facilities/COC and the certification should be valid throughout the entire period of contract</p> <p>9. Choke &amp; Kill lines on Riser System shall be minimum 4" ID with 15000 psi pressure rating</p> <p>10. Riser system shall have at least one auxiliary line of min. 3" ID that can be used as Booster line.</p> <p>11. Riser Tensioner System shall be capable to operate in 3400 m of water depth in environmental and met-oceanic condition prevailing in east coast offshore India.</p> <p>12. Rig shall be equipped with suitable riser buoyancy system for operation in 3000 m of water depth.</p> <p>13. Bidder to provide documentary evidence that the compensation system is adequate for the water depth mentioned and other</p>	
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		<p>requirement for station keeping / riser management/others as applicable.</p> <p>Details of the separate system of HP Compressors to be provided.</p>	
16	Diverter System	<p>Rig shall be equipped with Diverter System of minimum OD of 49 ½" and shall meet applicable API Std</p> <p>If diverter systems are older than 5 years, then the same should have re-certification from OEM and OEM authorized facilities. COC and the certification should be valid throughout the entire period of contract</p>	Bidder to provide relevant details from the OEM Equipment manufacturer.
17	Drill String Motion Compensation System Main & Auxiliary	<p>The Rig must be equipped with drill string active / passive type Motion Compensation System</p> <ul style="list-style-type: none"> <li>• Minimum locked hook load rating of 750 T or more as per drilling depth capacity</li> <li>• <b>Minimum</b> compensated Capacity of <b>800,000 lbs</b> or more.</li> <li>• Minimum Compensator Stroke must be 25 ft or more</li> <li>• In case of active heave system, it shall have minimum specifications as above.</li> </ul> <p>Bidder to indicate whether rig is equipped with Passive or Active Heave Compensator and where it is installed in derrick.</p>	Bidder to provide relevant details from the OEM Equipment manufacturer.
18	Casing and Tubular management system	<p>1. Tentative Casing policy envisaged to drill the wells would require use of casing sizes 36", 30", 20", 16", 13.3/8"/14", 11 ¾", 10 ¾", 9 5/8"/9 7/8", 7 5/8", 7" and 5". Bidder must provide all the handling tools for these casing sizes, including but not limited to the following: All the bushings for these sizes of casing are required to be provided with adequate redundancies and spares.</p>	Bidder to provide details

		<ul style="list-style-type: none"> <li>• Manual slips for the sizes of casings specified.</li> </ul> <ol style="list-style-type: none"> <li>2. Casing Hydraulic power Tong with jaws for all the above listed casing sizes.</li> <li>3. Casing Tongs with jaw for 30", 20", 13.3/8", 9.5/8", 7 casing sizes (Makeup and Breakout).</li> <li>4. Side Door elevators/Single Joint Pick-up elevators/Slips for all casing sizes as specified.</li> <li>5. One set slip type air operated Spider/Elevator 500 T capacity with jaws for 13.3/8"/9.5/8"/7" is required.</li> <li>6. Rotating Casing scrapers for 7" and 9.5/8 casing with redress kits.</li> </ol>	
19	Fishing Tools	<p>The rig must be equipped with fishing tools to enable fishing of all Bidder provided drilling tools and tubulars, plus Operator provided casing, such as Overshot, Junk Subs, Reverse Circulating Junk Baskets, Junk Mills, Taper Mills, Magnets, Impression Blocks, Safety Joints, Fishing Jars, Jar Intensifiers, etc.</p> <p>Ditch magnet is provided in the flow channel. Operator shall have right to use above fishing tools if they are suitable for any fishing operations involving Operator's/ Operator's Third Party's tools.</p> <p>Complete list of fishing tools &amp; accessories to be submitted along with technical bid. It should be noted that above fishing tools are onboard for hole sizes mentioned in the Drilling Programme.</p>	Bidder to provide details
20	Drill string and accessories	<p>The Rig shall be equipped with a suitable landing string &amp; drill stem to meet the following requirements:</p> <p>(i) Landing String: Capable of lowering 9-5/8"/9-7/8", 47/53.5 ppf and 7", 29 ppf casing in up to 7500m in water depth of up to 3400m.</p>	Bidder to provide details

		<p>(ii) Drilling Stem: (BHA &amp; Drill Pipes) suitable for drilling 42" to 6" hole sizes. (All Drill pipes in Range-II or above, new/premium class, preferably without hard banding on tool joints. Tool joints having hard banding of non-abrasive, non-tungsten carbide material applied countersunk and flushed with tool joint)</p> <p>Bidder to provide drill string as below:</p> <p>1. Drill Pipe</p> <p>Main Drill Pipe string:</p> <ul style="list-style-type: none"> <li>• 5" x 19.50 lb/ft x S135 – 3000 meters plus 5" x 19.50 lb/ft x G 105 - 3000 meters</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>• 5.1/2" x 21.9 or 24.7 lb/ft x S135 - 3000 meters plus 5.1/2" x 21.9 or 24.7 lb/ft x G 105 - 3000 meters</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>• 5.7/8" x 26.4 or 28.67 lb/ft x S135 - 3000 meters plus 5.7/8" x 26.4 or 28.67 lb/ft x G 105 - 3000 meters</li> </ul> <p>Or</p> <p>One full string of 5" x 19.50 lb/ft x S135 - 6000 meters</p> <p>Or</p> <p>One full string of 5.1/2" x 21.9 or 24.7 lb/ft x S135 - 6000 meters</p> <p>Or</p> <p>One full string of 5.7/8" x 26.4 or 28.67 lb/ft x S135 - 6000 meters</p> <ul style="list-style-type: none"> <li>• 3.1/2" x 15.5 ppf x G-105 or S- 135 - 2000 meters</li> <li>• Integral Pup Joints (2 each) for main drill pipe of 5"/5-1/2"/5-7/8" and 3-1/2" size with lengths 5 feet, 10 feet and 15 feet.</li> </ul> <p>2. Heavy Weight Drill Pipe</p> <ul style="list-style-type: none"> <li>• 5-7/8" X 46,29 ppf or 5-1/2" X 48 or 55 ppf - 36 joints</li> <li>• 3-1/2" X 26.7 ppf - 24 joints</li> </ul>	
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		<p>3. Drill Collars</p> <ul style="list-style-type: none"> <li>• 9.1/2" - 6 joints</li> <li>• 8"/8.1/4" - 30 joints</li> <li>• 6.1/4" / 6.1/2" / 6.3/4" D/C – 30 joints</li> <li>• 4.3/4" D/C – 30 jts</li> </ul> <p>4. Drill string standards and Inspection standards</p> <p>All Drill pipes in Range-II, new / premium class as per API RP 7G-DS1, category IV and other applicable API standards on tool joints and other properties. Tool joints must have hard banding of non-abrasive, non-Tungsten carbide material applied countersunk and flushed with tool joint and minimum inspection as per DS1, category IV. Bidder to provide inspection certificates prior to commencement of the contract.</p> <p>5. Crossovers</p> <p>All Substitutes matching to Bidder's drill string, fishing tools and Bidder supplied equipment and for the bits, as per the Casing Policy to be used. Complete list of Substitutes to be submitted along with technical bid.</p> <p>A minimum of two no. of each substitute including saver sub and bit subs is required. The bit subs must be bored suitable for float valves.</p> <p>Bidder to provide float valves compatible with different sizes of bits.</p> <p>6. Bit Breakers</p> <ul style="list-style-type: none"> <li>• Suitable bit breakers for 26", 17.1/2", 12.1/4", 8.1/2" and 6" bits</li> </ul> <p>7. Drilling Jar and Bumper Sub</p> <ul style="list-style-type: none"> <li>• Minimum three of Drilling Jars and Bumper Subs each for 8" and 6.1/2" sizes,</li> </ul>	
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		<p>having compatible connections to the Bidder provided tubulars.</p> <p>8. Drilling Jar and Bumper Sub</p> <ul style="list-style-type: none"> <li>• Minimum three of Drilling Jars and Bumper Subs each for 8" and 6.1/2" sizes, having compatible connections to the Bidder provided tubulars.</li> </ul> <p>9. Hole Openers</p> <ul style="list-style-type: none"> <li>• 42", 36" and 26" hole openers.</li> </ul> <p>10. Stabilizers</p> <p>Suitable stabilizers for drilling to be provided as below</p> <ul style="list-style-type: none"> <li>• 26" string IB stabilizer – 1 no.</li> <li>• 17 3/8" string IB stabilizer- 2 nos.</li> <li>• 14 5/8" string IB stabilizer- 1 no.</li> <li>• 12 1/8" string IB stabilizer-2 nos.</li> <li>• 8 3/8" string IB stabilizer- 2 nos.</li> <li>• 8" string IB stabilizer- 2 nos.</li> </ul> <p>Note: Stabilizers should be of slight helix 3 blade design type.</p>	
21	Tubular Handling Tools	<p>1. Bidder is to ensure that the rig is equipped with all necessary handling tools (two of each size), including but not limited to, Elevator, Slip, Tong, Power Tong, Pipe Spinner, Safety Clamp, Elevator Link, etc. for Bidder's tubulars.</p> <p>2. All tubular handling equipment must be inspected prior to commencement of contract, with certificates provided to the Company.</p> <p>3. Bidder must provide at least 2 sets of Drill Pipe Elevators with 350/500 Short Ton (ST) capacity for the main drill pipe string.</p>	Bidder to provide details

		<p>4. Bidder must provide at least 2 sets of the following sizes of Elevator links:</p> <ul style="list-style-type: none"> <li>• 2 sets of 4-1/2" x 10 ft x 500 ST</li> <li>• 2 sets of 4-3/4" x 15 ft x 500 ST</li> <li>• 2 sets of 3-3/4" x 10 ft x 350 ST</li> <li>• 2 sets of 3-3/4" x 50 ft x 350 ST</li> </ul> <p>5. Bidder must provide 2 sets of Slips for all Tubulars as specified</p> <p>6. Bidder must provide 2 sets of Make-up and Break out Manual Tongs of HT-65/equivalent and HT 100/equivalent</p> <p>7. Bidder must provide Lifting subs for all Drill Collars as specified.</p> <p>8. Bidder must provide 2 sets of Safety Clamp for the Tubulars as specified</p> <p>9. Bidder must provide Iron Roughneck (or equivalent) for efficient pipe make up and break out</p>	
22	Cementing unit and Batch Mixer	<p>Bidder will provide Cementing Unit of following make of model as identified or above:</p> <p>a) Dowell Schlumberger: Model-CPS 361 or above  b) BJ: Model-RAM 35-8-5 or above  c) Halliburton Model: Advantage or above</p> <p>Electric Motor or Diesel Engine driven Horizontal Twin Pump Cementing Unit with appropriate plunger sizes and pumping pressures.</p> <p>Cementing Unit must have recirculating mixer system complete with all accessories and 100-barrel batch mixers</p> <p>Cementing Unit must have 15000 psi rated pumping manifold</p>	Bidder to provide details

		<p>Cementing Unit must have as a minimum:</p> <ul style="list-style-type: none"> <li>• Two Triplex Plunger Pumps have 15,000 psi rated working pressure and maximum discharge rate of 10-11 BPM per pump.</li> <li>• Centrifugal water mixing Pumps, rated working pressure-200-220 psi minimum, and maximum discharge rate of 10.5 bbl/min per pump.</li> <li>• Slurry Supercharger / Booster centrifugal pump rated working pressure 40-50 psi and maximum flow rate 20-22 BPM.</li> <li>• Standard high-pressure discharge and release manifold rated working pressure 15000 psi (same working pressure as of cementing unit)</li> <li>• Cementing unit must have one number Densimeter which can measure slurry density accurately.</li> <li>• Provision for monitoring and recording system to record and show the real time parameters such as pressures, flow rate, density etc up to 8 operating parameters</li> <li>• Cement surge tank of 70-80 cu.ft. capacity with load cell arrangement is to be provided</li> <li>• Company will provide experienced personnel to run the cementing unit and batch mixer as and when required.</li> <li>• If the cementing unit is owned by the Bidder, then Bidder shall always maintain minimum one set of operational spares as per recommendation of cementing unit and batch mixer manufacturer.</li> </ul> <p>Low pressure butterfly valves must be pneumatic actuated type with control valves at cementing Company console panel.</p>	
23	Oil & Gas Burner Booms	1. The Drilling Unit must have two (02) Oil and Gas burner boom	Bidder to provide details and drawing

	<p>&amp; Well Testing system</p>	<p>assembly on port and star board side, complete with king post, burner head, base plate, tie back rods and wire rope slings. The booms when deployed shall be perpendicular to the port and starboard sides of the rig.</p> <p>2. Oil &amp; Gas Burners for complete &amp; smokeless burning of the products of the test well on offshore rigs, shall be supplied with the following facilities:</p> <ul style="list-style-type: none"> <li>a) Should have minimum three burner heads mounted on boom.</li> <li>b) Oil capacity should be 1000 m3/day.</li> <li>c) Total gas capacity should be 100 MMSCF/DAY</li> <li>d) Oil burning should be through full atomization of fluid to be disposed off for efficient combustion at varying flow rates / pressures with minimum backpressure. Dropping of liquid below the burner is not acceptable.</li> <li>e) LPG/Propane ignition pilot system with spark plug facility to be provided near burner heads &amp; gas line outlet to ignite oil &amp; gas efficiently with control at the base of burner. Pilot to be fully protected from water (cooling spray).</li> <li>f) Oil &amp; gas pipeline should be suitable for sour service as per NACE specs MR-01-75 (latest edition).</li> </ul> <p>3. Burner boom to support heads, provide safe walkway to approach burner head, and support all piping for oil, gas, water, air &amp; LPG and should have the following:</p> <ul style="list-style-type: none"> <li>a) Boom length 60 ft minimum and should be suitable to fold 90 deg Vertically/ horizontally to facilitate boat operation during well testing.</li> <li>b) Should have inbuilt handrails and steel grating walkways for safe</li> </ul>	<p>of the well test lines on the rig.</p>
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		<p>access for people to burner head (chains not acceptable)</p> <p>c) Should be rugged enough to withstand 150 KMPH wind speed in hanging position.</p> <p>d) The flow line piping for oil, gas and air should be of following size and end connections, as per NACE MR0175 (latest edition).</p> <p>Flow/line Size/ End Connection:</p> <p>Oil / 3" / 3" WECO Fig 602 Female</p> <p>Gas / 4" / 4" WECO Fig 602 Female</p> <p>Water / 3" / 3" WECO Fig 602 Female</p> <p>Air / 2" or 3" / (2" WECO Fig 206 Female / 3" WECO Fig 602 Female)</p> <p>(In case 3" Fig 602 end connections are provided for the Air line, then suitable change over to convert the end connection to 2" WECO Fig 206 Female should be provided)</p> <p>e) Oil flow lines to have 3" x 1400 PSI WP check valve and airline to have 2" x 500 PSI WP check valve at the end of the burner boom.</p> <p>f) Suitable accessories including slings, base plate, kingpost &amp; tie rods should be supplied for installation of burner.</p> <p>g) The pilot ignition start-up switch boxed in fireproof and explosion proof case with supply cable of 100' length compatible with power supply of rig and fitted with fuse etc.</p> <p>Well Testing Lines:</p> <p>a) 3" - 1440 PSI 602 Downstream line to connect oil line &amp; 4" - 1440 PSI 602 Downstream line to connect gas line of the burner with the well test separator including Oil &amp; Gas diverters.</p> <p>b) Provision for cooling water supply, water jet/spray system</p>	
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		<p>required during burning of hydrocarbon</p> <p>Note:</p> <ul style="list-style-type: none"> <li>• DP Rig may have only one burner boom assembly as above if rig is capable to weathervane as per requirements of testing operations.</li> <li>• Provision for cooling water supply, water jet/spray system required during burning of hydrocarbon.</li> </ul>	
24	Water Maker	<p>1. Water maker of adequate capacity of around 40 to 50 tons per day</p> <p>Water maker plant shall be able to meet all daily pot water requirements of the rig considering all Bidder / Bidder's Third-Party crew and Operator /Operator's Third-Party crew.</p>	Bidder to provide details
25	Helideck & Helicopter Re-fueling system	<p>Helideck must be suitable for landing and take-off of twin-engine helicopters.</p> <p>Helideck should be suitable for taking off and landing AW-139/S-92 helicopters or equivalent. Landing system should meet the latest CAP 437 regulations and OISD standard Circular No. AV22031/55(H)/2014-FSD Vol-1 dates Feb 2018 providing "Joint Standard Operating Procedure, Night Medical Evacuation Operations" Helideck and its markings shall be as per Civil Aviation requirement, Series B Part III of DGCA, Govt of India</p> <p>Helideck should also have following lightings available:</p> <ul style="list-style-type: none"> <li>• Peripheral Lightings.</li> <li>• TD/PM Lights (Touch down/Position Marking)</li> <li>• H marking light.</li> <li>• Lit up windsock</li> <li>• HAPI (Helicopter Approach Path Indicator)</li> </ul>	Bidder to provide details

		Rig should have helicopter re-fueling system, approved by DGCA with adequate safety devices.	
26	Safety, Fire-Fighting and Life Saving Equipment	<ol style="list-style-type: none"> <li>1. Drilling Unit must be provided with all safety, firefighting, gas detection and lifesaving equipment as per the requirement of SOLAS, IMO and other relevant standards and regulations.</li> <li>2. Drilling Unit must be equipped with Early Kick Detection equipment to detect Combustible and Sour gases as per international practices.</li> <li>3. FFA and LSA should have provisions for mitigating risks associated with Methanol and Glycol.</li> <li>4. Offered Rig shall be equipped with - Life rafts, Lifeboats, Rescue boats, Life Vests, Working Vests, Ring Life Buoys as per international regulation.</li> <li>5. Minimum of two portable gas detectors</li> <li>6. Bidder to provide Class approved Safety Plan (LSA/FFA and others), Hazardous area plan</li> <li>7. Bidder to provide emergency showers, eyewash stations, first-aid kits and emergency breathing apparatus in compliance with Company's Policy and internationally accepted standards for all on-board personnel.</li> <li>8. Rig should be equipped with 2 Citadels (fortified compartments) for any untoward eventuality.</li> </ol>	Bidder to provide details
27	SOBM Compatibility	Rig should be equipped with suitable SOBM equipment and material commensurate with scope of work requirements like Compatible elastomers, compatible flexible	Bidder to provide details

		hoses, drains from the rig floor leading up to holding Pit/Tanks, Pressure washers, Mud vacuum for SOBM cleaning, Mud savers etc	
28	Communication Equipment	<p>1. Adequate communication equipment as per the requirement of International Marine regulation and practices are to be provided with the unit for the following</p> <ul style="list-style-type: none"> <li>• Rig to Shore base communication.</li> <li>• Short range field communication.</li> <li>• Ground to air communication.</li> <li>• Emergency distress communication.</li> <li>• Rig PA system</li> <li>• E-mail</li> <li>• Photocopier</li> </ul> <p>Note: Please refer to <b>Appendix 1 Exhibit 4</b> for full scope of work.</p>	Bidder to provide details
29	Data Acquisition Recording and Transmission System	<p>Drilling Unit must be equipped with electronic drilling data acquisition, including recording and transmission system with capability of real time transmission of all recorded drilling data to base at Company designated offices.</p> <p>The system will also be required for real time transmission of other data, such as mud logging, wireline logs, LWD and MWD data and well testing data.</p> <p>Note: Please refer to Appendix 1 <b>Exhibit 4</b> for full scope of work.</p>	Bidder to provide details
30	Air Conditioning system	Suitable ventilation and air-conditioningsystem. Bidder to provide the HVAC plan of the rig.	Bidder to provide details
31	Environmental and Pollution control	Drilling Unit must be near-zero discharge and rig specific plans for waste containment for Mud/Dirty oil and others such as suitable Sewage Treatment Plant to be provided.	Bidder to provide details

		<p>Bidder must provide the Class approved rig specific Garbage Management Plan (GMP), SOPEP and any other relevant data</p> <p>Bidder must provide Tier 1 Oil Spill response kit</p>	
32	Miscellaneous	<ol style="list-style-type: none"> <li>1. Bidder shall provide Minimum two nos. of Inside BOP &amp; Drill Pipe safety valve (rating 15000 psi) for each size of drill pipe.</li> <li>2. Rig shall be equipped with full set of working instrumentation like weight indicator complete with suitable wire line anchor, mud gauge assembly, tong torque indicating system, rotary/TDS rpm, rotary/TDS torque, mud pump SPM tachometer system, mud volume totalizer, mud flow fill and stroke indicating system, pit level indicator, Recorder to record weight, mud pressure, rotary torque and rpm, mud pump SPM and rate of penetration.</li> <li>3. Calibrated Flow Meters for diesel, Drill and Potable water for undisputable record of HSD &amp; water.</li> <li>4. Welding Gensets, Gas Cutters, Torches and accessories.</li> <li>5. Cargo nets, cargo baskets, personnel baskets, towing lines, slings, hoses for transferring barytes, cement, potable water, drill water, diesel etc, must be provided.</li> <li>6. All lifting appliances to be duly certified</li> <li>7. All lubricants for Bidder's equipment and Bidder's hired equipment will be supplied by Bidder at its cost, including for Cementing Unit.</li> <li>8. PPE for Bidder's crew as per relevant standards and</li> </ol>	Bidder to provide details

		<p>specifically PPE for SOBMs handling such as Barrier Cream, Disposable Coveralls, Full face protection, Rubber apron and others.</p> <p>9. All other miscellaneous equipment required for Rig and drilling operations. which are not specifically detailed in here, but which are required for normal operations according to good oilfield practice where these are related to items already furnished by the Bidder and/or are normally Bidder supplied.</p> <p>10. Bidder should have reverse circulating jetting tools for cleaning of ram cavities in BOP and well head area to trap debris during well testing / subsea well completions</p> <p>11. Rig shall be equipped with Detection equipment to detect Combustible &amp; sour gases as per international practices.</p> <p>12. Suitable ventilation and air-conditioning system. Details on system performance and rating of the air-conditioning and ventilation system</p>	
33	General	<p>1. All Rig Equipment such as Draw-works, Mud Pumps, Main Generator Sets, Main Engines etc. must be in perfect working condition and must be capable of operating at full-rated capacity.</p> <p>2. Spare parts for Bidder provided tools and equipment, or replacement of Bidder provided equipment, and tools are to be provided by Bidder.</p> <p>3. The Drilling Unit must be capable of always accommodating onboard marine riser and all of the Bidder's provided tubulars and</p>	Bidder to provide details

		<p>handling tools during the Contract period.</p> <p>4. The Drilling Unit must be able to accommodate Company's third-party service provider equipment on board the rig without compromising variable load criteria.</p> <p>The Drilling Unit must have space and provision for power, water, diesel and air as required for installation of Company provided third-party services such as Mud Logging unit, Production testing equipment, Slick line unit, Nitrogen pumping unit, Wire line Logging Unit, Mud Lab, etc. Bidder is to provide drawing of General Arrangement of deck area indicating the designated space for the installation of the third-party services equipment listed above.</p>	
34	Compliances required to operate in Indian Offshore	<p>Compliance with Various Regulatory Body Requirements. Bidder must comply with the following but not limited to:</p> <p>Bidder to submit all relevant documents required under Schedule IV and other applicable rules for obtaining to operate for compliance of Petroleum and Natural Gas (Safety in Offshore Operations) Rule 2025 issued by MOP&amp;NG, India being regulated by Oil Industries Safety Directorate (OISD). First part of schedule IV to be submitted 60 days prior to start of operations and Rule 30 is to be submitted at least 20 days prior to start of operations to accept the rig by Company</p> <ol style="list-style-type: none"> <li>1. MODU Safety Certificate from concerned classification society</li> <li>2. Drilling Unit must be compliant with International Ship and Port facility Security (ISPS) Code as applicable</li> <li>3. Drilling Unit must be equipped with AIS (Automated Information System) (ODAG)</li> </ol>	Bidder to provide details

		<ol style="list-style-type: none"> <li>4. Drilling Unit must be equipped with CCTV (with Recording capability) at Helideck</li> <li>5. International Oil Pollution Prevention (IOPP) Certificate to be provided</li> <li>6. Sewage Pollution Prevention (SPP) Certificate to be provided</li> <li>7. Rig shall be capable of handling MOEF guidelines for drill cuttings disposal</li> <li>8. Bidder to comply verification of fitness of offshore drilling rigs as per OISD guidelines note on Rule-30 on "Verification of fitness of offshore installation" pertaining to offshore drilling rigs, available on OISD website <a href="http://www.oisd.gov.in">www.oisd.gov.in</a>.</li> <li>9. Bidder also to comply latest applicable guidelines issued by OISD for operating the rig in Indian water.</li> <li>10. OLS (Obstruction Limitation Surface) survey report</li> <li>11. TPI (Third Party Independent) audit report.</li> <li>12. AWS (Automatic Weather Station)</li> <li>13. OFS (Obstruction Free Sector) angle should not be less than 210 degrees.</li> <li>14. Helideck and its markings must be as per Civil Aviation requirement, Series B Part III of DGCA, Govt of India.</li> </ol>	
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**Drilling Unit must be compliant with, but not limited to, the applicable API standards as follows:**

API Spec 4E	Specification for drilling and well servicing structures
API Spec 4F	Specification for drilling and well servicing structures
API RP 2D	Operations and Maintenance of Offshore Cranes
API Spec 5CT	Specification for casing and tubing (combination of former specs 5A, 5AC, 5AQ and 5AX - Casing and tubing requirements)

API Bull 5C2	Bulletin on performance properties of casing, tubing and drill pipe
API Spec 5D	Specification for drill pipe (combination of specs 5A and 5AX, drill pipe requirements)
API Bull 5A2	Bulletin on thread compounds for casing, tubing and line pipe
API RP 5A5	Recommended practice for field inspection of new casing, tubing and plain end drill pipe
API RP 5C1	Recommended practice for care and use of casing and tubing
API Spec 6A	Specification for valves and well head equipment
API Spec 6D	Specification for pipeline valves (steel gate, plug, ball and check valves)
API Spec 7	Specification for rotary drilling equipment
API Spec 7B-11C	Specification for internal combustion reciprocating engines for oil field service
API Spec 7F	Specification for oil field chain and sprockets
API RP 7G	Recommended practice for drill stem design and operating limits
API Spec 7J	Specification for drill pipe/casing protectors (DP/CP)
API Spec 8A	Specification for drilling and production hoisting equipment
API Spec 8C	Specification for drilling and production hoisting equipment (PSL 1 and PSL 2)
API RP 8B	Recommended practice for hoisting tool inspection and maintenance procedures
API Spec 9A	Specification for wire rope
API RP 9B	Recommended practice on application, care and use of wire rope for oil field service
API Spec 13A	Specification for oil well drilling fluid materials
API RP 13B	Recommended practice for standard procedure for field testing drilling fluids
API Bull 13C	Bulletin on drilling fluids processing equipment
API RP 13E	Recommended practice for screen cloth designation
API RP 13G	Recommended practice for drilling mud report form
API RP 13I	Recommended practice, standard procedure for laboratory testing drilling fluids
API RP 13J	Recommended practice for testing heavy brines
API SPEC 16A	Drill through equipment
API SPEC 16C	Choke and Kill Systems
API SPEC 16D	Control System for well control system
API RP 49	Recommended practices for safe drilling of well containing hydrogen Sulphide
API RP 53	Blow out protection equipment systems for drilling wells
API RP 54	Recommended practices for occupational safety and health for oil and gas well drilling and servicing operations
API RP 59	Recommended practices for well control operations

**Note:** Bidder shall provide details of equipment as per IADC STANDARD FORMAT EQUIPMENT list. This can be found on the [IADC website IADC Standard Format Equipment List – Semi-Submersible / Drill Ship Units - IADC.org](http://www.iadc.org)

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**TECHNICAL SPECIFICATION OF ROV AND ASSOCIATED EQUIPMENT****1. ROV System General**

<b>Description</b>	<b>Specification</b>
<b>1. GENERAL</b>	
Weights (maximum)	
Vehicle, kg	
Tether Management System / Cage, kg	
Umbilical winch, kg	
Control container, kg	
Handling system, kg	
Power packs, kg	
Area Classification (zone 1 or 2)	
Power Supply and Requirement	
Vehicle	
Tether Management System	
Umbilical winch	
Control container	
Handling system	
Maximum total power consumption	
Maximum total deck space requirement	
Main Power Supply	
Voltage	
Amperage	
Frequency	
Fault rating (max short-circuit current rating)	
Operating Water Depth, meters (maximum)	
Operational radius, meters	
Environmental Operating Limits	
Wind speed, knots	
Wave height, meters	
Wave period, sec	
Surface current speed, knots	
Sub-sea current speed, knots	
Vessel heave, meters	
<b>2. VEHICLE</b>	
Manufacturer	

Description	Specification
Type	
Year of manufacture	
Dimensions	
length, meters	
width, meters	
height, meters	
Frame	
Frame Load Capacity (under slung), kg	
Depth Rating, meters	
Auto control and sensing system	
Auto heading	
Auto depth	
Auto attitude	
Auto roll control	
Auto pitch control	
3. MAIN HYDRAULIC SYSTEM	
Hydraulic Power Unit. Output HP	
4. BUOYANCY	
Description	Specification
Fixed Buoyancy	
payload, kg	
Variable buoyancy? (yes/no)	
payload, kg	
Propulsion	
forward thrust , speed kg , m/sec	
vertical thrust , speed kg , m/sec	
lateral thrust , speed kg , m/sec	
Turning rate, degrees/sec	
Thrust, lifting capacity in front of vehicle kg, kg	
No of thrusters and positions	
5. RIGHT HAND MANIPULATOR	
Manufacturer	
Type	
Construction	
Control method	
No of functions	
Horizontal reach, cm	
Vertical reach below lowest part of ROV, cm	
Lift capacity at full extension, kg	
Push/pull force capacity, kg/kg	
Claw rotation torque, n-m	
Description	Specification
Type	

Year of manufacture	
Dimensions	
length, meters	
width, meters	
height, meters	
Frame	
Frame Load Capacity (under slung), kg	
Depth Rating, meters	
Auto control and sensing system	
Auto heading	
Auto depth	
Auto attitude	
Auto roll control	
Auto pitch control	
3. MAIN HYDRAULIC SYSTEM	
Hydraulic Power Unit. Output HP	
4. BUOYANCY	
Description	Specification
Fixed Buoyancy	
payload, kg	
Variable buoyancy? (yes/no)	
payload, kg	
Propulsion	
forward thrust , speed kg , m/sec	
vertical thrust , speed kg , m/sec	
lateral thrust , speed kg , m/sec	
Turning rate, degrees/sec	
Thrust, lifting capacity in front of vehicle kg, kg	
No of thrusters and positions	
5. RIGHT HAND MANIPULATOR	
Manufacturer	
Type	
Construction	
Control method	
No of functions	
Horizontal reach, cm	
Vertical reach below lowest part of ROV, cm	
Lift capacity at full extension, kg	
Push/pull force capacity, kg/kg	
Claw rotation torque, n-m	
Description	Specification
Still picture camera	
Moveable arm for pan / tilt unit	
8. LIGHTING	
No. of lights-vehicle	

Lighting capacity-vehicle	
No. of lights manipulator	
Lighting capacity-manipulator	
<b>9. SONAR</b>	
Manufacturer	
Type	
Frequency	
Range	
Scanning sector	
Scanning speed	
<b>10. SENSORS AND EQUIPMENT</b>	
Altimeter	
Pitch/Roll sensors	
Compass/Gyro system	
Current meter	
Temperature sensor	
Emergency flasher	
Emergency locating pinger / beacon	
Mini-transponder	
Monitor, cable and signals for drill floor	
Monitor, cable and signals for Operator office	
Brackets for mounting additional equipment on vehicle	
<b>11. UMBILICAL</b>	
Description	Specification
Manufacturer / Type	
Length, m	
Diameter, cm	
Construction	
Weight, kg	
Breaking strength, kg	
Cable insulation material	
Conductors	
Telemetry	
Video	
Spare conductors	
Redundancy for signal and power? (yes / no)	
<b>Description</b>	<b>Specification</b>
<b>12. UMBILICAL WINCH</b>	
Dimensions	
length, meters	
width, meters	
height, meters	
Manufacturer	

Line pull, kg	
Line speed, meters/sec	
Brake (manual/auto)	
Storage (on drum), meters	
Remote control (y/n)	
Active heave compensator	
<b>13. TETHER MANAGEMENT SYSTEM</b>	
Manufacturer / Type	
Dimensions	
length, meters	
width, meters	
height, meters	
Tether length	
Cameras (no. and type)	
Pan/tilt	
Lighting	
Power pack	
Thrusters for propulsion and station keeping	
Gyro compass	
<b>14. CONTROL CABIN</b>	
Dimensions	
length, meters	
width, meters	
height, meters	
Area Classification	
Control console	
No. of video monitors and type	
No. of digital video recorders and type	
Video timer	
Computerized video and photo handling	
Colour printer	
Ground fault detection/shutdown system	
<b>15. AUXILIARY POWER PACK / CLEAN POWER UNIT</b>	
Auxiliary power pack /clean power unit? (yes / no)	
Manufacturer / Type	
Description	Specification
Dimensions	
length, meters	
width, meters	
height, meters	
Area Classification	
<b>16. CURRENT METER</b>	
Manufacturer / Type	

Dimensions (L x W x H. cm)	
Weight, kg	
Operating water depth range, meters	
Operating temperature range, °C	
Current speed measurement:	
Sensor	
Range	
Precision	
Current direction measurement:	
Sensor	
Range	
Precision	
Memory	
Recording Frequency	
Battery life	
17. TEMPERATURE PROBE	
Manufacturer / Type	
Dimensions (L x W x H. cm)	
Weight, kg	
Temperature measurement range, °C	
Precision	
Memory	
Water depth rating, meters	
Battery life	
18. ADDITIONAL EQUIPMENT	

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**DRILLING UNIT DESIGN PARAMETERS**

<b>Parameter</b>	<b>Survival Condition</b>	<b>Operating Condition</b>	<b>Transit Condition</b>
Air Gap/Draft			
Max. wave height: ft			
Max. wave period: sec			
Max. wind velocity: kts			
Max. current velocity: kts			
Max. heave (double amplitude): ft			
Max. pitch (Single amplitude): deg			
Max. roll (Single amplitude): deg			

**OPERATING LIMITATIONS FOR RIG**

<b>Operation</b>	<b>Heave (m)</b>	<b>Pitch ° (Single Ampl.)</b>	<b>Roll ° (Single Ampl.)</b>	<b>BOP Flex Joint Angle (°)</b>
Normal Drilling or Tripping				
Landing/Running/Pulling BOP and X-Mas Tree				
Logging, Coring and Fishing				
Running Casing				
Well Testing				
Disconnect/Reconnect LMRP				
Running/Setting Subsea Templates				
Running Subsea Manifolds				
Crane Operation				

**OPERATING LIMITATIONS FOR ROV**

<b>Operation</b>	<b>Heave (m)</b>	<b>Pitch ° (Single Amplitude)</b>	<b>Roll ° (Single Amplitude)</b>	<b>Current (Knots)</b>
ROV Launch and Recovery				
ROV Operation				

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**SCHEDULE OF RESPONSIBILITIES FOR DRILLING EQUIPMENT MATERIALS, SUPPLIES AND SERVICES**

		Provided By		At Cost Of	
		Company	Bidder	Company	Bidder
<b>A.</b>	<b>UTILITIES</b>				
1.	Fresh water for drilling / cementing and washing down of Bidder's equipment.	X		X	
2a	Potable water more than rated capacity of distillation equipment	X		X	
2b.	Potable water in case of short fall in generating up to rated capacity of distillation equipment (s) installed on rig including transportation charges.	X			X
2c	In case water maker is not able to produce potable water due to in-concentration of silt, seabed condition which has to be duly certified by third party.	X		X	
3a.	Diesel fuel for all equipment of the drilling unit (up to quoted quantity as per clause No: 40.0 of SCC of Contract).	X		X	
3b.	Diesel fuel for all equipment of the drilling unit beyond 3a above including transportation charges.	X			X
4.	Thread dope for Company's tubular equipment.	X		X	
5.	All cement, mud, chemicals and additives including base oil and special drilling and completion fluids.	X		X	
6.	Glycol and Methanol to prevent hydrate formation (In case hydrate is formed due to malfunction of rig Bidder's equipment or due to improper operation / negligence by rig Bidder)		X		X

7.	Prevention of Hydrate Formation around BOP / Well Head / X-mass Tree area.		X		X
<b>B.</b>	<b>TRANSPORTATION</b>				
1.	All marine transportation required for Bidder's and Company's equipment, supplies, fuel, drill water, potable water, consumables and personnel between Company's shore base and Drilling Unit, subject to A . 2(b) and A.3b above.	X		X	
2.	Supply vessels for Company's and Bidder's requirement in the area of operation including standby vessel for safety of well, crew and Drilling Unit during operations.	X		X	
3a.	All Air Transportation of the Bidder's personnel as per Appendix 5 from the Company's shore base/nearest National Airport (whichever is nearer to Drilling Unit) to Drilling Unit and back.	X		X	
3b.	All Sea Transportation of the Bidder's personnel as per Appendix 5 from the Company's shore base/nearest National Airport (whichever is nearer to Drilling Unit) to Drilling Unit and back.	X		X	
4a.	Marine transportation if required for offloading Bidder's shore base supplies and equipment from Drilling Unit after commencement of contract and for loading shore base supplies and equipment up to termination of contract.	X		X	
4b.	Air transportation of the Bidder's personnel as per Appendix-5 between rig to shore base in case of medical emergencies provided the emergency is certified by the	X		X	

	rig medical doctor and company Tool Pusher				
<b>C.</b>	<b>MAINTENANCE SUPPLIES AND SPARES</b>				
1.	Repairs, parts and operating supplies for Company's equipment.	X		X	
2.	Repairs, parts for Bidder's equipment, including BOP except as otherwise specified.		X		X
3.	Drill pipe protectors on Bidder's drill pipe		X		X
4.	Drill pipe and tubing wipers		X		X
<b>D.</b>	<b>DRILLING UNIT EQUIPMENT AND PERSONNEL</b>				
1.	Drilling rig and equipment, complete with accommodation facilities		X		X
2.	Drill pipe, drill collars and handling tools		X		X
3.	Personnel work visas, permits etc. for Bidder's personnel		X		X
4.	Rams for BOP, including blind / shear, pipe rams and variable rams to suit all of Bidder's tubulars		X		X
5.	Spare elements for each of the Bidder's annular BOPS		X		X
6.	Spare rams for each of the Bidder's ram BOPS		X		X
7a.	Drill pipe and drill collar inspection prior to commencement of the contract		X		X
7b.	Drill pipe and drill collar inspection during the term of the contract		X		X
7c.	Refacing of tool joints of drilling tubulars during the term of the contract		X		X
8.	Screens for shale shakers, regardless of mesh size		X	X	
9a.	Initial BOP rubber goods		X		X

9b.	Replacement of BOP rubber goods during term of contract		X		X
10a.	Initial vessel mooring ropes		X		X
10b.	Replacement of vessel mooring ropes during term of contract		X		X
11a.	Initial bulk loading hoses		X		X
11b.	Replacement of bulk loading hoses during term of contract		X		X
12.	Mud pump pistons, liners and valves		X		X
13.	Personal protective equipment for all Bidder's personnel		X		X
14.	Bidder's field office, base facilities and warehouse		X		X
<b>E.</b>	<b>WELL EQUIPMENT</b>				
1.	All conductor pipe and casing to be used in the wells.	X		X	
2.	Subsea Wellheads and accessories including running tools	X		X	
3a.	Ring gaskets for connection between BOP and sub-sea wellhead		X	X	
3b.	Ring gaskets for connection between BOP and lower marine riser package		X		X
4.	Bits and Directional/deviation drilling tools, equipment and services.	X		X	
5.	All well testing equipment	X		X	
<b>F.</b>	<b>THIRD PARTY SERVICES</b>				
1.	Cementing Bulk, additives, float equipment, wiper plugs, sub-sea release tools, baskets, centralizers (positive and bow spring) and all other cementing tools and accessories, except Cementing Unit/Batch mixer and other handling tools as specified in Appendix 2/Exhibit A of the technical scope of work	X		X	

2.	Electro Logging Unit and Services	X		X	
3.	Mud Engineering Services.	X		X	
4.	Mud logging Unit and Services.	X		X	
5.	Well Testing (SSTT+PTS) Equipment and Services	X		X	
6.	LWD, MWD and Mud Motor Services	X		X	
7.	Coring services and equipment, including consumables	X		X	
8.	H2S Equipment and Services		X		X
9.	Tubular Running Services (for casing and tubing)	X		X	
10.	Drilling tools		X		X
11a.	Fishing Tools		X		X
11b.	Repairs and replacements to fishing tools in line item above		X		X
12.	ADCP Current Measurement, per list in Appendix 1, Exhibit 6		X		X
13.	Weather forecasting Services		X		X
14.	Medical Evacuation Services		X		X
15.	MPD Services		X	X	
<b>G.</b>	<b>SERVICES</b>				
1.	All permits and licenses for Radio.		X		X
2.	All permits and licenses which are required for drilling site and to permit access thereto and egress there from required.	X		X	
3.	Location approval or any other similar formality from Bidder's underwriters.		X		X
4.	Security and Naval Defense Clearance of Drilling Rig and its Equipment, Vessels and Bidder's personnel from Ministry of Home and Defense, DRDO, IB, Police and other Government agencies as required.		X		X

5.	Meeting all class requirement, safety/statutory regulations of India such as Customs, DGCA, DG Shipping, OISD (Consent for Operation) etc, ISM Code compliance in case of drillships		X		X
<b>H.</b>	<b>LOGISTICS SERVICES</b>				
1.	Helicopter Services	X		X	
2.	Shore Base including all services	X		X	
<b>I.</b>	<b>MISCELLANEOUS</b>				
1.	Lubricants, Grease, Hydraulic operating fluids and additives for the drilling unit and all Bidder's equipment in accordance with manufacturer's specification and recommendation.		X		X
2.	All personnel, safety equipment for personnel on board the drilling rig.		X		X
3.	Mud pump pistons and liners.		X		X
4.	Labour on the Drilling Unit to load and unload all Bidder's and Company's equipment, materials.		X		X
5.	Overtime beyond normal Work Schedule, meal and accommodation for personnel when required by Company for any reason including transportation delays.		X		X
6.	Office for Bidder's personnel and space for Bidder's materials at Company's shore base.		X		X
7.	All Radio communication equipment.		X		X
8.	a. Cementing unit and Cement mixing pumps if owned by Bidder		X		X
	b. Cementing unit and Cement mixing pumps if unit is 'free placement' or	X		X	

	installed by Company				
	c. Cementing Company for the cement unit as per 8a, 8b	X		X	
9.	a. Repair, maintenance, cost of spares and modifications to Cementing Unit if owned by Bidder		X		X
	b. Repair, maintenance, cost of spares and modifications to Cementing Unit if unit is 'free placement' or installed by Company	X		X	
10.	ROV Services		X		X
11.	Location survey and marine survey, if any required by Bidder/Bidder's underwriters in addition to that being carried out by Company.		X		X
12.	Transfer hoses and their replacements.		X		X
13.	Mooring lines and its replacements.		X		X
14.	Medical services (first aid only) on board the Drilling Unit for all Company and Company's third-party personnel.		X		X
15.	King posts, boom mounts for burner boom installation on both port and starboard sides		X		X
16.	Catering including meals, accommodation for 35 Numbers of Company and Company's third-party personnel. Bidder should provide standard food & services as per industry practice for all its own & its sub-Bidder's personnel including Company's Personnel and service providers deployed by the Company.		X		X
17.	OISD and other mandatory regulatory compliances		X		X

18.	Police verification of Bidder's manpower		X		X
19.	Assist during oil spill		X		X
20.	All equipment and services which are not specified herein.	X		X	

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**RATE OF DEDUCTION FOR SHORT DEPLOYMENT FOR RIG CREW PERSONNEL**

<b>Sl. No.</b>	<b>Personnel</b>	<b>Minimum present on board at any time for 2 shift operations</b>	<b>Short Deployment Rate (US\$)/Day</b>
1	Drilling Superintendent	1 (at rig or base as required)	600
2	Offshore Installation Manager (OIM)	1	500
3	Tool Pusher / Performance Tool Pusher (For Dual Activity Rigs)	1	500
4	Tour Pusher /Night Tool Pusher	1	500
5	Captain	1	500
6	Chief Engineer (Marine)	1	500
7	Chief Mechanic	1	500
8	Chief Electrician	1	500
9	Subsea Engineer	1	500
10	Asst. Subsea Engineer	1	300
11	Driller	2	300
12	Asst. Driller	2	100
13	Derrickman	2	100
14	Floorman/Roughnecks	8	100
15	Crane Operator	3	100
16	Roustabouts	10	100
17	Maintenance/ Seamen	5	100
18	Asst. Electrician	2	100
19	Welder	2	100
20	Asst. Mechanic	2	100
21	Motorman	4	100
22	Storekeeper	1	100
23	Radio Officer	1	100

24	Medic	1	100
25	ROV Supervisor	1	300
26	ROV Technician	2	100
27	DP Supervisor	1	500
28	DP Technician	2	200
29	Solids Control Engineer (as and when required)	2	200
30	Safety Officer/RSTC	1	500
31	Cementing Unit Operator	1	300
32	Navigational watchkeeping officer, (NCV)/F.G.	1	300
33	2nd Engineer MEO Class IV/IV (NCV) with 2-year Exp	1	300
34	Rating Forming Part of Navigation watch	2	200
35	Deck rating	1	100
36	E/R Rating	2	100
37	Sr. Tool Pusher	1	500
38	Chief Mate	1	300
39	Sr. Subsea Engineer	1	500
40	Electrical Supervisor	1	300
41	Mechanical Supervisor	1	300
42	HSE Manager (can manage more than 1 rig)	1 (on Rig/Base as required)	1500
43	Optional (As & when required) personnel for Auxiliary Rotary Table	5	100
44	Additional Personnel (Bidder to specify)	5	100
45	MPD Operations Crew	As specified by bidder	500/crew

**NOTE:** The above Rate of Deduction is for 1st seven days only. Subsequently the Rate of Deduction will be double every week thereafter (for example in case of Tool Pusher for 8th day to 14th day: 1000 US\$ per day, for 15th to 21st day: 2000 US\$ per day and so on).

**XXX**

**LIST OF (PERSONNEL) CREW**

1. The following is the minimum requirement. Bidder may have more personnel, if considered necessary. Bidder may deploy additional personnel for maintenance/ operations/ supervision/ training/ inspection for which their request will be considered on merit by Company. Helicopter services for such personnel subject to two nos. at any one time will be provided by Company at the time of crew change at no extra cost to the Bidder and no special sortie shall be provided for such additional personnel. Any person exceeding two nos. shall be transported by Company on chargeable basis to Bidder. However, NDA / Warranty / Class Surveyor (two at a time) shall be transported by helicopter at no cost to the Bidder.

<b>Sl. No.</b>	<b>Personnel</b>	<b>Minimum present on board at any time for 2 shift operations</b>
1	Drilling Superintendent	1 (at rig or base as required)
2	Offshore Installation Manager (OIM)	1
3	Tool Pusher / Performance Tool Pusher (For Dual Activity Rigs)	1
4	Tour Pusher /Night Tool Pusher	1
5	Captain	1
6	Chief Engineer (Marine)	1
7	Chief Mechanic	1
8	Chief Electrician	1
9	Subsea Engineer	1
10	Asst. Subsea Engineer	1
11	Driller	2
12	Asst. Driller	2
13	Derrickman	2
14	Floorman/Roughnecks	8
15	Crane Operator	3
16	Roustabouts	10
17	Maintenance/ Seamen	5
18	Asst. Electrician	2
19	Welder	2
20	Asst. Mechanic	2
21	Motorman	4
22	Storekeeper	1
23	Radio Officer	1
24	Medic	1
25	ROV Supervisor	1
26	ROV Technician	2
27	DP Supervisor	1
28	DP Technician	2
29	Solids Control Engineer (as and when required)	2
30	Safety Officer/RSTC	1
31	Cementing Unit Operator	1
32	Navigational watchkeeping officer, (NCV)/F.G.	1

33	2nd Engineer MEO Class IV/IV (NCV) with 2-year Exp	1
34	Rating Forming Part of Navigation watch	2
35	Deck rating	1
36	E/R Rating	2
37	Sr. Tool Pusher	1
38	Chief Mate	1
39	Sr. Subsea Engineer	1
40	Electrical Supervisor	1
41	Mechanical Supervisor	1
42	HSE Manager (can manage more than 1 rig)	1 (on Rig/Base as required)
43	Optional (As & when required) personnel for Auxiliary Rotary Table	5
44	Additional Personnel (Bidder to specify)	5
45	MPD Operations Crew	As specified by bidder

**Note:**

- a) Additional 5 personnel above at S. Nos.44 is to be mentioned by bidder who will form the part of the dedicated crew of the rig and for whom short deployment deduction rates will apply whenever they are not on board as per the rates given in the table given in Appendix -4 on short deployment rates.
- b) 5 Optional category personnel above at S. No. 43 are those additional personnel who can be sent to the rig as and when required for operational reasons and shall be on non-chargeable basis subject to availability of seats in helicopter.
- c) Catering personnel as required but not to exceed the limit of 18 nos. for transportation of this crew by helicopter is on non-chargeable basis.
- d) All crew will operate on minimum 28 days on/off pattern basis except those falling into the category of as & when required on board.
- e) Any person staying beyond norm days mentioned by Bidder can stay only with due approval from OIL.
- f) Preference will be given to OIL personnel or its 3rd party whenever desired due to operational reasons and for that no short deployment deduction shall apply

The experience of key personnel must be as follows:

**Key personnel - Drilling Unit**

- OIM (Offshore Installation Manager), Captain, Chief Engineer (Marine), Chief Mechanic, Chief Electrician, Radio Officer must have three years of offshore experience in their respective positions, out of which, a minimum of one year should be on the type of Drilling Unit offered.
- The OIM must hold current, internationally recognized certification as an Offshore Installation Manager.
- Drilling Superintendent, Sr. Tool Pusher, Tool Pusher, Tour Pusher, HSE Manager, Sr Subsea Engineer, Subsea Engineer, Driller, Assistant Driller and DP Supervisor must have three years offshore experience in their respective position in water depth more than 1000m (Cumulative year experience shall be considered for above purpose). This experience should include minimum one well in the water depth of 1500m or more.
- Drilling Superintendent, Tool Pusher, Tour Pusher, Subsea Engineer, Driller and Assistant Driller must possess valid well control certificate of either IADC Well CAP or IWCF of respective level, First Aid Ticket / H<sub>2</sub>S ticket.

- a) The ROV Supervisor should have minimum three years offshore experience and ROV Technician should have minimum 1 year in water depth of more than 1000m. This experience should include minimum one well in the water depth of 1500m or more.
  - b) Medic must have at least three years' experience as a registered medical practitioner and be a minimum MBBS degree holder.
  - c) Cementing Unit Operator must have at least 3 years' experience in Deepwater specific Cement unit operations and practices
  - d) The Cuttings Drier/Solids Control Engineer should have minimum of 3 years of offshore experience in handling Waste management. This experience should include minimum of 3 wells on floater rig. These crew shall normally be required during drilling operations. However, Bidder provides these crew as and when required for other operations for which Bidder shall regularly coordinate with Operator.
  - e) HSE Manager and Safety Officer should have valid NEBOSH (National Examination Board in Occupational Safety and Health) International Technical Certificate in Oil and Gas Operational Safety/ NEBOSH HSE Certificate in Process Safety Management.
  - f) Crane Operator should possess a relevant certification for crane operation as per API RP 2D and must have at least one year of offshore experience on a floater rig.
2. Training requirement of the Crew personnel
    - a) All the crew members including catering personnel must have undergone Personal Survival Training (PST), Fire Prevention and Fire Fighting (FPPF) 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.
    - b) Captain/Chief Officer must have undergone Helicopter Landing Operation Training (HLO).
    - c) At least two Roustabouts or Maintenance/Sea Men with HLA/OHETMC training shall always be available for helicopter operations.
  3. All above personnel must be fluent in English.
  4. Confirmation regarding the above qualification etc. shall be submitted along with the unpriced bid.
  5. The details of all personnel i.e. CVs, proof of qualification etc., shall be submitted within 30 days of the Letter of Award or at least 45 days prior to commencement of Contract, whichever later and be approved by Company before commencement of the work.
  6. Bidder to ensure that all marine crew, in case of self-propelled rig, will have mandatory marine trainings as per Flag/rig specific/India Director General Shipping and Marine rules and regulations applicable in India.

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**GENERAL METOCEAN CONDITIONS****1.0 Criteria Reference: (To be uploaded in the Tender after the pre-bid conference)****1.1 Extreme Wind Speeds****Table 1.1.1 Extreme wind speeds: Extra- Tropical Revolving Storms, Return period 1-Year**

DIRECTION (From)	U 1hr (m/s)	U 15Sec (m/s)	U 5sec (m/s)	U 3Sec ( m/s)
Omni				
N				
NE				
E				
SE				
S				
SW				
W				
NW				

**Table 1.1.2 Extreme wind speeds: Extra- Tropical Revolving Storms, Return period 10-Years.**

DIRECTION (From)	U 1hr (m/s)	U 15Sec (m/s)	U 5sec (m/s)	U 3Sec ( m/s)
Omni				
N				
NE				
E				
SE				
S				
SW				
W				
NW				

**Table 1.1.3 Extreme wind speeds: Extra- Tropical Revolving Storms, Return period 100-Years**

DIRECTION (From)	U 1hr (m/s)	U 15Sec (m/s)	U 5sec (m/s)	U 3Sec ( m/s)
Omni				
N				
NE				
E				
SE				
S				
SW				
W				
NW				

**1.0 Extreme Wave Heights and Associated Parameters****Table 1.2.1: Extreme Wave Heights and Associated Periods: Extra-Tropical Revolving Storms; Return Period 1-year.**

DIRECTION (From)	Hs (m)	Tz (s)	Tp (s)	Hmax (m)	Tass (s)
Omni					
N					
NE					
E					
SE					
S					
SW					
W					
NW					

**Table 1.2.2 Extreme Wave Heights and Associated Periods: Extra-Tropical Revolving Storms; Return Period 10-years**

DIRECTION ( From)	<i>Hs (m)</i>	<i>Tz (s)</i>	<i>Tp (s)</i>	<i>Hmax (m)</i>	<i>Tass (s)</i>
Omni					
N					
NE					
E					
SE					
S					
SW					
W					
NW					

**Table 1.2.3 Extreme Wave Heights and Associated Periods: Extra-Tropical Revolving Storms; Return Period 100-years**

DIRECTION ( From)	<i>Hs (m)</i>	<i>Tz (s)</i>	<i>Tp (s)</i>	<i>Hmax (m)</i>	<i>Tass (s)</i>
Omni					
N					
NE					
E					
SE					
S					
SW					
W					
NW					

**Frames of Reference:**

**Units of Conversions:**

The following list describes the units and conversions used in the table. Where possible units have been expressed using SI conversion.

- Wave heights are expressed in meters (m).
- Wave periods are expressed in seconds (s).
- Wave direction is expressed in compass points or degrees, relatives to true north and describes the direction from which the waves were travelling.
- Wind speed is expressed in meter/ second (m/s).
- Wind direction is expressed in compass points or degrees, relative to true north, and

describes the direction from which the wind was blowing.

### Parameter Descriptions

The following table provides summery descriptions of the primary wind and wave parameters.

Parameter	Unit	Descriptions	Comments
<i>H<sub>s</sub></i>	M	Significant wave height	Estimated from the wave energy spectrum, $HS = 4\sqrt{m_0}$
<i>H<sub>max</sub></i>	M	Maximum wave height	Most likely highest wave in the sea state of duration three hours.
<i>T<sub>ass</sub></i>	S	Wave period associated with Hmax.	$T_{ass} = 1.005T_p$ .
<i>T<sub>z</sub></i>	S	Mean zero crossing period	Estimated from the wave energy spectrum, $T_z = \sqrt{(m_0/m_2)}$
<i>T<sub>p</sub></i>	S	Peak period	The period associated with the peak in wave energy spectrum.
<i>U<sub>3s</sub></i>	m/s	3-sec gust speed at 10m above sea level	
<i>U<sub>5s</sub></i>	m/s	5-sec gust speed at 10m above sea level	
<i>U<sub>15s</sub></i>	m/s	15-sec gust speed at 10m above sea level	
<i>U<sub>1 Hr</sub></i>	m/s	1hr mean wind speed at 10m above sea level	

### 2.0 Current Data

### 3.0 Visibility Data

**XXX**

**RIG INFORMATION LIST****Drawings/Schematics:**

1. GA Drawings of the Rig, Moon pool area, Riser deck
2. BOP and components
3. BOP Control system and Secondary activation system details and schematic
4. High Pressure Lines schematic and interconnection (Cementing manifold/Choke and Kill manifold/ Standpipe (Pump room and rig floor)
5. Rig Well Testing Piping schematic
6. Rig Motion Compensation system and schematic
7. Other Drawings/Schematic as required in Exhibit A, Appendix 2 of Section II (Technical Scope of work).

**Status of Drilling Unit and Regulatory Compliances**

No.	Class Certificate	Issue Date	Validity	Annual Endorsement done on	Next Annual Endorsement due	Remarks
1	Certificate of Registry					
2	Safe manning Certificate					
3	International Tonnage Certificate					
4	International Load Line Certificate					
5	MODU Safety Certificate					
6	International Oil Pollution Prevention (IOPP) Certificate					
7	International Sewage Pollution Prevention (ISPP) Certificate					
8	International Air Pollution Prevention (IAPP) Certificate					
9	ISPS					
10	Radio Station License					
11	Safety Management Certificate and Document of Compliance and latest continuous Synopsis Record (If MODU is self-propelled)					
12	Hull and machinery Survey (Approving Class Survey Report)					
13	Annual Cargo Gear Report and Certificate from Classification Society					

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**HSE QUESTIONNAIRE****TO BE RETURNED WITH TENDER**

Bidder Name:	
Location:	
Completed By:	
Designation:	
Date:	

**Guidelines for Completion of Questionnaire:**

- 1 The information must be supplied in the same format and sequence in which they appear in the questionnaire. Bidders may provide relevant sections from the HSE Management system in answer to the questions.
- 2 Emphasis must be placed on the need for complete answer substantiated by supporting documentation as far as is practicable. Responses and any supporting documentation must relate specifically to the policy and organizational arrangements of the company that would be the signatory of any future contract.
- 3 The Bidder is encouraged to identify where he exceeds Industry safety requirements.

**Questionnaire for Bidder's Health, Safety, Environment Capability Assessment**

<b>Section 1: Leadership and Commitment</b>
<b>1.1 Commitment to HSE aspects through leadership</b>
1. How are senior managers personally involved in HSE management, for example objective-setting and monitoring?
2. Provide evidence for commitment to HSE at all levels of the organization.
3. How do you promote a positive culture towards HSE matters?
<b>Section 2: HSE Policy and Strategic Objectives</b>
<b>2.1 HSE policy documents</b>
1. Does your company have Health, Safety and Environment (HSE) policy document? If the answer is YES please attach copy of policy document.
2. Who has overall and final responsibility for HSE in your organization?
3. Who is the most senior person in the organization responsible for this policy being carried out at the premises and on site where his employees are working? Provide name and title.
4. Itemize the methods by which you have drawn your policy statements to the attention of all your employees.
5. What are your arrangements for advising employees of changes in the policy?
<b>2.2 HSE contract strategic objectives</b>

1. Does your company have strategic HSE objectives? If the answer is YES, please attach a copy.
2. Itemize the methods by which you have communicated your strategic HSE objectives to the attention of all your employees?
<b>Section 3: Organization, Responsibilities, Resources, Standards and Documentation</b>
<b>3.1 Organization structure for HSE management</b>
1. How is your organization structured to manage and communicate with HSE effectively?
2. Do HSE meetings promote HSE awareness?
3. Do clients and Bidder meet regularly to discuss and act on any interface situations?
4. What provision does your company make for HSE communication meetings? Please provide an organization chart
<b>3.2 HSE training of managers, supervisors and HSE critical position holders</b>
1. Have the managers and supervisors at all levels who will plan, monitor, oversee and carry out the work received formal HSE training in their responsibilities with respect to conducting work to HSE requirements?
2. If YES please give details. Where the training is given in-house, please describe the content and duration of courses. Please provide an example of training matrix.
3. How have you identified areas of your company's operations where specialized training is required, for instance training related to health hazard such as radiation, asbestos and chemicals?
4. What specialist HSE resources does your organization have available?
5. How does your company provide HSE specialized training for HSE staff?
<b>3.3 General HSE training</b>
1. What arrangements do your company have to ensure new employees have knowledge of basic industrial HSE, and to keep this knowledge up to date?
2. What arrangements does your company have to ensure new employees also have knowledge of your HSE policies and practices, and company requirements?
3. What arrangements does your company have to ensure new employees have been instructed and have received information on any specific hazards arising out of the nature of the activities?
4. Note: If above training (1, 2, and 3) are provided in-house, please give details of content.
<b>3.4 Competence assurance</b>

1. Does your organization have a competence system in place? If YES, please describe the scope and content of your competence system.
2. What arrangements do your company have to ensure existing staff HSE knowledge is up to date?
<b>3.5 Bidder management process</b>
1. Does your company have a Bidder management process or system? If yes, provide an outline of the process.
2. How do you assess Bidders, HSE competence or HSE performance?
3. Where do you define the company standards you require your Bidders to meet?
4. How do you ensure these standards are met and verified?
<b>3.6 HSE Standards</b>
1. How do you identify new industry or regulatory standards that may be applicable to your activities?
2. Is there an overall structure for producing, updating and disseminating standards?
3. Are your company standards aligned with OGP/IADC/industry guidelines or recommended practices? If yes state which one.
<b>Section 4: Risk Management</b>
<b>4.1 Risk assessment and control</b>
1. How does your company identify hazards, assesses risk, control and mitigation consequences, to a level as low as reasonably practicable?
<b>4.2 Health hazards</b>
1. Do you have specific policies and programs on specific health hazards e.g. substance abuse, blood borne pathogens, malaria, pandemic diseases etc.
2. What type of health hazards (chemical, vibration, noise, radiation, etc) are associated with the scope of your services? Explain how occupational health hazards are identified, assessed and controlled.
3. What systems are in place to control these hazards and monitor the effectiveness of these controls? Is worker's regular exposure monitoring part of these systems?
<b>4.3 Safety hazards</b>
1. What type of safety hazards (mechanical guarding, work at height, lifting and hoisting, confined space entry, explosive atmospheres etc.) are associated with the scope of your services?
2. What systems are in place to control these hazards and monitor the effectiveness of these controls?
<b>4.4 Logistics hazards</b>

1. What type of logistics hazards (land transport, air transport, marine transport, materials handling etc.) are associated with the scope of your services?
2. What systems are in place to control these hazards and monitor the effectiveness of these controls?
<b>4.5 Environmental hazards</b>
1. What type of environmental hazards (chemical spills, atmospheric emissions, waste disposal etc.) are associated with the scope of your services?
2. What systems are in place to control these hazards and monitor the effectiveness of these controls?
<b>Section 5: Planning and Procedures</b>
<b>5.1 HSE operations manuals</b>
1. Do you have a company HSE-MS manual (or Operations Manual with integrated HSE requirements) which describes in detail your company approved HSE working practices relating to your work activities?  If the answer is YES, please attach a copy of an index and relevant supporting documentation.
<b>5.2 Infrastructure and equipment integrity</b>
1. How do you ensure that infrastructure, plant and equipment used within your operations (own premises, client site, or at other locations) are correctly registered, controlled and maintained in a safe working condition?
<b>5.3 Management of Change</b>
1. How do you manage changes and assess associated risks e.g. personnel, equipment, processes, documentation?
<b>5.4 Emergency Planning and Response</b>
1. What arrangements do your company have for emergency planning and response?
2. Which emergency situations are included?
<b>Section 6: Implementation and Performance Monitoring</b>
<b>6.1 HSE-Management System (MS) implementation and active performance monitoring of work activities</b>
1. What arrangements does your organization have for monitoring the implementation of your HSE-MS?
2. How does your company ensure the implementation of work procedures within your work-site operations e.g. compliance with procedures, toolbox talks, safety meetings, supervision, job observations?
3. How do you monitor employee HSE performance e.g. hazard identification systems, HSE participation?

4. What active HSE monitoring is performed (i.e. where no incident has occurred)?
5. How do you report and correct deficiencies identified?
6. How do you communicate the results of active performance monitoring to relevant personnel?
<b>6.2 Safety performance indicators</b>
<p>1. Please provide the following statistics for each year for the last five years:</p> <ul style="list-style-type: none"> <li>• Number of fatalities</li> <li>• Number Lost Time Injuries</li> <li>• Number of Lost Workday Cases</li> <li>• Number of Restricted Workday Cases</li> <li>• Number of Medical Treatment Cases</li> <li>• Number of first aid cases</li> <li>• Number of near miss incidents</li> <li>• Fatal Accident Rate (per 100 million hours worked)</li> <li>• Lost Time Injury Frequency (per million hours worked)</li> <li>• Total Recordable Incident Rate (per million hours worked)</li> </ul> <p>As per IADC Incidents Statistics programme guidelines. If your Company follows some other Industry standard, please specify.</p>
<b>6.3 HSE performance monitoring</b>
1. How is health performance monitored and recorded?
2. How is environmental performance monitored and recorded?
3. How is security performance monitored and recorded?
4. How and what near miss incidents are reported?
5. How often is HSE performance reviewed? By whom?
6. How is logistics performance monitored and reported?
<b>6.4: HSE incident investigation and follow up</b>
1. What types of HSE incident are investigated?
2. What process is used to investigate HSE incidents?
3. Who conducts HSE incident investigations?
4. How are the findings of an incident investigation followed up to ensure effective prevention of recurrence?
5. How is incident learning communicated to all relevant personnel?
<b>6.5: Statutory notifiable incidents or Noncompliance notices</b>

<p>1. Has your company suffered any statutory notifiable incidents in the last five years (safety, occupational health and environmental)?</p> <p>Answers with details including dates, country and location, summary of incident and follow-up preventative measures taken.</p>
<p><b>Section 7: HSE Auditing and Management Review of HSE-MS</b></p>
<p><b>7.1 Audits</b></p>
<p>1. Do you have a written procedure for HSE auditing? If yes, please attach a copy.</p>
<p>2. Who is involved in conducting HSE audits? How are audit team members selected to have specific expertise and be independent from the activities being audited?</p> <p>What are the qualifications required for auditors?</p>
<p>3. How does your company schedule HSE audit and what scope of auditing is covered? e.g. internal, regulatory compliance, supplier/Bidder, HSE management system implementation.</p>
<p>4. How does management follow up on audit findings and ensure effective close out of action items?</p>
<p><b>7.2 Management review and follow up</b></p>
<p>1. Do you have a written procedure for management review of the HSE-MS? If yes, please attach a copy</p>
<p>2. How often are HSE-MS reviews conducted and who is involved in the process?</p>
<p>3. How are identified actions and improvement efforts recorded and tracked to effective completion?</p>
<p><b>Section 8: HSE Management - Additional Features</b></p>
<p><b>8.1 Certification of your HSE-MS</b></p>
<p>1. Please provide information on any certification which you have received from certification bodies</p>
<p><b>8.2 Memberships of Associations</b></p>
<p>1. Describe the nature and extent of your company's participation in relevant industry, trade, and governmental organizations.</p>
<p><b>8.3 Additional features of your HSE-MS</b></p>
<p>1. Does your organization (globally, regionally or locally) have any HSE features or arrangements not described elsewhere in your response to the questionnaire?</p>
<p><b>9 Carbon Footprint Questionnaire</b></p>

## Carbon Footprint Assessment

India had announced that it will reach carbon neutrality by 2070 as part of a five-point action plan that included reducing emissions to 50% by 2030.

OIL is taken this initiative to assist India's to reach its goal towards carbon neutrality by 2070.

We are aware that Oil & gas activities create about 8 - 10 % of current total E&P-related emissions. These emissions primarily consist of CO<sub>2</sub> generated by equipment on drilling rigs, platforms and well construction and production related equipment and infrastructure. Other sources are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, NF<sub>3</sub>, SF<sub>6</sub> and other appropriate GHG groups (HFCs, PFCs, etc.) in tonnes of CO<sub>2</sub>e.

A key opportunity to reduce CO<sub>2</sub> emissions is to

- Improve operational efficiency
- Reduce energy consumption
- Optimise fuel usage.
- OIL aims to achieve this on a project basis by:-
- Reduced rig time
- Reduced transportation requirements
- Improved fuel efficiency i.e fuel switching or substitution
- Technology or process improvements waste minimization;

**OIL has developed the following questionnaire to establish the based line of the Drilling Contractors that will be involved in these operations.**

1. Are GHG emission monitored?
2. Do you have inhouse GHG accounting & reporting system?
3. Have you identified GHG that your company produces?
4. Have you identified sources of GHG? If yes, please list below.
5. Briefly describe your company initiative to measures and to reduce you GHG / carbon footprint.
6. What methodology has your corporate adopted to measure carbon footprint GRI, API, SASB etc
7. How do you fair in terms of measures as compared to industry?
8. How are the drilling wastes disposed of - what technologies are used?

**XXX**

**OISD GUIDELINES**

Verification of Fitness – for - Purpose (OISD Rule 30) of the drilling unit/ Safety Critical Equipment Certification Status Verification of Fitness of Offshore Drilling Rigs – Rule 30 (Oil Industry Safety Directorate – OISD). Bidder to provide the Certificate of Conformance for all the major systems as enumerated below:

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
1.	Drilling structure, drill floor, sub structure, lifting equipment.	<p><b>A. Derrick / structures</b></p> <p>(i) Structures have been designed and fabricated by manufacturers as per API Spec 4F or equivalent. This verification must include structural safety level (refer sections 6 and B.6 of API Spec 4F).</p> <p>(ii) Different categories' inspection(s) of derrick, structures and drill floor have been carried out as per section 6 of API RP 4G or equivalent and OEM's recommendations, besides NDE as considered necessary.</p> <p>(iii) Repair and modification of structures (if carried out, based</p>	<p>API Spec 4F (3rd Edition 2008)</p> <p>API RP 4G (3rd Edition, 2004)</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>on inspection) have been carried out as per section 7 and 8 respectively of API RP 4G or equivalent and OEM's recommendations. Quality control of repair and modification has been ensured in line with requirements of section 11 of API SPEC 4F or equivalent.</p> <p><b>B. Drilling equipment</b></p> <p>(i) Installation, inspection and maintenance of IC engines have been carried out as per API Spec 7C-11F or equivalent and OEM's recommendations. For minimizing potential fires and/or explosions in the operations of IC engines requirements given in Appendix A of API Spec 7C-11F or equivalent, are being followed. Functional testing of safety devices and emergency stop functions have been carried out.</p>	<p>API RP 4G(3rd Edition, 2004)</p> <p>API Spec 4F (3rd Edition 2008)</p> <p>API Spec 7C-11F (5th Edition 1994)</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>(ii) Design, inspection and operating limits of drill stem components are as per API RP 7G plus TH Hill DS-1 or equivalent.</p> <p>(iii) Design of drilling equipment (rotary equipment, slush pumps, power tongs and draw works) is as per API Spec 7K or equivalent.</p> <p>Inspection, maintenance and repair of rotary equipment, slush pumps, power tongs and draw works have been carried out as per API RP 7L or equivalent and OEM's recommendations. Inspection has included NDE and/or opening of equipment as considered necessary. Functional testing of safety devices and emergency stop functions have been carried out.</p> <p>(v) Design of drilling hoisting equipment is as per API Spec 8A and API Spec 8C or equivalent.</p>	<p>API RP 7G DS-1 need Cat IV...</p> <p>API Spec 7K</p> <p>API RP 7L</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>(vi) Inspection, maintenance and repair of hoisting equipment are as per API RP 8B or equivalent and OEM's recommendations. Inspection of hoisting equipment has focused on structural integrity and personnel protection. Category III and IV inspection have included NDE / MPI and/or opening of equipment as considered necessary. Functional testing of safety devices and emergency stop functions have been carried out.</p> <p>(vii) Minimum requirements and terms of acceptance of steel wire ropes as per API Spec 9A / ISO 10425 or equivalent are being followed.</p> <p>(viii) Field care (inspection) and use of wire rope and evaluation of rotary drilling line have been</p>	<p>API Spec 8A and API Spec 8C</p> <p>API RP 8B</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>carried out as per API RP 9B or equivalent.</p> <p>(ix) Inspection of piping and piping systems has been carried out as per API RP 570 and API RP 574.</p> <p>(x) Pressure vessels have been inspected externally and internally; thickness measurement / crack detection tests have been carried out as deemed necessary. Pressure testing at a pressure equal to maximum allowable working pressure has been carried out. Safety valves / instrumentation have been tested.</p>	<p>API Spec 9A / ISO 10425</p> <p>API RP 9B</p> <p>API RP 570 and API RP 574</p>	
2.	Well Control Systems: blow out preventers, diverters, marine risers, choke and kill system, control systems for well control equipment.	A. Design of drill through equipment/ blowout prevention equipment – ram and annular blowout preventers, hydraulic connectors, drilling spools, adaptors etc. is as per API Spec 16A/ISO 13533 or	API Spec 16A (3rd Edition 2004) / ISO 13533 (2001)	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>equivalent. Records of maintenance (including major inspection as per section 17.10.3 of API RP 53 and OEM's recommendations) have been reviewed. Installation and testing (complete performance testing including functional and pressure tests) of blow out control equipment is being carried out in line with API RP 53 or OISD-RP-174 or equivalent.</p> <p>B. Design and maintenance of diverter systems is as per API RP 64 or equivalent. Inspection and testing of diverter systems have been carried out as per API RP 64 or OISD-RP-174 or equivalent.</p> <p>C. Design of choke and kill systems is as per API Spec 16C or equivalent. Pressure testing of choke and kill systems is being carried out in line with</p>	<p>API RP 53 (3rd Edition 1997) or OISD-RP-174</p> <p>API RP 64 or OISD-RP-174</p> <p>API Spec 16C</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>API RP 53 or OISD-RP-174 or equivalent. Flexible choke and kill lines and choke manifold are inspected as per section 17.10.3 of API RP-53(3rd Edition 1997) and OEM's recommendations.</p> <p>D. Design of control systems for well control equipment and diverter equipment is as per API Spec 16D and API RP 53 or equivalent and performance requirements/ testing, inspection and maintenance is as per API RP 53 or OISD-RP-174 or equivalent and OEM's recommendations.</p> <p>E. Marine drilling riser systems for floating drilling operations have been selected, operated and maintained in line with API RP 16Q or equivalent. Design, manufacture and fabrication of marine drilling riser system and associated</p>	<p>API RP 53(3rd Edition 1997) or OISD-RP-174</p> <p>API Spec 16D and API RP 53</p> <p>API RP 53 or OISD-RP-174</p> <p>API RP 16Q</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>equipment used in conjunction with a subsea blowout preventer (BOP) stack is as per API Spec 16F or equivalent. Design and standards of performance for marine drilling riser coupling is as per API Spec 16R or equivalent. Risers and riser couplings / joints are being inspected for wear, cracks and corrosion; thickness measurement has been carried out as required.</p>	<p>API Spec 16F /  API Spec 16R</p>	
3.	Man riding equipment	<p>Selection of man riding equipment is done ensuring that equipment is suitable for man riding operations, and the equipment are inspected and maintained regularly.</p>		
4.	Station keeping systems: anchoring, mooring, dynamic positioning, compensator and disconnection systems.	<p>Verify that MODU's station keeping and stability characteristics are suitable for the environmental (including seabed and soil conditions) and operating</p>	<p>API RP 2SK (for station keeping) MODU code (for stability)</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		conditions envelope. Inspection and maintenance of mooring hardware is as per API RP 2I or equivalent and OEM's recommendations; and design, manufacturing and maintenance of synthetic fiber ropes for offshore mooring is as per API RP 2 SM or equivalent.	API RP 2I API RP 2 SM	
5.	Drilling fluid handling and cementing system	Physical condition of the equipment is satisfactory, and instrumentation, safety alarms and pressure safety valves are being tested regularly.		
6.	Electrical Systems	<p>A. Design and maintenance of electrical systems is as per IMO MODU code meeting requirements of industry standards API RP 500 or API RP 505.</p> <p>B. Inspection and functional testing of emergency power system is being carried out.</p>	MODU code API RP 500 API RP 505	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
7.	Safety systems (exclude items which are covered by MODU safety certificate, provided the rig has valid MODU safety certificate)	<p>A. Inspection and testing of the following safety systems is being carried out periodically:</p> <ul style="list-style-type: none"> <li>• Fire detection system</li> <li>• Gas detection system – HC and H<sub>2</sub>S</li> <li>• Drilling operations related to alarm system</li> <li>• Lifesaving appliances</li> <li>• SCBA</li> <li>• Gas measuring devices</li> <li>• Firefighting system</li> <li>• Communication systems</li> </ul> <p>B. Safety systems are as per MODU code requirements, as applicable.</p>		
8.	Cranes (If classed certificate notation does not cover cranes)	<p>A. Design and testing of pedestal mounted offshore cranes are as per API Spec 2C or equivalent.</p> <p>B. Operations and maintenance of offshore cranes are as per API RP 2D or equivalent.</p>	<p>API Spec 2C</p> <p>API RP 2D</p>	

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		<p>Inspection has focused on structural integrity and includes:</p> <ul style="list-style-type: none"> <li>• Blocks and sheaves</li> <li>• Wire ropes and end attachments</li> <li>• Hooks</li> <li>• Bearings</li> <li>• Shackles</li> <li>• Securing arrangements</li> <li>• Support structure</li> <li>• Axle Pin and housing</li> </ul> <p>C. Inspection and function testing has included:</p> <ul style="list-style-type: none"> <li>• Correct adjustment of brakes</li> <li>• Resistance measurement of electrical systems</li> <li>• Leakages in hydraulic systems</li> </ul> <p>D. Load charts have been verified by carrying out load tests as per applicable requirements.</p>		

No.	Equipment	Verification requirements	Reference Standard	Present Status of the Safety Critical Equipment and Systems of the MODU
		Functional testing of safety devices and emergency stop function are being carried out.		
9.	Helideck (If classed certificate notation does not cover helideck)	Inspection has included: <ul style="list-style-type: none"> <li>• Structural integrity of deck and supporting structure</li> <li>• Surface of deck</li> <li>• Obstacles and marking</li> <li>• Safety net</li> <li>• Fire safety arrangements</li> </ul>		

**Notice to Companies from OISD (available on OISD website [www.oisd.gov.in](http://www.oisd.gov.in)):**

**OISD/OFF/NTO/1-11 7th January 2011**

Recertification of well control equipment: Rule 158(2) of the Petroleum and Natural Gas (Safety in Offshore Operations) Rules, 2008 requires that “The blow out preventer with associated valves and other pressure control equipment on the facility shall be subjected to a complete overhaul and shall be recertified at regular intervals based on original equipment manufacturer’s recommendations and international standards and recommended practices”.

In the guidance document issued by OISD it has been further clarified that “Complete overhaul and recertification as mentioned in this sub rule may be carried out periodically and in a manner which ensures that single components and the whole unit will be overhauled in a rolling five-year period”.

On perusal of the certificates being submitted by Companies, in compliance to the above Rule, the following two categories of certificates have been observed:

- i. A certificate issued by manufacturer or their authorized facility, where compliance to both industry standards and OEM’s repair and/or remanufacture specifications are certified.
- ii. A certificate issued by a facility not having OEM authorization, where only compliance to industry standards is certified.

Please note that category ii certificate as above is not acceptable. Well control equipment is Safety Critical Equipment. In the case that it is remanufactured or repaired by a facility without authorization from the original equipment manufacturer, there may be an effect on the reliability of the equipment.

Companies shall ensure that BOP and other well control equipment on offshore rigs are certified and/or recertified by the OEM or an OEM authorized facility.

**XXX**

**BIDDER IS TO FURNISH THE ACTIVITY TIMELINE SCHEDULE TO MOBILISE AND COMMENCE WORK TO MEET COMPANY'S SCHEDULE AS PER THE MOBILISATION REQUIREMENT.**

**(END OF SECTION-II, PART-3)**