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EXPRESSION OF INTEREST (EOI) (EOI NO. : OIL/NEF/GLOBAL/EOI/020/2013)

INTEGRATED DRILLING SERVICES

<u>Sub</u>: Detailed Text for Expression of Interest (EOI) to short-list the Vendors/Contractors/Service Providers for hiring Integrated Services of Drilling Rig Package with other associated services to drill one (1) exploratory well in NELP - IV Block (AA-ONN-2002/3) in Karbi-Anglong & North Cachar Hills (Presently Dima-Hasao) Districts of Assam.

OIL INDIA LTD (OIL), a premier Navaratna Public Sector Undertaking of Govt. of India engaged in exploration, production & transportation of hydrocarbons, invites Expression of Interests (EOIs) from reputed and established E & P Service Providers meeting the pre-qualification criteria as mentioned below for empanelment/short listing for issuance of tender document for hiring of drilling rig package with other associated services to drill one (1) number of on-shore exploratory well in the NELP-IV block (AA-ONN-2002/3) in Karbi-Anglong and North Cachar Hills (presently Dima-Hasao) district in Assam.

1.0 PROJECT INFORMATION:

As per committed MWP in Phase-II to the Govt. of India, Oil India Ltd. (OIL) being the Operator with 30% participating interest) in the above mentioned NELP block (remaining 70% PI is held by M/s. ONGCL), has to drill 1 (one) exploratory well within the stipulated time frame. It is, therefore, proposed to charter hire a drilling rig package of 1000HP (minimum) capacity along with other associated services like effluent treatment system, mud engineering, mud logging, cementing, liner hanger & coring services etc. to drill one (1) number of exploratory well at designated site within the NELP block. The requirements shall be as briefly defined in clause 4.0 & 5.0 below.

1.1 The drilling location has already been released by the competent authority for exploratory drilling in the above NELP block. The location falls near Chotomanja village under Dima Hasao Autonomous Council (erstwhile North Cachar Hill district), for which the existing kutcha road from Ardaopur to location needs to be improved. An MOU has already been signed with Assam PWD for construction/ improvement of approach road from Ardaopur on NH 54E to Chotomanja village (approx. 9 Km) under deposit scheme.

2.0 LOCATION OF THE AREA:

The block: AA-ONN-2002/3 is situated in Karbi-Anglong and North Cachar (presently in Dima Hasao) district in Assam state and covers an area of 1095 sq km. The nearest railhead is at Lumding in Assam & the nearest airports are Dimapur (Nagaland) / Silchar (Assam) / Guwahati (Assam). The nearest international airport is located at Kolkata in West Bengal. The proposed area lies within the under mentioned coordinates.

3.0 COORDINATES OF BLOCK AA-ONN-2002/3:

	Ι	atitude (N	I)	Longitude (E)			
Points	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
А	25	40	20.87	93	07	48.04	
В	25	40	53.00	93	15	35.00	
С	25	32	53.00	93	19	57.00	
D	25	15	00.00	93	22	37.00	
E	25	15	00.00	93	04	11.00	
А	25	40	20.87	93	07	48.04	

4.0 BRIEF SCOPE OF WORK:

- 4.1 Drilling of one (1) number on-shore exploratory well of approximate depth of 2200m in Dima-Hasao District of Assam (India) under NELP-IV Block (AA-ONN-2002/3). For this purpose, Company intends to hire a reputed & eligible Service Provider/ Vendor/Contractor who shall provide all integrated services related to oil/gas well drilling activities and successfully drill the well for Company by deploying a suitable on-shore Drilling Rig Package of capacity 1000 HP (minimum) and other associated services. Requisite manpower, equipment, tools, accessories and consumables etc. for all these services will be provided by the Service Provider/Vendor/Contractor, except Casings/liner, Tubings, Rock Bits and Well Head items which will be issued by Company to Contractor from its Central Stores Yard at Duliajan/Moran in Assam. However, transportation of these items upto the designated well site in Dima-Hasao district (approx. distance of 500 Km) shall be the sole responsibility of Contractor/ Service Provider. The Integrated Service Package (Drilling & Associated Services) as envisaged by Company for the Contractor/Service Provider to provide includes:
 - (a) Charter Hire of a Trailer Mounted Mobile Mechanical Drilling Rig Package of 1000 HP (min), complete with all equipment, tools & accessories etc.
 - (b) Effluent Treatment Services including supply of Effluent Treatment Plant/ system, required consumables & safe disposal of solid & liquid wastes.
 - (c) Mud Engineering & Laboratory Services including supply of required lab equipment/tools, mud chemicals, additives & consumables.
 - (d) Cementing Services including slurry designing, supply of required cement, cement additives, various floating & guiding equipments and casing accessories etc. Bulk Handling Plant/Blending facilities and storage/ transportation silos etc. as required will also be provided by the Contractor.
 - (e) Mud Logging Services including deployment of a suitable Mud Logging Unit.
 - (f) Security and Escort Services (for Camp, well site & during movement of man and materials).
 - (g) Liner Hanger Services including supply of Liner Hanger and required tools & consumables for running-in & setting the 7" liner hanger inside 9.5/8" casing.
 - (h) Coring Services including supply of tools & consumables for taking conventional cores using core barrel in 12.1/4" & 8.1/2" hole and core stabilization.
 - (i) Road Transportation Services for transportation of drilling consumables (like casing/liner, tubing, bits & wellhead fittings etc.) from OIL's central Stores at Duliajan/Moran in Dibrugarh/Sivasagar District of Assam to the designated well site at Dima-Hasao district of Assam.

- (j) Services of Cranes of adequate capacity and numbers as may be required at site for handling the equipment & tubular items at designated well site.
- (k) Maintenance Services for Well Plinth & Approach Road (approx. 9 Km) for the drilling location.
- (l) Drilling Camp Services (accommodation, catering, laundry and medical services) for about 10 to 15 representatives to be designated by Company in addition to Contractor/Service Provider's own personnel.
- 4.2 These services will be hired for an initial period of 4 months or till completion of 1 (one) exploratory well. The contract may be extended for drilling another one (1) well with the same terms and conditions.

5.0 DRILLING RIG & ASSOCIATED SERVICES:

- 5.1 The vendor shall be in possession of the Drilling Rig Package offered (either owned or leased). In case, the vendor is not in possession of the Rig at the time of submission of EOI, they may offer a Rig Package for which they intend to have an agreement for lease/buy.
- 5.2 The horsepower rating of the rig should be minimum 1000 HP. Further, the rig should preferably be Self Propelled or trailer mounted (with horse unit) Mobile Mechanical Drilling Rig, having self elevating Telescoping mast with matching Telescoping type sub-structure assembly (Mast & Sub-structure must be manufactured as per API Spec. 4F).
- 5.3 The Drilling Rig Package shall have, but not limited to, the following:
 - a) Depth rating Not less than 3000 Mtrs with 5" OD drill pipes.
 - b) Draw-works Input horsepower Not less than 1000 HP through Power Packs mounted on same trailer.
 - c) Hook load / Rotary capacity Not less than 200 MT with 10 lines.
 - d) Setback capacity of Sub-structure Not less than 125 MT
 - e) Rotary Table 20.5" or 27.5"
 - f) Mud tank system capacity (active + reserve) around 1800 barrels (US)
 - g) Water tank system capacity around 900 barrels (US)
 - h) Solid control equipments with a capacity not less than 1000 GPM consisting of Linear Motion Shale Shaker, Desander, Desilter, Vacuum Degasser, Centrifuge, etc.
 - i) Two mud pumps each rated for minimum 1000 HP (input horse power).
 - j) Two power packs with SCR module for powering mud pumps, solid control equipment, rig auxiliaries, etc.
 - k) Tubular such as Drill Pipes, Drill collars, Heavy Weight / Thick wall Drill Pipes.
 - 1) BOPs Annular (13.5/8" x 5K), Double Ram (13.5/8" x 5K and 7.1/16" x 5K)
 - m) Well killing pump with all required fittings & piping Rating not less than 10,000 psi WP.
 - n) Fire Fighting system as required for oil well drilling as per the provisions of OISD STD 189 & the Mines Act of India.
- 5.4 The Drilling Rig package should not be more than 7 (seven) years old as on the EOI closing date.
- 5.5 Further, the Drilling Rig package should have a residual life of seven (7) years as on the EOI closing date. The inspection and certification regarding residual life of the rig package should be done by any of the following inspection agencies:
 - (a) DNV
 - (b) ABS

- (c) BV
- (d) LLOYDS
- (e) Oilfield Audit Services
- 5.6 The drilling rig Service Provider / Contractor shall have to arrange / cater for the following associated services alongwith the drilling rig as an integrated service package. The drilling rig service provider / Contractor can provide the following associated services either by themselves or by sub-contracting or by forming a consortium of companies where the leader of consortium shall be the drilling rig service provider (also refer **Annexure-V** for further details):
 - a) Effluent treatment plant (for both solid and liquid). Effluent treatment plant should be capable for treating around 50 to 150 cum of effluent per day generated during the drilling / testing operations.
 - b) Mud Engineering & Laboratory Services along with supply of all required chemicals.
 - c) Primary and Secondary cementation services alongwith designing of cement slurry, supply of cement, cement additives and floating & guiding equipments etc.
 - d) Mud logging Services
 - e) Liner Hanger Services
 - f) Coring Services
 - g) Services of Cranes
 - h) Drilling Camp Services (accommodation, catering, laundry and medical services).
 - i) Security Services and Escort Services (for Camp, well site & movement of man and materials).
 - j) Road Transportation Services for drilling consumables (casing, bits, etc.) from OIL's Central Stores at Duliajan/Moran to the well site in Dima-Hasao district.
 - k) Maintenance services for Well Plinth & Approach Road of 9 km.
- 5.7 Timely mobilization of complete package including the Drilling Rig together with all equipments/accessories/consumables, etc. for other associated services as mentioned in the scope of work, to the drilling locations will be the sole responsibility of the Bidder/Contractor (i.e. drilling rig service provider).
- 5.8 Wireline Logging and Production Testing Services shall be arranged and provided by Company separately as required. Hence, these two services shall be kept outside the scope of the intended tender for integrated service contract.

6.0 MANPOWER:

The drilling rig service provider must have the key personnel with requisite experience and qualification as specified in <u>Annexure-I</u>. The Area Manager/Rig Superintendent, Tool Pusher, Tour pusher, Driller and Asst. Driller should possess valid International Well Control Forum (IWCF) certificate at appropriate levels and should be fluent in English.

7.0 SAFETY COMPLIANCE:

The vendor shall have to comply with the applicable and prevailing provisions of the Mines Act 1952, OISD (Oil Industry Safety Directorate) guidelines and MoE&F (Ministry of Environment and Forest) and Central/State Pollution Control Board directives/regulations.

8.0 PRE-QUALIFYING CRITERIA:

8.1 The vendor/Service Provider must fulfil the following minimum pre-qualifying criteria for empanelment / short-listing by Company to issue tender document for the integrated services of charter hire of 1000 HP (minimum) rig package including other associated services to complete the well.

8.2 **Experience:**

- (i) The service provider / vendor must be in the business of providing drilling services during the last 5 (five) years preceding EOI closing date.
- (ii) Minimum one year continuous experience of providing oil/gas well drilling services with minimum 1000 HP capacity rig on charter hire basis.
- (iii) Completed drilling of at least 5 (five) nos. of wells with drilling rig of minimum 1000 HP capacity.
- (iv) The rig service provider must undertake to provide all the key personnel of drilling rig with required qualification, experience, etc. as given in **Annexure-I**.
- (v) The minimum experience of various associated service providers, if sublet/ engaged any by the drilling rig service provider, should satisfy the following. The rig service provider must categorically confirm/undertake same while responding to this EOI. Also refer enclosed **Annexure-V**.
 - a) **Effluent Treatment Services** Minimum two years experience in providing effluent treatment services to oil/gas wells for E&P Companies / Operators.
 - b) **Mud Engineering & Laboratory Services** Minimum 5 (five) years of experience in providing mud engineering services to oil/gas wells for E&P Companies / Operators.
 - c) **Mud Logging Services** Minimum 5 (five) years experience in providing Mud Logging Services to oil/gas wells for E&P Companies / Operators.
 - d) **Cementing Services:** Minimum 5 (five) years of experience in providing primary and secondary cementing services to oil/gas wells for E&P Companies / Operators.
 - e) **Liner Hanger Services** Minimum 5 (five) years experience in providing liner hanger services to oil/gas wells for E&P Companies / Operators.
 - f) **Coring Services** Minimum 5 (five) years experience in providing coring services to oil/gas wells for E&P Companies / Operators.
 - g) **Security (Camp & well site) and Escort Services** Minimum 2 (two) years experience in providing security services to various installations.
 - h) **Transportation Services for drilling consumables** Minimum 2 (two) years experience in providing Road Transportation Services of industrial goods and equipment etc.

- 8.3 The average annual financial turnover of the lead Bidder/Vendor, as per Audited Annual Reports & Balance Sheets, during the last 3 (three) accounting years (ending 31.03.2013) shall be at least `**7.55 Crores (or US\$ 1.25 Million).**
- 8.4 The average net profit of the Bidder/Vendor needs to be positive as per the past three years audited accounts.
- 8.5 The EOI must include all the jobs/services mentioned in Clause No. 4.0 (Brief Scope of Work) above.

9.0 INFORMATION & DOCUMENTS:

- 9.1 The Vendor must furnish the following documentary evidences in support of fulfilling all the above pre-qualifying criteria and to certify that the service provider will provide drilling rig as per specifications.
 - (a) **Rig offered** documents relating to rig already in possession or propose to buy/lease alongwith brief technical specifications of the rig package.
 - (b) **Drilling experience of Vendor –** Statement to be furnished by the Vendor in a tabular form as per **Annexure-II**.
 - (c) Experience for Associated Services A letter with categorical confirmation that the rig service provider shall arrange and/or deploy all other associated services as detailed in Clause No. 4.1 above. In case, the lead bidder/vendor (Drilling Rig Service Provider) proposes to enter into MOUs with appropriate vendors/service providers for any/all of the associated services listed therein, for successful completion of drilling operation (in the event of award of contract), they must identify all such parties/partners in the EOI. A letter of consent in original from all such associated partners/service providers must also accompany the EOI together with their required experience as indicated under clause 8.2 (a) to (h) above. The experience and educational qualifications of key personnel proposed to be deployed by each such associated service provider must also be submitted. Refer Annexure-V in this regard.
 - (d) **Financial turnover** of the Vendor must be furnished as per **Annexure-III**, duly certified by a practicing Charter Accountants' Firm incorporating their Registration Number/Membership Code.
- 9.2 Detailed Statement on the current work in hand of similar nature and other contractual commitments of the lead Bidder/Vendor are to be submitted in a tabular form as per **Annexure-IV**.
- 9.3 Vendor while submitting the documents in support of their experience vide Clause 9.1 (a) to (d) above shall also submit a declaration stating the competence/having experience as a Leader of the consortium/joint venture (as may be applicable) on works/jobs done of similar nature along with the EOI.
- 9.4 All documents submitted with the EOI must be self certified by the applicant/ vendor's authorized person indicating clearly name & designation of the person.
- 9.5 All correspondences and documents relating to this EOI shall be in English language, except that any document may be in language other than English provided it is accompanied by an English translated version certified by a translator, which shall govern for the purpose of interpretation.

- <u>Note:</u>
 - (i) All the copies of documents submitted along with the EOI should be clear & legible.
 - (ii) OIL INDIA LIMITED (OIL) reserves the right to physically check the original documents/certificate, copies of which are submitted along with the EOI.
 - (iii) The EOI is liable to be ignored in case of submission of any misleading/false representation by the vendor/service providers in the form, statements and attachments.
 - (iv) OIL INDIA LIMITED reserves the right to ignore any or all EOIs without assigning any reason thereof.
 - (v) OIL INDIA LIMITED reserves the right to curtail/ enhance the scope of the work stated above or cancel, if required, without assigning any reason thereof.

10.0 SUBMISSION OF EOI:

10.1 The EOI together with the information/documents as mentioned above should be submitted in a closed envelop superscribing "EOI for Integrated Services to drill on-shore exploratory oil/gas well in Karbi-Anglong" and must reach the following address on or before 7th August, 2013 till 15:00 Hrs. (IST):

General Manager - NEF OIL INDIA LIMITED Duliajan-786602, Assam, India Ph: 91-374-2800405/2801799, Fax: 91-374-2801799, Email: <u>nef@oilindia.in</u> Website: <u>www.oil-india.com</u>

- 10.2 However, in case the above mentioned EOI Closing Date happens to be a Holiday / Bundh etc. in Duliajan, EOI will be received up to the next full working day till 03.000 PM (IST). EOI may be sent by post/courier service, delivered personally or dropped in the tender box placed at the office of NEF Project, Oil India Ltd., Duliajan-786602, Assam. However, Oil India Ltd. will not be responsible for any delay in receipt or non-receipt of EOIs.
- 11.0 Oil India Limited reserves the right to (a) either accept or reject any / all EOI(s) (b) cancel the process without assigning any reason what so ever.

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Details of Key Personnel for Drilling Rig Package

1. RIG MANAGER/ RIG SUPERINTENDENT:

Qualification: Graduate in Engineering / Science or three years Diploma in Engineering.

<u>Experience</u>: Should have work experience in drilling oil / gas wells, for minimum 10 years, of which at least 5 years should be in a senior management level.

<u>Certification/License</u>: Must possess valid well control certificate (**IWCF**-Supervisor Level) and should be conversant with well control methods to take independent decisions in case of well emergencies.

2. TOOL PUSHER:

<u>Qualification</u>: Graduate in Engineering / Science or three years Diploma in Engineering.

<u>Experience</u>: Should have work experience in drilling oil / gas wells, for minimum 10 years, of which at least one year as tool pusher in exploratory & development wells.

<u>Certification/License</u>: Must possess valid well control certificate (**IWCF**-Supervisor Level) and should be conversant with well control methods to take independent decisions in case of well emergencies.

3. TOUR PUSHER / NIGHT TOOL PUSHER:

Qualification: Graduate in Engineering / Science or three years Diploma in Engineering.

Experience: Should have work experience in drilling oil / gas wells for minimum 7 years in drilling, out of which at least one year as tool / tour pusher of exploratory & development wells.

<u>Certification/License</u>: Must possess valid well control certificate (**IWCF**-Supervisor Level) and should be conversant with well control methods to take independent decisions in case of well emergencies.

4. DRILLER:

Qualification: Graduate in Science or three years Diploma in Engineering.

<u>Experience</u>: Should have work experience in drilling oil / gas wells for minimum 5 years out of which at least one year as Shift-in-charge / Driller of exploratory & development wells.

<u>Certification/License</u>: Must possess valid well control certificate (**IWCF**-Driller Level) and should be conversant with well control methods to detect well kick, shut the well and assist Tool Pusher/ Tour Pusher in case of well emergencies.

5. ASSISTANT DRILLER:

Qualification: SSC/HS/PU/I. Sc. or equivalent

<u>Experience</u>: Should have work experience in drilling oil / gas wells for minimum 4 years out of which at least one year as Asst. Driller / Head-man of exploratory & development wells.

<u>Certification/License</u>: Must possess valid well control certificate (**IWCF**-Driller Level) and should be conversant with well control methods to detect well kick, shut the well and assist Tool Pusher/ Tour Pusher in case of well emergencies.

Annexure-II

Drilling experience

S1. No.	Name & contact details of client			Completion date of contract

Annexure-III

Financial Statement

TO BE ISSUED BY PRACTISING **CHARTERED ACCOUNTANTS' FIRM** ON THEIR LETTER HEAD

TO WHOM IT MAY CONCERN

This is to certify that the following financial positions extracted from the audited financial statements of M/s.....(Name of the Bidder) for the last three (3) accounting years upto 31^{st} December, 2012 / 31^{st} March, 2013 (Strike off whichever is not applicable) are correct.

YEAR	TURN OVER	NET PROFIT
	In INR (`) Crores or	In INR (`) Crores or
	US \$ Million)	US \$ Million)

Rate of Conversion (if used any) : USD 1.00 = INR.....

Place: Date:

Seal:

Membership Code/ Registration No. : Signature

Annexure-IV

Details of current work in hand

S1. No.	Contract No.	Name & address of client	Place of operation		No. of Wells drilled	Commencement date of contract

Annexure-V

Details of Associated Services

S1. No	Associated Services	Major Equipment or Tools reqd.	Personnel Required with experience	Consumables Required	Brief Scope of Work
1.	Effluent treatment Services	Effluent treatment plant with suitable Centrifuge & Laboratory facility	One Supervisor & one Laboratory Assistant in each shift with at least two years of relevant experience in oil & gas well. and conversant to all the SPCB, CPCB, DGMS, OISD & MoEF guidelines. The Supervisor should have a minimum qualification of B.Sc. in Chemistry / Environmental science. The Laboratory Assistant should have a minimum qualification of SSLC / Higher Secondary in science stream.	All required spares, consumables, chemicals, etc. for smooth running of the plant.	To separate the solid and liquid from effluent, treat the solid and liquid effluent from well & plinth as per SPCB & CPCB norms and to dispose.
2.	Mud Engineering & laboratory Services	Laboratory equipments to carryout mud testing.	One mud engineer in each shift having minimum qualification of Bachelor degree in Engineering/ Science or Equivalent and with at least five years of relevant experience.	the well along with	 Laboratory testing of drilling fluid. Preparation, maintenance, and supply of drilling and completion fluid at various stages of the well for smooth and trouble free completion.
3.	Cementing service	Cementing unit for mixing and pumping of cement slurry. One Batch mixture of 50 bbls capacity. Also includes suitable transport & storage silos and Bulk Handling Plant (BHP) as required.	One competent qualified cementing engineer with Graduate in Engineering / Science or three years Diploma in Engineering having minimum five years independent experience accompanied with two work personnel having minimum two years experiences.	All floating and guiding equipment. All required cement and additives to prepare and pump cement at various stages of the well for primary as well as secondary cementation job.	 Processing of dry bulk cement & mixing / blending of additives and feeding to cementing unit through silos. To provide Slurry Design, Cementing Programme, Casing Stand-off Programme and actual execution of various primary & secondary cementing operations. Supply of cement and additives required at various stages of the well. Supply of complete

					floating and guiding equipment.
4.	Mud logging Services	Mud Logging Unit (MLU) with all relevant sensors	Refer Appendix-I below	All required spares, consumables, etc. for smooth running of the MLU operation.	Mud Logging (ML) Company must be latest ISO certified in terms of Quality Control, Health, Safety & Environment management to provide ML Services.
5.	Drilling Camp Services	Portable Living bunk / Temporary houses, kitchen, dining hall, recreation hall, toilets, etc.	Camp boss, a qualified doctor, laundry man, chef/cook, sweeper, etc.	As required on day to day basis	To provide accommodation for all personnel of service providers (including personnel of associated services) and additionally to accommodate around 15 company's personnel or company's third party representatives.
6.	Security & Escort Services	As required to provide adequate security and escort services.	As required	As required to provide adequate security and escort services.	To protect the equipment, tools, spares, etc. related to drilling rig service provider, company or company's third party hired services. To provide security to all personnel at well site as well as at camp site. Also to provide escort during movement of personnel.
7.	Liner Hanger Services	Liner hanger assembly (with packer) including running & setting tool and cementing head.	One liner hanger expert having Graduate in Engineering / Science or three years Diploma in Engineering and with minimum five years of experience in providing liner hanger services.	One complete set of 7" liner hanger assembly with packer to set inside 9.5/8" casing.	To run & set the liner hanger assembly with packer & assist in cementation of liner string.
8.	Coring Services	One set each of 8" x 4.3/4" (or 5.1/4") x 30' and 6.3/4" x 4" x 30' core barrels with core extractor, cutter and handling & Stabilization tools.	One coring specialist having Graduate in Engineering / Science or three years Diploma in Engineering and one foam/epoxy injection technician with a minimum experience of five years in respective fields.	12.1/4" & 8.1/2" coring bits (PDC or Diamond), Aluminium standard inner barrel, core boxes, etc.	To take core in 12.1/4" & 8.1/2" holes (i.e. 30' in each run), record core gamma, extraction & cutting of core samples, preservation, stabilization & packing / boxing, etc.
9.	Transportat- ion Services	Trucks, trailers, etc.	As required		To transport well consumables (casing, bits, well head equipments/fittings, etc.) from OIL's Duliajan / Moran material yard to respective well site at

				Dima Hasao District.
Maintenance Services of well Plinth & Approach road of 9 km.	Excavator, roller, etc.	As required	As required	To maintain the well plinth & approach road in perfect condition.

<u>Appendix-I</u>

Mud Logging Services

Sr. No.	Position	Minimum Qualification/Work Experience	No. of Personnel
1	Data Engineer (DE)/Total Drilling Controller (TDC)	 Min. Qualification : Graduate in Engineering OR M. Sc. in Applied Geology/Geology/Geosciences Min. Work Experience : (i) Five (5) years relevant experience in Oil/Gas wells, out of which minimum two (2) years as a Data Engineer/TDC. 	One (1)
2	Mud Logger (ML)	 Min. Qualification: M. Sc. in Applied Geology/Geosciences. Min. Work Experience : Three (3) years relevant experience in Oil/ Gas wells as a Mud Logger (ML). 	Two (2)
3	Sample Catcher	Min. Qualification: 10 + 2 or equivalentWork Experience: The persons to be deployed must be conversant with their jobs.	Two (2)

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