OIL INDIA LIMITED
KG BASIN PROJECT
KAKINADA

AMENDMENT NO. 2 DATED 11.04.2025
To TENDER NO. CEG8433P25

1.0 Consequent of the Pre-bid Conference held on 20.02.2025 to 21.02.2025, this amendment is issued to amend / correct the following clauses of bidding document:

<table>
<tr><th>SL NO.</th><th>Section/ Clause No./Page No.</th><th>Original Clause</th><th>Amended Clause</th></tr>
<tr><td colspan="4">FORWARDING LETTER</td></tr>
<tr><td>1</td><td>Forwarding Letter

Subject:</td><td>IFB No. CEG8433P25 for Hiring of Bundle Services inclusive of Marine Vessels and Shore Base Management to support drilling operations in Offshore Kerala Konkan Block KK-OSHP-2018/1 for a period of 07 months or till completion of 01 (one) well, extendable by another 07 (seven) months for an optional well or otherwise at the same rates, terms & conditions.</td><td>IFB No. CEG8433P25 for Hiring of Bundle Services inclusive of Marine Vessels and Shore Base Management to support drilling operations in Offshore Kerala Konkan Block KK-OSHP-2018/1 till completion of 01 (one) well, extendable by another 07 (seven) months for an optional well or otherwise at the same rates, terms & conditions.</td></tr>
<tr><td>2</td><td>Forwarding Letter

Clause 2.0 (j) Mobilization Time</td><td>
<table>
<tr><th>Sl. No.</th><th>Name of the Services</th><th>Designated Location</th><th>Mobilization Period</th></tr>
<tr><td colspan="4">GROUP-I SERVICES</td></tr>
<tr><td>5</td><td>Tubular for Well Testing.</td><td>At Contractor’s Base in Kollam, Kerela</td><td>Within 120 days of Mobilization notice issued by Company</td></tr>
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</td><td>
<table>
<tr><th>Sl. No.</th><th>Name of the Services</th><th>Designated Location</th><th>Mobilization Period</th></tr>
<tr><td colspan="4">GROUP-I SERVICES</td></tr>
<tr><td>5</td><td>Tubular for Well Testing.</td><td>At Contractor’s Base in Kochi, Kerela</td><td>Within 150 days of Mobilization notice issued by Company</td></tr>
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		12	Supply of Mud Line Suspension.	30" landing ring, 20" shoulder type hanger & pup joint.	At Contractor's Base in Kollam, Kerela	Within 150 days of Mobilization notice issued by the Company	12	**DELETED**			
		13		13-3/8" shoulder type hanger & pup joint.		Within 180 days of Mobilization notice issued by the Company	13				
		14		9-5/8" Split Ring Hanger & pup joint.		Within 210 days of Mobilization notice issued by the Company	14				
		15		7" Split Ring Hanger & pup joint.		Within 240 days of Mobilization notice issued by Company	15				
		16		Running Tools for Casing Hangers & other tools.		Within 150 days of Mobilization notice issued by Company	16				
		18	Well testing & TCP Services	At Contractor's Base in Kollam, Kerela for Equipment and crew		Within 150 days of Mobilization	18	Well testing & TCP Services	At Contractor's Base in Kochi, Kerela for Equipment and crew	For Well Testing & TCP Services: Within 150 days of Mobilization notice	

				at OIL's Heli Base in Thiruvananthapuram	notice issued by Company			at OIL's Heli Base in Kochi	issued by the Company. For Consumables (liquid Nitrogen, Methanol, PPD, Demulsifier, & defoamer): Within 14 days of mobilization notice issued by the company
			GROUP-II SERVICES				**GROUP-II SERVICES**		
			22	Shore Based Services	Sea Port - Kollam	Within 150 days of Mobilization notice issued by the Company	22	Shore Based Services	Sea Port - Kochi	Within 120 days of Mobilization notice issued by the Company
			23	Marine Vessels – 2 Nos. AHTS with 100 Metric Tons bollards pull or more along with the crew	Port of Call - Kollam	Within 150 days of Mobilization notice issued by the Company	23	Marine Vessels – 2 Nos. AHTS with 100 Metric Tons bollards pull or more along with the crew	Port of Call - Kochi	Within 120 days of Mobilization notice issued by the Company
3	Forwarding Letter Clause 2.0 (m) Amount of	5% of total estimated contract value, to be furnished within 30 days from the date of notification of the award					5% of total estimated contract value, to be furnished within 30 days from the date of notification of the award. To be submitted in two parts:			

	Performance Security		Part-1: 5% of total contract cost excluding cost for Shore Base Services. Part-2: 5% of total cost for Shore Base Services.
4	Forwarding Letter Clause 2.0 (n) Validity of Performance Security	Should be valid throughout the contract period up to 03 (three) months beyond the date of completion of all contractual obligations of the contractor, including the warranty / guarantee / defect liability period (if any).	Should be valid throughout the contract period up to 03 (three) months beyond the date of completion of contract, including extension (if any) for Part-1 of Performance Security. For Part-2, the validity should be 03 (three) months beyond the completion of hiring period of the OCTG Yard, including extension (if any).
5	Forwarding Letter Clause 2.0 (p) Duration of the Contract	The duration of the contract shall be for a period of 210 days from the date of commencement of the contract or the completion of 01 (one) Well whichever is earlier, subject to following conditions: (i) The contract shall continue till completion / abandonment of the well being drilled as per the operational programme of the Company or till de-hiring of the Drilling Unit. The Contract will be automatically extended for completion of jobs in the last well, on the same rates, terms & conditions. (ii) The contract duration may be extended by another 210 days, for an optional well or otherwise, at the sole discretion of the Company at the same rates, terms and conditions. (iii) Some of the services may be required even after de-hiring of the Drilling Unit and as such the individual services shall be successively de-hired as per the requirement of the last well. (iv) Payments of any individual services shall be made as per the provisions of conditions specified in the Contract for each service.	The contract duration for hiring Bundle Services is as follows: • Bundle Services (excluding Marine Logistics and Shore Base Services): 210 days • Marine Logistics: 240 days • OCTG Yard: 330 days • Other Shore Base Services: 240 days The duration will be counted from the contract commencement date. For the Bundle Oilfield Services, Marine Logistics, and Other Shore Base Services (excluding OCTG Yard), the contract will last 210 days, 240 days, and 240 days, respectively, or until the completion of one well, whichever is earlier, subject to the following conditions: (i) The contract shall continue till completion / abandonment of the well being drilled as per the operational programme of the Company or till de-hiring of the Drilling Unit. The Contract will be automatically extended for completion of jobs in the last well, on the same rates, terms & conditions.

<table>
<tr><td></td><td></td><td></td><td>(ii) The contract duration may be extended by another 210 days for an optional well or otherwise, at the sole discretion of the Company at the same rates, terms and conditions.

(iii) Some of the services may be required even after de-hiring of the Drilling Unit and as such the individual services shall be successively de-hired as per the requirement of the last well.

(iv) Payments of any individual services shall be made as per the provisions of conditions specified in the Contract for each service.</td></tr>
<tr><td colspan="4">Part-2
BID EVALUATION CRITERIA (BEC)</td></tr>
<tr><td>1</td><td>Clause 1.2 Scope of Work / Technical Evaluation Criteria:</td><td>Bundled Services (Group-I):

10) Supply of Surface Wellheads, Mud Line Suspension and 30” Conductor Pipe.</td><td>Bundled Services (Group-I):

10) Supply of Surface Wellheads and 30” Conductor Pipe.</td></tr>
<tr><td>2</td><td>Clause A.6.0 Mobilization Period</td><td><table><tr><th>Particulars</th><th>Mobilization Time</th></tr><tr><td>Group – I Services (Exclusive of Supply of Surface Wellheads, Mud Line Suspension, 30” Conductor Pipe, Liner Hanger Equipment supply and Liner running Services, Tubular for Well Testing and Well Testing & TCP Services).</td><td>Within 90 days of Mobilization notice issued by Company</td></tr></table></td><td><table><tr><th>Particulars</th><th>Mobilization Time</th></tr><tr><td>Group – I Services (Exclusive of Supply of Surface Wellheads, 30” Conductor Pipe, Liner Hanger Equipment supply and Liner running Services, Tubular for Well Testing and Well Testing & TCP Services).</td><td>Within 90 days of Mobilization notice issued by Company</td></tr></table></td></tr>
<tr><td>3</td><td>Clause A.6.0 Mobilization Period</td><td><table><tr><th colspan="2">Particulars</th><th>Mobilization Time</th></tr><tr><td>Group – I Services (Supply of</td><td>30” landing ring, 20”</td><td>Within 150 days of Mobilization notice issued by Company</td></tr></table></td><td>DELETED</td></tr>
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		Mud Line Suspension).	shoulder type hanger & pup joint.	
			13-3/8" shoulder type hanger & pup joint.	Within 180 days of Mobilization notice issued by Company
			9-5/8" Split Ring Hanger & pup joint.	Within 210 days of Mobilization notice issued by Company
			7" Split Ring Hanger & pup joint.	Within 240 days of Mobilization notice issued by Company
			Running Tools for Casing Hangers & other tools.	Within 150 days of Mobilization notice issued by Company

4	Clause A.6.0 Mobilization Period	**Particulars**	**Mobilization Time**	**Particulars**	**Mobilization Time**
		Group – I Services (Tubular for Well Testing).	Within 120 days of Mobilization notice issued by Company	Group – I Services (Tubular for Well Testing).	Within 150 days of Mobilization notice issued by Company
5	Clause A.6.0 Mobilization Period	**Particulars**	**Mobilization Time**	**Particulars**	**Mobilization Time**
		Group – I Services (Well Testing & TCP Services).	Within 150 days of Mobilization notice issued by the Company	Group – I Services (Well Testing & TCP Services).	For Well Testing & TCP Services: Within 150 days of Mobilization notice issued by the Company. For Consumables (liquid Nitrogen, Methanol, PPD, Demulsifier, &

				defoamer): Within 14 days of mobilization notice issued by the company
6	Clause A.6.0 Mobilization Period	**Particulars** / **Mobilization Time** Group - II Services (Shore Based Services.) / Within 150 days of Mobilization notice issued by the Company	**Particulars** / **Mobilization Time** Group - II Services (Shore Based Services.)	Within 120 days of Mobilization notice issued by the Company
7	Clause A.6.0 Mobilization Period	**Particulars** / **Mobilization Time** Group - II Services (Marine Vessels - 2 Nos. AHTS with 100 metric tons bollards pull or more along with the crew.) / Within 150 days of Mobilization notice issued by the Company	**Particulars** / **Mobilization Time** Group - II Services (Marine Vessels - 2 Nos. AHTS with 100 metric tons bollards pull or more along with the crew.)	Within 120 days of Mobilization notice issued by the Company
8	Clause A.6.0 Mobilization Period Interim De-mobilization and Re-mobilization	**Particulars** / **Mobilization Time** Well testing Services & TCP Services under Group – I Services / Within 45 days of Re-Mobilization notice issued by the Company	**Particulars** / **Mobilization Time** Well testing Services & TCP Services under Group – I Services	For Well Testing Services: Within 45 days of Re-Mobilization notice issued by the Company. For TCP Services: within 120 days of Re-Mobilization notice issued by the Company.
9	Clause A.8.0 Vintage:	**Service Details** / **Vintage Clause** Well Testing service / - The vintage of the equipment for Well Testing service should not be more than 10 (ten) years from the date of manufacturing as on the original Bid closing date.	**Service Details** / **Vintage Clause** Well Testing service	- The Residual life of the equipment for Well Testing services should be 5 (Five) years and shall be valid during the execution of contract duration.

			- Bidder to submit relevant documents in support of this vintage clause.		- Bidder to submit relevant documents in support of this clause.
10	Clause B.1	Annual Financial Turnover from operation of the bidder during any of preceding 03 (Three) financial/accounting years from the original bid closing date should be at least INR 333.00 Cr. or USD 38.54 Million (1 USD = INR 86.31).		Annual Financial Turnover from operation of the bidder during any of preceding 03 (Three) financial/accounting years from the original bid closing date should be at least INR 341.33 Cr. or USD 39.55 Million (1 USD = INR 86.31).	
11	Clause B.4.1	In case the Bidder is a Consortium, then any one of the Consortium members individually shall have to meet the financial turn-over criteria as per BEC Clause B.1 above. Similarly, other Consortium members individually shall have minimum Annual financial turn-over of INR 166.33 Cr. or USD 19.27 Million (1 USD = INR 86.31) in any of preceding 03 (Three) financial / accounting years from the original bid closing date. Net worth of all Consortium members must be Positive for the preceding financial / accounting year from the original bid closing date.		In case the Bidder is a Consortium, then any one of the Consortium members individually shall have to meet the financial turn-over criteria as per BEC Clause B.1 above. Similarly, other Consortium members individually shall have minimum Annual financial turn-over of INR 170.67 Cr. or USD 19.78 Million (1 USD = INR 86.31) in any of preceding 03 (Three) financial / accounting years from the original bid closing date. Net worth of all Consortium members must be Positive for the preceding financial / accounting year from the original bid closing date.	
Part-3 SECTION-II TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/ SCOPE OF WORK					
1	D. PROPOSED DRILLING SCHEDULE	**Logistical Support/Supply Bases**	The Company recommends that the shore base and OCTG yard should be operated from Kollam, Kerela, India from where all supplies such as casing, bits, mud chemicals, brine,	**Logistical Support/Supply Bases**	The Company recommends that the shore base and OCTG yard should be operated from Kochi, Kerela, India from where all supplies such as casing, bits, mud chemicals, brine,

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<tr><td></td><td>cement, potable water, fuel shall be supplied by the hired vessels. Kollam is well connected by road, train, air, and sea from all parts of India. Helicopter services will be operated from Thiruvananthapuram, Kerala.</td></tr>
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<tr><td></td><td>cement, potable water, fuel shall be supplied by the hired vessels. Kochi is well connected by road, train, air, and sea from all parts of India. Helicopter services will be operated from Kochi, Kerala.</td></tr>
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<td>2</td>
<td>G. PROPOSED CASING PROGRAM</td>
<td>
Well engineering has been completed and the table below shows the casing program for the wells.
<table>
<tr><th>Casing Size</th><th>Hole Size</th><th>Shoe Depth TVDRT (m)</th></tr>
<tr><td>30”</td><td>Driven</td><td>200</td></tr>
<tr><td>20”</td><td>26”</td><td>800</td></tr>
<tr><td>16”</td><td>Pilot hole 17.1/2” Underream to 20”</td><td>1970</td></tr>
<tr><td>13.3/8”</td><td>Pilot hole 12.1/4” Underream to 17.1/2”</td><td>2800</td></tr>
<tr><td>9.5/8”</td><td>12.1/4”</td><td>4500</td></tr>
<tr><td>7”</td><td>8.1/2”</td><td>6000</td></tr>
<tr><td>4.1/2” liner contingent</td><td>5-7/8”</td><td>As needed</td></tr>
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Well engineering has been completed and the table below shows the casing program for the wells.
<table>
<tr><th>Casing Size</th><th>Hole Size</th><th>Shoe Depth TVDRT (m)</th></tr>
<tr><td>30”</td><td>26” enlarged to 36”</td><td>200</td></tr>
<tr><td>20”</td><td>26”</td><td>800</td></tr>
<tr><td>16”</td><td>Pilot hole 17.1/2” Underream to 20”</td><td>1970</td></tr>
<tr><td>13.3/8”</td><td>Pilot hole 14.3/4” Underream to 17.1/2”</td><td>2800</td></tr>
<tr><td>9.5/8”</td><td>12.1/4”</td><td>4500</td></tr>
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<td>3</td>
<td>H. TENTATIVE MUD PROGRAMME</td>
<td>
<table>
<tr><th>Casing and Hole Size</th><th>Mud program</th></tr>
<tr><td>Hammer 30” Conductor</td><td></td></tr>
<tr><td>26” hole x 20” casing</td><td>Pre-hydrated bentonite</td></tr>
<tr><td>17.1/2” x 20” hole x 16” casing</td><td>8.8 – 9.2 lb./gal Mixed Metal Oxides</td></tr>
<tr><td>12.1/4” x 17.1/2” hole x 13.3/8” casing</td><td>9.2 – 9.5 lb./gal Mixed Metal Oxides</td></tr>
<tr><td>12.1/4” hole x 9.5/8” casing</td><td>9.5 -10.0 lb./gal KCl-PHPA-Polymer-WBM</td></tr>
<tr><td>8.1/2” hole x 7” casing</td><td>10.0 – 11.5 lb./gal KCl-PHPA-Polymer-WBM</td></tr>
<tr><td>5-7/8” hole x 4-1/2” liner</td><td>11.5 lb./gal KCl-PHPA-Polymer-WBM</td></tr>
</table>
</td>
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<table>
<tr><th>Casing and Hole Size</th><th>Mud program</th></tr>
<tr><td>36” hole x 30” Conductor</td><td></td></tr>
<tr><td>26” hole x 20” casing</td><td>Pre-hydrated bentonite</td></tr>
<tr><td>17.1/2” x 20” hole x 16” casing</td><td>8.8 – 9.2 lb./gal Mixed Metal Oxides</td></tr>
<tr><td>14.3/4” x 17.1/2” hole x 13.3/8” casing</td><td>9.2 – 9.5 lb./gal Mixed Metal Oxides</td></tr>
<tr><td>12.1/4” hole x 9.5/8” casing</td><td>9.5 -10.0 lb./gal KCl-PHPA-Polymer-WBM</td></tr>
<tr><td>8.1/2” hole x 7” casing</td><td>10.0 – 11.5 lb./gal KCl-PHPA-Polymer-WBM</td></tr>
<tr><td>5-7/8” hole x 4-1/2” liner</td><td>11.5 lb./gal KCl-PHPA-Polymer-WBM</td></tr>
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<tr><td colspan="4">Exhibit 1
1) CEMENTING SERVICES</td></tr>
<tr><td>1</td><td></td><td></td><td>Refer to amended Exhibit 1</td></tr>
<tr><td colspan="4">Exhibit 3
3) CASING & TUBING RUNNING SERVICES</td></tr>
<tr><td>1</td><td></td><td></td><td>Refer to amended Exhibit 3</td></tr>
<tr><td colspan="4">Exhibit 4
4) DRILLING TOOLS</td></tr>
<tr><td>1</td><td></td><td></td><td>Refer to amended Exhibit 4</td></tr>
<tr><td colspan="4">Exhibit 5
5) DIRECTIONAL SERVICES / MWD/ LWD</td></tr>
<tr><td>1</td><td>5.5(page no. 147)</td><td>5.5 Experience and Training
Minimum experience required for the Directional Drilling Engineer and the lead MWD/LWD Engineer is minimum 5 years of relevant</td><td>5.5 Experience and Training
Minimum experience required for the Directional Drilling Engineer is minimum 5 years of relevant experience. Company at its option may mobilize a second MWD/LWD</td></tr>
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		experience. Company at its option may mobilize a second MWD/LWD Engineer for directional wells. The second MWD/LWD Engineer should have minimum 3 years of relevant experience.	Engineer for directional wells. The lead/second MWD/LWD Engineer should have minimum 3 years of relevant experience.
2	6.6(page no. 149)	**6.6 Post-processing of field data** Post processing of field data at the well site or Bidders' base office will consist of: a) Special processing of data such as resistivity (if array type tools are used). Deliverables for 12.1/4" and 8.1/2" hole sections: i) 1D Inversion Model ii) Distance to Bed Boundary iii) Average Resistivity Image	**DELETED**
3	7.3.1, e), vi) (page no. 151)	vi) Should be able to measure internal and external string pressure and temperature.	vi) Should be able to measure external string pressure.
4	7.4, b) (page no. 153)	b) Mud flow rates: 250-900 GPM or better for 12-1/4" and 8-1.2" hole.	b) Mud flow rates: 250-800 GPM or better for 12-1/4" and 8-1.2" hole.
5	**7.3.2 12-1/4" hole** a) High Resolution Standard Array Induction Service, iii) (Page No. 151 of 607)	iii) Maximum Flow Rate: >450-1200 GPM	iii) Maximum Flow Rate: >600-1200 GPM
6	**7.3.2 12-1/4" hole** b) Sonuc, iii) (Page No. 152 of 607)	iii) Maximum Flow Rate: >450-1200 GPM	iii) Maximum Flow Rate: >600-1200 GPM

7		a) 7-5/8” / 8" / 8-1/4” OD high torque, low to medium speed stabilized positive displacement steerable multi-lobe mud motor capable of drilling vertical and deviated wells to be used for drilling in 12-1/4" hole with bearing housing stabilizer and adjustable kick off sub (Adjustable Bend Housing) with 6-5/8" API Regular Box down (bit box) and 6-5/8" API Regular Box up, complete with lifting sub and having following specifications. Flow rate 300-900 GPM, RPM 45-225 (indicative).	a) 7-5/8” / 8" / 8-1/4” OD high torque, low to medium speed stabilized positive displacement steerable multi-lobe mud motor capable of drilling vertical and deviated wells to be used for drilling in 12-1/4" hole with bearing housing stabilizer and adjustable kick off sub (Adjustable Bend Housing) with 6-5/8" API Regular Box down (bit box) and 6-5/8" API Regular Box up, complete with lifting sub and having following specifications. Flow rate 450-800 GPM, RPM 45-225 (indicative).
8	7.3.1. 8-1/2” Hole section Page No. 151 of 607	e) **Annular Pressure and Annular Circulating Temperature While Drilling** i) Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density). iv) Should be able to provide measurements in both OFF and ON conditions of the pumps. v) Should be able to take multiple pressure measurements during LOT.	e) **Annular Pressure and Annular Circulating Temperature While Drilling** i) Pressure sensor to identify ECD (Equivalent Circulating Density). iv) **DELETED** v) **DELETED**
9	**7.3.2 12-1/4” hole** Page No. 152 of 607	c) **Annular Pressure and Annular Circulating Temperature While Drilling** i) Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density). iv) Should be able to provide measurements in both OFF and ON conditions of the pumps. v) Should be able to take multiple pressure measurements during LOT.	c) **Annular Pressure and Annular Circulating Temperature While Drilling** i) Pressure sensor to identify ECD (Equivalent Circulating Density). iv) **DELETED** v) **DELETED**

Exhibit 6 **6) DRILLING FLUIDS**			
1	6.13.3 (Page No. 192 of 607)	6.13.3 Centrifuge must be compatible with supplied mud system and as per its requirement. Specifications: Two Nos of Centrifuges each capable of handling 250 GPM of mud, one to act as a Barites recovery unit and the other to remove low gravity solids. • Bowl size – 14 inch to 18 inch • Bowl speed (rpm) – 3000 or more (variable) • Feed Volume – Up to 250 GPM • Speed variation will be integral to the centrifuge unit and must not require any mechanical intervention such as belt changes. All equipment to be rated for Zone-1 use. • The centrifuge package should include all controls and accessories including working platform	6.13.3 Centrifuge must be compatible with supplied mud system and as per its requirement. Specifications: Two Nos of Centrifuges each capable of handling 245 GPM of mud, one to act as a Barites recovery unit and the other to remove low gravity solids. • Bowl size – 14 inch to 18 inch • Bowl speed (rpm) – 3000 or more (variable) • Feed Volume – Up to 245 GPM • Speed variation will be integral to the centrifuge unit and must not require any mechanical intervention such as belt changes. All equipment to be rated for Zone-1 use. • The centrifuge package should include all controls and accessories including working platform
2	6.5 (a) (Page No. 175 of 607)	a) The contractor shall provide dedicated DE Filtration unit along with Dual Pod Filtration Unit for each Rig under testing and completion to provide clean brine up to 2 microns.	a) The contractor shall provide Dual Pod Filtration Unit for each Rig under testing and completion to provide clean brine up to 2 microns.
3			Also Refer to amended Exhibit – 6.

Exhibit 7 **7) DRILL BITS**											
1	Table 1: Company's Preferred Bits List, Sl. No.7	7	3-5/8"	Roller Cone Milled Tooth	IADC code 1-1-7 for 4-1/2" liner cleanout	2	7	3-5/8"	Roller Cone Milled Tooth	IADC code from 1-1-7 to 3-1-7 for 4-1/2" liner cleanout	2

	(Page No. 202 of 607)		
Exhibit 8 8) LINER HANGER SERVICES			
1	8) LINER HANGER SERVICES, 2. EQUIPMENT DESCRIPTION (Page No. 205 of 607) & 8) LINER HANGER SERVICES, Table-A EQUIPMENT DETAILS – CONSUMABLE BASIS, Sl. No. 1,2 & 3 (Page No. 210 of 607)	16", 84 lb/ft, VN110SS-D, DINO VAM	16", 84 lb/ft, VM110SS-D, DINO VAM
2	2.2, l) (Page No. 206 of 607)	l) Liner hangers should be proposed with integral lap packers, capable of withstanding 5000 psi differential pressure. A separate Tie back packer, seal nipple and seal orifice float collar should be proposed as back up.	l) Liner hangers should be proposed with integral lap packers, capable of withstanding 10000 psi differential pressure & temperature rating of 250-300^{0}F. A separate Tie back packer, seal nipple and seal orifice float collar should be proposed as back up.
3	2.3, l) (Page No. 207 of 607)	l) Liner hangers should be proposed with integral lap packers, capable of withstanding 5000 psi differential pressure.	l) Liner hangers should be proposed with integral lap packers, capable of withstanding 10000 psi differential pressure & temperature rating of 250-300^{0}F.

<table>
<tr><td colspan="5">Exhibit 9
9) MUD LOGGING SERVICES</td></tr>
<tr><td>1</td><td>9, 3.5, F.3. (Page no. 220)</td><td><table><tr><td>Sl. No.</td><td>Equipment Description</td><td>Quantity*</td></tr><tr><td>3.</td><td>Intercoms with minimum 6 (six) terminals connecting Rig Floor, Mud Engineer, Company Man's office, Wellsite Geologist's office, Mud Tanks / Shale Shaker and MLU.</td><td>1</td></tr></table></td><td></td><td><table><tr><td>Sl. No.</td><td>Equipment Description</td><td>Quantity*</td></tr><tr><td>3.</td><td>DELETED</td><td></td></tr></table></td></tr>
<tr><td>2</td><td>9, 3.5, F.5. (Page no. 220)</td><td><table><tr><td>Sl. No.</td><td>Equipment Description</td><td>Quantity*</td></tr><tr><td>5.</td><td>Ditch Magnet of 1-meter length</td><td>1</td></tr></table></td><td></td><td><table><tr><td>Sl. No.</td><td>Equipment Description</td><td>Quantity*</td></tr><tr><td>5.</td><td>DELETED</td><td></td></tr></table></td></tr>
<tr><td>3</td><td>3.16.9. (Page no. 233)</td><td colspan="2">9.Intercoms with minimum 6 (six) terminals connecting derrick floor, mud attendant, company representative office, geologist’s office, mud engineer’s office and MLU.</td><td>9. DELETED</td></tr>
<tr><td>4</td><td>3.16.11. (Page no. 233)</td><td colspan="2">11.Ditch Magnet of at least 1 meter length.</td><td>11. DELETED</td></tr>
<tr><td colspan="5">Exhibit 10
10) SURFACE WELLHEADS, MUD LINE SUSPENSION AND 30” CONDUCTOR PIPE</td></tr>
<tr><td>1</td><td></td><td colspan="2"></td><td>Refer to amended Exhibit 10</td></tr>
</table>

Exhibit 11 **11) WELL TESTING SERVICES, SURFACE AND DOWNHOLE TOOLS**			
1			Refer to amended Exhibit 11
Exhibit 12 **12) SCOPE OF WORK FOR WIRELINE LOGGING & PERFORATION SERVICES**			
1	Exhibit-12 Annexure-A Service Code : TR-1 LOGGING UNIT WITH CAPSTAN Page 326	LOGGING UNIT WITH CAPSTAN	LOGGING UNIT
2	Exhibit-12 Annexure-A Service Code : TR-1 LOGGING UNIT WITH CAPSTAN Page 326	1. The logging unit must be Heavy duty, Skid mounted offshore unit with 100% redundancy for essential equipment and state-of-the-art technology designed to provide full-service capabilities for performing offshore wireline logging operations.	1. Wireline Logging Unit: Heavy duty, skid mounted offshore unit with 100% redundancy for essential equipment, fully computerized, air conditioned, tropicalized dual drum or split drum fitted with multiconductor and single conductor cable and Auxiliary Cable drum Plus all required accessories, workshop, tool pallets etc. designed to provide full-service capabilities for performing offshore wireline logging operations. The logging cabin must have seating place for the witness attending the logging job.
3	Exhibit-12 Annexure-A Service Code : TR-1 LOGGING	3. **High strength cable:** The 7-conductor cable shall be high strength cable having minimum rated breaking strength of 35,000 lbs. The cable should be without splice at the time of deployment.	3. **High strength cable:** The 7-conductor cable shall be high strength cable having minimum rated breaking strength of 30,000 lbs. The cable should be without splice at the time of deployment.

	UNIT WITH CAPSTAN Page 326		
4	Exhibit-12 3. WIRELINE LOGGING SERVICES: Special Services Page 308	**Special Services:** These services shall be mobilized and hired for duration as per OIL's requirement. Some of the special services may be mobilized along with Logging Unit during initial mobilization which shall be mentioned in the LOA. Special services are listed in sub-heading B of **Table-1** below.	**Special Services:** These services shall be mobilized and hired for duration as per OIL's requirement. Once mobilized, these services shall be hired for a minimum period of 30 Days. Some of the special services may be mobilized along with Logging Unit during initial mobilization which shall be mentioned in the LOA. Special services are listed in sub-heading B of **Table-1** below.
5	Exhibit-12 Annexure-A Service Code : TR-1 LOGGING UNIT WITH CAPSTAN Page 327	5. **Wireline jar:** The logging unit should include Wireline jar as a standard package with the following specifications: Tool OD should be less than 4.125". Should be delivering jarring impact to stuck tools. Should be combinable with open hole logging tools. Should have the capability to be controlled from surface.	**DELETED**
6	Exhibit-12 Annexure-A Service Code : A-9 CEMENT EVALUATION AND CASING INSPECTION Page 337	ii)Identification of cement channels or voids of width 1.40 inch or more in 7 inch casing and 1.90 inch or more in 9 ⅝" or 9-7/8" and 13 ⅜" casings/liners.	ii)Identification of cement channels or voids of width 1.40 inch or more in 7 inch casing and 1.90 inch or more in 9 ⅝" or 9-7/8" casings/liners.

7	Exhibit-12 Annexure-A Service Code : A-13A/A-13B BRIDGE PLUG SETTING / RETAINER PACKER SETTING Page 341	a) Bridge plug setting and retainer packer setting for 4 ½", 5", 5 ½", 7" & 9 ⅝" liner/casing.	a) Bridge plug setting and retainer packer setting for 7" & 9 ⅝" liner/casing.
8	Exhibit-12 Annexure-A Service Code : A-15 CASING GUN PERFORATION Page 343	4½-4 ⅝" BIG HOLE CHARGE (for 7 inch csg) / SPF: 6 EHD ≥ 0.7 inch TTP ≥ 5 inch Bidder to provide API 19B/ API 43 certificate.	4½-4 ⅝" BIG HOLE CHARGE (for 7 inch csg) / SPF: 5/6 EHD ≥ 0.7 inch TTP ≥ 5 inch Bidder to provide API 19B/ API 43 certificate.
9	Exhibit-12 Annexure-A Service Code : AD-1 (A TO F) THROUGH DRILL PIPE SLIM OH LOGGING	**SPECIAL TOOLS/SERVICES** THROUGH DRILL PIPE SLIM OH LOGGING	**OPTIONAL TOOLS/SERVICES** THROUGH DRILL PIPE SLIM OH LOGGING

<table>
<tr><td></td><td>Page 354 to 356</td><td></td><td></td></tr>
<tr><td>10</td><td>Exhibit-12

TABLE–1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL

B. Special Tools/ services

Page 310</td><td>SPECIAL TOOLS/SERVICES<table><tr><td>9.</td><td>AD-1</td><td>Through Drillpipe Slim OH Tools with multiple conveyance modes:
A) Induction/Laterolog tool B) Density tool
C) Neutron Porosity
D) Borehole deviation tool
E) Dipole shear sonic tool</td></tr></table></td><td>OPTIONAL TOOLS/SERVICES<table><tr><td>9.</td><td>AD-1</td><td>Through Drillpipe Slim OH Tools with multiple conveyance modes:
A) Induction/Laterolog tool
B) Density tool
C) Neutron Porosity
D) Borehole deviation tool
E) Dipole shear sonic tool</td></tr></table></td></tr>
<tr><td>11</td><td>Exhibit-12

NOTES ON TABLE - 1:

Page 310 TO 311</td><td>j) Use of RF safe detonators is mandatory for jobs involving high explosives. Bidder should quote their services accordingly.</td><td>j) Use of RF safe detonators is mandatory for jobs involving high explosives. Bidder should quote their services accordingly.

k) Bidder may quote price for the Optional Tools/Services, if they are capable of providing, as per Price Bid Format (Proforma-B). These tools/services (AD-1) (listed in Table-1 above) will not be considered for evaluation of bid. However, those tools/ services of the lowest bidders shall be kept as Tools-on-call (optional) Services and if the Company requires, bidder has to supply those tools to be utilized using already mobilized Logging Unit of successful bidder.

l) Bidders must quote for Optional tools/services, if bidder possess the Optional tools/services or provided the same</td></tr>
</table>

			tools/services to other E&P companies, even it is from third party services. m) Prices of optional tools/services should include the processing charges as applicable. n) Bidder has to give **rate reasonability** of the prices quoted for Tools/processing services on call (Optional) services, which will be compared with those of existing/ running Contracts with other E&P companies in India under which the Bidder has provided the same Tools/ Services within 01 (one) year prior to the date of Tender opening. For this purpose, the bidder will be asked to provide the copy(ies) of orders executed/ currently in hand. In case the bidder has not supplied the same item/ service to other oil company in India, the bidder shall be asked to provide the copy (copies) of orders placed on him by any other oil company anywhere in the world during last one year prior to the date of Tender opening. **OIL reserves the right to hire the Optional services for which rate reasonability is established as per the above methodology. Further the bidder shall provide an undertaking that the price quoted for the optional services of same specification is not more than what they charge to their customers.** o) Customer Instrument Service (CIS) clause shall be **mandatory** for running Optional services with other Contractor's logging unit. Optional tools, if hired, will be run with already mobilized logging unit of the successful bidder with CIS charges payable separately. **Therefore, Bidder should not include any Logging unit, Crew Charges etc. on the rates of the Optional tools**. The Logging units provided by other Contractor shall have option for hepta-cable and Mono-conductor cables.

			p) **<u>Evaluation and award of Optional tools/services:</u>** 1. Optional tools category will be evaluated separately from the logging units, standard and special tools and shall **not be considered** for arriving at the price ranking of bids for award of Logging units, Standard tools & Special tools. 2. The optional tools will be evaluated and awarded to the lowest bidder. The ranking of bidder for award of optional tools shall be determined considering the evaluated price calculated as follows: **Line item evaluated price =** Operating cost + Mobilization charge + Demobilization charge + ISDR for estimated required Days (mentioned in Price Bid Format). 3. Upon requirement, Optional service will be availed from the bidder offering the lowest negotiated price for that service irrespective of that bidder has been awarded logging units or not. However, this shall be subject to rate reasonability as mentioned in earlier clause.
12	Exhibit-12 Annexure-A Service Code : AD-1 (A TO F) THROUGH DRILL PIPE SLIM OH LOGGING Page 354 to 355	1) Slim OH tools deployable through drill pipe and pass-through drill pipes and log the well during hole conditioning trip and capable of recording **real-time mode** as well as **memory mode**. 2) The tool shall have the following deployment methods: a) Wireline through pipe (bypass trouble zone through drill pipe) b) Wireline drop off (pull-out with drill pipe and recording in memory mode) c) Conventional TLC/PCL mode (wet latching and pull-out with drill pipe recording realtime via wireline) c) Pump down/gravity drop off/well shuttle (recording and pull-out with drill pipe)	1) Slim OH tools deployable through drill pipe and pass-through drill pipes and log the well during hole conditioning trip and capable of recording **real-time mode** as well as **memory mode**. 2) The tool shall have the following deployment methods: a) Wireline through pipe (bypass trouble zone through drill pipe) b) Wireline drop off (pull-out with drill pipe and recording in memory mode) **c) DELETED** **c) DELETED**

		3) The system should allow drill pipe rotation and reciprocation for hole reaming at all times. 4) The system should be capable of mud circulation at all times. 5) BHA should include float-valve to stop flow of fluid up into drill string.	3) The system should allow drill pipe rotation and reciprocation for hole reaming during tool deployment. 4) The system should be capable of mud circulation at all times. 5) BHA should include float-valve to stop flow of fluid up into drill string.
13	Exhibit-12 Annexure-A Service Code : AD-1 (A TO F) THROUGH DRILL PIPE SLIM OH LOGGING Page 355	2) Density tool Bulk density, Photoelectric absorption cross-section and Caliper. DOI ≥ 2.0” Measurement range: Density 1.0 to 3.0 gm/cm3, Pe 1 to 10 B/e Accuracy: ±0.02 g/cm3 and ±0.2 B/e or 1.6% Vertical resolution: 14 in or better	2) Density tool Bulk density, Photoelectric absorption cross-section and Caliper. DOI ≥ 2.0” Measurement range: Density 1.5 to 3.0 gm/cm3, Pe 1 to 10 B/e Accuracy: ±0.02 g/cm3 and ±0.2 B/e or 1.6% Vertical resolution: 14 in or better
14	Exhibit-12 SCOPE OF WORK FOR WIRELINE LOGGING & PERFORATION SERVICES 2.1Experience of Contractors personnel: Page 306	**Logging Engineer:** The Logging Engineers deployed shall have minimum **3 (three) years** of relevant experience of carrying out wireline logging and perforation and related services. Deployed logging engineers must be able to handle independent assignments and must have logged at least **10 wells including 3 Shallow water offshore wells** in an independent capacity in earlier assignments on the bid closing date. Apart from requisite experience and Logging engineers should have valid well control and offshore safety course certifications. **Logging Operator:** The Logging Operators deployed should have at least **1 (One) years** of relevant experience of carrying out wireline logging and perforation and related services. Deployed logging operators must be able to handle	**Logging Engineer:** The Logging Engineers deployed shall have minimum **3 (three) years** of relevant experience of carrying out wireline logging and perforation and related services. Deployed logging engineers must be able to handle independent assignments and must have logged at least **10 wells including 3 offshore wells** in an independent capacity in earlier assignments on the bid closing date. Apart from requisite experience and Logging engineers should have valid well control and offshore safety course certifications. **Logging Operator:** The Logging Operators deployed should have at least **1 (One) years** of relevant experience of carrying out wireline logging and perforation and related services. Deployed logging operators must be able to handle independent assignments and must have logged

<table>
<tr><td></td><td></td><td>independent assignments and must have logged at least 5 wells including 1 Shallow water offshore wells in an independent capacity in earlier assignments on the bid closing date. Apart from requisite experience and Logging operators should have valid offshore safety course certifications.</td><td>at least 5 wells including 1 offshore wells in an independent capacity in earlier assignments on the bid closing date. Apart from requisite experience and Logging operators should have valid offshore safety course certifications.</td></tr>
<tr><td>15</td><td>Exhibit-12
Annexure-A
Service Code : A-1
DUAL LATEROLOG RESISTIVITY + MICRO RESISTIVITY
Page 330</td><td><table><tr><td>DEPTH OF INVESTIGATION</td><td>LLD: 55-84 inches minimum
LLS: 16-36 inches minimum</td></tr></table></td><td><table><tr><td>DEPTH OF INVESTIGATION</td><td>LLD: 55-84 inches minimum
LLS: 24-36 inches minimum</td></tr></table></td></tr>
<tr><td>16</td><td>Exhibit-12

Annexure-A
Service Code : A-15

CASING GUN PERFORATION Page 342</td><td><table><tr><td>2 ⅞”
DEEP PENETRATION CHARGE (for 4½" liner)</td><td>SPF: 6 EHD ≥ 0.30 inch TTP ≥ 27.5 inch
Phasing: 60° Bidder to provide API 19B/ API RP43 certificate.</td></tr></table></td><td><table><tr><td>2 ⅞” or 2 ¾” DEEP PENETRATION CHARGE (for 4½" liner)</td><td>SPF: 6 EHD ≥ 0.30 inch TTP ≥ 27.5 inch
Phasing: 60° Bidder to provide API 19B/ API RP43 certificate.</td></tr></table></td></tr>
<tr><td>17</td><td>Exhibit-12

3. WIRELINE LOGGING SERVICES:

Special Services (Table No. 1: LIST OF REQUIRED</td><td>B. Special Tools/services
Sl. No. 1 (OIL Code S1)
Vertical Seismic Profile (VSP)</td><td>Look-Ahead Vertical Seismic Profiling (VSP)</td></tr>
</table>

	WIRELINE SERVICES AND TOOL) Page 309		
18	Exhibit-12 4. WIRELINE LOGGING SERVICES: Special Services (Table No. 2: LIST OF REQUIRED DATA PROCESSING SERVICES) Page 316	Sl No. 6 (OIL Code : PS-3) Data acquired by: Vertical Seismic Profiling (VSP) (S-1) <u>Post Processed Data Requirement</u> Processing of Borehole Seismic Services (VSP) data in open hole & cased hole relevant to acquisition mode with report comprising of: i) Composite Display of Down-going waves, corridor stack (repeating 6-7 times) with check-shot corrected Sonic, Density, Gamma and Formation Tops. This display is to be with respect to SRD (seismic reference datum). ii) Display of original Down-going (i.e., after separation) waves and display of Down-going waves after Deconvolution. iii) Details of velocity filter and Deconvolution parameters as part of processing note. iv) VSP Velocity Listing Table: The primary use of VSP is for accurate well – to- seismic ties. Seismic sections are always based on the SRD (seismic reference Datum). Therefore, velocity listing table should have a column mentioning SRD so that the average velocity and interval velocity can be seen w.r.t. SRD. v) Time-Depth Curve: The Depth axis should start from SRD level. At right hand side, there should be a color bar indicating the Formation Tops and Thickness. vi) Time-Depth Table: Interval velocity and Average velocity should be mentioned along with TWT. vii) Checkshot data.	Sl No. 6 (OIL Code : PS-3) Data acquired by: Look Ahead Vertical Seismic Profiling (VSP) (S-1) <u>Post Processed Data Requirement</u> Processing of Borehole Seismic Services (VSP) data in open hole & cased hole relevant to acquisition mode with report comprising of: i) Composite Display of Down-going waves, corridor stack (repeating 6-7 times) with check-shot corrected Sonic, Density, Gamma and Formation Tops. This display is to be with respect to SRD (seismic reference datum). ii) Display of original Down-going (i.e., after separation) waves and display of Down-going waves after Deconvolution. iii) Details of velocity filter and Deconvolution parameters as part of processing note. iv) VSP Velocity Listing Table: The primary use of VSP is for accurate well – to- seismic ties. Seismic sections are always based on the SRD (seismic reference Datum). Therefore, velocity listing table should have a column mentioning SRD so that the average velocity and interval velocity can be seen w.r.t. SRD. v) Time-Depth Curve: The Depth axis should start from SRD level. At right hand side, there should be a color bar indicating the Formation Tops and Thickness. vi) Time-Depth Table: Interval velocity and Average velocity should be mentioned along with TWT. vii) Checkshot data. viii) Report on acquisition and processing. **A. Real-Time Processing & Preliminary Interpretation**

		viii) Report on acquisition and processing.	1. Conduct on-site QC processing to assess data quality. 2. Generate real-time velocity updates for time-depth conversion. 3. Provide immediate Look-Ahead prediction reports at each acquisition stage (within 24 hours of each acquisition stage). 4. Identify overpressure zones, faults, and stratigraphic discontinuities. 5. Depth Prediction to give seismic target depth. **B. Post-Acquisition Processing & Final Interpretation** 1. Perform advanced processing, including: o Deconvolution and wavefield separation. o Depth imaging to enhance subsurface resolution. o Inversion techniques to generate acoustic impedance logs below TD. 2. Integrate VSP results with surface seismic, well logs, and drilling data. 3. Prepare a final interpretation report with: o Velocity model refinements. o Structural and stratigraphic analysis. o Drilling risk assessment. **C. DELIVERABLES**

			The contractor must provide the following: 1. Real-Time Look-Ahead Reports (within 24 hours of each acquisition stage). 2. Final Processed VSP Data (SEG-Y format) with interpretation. 3. Well Tie Report correlating seismic, VSP, and well logs. 4. Geohazard and Overpressure Assessment Report. 5. Comprehensive Final Report, including: o Methodology and acquisition details. o Processed data and interpretations. o Recommendations for further drilling.
19	Exhibit-12 WIRELINE LOGGING SERVICES: Annexure-A TECHNICAL SPECIFICATIONS CUM EVALUATION TABLE Page 345	SPECIAL TOOLS/SERVICES Service Code: S-1 VERTICAL SEISMIC PROFILING (VSP) **Requirement:** Tri axial data acquisition to provide high quality VSP compressional and shear event. At least five shuttle arrays to save measurement time, adjustable distance between shuttles from 10 m to 20 m or more. Energy source: air gun.	SPECIAL TOOLS/SERVICES Service Code: S-1 LOOK AHEAD VERTICAL SEISMIC PROFILING (VSP) **Requirement:** Tri axial data acquisition to provide high quality VSP compressional and shear event. Multi-level 3-component (3C) downhole geophones At least five shuttle arrays to save measurement time, adjustable distance between shuttles from 10 m to 20 m or more. Energy source: air gun.

		Bidder shall provide energy source, surface equipment and all other accessories as required. Suitable for Data acquisition in cased hole and open-hole. **Measurements:** Seismic stacks travel time v/s depth plots and raw seismic traces of individual shots **POST PROCESSED DATA:** Processing of Borehole Seismic Services (VSP) data in open hole & cased hole relevant to acquisition mode with report comprising of: Composite Display of Down-going waves, corridor stack (repeating 6-7 times) with check-shot corrected Sonic, Density, Gamma and Formation Tops. This display is to be with respect to SRD (seismic reference datum). Display of original Down-going (i.e. after separation) waves and display of Down-going waves after Deconvolution. Details of velocity filter and Deconvolution parameters as part of processing note. VSP Velocity Listing Table: The primary use of VSP is for accurate well-toseismic ties. Seismic sections are always based on the SRD (seismic reference Datum). Therefore, velocity listing table should have a column mentioning SRD so that the average velocity and interval velocity can be seen w.r.t. SRD.	Bidder shall provide energy source, surface equipment and all other accessories as required. Suitable for Data acquisition in cased hole and open-hole. Real-time data transmission system for QC **Measurements:** Seismic stacks travel time v/s depth plots and raw seismic traces of individual shots. To conduct Zero Offset VSP as a baseline survey for velocity calibration. And execute Look-Ahead VSP survey at multiple depths as drilling progresses. **POST PROCESSED DATA:** Processing of Borehole Seismic Services (VSP) data in open hole & cased hole relevant to acquisition mode with report comprising of: Composite Display of Down-going waves, corridor stack (repeating 6-7 times) with check-shot corrected Sonic, Density, Gamma and Formation Tops. This display is to be with respect to SRD (seismic reference datum). Display of original Down-going (i.e. after separation) waves and display of Down-going waves after Deconvolution. Details of velocity filter and Deconvolution parameters as part of processing note. VSP Velocity Listing Table: The primary use of VSP is for accurate well-toseismic ties. Seismic sections are always based on the SRD (seismic reference Datum). Therefore, velocity listing table should have a column mentioning SRD so that the average velocity and interval velocity can be seen w.r.t. SRD.

		Time-Depth Curve: The Depth axis should start from SRD level. At right hand side, there should be a color bar indicating the Formation Tops and Thickness. Time-Depth Table: Interval velocity and Average velocity should be mentioned along with TWT. Checkshot data. Report on acquisition and processing.	Time-Depth Curve: The Depth axis should start from SRD level. At right hand side, there should be a color bar indicating the Formation Tops and Thickness. Time-Depth Table: Interval velocity and Average velocity should be mentioned along with TWT. Checkshot data. Report on acquisition and processing. **A. Real-Time Processing & Preliminary Interpretation** 1. Conduct on-site QC processing to assess data quality. 2. Generate real-time velocity updates for time-depth conversion. 3. Provide immediate Look-Ahead prediction reports at each acquisition stage (within 24 hours of each acquisition stage). 4. Identify overpressure zones, faults, and stratigraphic discontinuities. 5. Depth Prediction to give seismic target depth. **B. Post-Acquisition Processing & Final Interpretation** 1. Perform advanced processing, including: o Deconvolution and wavefield separation. o Depth imaging to enhance subsurface resolution. o Inversion techniques to generate acoustic impedance logs below TD.

			2. Integrate VSP results with surface seismic, well logs, and drilling data. 3. Prepare a final interpretation report with: o Velocity model refinements. o Structural and stratigraphic analysis. o Drilling risk assessment. **C. DELIVERABLES** The contractor must provide the following: 6. Real-Time Look-Ahead Reports (within 24 hours of each acquisition stage). 7. Final Processed VSP Data (SEG-Y format) with interpretation. 8. Well Tie Report correlating seismic, VSP, and well logs. 9. Geohazard and Overpressure Assessment Report. 10. Comprehensive Final Report, including: o Methodology and acquisition details. o Processed data and interpretations. o Recommendations for further drilling.
20	Exhibit-12	(b) **Advanced Log Interpretation**:	b) **Advanced Log Interpretation**:

	4. WIRELINE LOGGING SERVICES: 4. DATA PROCESSING & INTERPRETATION (b) Advanced Log Interpretation Page no. 312	The service provider will be required to carry out detailed processing & Interpretation of advanced logs for the Service Codes PS-2, PS-3, PS-4, PS-5 & PS-6, cost of which is to be included in the "operating cost per standard job" and submit the provisional result within 72 hours from the time the survey is completed/ after handing over the recorded data to Contractor. Final Report for Advanced Log Interpretation is to be submitted within 5 days (soft copy acceptable). Hardcopies and data (in suitable media) of final processed product to be submitted within 7 days. Processed/ interpreted data must be submitted by Bidders representative stationed at OIL's operating Base.	The service provider will be required to carry out detailed processing & Interpretation of advanced logs for the Service Codes PS-2, PS-3, PS-4, PS-5, PS-6 & PS-10, cost of which is to be included in the "operating cost per standard job" and submit the provisional result within 72 hours from the time the survey is completed/ after handing over the recorded data to Contractor [Processing PS-3 : Look Ahead VSP (S-1) should be completed and real time look ahead report should be submitted within 24 hours]. Final Report for Advanced Log Interpretation is to be submitted within 5 days (soft copy acceptable). Hardcopies and data (in suitable media) of final processed product to be submitted within 7 days. Processed/ interpreted data must be submitted by Bidders representative stationed at OIL's operating Base.
21	Exhibit-12 4. DATA PROCESSING & INTERPRETATION NOTE ON TABLE – 2 LIST OF DATA PROCESSING SERVICES Page 319	NOTE ON TABLE – 2 LIST OF DATA PROCESSING SERVICES c) **Advanced Log Interpretation**: The service provider will be required to carry out detailed processing & Interpretation of advanced logs for the Service Codes PS-2, PS-3, PS-4, PS-5 & PS-6, cost of which is to be included in the "operating cost per standard job".	NOTE ON TABLE – 2 LIST OF DATA PROCESSING SERVICES c) **Advanced Log Interpretation**: The service provider will be required to carry out detailed processing & Interpretation of advanced logs for the Service Codes PS-2, PS-3, PS-4, PS-5, PS-6 & PS-10, cost of which is to be included in the "operating cost per standard job".

Exhibit 13 **13) FISHING TOOLS AND SERVICES**			
1			Refer to amended Exhibit 13
Exhibit – 14 **14) CORING, CORE HANDLING & CORE STABILIZATION SERVICES**			
1	14.1.a (Page No. 374)	a. The successful Bidder shall provide a complete set of coring equipment for coring unconsolidated and shale formation including but not limited to Core Barrel & orientation assembly, handling tools, circulating sub on top of core barrel, core heads and coring services with all required accessories for coring in 12¼" & 8½" hole sections of the wells.	a. The successful Bidder shall provide a complete set of coring equipment for coring unconsolidated and shale formation including but not limited to Core Barrel assembly, handling tools, circulating sub on top of core barrel, core heads and coring services with all required accessories for coring in 12¼" & 8½" hole sections of the wells.
2	Exhibit-14, 14.3.i, (Page No. 374-375)	i) Core Barrels to be provided as follows: One set of 6¾″ x 4″ x 30 ft long Core barrel with 8.3/8" / 8.1/2" core heads for operation in 8.½" & 12.1/4" holes (with back-up as required to ensure uninterrupted operation). The bidder should provide a variety of core heads on consignment basis. The core barrels should be complete with Fiber glass inner barrel liner system complete with end caps and clips; Fiber glass inner tubes shall be in approximately 9m (30 ft) sections to suit the outer barrels. The inner tubes must be able to operate at bottom hole static temperatures of up to 230°F & 300°F for 12-1/4" & 8-1/2" hole sections respectively. Complete set with core catcher, circulating sub on top, handling tools, stabilizers, safety joint and all required accessories are to be provided. The core barrels should also be equipped with suitable stabilizers according to the size of the core heads to ensure proper stabilization during	i) Core Barrels to be provided as follows: One set of 6¾″ x 4″ x 30 ft long Core barrel with 8.3/8" / 8.1/2" core heads for operation in 8.½" & 12.1/4" holes (with back-up as required to ensure uninterrupted operation). The bidder should provide a variety of core heads on consignment basis. The core barrels should be complete with Fiber glass/Aluminium inner barrel liner system complete with end caps and clips; Fiber glass/Aluminium inner tubes shall be in approximately 9m (30 ft) sections to suit the outer barrels. The inner tubes must be able to operate at bottom hole static temperatures of up to 230°F & 300°F for 12-1/4" & 8-1/2" hole sections respectively. Complete set with core catcher, circulating sub on top, handling tools, stabilizers, safety joint and all required accessories are to be provided. The core barrels should also be equipped with suitable stabilizers according to the size of the core heads to ensure proper stabilization during

		coring operation and should also feature an Anti-Jamming System. Accessories: End Caps, Clamps and Core Boxes, core handling tools, required x-over subs, etc. are to be provided. Bidders to specify all such equipment / items required for carrying out the coring services.	coring operation and should also feature an Anti-Jamming System. Accessories: End Caps, Clamps and Core Boxes, core handling tools, required x-over subs, etc. are to be provided. Bidders to specify all such equipment / items required for carrying out the coring services.
3	Exhibit-14, 14.3, Note 2. (Page No. 376)	2. Tools / equipment deployed should not be older than seven (07) years as on the original bid closing date and shall be of the latest versions / technologies, so that, the project can be completed in the shortest possible time and execution of the jobs shall be of state-of-the-art technology.	2. Tools / equipment deployed should not be older than ten (10) years as on the original bid closing date and shall be of the latest versions / technologies, so that, the project can be completed in the shortest possible time and execution of the jobs shall be of state-of-the-art technology.
4	Exhibit-14, 14.3.iii)4.i), (Page No. 376)	Other Equipment: i Ball Drop Sub to allow core barrel to be run below motor. ii Full strength Overshot and Grapples. iii Full inventory of spare parts and consumables for the Coring systems at the well site. iv Fishing tools for any "non-standard" downhole equipment. A list of available fishing equipment is mentioned elsewhere in the tender. v Bidder will be required to maintain stocks of equipment consumables and accessories commensurate with a remote area operation. vi Any other tools required as per Bidder's understanding but have missed out in Sr.No. 1, 2, 3 and 4.	Other Equipment: i **DELETED** ii **DELETED**. iii Full inventory of spare parts and consumables for the Coring systems at the well site. iv Fishing tools for any "non-standard" downhole equipment. A list of available fishing equipment is mentioned elsewhere in the tender. v Bidder will be required to maintain stocks of equipment consumables and accessories commensurate with a remote area operation. vi Any other tools required as per Bidder's understanding but have missed out in Sr.No. 1, 2, 3 and 4.
5	14) CORING, CORE HANDLING & CORE STABILIZATI	vii. Core plugging tool with core trimming tool.	vii. Core plugging tool with core trimming tool (required one plug per core).

	ON SERVICES, 3. Specification of Coring Tools & Equipment: iii)Equipment list: 1.vii (Page No. 375 of 607)		
Exhibit 15 15) PROJECT COORDINATOR AND RIG-SITE CO-ORDINATORS			
1	SCOPE OF WORK FOR PROJECT COORDINATOR GENERAL (Page No. 380 of 607)	The Project Coordinator shall be based in Thiruvananthapuram, Kerela and shall be responsible for all activities under the bundle services. The project coordinator shall be in direct interaction with the Company operation team to coordinate all activities. The Project Co-ordinator must have the entire power requisite for performance of the work. He must liaise with all bundle service providers and report to the Head of OIL's operation team based in Thiruvananthapuram and also to OIL Drilling Head, based in Kakinada, Andhra Pradesh for the proper co-ordination and timely execution of the job.	The Project Coordinator shall be based in Kochi, Kerela and shall be responsible for all activities under the bundle services. The project coordinator shall be in direct interaction with the Company operation team to coordinate all activities. The Project Co-ordinator must have the entire power requisite for performance of the work. He must liaise with all bundle service providers and report to the Head of OIL's operation team based in Kochi and also to OIL Drilling Head, based in Kakinada, Andhra Pradesh for the proper co-ordination and timely execution of the job.
2	SCOPE OF WORK FOR RIG SITE COORDINATOR (DAY) EXPERIENCE (Page No. 382 of 607)	The Rig Site Coordinator must be an engineering Graduate or a Diploma in engineering having minimum 07 years of Oil & Gas field experience. He must possess a valid IWCF (Supervisory level) certificate at all times. He must have a minimum of five (05) years of experience as Project Coordinator / Rig Site Coordinator to support Drilling/E&P Companies with at least three (03) years in offshore rigs.	The Rig Site Coordinator must be an engineering Graduate or a Diploma in engineering having minimum 07 years of Oil & Gas field experience. He must have a minimum of five (05) years of experience as Project Coordinator / Rig Site Coordinator to support Drilling/E&P Companies with at least three (03) years in offshore rigs.

Exhibit 16 16) SHORE BASE SERVICES:			
1	Exhibit 16 SHORE BASE SERVICE (Page No. 384 of 607)	16) SHORE BASE SERVICES: This section establishes the scope and schedule for the work to be performed by the Contractor and describes the specifications, instructions, standards and other documents including the specifications/description for any materials, tools, equipment, services etc., which the Contractor shall satisfy or adhere to in the performance of the work. The services to be rendered by the successful Bidder/Contractor will have to support the offshore operations from Kollam Seaport, Kerala. The intent is to serve the regular daily requirements to the field from Kollam Seaport which include but are not limited to the jetty for berthing & handling offshore supply vessels, open and covered storage for material and equipment, bunkering, bulk handling plant (barytes, cement and additives), Potable & Drill Water, drill bits, wellheads, various consumables, etc. The hiring for the OCTG Yard shall initially be for 12 months with provision for an extension by a maximum of 06 months or part thereof, at Company's option, based on operational requirements, under the same rates, terms and conditions and the hiring for the other services shall initially be for 08 months with provision for an extension by a maximum of 08 months or part thereof, at Company's option, based on operational requirements, under the same rates, terms and conditions. A Shore Base facility in oilfield parlance typically includes a jetty for berthing & handling offshore supply vessels, open and covered storage	16) SHORE BASE SERVICES: This section establishes the scope and schedule for the work to be performed by the Contractor and describes the specifications, instructions, standards and other documents including the specifications / description for any materials, tools, equipment, services etc., which the Contractor shall satisfy or adhere to in the performance of the work. The services to be rendered by the successful Bidder/Contractor will have to support the offshore operations from Kochi Seaport, Kerala. The intent is to serve the regular daily requirements to the field from Kochi Seaport which include but are not limited to the jetty for berthing & handling offshore supply vessels, open and covered storage for material and equipment, bunkering, bulk handling plant (barytes, cement and additives), Potable & Drill Water, drill bits, wellheads, various consumables, etc. The hiring for the OCTG Yard shall initially be for 11 months with provision for an extension by a maximum of 07 months or part thereof, at Company's option, based on operational requirements, under the same rates, terms and conditions and the hiring for the other services shall initially be for 08 months with provision for an extension by a maximum of 08 months or part thereof, at Company's option, based on operational requirements, under the same rates, terms and conditions. A Shore Base facility in oilfield parlance typically includes a jetty for berthing & handling offshore supply vessels, open and covered storage for material and equipment, dry and liquid bulk handling facility, Material handling and Stevedoring besides communication network & engineering facilities. This translates into a Port facility and a Shore Base

		for material and equipment, dry and liquid bulk handling facility, Material handling and Stevedoring besides communication network & engineering facilities. This translates into a Port facility and a Shore Base Operator. The Shore Base is to be hired as a Build-Own-Operate (BOO) project. It is to be designed, constructed and operated with the Global Best Practices of the E&P Industry and in compliance with the "Operating Standards" as brought out in international practices. The Shore Base must acquire the required Quality Standards once fully operational.	Operator. The Shore Base is to be hired as a Build-Own-Operate (BOO) project. It is to be designed, constructed and operated with the Global Best Practices of the E&P Industry and in compliance with the "Operating Standards" as brought out in international practices. The Shore Base must acquire the required Quality Standards once fully operational.
2	Exhibit 16 SHORE BASE SERVICE, (Page No. 385 of 607)	2. Contract Completion Period: The project is to be delivered in two phases for 09 months with a provision for extension by a maximum of 07 months or part thereof, at the Company's option, based on operational requirements.	2. Contract Completion Period: The project is to be delivered in two phases for the OCTG Yard shall initially be for 11 months with provision for an extension by a maximum of 07 months or part thereof & for the other shore base services shall initially be for 08 months with provision for an extension by a maximum of 08 months or part thereof, at the Company's option, based on operational requirements.
3	Exhibit 16 SHORE BASE SERVICE, (Page No. 385 of 607)	2. Contract Completion Period: Phase-2: Shore Base complete with all facilities and ready to operate within 05 months after the receipt of advice (mobilization notice) from the Company (01 month after Phase-1). (Refer to Attachment-I, II & III, Fully Operational Shore Base on the Deployment of Manpower & Material Handling Equipment.)	2. Contract Completion Period: Phase-2: Shore Base complete with all facilities and ready to operate within 04 months after the receipt of advice (mobilization notice) from the Company. (Refer to Attachment-I, II & III, Fully Operational Shore Base on the Deployment of Manpower & Material Handling Equipment.)
4	Exhibit 16 SHORE BASE SERVICE, (Page No. 386 of 607)	2.1 Contractor's Eligibility and Experience: iii) Handling of at least 08 (eight) port calls per month (monthly average) by supply / cargo vessel for 2 years (in one or more contracts) in last 7 years reckoned from original bid closing date.	2.1 Contractor's Eligibility and Experience: iii) Handling of at least 06 (six) port calls per month (monthly average) by supply / cargo vessel for 2 years (in one or more contracts) in last 7 years reckoned from original bid closing date.

5	Exhibit 16 SHORE BASE SERVICE, (Page No. 386 of 607)	3. SCOPE OF WORK 3.1. To establish (design & construct) and operate a purpose-built onshore 'Shore Base' at Kollam Seaport, Kerala. The Shore Base has to comply with the best-in-class Global Standards. The Port facility at Kollam Port, shall have:	3. SCOPE OF WORK 3.1. To establish and operate a purpose-built onshore 'Shore Base' at Kochi Seaport, Kerala. The Shore Base has to comply with the best-in-class Global Standards. The Port facility at Kochi Port, shall have:
6	Exhibit 16 SHORE BASE SERVICE, (Page No. 387 of 607)	3. SCOPE OF WORK 3.1.4. c Dry Bulk Plant of around 750 Sqm area, preferably in proximity to the jetty.	3. SCOPE OF WORK 3.1.4. c Dry Bulk Plant of around 750 Sqm area.
7	Exhibit 16 SHORE BASE SERVICE, (Page No. 387 of 607)	4. Operational Parameters: 4.9. Turn-Round-Time (TRT) of the marine vessel has to be within 16 hours, from berthing to cast off, including security check, customs, ROB survey & statutory clearance, etc., subject to the condition that all the material to be loaded is available at the Jetty.	4. Operational Parameters: 4.9. Turn-Round-Time (TRT) of the marine vessel has to be within 24 hours, from berthing to cast off, including security check, customs, ROB survey & statutory clearance, etc., subject to the condition that all the material to be loaded is available at the Jetty.
8	Exhibit 16 SHORE BASE SERVICE, (Page No. 388 of 607)	6. Port Call by Supply Vessel: 6.2. The charges for 80 m long dedicated berth to be inclusive of all Port charges and dues considering GRT of the vessels as 2000 MT. Delays, if any, on statutory clearances must immediately be brought to the notice of the Company.	6. Port Call by Supply Vessel: 6.2. The charges for 80 m long dedicated berth to be inclusive of all Port charges and dues considering GRT of the vessels as 3500 MT. Delays, if any, on statutory clearances must immediately be brought to the notice of the Company.
9	8.Warehouse & Yard Management: 8.2.11. (Page No. 390 of 607)	8.2.11. The Plastic/Fibre pallets (reusable) are to be used for storing material which is to be moved within the Supply Base and Wooden Pallets would be used only for the materials which are to be sent to Offshore.	8.2.11. The wooden/Plastic/Fibre pallets (reusable) are to be used for storing material which is to be moved within the Supply Base and Wooden Pallets would be used only for the materials which are to be sent to Offshore.
10	Exhibit 16 SHORE BASE SERVICES,	b. Forklifts (2 Nos of 10 Tons capacity): The deployments include one each at the Dry Bulk Plant and Warehouse.	b. Forklifts (2 Nos of 5 Tons capacity): The deployments include one each at the Dry Bulk Plant and Warehouse.

	10. Material Handling Equipment, 10.1.b. (Page No. 393 of 607)		
11	Exhibit 16 SHORE BASE SERVICES, Attachment - III (Page No. 402 of 607)	Serial No: 1 Tyre Mounter Hydraulic Crane with telescopic and lattice boom SWL minimum 100T	Serial No: 1 Tyre Mounter Hydraulic Crane with telescopic and lattice boom SWL minimum 200T
12	Exhibit 16 SHORE BASE SERVICES, Attachment - III (Page No. 402 of 607)	Serial No: 4 Hydraulic Tyre mounted SWL 10T forklift	Serial No: 4 Hydraulic Tyre mounted SWL 5T forklift
Exhibit 17 17) MARINE LOGISTICS SERVICES			
1	Exhibit 17, MARINE LOGISTICS SERVICES, VESSEL SPECIFICATION SHEET – AHTS VESSEL, 10.2.i, Search and Rescue (SAR) (Page No. 414 of 607)	i) The vessel must comply with the requirement of the SOLAS convention of 2001 for cargo ships as amended to date and UKOOA guidelines for "Standing by Duty" Offshore Installations (Group C), as per the following.	i) The vessel must comply with the requirement of the SOLAS convention of 2001 for cargo ships as amended to date and as per the following.

<table>
<tr><td>2</td><td>Exhibit 17, MARINE LOGISTICS SERVICES, VESSEL SPECIFICATION SHEET – AHTS VESSEL, 10.2., Search and Rescue (SAR), Fast Rescue Craft

(Page No. 414 of 607)</td><td>Fast Rescue Craft
i) The vessel is to be equipped with at least one fast rescue craft (FRC) of a capacity of 5 persons in addition to the rescue boat (as per the SOLAS Convention). FRC must meet UKOOA Guidelines for “Standing by Duty” for Offshore Installations arranged and maintained to be permanently ready for use under all weather conditions.

ii)Vessel must have 1 No. Aero VHF of suitable frequency for communication with helicopters.</td><td>Fast Rescue Craft
i) The vessel is to be equipped with at least one fast rescue craft (FRC) of a capacity of 5 persons in addition to the rescue boat (as per the SOLAS Convention).

ii) Vessel must have some suitable communication set-up for communication with helicopters.</td></tr>
<tr><td colspan="4">PART-3
SECTION-III
SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)</td></tr>
<tr><td>1</td><td>2.3

(Pg. No. 423, 424 & 425 of 607)</td><td>DESIGNATED LOCATION

At Contractor’s Base in Kollam, Kerela for Equipment and crew at OIL’s Heli Base in Thiruvananthapuram.</td><td>DESIGNATED LOCATION

At Contractor’s Base in Kochi, Kerela for Equipment and crew at OIL’s Heli Base in Kochi.</td></tr>
<tr><td>2</td><td>2.3 MOBILISATION TIME AND DEMOBILIZATION:
(Pg No. 423 of 607)</td><td>Serial No: 5

<table><tr><td>Tubular for Well Testing.</td><td>At Contractor’s Base in Kollam, Kerela</td><td>Within 120 days of Mobilization notice issued by Company</td></tr></table></td><td>Serial No: 5

<table><tr><td>Tubular for Well Testing.</td><td>At Contractor’s Base in Kochi, Kerela</td><td>Within 150 days of Mobilization notice issued by Company</td></tr></table></td></tr>
<tr><td>3</td><td>2.3 MOBILISATION TIME</td><td>Serial No: 12, 13, 14, 15 & 16

Supply of Mud Line Suspension.</td><td>Serial No: 12, 13, 14, 15 & 16

DELETED</td></tr>
</table>

	AND DEMOBILIZATION: (Pg No. 424 of 607)		
4	**2.3 MOBILISATION TIME AND DEMOBILIZATION:** (Pg No. 424 of 607)	Serial No: 18 Well testing & TCP Services / At Contractor's Base in Kollam, Kerela for Equipment and crew at OIL's Heli Base in Thiruvananthapuram / Within 150 days of Mobilization notice issued by Company	Serial No: 18 Well testing & TCP Services / At Contractor's Base in Kochi, Kerela for Equipment and crew at OIL's Heli Base in Kochi / For Well Testing & TCP Services: Within 150 days of Mobilization notice issued by Company For Consumables (liquid Nitrogen, Methanol, PPD, Demulsifier, & defoamer): Within 14 days of mobilization notice issued by the company
5	**2.3 MOBILISATION TIME AND DEMOBILIZATION:** (Pg No. 425 of 607)	Serial No: 22 Shore Based Services / Sea Port - Kollam / Within 150 days of Mobilization notice issued by the Company	Serial No: 22 Shore Based Services / Sea Port - Kochi / Within 120 days of Mobilization notice issued by the Company
6	**2.3 MOBILISATION TIME AND DEMOBILIZATION:**	Serial No: 23 Marine Vessels – 2 Nos. AHTS with 100 Metric Tons bollards pull / Port of Call - Kollam / Within 150 days of Mobilization notice issued by the Company	Serial No: 23 Marine Vessels – 2 Nos. AHTS with 100 Metric Tons bollards pull / Port of Call - Kochi / Within 120 days of Mobilization notice issued by the Company

	(Pg No. 425 of 607)	or more along with the crew		
7	**2.3 MOBILISATION TIME AND DEMOBILIZATION:** (Pg No. 425 of 607)	Serial No: 24 Project Coordinator | At base (Kakinada) | Within 30 days of Mobilization notice issued by Company	Serial No: 24 Project Coordinator | At base (Kochi) | Within 30 days of Mobilization notice issued by Company
8	**2.3 MOBILISATION TIME AND DEMOBILIZATION:** (Pg No. 425 of 607)	Serial No: 25 Rig Site Coordinator (Day Tour) | At OIL's Heli base in Kakinada | Within 30 days of Mobilization notice issued by Company	Serial No: 25 Rig Site Coordinator (Day Tour) | At OIL's Heli base in Kochi | Within 30 days of Mobilization notice issued by Company
9	**2.3 MOBILISATION TIME AND DEMOBILIZATION:** (Pg No. 425 of 607)	Serial No: 26 Rig Site Logistics Coordinator (Night Tour) | At OIL's Heli base in Kakinada | Within 30 days of Mobilization notice issued by Company	Serial No: 26 Rig Site Logistics Coordinator (Night Tour) | At OIL's Heli base in Kochi | Within 30 days of Mobilization notice issued by Company
10	**2.3 INTERIM DE-MOBILIZATION & RE-MOBILIZATION:**	Note: (ii) The succeeding day of issue of mobilization notice shall be counted as day 01 for the purposes of Mobilization period. For the purposes of LD, the mobilisation would be deemed complete from the date and time the equipment, tools, consumables etc. are mobilized in the designated location.	Note: (ii) The succeeding day of issue of mobilization notice shall be counted as day 01 for the purposes of Mobilization period. For the purposes of LD, the mobilisation would be deemed complete from the date and time the equipment, tools, consumables etc. have reached the designated location.

<table>
<tr><td></td><td>(Pg No. 425 of 607)</td><td></td><td></td></tr>
<tr><td>11</td><td>2.3 INTERIM DE-MOBILIZATION & RE-MOBILIZATION:

(Pg No. 425 & 426 of 607)</td><td>Note:

(iii) For the initial mobilization of tools & equipment, on receipt of intimation from contractor, Company will inspect and certify within 10 working days. For successive remobilization, contractor must intimate Company about arrival of the tools & equipment and Company will inspect the tools & equipment for each re-mobilization within 05 working days of receipt of intimation from the contractor. Date of mobilization / re-mobilization will be considered from the date of successful inspection carried out by Company representative.

ISDR will be applicable after the stipulated time frame for inspection and if the inspection is not carried out by company representative within the stipulated time frame as mentioned above, provided it is not due to any fault of the Contractor.

All documents pertaining to the Marine Vessel(s) in connection with Block transfer - if applicable, other statutory clearances / documents etc. as applicable under law must be submitted / applied prior to mobilization. Mobilization will not be treated as complete by the Company unless all the statutory documents as required under law including but not limited to Class Certification, Registry, ISM code are submitted and are found to be in order and to the satisfaction of the Company.</td><td>Note:

(iii) For the initial mobilization of tools & equipment, on receipt of intimation from contractor, Company will inspect and certify within 10 working days. For successive remobilization, contractor must intimate Company about arrival of the tools & equipment and Company will inspect the tools & equipment for each re-mobilization within 05 working days of receipt of intimation from the contractor. Date of mobilization / re-mobilization will be considered from the date of successful inspection carried out by Company representative.

ISDR / Monthly Rate (Shore base) / Operating Day Rate (Vessel) will be applicable after the stipulated time frame for inspection and if the inspection is not carried out by company representative within the stipulated time frame as mentioned above, provided it is not due to any fault of the Contractor.

All documents pertaining to the Marine Vessel(s) in connection with Block transfer - if applicable, other statutory clearances / documents etc. as applicable under law must be submitted / applied prior to mobilization. Mobilization will not be treated as complete by the Company unless all the statutory documents as required under law including but not limited to Class Certification, Registry, ISM code are submitted and are found to be in order and to the satisfaction of the Company.</td></tr>
<tr><td>12</td><td>2.4 MOBILISATION TIME AND</td><td><table><tr><td>Name of the Service</td><td>Re-Mobilization Period.</td></tr></table></td><td><table><tr><td>Name of the Service</td><td>Re-Mobilization Period.</td></tr></table></td></tr>
</table>

	DEMOBILIZATION: (Pg No. 428 of 607)	Well testing Services & TCP Services under Group – I Services: Within 45 days of Re-Mobilization notice issued by the Company	Well testing Services & TCP Services under Group – I Services: For Well Testing Services: Within 45 days of Re-Mobilization notice issued by the Company. For TCP Services: within 120 days of Re-Mobilization notice issued by the Company.
13	**2.5 DURATION OF CONTRACT:**	The duration of the contract shall be for a period of 210 days from the date of commencement of the contract or the completion of 01 (one) Well whichever is earlier, subject to following conditions: (i) The contract shall continue till completion / abandonment of the well being drilled as per the operational programme of the Company or till de-hiring of the Drilling Unit. The Contract will be automatically extended for completion of jobs in the last well, on the same rates, terms & conditions. (ii) The contract duration may be extended by another 210 days, for an optional well or otherwise, at the sole discretion of the Company at the same rates, terms and conditions.	The contract duration for hiring Bundle Services is as follows: • Bundle Services (excluding Marine Logistics and Shore Base Services): 210 days • Marine Logistics: 240 days • OCTG Yard: 330 days • Other Shore Base Services: 240 days The duration will be counted from the contract commencement date. For the Bundle Oilfield Services, Marine Logistics, and Other Shore Base Services (excluding OCTG Yard), the contract will last 210 days, 240 days, and 240 days, respectively, or until the completion of one well, whichever is earlier, subject to the following conditions: (i) The contract shall continue till completion / abandonment of the well being drilled as per the operational programme of the Company or till de-hiring of the Drilling Unit. The Contract will be automatically extended for completion of jobs in the last well, on the same rates, terms & conditions. (ii) The contract duration may be extended by another 210 days for an optional well or otherwise, at the sole discretion of the Company at the same rates, terms and conditions.

		(iii) Some of the services may be required even after de-hiring of the Drilling Unit and as such the individual services shall be successively de-hired as per the requirement of the last well. (iv) Payments of any individual services shall be made as per the provisions of conditions specified in the Contract for each service.	(iii) Some of the services may be required even after de-hiring of the Drilling Unit and as such the individual services shall be successively de-hired as per the requirement of the last well. (iv) Payments of any individual services shall be made as per the provisions of conditions specified in the Contract for each service.
14	**5.1** (Page No. 431 of 607)	For Wireline Logging Services, the **Operating Rate / Re-dressing Charges shall be payable per job as per the actual 'Unit' of data acquired as listed in Proforma-B.** If a particular tool, including back-up tool, is found to be non-functional during operation in first well after initial mobilization, in that case neither ISDR nor Operating Rate shall be applicable from the date of receipt of that particular tool at OIL designated locations. The **ISDR / Operating Rate (as applicable) for the replacement tool** will be payable, from the time the replacement tool is made available at OIL designated locations subject to it being functional on subsequent logging operations. However, the above penalty for the replacement tool shall be limited to 30 days.	For Wireline Logging Services, the **Operating Rate / Re-dressing Charges shall be payable per job as per the actual 'Unit' of data acquired as listed in Proforma-B.** If a particular tool, including back-up tool, is found to be non-functional during operation in first job after initial mobilization, in that case neither ISDR nor Operating Rate shall be applicable from the date of receipt of that particular tool at OIL designated locations. The **ISDR / Operating Rate (as applicable) for the replacement tool** will be payable, from the time the replacement tool is made available at OIL designated locations subject to it being functional on subsequent logging operations. However, the above penalty for the replacement tool shall be limited to 30 days.
15	**5.5** (Page No. 432 of 607)	ISDR shall not be payable during the period OCDR / Operating Rate is payable for that particular service.	ISDR shall not be payable during the period OCDR is payable for that particular service (Except for Wireline Logging & Perforation services).
16	**9.1.2** (Page No. 436 of 607)	The Contractor shall appoint a Project Co-Coordinator as the Contractor's representative who must be in charge of the project and must be primarily based in Thiruvananthapuram. The	The Contractor shall appoint a Project Co-Coordinator as the Contractor's representative who must be in charge of the project and must be primarily based in Kochi. The Project Co-ordinator must have the entire power requisite

		Project Co-ordinator must have the entire power requisite for performance of the work. He must liaise with all bundle service providers and report to the Head of OIL's operation team based in Thiruvananthapuram and also to the OIL Drilling Head, based in Kakinada for the proper co-ordination and timely execution of the job.	for performance of the work. He must liaise with all bundle service providers and report to the Head of OIL's operation team based in Kochi and also to the OIL Drilling Head, based in Kakinada for the proper co-ordination and timely execution of the job.
17	**13.5** (Pg. No. of 607)	To order suspension of operations while and whenever: a) Contractor's personnel are deemed by Company to be not satisfactory,	To order suspension of operations while and whenever: a) Contractor's personnel are deemed by Company to be not satisfactory as per the contractual requirements required for the contractor's personnel.
18	**18.1** (Page No. 442 of 607)	Except as otherwise specifically provided in this Contract, any damage to or loss of the Contractor's Equipment and/or Marine Vessels (which, for the purpose of this Article 20.1 shall be deemed to include all Contractor's and its sub-contractors equipment and Marine Vessels) and regardless of the cause or reason for said loss, shall be the loss of the Contractor its underwriters or insurers and Contractor agrees to protect, defend, indemnify and hold the Company, its co-licensees and its and their affiliate companies, agents, employees, invitees, servants, their underwriters or insurers (other than Contractor's) and their employees harmless against any claim whatsoever or responsibility for any damage to or loss of the Contractor's Equipment and/or Marine Vessels or any other equipment or property of Contractor or Contractor's sub-contractors furnished or intended for use in the operations herein undertaken.	Except as otherwise specifically provided in this Contract, any damage to or loss of the Contractor's Equipment and/or Marine Vessels (which, for the purpose of this Article 18.1 shall be deemed to include all Contractor's and its sub-contractors equipment and Marine Vessels) and regardless of the cause or reason for said loss, shall be the loss of the Contractor its underwriters or insurers and Contractor agrees to protect, defend, indemnify and hold the Company, its co-licensees and its and their affiliate companies, agents, employees, invitees, servants, their underwriters or insurers (other than Contractor's) and their employees harmless against any claim whatsoever or responsibility for any damage to or loss of the Contractor's Equipment and/or Marine Vessels or any other equipment or property of Contractor or Contractor's sub-contractors furnished or intended for use in the operations herein undertaken.
19	**18.5**	**USE OF CONTRACTOR'S EQUIPMENT:** The Company shall have the right to use the Marine Vessels and all of Contractor's equipment and	**USE OF CONTRACTOR'S EQUIPMENT:** Subject to Clause No. 52 of SCC, The Company shall have the right to use the Marine Vessels and all of Contractor's

	(Pg. No. 443 of 607)	personnel provided under this Contract during such times as the Company or both Company and Contractor are engaged in bringing a well under control and marine vessels will perform all activities related to well control.	equipment and personnel provided under this Contract during such times as the Company or both Company and Contractor are engaged in bringing a well under control and marine vessels will perform all activities related to well control.
20	**28.2** (Pg. No. 449 of 607)	OIL shall declare the Loss in Hole immediately after the fishing operation is called off upon non-retrieval of the downhole items and intimate the Contractor, so that replacement and claim for the loss of downhole items can be done within the stipulated time. The contractor should replace the lost tool(s) within a stipulated time of 30 Days from the date of declaration of Lost in Hole by the company.	OIL shall declare the Loss in Hole immediately after the fishing operation is called off upon non-retrieval of the downhole items and intimate the Contractor, so that replacement and claim for the loss of downhole items can be done within the stipulated time. The contractor should replace the lost tool(s) within a stipulated time of 45 Days from the date of declaration of Lost in Hole by the company.
21	**36.0** (Pg. No. 453 of 607)	**WELL MATERIALS / DRILL BITS:** For well materials and Drill Bits, the reimbursement shall be as per actual consumption as per the "Schedule of Rates".	**DRILL BITS:** For Drill Bits, the reimbursement shall be as per actual consumption as per the "Schedule of Rates".
22	**38.0** (Pg. No. 453 of 607)	**LOADING OF EQUIPMENT:** Contractor shall make available all of Contractor's and its Sub-Contractor's equipment, material at the designated shore base at Kollam as per the operational requirement. Contractor agrees to transport Contractor's & its Sub-Contractor's material and Company's & its Sub-Contractor's material to the drilling location nominated by Company for loading and unloading on board the Drilling Unit at Contractor's cost.	**LOADING OF EQUIPMENT:** Contractor shall make available all of Contractor's and its Sub-Contractor's equipment, material at the designated shore base at Kochi as per the operational requirement. Contractor agrees to transport Contractor's & its Sub-Contractor's material and Company's & its Sub-Contractor's material to the drilling location nominated by Company for loading and unloading on board the Drilling Unit at Contractor's cost.
23	**40.0** CONVENTIONAL WELLHEAD AND MUDLINE SUSPENSION	Contractor must make available minimum 1+1 backup numbers of Well Heads and Mudline suspension assemblies comprising of items quoted as per Scope of Work all the time on the Drilling Units/Shore base. Contractor would have to supply the well heads and Mudline Suspension System from any of the vendors as listed in the vendor list.	Contractor would have to supply the well heads from any of the vendors as listed in the vendor list. (i) Dril-Quip (ii) Cameron, Schlumberger (iii) Baker Hughes

	SYSTEM SERVICES (Page No. 453 of 607)	(i) Dril-Quip (ii) Cameron, Schlumberger (iii) Baker Hughes (iv) WOM In case there is shut down / interruption in operations at the drilling unit on account of non-availability of wellheads or Mudline Suspension Systems or its items or required wellheads / MLS lowering tools and services as per scope of work (due to factors attributable to the Contractor), in addition to deduction as per clause 6.2 above, Contractor will not be eligible for any of the Individual Services' Day Rates for all other services.	(iv) WOM (v) Technip FMC In case there is shut down / interruption in operations at the drilling unit on account of non-availability of wellheads or its items as per scope of work (due to factors attributable to the Contractor), in addition to deduction as per clause 6.2 above, Contractor will not be eligible for any of the Individual Services' Day Rates for all other services.
24	**42.0** CUSTOMS DUTY:	42.1 The Company/Operator will issue Essentiality Certificate for import of Goods in terms of Custom Notification No. 50/2017-Customs dated 30th June-2017, further amended vide custom Notification No. 02/2022-Customs dated 1st February, 2022, S. No. 404 of Table, List 33 and Condition No. 48 and notification no. 08/2022 dated 13.07.2022 on submission of clear, legible and valid documents (including detailed invoice, technical justification, undertaking and affidavit, EC statement etc.) by the contractor to OIL at least three (03) weeks before the shipment date. OIL shall not be liable in whatsoever manner for the rejection of their claims for zero customs duty by any of the authorities due to any discrepancy in the documents submitted by the contractor. Similarly, Company / Append will issue requisite undertaking for transfer of EC, in respect of the goods already imported under Essentiality Certificate and to be transferred to this contract, on submission of clear, legible and valid documents by the Contractor to OIL.	42.1 The Company/Operator will issue Essentiality Certificate for import of Goods in terms of Custom Notification No. 50/2017-Customs dated 30th June-2017, further amended vide custom Notification No. 02/2022-Customs dated 1st February, 2022 and Notification No. 30/2024 dated 23.07.2024, S. No. 404 of Table, List 33 and Condition No. 48, on submission of clear, legible and valid documents (including detailed invoice, technical justification, undertaking and affidavit, EC statement etc.) by the contractor to OIL with clear 15 working days' notice. OIL shall not be liable in whatsoever manner for the rejection of their claims for zero customs duty by any of the authorities due to any discrepancy in the documents submitted by the contractor. Similarly, Company / Append will issue requisite undertaking for transfer of EC, in respect of the goods already imported under Essentiality Certificate and to be transferred to this contract, on submission of clear, legible and valid documents by the Contractor to OIL.

		Similarly, the domestic supply of such goods would attract 12% GST (i.e. IGST or CGST & SGST/UTGST) on submission of EC in terms of GST Notification no. 08/2022 dated 13.07.2022. Bidder / Contractor is deemed to have taken note of the prevailing customs notifications including the latest amendment vide gazette Notification No. 02/2022-Customs dated 01.02.2022 while quoting their prices. Contractor should consider concessional Customs Duty only for those items appearing in List-33 therein. Items of their import other than those appearing in List-33 of the said gazette notification shall be considered as duty payable on merit basis in their respective bid. OIL shall issue the requisite undertaking/certificate on request from Contractor for availing concessional rate of customs duty only against the items explicitly covered under List-33 of Customs Notification No. 02/2022-Customs dated 01.02.2022 or against any other item(s) subsequently declared by the competent authority during the tenure of the contract to be duty exempted/concessional. However, in the event of refusal/denial by Customs Authority to accord exemption/concession of Customs Duty against import of items which are explicitly covered under List-33 of Notification No. 02/2022-Customs dated 01.02.2022, such applicable customs duty shall be reimbursed at actual by OIL to the Contractor on submission of documentary evidence. Similarly, the items other than those appearing in List-33 of the said gazette notification, if to be imported by the Contractor for the purpose of execution of contract against this tender, the same shall be considered as duty payable on merit basis	Similarly, the domestic supply of such goods would attract 12% GST (i.e. IGST or CGST & SGST/UTGST) on submission of EC in terms of GST Notification no. 08/2022 dated 13.07.2022. Bidder / Contractor is deemed to have taken note of the prevailing customs notifications including the latest amendment vide gazette Notification No. 30/2024 dated 23.07.2024 while quoting their prices. Contractor should consider concessional Customs Duty only for those items appearing in List-33 therein. Items of their import other than those appearing in List-33 of the said gazette notification shall be considered as duty payable on merit basis in their respective bid. OIL shall issue the requisite undertaking/certificate on request from Contractor for availing concessional rate of customs duty only against the items explicitly covered under List-33 of Customs Notification No. 30/2024 dated 23.07.2024 or against any other item(s) subsequently declared by the competent authority during the tenure of the contract to be duty exempted/concessional. However, in the event of refusal/denial by Customs Authority to accord exemption/concession of Customs Duty against import of items which are explicitly covered under List-33 of Notification No. 30/2024 dated 23.07.2024, such applicable customs duty shall be reimbursed at actual by OIL to the Contractor on submission of documentary evidence. Similarly, the items other than those appearing in List-33 of the said gazette notification, if to be imported by the Contractor for the purpose of execution of contract against this tender, the same shall be considered as duty payable on merit basis and the applicable customs duty

		and the applicable customs duty thereof must be included by the contractor in their respective bid value. OIL will not issue any Undertaking / Certificate towards customs duty concession / exemption for those items (not included in List-33 of Notification) and the duty payable on merit shall be borne by the Contractor. However, any other item if subsequently notified by the competent authority to be Duty free/concessional during the tenure of the contract, OIL will issue requisite Certificate/Undertaking for Contractor to avail the Customs Duty benefit and the duty benefit must be passed on to OIL. Additionally, for all those items against which the contractor considers the Customs Duty on merit, the list specifying the Customs Duty Rate (percentage) may be furnished, so that subsequent increase/decrease in Customs Duty, if any shall be reimbursed/recovered by OIL as the case may be on documentary evidence. Contractors should submit the list of items which are to be imported for execution of the contract against this tender as per Proforma-A prudently along with their bid. Undertaking/Certificate for availing concessional rate of Customs Duty shall be issued by OIL only for the eligible items, provide the same are included in the Proforma-A submitted by the contractor. Note: The above stipulations shall prevail over other clauses if stipulated otherwise elsewhere in the original tender document/previous amendments. However, the aforementioned notifications are subject to change as per Government guidelines and the provisions ruling at the time of Bid Closing will be applicable.	thereof must be included by the contractor in their respective bid value. OIL will not issue any Undertaking / Certificate towards customs duty concession / exemption for those items (not included in List-33 of Notification) and the duty payable on merit shall be borne by the Contractor. However, any other item if subsequently notified by the competent authority to be Duty free/concessional during the tenure of the contract, OIL will issue requisite Certificate/Undertaking for Contractor to avail the Customs Duty benefit and the duty benefit must be passed on to OIL. Additionally, for all those items against which the contractor considers the Customs Duty on merit, the list specifying the Customs Duty Rate (percentage) may be furnished, so that subsequent increase/decrease in Customs Duty, if any shall be reimbursed/recovered by OIL as the case may be on documentary evidence. Contractors should submit the list of items which are to be imported for execution of the contract against this tender as per Proforma-A prudently along with their bid. Undertaking/Certificate for availing concessional rate of Customs Duty shall be issued by OIL only for the eligible items, provide the same are included in the Proforma-A submitted by the contractor. Note: The above stipulations shall prevail over other clauses if stipulated otherwise elsewhere in the original tender document/previous amendments. However, the aforementioned notifications are subject to change as per Government guidelines and the provisions ruling at the time of Bid Closing will be applicable.

		42.2 Contractor should provide the list of the items to be imported by the Service Provider them under the Contract will be as per the items to be imported as submitted in the format specified in Proforma-A along with their bid for issuance of Essentiality Certificate. Contractor shall make written request to Company immediately after shipment of the goods indicated by them in Proforma-A, along with the Invoices and all shipping documents (with clear 15 working days' notice) requesting Company for issuance of the Essentiality Certificate. Company shall issue the Essentiality Certificate provided all the documents submitted by the Contractor are found in order as per contract. It shall be however, Contractor's responsibility to obtain EC from Customs and clear the goods through customs. Company shall not be liable in whatsoever manner for the rejection of their claims for zero customs duty by any of the authorities. Contractor shall indemnify Company from all liabilities of Customs Duty.	Contractor should provide the list of the items to be imported by the Service Provider them under the Contract will be as per the items to be imported as submitted in the format specified in Proforma-A along with their bid for issuance of Essentiality Certificate. Contractor shall make written request to Company immediately after shipment of the goods indicated by them in Proforma-A, along with the Invoices and all shipping documents (with clear 15 working days' notice) requesting Company for issuance of the Essentiality Certificate. Company shall issue the Essentiality Certificate provided all the documents submitted by the Contractor are found in order as per contract. It shall be however, Contractor's responsibility to obtain EC from Customs and clear the goods through customs. Company shall not be liable in whatsoever manner for the rejection of their claims for zero customs duty by any of the authorities. Contractor shall indemnify Company from all liabilities of Customs Duty.
		42.3 All imports and import clearances under the contract shall be done by the contractor and Company shall not provide any assistance in this regard.	42.3 All imports and import clearances under the contract shall be done by the contractor and Company shall not provide any assistance in this regard.
		42.4 However, in the event customs duty becomes leviable during the course of contract arising out of a change in the policy of the Government, Company shall be liable for payment of the customs duties leviable in India on Contractor's items as provided in Proforma-A or the actuals whichever is less, provided Contractor furnishes all necessary documents indicating the estimated customs duty at least 10 days in advance. Such payment of Customs Duty shall be arranged by Company and	42.4 However, in the event customs duty becomes leviable during the course of contract arising out of a change in the policy of the Government, Company shall be liable for payment of the customs duties leviable in India on Contractor's items as provided in Proforma-A or the actuals whichever is less, provided Contractor furnishes all necessary documents indicating the estimated customs duty at least 10 days in advance. Such payment of Customs Duty shall be arranged by Company and made available to the representatives of Contractor within 3

		made available to the representatives of Contractor within 3 working days after Contractor submits the undisputed and clear necessary documents / duty assessment papers.	working days after Contractor submits the undisputed and clear necessary documents / duty assessment papers.
		Contractor would be responsible for passing such payment to customs authorities at the port of entry. Company's obligation for Customs Duty payment shall be limited / restricted to the tariff rates as assessed by the Customs on the day of clearance, or as on the last day of the stipulated mobilisation period. In case of clearance thereafter, on the CIF value of items in Proforma-A will be frozen and any increase in Customs Duty on account of increase in value on these will be to the Contractor's account. Furthermore, in case the above CIF value is not acceptable to assessing Customs Officer and as a result if any excess Customs Duty becomes payable, it shall be to Contractor's account. Before filing Bill of lading, Bill of entry, the Contractor must consult the Company to avoid payment of excess Customs Duty.	Contractor would be responsible for passing such payment to customs authorities at the port of entry. Company's obligation for Customs Duty payment shall be limited / restricted to the tariff rates as assessed by the Customs on the day of clearance, or as on the last day of the stipulated mobilisation period. In case of clearance thereafter, on the CIF value of items in Proforma-A will be frozen and any increase in Customs Duty on account of increase in value on these will be to the Contractor's account. Furthermore, in case the above CIF value is not acceptable to assessing Customs Officer and as a result if any excess Customs Duty becomes payable, it shall be to Contractor's account. Before filing Bill of lading, Bill of entry, the Contractor must consult the Company to avoid payment of excess Customs Duty.
		42.5 Contractor shall, however, arrange clearance of such items from Customs and port authorities in India and shall pay all requisite demurrages, if any, clearance fees/charges, port fees, clearing and forwarding agent fees/ charges, inland transport charges etc. Company shall provide all assistance by issuance of necessary letter of authority or other relevant documents and necessary help.	42.5 Contractor shall, however, arrange clearance of such items from Customs and port authorities in India and shall pay all requisite demurrages, if any, clearance fees/charges, port fees, clearing and forwarding agent fees/ charges, inland transport charges etc. Company shall provide all assistance by issuance of necessary letter of authority or other relevant documents and necessary help.
		42.6 Contractor must ensure that the spares and consumables imported by them for providing the services under Contract are properly used in executing their job under the Contract in the PEL/ML areas of Company for which EC has been	42.6 Contractor must ensure that the spares and consumables imported by them for providing the services under Contract are properly used in executing their job under the Contract in the PEL/ML areas of Company for which EC has been obtained. Contractor shall furnish to

		obtained. Contractor shall furnish to Company a certificate as and when the spares and consumables are used/consumed certifying that the spares and the consumables imported by them have been consumed in those ML and PEL areas under the contract for which ECs were obtained by them. In order to avoid any misuse of the spares and consumables imported by the Contractor for providing the services under the Contract, Contractor shall furnish an Undertaking similar to that being furnished by Company to Customs of suitable amount before issue of the Essentiality Certificate. 42.7 In the event of refusal / denial by Customs Authority to accord exemption / concession of Customs Duty against import of items which are explicitly covered under List-33 of Notification No. 30/2024 dated 23.07.2024 or non-issuance of Essentiality certificate in terms of GST Notification no. 08/2022 dated 13.07.2022 for reason not attributable to the Contractor, Contractor shall charge applicable customs duty on import or goods and service tax on supply as per the HSN code of the product.	Company a certificate as and when the spares and consumables are used/consumed certifying that the spares and the consumables imported by them have been consumed in those ML and PEL areas under the contract for which ECs were obtained by them. In order to avoid any misuse of the spares and consumables imported by the Contractor for providing the services under the Contract, Contractor shall furnish an Undertaking similar to that being furnished by Company to Customs of suitable amount before issue of the Essentiality Certificate. 42.7 In the event of refusal / denial by Customs Authority to accord exemption / concession of Customs Duty against import of items which are explicitly covered under List-33 of Notification No. 30/2024 dated 23.07.2024 or non-issuance of Essentiality certificate in terms of GST Notification no. 08/2022 dated 13.07.2022 for reason not attributable to the Contractor, Contractor shall charge applicable customs duty on import or goods and service tax on supply as per the HSN code of the product.
25	**47.0** (Page No. 458 of 607)	**LOG INTERPRETATION:** Since all log interpretations are based on inference from electrical or other measurements, Contractor cannot and does not guarantee the accuracy or correctness of any interpretation and Company agrees that Contractor shall not be liable or responsible except for the case of wilful misconduct on Contractor or his sub-contractors part, for any loss, cost, damage or expense incurred or sustained by Company resulting directly or indirectly from	**LOG INTERPRETATION:** Since all log interpretations are based on inference from electrical or other measurements, Contractor cannot and does not guarantee the accuracy or correctness of any interpretation and Company agrees that Contractor shall not be liable or responsible except for the case of wilful misconduct on Contractor or his sub-contractors part, for any loss, cost, damage or expense incurred or sustained by Company resulting directly or indirectly from any interpretation made by Contractor or any of its agents,

		any interpretation made by Contractor or any of its agents, servants, officers or employees. Should any such interpretation or recommendation be relied upon as the sole basis for any drilling, completion, well treatment or production decision or any procedure involving any risk to the safety of any drilling ventures, drilling rig, or its crew or any other individual, Company agrees that under no circumstances shall Contractor be liable for any loss or damages on this account except in case of wilful misconduct or gross negligence.	servants, officers or employees. Should any such interpretation or recommendation be relied upon as the sole basis for any drilling, completion, well treatment or production decision or any procedure involving any risk to the safety of any drilling ventures, drilling rig, or its crew or any other individual, Company agrees that under no circumstances shall Contractor be liable for any loss or damages on this account except in case of wilful misconduct.
PART-3 SECTION-IV SCHEDULE OF RATES (SOR)			
1	B. (ii) (Page No. 462 of 607)	Payments of any individual service or material shall be made as per the Contract rates all-inclusive of taxes and as per the provisions and conditions specified for each service in the Contract. The quantities given in the Price Schedule are indicative and just for estimation purpose only. These may change depending upon the actual requirement. Payment shall be made as per actual utilization of services /consumption of materials. In case the quantities increase more than that indicated in the Price Schedule, the contractor has to provide the services/ materials at the same rates and terms and conditions as mentioned in the contract. If the quantities are not utilized/consumed as indicated in the Price Schedule, no payment or any other compensation shall be given to the contractor and contractor shall not raise any dispute in this regard.	Payments of any individual service or material shall be made as per the Contract rates all-inclusive of taxes and as per the provisions and conditions specified for each service in the Contract. The quantities given in the Price Schedule are indicative and just for estimation purpose only. These may change depending upon the actual requirement. Payment shall be made as per actual utilization of services/consumption of Drill Bits and bulks (Cement, Cement additives and Mud Chemicals). In case the quantities increase more than that indicated in the Price Schedule, the contractor has to provide the services/ materials at the same rates and terms and conditions as mentioned in the contract. If the quantities are not utilized/consumed as indicated in the Price Schedule, no payment or any other compensation shall be given to the contractor and contractor shall not raise any dispute in this regard.
2	C. (i) (a) (Page No. 462 of 607)	Mobilization charges shall become payable for the respective Group I and Group II Services (exclusive of Marine Services), ready in all respects as per scope of work, including obtaining all statutory	Mobilization charges shall become payable for the respective Group I and Group II Services (exclusive of Marine Services), ready in all respects as per scope of work, including obtaining all statutory clearances (as

		clearances (as applicable) are mobilised to the designated locations and after on-hire survey by the Company Representative, which shall be no later than 10 working days from the date of arrival & intimation thereafter by the contractor & provided it is certified by the Contractor and accepted by Company Representative and/or by Third Party Inspection agency that all items are in good working condition. Date of mobilization will be considered as completed from the date of successful inspection carried out by Company representative and/or by Third Party Inspection agency. However, for the purposes of LD, the mobilisation would be deemed complete from the date and time the equipment, tools, consumables etc. are mobilized in the designated location.	applicable) are mobilised to the designated locations and after on-hire survey by the Company Representative, which shall be no later than 10 working days from the date of arrival & intimation thereafter by the contractor & provided it is certified by the Contractor and accepted by Company Representative and/or by Third Party Inspection agency that all items are in good working condition. Date of mobilization will be considered as completed from the date of successful inspection carried out by Company representative and/or by Third Party Inspection agency. However, for the purposes of LD, the mobilisation would be deemed complete from the date and time the equipment, tools, consumables etc. have reached the designated location.
3	C. (x) (Page No. 464 of 607)	Company shall have the option to ask for delayed mobilization of any unit / tools to be mobilized / remobilized as per Contract. A minimum notice period of 30 days before the schedule date of mobilization shall be applicable at the time of asking for such delay in mobilization. Mobilization can be delayed for a maximum of 45 days limited to twice in the duration of the Contract.	Company shall have the option to ask for delayed mobilization of any unit / tools (excluding marine vessels) to be mobilized / remobilized as per Contract. A minimum notice period of 30 days before the schedule date of mobilization shall be applicable at the time of asking for such delay in mobilization. Mobilization can be delayed for a maximum of 45 days (cumulative), limited to twice in the duration of the Contract.
4	E. 3.1 (Page No. 468 of 607)	(f) Individual Service Day Rate (ISDR) for each of the tools & equipment will continue till issue of Demobilization notice or offloaded at the shore base in Kollam after issue of Demobilization notice.	(f) Individual Service Day Rate (ISDR) for each of the tools & equipment will continue till issue of Demobilization notice or offloaded at the shore base in Kochi after issue of Demobilization notice, whichever is later.
5	E. 3.2 (Page No. 468 of 607)	**SERVICE PERSONNEL DAY RATE:** Company shall pay the Contractor the quoted **DAY RATE** to following service personnel. a. Casing Crew Chief (01 Number) b. Casing Stabber (02 Numbers) c. Casing Tong Operator (02 Numbers)	**SERVICE PERSONNEL DAY RATE:** Company shall pay the Contractor the quoted **DAY RATE** to following service personnel. a. Casing Crew Chief (01 Number) b. Casing Stabber (02 Numbers) c. Casing Tong Operator (02 Numbers) d. TT Operator for CRT (02 Numbers)

		Note: Personnel will be required on a call out basis. Company shall give a maximum of 10 days' notice.	Note: Personnel will be required on a call out basis. Company shall give a maximum of 10 days' notice.
6	E. 4(f) (Page No. 469 of 607)	(f) Individual Service Day Rate (ISDR) for each of the type of Drilling Tools will continue till issue of Demobilization notice or offloaded at the OIL's shore base where it was initially mobilized as per the Contract after issue of Demobilization notice.	(f) Individual Service Day Rate (ISDR) for each of the type of Drilling Tools will continue till issue of Demobilization notice or offloaded at the OIL's shore base where it was initially mobilized as per the Contract after issue of Demobilization notice, whichever is later.
7	E. 4.1	NEW CLAUSE	**SERVICE PERSONNEL DAY RATE:** Company shall pay the Contractor the quoted **DAY RATE** to following service personnel. a. Under Reamer Service Engineers (02 Numbers) Note: Personnel will be required on a call out basis. Company shall give a maximum of 10 days' notice.
8	E. 5.3.1 (Page No. 471 of 607)	**5.3.1** The Contractor shall arrange for and execute demobilization of their Tools / Equipment / Spares / Accessories etc. (one or more sets), upon receipt of notice from the Company. All Tools / Equipment / Spares / Accessories etc. (one or more sets) will be demobilized upon issue of Demobilization notice or offloaded at the shore base in Kollam after issue of Demobilization notice.	**5.3.1** The Contractor shall arrange for and execute demobilization of their Tools / Equipment / Spares / Accessories etc. (one or more sets), upon receipt of notice from the Company. All Tools / Equipment / Spares / Accessories etc. (one or more sets) will be demobilized upon issue of Demobilization notice or offloaded at the shore base in Kochi after issue of Demobilization notice, whichever is later.
9	E. 5.3.2 (Page No. 471 of 607)	**5.3.2** All rates on Tools / Equipment / Spare / Accessories etc. (one or more sets) shall cease to exist with effect from the day the Contractor is issued de-mobilization notice by Company or offloaded at the shore base in Kollam after issue of Demobilization notice.	**5.3.2** All rates on Tools / Equipment / Spare / Accessories etc. (one or more sets) shall cease to exist with effect from the day the Contractor is issued de-mobilization notice by Company or offloaded at the shore base in Kochi after issue of Demobilization notice, whichever is later.
10	E. 5.4.3 (Page No. 472 of 607)	5.4.3 Individual Service Day Rate (ISDR) will be payable to the tools & equipment upon acceptance of mobilization by the Company and will cease upon issue of Demobilization notice or offloaded at the shore base in Kollam after issue of Demobilization notice.	5.4.3 Individual Service Day Rate (ISDR) will be payable to the tools & equipment upon acceptance of mobilization by the Company and will cease upon issue of Demobilization notice or offloaded at the shore base in Kochi after issue of Demobilization notice, whichever is later.

<table>
<tr><td>11</td><td>E. 8.4.(iii)

(Page No. 479 of 607)</td><td>(iii) ISDR will also be payable during the period, the liner setting tool is pulled out of hole (after completion of cementing operation) and till receipt of the tool/equipment/spares etc. at Contractor's OCTG Yard at Kollam after issue of demobilization / interim demobilization notice.</td><td>(iii) ISDR will be payable during the period, from the acceptance of mobilization till the liner setting tool is below the Rotary Table (BRT) and for the period the liner setting tool is pulled out of hole (ART - after completion of cementing operation) till receipt of the tool/equipment/spares etc. at Company's OCTG Yard at Kochi after issue of demobilization / interim demobilization notice.</td></tr>
<tr><td>12</td><td>E. 9.2
(Page No. 481 of 607)</td><td>(i) The Contractor shall arrange for and execute demobilization of the Mud Logging Unit and accessories upon receipt of notice from the Company. The Mud Logging Unit and accessories will be demobilized upon issue of Demobilization notice or offloaded at the Shore Base in Kollam after issue of Demobilization notice.</td><td>(i) The Contractor shall arrange for and execute demobilization of the Mud Logging Unit and accessories upon receipt of notice from the Company. The Mud Logging Unit and accessories will be demobilized upon issue of Demobilization notice or offloaded at the shore base in Kochi after issue of Demobilization notice, whichever is later.</td></tr>
<tr><td>13</td><td>E. 9.3.(i)

(Page No. 481 of 607)</td><td>(i) Contractor shall be paid ISDR as per conditions stipulated in the scope of work / SCC and respective price formats. ISDR shall commence after completion of the mobilization and commissioning of the Mud Logging Unit and accessories along with personnel at the drilling unit.</td><td>(i) Contractor shall be paid ISDR as per the condition stipulated in the scope of work / SCC and respective price format. ISDR shall commence after completion of the mobilization and loading of the Mudlogging unit and accessories at the drilling unit. In case the mud logging unit is not sent to the rig after on-hire survey due to any reason not attributable to contractor, then ISDR charges as applicable shall be payable after 7 days onwards from the on-hire survey date.</td></tr>
<tr><td>14</td><td>Description of Services, SL. NO. 10
(Page No. 461 of 607)</td><td><table><tr><td>SL No</td><td>Description of Services</td></tr><tr><td>10</td><td>Supply of Surface Wellheads, Mud Line Suspension and 30” conductor pipe</td></tr></table></td><td><table><tr><td>SL No</td><td>Description of Services</td></tr><tr><td>10</td><td>Supply of Surface Wellheads and 30” conductor pipe</td></tr></table></td></tr>
<tr><td>15</td><td>E. 10. SURFACE WELLHEADS, MUD LINE SUSPENSION AND 30”</td><td>10. SURFACE WELLHEADS, MUD LINE SUSPENSION AND 30” CONDUCTOR PIPE (10)

10.1 MOBILIZATION

(i) Surface Wellheads, Mud Line Suspension and 30” Conductor Pipe along with rental</td><td>10. SURFACE WELLHEADS AND 30” CONDUCTOR PIPE (10)

10.1 MOBILIZATION

(i) Surface Wellheads and 30” Conductor Pipe along with equipment/accessories /spares shall be mobilized to</td></tr>
</table>

	CONDUCTOR PIPE (Page No. 481-483 of 607)	tools/equipment/accessories /spares shall be mobilized to Contractor's OCTG Yard at Kollam as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.3.	Contractor's OCTG Yard at Kochi as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.3.
		(ii) Mobilization charges shall be payable on lump sum basis which cover 'all cost' of the Contractor to mobilize rental tools / equipment / accessories / spares to the Contractor's OCTG Yard at Kollam.	(ii) DELETED
		(iii) Each down hole tool/equipment as well as consumable items should have minimum number of back-ups to continue the operation in case of malfunctioning of tool/equipment and consumable items found to be defective or damaged during handling at surface.	(iii) DELETED
		10.2 DEMOBILIZATION	10.2 DEMOBILIZATION
		(i) The Contractor shall arrange for and execute demobilization of their rental Tools / Equipment / Spares / Accessories etc. upon receipt of notice from the Company or on receipt of the Rental Tools / Equipment / Spares / Accessories etc. at Contractor's OCTG Yard at Kollam from the Drilling Unit after issue of Demobilization notice. Contractor shall bear all such costs/charges towards demobilization of the same from Contractor's OCTG Yard at Kollam.	(i) DELETED
		(ii) Demobilization charges for the complete set of rental tools, equipment, accessories and unutilized spares shall be quoted on lump sum basis and shall include all charges for demobilization of the complete set of rental tools, equipment, accessories & unutilized spares etc.	(ii) DELETED

		from the Contractor's OCTG Yard at Kollam to Contractor's base in India or abroad.	
		10.3 CONSUMABLES	10.3 CONSUMABLES
		(i) Company will place firm order for two sets of Surface Wellheads and one set of Mud Line Suspension System to be delivered at Contractor's OCTG Yard at Kollam, India on DDP (Kollam) basis.	(i) Company will place firm order for two sets of Surface Wellheads to be delivered at Contractor's OCTG Yard at Kochi, India on DDP (Kochi) basis.
		(ii) Company will place order for one more set of Mud Line Suspension System on a buy back basis, to be delivered at Contractor's OCTG Yard at Kollam, India on DDP (Kollam) basis. All unused components of the Mud Line Suspension System will be returned to Contractor at the conclusion of drilling campaign. Contractor must quote buy-back charges (minimum 30% of the quoted rate) for all unused components of Mud Line Suspension System which will be considered for price evaluation.	(ii) DELETED
		(iii) Payment to the Contractor for consumable items shall be made as Certified by Company representative against the submission of invoice.	(iii) Payment to the Contractor for consumable items shall be made as Certified by Company representative against the submission of invoice.
		(iv) The total cost for demobilizing the unused components of Mud Line Suspension System, as per quantities mentioned in the price proforma, from the Contractor's OCTG Yard at Kollam to Contractor's base in India or abroad should be borne by the Contractor.	(iv) DELETED
		(v) Company will place firm order for 30" Conductor Pipe as per operational requirement, to be delivered at Contractor's OCTG Yard at Kollam, India on DDP (Kollam) basis.	(v) Company will place firm order for 30" Conductor Pipe as per operational requirement, to be delivered at Contractor's OCTG Yard at Kochi, India on DDP (Kochi) basis.

		10.4 INDIVIDUAL SERVICE DAY RATE (ISDR) (i) Individual Service Day Rate charges will be payable for full day or part thereof on pro-rata basis up to the nearest hour and will be payable from completion of mobilization. (ii) Individual Service Day Rate (ISDR) will continue till issue of Demobilization notice or offloaded at the shore base in Kollam after issue of Demobilization notice. (iii) Break Down clause under Part-3; Section-III; SCC Clause No: 6.0 will be applicable if contractor's tool/equipment fails to perform its intended operations until the tool/equipment is back in operating condition. 10.5 SERVICE PERSONNEL DAY RATE Company shall pay the Contractor the quoted DAY RATE to following service personnel. a. Service Engineer (01 Number)	10.4 INDIVIDUAL SERVICE DAY RATE (ISDR) (i) DELETED (ii) DELETED (iii) DELETED 10.5 SERVICE PERSONNEL DAY RATE Company shall pay the Contractor the quoted DAY RATE to following service personnel. a. Service Engineer (01 Number) Note: Personnel will be required on a call out basis. Company shall give a maximum of 10 days' notice.
16	E. 11.1 (i) (Page No. 483 of 607)	Mobilization charges (excluding manpower) shall become payable after the Services, ready in all respects as per scope of work, including obtaining all statutory clearances (as applicable) are mobilized to the Shore base at Kollam, Kerela and after on-hire survey by the Company Representative, which shall be no later than 10 working days from the date of arrival / intimation by the contractor & provided it is certified by the Contractor and accepted by Company	Mobilization charges (excluding manpower) shall become payable after the Services, ready in all respects as per scope of work, including obtaining all statutory clearances (as applicable) are mobilized to the Shore base at Kochi, Kerela as per mobilization notice issued by the company and after on-hire survey by the Company Representative, which shall be no later than 10 working days from the date of arrival & intimation by the contractor and provided it is certified by the Contractor and accepted by Company Representative and/or by Third Party

		Representative and/or by Third Party Inspection agency that all items are in good working condition. Date of mobilization will be considered as completed from the date of successful inspection carried out by Company representative and/or by Third Party Inspection agency. However, for the purposes of LD, the mobilization would be deemed complete from the date and time the equipment, tools, consumables etc. are mobilized in the designated location.	Inspection agency that all items are in good working condition. Date of mobilization will be considered as completed from the date of successful inspection carried out by Company representative and/or by Third Party Inspection agency. However, for the purposes of LD, the mobilization would be deemed complete from the date and time the equipment, tools, consumables etc. are have reached the designated location.
17	E. 11.3.1	NEW CLAUSE	**INTERIM DEMOBILIZATION & INTERIM REMOBILISATION CHARGES:** (i) Well Testing services (SPT, DST, TCP, NPU & Slickline) shall be interim demobilized to Contractor's base and interim remobilized to Company's Shore Base at Kochi as per the interim demobilization and interim remobilization notice issued by the company. Separate interim demobilization and interim remobilization notice will be issued. (ii) The Contractor shall arrange for and execute interim demobilization and interim remobilization of their Well Testing Services (SPT, DST, TCP, NPU & Slickline) along with Tools / Equipment / Spares / Accessories etc. upon receipt of notice from the Company from the Company's Shore Base at Kochi to Contractor's base and vice versa (Contractor's base to Company's Shore Base at Kochi) after issue of interim demobilization and interim remobilization notice respectively. (iii) Interim Demobilization & Interim Remobilization charges for the Well Testing Services (SPT, DST, TCP, NPU & Slickline) with complete set of tools, equipment and spares shall be quoted on lump sum basis and shall include all charges for interim demobilization / interim remobilization of the complete set of tools, equipment,

			accessories & unutilized spares etc. to & from the Company's Shore Base at Kochi. (iv) All charges on Tools / Equipment / Spare / Accessories etc. shall cease to exist with effect from the day the Contractor is issued interim de-mobilization notice by the Company and Tools / Equipment / Spare / Accessories etc. are offloaded at the shore base in Kochi where it was mobilized as per the Contract. (v) Individual Service Day Rate charges for Tools / Equipment / Spare / Accessories etc. as applicable shall be payable after 7 days onwards from the completion of interim remobilization at Company's shore base as per the interim remobilization notice issued by the company, if Tools / Equipment / Spare / Accessories etc. are not sent to rig. e.g., in case remobilization is done on Day 1, then Individual Service Day Rate shall start from Day 8. (vi) No rates shall be payable between issuance of interim demobilization notice and offloaded at company's shore base to completion of interim remobilization to the company's shore base as per interim remobilization notice (reference clause V, as above) issued by the company. If the interim demobilized services for Well Testing Services are not called for interim remobilization, then demobilization notice shall be become effective & considered as final demobilization of Well Testing Services and shall be paid accordingly.
18	E. 11.3 (v)	NEW CLAUSE	In case Company utilizes the services / tools / units / sets etc. after part mobilization, only 80% ISDR charges shall be paid.
19	E. 11.4 (viii)	NEW CLAUSE	In case Company utilizes the services / tools / units / sets etc. after part mobilization, only 80% OCDR charges shall be paid.

20	E. 11.5 (i) (Page No. 486 of 607)	Liquid nitrogen for well activation using NPU shall be delivered at Shore Base in Kollam, Kerela on DDP (Kollam) basis for onward transportation to the Drilling Unit.	Liquid nitrogen for well activation using NPU, Methanol, PPD, Demulsifier and Defoamer shall be delivered at Shore Base in Kochi, Kerela on DDP (Kochi) basis for onward transportation to the Drilling Unit.
21	E. 11.5 (ii) (Page No. 487 of 607)	Payment to the Contractor for consumable items shall be made on actual consumption basis as Certified by Company representative against the submission of invoice.	Payment shall be made for consumable items (Methanol, PPD, Demulsifier, Defoamer and Liquid Nitrogen) against mobilized quantity as per mobilization notice issued by the company.
22	E. 11.6 Notes: v)	NEW CLAUSE	The personnel day rate for Well Testing Co-ordinator shall be payable from the date of arrival at Kakinada / Kochi / at drilling rig based on the company's requirement on issue of mobilization notice till issue of demobilization notice.
23	E. 12.3.(iv) (Page No. 489 of 607)	(iv) Individual Service Day Rate (ISDR) will continue till issue of Demobilization notice or offloaded at the shore base after issue of Demobilization notice.	(iv) Individual Service Day Rate (ISDR) will continue till issue of Demobilization notice or offloaded at the OIL's shore base in Kochi after issue of Demobilization notice, whichever is later.
24	E. 12.4.(iii) (Page No. 489 of 607)	(iii) 60 meters of overlap is to be provided at no extra cost whenever a section is logged in stages except for image data where overlap section should be 20 meters.	(iii) **DELETED**
25	E. 12.4.(vi) (Page No. 489 of 607)	(vi) Operating Rate charge of any equipment/service (including processing charges wherever applicable) should be between 100% and 135% of its Individual Service Day Rate charge for 30 days. This limit however does not apply for the following services: as per TABLE–1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL of EXHIBIT 12 of "Scope of Work". A-6: Side Wall Core A-10: Pipe Conveyed Wireline Logging A-12: String shots A-13A/B: Setting jobs. A-14: Through Tubing Perforation A-16: Explosive Pipe Cutter A-17: Severing/Colliding Tool A-18: Puncture Services	(vi) Operating Rate charge of any equipment/service (including processing charges wherever applicable) should be between 100% and 135% of its Individual Service Day Rate charge for 30 days. This limit however does not apply for the following services: as per TABLE–1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL of EXHIBIT 12 of "Scope of Work". A-6: Side Wall Core A-10: Pipe Conveyed Wireline Logging A-12: String shots A-13A/B: Setting jobs. A-14: Through Tubing Perforation A-15: Casing Gun Perforation A-17: Explosive Pipe Cutter A-18: Severing/Colliding Tool

			A-19: Puncture Services
26	E. 12.4.(xiii).c) (Page No. 491 of 607)	c) In case of bad hole condition, if no data is acquired then 50% of Flat charge shall be payable.	c) In case of bad hole condition, if no data is acquired then 20% of Flat charge shall be payable.
27	E. 12.4.(xiii).d) (Page No. 491 of 607)	d) In case of incomplete formation testing operations due to bad hole condition or the tool fails before obtaining all the planned pressure tests/ Fluid Sample and the tests/samples acquired before tool failure are accepted by the Company, operating charges shall be payable to Contractor for the valid or successful tests with the operating charge component prorated to the number of valid pre-tests (in respect to the no. of pre-tests mentioned in 'Estimated Job units per job' column of price schedule) but restricted to a minimum of 20%. (i.e., if prorated operating charge calculates to below 20%, then a minimum of 20% operating charge shall be payable).	d) In case tool fails before obtaining all the planned pressure tests/ Fluid Sample, and the tests/samples acquired before tool failure are accepted by the Company, operating charges shall be payable to Contractor for the valid or successful tests however with a 20% deduction.
28	E. 12.5.(i). (Page No. 492 of 607)	(i) During initial mobilization, the Contractor must mobilize one additional OH cable drum (meeting tender specifications) to be kept as spare at all times for immediate replacement of logging unit's cable in case of cable loss/damage in fishing operations.	(i) Bidder shall keep additional OH cable drum at its pool base location in India and same shall be mobilised as per the operational requirement.
29	E. 12.5.(ii). (Page No. 492 of 607)	(ii) After fishing operation, Contractor shall make their logging unit ready for job immediately using the spare cable drum without delay. The contractor must at the same time arrange for splicing of the fished cable and make ready a standby reel for future requirement within 1 month.	(ii) After fishing operation, Contractor shall make their logging unit ready for job immediately using the spare cable drum without delay. The contractor must at the same time arrange for splicing of the fished cable and make ready a standby reel for future requirement within 1 month after receiving of Cable at Kochi Onshore supply base.
30	E. 12.9 Page No. 493 of 607	**SERVICE PERSONNEL DAY RATE** Company shall pay the Contractor the quoted DAY RATE to following service personnel. (a) Wireline Logging engineer (01 Number).	**SERVICE PERSONNEL DAY RATE** Company shall pay the Contractor the quoted DAY RATE to following service personnel. (a) Wireline Logging engineer (01 Number).

		(b) Wireline Logging Operator. (02 Numbers). (c) Logging Specialist. (01 Number) Note: Logging Specialist will be required on a call out basis. Company shall give a maximum of 15 days' notice.	(b) Wireline Logging Operator. (02 Numbers). (c) Tool Specialist. (01 Number) Note: Tool Specialist will be required on a call out basis. Company shall give a maximum of 15 days' notice.
31	E. 13.2 (Page No. 494 of 607)	(iv) Individual Service Day Rate (ISDR) for each of the tools & equipment will continue till issue of Demobilization notice or offloaded at the shore base in Kollam after issue of Demobilization notice.	(iv) Individual Service Day Rate (ISDR) for each of the tools & equipment will continue till issue of Demobilization notice or offloaded at the shore base in Kochi after issue of Demobilization notice, whichever is later.
32	E. 14.3.(iii) (Page No. 495 of 607)	(iii) ISDR will also be payable during the period, the Coring Equipment is pulled out of hole and till receipt of the tool/equipment/spares etc. at Contractor's OCTG Yard at Kollam after issue of demobilization / interim demobilization notice.	(iii) ISDR will be payable during the period, from the acceptance of mobilization till the Coring Equipment is below the Rotary Table (BRT) and for the period the Coring Equipment is pulled out of hole (ART) till receipt of the tool/equipment/spares etc. at Company's OCTG Yard at Kochi after issue of demobilization / interim demobilization notice.
33	E. 18.4.ii (Page No. 499 of 607)	ii) Consumables (Wire Rope Sling 19mm IWRC 19 x 9 40 feet long and Nylon Rope 1 inches thick Coil)	ii) Consumables (Wire rope slings with mechanically spliced standard loops at both end 6x36 IWRC un-galvanised, right hand ordinary lay (RHOL) confirming to IS specs wire rope with test certificate from Govt. approved test house for proof load, Size 26 mm, 12 meters effective length and SWL 6 MT, complete with required bulldog clamps for choking/clamping 26 mm sling with IS specification and Nylon Rope 1 inches thick Coil)
33		NOTE:	**Shore Base: Kochi** **Heli Base: Kochi** **Designated Mobilization Location: Kochi** **All DDP (Kollam) should be read as DDP (Kochi)**
PROFORMA-B			
			Refer to amended Proforma-B
CHECKLIST-II BEC CHECK LIST			
			Amended Checklist-II enclosed herewith

2.0 Amended Exhibit Nos. 1 (Cementing Services), 3 (Casing and Tubing Running Services), 4 (Drilling Tools), 6 (Mud Engineering Services), 10 (Surface Wellheads and 30" Conductor Pipe), 11 (Well Testing Services, Surface and Downhole Tools) & 13 (Fishing Tools and Services) and Revised BEC Checklist-II are enclosed herewith.

Revised **Proforma - B (Price Bid Format)** uploaded in OIL's e-portal under "Notes & Attachments" Tab.

3.0 Minutes of Pre-bid Meeting and OIL's response to Pre-bid queries of bidders are uploaded in OIL's e-portal under "Technical Attachments" Tab.

4.0 All other terms and conditions of the Tender remain unchanged. Bidders are requested to submit their offer considering above amendments/notifications within current bid closing date i.e. **30.04.2025**.

Oil India Limited
KG Basin Project

Amended Exhibit 1

CEMENTING SERVICES

1. GENERAL

The Scope of Work will include but not be limited to:

a) Performing all cementing operations including cementing engineering and design, cementing programme, centralisation plan, primary and remedial cementing jobs, cement plugs for side tracking operations, abandonment or suspension of the well, for well control related issues and for any other related jobs as required.
b) The minimum Compressive strength details for various slurries is provided in the scope under "**B**" (From Table **B.1** to **B.9**).
c) Performing pressure testing of lines, BOP, tubing and casing, formation integrity and other testing as required
d) Assisting in well circulation, well killing operations if necessary and as required.
e) Setting down hole tools including retrievable packers, cement retainers, bridge plugs, inflatable packers.
f) Performing other pumping services including but not limited to well testing, completion, acidizing, formation fracturing, formation strength tests.
g) Performing Leak Off Tests, with calculations and reports
h) Be responsible solely for the operation of the Bidder's equipment and items including but not limited to rigging up, testing, running, and rigging down of the Bidder's equipment and items.
i) Supply of cement and chemicals of good quality and supply of equipment and downhole tools as required by this scope of work.

2. EXPERIENCE

The Bidder should have a minimum of five (05) years of experience in providing the Cementing Services to Drilling/E&P Companies with at least three (03) years in offshore areas.

The Bidder should also have the experience of cementing at least two (02) offshore Wells and should have executed at least one contract for Cementing services in offshore area in the last 07 years reckoned from original bid closing date.

2.1 Bidder to Provide

2.1.1 Bidder shall be able to provide all equipment, labour and materials, and services specified herein or in the Compensation Schedule.

2.1.2 Bidder shall provide cement and the additives (in sacks) on 1 MT capacity pallets. The pallets shall be reusable at least once but with the approval of the Base Manager at the Shore Base only.

2.1.3 The Company reserves the right to mobilize all, or part of the equipment, personnel or services mentioned herein, and, in the Equipment, List included in this exhibit.

2.2 Bulking Facility

a) Supervision at the facility as required.

2.3 Approvals

The Bidder shall submit the following to Company for approval prior to the Commencement Date:

i) Preventive maintenance schedule and plan for all Bidder's Equipment.
ii) Bulk handling guidelines.
iii) Emergency procedures for gas, fire, and other emergencies.
iv) Bidder's safety manual and procedures.

2.4 Personnel

All the Bidder's offshore personnel should possess a valid Offshore Survival Certificate and other Statutory Certificates.

The Bidder shall submit CVs of the personnel to the company within 30 days of issue of letter of award or 45 days prior to commencement of contract (whichever later) for-Company's approval. The Bidder shall not deploy its personnel unless cleared by the Company.

The Expatriate personnel of the Bidder shall possess all clearances, and the Bidder shall ensure that such clearances are obtained at his own responsibility and cost prior to any expatriate personnel mobilized to the field.

2.5 Supervision (at Bidder's cost)

Bidder shall provide a qualified and skilled Cementing Engineer with relevant and adequate experience in offshore rig environment, primarily based at Kochi or such other location as Company at its sole option may agree. The Cementing Engineer shall have a minimum of five years' experience, out of which of 3 years should be in offshore environment. The Bidder shall submit the resume of the proposed personnel to the Company for approval prior to deploying the Cementing Engineer. The Cementing Engineer shall be responsible including but not limited to the following:

a. Cementing engineering, design, and stimulation.
b. Cement programmes.
c. Logistics management of equipment and personnel related to the Work, including customs clearance, transport and inspection if required.
d. Administration of the Bidder's Day to day affairs under the Contract.
e. Responsible for preparing, checking and submitting the invoices to the Company.
f. Shall be available for consultation at all times for the duration of the Contract.
g. Responsible for preparing consumption reports based on reports from the Field Cementing Engineer and submit a report to the Company Representative at Kakinada office within 24 hrs after the job is carried out.
h. Responsible for preparing the end of well reports and end of job report. The job report shall be submitted within 48 hrs after the job is carried out and the end of well reports within 14 days after the completion of the well to the Company Representative at Kakinada office.
i. The end of job report shall include detailed analysis and recommendations.

3. CEMENTING ENGINEERS ON DRILLING UNIT

Bidder shall provide two qualified, skilled and experienced Field Cementing Engineers with experience of working on an offshore rig, to work on the Drilling Unit on rotation basis (one Field Cementing Engineer at a time on the rig). The Cementing Engineer shall have a minimum of five years' experience, out of which of 2 years should be in an offshore rig. The Field Cementing Engineer shall be responsible including but not limited to the following:

a) Cementing calculations for each job.
b) Performing Primary and remedial cementing jobs.
c) Capable to operate, maintain & order spares for different make of cement units (like Halliburton, SLB, BJ, etc)
d) Must be conversant with cement accessories and operations of other tools.
e) Management of cementing operation and the unit.
f) Maintain a stock of inventory on the rig and ensure that adequate stock is available on the rig for each cement job.
g) Ensure that adequate equipment, tools and materials are available on the rig at all times to carry out the services, including but not limited to, as stated in the attachment to this exhibit.
h) Prepare job sheets after each job and submit to the Company Representative for approval.
i) Maintain and service equipment and tools to ensure that they are in operating condition at all times.
j) Ensure that adequate spares for all the equipment and tools are available on the rig to carry out any repairs without downtime.
k) Should have experience in remedial cement jobs, setting/releasing packers, bridge plugs, stage collars etc.

4. CEMENTING HELPERS

The Bidder shall provide four qualified, skilled Cement Helpers with relevant experience to work on the Drilling unit on rotation basis (Maximum two Cement Helpers at a time on the rig). Additional cementing helpers to be available as and when requested by the Company.

5. SHORE BASE PERSONNEL (AT BIDDER'S COST)

Two supervisors (at a time, day & night) to be deployed at the Shore Base (Kochi) for supervision of the bulking activities and logistics of moving the tools, cement and additives to the Drilling Unit. The supervisor deployed at the Shore Base will co-ordinate with the Company's Base Manager at the Shore Base. The Supervisor shall be responsible including but not limited to the following:

a) Logistics management of equipment and personnel related to the Services, between the Company Shore Base and the Drilling Unit.
b) Administration of the Bidder's day-to-day affairs under the Contract.
c) Responsible for preparing, checking, and submitting the manifests to the Base Manager.
d) Responsible for maintaining the stock and inventory at all times and submitting a weekly status report to the Base Manager.
e) Responsible for preparing consumption reports based on reports from the Field Cementing Engineer and submitting a report to the Base Manager within 24 hrs after the job is carried out.
f) Responsible for receiving, maintaining, and releasing any of the Bidder's material and responsible to obtain a counter signature and approval from the Base Manager for any such movement of the material.
g) Shall be available for consultation at all times for the duration of the Contract.

6. BIDDER TO PROVIDE

The Bidder shall provide in the technical element of its submission, the information and data requested below.

6.1 Other Commitments

The Bidder shall state all similar existing commitments and warrant the availability of the equipment being proposed.

Bidder shall provide details of the existing commitments of its and its major subcontractors' key personnel proposed for the Services. The Bidder should have minimum of 5 years of experience of providing similar services in oil exploration out of which of three (03) years in offshore areas.

6.2 Previous Experience

Details relevant to elements of the Services, of Bidder's (including, separately, all joint venturers) and any major subcontractor's experience using the same equipment intended to be used or installed in the Services.

6.3 Organisation

The organisation shall describe the responsibilities of each post holder particularly with reference to management, planning, technical, marine, safety and QA/QC.

Details of Bidder's organisation and management of the Services including:

a. A chart (or charts) showing the relationship to corporate management but particularly detailing the management structure of the organisation proposed including all its elements, sub-contractor's and functional groups. The chart(s) shall show titles and names of Cementing Engineer and personnel of higher status. The chart(s) shall show lines of communication and lines of authority and shall clearly define the QA/QC and safety functions. The organisation shall relate to the mobilisation plan.

b. Career résumés of Bidder's proposed Cementing Engineer and Cement Company's and above personnel for the Services, which shall provide as a minimum, full details of qualifications, years of relevant experience, previous employment and responsibilities. Bidder shall state current location and commitment of proposed personnel. The cementing engineers shall have adequate experience in similar cementing operations.

6.4 Provisions by the Bidder

a. Bidder shall submit a cementing programme based on Company's proposed well design for the wells and abandonment plugs as given along with the Bid. All the testing of the cement slurries shall be based on API standards as a minimum. The provisional well data and design parameters for cement design are included in the introduction to this scope-of-work document.

b. The cost details shall not be included in the Technical Proposal. The Technical Proposal shall contain only the quantities of cement and additives required. The cost details shall be included only in the Price Bid.

c. The Bidder shall propose equipment and tools necessary to carry out the scope of work including but not limited to the following effectively and most efficiently. A minimum requirement is proposed in Table 1 of this exhibit.

d. Bidder shall provide a list of all equipment necessary to carry out a cement job on rental basis. A minimum requirement is indicated in Table 1 of this exhibit. Bidder shall provide detailed technical specifications including but not limited to the manufacture, date of last inspection carried out and dimensional sketch of the equipment which will be installed on the Drilling Unit.
e. Bidder shall provide a list of all the other additional tools and equipment on rental as necessary. A minimum requirement is listed in Table 2 of this exhibit. Bidder shall provide detailed technical specifications including but not limited to the year of manufacture, date of last inspection or maintenance carried out.

f. In respect of the provision of cement and additives necessary to carry out the cement job and Bidder is required to price such provision on consignment basis. A minimum list of additives is indicated in Table 3 of this exhibit. Bidder is encouraged to propose additional additives if required to carry out the cement job more efficiently. Bidder shall submit detailed technical specifications of each additive including the MSDS sheets and standards with which they comply. Bidder should ensure that all the chemicals and additives supplied have adequate shelf life till the completion of the contract. The minimum applicable standard is API.

g. Contractor shall provide copies of the relevant certificates from a recognised Certifying Authority establishing the proper certification of the spread and all principal equipment related thereto for the purpose required. Contractor shall state the availability of the spread for inspection by Company.

6.5 Reporting

Bidder shall submit sample report formats for all reports as mentioned in section 10.0.

6.6 Mobilisation and Logistics

Bidder shall submit detailed mobilisation plan.

7. TECHNICAL SUPPORT

a. Bidder shall state from where it will obtain laboratory services for the analysis.
b. Bidder shall confirm to provide details of its supply base facilities at Kochi, Kerela if awarded with the Contract.
c. Bidder shall confirm to provide the experience and qualifications of the person nominated if awarded with the Contract.

8. PRICING

The Bidder must mobilize all the equipment, personnel or services mentioned herein as per the mobilization notice.

a. Mobilization/Demobilization charges are to include cost of appropriate packaging, anti-corrosion measures, etc, to ensure arrival of the equipment in good condition as follows:

i. Where appropriate all equipment and materials must be delivered on/in suitable skids, tool racks, baskets, containers, pallets, etc for delivery offshore or for temporary storage.
ii. Dangerous goods and explosives must be suitably packaged, labelled and otherwise marked according to all regulations.
iii. Appropriate packaging must be utilised for all sea and airfreight deliveries.
iv. If appropriate, material must be suitably coated with a corrosion prevention material and be packed with a dehumidifier, both of which must be suitable for storage at ambient temperatures of 45°C.
v. If appropriate, material must be securely contained within rigid wooden containers.
vi. Bidder shall supply appropriate lifting gear for all equipment to be delivered offshore; current load tests certificates for all slings, rigging and lifting gear utilised will be required.

b. Company will provide only sufficient temporary space at its shore base for items to be loaded immediately on-board marine vessels. Bidder is to maintain sufficient inventory of chemicals, cement and consumables at its own base located at a conveniently close distance from Company shore base.

c. The Service Day Rate of the tools to commence on arrival at Company's logistics shore base after customs, inspections and other clearances and Service Day Rate to stop when the demobilization notice is issued by the Company and offloaded at Company's Shore Base.

d. All Mobilization and Demobilization cost to be inclusive of all freight, taxes, insurance and any other cost to and from Company Shore Base.

e. Bidder will invoice, and Company will pay on actual per barrel basis, payment will be made as per the quoted per barrel price which is inclusive of cement and all other required chemical and additives cost as per the concentration required to be prepared for each cementing job. Any excessive consumption of chemical and additives Company will pay only 15% excess concentration of the concentration as quoted, irrespective of any consumption beyond 15%.

f. Pricing for chemicals and consumables shall be inclusive of cost, freighting, insurance, customs clearance, any other local taxes and surcharges and to be delivered at Company Shore Base. Company to provide the necessary documentations for all necessary clearances. Bidder is requested to provide a consignment plan for such items. Payment will be made on actual consumption, and all unused chemicals and consumables will be taken back by the Bidder. Once a standard package is opened, it will be considered as consumed.

g. The Bidder shall provide a complete list of all items that can be provided by the Bidder for this Contract. The cost of each of the item shall be provided in the format as indicated in the Price Schedule. Mark the global list of items clearly as "Global Price List" with applicable discount. All excessive cement, chemical and additive consumption up to 15% per barrel will be paid based on the quoted unit price after Company's prior approval, which needs to be done at the time of finalizing the cement recipe.

9. SUB-CONTRACTORS

If Bidder wishes to subcontract or associate in any way with another company or other companies for the performance of the Contract, then Bidder is required to state those parts of the Services which it intends to subcontract and name the party which is proposed to carry out that part of the Services. A full description of the SoW to be subcontracted, together with details of the proposed subcontractor's resources, capabilities and its previous experience in relation to the subcontracted scope is to be provided. Bidder must list all such subcontracts which are minor and of little significance to drilling work or programme as a pre-tender tie-up with a subcontractor in the Bidders final submitted bids.

In the absence of such information, or in respect of the any of the Services not specified as being subcontracted, Company will assume that Bidder will carry out the entire or remaining Services itself and no subcontracting or association will be permitted, except with the express approval of the Company.

10. REPORTING

A. General

Bidder shall comply with the following reporting requirements as a minimum. Bidder shall also provide additional reports to the Company Representative as may reasonably be requested during the Work.

a. Tools & Equipment Inventory

Bidder shall maintain an up-to-date inventory of all tools and equipment held on the Drilling Unit, Shore Base, work boats or elsewhere. This report shall be submitted on a weekly basis to the Company Representative.

b. Cementing Supplies Inventory

Bidder shall maintain an up-to-date inventory of all cement, cement blend and additives held on the Drilling Unit, Shore Base, Work Boats or elsewhere. This report shall be submitted on a weekly basis to the Company Representative.

c. Cement Evaluation Report

Bidder shall provide a detailed evaluation of each cement job, which shall include but not be limited to the following:

i. Cement design and cement programme.
ii. Assumptions used in the cement design and programme.
iii. Details of the operations including time break up and cost break up.
iv. Comparison between the plan and the actual parameters.
v. List of consumables used for the cement job.
vi. Comparison of planned Vs actual cost.
vii. Analysis of the cement job including detailed evaluation of any downtime.
viii. The detailed report of the unit which includes but not limited to pressures, rates and densities etc. and other equipment in both hard and soft copies.

This report shall be submitted within 24 hrs after the job is carried out.

d. End Of Well Report

The Bidder shall provide the following end-of-well reports within 14 days of the end of operations on each well:

i. A detailed recap of the cementing operation at the end of each well.
ii. An evaluation of all the other operations including the setting of down hole tools, performing other pumping services related to well testing, completion, acidizing, formation fracturing and, formation strength tests.
iii. An evaluation of any squeeze or remedial cement jobs and the abandonment plugs jobs carried out in the well.
iv. A detailed cost breakdown and material reconciliation for all the services performed.
v. Details of downtime and reason for the same

e. Sample Reports

The Bidder shall submit the sample reports to the Company prior to the commencement of the operation. The format of the reports shall be mutually agreed between the Company and the Bidder prior to the commencement of operations.

11. EQUIPMENT, MATERIALS AND ADDITIVES

a. Minimum Requirements

The Bidder shall provide all equipment, cement and additives necessary to carry out a cement job. The indicative lists are attached as Tables 1 & 2 of this exhibit. All cementing equipment should be capable of performing the job satisfactorily with the tubular which has been shared.

Bidder must provide API class-G cement (Dalmia Make) required for slurry design.

Make of Cement Additives should be from Baker Hughes, Halliburton or SLB.

b. Maintenance

Upon request by Company, Bidder shall provide proof of maintenance and service history of all items of equipment supplied.

The Bidder shall maintain the equipment in such a manner to prevent downtime or waiting on equipment during operation.

c. Equipment to be Operational

The Bidder shall maintain all equipment in operating condition and shall supply all relevant certifications requested by Company.

d. Inspection

Bidder acknowledges that Company may inspect Bidder's Equipment using a third-party inspection company as per Clause No: 8.0 of SCC and at any time during the duration of the contract.

12. LOGISTICS

a. Shore Base

The Bidder is required to mobilize all its equipment, chemicals etc to the Shore Base at Kochi, Kerela, India. All the equipment, materials, consumables etc. supplied by the Bidder to the Company under the contract and shall be

delivered as per operational requirement and when instructed by the Company.

All lifting and load-bearing equipment of the Bidder shall be certified prior to shipment to the drilling unit and all relevant certifications shall be available for inspection. Cement shall be supplied on 1 MT double-lining installed marine bags.

13. TECHNICAL SUPPORT

a. Samples

The Bidder shall obtain samples of cement, additives and water before any cement job for testing in Bidder's accredited laboratory. Bidder shall inform the Company of where the cement, additives and water are tested, giving details of the location, method of transport of samples to the laboratory and try, minimum time required for the whole process starting from obtaining samples to issuing the test result to the Drilling Unit. The final cement programme shall be based on such these results and shall be submitted to the Company and the Drilling Unit 48 hours before the cement job. These tests may be witnessed by Company's representative.

b. Logistical Support

Bidder shall provide all necessary logistic support for their services.

c. Technical

Bidder shall nominate a contact person to assist on technical queries and issues, in support of the Cementing Engineer based in India. Bidder shall state the location of the nominee and provide details of experience and qualifications.

d. New Developments

Bidder shall make available to Company in as much as it is not constrained by agreements of confidentiality, details of any ongoing research and development activities that it is undertaking, and which may be relevant to the Company's operation.

Table 1: Equipment List

Sr. No.	Equipment	Company's minimum specification	QTY
1.	Cementing Unit twin pump unit	Will be provided as part of the rig equipment.	Nil
2.	Bulk facilities	Will be provided by Shore Base Service provider which	As applicable

		is one of the services to be provided under this tender.	
3.	Batch Cement Mixer	Twin 50bbl compartments (Total 100 bbl) c/w chemical hopper, mixing facilities and transfer arrangements including transfer lines etc Paddle mixer system Diesel engine powered	1
4.	Chiksan Pipes Required (Sour Service) (All connections should be Fig. 1502 connections) All the components shall be rated to 10,000 psi Working Pressure	Sufficient quantity of the following: 1. 6 m. Loop and 1 m Straight 2. Lo-Torc valves 3. 90-degree Elbows & 45degree Elbows 4. Swivels 5. X-O from 2" fig.1502 x 3" fig.1502 6. X-O from 2" fig.1502 male x 2" fig. 1502 female 7. Adapter for 2" fig. 1502 male	Sufficient qty to be provided for all the job as mentioned in the Scope of work
5.	Cementing Tools	Chiksan accessories (other than those mentioned above) – 15,000 psi WP rating (sour service) 2" High pressure hoses – 10,000 psi WP rating All connections should be Fig. 1502.	Sufficient qty to be provided for all the job as mentioned in the Scope of work
6.	Surface cementing head(s) to hold cementing plugs as per size of casing for carrying out primary cementation.	For 13-3/8" casing, 68 lb/ft, P-110, BTC connections	1
7.	Surface cementing head(s) to hold cementing plugs as per size of casing for carrying out primary and stage casing cementation.	For 9-5/8" casing, 53.5 lb/ft, P-110, Premium connections	1

8.	Surface cementing head(s) to hold cementing plugs as per size of casing for carrying out primary and stage casing cementation.	For 7” casing, 32 lb/ft, P-110, premium connections	1
9.	Circulating Head c/w 2” WECO 1502 connection	For 30”, I” WT, X-52 or X-56, Multi start connector	1
10.	Circulating Head c/w 2” WECO 1502 connection	For 20”, 133 lb/ft, X-56, Multi start connector	1
11.	Circulating Head c/w 2” WECO 1502 connection	For 16”, 84 lb/ft. VM110SS-D, Dino VAM connections	1
12.	Circulating Head c/w 2” WECO 1502 connection	For 13-3/8” casing, 68 lb/ft, P-110, BTC connections	1
13.	Circulating Head c/w 2” WECO 1502 connection	For 9-5/8” casing, 53.5 lb/ft, P-110, Premium connections	1
14.	Circulating Head c/w 2” WECO 1502 connection	For 7” casing, 32 lb/ft, P-110, premium connections	1
15.	Circulating Head c/w 2” WECO 1502 connection	For 4-1/2” casing, 15.1 lb/ft, P-110 premium connection	1
16.	Circulating Head c/w box connection suitable for drill pipe.	For 20”, 133 lb/ft, X-56, Multi start connector	1
17.	Circulating Head c/w box connection suitable for drill pipe.	For 16”, 84 lb/ft. VM110SS-D, Dino VAM connections	1
18.	Circulating Head c/w box connection suitable for drill pipe.	For 13-3/8” casing, 68 lb/ft, P-110, BTC connections	1
19.	Circulating Head c/w box connection suitable for drill pipe.	For 9-5/8” casing, 53.5 lb/ft, P-110, Premium connections	1
20.	Circulating Head c/w box connection suitable for drill pipe.	For 7” casing, 32 lb/ft, P-110, premium connections	1

21.	Additional equipment by Bidder with quantities		As required

Table 2: Other Equipment List

Sr. No.	Equipment	Company's minimum specification	Qty
1.	Retrievable squeeze packer c/w circulating valves and crossovers	For 16", 84 lb/ft. VM110SS-D, Dino VAM connections	1 no + 1 optional
2.	Retrievable squeeze packer c/w circulating valves and crossovers	For 13-3/8" casing, 68 lb/ft, P-110, BTC connections	1 no + 1 optional
3.	Retrievable squeeze packer c/w circulating valves and crossovers	For 9-5/8" casing, 53.5 lb/ft, P-110, Premium connections	1 no + 1 optional
4.	Retrievable squeeze packer c/w circulating valves and crossovers	For 7" casing, 32 lb/ft, P-110, premium connections	1 no + 1 optional
5.	Retrievable squeeze packer c/w circulating valves and crossovers	For 4-1/2" casing, 15.1 lb/ft, P-110 premium connections	1 no + 1 optional
6.	Retrievable storm packer, c/w circulating valve, storm valve and crossovers.	For 13-3/8" casing, 68 lb/ft, P-110, BTC connections, capable of hanging +/- 300 Klbs	1 no + 1 back up
7.	Retrievable storm packer, c/w circulating valve, storm valve and crossovers.	For 9-5/8" casing, 53.5 lb/ft, P-110, Premium connections, capable of hanging +/- 300 Klbs	1 no + 1 back up
8.	Retrievable storm packer, c/w circulating valve, storm valve and crossovers.	For 7" casing, 32 lb/ft, P-110, premium connections, capable of hanging +/- 300 Klbs	1 no + 1 back up
9.	Pressurized mud balance c/w spares		2 no's
10.	Sampling kit for transporting samples		As required
11.	Additional equipment by Bidder with quantities		

Table 3: Chemicals and Additives

Sr. No.	Chemical	Packaging Size
1.	API Class 'G' cement	
2.	API Class G cement with 35% Si Flour	
3.	API Class G/H light weight cement	
4.	Bentonite (Gel)	50lb/sack
5.	Sodium Chloride	
6.	Calcium Chloride	
7.	Low-Medium temperature retarder	
8.	Medium-High temperature retarder	
9.	Low-Medium temperature Fluid Loss Additive	
10.	Medium-High temperature Fluid loss additive	
11.	Powdered fluid loss additive	
12.	Extender	
13.	Friction reducer	
14.	Dispersant	
15.	Spacer additives	
16.	Pre-flush chemicals – List them as proposed	
17.	Antifoam Additive	
18.	Anti-gas migration additives – Specify as proposed	
19.	Light Weight Additives	
20.	Surfactants	
21.	Fibrous chemicals as loss circulating material	
22.	Additional chemical and additive but not limited to the above	

Table 3: Personnel

Sr. No.	Position	Rotation
1.	Cementing Engineer – Shore Based	At no cost
2.	Logistics Supervisors (2 at all times)	At no cost
3.	Cementing Engineer – Drilling Unit Based	On rotation basis
4.	Cementing Helper – Drilling Unit Based	On rotation basis
5.	Cementing Helper – Drilling Unit Based (Call Out Personnel)	On rotation basis

A. <u>PLANNED CEMENTING PROGRAMME (Tables updated for 30" conductor):</u>

Table A: Well Loc OKKA, Kerala-Konkan: All depths are in TVDRT (water depth = 57m)

Hole Size	Casing Size	Shoe Depth (MD/TVDRT)	% Excess	Top Cement (m)	Cement Height (m)	Density, lb/gal	Expected BHST (Deg F /C)	Pore press.
36"	30"	200	150	Seabed	113	15.8 normal slurry	25	8.06
26"	20"	800	150	Seabed	553 160	13.7 lead 15.4 tail	82/27.7	8.07
20"	16"	1970	150	660	1310	15.0 normal slurry	92/33.3	8.3
17-1/2"	13-3/8"	2800	150	2300	500	15.8 Normal slurry	108/42.2	8.3
12-1/4"	9-5/8"	4500	75	3800 (1st Stage) 2600 (2nd Stage)	700 600	15.8 PPG Gas Tight slurry (1st stage & 2nd stage)	175/79.4	9.15
7" Liner/ Casing/ Tie-back cementation (3 Cases)								
Case-1: Considering 7" liner to 6000m and cementation of same								
8-1/2"	7"	6000	25	4350	1400 250	14.5 PPG lead slurry 15.8 PPG tail Gas Tight slurry	250/121	10.76
Case-2: Considering short landing of 7" liner, drilling of 5-7/8" hole and run 4-1/2" liner to 6000m								
8-1/2"	7" liner	5600	25	4350	1250	15.8 PPG normal slurry	223/106	10.57
5-7/8"	4-1/2" liner	6000	10	5450	550	15.8 PPG Gas	250/121	10.76

						Tight slurry		
Case-3: In case 7" Liner is run to 6000m, prospective zones across 9-5/8" casing is tested and thereafter 7" liner is tied-back to surface prior to testing prospective zones against 7" liner								
8-1/2"	7" liner	6000	25	4350	1650	15.8 PPG Gas Tight slurry	250/ 121	10.76
9-5/8" casing	7" Tie-back string	4350	10	2700	1650	15.8 PPG normal slurry	250/ 121	10.76

MW planned to be used: (MW weights proposed below are as per ONGC Final Report-OKKA)

Casing and Hole Size	**Mud program, Well Loc OKKA, Kerala-Konkan**
36" hole x 30" casing	8.6 lb/gal, Bentonite gel based WBM.
26" hole x 20" casing	8.6 lb/gal, Bentonite gel based WBM.
20" hole x 16" liner	9.2 lb/gal, Mixed Metal Oxide
17-1/2" hole x casing 13-3/8"	9.5 lb/gal, Mixed Metal Oxide
12-1/4" hole x casing 9-5/8"	10 lb/gal, KCL –PHPA –Polymer WBM
8 1/2" hole x 7" liner	11.5 lb/gal, KCL –PHPA – Polymer WBM
5-7/8" hole x 4-1/2" liner	11.5 lb/gal, KCL –PHPA – Polymer WBM

B. <u>Slurry details: Slurry details are provided below for well Loc OKKA, Kerala-Konkan:</u>

B.1. For 30" casing single slurry (In case of drilling 36" hole section):

Specifications	**Single Normal Slurry**
Mud system	Bentonite gel based WBM
BHST (°C) Tentative	25
Slurry Density, ppg	15.8
Casing Shoe Depth (m) MD/ TVDRT	200
Cement rise desired (from surface)	Up to Seabed
Length of Cement column planned	113m
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss	<150 ml

Sedimentation	-
Solid Volume Fraction	-
Thickening Time at BHCT, hrs.	
- 50 Bc	6.36
UCA	
- 24 hrs.	>1500 psi at BHST
-48 Hrs.	-

B.2. <u>For 20" lead and tail slurries:</u>

Specifications	**Lead**	**Tail**
Mud system	Bentonite gel based WBM	Bentonite gel based WBM
BHST (°C) Tentative	27.7	27.7
Slurry Density, ppg	13.7	15.4
Casing Shoe Depth (m) MD/ TVDRT	800	-
Cement rise desired (from surface)	Up to Seabed	-
Length of Cement column planned	553	160
Rheology Reading	-	-
Free Fluid	Nil	Nil
API Fluid Loss at 1000 psi	<150 ml	<150 ml
Sedimentation	-	-
Solid Volume Fraction	-	-
Thickening Time at BHCT, hrs.		
- 50 Bc	-	-
UCA		
- 24 hrs	>500 psi at BHST	>500 psi at BHST
-48 hrs	>1000 psi at BHST	>1500 psi at BHST

B.3. For 16" liner single slurry:

Specifications	**Single Normal Slurry**
Mud system	Mixed Metal Oxide WBM
BHST (°C) Tentative	33.3
BHCT (°C)	-
Casing Shoe Depth (m) MD/ TVDRT	1970
Hanger top MD/TVDRT (m)	660
Top of cement (m)	660
Length of Cement column (m)	1310
Density & Type of slurry planned, ppg	15.0 Normal Slurry

Density & Vol of spacer planned	Water/ 5.0 m3
Expected pump pressure	1700 + 500 Psi (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
Sedimentation	-
Solid Volume Fraction	-
Thickening Time at BHCT, hrs.	-
- 50 Bc	-
UCA	
- 24 hrs.	>1500 psi at BHST
-48 Hrs.	>1800 psi at BHST

B.4. For 13-3/8" casing single slurry:

Specifications	**Single Normal Slurry**
Mud system	Mixed Metal Oxide WBM
BHST (°C)	42.2
BHCT (°C)	-
Casing Shoe Depth (m) MD/ TVDRT	2800
Top of cement (m)	2300
Length of Cement column (m)	500
Density & Type of slurry planned, ppg	15.8 Normal Slurry
Density & Vol of spacer planned	Water/ 7.0 m3
Expected pump pressure	1300 + 500 psi (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
Sedimentation	-
Solid Volume Fraction	-
Thickening Time at BHCT, hrs.	-
- 50 Bc	-
UCA	-
- 24 hrs.	>1800 psi at BHST
-48 Hrs.	>2000 psi at BHST

B.5. 9 5/8" Casing Two stage cementing Slurries: 1st Stage cementing

Specifications	**Single Gas tight Slurry**
Mud system	KCl-PHPA-Polymer WBM
BHST (°C)	79.4
BHCT (°C)	-

Casing Shoe Depth (m) TVDRT	4500
Top of ZoI, MD/ TVDRT (m)	3920
Top of cement (m)	3800
Length of Cement column (m)	700
Density & Type of slurry planned, ppg	15.8 Gas Tight Slurry
Density & Vol of spacer planned	Water / 8.0 m3
Expected pump pressure	1050 + 500 Psi (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
SGSA	-
Permeability	-
Thickening Time at BHCT, hrs.	
- 50 Bc	-
UCA	
- 24 hrs.	>1800 psi at BHST
- 48 hrs.	>2000 psi at BHST

B.6. 9 5/8" Casing Two stage cementing slurries: 2nd Stage cementing

Specifications	**Single Gas tight Slurry**
Mud system	KCl-PHPA-Polymer WBM
BHST (°C)	79.4
BHCT (°C)	-
Stage collar Depth (m) MD/ TVDRT	3200
Top of ZoI, MD/ TVDRT (m)	2898
Top of cement (m)	2600
Length of Cement column (m)	600
Density & Type of slurry planned, ppg	15.8 Gas Tight Slurry
Density & Vol of spacer planned	11.6 ppg / 8.0 m3
Expected pump pressure	800 + 500 PSI (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
SGSA	-
Gas tight properties required	yes
Permeability	-
Thickening Time at BHCT, hrs.	-
- 50 Bc	-
UCA	-
- 24 hrs.	>1800 psi at BHST
- 48 hrs.	>2000 psi at BHST

B.7. Case-1: Run 7" Production Liner to 6000m and perform cementing:

Specifications	Lead	Tail
Mud system	KCl-PHPA-Polymer WBM	KCl-PHPA-Polymer WBM
BHST (°C)	121	121
BHCT (°C)	-	-
Casing Shoe Depth (m) MD/ TVDRT	6000	
Top of ZoI, MD/ TVDRT (m)	5824	
Top of cement (m)	4350	5750
Length of Cement column (m)	1400	250
Density & Type of slurry planned, ppg	14.5 Normal Slurry	15.8 Gas Tight Slurry
Density & Vol of spacer planned	12ppg/ 6.0 m3	12ppg/ 6.0 m3
Expected pump pressure	2850 + 500 PSI (plug bumping)	
Rheology Reading	-	-
Free Fluid	Nil	Nil
API Fluid Loss at 1000 psi	<50 ml	<50 ml
SGSA	-	-
Gas tight properties required	-	-
Permeability	-	-
Thickening Time at BHCT, hrs.	-	-
- 50 Bc	-	-
UCA	-	-
- 24 hrs.	>1600 psi at BHST	>1800 psi at BHST
- 48 hrs.	>1800 psi at BHST	>2000 psi at BHST

~~**B.8. Option-1**~~

~~**7" Casing Two stage cementing slurries: 1st Stage cementation**~~

~~**Specifications**~~	~~**Single Normal Slurry**~~
~~Mud system~~	~~KCl-PHPA-Polymer WBM~~
~~BHST (°C)~~	~~121~~
~~BHCT (°C)~~	~~-~~
~~Casing Shoe Depth (m) MD/ TVDSSSS~~	~~6000~~
~~Top of ZoI, MD/ TVDSSSS~~	~~5800~~
~~Top of cement (m)~~	~~5300~~
~~Length of Cement column (m)~~	~~700~~
~~Density & Type of slurry planned, ppg~~	~~15.8 Gas Tight Slurry~~
~~Density & Vol of spacer planned~~	~~12ppg/ 6.0 m3~~

~~- Expected pump pressure~~	~~2850 + 500 PSI (plug bumping)~~
~~Rheology Reading~~	~~-~~
~~Free Fluid~~	~~Nil~~
~~API Fluid Loss at 1000 psi~~	~~<50 ml~~
~~SGSA~~	~~-~~
~~Gas tight properties required~~	~~-~~
~~Permeability~~	~~-~~
~~Thickening Time at BHCT, hrs.~~	~~-~~
~~- 50 Bc~~	~~-~~
~~UCA~~	~~-~~
~~- 24 hrs.~~	~~>1800 psi at BHST~~
~~- 48 hrs.~~	~~>2000 psi at BHST~~

B.8. Case2: Considering short landing of 7" liner to 5600m, drilling of 5-7/8" hole and run 4-1/2" liner to 6000m (Contingency)

7" Liner cementing slurry:

Specifications	**Single Normal Slurry**
Mud system	KCl-PHPA-Polymer WBM
BHST (°C)	121
BHCT (°C)	-
Surface Density, ppg	15.8
Casing Shoe Depth (m) MD/ TVDRT	5600
Hanger top MD/TVDRT	4350
Top of cement (m)	4350
Length of Cement column (m)	1250
Density & Type of slurry planned, ppg	15.8 Normal Slurry
Density & Vol of spacer planned	12 ppg / 6.0 m3
Expected pump pressure	2850 + 500 PSI (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
SGSA	-
Gas tight properties required	-
Permeability	-
Thickening Time at BHCT, hrs.	-
- 50 Bc	-
UCA	-
- 24 hrs.	>1800 psi at BHST
- 48 hrs.	>2000 psi at BHST

4-1/2" Liner cementing slurry:

Specifications	**Single Gas Tight Slurry**
Mud system	KCl-PHPA-Polymer WBM
BHST (°C)	121
BHCT (°C)	-
Casing Shoe Depth (m) MD/ TVDRT	6000
Hanger top MD/TVDRT	5450
Top of ZoI, MD/ TVDRT (m)	5824
Top of cement (m)	5450
Length of Cement column (m)	550
Density & Type of slurry planned, ppg	15.8 Gas Tight Slurry
Density & Vol of spacer planned	12 ppg/ 5.0 m3
Expected pump pressure	2700 + 500 PSI (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
SGSA	-
Gas tight properties required	-
Permeability	-
Thickening Time at BHCT, hrs.	
- 50 Bc	-
UCA	
- 24 hrs.	>1800 psi at BHST
- 48 hrs.	>2000 psi at BHST

B.9. Case-3: Run 7" Liner to 6000m and Tie back to surface later:

7" Liner cementing slurry:

Specifications	**Single Gas tight and Normal Slurry**
Mud system	KCl-PHPA-Polymer WBM
BHST (°C)	121
BHCT (°C)	-
Surface Density, ppg	15.8
Casing Shoe Depth (m) MD/ TVDRT	6000
Hanger top MD/TVDRT	4350
Top of ZoI, MD/ TVDRT (m)	5894
Top of cement (m)	4350
Length of Cement column (m)	1650 + 1650m cementation between 9-5/8" csg & 7" liner

Density & Type of slurry planned, ppg	15.8 Gas Tight and Normal Slurry
Density & Vol of spacer planned	12 ppg / 6.0 m3
Expected pump pressure	2850 + 500 PSI (plug bumping)
Rheology Reading	-
Free Fluid	Nil
API Fluid Loss at 1000 psi	<50 ml
SGSA	-
Gas tight properties required	-
Permeability	-
Thickening Time at BHCT, hrs.	-
- 50 Bc	-
UCA	-
- 24 hrs.	>1800 psi at BHST
- 48 hrs.	>2000 psi at BHST

Bidders to note that volumes for Abandonment plugs are also included as a part of Slurries in **PERFORMA-B** and the bidders to quote accordingly.

Bidders to provide 20 numbers (15 numbers for jobs plus contingency) of foam balls for cleaning of d/pipes for 20" conductor/casing stinger cement jobs and also considering 4 abandonment plugs in the well. The cost of foam balls shall be included as a part of cement slurries.

3. <u>BIDDER shall perform, but not limited to the following laboratory tests:</u>

3.1. Quality control on cement (ISO/API, Company sedimentation test).
3.2. Fluid density (pressurized mud balance).
3.3. Well simulation thickening test in hot conditions (pressure & temperature control, chart-test temperature up to 250° C).
3.4. Compressive strength tests (API cubes) and sonic testing of cement (UCA) in hot conditions (test temperature up to 250° C).
3.5. Static Free fluid test. (Capability to run the test with different deviated angle).
3.6. Fluid loss test.
3.7. Sedimentation test for different angle (BP settling test).
3.8. Rheological properties and gel strength measurements (rotational 8 speed rheometer).
3.9. Wellbore fluids compatibility tests (WBM/ wash / Spacer). Ref ISO 10426-2.
3.10. Spacer efficiency, wettability, tile test.
3.11. Basic water analysis.
3.12. Gas Migration tests.
3.13. Cement Hydration Analyzer test; and

3.14. Static Gel Strength Analysis.

4. Testing Facility:

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

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

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

4.3.1. High Temp High Pressure Cement Slurry Consistometer

4.3.2. Curing Chamber

4.3.3. Atmospheric Consistometer

4.3.4. Fann Viscometer

4.3.5. HTHP Fluid Loss Cell

4.3.6. Waring Blender

4.3.7. Destructive Compressive Strength Tester

4.3.8. Computerized UCA

4.3.9. Gas Migration testing cell (Gas flow module). This test facility should be available at the Bidder's test lab or at the technology centre so as to provide test results within 10 days of request by the Company.

4.3.10. Slurry Stability & Settling Tester.

4.3.11. Hydraulics and other simulations:

4.3.12. Modelling fluid flow regime and behaviors with displacement efficiency simulations (must take into account the following: flow regime in eccentric annulus, friction pressure, rheological modelling factors, at BHCT)

4.3.13. Centralization simulations showing standoff at centralizers and between. Centralizer spacing, running forces, drag, etc.

4.3.14. Temperature simulations for different environments and conditions.

4.3.15. ECD calculations.

4.3.16. Containers for transporting cement, water, and additive samples from rig to base laboratory.

4.3.17. The above list shall be considered as a minimum requirement.

4.3.18. BIDDER shall add base laboratory Equipment required, and available

EQUIPMENT not listed by Company.

4.3.19. The Bidder shall describe completely his laboratory's EQUIPMENT. Calibration documents and pictures of Equipment used in the laboratory are requested.

4.3.20. The laboratory PERSONNEL shall be available 24 hours per day / 7 days per week, including national holidays.

3) CASING & TUBING RUNNING SERVICES

1. SCOPE OF WORK

The Scope of Work will include but not be limited to:

Providing the casing running tools and services which are suitable for all casing strings listed in the introductory section of this scope of work, plus 4-1/2" and 3-1/2" test tubing.

In addition to the above, the Bidder shall carry out the following:

i. Maintenance of the tools and equipment.
ii. Updating tool inventory.
iii. A monthly inventory for the entire rental tools and consumables.
iv. A monthly report on consumables consumed in the well with the details of replenishment of the stock to maintain spares level.
v. Tracking movement of tools from shore to rig and station authorized and qualified personnel to supervise loading and offloading at both shore and rig.
vi. Provide Tools running/Job records, any recommendations, and any other reports as requested.
vii. Equipment failure reports.
viii. Providing any other programs or reports relevant to the operations and to the Contract.

2. SUB-CONTRACT

The service will be provided either by the Bidder or through its Sub-Bidder.

3. BIDDER TO PROVIDE

Bidder shall be able to provide all equipment, labour, materials, and services specified herein and in the Compensation Schedule. Bidder shall be solely responsible for the operation of Bidder Equipment including but not limited to the rigging up/preparation, testing, running and rigging down thereof.

3.1. Approvals

Bidder shall submit to Company for approval prior to the Commencement Date:

a) All Bidder tools and equipment with complete specifications.
b) List of minimum recommended spares.
c) Preventive maintenance schedule and plan for all bidder equipment
d) Bidder's safety manual and procedures.
e) Detailed Mobilisation Schedule

3.2. Bidder to provide along with the bid.

a) Detailed technical specifications of the tools and equipment that the bidder intends to provide.
b) Detailed mobilization schedule.
c) Detailed HSE plan and procedures.
d) Experience of similar jobs in and around the region.
e) Nearest supply base with redressing facilities from which the intended tools will be mobilized.

4. EQUIPMENT LIST FOR CASING AND TUBING RUNNING SERVICES

The equipment list is attached to this exhibit.

The Company at its discretion can order the equipment and tools in part or in full as per this Scope of Work. The Company at its discretion can also reduce or increase the quantity of equipment and tools to be ordered.

5. PERSONNEL

5.1. Casing Crew Chief for Casing and Tubing running services

Casing Crew chief will be responsible for performing the following tasks:

a) Maintain an inventory of all tools being provided as part of Casing Running Service. This inventory will also show whether the tools are at the Supply base, Supply vessels or the Drilling Unit.
b) Co-ordinate the stocking of tool spares.
c) Write Failure Reports if required.
d) Maintenance of all tools and ensuring that the tools are properly stored and organized.
e) Evaluate the condition of the equipment/tools in storage.
f) Update the equipment inventory.
g) Prepare a monthly inventory report.
h) Track movement of tools from shore to rig.
i) Make shipping manifest for all tool movements.
j) Organize the tools for transport.
k) Prepare necessary arrangements to have the tools loaded and offloaded from the supply vessels.
l) Prepare a monthly consumable consumption list with details of replenishment of stock certified and approved by the Company base manager.
m) Maintain a weekly summary of tools used in the operation.
n) Prepare the final shipping lists at the end of the project.

o) The Crew Chief will act as liaison between the customer representative, drill crew, and casing running personnel. His tasks will include toolbox safety meetings and repair/service/operation of all Casing running equipment, logistics of equipment and personnel related to the work and, administration of the bidder's day to day affairs under the Contract. He shall be available for consultation at all times for the duration of the Contract. The crew chief will have the ability to operate all casing running equipment replacing one member of the existing personnel.

p) Responsible for inspection, measurement of casings on the deck.

q) Responsible for setting up and operation of Torque Turn Analysis system for premium casings.

r) Coordinate with the Company's Finance department to raise correct invoices with all support documents, ensure that variations to contract (if any) are in place and in general to try and reduce all disputes pertaining to raising/payment of invoices. He will also be responsible for all bidder equipment that are to be exported and imported out of the country and should be able to certify on behalf of the Bidder.

5.2. Casing Crew for Casing and Tubing running services (Tong Specialist, Casing Stabber, Torque Turn Operator)

The casing crew will perform, not limited to, the following tasks:

a) Ensure all equipment is ready to be picked up and operated as per instructions from Company representative at all times.

b) Maintain all Casing running tools, Power pack, Jam unit and the workshop at the base and on the rig in excellent running condition.

c) Present a list of accessories and make necessary arrangements that must be replaced after use due to wear or loss. (e.g., tong dies, tam packer rubbers etc).

d) Make recommendations to improve future operations.

e) Maintenance of all tools, equipment and spare parts.

f) Carry out jobs as per Company's request within the capacity of the Contract.

5.3. Kollam / Kochi based Coordinator (Base Coordinator)

The Co-ordinator should be an experienced engineer for the services to be based in Kollam/Kochi or as designated by Company and be the focal point for all communication between the Company and the Bidder. He should be responsible for, but not limited to, the following:

a) Attending all pre-spud and pre-job meetings and to be available for consultation at all times during the duration of the contract.

b) All Bidder's equipment that are to be exported and imported out of the country and shall certify that the equipment is imported or re-exported on behalf of the Bidder.
c) Coordination off all logistical movement of the Bidder's equipment and prepare all documentation required in consultation with the Company's Logistics/Commercial Departments.
d) Coordination with the Company's Finance department in order to raise correct invoices with all support documents, ensure that variations to contract (if any) are in place and in general to try and reduce all disputes pertaining to raising/payment of invoices.

5.4. Schedules for Casing crew chief and Casing Running Crew

All personnel must be approved by Company prior to commencement. Crew rotation for casing crew will be 28/28 or as otherwise agreed. Full CVs of all the proposed personnel should be submitted to the Company (for approval) prior to the commencement. All Expat Personnel need to hold valid Government clearances and Visas to work which shall be the responsibility of the bidder

The Base Coordinator should always be available for consultation from the beginning to end of contract.

Note: All personnel are to have valid Certificates to work in Jack-up platform and drilling unit as per local regulatory requirements.

6. REPORTING

6.1. General

Bidder shall comply with the following reporting requirements as a minimum. Bidder shall also provide additional reports to the Company Representative as may reasonably be requested during the Work

a) Updated list of tools being provided on board.
b) Maintenance and inspection reports for all tools.
c) Updated tool inventory.
d) Complete file of detailed manifests of equipment sent to and from the Drilling Unit.
e) Providing job running records, recommendations, tool failure reports and any other reports as reasonably requested.
f) A daily and weekly summary of tools used in the operation.
g) Summary of all operations with their tools.
h) Summary of any equipment failures.
i) A list of accessories that must be replaced after use due to wear or loss.
j) A monthly report of the inventory and consumable consumption.

6.2. Tools and Equipment Inventory

Bidder shall maintain an up-to-date inventory of all tools and equipment held on the Drilling Unit, Supply Base, workboats or elsewhere. This report shall be submitted on a weekly basis to the Company Representative. Bidder is responsible to ensure that tools are picked up, made-up, operated and laid down according to the bidder operating Guidelines and Procedures, which shall be approved by the Company prior to the commencement of operations.

6.3. End Of Well Report

Bidder shall provide the following end of well reports within 14 days of the end of each well for each of the services provided as applicable:

a. A detailed recap of each job, including time breakdown.
b. A recap of any problems and equipment failures running the casing handling tools along with recommendations on how to prevent them.
c. A detailed cost breakdown by section for all of the tools and equipment provided.
d. A summary of all operations with their tools.
e. A Lessons Learned Document with any recommendation to improve and optimize future jobs.
f. A final list of accessories that must be replaced use due to wear or loss (e.g., slip inserts)
g. A mobilisation plan for any tools that must be replaced including shipping time, cost, and importation plan.
h. A demobilization plan at the end of the project showing destination for all of the tools, estimated shipping time and export plan.

6.4. Sample Reports

The final reporting format will be agreed upon with the Company prior to the commencement of work.

7. EQUIPMENT

7.1. DELETED

7.2. Maintenance

Upon request by Company, Bidder shall provide proof of maintenance and service history of all items of equipment supplied.

7.3. Equipment to be Operational

Bidder shall maintain all equipment in such operating condition to prevent downtime or waiting on equipment during operation. All spares required for the service of the equipment and tools shall be provided by the bidder. Bidder equipment shall be inspected and certified by relevant API standards as a minimum. Bidder shall supply all the relevant certification along with next inspection date to the Company prior to the commencement of operations.

7.4. CRT make to be one of the following:

a) Odfjell
b) Weatherford
c) TESCO
d) NOV
e) Parker
f) Frank

7.5. Inspection

Bidder acknowledges that Company may inspect bidder's Equipment using a third-party Inspection Company. Bidder shall deliver the Equipment to Supply Base as directed by Company or 14 days prior to spud date to allow inspection to be carried out. Bidder acknowledges that Company may require random API testing of any/all tools by an independent bidder.

8. LOGISTICS

8.1. Supply Base

Bidder is required to mobilise all its equipment to the Supply Base at Kollam/Kochi, Kerala. Company at its discretion may mobilize all or part of the tools and equipment listed in the final contract to its supply base based.

8.2. Load Testing

All lifting and load bearing equipment of the Bidder shall be certified prior to use and all relevant certifications shall be available for inspection. All toolboxes and containers must be sent with certified slings and a copy of the certification should be sent with the equipment. The slings should be clearly identifiable as belonging to the Bidder.

9. SUPPORT SERVICES

9.1. Logistical Support

Bidder will be responsible to make all the necessary tools and equipment available at Company's logistics base before job. The Company shall be responsible for the transportation of necessary equipment and tools along with necessary spares from logistics base to the rig site.

9.2. New Developments

Bidder shall make available to Company in as much as it is not constrained by agreements of confidentiality, details of any on-going research and development activities that it is undertaking, and which may be relevant to the Company's operation.

10. EQUIPMENT LIST.

S.No.	Description	Qty
A	**GENERAL**	
A.1	**30" casing**	
1.	Split type bushings for 30" casing to fit in 37.5", 49.5" or 60.5" Rotary Table (to be confirmed after the rig is selected)	1
2.	30", 250-ton, Side door elevator with all spares	2
3.	30", J type, Single joint elevator with slings/shackles and spares	2
4.	30" Rotary hand slips	2
5.	30" safety clamps	2
6.	30" Dencon type hinge casing spider	1
7.	30" C plate and hand slips to run rig provided drill pipe as stinger (As planned to drill 36" hole) (Drill pipe OD-5-1/2")	1 set
8.	Petol chain tong / Petol Sure Grip Tong 1 Set for 30"	1 set
9.	Petol chain tong / Petol Sure Grip Tong 1 Set for 16"	1 set
A.2	**20" Casing**	
1.	Split type bushings for 20" casing to fit in 37.5", 49.5" or 60.5" Rotary Table (to be confirmed once the rig is selected)	1
2.	20" Rotary hand slips with all spares	2

S.No.	Description	Qty
3.	20" C type safety clamps with all spares	2
4.	20" C plate and hand slips to run rig provided drill pipe as stinger (drill pipe OD-5-1/2")	1
5.	Casing drift 20", 133 lb/ft (Metallic)	2
6.	20" 250-ton, Side door elevator with all spares	2
7.	20" J type, Single joint elevator with slings/shackles and spares	2
A.3	**16” Liner (Premium threads)**	
1.	Split type bushing for 16” casing to fit in 37.5", 49.5" or 60.5" Rotary Table (to be confirmed once the rig is selected)	1
2.	16" multi segment casing slip with full complement of circular bottom segments and spares to run 16” casing	2
3.	16" C type Safety clamp	2
4.	16" Klepo/Clampon Quick Release Thread Protectors	3
5.	Casing drift (Teflon type), 16", 84 lb/ft	2
6.	Stabbing Guide for 16” Casing	1
7.	16" 150-ton, Side door elevator with all spares	2
8.	16" J type, Single joint elevator with slings/shackles and spares	2
A.4	**13-3/8” Casing**	
1.	Split Bushings for 13-3/8" and 9-5/8" casing to fit in Master Bushings provided by the Rig. (13-3/8" Split Bushing # No-1 Model)	1
2.	13-3/8" multi segment casing slip with full complement of circular bottom segments and spares to run 13-3/8" casing	2
3.	13-3/8" C type Safety clamp	2
4.	13-3/8" Klepo/Clampon Quick Release Thread Protectors	3
5.	Casing drift (metallic), 13-3/8", 68 lb/ft	2
6.	13-3/8" 150-ton, Side door Elevator with all spares	2
7.	13-3/8" J type, Single Joint Elevator with slings/shackles and spares	2
A.5	**9-5/8” Casing (Premium threads)**	

S.No.	Description	Qty
1.	9-5/8" multi segment casing slip with full complement of circular bottom segments and spares	2
2.	9-5/8", C type Safety clamp	2
3.	9-5/8", Klepo/Clampon Quick Release Thread Protectors	4
4.	Casing drift 9-5/8", ~~47~~53.5 lb/ft, (Teflon type)	2
5.	Stabbing Guide for 9-5/8” Casing	2
6.	9-5/8", 150-ton, Side door Elevator with all spares	2
7.	9-5/8", J type, Single Joint Elevator with slings/shackles and spares	2
8.	Casing Running Tool (CRT) having a provision to run premium casing having torque turn equipment installed for 9-5/8” and 7” casing (CRT to be Hydraulic latch type)	1
A.6	**7” Casing (Premium threads)**	
1.	7" multi segment casing slip with full complement of circular bottom segments and spares	2
2.	7", C type Safety clamp	2
3.	7", Klepo/Clampon Quick Release Thread Protectors	3
4.	Casing drift 7", 32 lb/ft, (Teflon type)	2
5.	Stabbing Guide for 7” Casing	2
6.	7", 150-ton, Side door Elevator	2
7.	7", J type, Single Joint Elevator with slings/shackles and spares	2
A.7	**4-1/2” Contingency Liner (Premium threads)**	
1.	4-1/2 Side door elevator 50 Ton	2
2.	4-1/2 Single joint elevator with slings	2
3.	4-1/2 casing hand slip	2
4.	Safety clamp	2
5.	4-1/2” Klepo/Clampon Quick Release Thread Protectors	3
6.	Casing drift 4-1/2”, 15.1 lb/ft, (Teflon type)	2
7.	Stabbing Guide for 4-1/2” Casing	2
A.8	**Manual Tongs**	

S.No.	Description	Qty
1.	Full set Manual Casing Tongs to cover the Casing range from 13-3/8” to 7” c/w jaws for 13-3/8”, 9-5/8” and 7”, casings	1 set
2.	Full set Manual Tongs to cover the range from 2-7/8” to 4-1/2” c/w jaws for 2-7/8”, 3-1/2” and 4-1/2”	1 set
3.	Full set Manual Tongs c/w jaws to cover 30", 20” and 16” casings	1 set
A.9	500 Ton Flush mounted slips (Hydraulic) for 13-3/8", 9-5/8" and 7" casing	1
A.10	**Hydraulic Power tong for 4-1/2” through 2-7/8” c/w Torque Gauge and one set of Jaws for each 4-1/2", 3-1/2" and 2-7/8" tubing**	2
1.	Hydraulic Power tong for 4-1/2” through 2-7/8” c/w Torque Gauge	2
2.	Jaws for 4-1/2" tubing	2 set
3.	Jaws for 3-1/2" tubing	2 set
4.	Jaws for 2-7/8" tubing	2 set
A.11	**2-7/8" EUE Tubing (for cement jobs)**	
1.	2-7/8", 50/75-ton Square Shoulder Elevator	2
2.	2-7/8" Single Joint Elevator with all spares	2
3.	2-7/8" tubing Rotary Hand Slips	2
4.	API drift, Metallic	2
A.12	**4-1/2" PH-4/PH-6 Tubing, 18.90 lb/ft, L-80**	
1.	200-ton elevators for 4-1/2" tubing	2
2.	Single joint elevator for 4-1/2" tubing	2
3.	Hand slips for the same.	2
4.	Slotted Hand slips to safely run the control line	2
5.	Safety Clamp	2
6.	Stabbing Guide for 4-1/2" tubing	2
7.	Tubing drift 4-1/2", 18.90 lb/ft, (Teflon type)	2
A.13	**3-1/2" PH-4/PH-6 Tubing, 15.5 lb/ft, P-110**	
1.	200-ton elevators for 3-1/2" tubing	2

S.No.	Description	Qty
2.	Single joint elevator for 3-1/2" tubing	2
3.	Hand slips for the same.	2
4.	Slotted Hand slips to safely run the control line	2
5.	Safety Clamp	2
6.	Stabbing Guide for 3-1/2" tubing	2
7.	Tubing drift 3-1/2", 15.5 lb/ft, (Teflon type)	2
A.14	**2-7/8", 10.4 lbs/ft, E or G grade PAC HT Pipes**	
1.	Lifting Sub for handling PAC HT pipes	4
2.	Lifting cap for PAC HT pipes	3
3.	Hand slips for PAC HT pipes	2
4.	Elevator to run HT PAC pipes (Min 25 tons capacity)	2
5.	Safety clamp for HT PAC pipes	2
6.	Single joint elevator	2
7.	Type C Manual Tongs makeup and breakup	1 set
B	**Power units and tongs etc.**	
B.1	**Diesel Hydraulic Power unit c/w 100 ft of Hydraulic, spark arrestor, High and Low-Pressure Hose, and Work stand, emergency shutdown for zone II hazardous environment.**	2
B.2	Torque Turn Analysis system (JAM unit equivalent) for Zone II area for 16", 9-5/8" & 7" premium connection	2
B.3	**Hydraulic Power tong to cover casing size from 20" through 7" c/w Torque Gauge and set of Jaws**	2
1.	Hydraulic Power tong to cover casing size from 20" through 7" c/w Torque Gauge	2
2.	Jaws for 20" casing	2 Set
3.	Jaws for 16" casing	2 Set
4.	Jaws for 13-3/8" casing	2 set
5.	Jaws for 9-5/8" casing	2 set
6.	Jaws for 7" casing	2 set
B.4	500 Ton Long elevator links to match Drilling Unit requirements 18 Feet long x 4-1/2" Shank Dia	2

S.No.	Description	Qty
B.5	500 Ton pneumatic / hydraulic spider with accessories and inserts for 16” casings	1
B.6	500 Ton pneumatic / hydraulic spider Elevator with accessories and inserts for 16” casings	1
B.7	500 Ton pneumatic / hydraulic spider with accessories and inserts for 13-3/8”, 9-5/8” and 7” casings	1
B.8	500 Ton pneumatic/hydraulic spider elevator with accessories and inserts for 13-3/8”, 9-5/8” and 7” casings	1
B.9	**Casing Fill-up / circulation tool**	
1.	For 16" Casing C/W packer and accessories for Fill-up tool along with spares	2
2.	For 13-3/8" Casing C/W packer and accessories for Fill-up tool along with spares	2
3.	For 9-5/8" Casing C/W packer and accessories for Fill-up tool along with spares	2
4.	For 7" Casing C/W packer and accessories for Fill-up tool along with spares	2
C	**Cargo baskets and Spares**	
C.1	Cargo Baskets (as required) to Store and transport tools between supply base and rig safely (along with slings and shackles)	1 lot
C.2	Bidder to provide list of Minimum spares for all the above tools and equipment including but not limited to die inserts for slips, tongs, elevators etc	as required

Amended Exhibit 4

4) DRILLING TOOLS

1. SCOPE OF WORK

The Scope of Work will include but not be limited to:

Providing the Rental Drilling Tools Services which are suitable as this scope of work.

In addition to the above, the Bidder shall carry out the following:

i. Maintenance of the tools and equipment.
ii. Updating tool inventory.
iii. A monthly inventory for the entire rental tools and consumables.
iv. Tracking movement of tools from shore to rig and station authorized and qualified personnel to supervise loading and offloading at both shore and rig.
v. Provide Tools running/Job records, any recommendations, and any other reports as requested.
vi. Equipment failure reports.
vii. Providing any other programs or reports relevant to the operations and to the Contract.

2. SUB-CONTRACT

The service will be provided either by the Bidder or through its Sub-Bidder.

3. The Bidder shall provide the following drilling tools:

S.No.	Description	Qty
A	**Drilling Jars and Accelerators**	
1.	8" OD Hydraulic Drilling Jars (Double Acting)	2
2.	6-1/2" OD Hydraulic Drilling Jars (Double Acting)	2
3.	4-3/4” OD Hydraulic Drilling Jars (Double Acting)	2
4.	6-1/2" OD Accelerator	2
B	**Hole Openers**	
1.	Hole opener - 36" with 7-5/8” Reg connections Note: Formation for target zone for use of "Hole opener - 36" with 7-5/8” Reg connections" is Soft to medium formation.	1

C	**Bumper subs**	
1.	8" Bumper sub	2
2.	6-1/2" Bumper Sub	2
3.	4-3/4” Bumper Sub	1
D	**Stabilisers (all with connections to suit Bidder's drilling tubulars)**	
1.	26" NB Stabiliser - integral blade	2
2.	26" String Stabiliser - integral blade	2
3.	17-1/2" NB Stabiliser - integral blade	2
4.	17-3/8" NB Stabiliser - integral blade	2
5.	17-1/4" NB Stabiliser - integral blade	2
6.	16-3/4" NB Stabiliser - integral blade	2
7.	16-1/4" NB Stabiliser - integral blade	2
8.	17-1/2" String Stabiliser - integral blade	2
9.	17-3/8" String Stabiliser - integral blade	2
10.	14-1/2” String Stabilizer	2
11.	14-1/2” NB Stabilizer	1
12.	12-1/4" NB Stabiliser - integral blade	2
13.	12" NB Stabiliser - integral blade	2
14.	12-1/4" String Stabiliser - integral blade	2
15.	12-1/8" String Stabiliser - integral blade	2
16.	12" String Stabiliser - integral blade	2
17.	11-3/4" String Stabiliser - integral blade	2
18.	8-1/2" NB Stabiliser - integral blade	2
19.	8-1/4" NB Stabiliser - integral blade	2
20.	8-1/2" String Stabiliser - integral blade	2
21.	8-3/8" String Stabiliser - integral blade	2
22.	8-1/4" String Stabiliser - integral blade	2
23.	5-7/8" NB Stabiliser - integral blade	2
24.	5-7/8" String Stabiliser - integral blade	2
25.	5-3/4" String Stabiliser - integral blade	2

E	**Casing Scrapers**	
1.	16", 84 PPF Casing scraper for rotating application with 6-5/8" Reg connections	2
2.	13-3/8", 68 PPF Casing scraper for rotating application with 6-5/8" Reg connections	2
3.	9-5/8", ~~47~~ 53.5PPF Casing scraper for rotating application with 4-1/2" Reg connections	2
4.	7", 32 PPF Casing scraper for rotating application with 3-1/2" Reg connections	2
5.	4-1/2", 15.1 PPF Casing scraper for rotating application with 2-3/8" Reg connections	2
F	**Circulating Subs**	
1.	8" Circulating sub with 6-5/8" Reg box x pin (multiple ball drop type to close and open the sub)	2
2.	6-1/2" Circulating sub with 4-1/2" IF box x pin (multiple ball drop type to close and open the sub)	2
G	**Cup Tester**	
1.	Cup tester for 20", 0.64" WT, 133 PPF, X-56 casing with 2 cups	2
2.	Cup tester for 13-3/8", 68 PPF casing with 2 cups	2
3.	Cup tester for 9-5/8", ~~47~~ 53.5PPF casing with 2 cups	2
4.	Cup tester for 7", 32 PPF casing with 2 cups	2
H	**Roller Reamers**	
1.	3-point Roller Reamer, Near Bit - 12-1/4" (sealed bearing, soft to medium formation)	2
2.	3-pointRoller Reamer, String - 12-1/4" (sealed bearing, soft to medium formation)	2
3.	3-pointRoller Reamer, Near Bit - 8-1/2" (sealed bearing, medium formation)	1
4.	3-pointRoller Reamer, Near Bit - 8-1/2" (sealed bearing, hard formation)	2
5.	3-pointRoller Reamer, String - 8-1/2" (sealed bearing, medium formation)	1
6.	3-pointRoller Reamer, String - 8-1/2" (sealed bearing, hard formation)	2
I	**Box to pin cross over**	
1.	2-7/8" EUE 8RD pin x rig drill pipe box (connections details will be provided after finalizing the rig)	1
2.	2-7/8" EUE 8RD pin x 3-1/2" IF box	1

3.	3-1/2" IF pin x 4-1/2" Reg pin	1
4.	2-7/8 HT PAC Pin X 3-1/2 IF Box	1
5.	Rig drill pipe Pin (connections details will be provided after finalizing the rig) x 2" Weco Fig 1502	1
6.	3-1/2" IF pin x 2" Weco Fig 1502	1
7.	2-7/8" HT PAC x 2" Weco Fig 1502	1
J	**Under-Reamer (EWD, Ander-reamer or equivalent) with spares (provide separate list for spares and consumables)**	
1.	Hole enlargement tool to be run along with 17-1/2" bit to open hole to 20" or greater for soft and medium hard formation along with spares (with 9 1/2" OD Bull Nose for reamer and hole opener) 16375 Under Reamer d/w 4 nos. cutters - ball drop activation / deactivation - 7 5/8 Reg connection - Hole opening - 17 1/2" X 20". Note: It is to be provided as per as T&C of the tender.	2
2.	Hole enlargement tool to be run along with 14-3/4" bit to open hole to 17-1/2" or greater for soft and medium hard formations along with spares (with 8" OD Bull Nose for reamer and hole opener) 1175 Under Reamer d/w 3 nos. cutters - ball drop activation / deactivation 6 5/8 Reg conn - Hole opening 12 1/4" X 17 1/2" Note: It is to be provided as per as T&C of the tender.	2
K	**Drilling Tubulars**	
1.	2-7/8" 6.5 lb/ft N80 EUE 8RD tubing (to use as cement stinger)	200m
2.	2-7/8" HT PAC pipes, 10.4 lbs/ft, E or G grade	500m
L	**Tubulars for Well Testing**	
1.	4-3/4" Drill Collars (grooved for slips and zip lift) or 3-1/2" HWDP with gas tight premium connection for well testing purposes. Note: Required ppf is as follows: 4-3/4" DC: 46.7 lbs/ft with premium connections 3-1/2" HWDP: 25.33 lbs/ft with premium connections	35jts

2.	6-3/4” DC Premium connection (grooved for slips and zip lift) or 5-1/2”/5-7/8” HWDP with gas tight premium connection for well testing purposes. Note: Required ppf is as follows: 6-3/4" DC: 105 lbs/ft with premium connections 5-1/2" / 5-7/8" HWDP: 56.8lbs/ft and 59.5 lbs/ft	35 jts
3.	Cross over sub 4-3/4" DC or 3-1/2” HWDP Premium connection pin x 4-1/2" PH4/PH-6 box Note: Required ppf is as follows: 4-3/4" DC: 46.7 lbs/ft with premium connections 3-1/2" HWDP: 25.33 lbs/ft with premium connections 6-3/4" DC: 105 lbs/ft with premium connections 5-1/2" / 5-7/8" HWDP: 56.8lbs/ft and 59.5 lbs/ft	2
4.	Cross over sub 4-3/4" DC or 3-1/2” HWDP Premium connection pin x 3-1/2" PH-4/PH6 box Note: Required ppf is as follows: 4-3/4" DC: 46.7 lbs/ft with premium connections 3-1/2" HWDP: 25.33 lbs/ft with premium connections 6-3/4" DC: 105 lbs/ft with premium connections 5-1/2" / 5-7/8" HWDP: 56.8lbs/ft and 59.5 lbs/ft	2
5.	3-1/2" tubing, 15.5 lb/ft, P-110, Premium connection (PH-4/PH6 connection preferred)	6300m
6.	4-1/2” tubing, heavy wall,18.90 lb/ft, L-80, Premium connection PH6 or PH4 (PH-4 connection preferred).	3900m
7.	Cross over sub 3-1/2" test tubing Premium connection pin x 3-1/2" IF box	2
8.	Cross over sub 3-1/2" test tubing Premium connection pin x 4-1/2" IF box	2
9.	Cross over sub 3-1/2" test tubing Premium connection pin x 4-1/2" test tubing premium connection box	2
10.	Cross over sub 3-1/2" test tubing Premium connection box x 4-3/4" DC or 3-1/2” HWDP Premium connection pin	2
11.	Cross over sub 4-1/2" test tubing Premium connection box to 6-1/2” or 6-3/4” DC or 5-1/2”/5-7/8” HWDP Premium connection pin	2
12.	Cross over sub 3-1/2" test tubing Premium connection box x 3-1/2" IF pin	2
13.	Cross over sub 3-1/2" test tubing Premium connection box x 2-7/8" EUE 8RD pin	2
14.	Circulating Sub 3-1/2" test tubing Premium pin x 1502, 2” WECO	2

15.	Cross over sub 4-1/2" PH-4/PH-6 box x 4-3/4" DC Premium Connection pin	1
16.	Circulating Sub 4-1/2" test tubing Premium pin x 1502, 2" WECO	2
17.	Cross over sub 4-1/2" PH-4/PH-6 box x 3-1/2" IF pin	1
18.	Cross over sub 4-1/2" PH-4/PH-6 box x 2-7/8" EUE 8RD pin	1
19.	Cross over sub 4-1/2" PH-4/PH-6 pin x 5-1/2" or 5-7/8" box rig supplied drill pipes (bidder will be informed about the connections after finalizing the drilling rig)	1
20.	Cross over sub 4-1/2" PH-4/PH-6 box x 5-1/2" or 5-7/8" pin rig supplied drill pipes (bidder will be informed about the connections after finalizing the drilling rig)	1
21.	3-1/2" tubing premium connection pin x 3-1/2" IF box	1
22.	4-3/4" DC premium connection pin x 3-1/2" IF box, or 3-1/2" HWDP premium connection pin x 3-1/2" IF box	1
23.	Bit sub 2-3/8" API Reg Box x 2-7/8" HT PAC Box (for 3-5/8" OD bit)	1
M	**Containers and Baskets**	
1.	Suitable containers and cargo baskets for offshore usage with slings and shackles	1 lot

4. Inspection

Bidder acknowledges that Company may inspect Bidder's Equipment using a third-party inspection company as per Clause No. 8.0 of SCC and at any time during the duration of the contract.

5. Logistics

The bidder is required to mobilize its equipment, spares, etc to the Shore Base at Kollam/Kochi, Kerela, India. Company at its discretion may mobilize all or part of the tools and equipment listed in the final contract. All the equipment, spares etc. supplied by the Bidder to the Company under the contract, shall be stored in Bidder's facilities at Kollam/Kochi, Kerela, India and shall be delivered at Shore Base as per operational requirement and when instructed by the Company.

6. Manpower

6.1 Service Engineer - Under reamer

6.1.1. Job Summary: We are seeking a detail-oriented and technically proficient Service Engineer. The ideal candidate will be responsible for the operation, maintenance, and repair of under reamers, ensuring optimal performance and reliability. He will be stationed at rig/shore base and will be on 24 hours on call basis and equal on on/off work pattern at well site/shore base as per DGMS guidelines.

6.1.2. Qualifications:
The person should be a Graduate Engineer/Diploma Engineer from recognized University / institutes.

6.1.3. Experience:

a) Experience of completing minimum 10 wells with Underreaming operations.
b) He must be OEM trained expert on the tools having thorough appropriate knowledge and experience on the tools & services.
c) Excellent analytical and problem-solving skills.
d) Strong verbal and written communication skills.

6.1.4. GENERAL

6.1.4.1. The Contractor will have to submit the Biodata of personnel proposed to be deployed prior to deployment for OIL's approval as per Annexure: Q. The following documents should accompany the Bio Data for approval

a) Educational Qualification certificate
b) Appointment / approval letters from the last Operator.
c) Proof of Work experience as per contract
d) Valid Police Verification Certificate

6.1.4.2. Under Reamer Engineer shall be an employee of the Contractor or of the Sub-Contractor whose under-reamer is offered by the Contractor. Bidder to confirm the same.
6.1.4.3. Company reserves the right to instruct for removal of any Service provider's personnel who is technically not competent or not rendering the services faithfully, or due to other reasons as per contract's requirements. The replacement of such personnel will also be fully at cost of the Service provider and the Service provider shall have to replace this/these personnel within Ten

(10) days of such instruction. The replacement personnel must have the requisite qualification and experience as indicated in the contract. The CV of the replacement service engineer must be submitted to Company for approval prior to their engagement.

6.1.5. Responsibilities:

He shall be the single point of contact between OIL and the Contractor with responsibility for working closely with OIL during underreaming operation.

The service engineer shall be responsible for:

a. Ensure availability of all tools, equipment and spares on rig/shore base.
b. To be involved in design the BHA, hydraulics, torque & drag for under reaming equipment along with directional and advance LWD tools and equipment along with Bundel Services provider.
c. To instruct, monitor and supervise while running in/ pulling out of underreamer assemblies during running in and pulling out operation.
d. To Supervise of underreaming operations on the rig and to detect any issues early and address them promptly.
e. To be present on rig floor and to provide support while downhole complication during under reaming operation.
f. Continuous monitoring of the equipment during operation
g. Configuring the under reamers according to specifications and operational requirements.
h. Perform routine maintenance, troubleshoot issues, and repair under reamers to ensure continuous operation.
i. Maintain detailed records of maintenance, repairs, and inspections.
j. Manage parts inventory and order supplies as needed.
k. Ensure compliance with safety regulations and maintain a clean and safe work environment.

Amended Exhibit 6

6) MUD ENGINEERING SERVICES

1. **Experience criteria for mud engineering services:** The bidder is either a single bidder or an Indian Joint Venture Company Incorporated shall fulfil the following experience criteria-

1.1 The bidder shall have minimum five (05) years of experience in providing the Mud Engineering Services to Drilling/E&P Companies with at least three (03) years in offshore areas.

1.2 The Bidder should also have executed at least one contract of Mud Engineering Services using Synthetic Oil Base Mud System / Water Base Mud System, in Offshore Wells in the last 07 years reckoned from original bid closing date.

To this effect, The Bidder shall submit any one of the documentary pieces of evidence indicating respective contract number and type of services in the form of

1.2.1 Copy of Contract along with satisfactory completion of services/Performance report from reputed clients **OR**

1.2.2 Copy of Contract along with proof of release of performance security after completion of the contract **OR**

1.2.3 Copy of contract along with proof of settlement / release of final payment against the Contract **OR**

1.2.4 Copy of Contract along with proof of any other documentary evidence that can substantiate the satisfactory execution of mud engineering service.

2. Experience of the Mud Engineering Personnel:

The bidder must confirm in their offer by giving an undertaking that they will submit CVs of four Mud Engineers as per the Scope of work (SOW). If awarded with the contract, the bidder must submit the CVs of four Mud Engineers for approval by the company. The lead mud engineers shall have a minimum of 7 years mud engineering experience along with the relevant work experience of at least 5 offshore wells using proposed KCL-PLOYMER-POLYAMINE-GLYCOL-PHPA Water Base Mud System or SOBM Mud System. The 2nd Mud engineer should have 5 years mud engineering experience along with the relevant work experience of at least 3 offshore wells using proposed KCL-PLOYMER-POLYAMINE-GLYCOL-PHPA Water Based Mud System or SOBM mud System. The Mud Engineers should also be well versed with the use of heavy weight brines.

3. The Bidder shall submit the test report of the proposed mud system duly tested in ONGC, IDT-Dehradun or any other laboratory of international repute or bidder's own laboratory (if the bidder's laboratory is of international repute) for designing the Phase wise mud systems as per the Mud Weight and dosages (fixed / variable) components to obtain the parameters as stated elsewhere in the tender document. A test report to that effect must be submitted along with the technical bid by the Bidder. Bids not accompanied by a valid test report shall be rejected. Test report as above received after date opening of tender will not be accepted.

4. Mobilization period: Mobilization period is 90 days from the date of Letter of Award (LOA) for mobilizing mud engineering services, mud lab accessories, lab reagents, lab apparatus, tools and equipment, glassware, necessary mud chemicals including contingency/special chemicals along with crew prior to spudding the well. Bidder must confirm the same in the submitted bid without which such bid(s) will not be evaluated further.

5. General scope of work

5.1 Bidder shall carry out Mud engineering planning and designing, mud preparation and maintenance required for drilling and completion of all phases of the wells by using the rig equipment and in accordance with the detailed drilling operations planned by OIL.

5.2 The wells in this contract will be drilled using the stated drilling fluid systems. OIL reserves the right to modify its drilling/drilling fluids programme at any time.

5.3 Bidder to provide well completion services with brine filtration unit. Bidder shall operate and maintain Brine filtrations unit at Rig as and when service is required.

5.4 Bidders to provide all the required mud testing equipment for testing the drilling fluid and completion fluid as per the requirement of the well.

5.5 Bidder shall provide round the clock mud engineering and completion fluid services by employing two shift mud engineers at a time one each in 12 hours shift.

5.6 The onsite engineers shall communicate with OIL coordinator on daily basis. OIL shall provide free access to its communication system at Rig.

5.7 Bidder shall provide all technical literature, hydraulics, surges, swab etc and all other drilling fluid related calculations and detailed mud histories and mud programme.

5.8 The Bidder shall Provide the software for daily mud reports, mud recaps, hydraulics and hole cleaning optimization in real time at the rig site.

5.9 The Bidder may be required to collect and test the various drilling fluid samples, water samples and drilling effluent samples during operations for onward dispatch through OSV.

5.10 The Bidder may also be required to collect the various HSE related drilling fluid samples, drill cuttings, effluent drill and wastewater samples as per requirement of the environmental regulations and OIL.

5.11 The onsite mud engineer is required to test mud samples for all parameters at least three times a day or as per operational requirement and submit daily operational report including hydraulics, mud parameters etc. to company Representative. The daily report should also include volume of mud prepared and consumed, consumption of chemicals and other additives, status of solid control equipment.

5.12 The onsite mud engineer shall collect all relevant operational data from driller, or any other data gathering system (mud logging unit) and record it for taking operational decisions as well as for final well completion report within 15 days after completion of the well as per standard international practice.

5.13 The bidder shall submit personnel resumes of 4 nos. of Mud Engineers for company's approval. The resume should specifically include but not limited to the following:

a Academic Qualification

b Detailed Curriculum Vitae (CV) of proposed Mud Engineers including current experience on offshore rig in the water depth ≥100m during the past five years and their safety record over the last 3 years.

c All requisite offshore safety related valid certificates.

d Length of experience in offshore exploration/development wells as mud engineer.

e Length of experience in the Area/ Field where and for whom worked.

f Type of mud system(s) worked with specific reference to offshore well.

g Experience in solving down hole problems particularly on Mud Loss and Pipe stuck and Kick control in offshore wells(if any).

h Experience in handling software capability to calculate mud hydraulics, ECD, swab and surge pressure in drilling fluid during operation.

5.14 The Bidder shall execute the work with professional competence and in an efficient and workmanlike manner.

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

5.16 Comply with all applicable statutory obligations specified in the Contract.

6. Technical scope of work:

The Technical Scope of Work is defined and described by the following parameters:

a) Drilling Fluid Engineering Services,

b) Generic Drilling Fluid Design

c) Drilling Fluid Management services,

d) Drilling Fluid material and Additives Supply.

e) Completion of Fluid services including chemicals.

Each of the above services is defined in detail in the following sections.

6.1 Drilling fluid engineering services

a) The Bidder shall carry out Drilling Fluid Engineering Planning and Designing; Mud preparation and maintenance required for drilling and completing all the phases of the well by using the rig equipment and in accordance with the detailed drilling operations planned by OIL.

b) The Bidder shall provide round-the-clock Drilling Fluid engineering services by deploying two mud engineers on the rig in 12 hours duty pattern.

c) The Drilling Fluid Engineer deputed by the bidder to rig site shall have an experience of minimum of five years' experience as a drilling fluid Engineer (in offshore area) and should have completed minimum three offshore wells using Potassium based -PHPA-POLYAMINE-Glycol-Polymer Mud system in the last 07 years reckoned from the original bid closing date.

d) The Bidder shall mobilize the Drilling Fluid Engineering Services including men and material so as to commence the job prior to the commencement of drilling.

e) The on-site Drilling Fluid Engineer shall provide OIL the daily drilling fluid reports as per standard industry practices.

f) The on-site Drilling Fluid engineer shall communicate with Company everyday as per operational requirements.

g) OIL reserves the right to modify its drilling program as per operational requirements.

h) The drilling fluid engineer shall also collect oil/water/gas samples on the rigs as and when required.

6.2 Generic drilling fluid design

The Bidder shall submit detailed Drilling Fluid engineering programs for each well at least 15 days prior to the commencement of the well based on the well details provided in the tender. Bidder shall design phase-wise Drilling Fluid program, detailed Drilling Fluid composition, recommended doses, total volume usage for each hole section to achieve the require mud parameter.

The Drilling Fluid design shall include but not limited to the following:

a) Drilling Fluid systems proposed for different sections.

b) Detailed mud system formulation for each section.

c) Drilling Fluid parameters for each section.

d) Expected chemical consumption and volumes in each section.

e) Complete cost estimates of building and maintaining the mud system as well as unit cost for each chemical used for each section and all standby chemicals.

f) Chemicals proposed for curing losses and release of stuck pipe and to liquidate other drilling fluid related down hole complications with detailed procedures.

g) Based on the performance of the mud systems, the Bidder shall undertake suitable studies for improving the performance of the mud system and shall submit the recommendations time to time to Drilling Fluid In charge of Company.

h) Software and Technical Support: The Bidder shall provide technical support for customer and on-site engineering along with a suitable software product; the range to include data base program to proprietary packages for drilling fluid data management, advanced drilling fluid engineering, environmental programme and reference databases containing latest technical literature and product summaries. Bidders shall supply details of their QA/QC procedures as they pertain to the supply of chemicals.

i) Doses of chemicals mentioned in the fluid design if affect the desired parameters, there is freedom to use higher or lower dose to achieve the parameters.

j) Use of Starch / Modified starch can be used in mud system.

k) KCl-PHPA-POLYAMINE/GLYCOL-POLYMER mud system for 12-1/4" hole sections shall be a clay free mud system.

l) Laboratory doses may differ from field doses due to nature of formation & drill water quality.

m) Mud parameters mentioned in the tender document are for the performance of the system in the laboratory and for evaluation purpose of various Bidders.

n) OIL reserves the right to alter, amend, or revise the proposed mud program during the course of drilling operations if the current program does not yield satisfactory performance or fails to meet the operational requirements of the well. Any such modifications will be undertaken in accordance with industry best practices and regulatory guidelines to ensure operational efficiency and environmental compliance.

6.2.1 GENERIC MUD SYSTEM FOR Loc: OKKA

The following is a description of the planned mud types and mud properties for the various hole sections to be drilled in Loc: OKAA. Refer to the introductory section for well locations, depths of casing points and other well data, Bidder is required to

a) submit mud programs that are along the lines of the planned mud program outlined below, to include product concentrations and total estimated consumption.

b) design the Phase wise mud systems as per the Mud Weight and dosages (fixed / variable) components and obtain the parameters as stated elsewhere in the tender document.

c) submit the sequence of mixing of the chemicals and the duration of mixing time after each addition for the above testing.

d) be carried out using De-ionised water and following Standard Test procedures.

e) measure the Mud Weights & pH of the Muds prior to hot rolling and after hot rolling.

f) measure other parameters at the stated temperature after hot rolling wherever hot rolling is there. After hot rolling the pH of the mud will be adjusted to the pH stated in the particular mud system.

g) add additional quantity of Barites/Limestone powder/MCC in excess of the quantity suggested in the formulation if required to achieve the specified Mud weight of the formulation.

6.2.2 36" Hole / 30" Conductor Casing

It is planned to hammer 30" conductor to 200m (approx.), as a contingency a 36" hole could be drilled utilizing a 26" bit / 36" Hole opener to a depth of 200m(approx.). In case of drilling 36" hole, drilling fluid will be seawater and high viscosity sweeps. The sweeps may be composed of HEC in seawater or of pre-hydrated bentonite slightly diluted with seawater or of CMC-HVG in sea Water or of Guargum in Sea Water

In case 36" hole is drilled, after reaching the casing point the hole will be swept with a 200 bbl high vis pill, and the hole will be filled with 10.5 lb/gal high vis mud prepared with PHG. (Viscosity 85-90 second/ quarta)

Tentative Composition of Bentonite gel-based drilling fluid			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	Water	As per requirement	Base Fluid
2.	Soda Ash	0.35 Max	Water softner
3.	Bentonite powder	28 Max	Viscosifier
4.	CMC-HVG/Guargum/ HEC	1.75Max	Viscosifier

5.	Caustic Soda	0.35Max	To maintain pH 9-9.5

Mud Rheological (Hot rolling not required)

Mud properties	Tentative Value Range	Kill mud
Mud Weight (lb/gal)	8.4-8.6	10-10.5
Funnel Viscosity (sec/qt)	80-90	50
pH	9.0-9.5	10.0

6.2.3 26" Hole / 20" Surface Casing (200m to 800m)

The drilling fluid will be seawater and high viscosity sweeps composed of either HEC/HVG/Guargum in seawater or PHG (pre-hydrated bentonite) slightly diluted with seawater. After reaching the casing point @800m the hole will be swept with a 200 bbl high vis pill, and the hole will be filled with 11 lb/gal high vis mud. There is a probability of partial to total mud loss, occurring in Calicut and subsequent Karwar formations, as observed in offset wells. Hence, before drilling in Calicut, shallower formations like Trichur, Quillon, it should be encased with 20" casing. Anticipated Calicut top is at @1000m. Therefore, 20" casing may be required to lower to actual Calicut top observed while drilling 26" phase.

From the offset well data, mud loss may be occurred while drilling this section from partial to total mud loss. Therefore, sufficient generic type LCM is required for arresting mud loss. Moreover, if the loss does not subside, Mixed Metal Oxide (MMO)drilling Fluid may be alternatively used as drilling fluid to cure the loss while drilling this section. Composition of Pre-Hydrated Bentonite Suspension Mud (PHBS) drilling fluid system is planned for this phase of drilling.

TENTATIVE COMPOSITION OF BENTONITE GEL-BASED DRILLING FLUID			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	Water	As per requirement	Base Fluid
2.	Soda Ash	0.3-0.35	Water softner
3.	Bentonite powder	24-28	Viscosifier
4.	CMC-HVG/Guargum/ HEC	1-1.75	Viscosifier

5.	Caustic Soda	0.3-0.35	To maintain pH 9-9.5

MUD RHEOLOGY (Hot rolling not required)

Mud properties	Tentative Value range	Kill mud
Mud Weight (lb/gal)	8.4-8.6	10-10.5
Funnel Viscosity (sec/qt)	60-70	50
pH	9.0-9.5	10.0
Calcium (mg/l)	< 300	<200
Chlorides (mg/l)	≤ 10,000	<2000

Note: If mud loss is severe and then MMO mud system will be used as an alternative drilling fluid. There may be use of cement plug for arresting thief zone. If none of the system arrests mud loss, blind drilling with pumping of sea water is the last option for drilling to achieve target depth.

COMPOSITION OF MMO DRILLING FLUID (ALTERNATIVE DRILLING FLUID)			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	Pre-Hydrated Bentonite Suspension	14(max)	Base fluid
2.	Soda Ash	0.35(max)	For hardness treatment
3.	Caustic Soda	0.45(max)	pH to be maintained 10.0-10.5
4.	Biocide	0.35(max)	To control bacteria degradation
5.	MMO	3.5-7.0(max)	Thixotropy property of mud
6.	PGS	12-14(max)	Fluid loss reducer
7.	MCC	17-21(max)	Bridging material
8.	Sulphonated Asphalt(soltex)	@0.3-0.35(max)	Thinner used as Optional if required to treat the mud

MUD RHEOLOGY (Hot rolling not required)

Mud properties	Tentative Value Range	Kill mud (PHBS mud)

Mud Weight (lb/gal)	8.6-9.2	10.5
LSRV (cp)	Minimum 1 Lakh	50(M F Viscosity)
YP:PV ratio	5:1(minimum)	15(PV)
YP	50-60	25(YP)
Gel 0(lbs/100 Sq.ft)	40/45(minimum)	>7
Fluid Loss (cc/30 min)	10-8	<20
pH	10.0-10.5	10.0

6.2.4 17-1/2" Hole /16" liner(800m-1970m)

This section covers mainly limestone formation which is very prone to mud losses. Partial to fully mud losses without return would occur as per offset well history. Considering this, Mixed Metal Oxide (MMO) Drilling Fluid system is planned for drilling this section which imparts high gelation (Thixotropic fluid of Mud) for arresting thief zone. As the section has severe mud loss, it is planned to lower 16" liner to a depth of 1970m (i.e. to cover loss zone in Calicut and Karwar formation) and 16" casing liner is planned to be lowered to the target depth with 100m inside 20" casing. Due to mud loss, there may be Kick happens to occur for which a pit of 10.5 lb/gal kill mud will be kept ready onboard at the rig during this interval of drilling to address the kick in the lower portion of the interval due to complete mud loss.

TENTATIVE COMPOSITION OF MMO DRILLING FLUID			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	PHBS	14(max)	Base fluid
2.	Soda Ash	0.3-0.35(max)	For hardness treatment
3.	Caustic Soda	0.35-0.45(max)	pH to be maintained 10.0-10.5
4.	Biocide	0.3-0.35(max)	To control bacteria degradation
5.	MMO	3.5-7.0(max)	Thixotropy property of mud
6.	PGS	12-14(max)	Fluid loss reducer
7.	MCC	17-21(max)	Bridging material
8.	Sulphonated Asphalt(soltex)	0.3-0.35(max)	Thinner

MUD RHEOLOGY (Hot rolling not required)

Mud properties	Tentative Value Range	Kill mud (PHBS mud)
Mud Weight (lb/gal)	8.8-9.2	10.5
LSRV (cp)	Minimum 1 Lakh	50(MF Viscosity)
YP:PV ratio	5:1(minimum)	15(PV)
YP	50-60	25(YP)
Gel 0(lbs/100 Sq.ft)	40/45(minimum)	>7
Fluid Loss (cc/30 min)	10-8	<20
pH	10.0-10.5	10.0

6.2.5 17-1/2" Hole/13-3/8" Casing(1970-2800m)

The mud system will be MMO mud system. It is to be noted that if 16" liner is not lowered then 17-1/2" hole till 2800m be drilled with MMO mud system. If 16" liner is lowered, then 17 -1/2" hole will be drilled using hole opener method below 16-inch liner shoe till 2800 m. Sufficient LCM material should be available in case of loss. 200-250 mesh size Mud Cleaner may be used during drilling. In MMO mud system Pre-hydrated Bentonite Gel along with Soda ash, Caustic soda, Biocide gelatinized starch (PGS), Micronized Calcium Carbonate (MCC) bridging material, sulphonated asphalt are used for making MMO.A pit of 10.5 lb/gal PHBS kill mud will be kept onboard the rig during this interval in case a kick is taken in the lower portion of the interval due to complete loss of mud.

TENTATIVE COMPOSITION OF MMO DRILLING FLUID			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	PHBS	14(max)	Base fluid
2.	Soda Ash	0.3-0.35(max)	For hardness treatment
3.	Caustic Soda	0.45(max)	pH to be maintained 10.0-10.5
4.	Biocide	35(max)	To control bacteria degradation
5.	MMO	7.0(max)	Thixotropy property of mud
6.	PGS	14(max)	Fluid loss reducer
7.	MCC	21(max)	Bridging material
8.	Sulphonated Asphalt	0.35(max)	Thinner

MUD RHEOLOGY (Hot rolling not required)

Mud properties	Tentative Value Range	Kill mud (PHBS mud)
Mud Weight (lb/gal)	8.8-9.2	10.5
LSRV (cp)	Minimum 1 Lakh in Brookfield viscometer	50(MF Viscosity)
YP:PV ratio	5:1(minimum)	15(PV)
YP	50-60	25(YP)
Gel 0(lbs/100 Sq.ft)	40/45(minimum)	>7
Fluid Loss (cc/30 min)	10-8	<20
pH	10.0-10.5	10.0

6.2.6 12-1/4" Hole / 9-5/8" Casing (2800-4500m)

Based on the offset well data, this section is planned to be drilled using KCl-PHPA-Glycol-Ploy Amine-Polymer mud system.

For preparation of KCL-PHPA-Polyamine-Glycol-Polymer mud system, freshwater/ potable water/Low salinity water (chloride concentration less than 200ppm) is required for maintaining good rheological property of mud. The other additives such as fluid loss control additives, viscosifying agent, encapsulating agents and shale inhibition additives and lubricating agent are to be used in the above mud system. For increasing the mud density Limestone powder or barite may be used. Based on the quantities of materials consumed in this section, the drilling fluids may produce large amounts of low gravity solids as drilled solids. Mud weight ranging from 9.5 lb/gal to 10.5 lb/gal(approximately) may be maintained to get ride off caving, pack-offs, tight hole, stuck pipe particularly in the early Eocene, Palaeocene and Clastic intervals under Kasargod formation and Cochin formation. It is anticipated that with the use of a low saline, inhibitive, clean drilling fluid, mud related downhole problems can be minimised. Accordingly, the mud system is planned to be used as KCL-PHPA-Polymer base mud system comprising of Potassium Chloride, Xanthan Gum, PHPA with a polyamine clay inhibitor in the range 5-7 lb/bbl. For well #OKKA, the anticipated mud weight will be in the range 9.5 to 10.5 lb/gal, salinity around 50,000 mg/l chloride ion. Maximum mud weights may go upto 15 lb/gal, based on the expected fracture gradients at the 13-3/8" casing shoes.

COMPOSITION OF KCl-PHPA-GLYCOL-POLY AMINE-POLYMER DRILLING FLUID			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	Potable water	As per requirement	Base fluid
2.	Soda Ash	0.53-0.70	For hardness treatment
3.	Caustic Potash	0.35-0.70	pH to be maintained 9-9.5

4.	Biocide	0.35-0.70	To control bacteria degradation
5.	Sodium Sulphite	0.35-0.70	Oxygen Scavenger
6.	PGS	10.5-14.0(max)	Fluid loss reducer
7.	KCl	17.5(max)	Inhibition
8.	sulphonated Asphalt	10.5(max)	Thinner
9.	PAC-LV	4.6(max)	Fluid loss reducer
10.	PAC-RG	1-2(max)	Viscosifier
11.	Polyamine	7(Max)	Inhibition
12.	PHPA	1.5(max)	Encapsulation
13.	Polyol Grade-II	14(max)	For lubrication and also Inhibition
14.	MCC	18(max)	Bridging material
15.	NIF-Additive	7(max)	To control fluid invasion
16.	EP-Lube	3.5(max)	Lubricant
17.	Limestone Powder	As per density	Weighing agent
18.	XC-Polymer	10.5(max)	Viscosifier /Shear thinning agent
19.	Barite	As per density	Weighing agent

MUD RHEOLOGY (Hot rolling required)

Mud properties	Tentative Value Range(ppb) at temperature@32degC	**Hot rolling @90degC Bidders to fill up the mud rheology post hot rolling (ppb)**	Kill Mud
Mud weight (lb/gal)	9.2-10.0		11ppg
Funnel viscosity (sec/qt)	48-55		65-70
PV	<18		ALAP

YP	≥22		10-15
6 rpm	10-12		5-8
Gel strength (0m/10m)	5-8/18-20		8 - 13
Fluid loss (cc/30 min)	≤7		5 - 7
pH	9.0 – 10.0		9.0 – 9.5
Salinity, mg/l	>45,000		>45,000
Low gravity solids	< 5%		< 5%

NOTE TO BIDDER: The Mud Weights & pH of the Muds will be measured prior to hot rolling. Other parameters will be measured at the stated temperature after hot rolling.

6.2.7 8-1/2" Hole (5-7/8" Slim hole) / 7" Casing/Liner (4-1/2" Csg)

Drilling fluid for this interval will be a continuation of the KCl / XC polymer / PHPA / Polyamine fluid used in the previous hole interval.

COMPOSITION OF KCl-PHPA-POLYMER DRILLING FLUID SYSTEM			
Sl. No	Name of additives	Tentative Doses(ppb)	Function
1.	Potable water/sweet water	Asper requirement	For making mud
2.	Soda Ash	0.53-0.70(max)	For hardness treatment
3.	Caustic Potash	0.35-0.70(max)	pH to be maintained 9-9.5
4.	Biocide	0.35-0.70(max)	To control bacteria degradation
5.	Sodium Sulphite	0.35-0.70(max)	Oxygen Scavenger
6.	PGS	14.0(max)	Fluid loss reducer
7.	KCl	17.5(max)	Inhibition
8.	Sulphonated Asphalt	10.5(max)	Thinner
9.	PAC-LV	4.6(max)	Fluid loss reducer
10.	PAC-RG	1-2(max)	Viscosifier
11.	Polyamine	7(Max)	Inhibition
12.	PHPA	1.5(max)	Encapsulation

13.	Polyol Grade-II	14(max)	For lubrication and also Inhibition
14.	MCC	18(max)	Bridging material
15.	NIF-Additive	7(max)	To control fluid invasion
16.	EP-Lube	3.5(max)	Lubricant
17.	Limestone Powder	As per density	Weighing agent
18.	XC-Polymer	10.5(max)	Viscosifier/Shear thinning agent
19.	Barite	As per density	Weighing agent

MUD RHEOLOGY (Hot rolling required)

Mud properties	Tentative Value Range(ppb) at temperature @32degC	**Hot rolling @120 degC - Bidders to fill up the mud rheology post hot rolling (ppb)**	Kill Mud
Mud weight (lb/gal)	10-11.5		12ppg
Funnel viscosity (sec/qt)	48-55		65-70
PV	<18		ALAP
YP	≥22		10-15
6 rpm	10-12		5-8
Gel strength (10s/10m)	5-8/18-20		8 - 13
Fluid loss (cc/30 min)	≤7		5 - 7
pH	9.0 – 10.0		9.0 – 9.5
Salinity, mg/l	>45,000		>45,000
Low gravity solids	< 5%		< 5%

NOTE TO BIDDER: The Mud Weights & pH of the Muds will be measured prior to hot rolling. Other parameters will be measured at the stated temperature after hot rolling.

6.3 DRILLING FLUID MANAGEMENT SERVICES

Drilling Fluid management service encompasses all the functions and requirements contained in the previous section on Mud engineering services but not limited to the following:

a) Inventory control both at the rig and at the Supply Base.

b) Provide actual delivery verification of chemicals and additives.

c) Provide complete software package-based services for mud hydraulics, hole cleaning and engineering and also literature on all the types of drilling fluids to be used.

d) Maintain and provide Inventory Report fortnightly basis.

e) Submit Well Completion Report/ Well history (End of well Report) after the completion of services on each well within 15 days from completion of the well with full details of complications encountered, Cost analysis of each section, planned vs actual cost of each section, remedial measures undertaken to mitigate the complications and remedial measures proposed to be undertaken in future wells. Downhole Complication reports encountered should be submitted within 24 hours of mitigating of the complication in the standard proforma of Company. Company will provide the complication report template to the Mud Engineer at site.

6.4 DRILLING FLUID MATERIAL AND CHEMICALS SUPPLY:

The proposed drilling fluid chemicals including brine chemicals with estimated quantity against Regular and Contingency Chemicals are mentioned in Table-A, Table-B and Table-C respectively.

a) The Bidder shall submit detailed specifications along with the Material Specification Data Sheet (MSDS) of all the offered chemicals along with their bid as per the Chemicals provisioned in the Scope of work under Table -A, Table-B and Table-C. The specifications of each chemical should reflect the relevant parameters of that additive and indicate its performance required in the test report.

b) Bidder shall ensure enough chemicals and additives that shall be made available to allow for smooth and uninterrupted operations.

c) The Bidder shall furnish to OIL the test reports as per specifications prior to the delivery of the material at OIL's designated Supply Base. All the test reports must reflect the brand name and manufacturer as quoted in the bid and the chemicals used in the well shall be of the same brand and manufacturer and shall be of same specification as submitted with the bid document.

d) Bidders shall provide the complete chemical product data sheet including the brand name and manufacturer's name of the chemical, specifications of the chemical and Material Safety Data Sheets (MSDS) in respect of all the chemicals proposed to be used at the time of delivery as quoted in the bid.

e) Company reserves the right to check the quality of the Mud chemicals at random as per test reports/specification submitted by the Bidder at any point during the duration of Contract.

f) Bidder shall arrange for storage of the chemicals and additives at its facilities at its Supply base during the period of the Contract and shall deliver the chemical and additives to Company's supply -base facility as per operational requirement and when instructed by the Company at its own cost. The Bidder shall incorporate the costs of the packaging of each mud material. No Separate billing for packaging and palletizing is allowed for this.

g) At the end of the contract period, Bidder must take back the left over/unused chemicals and additives including Hazardous Brine/Hazardous Completion fluid from Rig site/ Company's designated Shore Base within 15/30days respectively from date of intimation about the same. However, For the disposal of Hazardous brine, Contractor is required to dispose the same at OIL's cost and the responsibility of Contractor or its subcontractor to comply with Storage, handling, transportation (on land), manifesting, and disposal of spent or used chemicals of hazardous/Non-Hazardous wastes at TSDF facility ensuring compliance with oil industry standards, applicable legislation, adopting best practices with necessary approvals or licenses from statutory agencies requirements.

   Failure to lift the chemicals and Hazardous brine within 15 days from Rig site or 30 days from Shore base, the bidder will be liable to pay a penalty of @Rs10000/Day till all the brine, and brine chemicals, mud chemicals are lifted completely

h) Bidder shall arrange to backload all the left-over chemicals and brine chemicals for transportation from rig site to mainland or to its designated base(s). However, for any hazardous Chemicals or Hazardous brine are used during well testing, the same will be disposed by the bidder following Hazardous waste disposal guidelines, as per tender.

i) The Bidder shall re-stock unused mud chemicals at nil cost to the Company.

j) The Bidders personnel at the drilling location shall be responsible for the safe handling and storage of Bidders mud chemicals at the drilling location. Company shall not accept charges for mud chemicals damaged by poor handling and storage unless such damage is agreed by the Company to be out with the Bidders control.

The chemicals shall be in original packing of the manufacturer. The packing of the chemicals shall be seaworthy, in bags of 25 Kgs. / 50 lbs. and in drums of not more than 250 LITERs capacity which shall withstand the rigors of sea transportation. Chemicals susceptible to moisture shall be packed in moisture proof multi-walled paper bags with High Density polythene (HDPE) lining.

OIL reserves the right to refuse any products not packaged in accordance with the specifications detailed below.

Material arriving at well site and damaged due to inappropriate packaging, handling or arriving in inappropriate packaging, will not be accepted and may be returned to SERVICE PROVIDER for replacement and any transport and associated costs thereof, will be to CONTRCTOR's account.

SERVICE PROVIDER material prices include the cost of all packaging and materials as specified, including associated labour cost, pallets, jumbo Bags, drums, cans, covers, cardboard boxing and additional pallets for stacking jumbo Bag material at well site as specified. OIL will not be responsible for the return of any pallets, Jumbo bags, drums or any packaging materials.

OIL will not be liable for the cost of re-palletising of any or all materials returned to SERVICE PROVIDER at any time during the well or at the end of operations. Palletising cost is at the point of Origin and must be factored into SERVICE PROVIDER quoted material prices.

6.4.1. Jumbo Bag Materials

The products listed below must be supplied in this type of packaging, in new, strong Jumbo bags complete with woven lifting handles with a design lifting capacity factor of at least two times the weight of the contents. Material received in old, damaged jumbo bags, or with inappropriate lifting handles or not properly multilayered polythene packed to withstand seaworthy condition, will not be to OIL account.

Barite	: 1.0 MT
Bentonite	: 1.0 MT
MCC	: 1.0 MT (Optional -50 kg Sacks)
KCl	: 1.0 MT Jumbo

All jumbo bags must be clearly mentioned or stencilled indicating the product type and weight per bag.

6.4.2. Sacked, Drummed or Canned Products

All products supplied in sacks, drums, cans or pails must have the following minimum packaging:

Palletized on strong undamaged standard pallets.
Tightly metal banded for sack material and for 55gal drum material.
In the event that drummed chemicals are returned in drums that have become dented or corroded but the chemical has not leaked or become contaminated, SERVICE PROVIDER will re-drum the chemical.
Each pallet is to be labelled, both inside and outside the polythene shrink wrap, on all four vertical sides and on top face with the following information:
The appropriate MSDS sheet is to be fixed with adhesive or staples on the top of the chemicals Maximum pallet height to be 48” (1.2m).
Caustic soda (sodium Hydroxide) and caustic Potash (Potassium Hydroxide) are only to be packaged in 25kg new waterproof multi-layered plastic bags or supplied with steel drums **(50kg drums are not acceptable).**

6.4.3. Hazardous Materials

Any pallets of material considered hazardous must be clearly labelled as such. All pallets must be neatly packaged to allow double stacking at rig site.
Any material received at the Well site that does not meet the specified packaging and labelling criteria will be rejected by OIL and returned back to SERVICE PROVIDER by their own arrangement. All replacement, transport and associated costs involved thereof will be to the SERVICE PROVIDER.

SERVICE PROVIDER will provide heavy duty rain and water-resistant tarpaulins as required to protect material stored at the well site.

6.4.4. Pallets

OIL will not be liable for the return or cost of, any or all pallets supplied on which palletised material is supplied throughout the contract.

a) Chemicals received in torn packaging and broken drums will not be accepted by OIL.
b) OIL shall provide low salinity drill water, seawater as applicable for mud preparation and maintenance.
c) Bidder shall deliver all chemicals, packed in waterproof pallets only ready for loading onto Offshore supply Vessels (OSV).
d) The Bidder shall provide the same brand of chemicals during the contract as stated in the test report submitted along with the bid for various drilling fluid systems as well as stated in the price bid. During execution stage, if Bidder wants to switch over to any alternative manufacture for a particular chemical, it has to be approved through test report of formulation from the authorized lab witnessed by OIL representative.

6.5 COMPLETION FLUID SERVICES INCLUDING CHEMICALS & BRINE FILTRATION SERVICES

The Bidder is required to provide completion fluids during testing of oil & gas in the well. The selection of proposed brines mentioned under Table-C is taken arbitrarily due to non-availability proper formation pressure and temperature. However, as per the pore pressure potential of the formation post drilling/ logging, Bidder is required to supply the requisite brine within 30 days of written communication from OIL

a) The contractor shall provide Dual Pod Filtration Unit for the Rig during testing and completion to provide clean brine up to 2 microns.
b) All required spares, chemicals for filtration unit will be supplied by contractor to run the unit smoothly.
c) Filtration Engineer/ Supervisor and operators will be on call out basis.

d) Contractor will ensure that Brines conforms to the hydrate inhibition depending upon Brine weight, mud line temperature and pressure. Whenever required, without compromising Brine Weight, the brine will be supplemented with Mono Ethylene Glycol (MEG) to prevent hydrate inhibition during well completion operations.
e) The contractor shall supply all the required chemicals to formulate well completion fluid consisting of clear brines up to the range of 15.0ppg.
f) Contractor shall provide experienced completion fluid engineers on call out basis having minimum offshore experience in providing service in 2 offshore wells.
g) In case of Formate base brine or Bromide base Brines are required for well testing, the mud engineer deployed during well Testing / completion should have experience of at least 02 offshore wells with Formate or Bromide base Brines.
h) The Contractor shall provide and run Brine filtration unit to provide clear completion fluid for well completion and well testing up to 2 microns, in accordance with the prevalent standards of the oil industry and as per well requirement.
i) The Filtration unit should be designed for easy transportation and be easily disembarked at site for fast commissioning with minimum possible time.

NOTE TO BIDDER:

1. Company to issue separate call-out for the specialized brine with mobilization timeline of 30 days. Specialty brine such as Calcium bromide brine and Sodium Formate-Potassium Formate blended brine in IBC, if supplied by the contractor would be charged back to OIL after delivery at Kollam or Kochi Supply yard of Company.
2. After completion of the project or expiry of the contract, it is the responsibility of the contractor to backload Left-over used and unused Chemicals/Brine from Rig site within 15 days and from shore base within 30 days upon written instruction from OIL. Left over unused brine in IBCs would be charged back to OIL.
3. Calcium Bromide brine if used during well testing, the same will be disposed by the bidder post completion of testing following Hazardous waste disposal guidelines at OIL's cost.
4. Payment for specialty brine (Calcium Bromide brine and Sodium-Potassium Formate blended brine)will be made after delivery at Kollam or Kochi Supply yard of Company

6.5.1 PLANNED VOLUME (SECTION WISE)

a 36” OH in case of contingency

Hole Size	INTERVAL	VOLUME (US BBL)	Operational/Surface loss (500% Extra) (US BBL)	High Vis Sweep	Total Estimated Volume of gel mud (US BBL)
		Sea water	See Water	Bentonite gel with Guar gum /HVG / HEC	9,000
30	0-200(30") 36” hole drilling	600	3000		

b 26” OH

Hole Size (26"OH)	INTERVAL	VOLUME (US BBL)	Operational /Surface/Formation Loss (800% Extra)- (US BBL)	High Vis Sweep	Total Volume (BBL)
85m Piling	0-200(cased hole)	600	600	Bentonite gel with Guargum /HVG/ HEC	10,2,488
30m Air gap					
57mWater depth					
200-800 (26"OH)		1288	100000		

c 16” OH

Hole Size (16"OH)	INTERVAL	VOLUME (US BBL)	Volume of Other previous cased hole section +Riser Volume+ Surface mud(US BBL)	High Vis Sweep	Total Estimated Volume (US BBL)
	0-800 (20" cased hole)	1200	2168+5000= 7218	Bentonite gel with Guargum/ HVG/HEC	10,09,368
	800-1970 (16"OH)	950	10,00,000		

d 17.5" OH SECTION

Hole Size (17.5" OH)	INTERVAL	VOLUME (USBBL)	Volume of Other previous cased hole section +Riser volume+ Surface mud+ Mud Loss(US BBL)	High Vis Sweep	Total Estimated Volume (US BBL)
17.5" OH	**1970-2800 (830)**	807	3718 +280+ 5000+500000	PAC-XC-Polymer	5,09,525

e 12-1/4" OH

Hole Size (12-1/4") OH	INTERVAL	VOLUME(US BBL)	Volume of Other previous cased hole +Riser volume+ +surface mud (US BBL)	High Vis Sweep	Total Estimated Volume (US BBL)
12.25"OH	2800-4500 **(1700)**	810	1370+280+500 0 =6370	PAC-XC-Polymer	7180

f 8-1/2" OH SECTION

Hole Size (8-1/2"OH)	INTERVAL	VOLUME (US BBL)	Volume of Other previous cased hole +surface mud (US BBL)	High Vis Sweep	Total Estimated Volume (US BBL)
8.5"OH	4500-6000 **(1500)**	344	1077+5000	PAC-XC-Polymer	6421

6.6 LIST OF CHEMICALS, PERSONNEL, EQUIPMENT & SPARES FOR PROPOSED MUD SYSTEMS

CONTIGENCY CHEMICALS

TABLE-A

Sr No.	Product	UOM	Estimated Quantities
1.	Drilling Detergent	LITER	5000
2.	Piplex	LITER	30000

3.	Mica	KG	20000
4.	Saw dust	KG	20000
5.	Jel Flakes	KG	20000
6.	Walnut shell	KG	20000
7.	Rice Husk	KG	10000
8.	Coconut fibre	KG	10000
9.	SAPP	KG	1000
10.	Teepol	LITER	1000
11.	Lime	KG	10000
12.	Defoamer (Octyl alcohol)	LITER	10000
13.	Citric Acid	KG	5000
14.	Zinc Carbonate	KG	5000
15.	EGMBE (Ethelene Glycol Mono Butyl Ether)	LITER	10000
16.	Corrosion Inhibitor (Egromorerohdine)	LITER	10,000
17.	Hydrochloric Acid	LITER	10000
18.	Ammonium Bifluoride	KG	5000
19.	Aluminium Stearate	KG	5000
20.	Kwikseal (F) equivalent	KG	10,000
21.	Kwikseal (M) equivalent	KG	10,000
22.	Kwikseal (C) equivalent	KG	10,000
23.	Resinated Lignite	KG	15000
24.	Polymeric Deflocculant	KG	7000
25.	Lubricant (Resilient Graphite)	KG	10000
26.	Calcium Bromide Powder (Minimum 95% purity)	MT	500
27.	Sodium Formate Powder(minimum98%purity)	MT	500
28.	Potassium Formate Powder(minimum98%purity)	MT	500
29.	Potassium Sulphate Powder ((Minimum96% Purity) -	MT	500
30.	Mono Ethylene Glycol	LITER	10000

REGULAR CHEMICAL

TABLE-B

Sr No.	Product Description	UOM	Estimated Quantities (a2)
1.	Soda Ash	KG	20000
2.	Sodium Bicarbonate	KG	20000
3.	Caustic Soda	KG	50000
4.	Caustic Potash	KG	50000
5.	Biocide	LITRE	22000
6.	Calcium Carbonate (Fine) D50 (10-14µ) Purity-94%(minimum)	KG	200000
7.	Calcium Carbonate (Med) D50 (135-165 µ) Purity-94%(minimum)	KG	200000
8.	Calcium Carbonate (Course) D-50 (550-650µ) Purity-94%(minimum)	KG	450000
9.	Sulphonated Asphalt	KG	20000
10.	Sodium sulphite	KG	40000
11.	KCl (Potassium Chloride) powder purity 97% (minimum)	MT	500
12.	Polyamine	LITER	100000
13.	PAC-LV	KG	20000
14.	PAC-RG	KG	50000
15.	XC-Polymer/ DUOVIS/ Barazan-D/ Xanplex-D	KG	200000
16.	PHPA	LITER	100000
17.	Polyol Grade II	LITER	100000
18.	NIF additive (FLC-2000 or equivalent)	KG	30000
19.	EP-Lube	LITER	200000
20.	Barite (1MT per Jumbo Bag) Sp Gravity ≥4.15 (minimum)	MT	8000
21.	MMO	MT	200

22.	PGS	MT	100
23.	Bentonite (1MT/Jumbo Bag)	MT	2000
24.	CMC-HVG	KG	10000
25.	Modified Guar gum	KG	10000
26.	Hydroxy Ethyl Cellulose(HEC)	KG	10000
27.	Micromax Powder,SG 4.7 Jumbo	KG	30000
28.	Micronized Barite Powder, SG ≥ 4.2 Particle size D50 < 5µ, D90 < 10µ	MT	200

BRINE CHEMICAL
TABLE-C

Sr. No.	Product Description	UOM	Estimated Quantities	Brine Weight(ppg)
1.	Sodium Chloride (99% Purity Minimum)	MT	850	10
2.	Calcium Chloride (97% Purity-Minimum)	MT	850	11.6
3.	Potassium Formate Brine in IBC (13.1ppg)	BBL	7000	13.1
4.	CaBr2 Brine in IBC (14.2ppg)	BBL	7000	14.2
5.	Corrosion Inhibitor (for halide base brine)	LITER	10000	****
6.	Corrosion Inhibitor (formate Base brine)	LITER	10000	****
7.	Oxygen Scavenger	LITER	10000	*****
8.	Tracer Chemicals (Robin Blue or equivalent)	KG	50	******
9.	Wellbores clean up chemical packages	LITER	50000	*****

NOTE TO BIDDER: The UOM of Brine in IBCs (Calcium Bromide Brine and Sodium Formate-Potassium Blended Brine) will be in US BBL. The unit of the rest of the brine Chemicals, mud chemicals will be as per the unit mentioned in the price bid format.

PERSONNEL
TABLE-D

Sr No.	Item Description	UOM	Estimated Quantities
1.	Lead Mud Engineer	DAYS	210
2.	Night Mud Engineer	DAYS	210
3.	Filtration Unit Personnel (Supervisor)	DAYS	210
4.	Filtration Unit Personnel (Technician)	DAYS	210
5.	Centrifuge Technician	Days	210

TABLE-G

LIST OF OPTIONAL MUD CHEMICALS

SL NO	BRAND OR PRODCUT NAME OF THE CHEMICALS	UOM (KG/LITER)	QUANTITY	PURPOSE OF USE OF OPTIONAL MUD CHEMICALS OTHER THAN THE CHEMICALS PROVISIONED IN THE TENDER
1			1	
2			1	
3			1	
4			1	
5			1	
6			1	
7			1	
8			1	
9			1	
10			1	
11			1	
12			1	
13			1	
14			1	
15			1	

NOTE TO BIDDER:

1.The quantities of contingency, specialty, regular chemicals, brine chemicals, and brine volume mentioned in the tender are indicative and provided solely for bid

evaluation purposes. This ensures consistency and comparability among bidders but does not necessarily reflect the exact requirements during execution.

2.In case of an overrun of chemical quantities beyond those provisioned in the contract due to geological challenges, extended drilling, unforeseen operational complexities, or downhole issues, the bidder shall supply the additional chemicals upon written instruction from OIL.

3.Bidders are requested to fill up the names of their specialized/proprietary chemicals and intended uses of such chemicals in **TABLE-G** of the tender document and in Price Bid format with quoting the unit rate only. However, such specialized/proprietary chemicals shall not be considered as a part of price bid evaluation as these are considered as optional Chemicals. In case OIL intends to procure these optional chemicals for operational purpose during the currency of contract, the provided unit rate shall be considered.

6.7 FLUID TESTING EQUIPMENT AND REAGENTS AND SUPPLIES

The delivery point for all Bidders mud chemicals, equipment and supplies shall be at rig site/Bidders supply base. The Bidder shall be solely responsible for all transportation of mud chemicals, Lab reagents contingency chemicals, glass wares, Lab equipment, supplies to the base location. The Bidder shall provide at the drilling location the equipment specified hereunder to perform mud tests and checks as required to monitor the mud system in use. Electrical
voltage transformers and/or regulators if necessary to permit safe use of testing equipment with rig power supply. Sufficient Spare Parts, Reagents, Indicator Solutions, Calibration Agents, Filter Papers, CO2/N2O Cartridges, Gaskets, O-Rings, Batteries and other consumables such as deionised water as per requirement, to ensure that full mud testing capability is maintained at all times. Sufficient general glassware as per the list, titration dishes, etc to last for the duration of the well and allow for potential breakages. The lists of the items are mentioned as under.

6.7.1. LIST OF LAB EQUIPMENT

1) 2 No Mud Balances (Baroid Type)
2) 2 Nos. marsh Funnels
3) 1 pressurised Mud Balance
4) 4 Nos 1 LITER Mud Cups
5) 1 No. Heated Mud Cup for Rheometer.
6) 2 Nos. 6 or 8 speed Fann VG Meter completed with sample cup
7) 1 complete and operational API filter press complete with ample spare gaskets and seals.
8) 1 complete and operational HTHP filter press 250^0F, 500psi complete with ample spare gaskets and seals.

9) 2 pH meters complete with calibration buffers.
10) 1 magnetic stirrer
11) 4 magnetic stir bars
12) 1 Hamilton Beach Blender (multi speed)
13) 2 Hamilton Beach stainless steel beakers.
14) 1 Mud Lubricity tester
15) 1 Brookfield Viscometer or Hake Viscometer
16) 1 Digital Balance
17) 1 500 gm digital balance.
18) 1 variable speed electric centrifuge with spare centrifuge sample tubes.
19) 2 step-down transformers (240v to 110v) complete with suitable outlets for the equipment supplied.
20) 1 US type plug, I Indian Type Plug, 4 – way connection block.
21) 1 NTU meter (Portable Turbid meter) with spare glass sample chambers (required only if testing brine is to be used.
22) Nitrate test strips or Iodide Probe and Meter (with complete set of Analar grade Iodide calibration solutions) to allow determination of mud filtrate/ produced water iodide tracer concentration.
23) 1 No. pH Meter with standard calibration agents.
24) 1 No. Colorimetric pH Test Kit (pH strips).
25) 1 No API Sand Content Test Kit.
26) 1 No. Retort Kit (minimum 20 ml cell volume) with Temperature Control.
27) 1 No. Additional Cell and Condenser for Retort.
28) 1 No. Alkalinity Test Kit.
29) 1 No Potassium Ion Determination Test Kit (Perchlorate precipitation).
30) 1 No Salinity Test Kit.
31) 1 No Total Hardness Test Kit.
32) 1 No Calcium Ion Test Kit.
33) 1 each CEC Test Kit.
34) 1 each PHPA Test Kit.
35) 1 each Poly Amine Test Kit
36) 1 each Weighing Balance suitable for pilot testing.
37) 1 each Hotplate with Magnetic Stirrer.
38) 1 each Garret Gas Train for H_2S and CO_2 analysis.
39) Electrical voltage transformers and/or regulators if necessary to permit safe use of testing equipment with rig power supply.
40) Sufficient Spare Parts, Reagents, Indicator Solutions, Calibration Agents, Filter Papers, CO_2/N_2O Cartridges, Gaskets, O-Rings, Batteries and other consumables such as deionised water as per requirement, to ensure that full mud testing capability is maintained at all times.
41) Sufficient general glassware, titration dishes, etc to last for the duration of the well and allow for potential breakages.

6.7.2. Glassware

1) 10 ml, 5 ml, 2 ml and 1 ml pipettes- 3 nos. Each
2) 100 ml graduated glass measuring cylinder-3No
3) 50 ml graduated glass measuring cylinder-3Nos
4) 20 ml graduated glass measuring cylinder-3Nos
5) 10 ml graduated glass measuring cylinder-5 Nos
6) 250 ml Erlenmeyer flasks-4Nos.
7) Sand content tube, filter and funnel-2 Nos
8) 250 ml glass beaker-4Nos.
9) 150 ml glass beaker-4Nos
10) 5 ml glass syringes-5Nos.
11) l ml plastic syringes-5Nos.
12) 100ml Conical flasks-5Nos
13) 200ml conical flaks-3 Nos
14) 250ml graduated round bottom flasks-2 Nos
15) 500ml graduated round bottom flska with stopper-2Nos
16) 1000ml Graduated glass Cylinder-1Nos
17) 500ml Graduated glass Cylinder-2Nos
18) 100ml Graduated glass Cylinder-2Nos
19) 250ml graduated glass cylinder-1 No
20) 50ml-graduated glass cylinder-2 nos

6.7.3. Testing Re-agents (All to be minimum 4 months from expiry date at time of supply)

1) 1000 ml 0.282N Sliver Nitrate
2) 250 ml 0.0282N Silver Nitrate
3) 100 ml Phenolphthalein
4) 500 ml 0.02N Sulphuric add
5) 50 ml 0.1N Sulphuric acid
6) 100 ml 0.1N Hydrochloric Acid
7) 100 ml 0.2N Hydrochloric Add
8) 100 ml 0.1N Sodium Hydroxide
9) 100 ml 0.2N Sodium Hydroxide
10) 500 ml 0.01M EDTA
11) 250ml 0.1M EDTA
12) 250 ml Methylene Blue (1 ml= 0.01 mill equivalents)
13) 50 ml 5N Sulphuric Acid
14) 200 ml Standard Sodium Perchlorate Solution (150 gm/100 ml)
15) 100 ml Standard Potassium Chloride Solution (14 gm/100 ml)
16) 100 ml Versenate Hardness lndicator Solution

17) 100 ml Calcium Versenate Buffer (8N KOH)
18) 100 ml Versenate Hardness Buffer (Ammonia)
19) 100 ml Bromocresol Green I Methyl Red Indicator Solution
20) 100 ml Potassium Chromate Indicator Solution
21) 500 ml 3% Hydrogen Peroxide
22) 20 LITERs Distilled Water

6.7.4. Miscellaneous

1) 2 mercury (0°C – 150°C range) glass thermometer
2) 1 digital thermometer – 0 to100deg C range
3) 20 boxes of CO2 Cartridges
4) 10 Packs of 7 - 14 range pH Indicator Strips
5) 2 Nos. Stainless Steel Fann VG meter Beakers
6) 1 No. 10 ml retort scrapers
7) 4 Nos. Plastic Titration Dishes
8) 3 Nos. 30 Minute Timers
9) 100 Nos 9 cm API Filter Press Papers (Hardened)
10) 100 Nos. 2.5'' HTHP Filter Press Papers (Hardened)
11) 2 Nos Tubes High Temperature Lubricant
12) 1 No. Tube of Silicon Grease
13) 5 Nos. Distilled Water Squeeze Bottle
14) 3 Packets of Pipe Cleaners
15) 2 Packets of 0000 Grade Fine Steel Wool
16) 10 Rolls of Absorbent Kitchen Towel
17) 2 Stainless Steel Sample Spatula
18) 10 Nos. 50 ml Plastic Sample Bottles (Wide Neck Type)
19) 6 Nos. +/- 20 ml Plastic Squeeze Bottles (for indicator solutions etc.)

6.8 GENERAL TERMS & CONDITIONS APPLICABLE TO MUD MATERIALS

1) Bidders are required to mention/specify in their offer about the Purity % and/or % Active Component (as the case may be) for their proprietary or specialty chemicals., as well as for the chemicals where OIL has not provided any test specification in the tender scope. Bidder to provide the following documents prior to deliver the chemicals to well site /supply base.

   a Certificate of Analysis (CoA) of each chemical from the manufacturer
   b Self-Life of the Chemical
   c Material Safety Data Sheet (MSDS) of each chemical
   d Manufacturing Date of chemicals
   e Expiry Date of Chemicals
   f Relevant environmental data of chemicals.
   g Spill and clean-up procedures of chemicals.

h Percent of purity/Percentage of active ingredients in Speciality/ proprietary Chemicals (as the case may be)

i Heavy-metals content of barite supplied, as analysed and certified by a third-party NABL/ISO laboratory.

2) The Bidder shall provide mud chemicals for use, as and when required, upon receipt of a written or telephonic request from an authorized company representative. All mud chemicals to be supplied are to meet either API or BIS or OMCA or OIL's testing specifications for quality control. For Bidder's proprietary or specialty chemicals as well as for the chemicals where OIL has not provided any test specification in the tender scope, for such chemicals, bidder to provide the Purity % and/or % of Active Component (as the case may be).

3) The Company reserves the right to test any of the Bidders mud chemicals for quality control in accordance with API Standards Recommended Practices 13A/13B to determine if they meet the standards of the API for oilfield use, that they can be economically combined to produce a mud system with the required properties, and if they create an environmental and/or health hazard.

4) The Bidder shall package and box its mud chemicals, except Big-Bags, Jumo Bags and bulk, as specified by the Company for delivery as provided hereunder:

a) Palletised
b) Cardboard sides
c) Plywood top
d) Metal-banded four times
e) Double shrink (Jungle) wrapped.

Labelled inside and outside wrapping twice on sides and once on top with:

a) Name of the product
b) Number of units per pallet.
c) Weight of each unit in pallet.
d) Total weight of pallet.
e) Maximum pallet height to be 48 inches (Maximum Height 1.2meter)
f) All Big-Bag packaged material must be moisture proof with bottom drawstring and double polyethylene lining.
g) The Bidder shall supply caustic materials (e.g. NaOH, KOH) in metal cans rather than in sacks for safety reasons.
h) The Bidder shall supply barite and bentonite in bulk but may be requested to supply in big/jumbo bags at discretion of Company. OIL reserves the right to supply Barytes from its own resources at any time during the contract.
i) The Bidder shall supply Bentonite, Barite, KCl, MCC in big bags. Package size may be changed at discretion of Company.
j) The well in this contract will be drilled using the stated drilling fluid systems. OIL reserves its right to modify its drilling / drilling fluids program at any time.

Remark: OIL reserves the right to refuse acceptance of any mud chemicals not packaged in accordance with the above specifications. OIL shall not accept charges for mud chemicals damaged by weather or transport /handling if not packaged as specified above. The Bidder, at its option, may provide personnel to audit the mud chemicals that arrived at the drilling location.

6.9 TECHNICAL PRODUCT SPECIFICATIONS OF MUD CHEMICALS and DATA REQUIREMENTS

Proposed chemicals should adhere to the following regulatory standards applicable in India. The chemical additives used for the preparation of drilling fluids should have low toxicity (i,e. 96 hr LC50) value greater than 30,000 mg/1 as per toxicity test conducted on locally available sensitive species. SERVICE PROVIDER shall carry out the required low toxicity testing prior to shipment of chemicals /products to well site/Supply Base and submit the LC50 test report for record.

a) The chemicals used (mainly organic constituents) should be biodegradable.
b) Barite used in preparation of drilling fluid shall not contain Arsenic >10mg/kg, Hg > 10 mg/kg, Cd > 10 mg/kg and Pb> 500 mg/kg, Zinc> 500mg/kg. OIL will not accept poor quality and contaminated Barite whose specific gravity falls below 4.15.
c) All Barite, Bentonite and Salts, bulk, or sack materials, supplied by the service provider must meet API / BIS specification. The Specification of chemicals used for mud formulation is required to be supplied by SERVICE PROVIDER during the contract in force. Where the bidder's product is proprietary, the bidder is required to mention the %of purity /% active content in the proprietary products.
d) Failure to meet these standards during the contract may result in cancellation of the contract by OIL and costs associated with the return of such materials will be to service provider's account.
e) OIL reserves the right to have tests performed on any or all of SERVICE PROVIDER products to verify quality control in OIL's Field Head Quarter Chemical Laboratory, Duliajan or any certified third-party ISO/NABL Laboratory in the region. Such tests may be performed so as to determine both products specification and their economical use in preparing drilling fluid to required specification. OIL may require such product testing (including testing of rig site samples) at any time from the tendering process, during drilling / completion operations to completion of the drilling programme.
f) Non-compliance with such standards will be grounds to reject SERVICE PROVIDER'S additives or, at discretion of OIL, to require that the SERVICE PROVIDER obtain an equivalent additive, of equal or greater specification, and to OIL satisfaction, from a designated supplier at a cost equal to or less than the original product price.
g) Locally manufactured products will be preferable under the express understanding that such local products supplied meet required specifications.

6.9.1. Barite

The material as received shall be white/light greyish white/light pinkish white free flowing powder, free from dirt and foreign matter. Specific Gravity of material, as received, at 26 +/- 2 degC minimum: 4.15 SG, Fineness: a) Wet Screen Analysis - Passing through 75-micron sieve, (ISS 6/BSS 200/ASTM 200), %by mass, minimum: 97.00, b) Passing through 53-micron sieve, (ISS 5/ BSS 300/ASTM 270, % by mass: 92 ±2
Insoluble Minus Silica % by mass, minimum.: 90.00
Water Soluble Content, % by mass, maximum: 0.02
Heavy metal content: Arsenic <10mg/kg, Hg < 10 mg/kg, Cd < 10 mg/kg, Pb< 500 mg/kg, Zinc< 500mg/kg

6.9.2. Bentonite

The material as received should be in the form of fine light to greyish yellow buff or cream-colored powder, free from dirt and foreign matter. Moisture Content, measured by drying at 105±2DegC to constant weight, % by mass, maximum.: 12.00 Sand Content, % by mass, max.: 2.00(retention on 200 B.S.S. mesh sieve or equivalent, by wet method). Dry Screen Analysis, % by 98.00 mass, min (passing through 100 B.S.S. mesh or equivalent by dry method).

6.9.3 Potassium Chloride

Must be in granular form, easy to mix, and have a purity of at least 97%. Moisture content must be less than 3.0% by wt.

6.9.4 Caustic Soda (NaOH)

The material, as received, should be in the form of flakes and should be free from dirt and foreign matter. **Purity as** NaOH, % by mass, minimum: 95.0

6.9.5 Caustic Potash (KOH)

The material, as received, should be in the form of pallets or flakes free from dirt or foreign matter.
Total Alkalinity as KOH, % by mass, : 87.00(MINIMUM), Sodium as Na, % by mass, maximum : 1.00

6.9.6 Soda Ash (Na2CO3) Sodium Carbonate:

The material, as received, should be in powder form free from dirt and foreign matter and should be easily soluble in water. Purity as Na_2CO_3: % by mass, minimum: 98.5, Matter insoluble in water**:** % by mass, maximum: 0.15

6.9.7 Sodium Bicarbonate (NaHCO3):

Must have a purity of at least 99% and a moisture content of no more than 2% by wt.

6.9.8 Citric Acid:

Must have a purity of at least 95% and a moisture content of no more than 2% by wt.

6.9.9 Polyanionic Cellulose (SL):

The material, as received, should be white to creamish white free flowing powder, free from lumps and other impurities.

a) Moisture Content, % by mass: maximum: 10.0
b) Degree of substitution, minimum: 1.00
c) Active matter, % by mass, minimum: 85.00

6.9.8. Both low and regular viscosity grade PAC product supplied will be 100% pure grade PAC, for example Drispac Plus or Aquapac. Substitute products will only be accepted if proof of performance equal to or better with respect to pure PAC polymer can be demonstrated.

6.9.9. **PHPA:** Product supplied is as a viscous, milky liquid, anionic charge, specific gravity: 1.05-1.1, pH :7-9, and a non-volatile matter content of around 99%; it should be readily soluble in water and function as a shale inhibitor/encapsulator in water-based drilling muds. Should be Calcium tolerance in nature.

6.9.10. **Polyamine: Liquid**, SG 1.02-1.1, pH 4-8, water soluble, %age of Amine Value :60%(minimum)

6.9.11. **Pre-Gelatinized Starch (PGS):** (i)The supplied material will be pre-treated for fermentation resistance and be free of contaminating material. Product must be at least 95% pure.

i. Moisture Content as measured at 105 +/- 2 degC % by mass: 5%
ii. pH of 2%(w/v) in distilled water at 24 ± 2 deg C: 10.0(minimum)
iii. AV of 2%(w/v) in distilled water at 24 ± 2 deg C, cp:10(maximum)
iv. Qualitative test for presence of Starch: 1% of Potassium Iodide solution changes to Blue

6.9.12. **Hydroxy Ethyl Cellulose (HEC):** The material as received, shall be in the form of a free-flowing powder, free from visible impurities. Product must be at least 95% pure and highly dispersible and capable of building high viscosity mud when mixed with seawater. Moisture content should not be more than 10.0%(Maximum), Residue content should not be more than 0.5% (Maximum), Insoluble matter % by mass = 0.3 (Maximum)

6.9.13. **Asphaltene shale stabiliser**: Product supplied will be industry recognised for example Soltex. The material, as received, should be a free-flowing brown to black coloured powder, free from lumps and other foreign matter. Moisture Content, % by mass, maximum: 15.0, Water soluble content, % by mass: 65-70. Soluble matter in Dimethyl Sulphoxide , % by mass should be 30-35 range. pH of 2 % (w/v) solution, minimum : 8.5 Substitute products will only be accepted if proof of performance equal to or better with respect to Soltex can be demonstrated.

6.9.14. **Calcium Carbonate(F,M,C**): The material supplied must have a consistent size distribution to the specified grade - fine, medium or coarse as specified in tender scope.

6.9.15. **Drilling Detergent:** The material should be a soapy liquid, miscible with water. It should be free from visible impurities and any other suspended matter. Density at 25 degC, gm/ml : 1.00 ~ 1.10 and pH range : 7.5 ~ 10.5. Lubricity co-efficient : less than 0.20. Increasing of foaming volume tendency should not be more than 5.00 %.

6.9.16. **Defoamer:** The material should be free flowing white to off white transparent liquid free from any impurities. Measure density at 24+/-2 degC shall not be more than 0.42

6.9.17. **Oxygen scavenger:** Details of the chemical nature of active ingredients must be provided by the Bidder.

6.9.18. **Corrosion Inhibitors** (filming amines and others proposed): Details of the chemical nature of active ingredients must be provided by the Bidder.

6.9.19. **Biocide:** The chemical nature of active ingredients must be provided by the Bidder.

6.9.20. **Ethylene Glycol Mono Butyl Ether (EGMBE):**The material as received shall be clear liquid free from visible impurities and completely miscible in water, Specific gravity at 20 deg : 0.901 to 0.905, Boiling point at atmospheric pressure: 172±2 deg C, Acidity as CH3COOH, % by mass: 0.01 (Max), Water content, % by mass: 0.03 (Max)

6.9.21. **Extreme Pressure Mud Lubricant**: The material, as received, should be yellow, brownish yellow, pinkish yellow coloured clear viscous liquid free from suspended materials and other impurities. The material should be vegetable oil-based product, non-polluting, bio - degradable, non-fluorescent and should be environmentally friendly product and should not cause any pollution to hazard The material should be dispersible / miscible with water without formation of oil sheen in water. Density at 25 degC: 0.92 – 0.98, Lubricity Coefficient should be in the range of 0.15 - 0.20

6.9.22. **Hydrochloric Acid:** as per bis specification

6.9.23. **Stuck Pipe Releasing Agents**: Details of the chemical nature of active ingredients must be provided by the Bidder.

6.9.24. **Modified Guar gum**: Specification:

The material should be white to creamish white free flowing powder, free from lumps and other impurities. Moisture Content, measured by drying at 105 +/- 2DegC to constant weight, % by mass, maximum.: 15.00, pH range of 1% w/v of the sample: 6.5 – 7.5 distilled water at 26 +/-2 DegC.

6.9.25. **MMO:** Details of the chemical nature of active ingredients must be provided by the Bidder.

6.9.26. **Linseed Oil**: The material, as received, should be yellow, brownish yellow, coloured clear viscous liquid free from suspended materials and other impurities. Density at 25 degC: 0.9230 – 0.9280, Acid value, mg KOH/gm, maximum: 10.0, Moisture content, % by mass maximum: 0.25, Lubricity Coefficient should not be more than 0.20 in saline water mud. Foam test: The specific gravity of the mud should not be less than 0.8 when 0.5% linseed oil in 7.5% bentonite mud. Refractive Index@ 40° C = 1.4720 to 1.4750

6.9.27. **Mica Flakes:** The material should be in the form of clean and clear flakes free from silica / clays and other impurities Sieve analysis**,** % by mass Amount retained in 5 mesh BSS screen, % by mass, maximum: 2.0, Passing through 52 mesh BSS Screen , % by mass, maximum: 5.00

6.9.28. **Wall Nut / Coconut Shell:** The material, as received, should be coarse ground, with maximum size about 5 mm, free from dirt and foreign matter.

Moisture Content: 15%max,

Sieve Analysis: a. Retain on 8 mesh BSS or its equivalent, % by mass: 52±3

b. Retain on 100 mesh BSS or its equivalent, % by mass, minimum: 95.00

6.9.29. Non-Invasive Fluid (FLC 2000 or equivalent): The material, as received, should be a free flowing creamish / white powder free from foreign matter and visible impurities. The material shall be in the form of powder, free from lumps. Moisture Content, @ 105 ± 2 Deg C % by mass=10(max), pH of 5% solution in distilled water:10(minimum). In sand bed invasion test in saltwater mud, the maximum penetration should not be more than 8.0cm. Other than FLC 2000, if the bidder provides the equivalent chemical, the bidder has to provide the data % active content or %purity.

6.9.30. Polyol (Low Temperature): The material, as received, should be in the form of liquid at 24± 2 degC, free from visible impurities.

pH of 3% (v/v) Sample in 5% (w/v) KCl Solution in Distilled water: 6.0 – 7.5

Iodoform Test for Confirmation of Presence of carbon in Sample: Should be positive.

Cloud Point of 3% (v/v) Sample in 5% (w/v) KCl in Distilled Water, degC: 60-72 deg C.

6.9.31. Potassium Chloride (KCl):

i. Physical Properties: The material should be a lumps free crystalline solid/ free flowing powder and white in colour, free from dirt and foreign matters.
ii. Moisture Content as measured at 105 ± 2 degC % by mass: 10
iii. Matter insoluble in water, % by mass :0.5
iv. Purity as potassium chloride, % by mass: 97

6.9.32. Potassium Formate (HCOOK)

i. Physical State: The material should be a white granular or free flowing lumps free crystalline powder and free from visible impurities.
ii. Specific Gravity at 24 +/- 2 degC: 1.57, Minimum
iii. pH of 5% solution: 7.0-10.0
iv. Purity as potassium formate, % by mass: 98%
v. Chloride as KCl, % by mass.: 0.50 % Maximum

6.9.33. Resinated Lignite:

i. Physical Sate: The material, as received, should be black or brownish coloured free flowing powder, free from lumps and other foreign matter.
ii. Moisture Content, % by mass: 10(Maximum)
iii. Water Soluble Content:70%(minimum)

6.9.34. Sodium Chloride

i. Physical State: The material, as received, should be a white lumps free crystalline salt free from foreign matter and other impurities.

ii. Moisture Content at 140-150degC:10%(Max) by mass
iii. Purity as NaCl: 99% (minimum)
iv. Insoluble matter in water:1%(maximum)

6.9.35. Potassium Sulphate:

Physical Properties: The material shall be in the form of crystalline free flowing salt or powder, free from visible impurities. Should be determined visually.

(ii)Moisture Content at 105 +/-2 DegC, % by mass=10(maximum)

(iii) Matter Insoluble in Water on Dry Basis:

Transfer quickly 20 g of the material and dissolve by stirring in 200 ml of water. Filter the solution through a tared Gooch or sintered glass crucible (G No. 4) and wash the residue with water till the filtrate gives no opalescence with silver nitrate solution. Dry the crucible along with the residue to constant weight at a temperature of 105 to 110degC.

$$\text{Matter insoluble in water, percent by weight} = \frac{100\ W_1}{W2}$$

iv) Calcium as Ca++ on Dry Basis, ppm: 2000 (Maximum)

Dissolve 0.5 gm of the sample in distilled water in 500 ml volumetric flask and make up the volume with distilled water.

Measure Ca++ Content in the above solution using Ion chromatography and report as Ca++ in ppm.

v) Purity as Potassium Sulphate on Dry Basis, percent by mass:96%(Minimum)

Dissolve 0.5 gm of the sample in distilled water in 500 ml volumetric flask and make up the volume with distilled water.

Take 1 ml of this solution and dilute to 100 ml. Run distilled water in a flame photometer and adjust the meter 0.0 reading by adjusting SET. REF.knob. Then run the Standard Potassium solution (4 ppm) and adjust the reading 80 with the help of. SET F.S. knob. Then run the diluted sample and note the reading.

i. Calculation

$$K^+ \text{ (in ppm)} = \frac{\text{(reading x 4(std. potassium soln Reading) x D}}{\text{80(reading of std. potassium solution)}}$$

$$\text{Potassium Chloride content \% by mass} = \frac{K^+ \times 100 \times 174.259}{2 \times 1000 \times M \times 39.096}$$

6.9.36. XC-Polymer/XANVIS/DOUVIS etc

Physical Properties: (i)The material, as received, should be a free-flowing white to creamish / brownish white powder free from foreign matter and visible impurities. Should be determined visually.)

(ii)**Moisture Content**, % by mass, maximum: 10

iii) Dispersibility / Solubility

Should be quickly and easily dispersible in water when sprayed in water taken in a beaker and should not remain floating. 1.00% (w/v) solution of the product in distilled water after mixing in multimixer for 30 minutes should give clean solution without turbidity.

(i) AV, cp: 15 - 25

(ii) 0' gel, lbs/100 ftsq, minimum: 8

(iii) N value at 200 and 100 rpm reading, maximum: 0.40 where 'N' value = 3.32 x log (200rpm reading/100rpm reading)]

iv) Cross Linking Properties

To 500 ml of distilled water, add 5 ml of 3 % (w/v) solution of calcium chloride (fused and analar grade) and to this solution , add 0.5% (w/v) of the sample while stirring in a multimixer. Stir the suspension further for 30 minutes in a multimixer. To this add 2% (w/v) chrome alum powder (LR grade) and stir for additional 10 min. Measure the pH and adjust in the range 8 - 9 with 1N NaOH solution while stirring. Determine the rheological properties of the suspension at 26 +/- 2 degC which should be as under.

i) AV, cp: 40
ii) Yield Value lbs/100 ftsq, minimum : 40
iii) 0' gel, lbs/100 ftsq, minimum : 20
iv) 15' gel, lbs/100 ftsq, minimum: 100

v) Performance test in freshwater mud

Preparation of base mud: Prepare a 0.5 % (w/w) solution of the sample in distilled water by stirring in a multimixer for 30 minutes. Measure the pH and adjust the pH to 8 - 9 with 1N NaOH solution. Add to it 3 % of the OIL approved bentonite powder and stir for 30 minutes. Determine apparent viscosity, yield and API fluid loss of the mud at 26 +/- 2 degC

i) Apparent viscosity, cp : To determine.
ii) Yield value, lbs/100ftsq : To determine.
iii) API Fluid loss, ml : To determine.

Age the treated mud at 100 +/- 2 degC for 18 hrs. in rolling condition. Cool and stir for 15 minutes in a multimixer. Determine apparent viscosity, yield value and API fluid loss at 26 +/- 2 degC which should be as under.

i) Apparent viscosity, cp : Should not decrease.
ii) Yield value, lbs/100ftsq : Should not decrease.
iii) API Fluid loss, ml : Should not increase.

vi) Temperature Stability: Prepare 0.5 % (w/v) solution of the sample in saturated salt water (prepared by dissolving analar grade NaCl in distilled water) by stirring in a multimixer for 30 minutes. Measure the pH and adjust pH to 8 – 9 by 1N NaOH solution. Record apparent viscosity and yield value of suspension at 26 +/- 2 degC.

i) Apparent viscosity, cp : To determine.
ii) Yield value, lbs/100ftsq : To determine.

Age the solution in a roller oven in rolling condition at 120 +/- 2 degC for 18 hrs. Cool and stir for 5 minutes. Measure apparent viscosity and yield value of the solution at 26 +/- 2 degC which should be as under:

i) Apparent viscosity, cp : Should not decrease.
ii) Yield value, lbs/100ftsq : Should not decrease.

6.10 WELL TESTING FLUID INCLUDING BRINE FILTRATION SERVICES AND EQUIPMENT

6.10.1 The bidder shall confirm all the required chemicals to formulate well testing fluid consisting of clear brines up to the range of 15.0 ppg

6.10.2 The bidder shall confirm to provide an experienced completion fluid engineers on call out basis having minimum experience of 3 years and at least of 3 offshore wells of the proposed brines.

6.10.3 In case formate or Bromide Brines are required for testing and completion of well, completion fluid engineer to be deployed for testing/completion should have experience of at least 02 offshore wells with formate or Bromide Brines.

6.10.4 The bidder shall confirm to provide Brine filtration unit to provide clear completion fluid up to 2 microns during well testing. As per well requirement, the filtration control unit along with all the accessories, spares, hoses etc and manpower will be deployed to well site within 30 days of receiving notification from OIL.

6.10.5 The Filtration unit should be designed for easy transportation and be easily disembarked at site for fast commissioning with minimum possible time.

6.10.6 Service tools shall be designed and qualified such that it meets, as a minimum, the applicable Industry (API, ISO, NACE, etc.) standard (if applicable) and / or Industry best practice. In addition, Contractor may be required to demonstrate to OIL that equipment meets or exceeds the technical and functional requirements of the work.

6.10.7 The bidder shall provide any one of the test report such as Systems-Integration Test, Field Trial report, Yard Test report or field history report of Filtration control unit equipment and ancillary equipment (if any) to OIL for OIL's satisfaction confirming tool functionality and performance tests.

6.10.8 The bidder shall notify OIL of any modifications or damage to equipment.

6.10.9 The bidder shall confirm all backup equipment shall be identical to the primary equipment.

6.10.10 The bidder shall agree to provide engineering design and technical analysis for the most effective displacement design and chemicals to acceptable well-testing best practices. The bidder shall agree to provide an engineered and comprehensive procedure for the displacement including chemical recommendations, detailed procedures, QA/QC protocols, etc. for proper execution of the job.

6.10.11 The bidder shall endeavour to provide the most effective chemicals and materials which are environmentally friendly for well testing.

6.11 DUAL POD FILTRATION UNIT

Provision to be kept by the Contractor for supply of Dual pod Brine filtration unit (Duplex with cartridge) on call out basis along with personnel. The specification of Dual pod Brine filtration unit (Duplex with cartridge) are as below:

a) Bag type Filter unit – for upstream coarse filtration.

b) Cartridge type filter unit for filtration brine up to 2 microns.

c) Filter Housing- Designed as per ASME Sec VII Division I

d) Vessel material- Stainless Steel 316 grade

e) Swing type eye bolts along with davit pipe help easy opening of the filter housing for quick changing of filter cartridge.

f) Filter Media - Polypropylene pleated cartridge

g) Construction- 304/316 Stainless Steel constructions, 10-18 bbl/min/vessel flow capacity approx., 52 pleated PP cartridges per vessels, 78 Sq. m (840 Sq. ft) filtration area per vessel.

h) 4" inlet/outlet Series & Parallel piping work suitable for 10 bar operation

i) Dimension – Approx. 2.75m/1.3m/2.35m height/1900 kg

Tentative Consumable for filtration unit: (bags & cartridge as given below).

The consumables mentioned below are indicative only. Contractor to maintain enough consumables so that operations are not hampered.

a) Filter bag type 40 Micron - 1000 no
b) Filter Bag type 25 Micron – 1000 no.
c) Filter Cartridge Type 10 Microns – 1000 no.
d) Filter Cartridge Type 5 Microns – 1000 no.
e) Filter Cartridge Type 2 Micron - 1000 no.

Note: The quantities specified above for filter bags and cartridges were provided as indicative numbers solely for the evaluation of bids from various bidders. Actual requirements may vary depending on the specific operational needs of the well.

6.11.1 The contractor shall provide Dual Pod Filtration Unit for the Rig under testing and completion to provide clean brine up to 2 microns. Contractor shall provide equipment including hoses and connections etc. to conduct brine filtration services.

6.11.2 The filtration shall be skid based and suitable for offshore services.

6.11.3 Minimum functional and technical requirements are Ability to filter brine to a turbidity of less than 25 NTU.

6.11.4 OIL requires filtration rates of 12 BPM or higher via cartridge filter pod system.

6.11.5 System shall be plumbed to allow dual cartridge filter pod system to operate to provide continuous brine filtration service.

6.11.6 All brine wetted metallic surface shall be made of stainless steel.

6.11.7 Cartridge filter pod unit shall be equipped with functional pressure gauges (minimum of 4” face) and rated to no higher than 250 psi; gauges shall be fitted upstream and downstream of the filters.

6.11.8 The cartridge filters shall be absolute (Beta 5000) rated.

6.11.9 Any bypass around the cartridge filters shall be equipped with a valve and a means of securing that valve in the “closed” position (i.e., lock-out / tag-out) to prevent inadvertent opening of the bypass.

6.11.10 Contractor shall ensure consumables are packaged, shipped and stored in such a way to avoid damage (if used). Consumables shall be shipped offshore in a closed shipping container with rain-and splash-proof roof and sides.

6.11.11 All skids should be certified by DNV or other reputed third-party inspection agency to meet all safety standards for offshore operations.

6.11.12 All filtration equipment supplied by Contractor shall be either new or refurbished equipment redressed with new parts/ components (e.g., screen cloth and rubber seal). For refurbished equipment, date and details of parts/components replaced is to be submitted. All hoses shall be new.

6.11.13 Contractor shall supply QA/QC equipment for measurement and analysis of fluid cleanliness.

6.11.14 Contractor shall provide engineering design and technical analysis for the most effective completion fluid design and chemicals to maintain appropriate hydrostatic pressure and avoid formation damage and inculcate completion best practices. The Contractor shall provide an engineered and comprehensive procedure for the completion fluid design including, detailed procedures, QA/QC protocols, etc. for proper execution of the job.

6.12 FILTRATION CONTROL UNIT PERSONNEL

6.12.1 OIL requires qualified, competent, and experienced filtration control unit personnel (one Filtration unit Supervisor and one Filtration unit Technician) on call out basis.

6.12.2 The Filtration unit Supervisor and Filtration unit Technician shall have at least five (5) years of relevant experience at a time on call out basis. The Filtration unit Supervisor must have experience of working in offshore rig.

6.13 CENTRIFUGE UNITS

The bidder shall provide centrifuge units for removal of low gravity solids and for barite recovery simultaneously.

6.13.1 Centrifuge shall be provided by the Contractor along with the power requirement and motor HP for running this facility. The Electrical equipment must have Test Report of flame-proofness conforming to the relevant standards IECEx accredited laboratory or ATEX notified body, which is not a part of manufacturer's facility for use in Drilling well. OIL will only provide necessary assistance of Crane Services for installation (rig-up) of Centrifuge and Dismantling (rig-down) of same in the location. However, the Contractor will have sole responsibility for installation, operation & maintenance of Centrifuge along with the spares.

6.13.2 The Contractor shall provide/ bring necessary spares, platform for mounting the Centrifuge along with all required piping.

6.13.3 Centrifuge must be compatible with supplied mud system and as per its requirement.

Specifications:

Two Nos of Centrifuges each capable of handling 250 GPM of mud, one to act as a Barites recovery unit and the other to remove low gravity solids.

- Bowl size – 14 inch to 18 inch

- Bowl speed (rpm) – 3000 or more (variable)
- Feed Volume – Up to 245 GPM
- Speed variation will be integral to the centrifuge unit and must not require any mechanical intervention such as belt changes. All equipment to be rated for Zone-1 use.
- The centrifuge package should include all controls and accessories including working platform.

6.14 PERSONNEL SAFETY, HEALTH & ENVIRONMENT

The Bidder shall provide appropriate Personal Protective Equipment (PPE) and work clothing for all its Personnel at the drilling location. The Company requires that all personnel at the drilling location should be furnished as a minimum with:

a) Safety Helmet
b) Safety Boots
c) Coveralls
d) Wet Weather Gear
e) Protective Gloves
f) Hearing Protection
g) Eye Protection

6.15 Contractors shall provide the Material Safety Data Sheets (MSDS) with respect to all the chemicals proposed to be used in the contract.

6.16 Contractor shall ensure safe conditions and methods of work and maintain the same throughout the period of Contract.

6.17 Contractor shall comply with the applicable environmental laws, regulations and practices, and is required to perform work so as to minimize the generation of hazardous waste to the extent technically feasible.

6.18 The Contractor shall:

(a) Make available for inspection by OIL upon request all registers, records and any other documentation on environmental aspects of the activities being carried out or on the environmental management system implemented by the Contractor.

(b) Responsible for disposing of left over mud/brine in accordance with all local requirements as per Kerala Pollution Control Board and for activities conducted offshore as per MOEF&CC guideline.

6.19 Contractor is required to maintain a logbook wherein waste generated for the mud systems and subsequent disposal is recorded.

7. LEFTOVER CHEMICALS AND ADDITIVES

7.1 At the end of the contract period, Contractor must take back the leftover/unused chemicals and additives from Rig site within 15days and from Company's designated Shore Base within 30days from the date of intimation about the same at its own cost. If due to any reason leftover/unused chemicals and additives are not lifted from OIL's Shore Base at Kollam/Kochi and from the Rig site, the contractor will be liable to pay penalty charges @Rs10,000/day.

7.2 Containers belonging to the Contractor used to transport material to the rig shall be returned to the Contractor. All unused / leftover chemicals and additives on rigs shall be transported back from the rig to Company's Shore Base at Kollam/Kochi by OIL.

7.3 It would be the responsibility of the Contractor to re-export or dispose of as deemed fit, as per existing regulations, the leftover chemicals, and additives within 60 days after the completion / expiry of the Contract under intimation to OIL.

7.4 It would be the responsibility of the Contractor to dispose of all the empty barrels/empty chemical bags/Carboys/empty IBC/used filter cartridges brought from the site.

7.5 Once Barite (Sp Gravity ≥4.15) is being taken into Silos after cutting the bags, Barite will be treated as consumed. All opened bags and Drums for chemicals and additives will also be treated as consumed.

7.6 OIL shall not buy back any leftover Chemicals (partially used or unused) from the contractor at any cost at any time and Contractor shall take back all the partially used and unused chemicals from Company's shore base/Rig site after completion of contract.

7.7 Payment to the contractor will be made based on actual consumption of chemicals. OIL shall not buy back any leftover chemicals from the contractor at the end of contract.

8. OBLIGATION OF BIDDER:

8.1 Bidder shall provide competent, qualified, and sufficiently experienced personnel to perform the work correctly and efficiently.

8.2 The bidder shall ensure that their personnel observe all statutory safety requirements including those prescribed by the Company. Upon Company's written request, Contractor, entirely at its own expense, shall remove immediately any personnel of the Contractor determined by the Company to be unsuitable and shall promptly replace such personnel with personnel acceptable to the Company.

8.3 The bidder shall remove and replace such employees at their expense within 15 days if replaced by National Crew and 30 days if replaced by Expatriate from the time of such instruction given by the Company. If no replacement has been provided within this time the company shall reduce the daily rate by 50% until such replacement has been provided.

8.4 Bidder shall provide all requirements of their personnel including but not limited to, their transportation upto helicopter base at Kollam, enroute/local boarding, lodging, personal protective gear & medical attention etc. Company shall have no responsibility or liability in this regard.

8.5 The bidder's personnel shall be fluent in English language (both writing and speaking).

8.6 The bidder shall provide round-the-clock Drilling Fluid engineering services by deploying two mud engineers to the rig each having 12 hours duty pattern, who are familiar with the proposed mud systems as per requirement. The Personnel should also have experienced in deep water drilling areas prone to overpressure, lost circulation and reactive clays.

8.7 Personnel supplied by the contractor must be approved by the Company in writing prior to the commencement of the contract. The Contractor shall submit detailed curriculum vitae for all personnel proposed for the contract.

8.8 The Bidder shall submit CVs of the personnel to the company within 30 days of issue of letter of award or 45 days prior to commencement of contract (whichever later) for-Company's approval. The Bidder shall not deploy its personnel unless cleared by the Company.

8.9 Personnel must be fully experienced in monitoring and maintaining the proposed drilling mud under all the anticipated drilling conditions at the drilling location.

8.10 Personnel will continuously monitor mud chemical concentrations and discharges and their potential environmental impact.

8.11 Personnel will continuously monitor mud properties, treatments, pit and hole volumes, mud losses to hole and at surface, mud losses to solids control equipment, and report these on a Daily Mud Report or when requested by the Company.

8.12 Personnel will monitor and endeavour to optimise all solids-control equipment operating efficiencies. They shall also ensure that all necessary and appropriate spares and consumables are available and advise the service provider in advance for any deficiencies.

8.13 Post award of contract, the contractor shall submit to Company the resume of the personnel, for its approval, to be deployed showing the Academic and Technical qualifications, offshore safety training, and mud engineering related experience. The Company reserves the right to accept or reject any personnel proposed by the Contractor.

NAME:
NATIONALITY:
DATE AND PLACE OF BIRTH:

PASSPORT NO AND VALIDITY: (Wherever applicable) POSITION:
QUALIFICATIONS: (Academic and Technical)
SAFETY TRAINING:
WORKING EXPERIENCE*: (Experience in KCl/K2SO4-Poly amine water base mud system or Synthetic Oil Base Mud System in offshore wells:
NUMBER OF WELLS WITH DETAILS:
Remarks: Indian laws require all foreign nationals to have a Business Visa (work permit) to work in the country. Also, there are restrictions on citizens of certain countries being able to work Offshore. Contractors are advised to check-up with the concerned authorities prior to selecting their crew personnel.

9. HAZARDOUS/NON-HAZARDOUS WASTE

The contractor shall be responsible for the transportation, storage, and disposal of all types of wastes (Hazardous and Non-Hazardous) generated, ensuring compliance with oil industry standards, applicable legislation, and best practices. The contractor must obtain all necessary approvals and licenses from statutory agencies for waste handling, storage, and disposal. The disposal of hazardous brine (Calcium Bromide brine) shall be carried out by the contractor at OIL's cost, ensuring compliance with environmental regulations and industry standards through contractor or sub-contractor's TSDF facility.

Contractor shall be liable for the storage, handling, transportation (on land), manifest and disposal through authorised agency of any spent or used chemicals or other hazardous waste included in the scope of Bundle Services under Shore Base Services **(Exhibit 16).**

ANNEXURE-1

SCHEDULE OF RESPONSIBILITY FOR MATERIALS AND SERVICES

DESCRIPTION	PROVIDED BY		AT COST OF	
	Contractor	Company	Contractor	Company
1. Transportation of chemicals up to Shore Base at Kollam Kerala	X		X	
2. Transportation of chemicals from Shore Base at Kollam Kerala to the Drilling Location	X		X	
3. Provide access to utilize the Rig equipment required for preparation of drilling fluids.		X		X
4. Manpower required for assisting in preparation and handling of drilling fluids: a) Mud Engineers b) Operations Co-ordinator. c) Administrative and Logistics Support Staff	X		X	
d) Roustabouts		X		X
5. Transportation of Contractor's personnel from Heli base to rig and back		X		X
6. Laboratory equipment Required on rig for Determination of mud Parameters	X		X	
7. Accommodation of Contractor's personnel on Rig		X		X
8. Accommodation of Contractor's personnel on Shore	X		X	
9.Mud Lab Container		X		X

10) SURFACE WELLHEADS AND 30" CONDUCTOR PIPE

Company requires a surface wellhead system and 30" conductor designed for use with a jack-up rig. The wellhead must accommodate a casing policy of 30" x 20" x 16" liner x 13-3/8" x 9-5/8" x 7" (7" could be a casing or 7" liner to be tied back to surface) as described elsewhere in this document. The following requirements are mandatory:

(a) The wellhead supplier to depute one service engineer who has knowledge of the wellhead.

(b) The design, material, welding, quality control (including factory acceptance testing), marking, storing, shipping including handling, testing and installing of surface wellhead system shall conform with API-Spec-6A latest edition. All wellhead equipment must be API monogrammed.

(c) All equipment shall be designed and constructed for a design life of minimum fifteen (15) years.

GENERAL

(a) Housing/spool details for section A, B, C, D and E is provided below:

Section		**Size & Pressure Rating**	**Temp. Class**
A	Casing Bowl	Casing Head Housing 20¾" X 3000 PSI Top Flange - 20" Slip on Weld Type	U
B	DSDPO	Double Studded Double Pack Off Adapter Flange, 16¾" X 5000 PSI (Top Flange) - 20¾" X 3000 Psi (Bottom Flange)	U
C	Well head spool	Spool API 13⅝" X 10,000 PSI Top Flange - API 16¾" X 5000 PSI Bottom Flange	U
D	Well head spool	Spool API 11" X 10,000 PSI Top Flange - API 13⅝" X 10,000 PSI Bottom Flange	U
E	Well head spool	Spool API 7-1/16" X 10,000 PSI Top Flange - API 11" X 10,000 PSI Bottom Flange	U

Section 1: WELLHEAD EQUIPMENT

SPECIFICATION OF THE ITEM

Material Description, Quantity 2 Sets

A. CASING HEAD HOUSING 20¾" X 3000 PSI TOP FLANGE - 20" SLIP ON TYPE, AS PER API SPECN. 6A (latest edition) - API MONOGRAMMED.

20" Slip on type Casing Head housing (to be welded with 20", 133 ppf, X-56 casing with Multi start thread connectors) and an API Top flange of 20¾" [527.1 mm] x 3000 W.P. with API ring groove of **RX-74** having two nos. of 50.8 MM (2 inches) x 3000 psi API L.P. female side outlets in opposite direction but in the same horizontal plane. The top flange should have preparation for hanger packer mechanism **(Slip & Seal Assembly) to pack and hang 13⅜" OD casing**. Height of the housing spool from bottom flange to top flange should be 20" (+/- 1"). Dimensions, metallurgy & pressure Rating should confirm to API spec.

Material Class: AA [General service].
Temperature Class: U (-18 to 121 °C)
Production Service Level: PSL-2 (Gas well, working pressure 3,000 PSI)
PR Certification: PR-1

The following accessories are also to be provided along with the 20¾" slip-on Type Casing Head Housings:

I) One Number combination BOP Test Plug and Wear Bushing R/R tool, having top connection as NC-50 Box up and bottom connection as NC-50 Pin down with two sets of extra seals

II) Compatible Casing Hanger to hold/hang and seal 13⅜" OD, P-110, 68 ppf API Casing in the 20¾" x 3000 psi Top flange.

Manufactured as per API Specification 6A (latest edition), Minimum Load Rating: **500,000 Lbs**.

III) Ring Joint Gasket (RX-74) – Pressure energised for use on type 6B flanges as per API SPECN. 6A – 02 (TWO) Numbers

IV) Two sets of the requisite number of studs and bolts are to be supplied along with the casing head housing for each flange as applicable.

V) Bull Plug 2" LP x 6" long x 3M with ½" NPT female thread preparation – 2 nos

VI) ½" NPT plug – 1 no.

VII) Nipple 2" LP male connection at each end x 6" Long x 3M – 2 nos

VIII) Gate valve 2-1/16" x 3000 psi W.P. with 2" LP Female connections – 2 nos.

IX) Pressure gauge 6" face, 0 - 3000 psi, 1/2" NPT thread – 2nos

X) Valve, needle angle, 1/2" NPT male thread - 2nos

XI) Wear Bushing compatible with wellhead – 1 no

XII) 2" LP nipple (male) prepared for 1502 WECO Female Hammer Union connection on one end – 1 no.

NOTE (1): Slip and Seal Assembly and Plug Tester should be in the following ratio with the Casing Head Housing (20¾"):

Slip and Seal Assembly: 1:1
Plug Tester: 1:1

NOTE (2): *16", 84ppf, VM110SS-D liner with liner hanger system and Under Reamer as 17 ½ x 20" & 14 ½/ 14 ¾" x 17½" will be lowered through the housing.*

B. DOUBLE STUDDED DOUBLE PACK OFF ADAPTER FLANGE, 16¾" X 5000 PSI TOP FLANGE - 20¾" X 3000 PSI BOOTOM FLANGE AS PER API SPECN. 6A (latest edition) - API MONOGRAMMED.

Double Studded Double Pack Off Adapter Flange having Top flange of API **16¾" 5000 W.P**. with API ring groove of **BX-162** and Bottom flange of API **20¾" X 3000 W.P.** with API ring groove of **RX-74** with dual annular seal (self-energized) and testing ports. The top and bottom flange should have preparation to **pack off 13⅜" OD casing** with two molded elastomer P-seals or equivalent (self-energized) to pack off 13⅜" OD API casing.

Dimensions, metallurgy & pressure Rating should confirm to API spec. 6A (Latest Edition) (PSL-2, U, BB)

Material Class: BB [General service]
Temperature Class: U (-18 to 121 °C)
Production Service Level: PSL-2 (Gas well, working pressure 5,000 PSI)
PR Certification: PR-1

The following accessories are also to be provided along with the double studded double pack off adapter flanges:

I) Testing port: Flanges must have testing ports for pressure testing purposes (Testing port facilities should include requisite port Valves installed).

II) Ring Joint Gasket (RX-74) – Pressure energised for use on type 6B flanges as per API SPECN. 6A – 02 (TWO) Numbers.

III) Ring Joint Gasket (BX-162) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

IV) Two sets of the requisite number of studs and bolts to be supplied along with the Double Studded Double Pack Off Adapter Flanges for each flange as applicable.

V) Each of the Double Studded Double Pack Off Adapter Flanges should be supplied complete with self-energised pack-off seals (as specified against each of the items).

VI) Ring Grooves of all Double Studded Double Pack Off Adapter Flange should be either stainless Steel or Inclo 625 lined.

C. SPOOL API 13⅝" X 10,000 PSI TOP FLANGE -- API 16¾" X 5000 PSI BOTTOM FLANGE, AS PER API SPECN.6A (latest edition) – API MONOGRAMMED

Casing Spool having a bottom flange of API **16¾" X 5000** psi W.P. with an API ring groove of **BX-162** and a top flange of API **13⅝" X 10,000** psi W.P. with an API ring groove of **BX-159** having two nos. of 77.79 MM (3.1/16 inches) x 10000 psi flanged side outlets with API ring groove **BX-154** in the opposite direction but in the same horizontal plane. The Side outlets should be prepared for VR threads as per API SPECN 6A (latest edition). The bottom flange should have preparation for System Pressure Energized FS or Equivalent Casing Seal rated up to 5000 psi to **pack off 13⅜" OD casing**. Flange should have a packing arrangement & testing port. The top flange should have preparation for hanger packer mechanism (Slip & Seal Assembly) to **pack & hang 9⅝" OD casing**. The height of the spool from bottom flange to top flange should be 26" (+/- 2"). The Spool should have a suitable bit pilot for 13⅜" OD casing at the bottom and to pass 12¼" bit through it. Dimensions, metallurgy & pressure rating should confirm to API spec. 6A (Latest Edition) (PSL-3G, U, BB)

Material Class: BB: General service
Temperature Class: U (-18 to 121 °C)
Production Service Level: PSL-3G (Gas well, working pressure 10,000 PSI)
PR Certification: PR-1

The following accessories are also to be provided along with the Casing Spools:

I) One Number combination BOP Test Plug and Wear Bushing R/R tool, having top connection as NC-50 Box up and bottom connection as NC-50 Pin down with two sets of extra seals.

II) Compatible Casing Hanger to hold/hang and seal 9⅝" OD, P110, 53.5 ppf API Casing in the 13⅝" x 10,000 psi Top flange.

Manufactured as per API Specification 6A (latest edition), Minimum Load Rating: **500,000 Lbs**.

III) Ring Joint Gasket (BX-162) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

IV) Ring Joint Gasket (BX-159) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

V) Ring Joint Gasket (BX-154) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 08 (EIGHT) Numbers.

VI) Two sets of the requisite number of studs and bolts are to be supplied along with the Casing Spool for each flange as applicable.

VII) Two sets of the requisite number of studs and bolts are to be supplied along with the Casing Spool for the installation of 2 gate valves on one side outlet and one gate valve on the other side outlet and to fix one companion and blind flange on each end.

VIII) The bottom flange should be provided complete with self-energised pack-off seals (as specified against each of the items).

IX) Gate valves 3-1/16" x 10,000 psi – 3 nos

X) Wear Bushing suitable for the casing spool – 1 no.

XI) Blind flange, 3-1/16"-10,000 psi WP, tapped 9/16" autoclave provided with autoclave valve – 1 no.

XII) 9/16" x 10,000 psi Autoclave valve to suit above blind flange – 1 no

XIII) 9/16" Autoclave plug -1 no

XIV) Pressure Gauge 0 – 10,000 psi, 6"/4" face tapped for male autoclave bottom connection – 1 no.

XV) Companion Flange 3-1/16" x 10,000psi with 2" LP Female connection– 1 no.

XVI) 2" LP nipple (male) prepared for 1502 WECO Female Hammer Union connection on one end – 1 no.

XVII) VR plug to suit VR threads preparation in the spool -1 no.

NOTE: The Slip Seal Assembly and Plug Tester should be in the following ratio with the Casing Spool:

Slip and Seal Assembly: 1:1
Plug Tester: 1:1

D. SPOOL API 11" X 10,000 psi TOP FLANGE -- API 13⅝" X 10,000 psi BOTTOM FLANGE, AS PER API SPEC-6A (latest edition) - API MONOGRAMMED.

Casing Spool having a bottom flange of API **13⅝" X 10,000** psi W.P. with an API ring groove of **BX-159** and a top flange of API **11" X 10,000** psi with an API ring groove of **BX-158** having two nos. of 77.79 MM (3.1/16 inches) x 10000 psi flanged side outlets with API ring groove **BX-154** in the opposite direction but in the same horizontal plane. The Side outlets should be prepared for VR threads as per API SPECN 6A (latest edition). The bottom flange should have preparation for System Pressure Energized FS or Equivalent Casing Seal rated up to 10000 psi to **pack off 9⅝" OD** casing. Flange should have a packing arrangement & testing port. The top flange should have preparation for hanger packer mechanism (Slip & Seal Assembly) to **pack & hang 7" OD casing**. The height of the spool from bottom flange to top flange should be 26" (+/- 2"). The Spool should have a suitable bit pilot for 9⅝"OD casing at the bottom and to pass 8½" bit through it. Dimensions, metallurgy & pressure rating should confirm to API spec. 6A (Latest Edition) (PSL-3G, U, BB)

Material Class: BB [General service]
Temperature Class: U (-18 to 121 °C)
Production Service Level: PSL-3G (Gas well, working pressure 10,000 PSI)
PR Certification: PR-1

The following accessories are also to be provided along with the Casing Spools:

I) One Number combination BOP Test Plug and Wear Bushing R/R tool, having top connection as NC-50 Box up and bottom connection as NC-50 Pin down with two sets of extra seals.

II) Compatible Casing Hanger to hold/hang and seal 7" OD, P110, 32 ppf API Casing in the 11" x 10,000 psi Top flange.

Manufactured as per API Specification 6A (latest edition), Minimum Load Rating: **500,000 Lbs**.

III) Ring Joint Gasket (BX-159) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

IV) Ring Joint Gasket (BX-158) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

V) Ring Joint Gasket (BX-154) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 08 (EIGHT) Numbers.

VI) Two sets of the requisite number of studs and bolts are to be supplied along with the Casing Spool for each flange as applicable.

VII) Two sets of the requisite number of studs and bolts are to be supplied along with the Casing Spool for the installation of 2 gate valves on one side outlet and one gate valve on the other side outlet and to fix one companion and blind flange on each end.

VIII) The bottom flange should be provided complete with self-energised pack-off seals (as specified against each of the items).

IX) Gate valves 3-1/16" x 10,000 psi – 3 nos

X) Wear Bushing suitable for the casing spool – 1 no.

XI) Blind flange, 3-1/16"-10,000 psi WP, tapped 9/16" autoclave provided with autoclave valve – 1 no.

XII) 9/16" x 10,000 psi Autoclave valve to suit above blind flange – 1 no

XIII) 9/16" Autoclave plug -1 no

XIV) Pressure Gauge 0 – 10,000 psi, 6"/4" face tapped for male autoclave bottom connection – 1 no.

XV) Companion Flange 3-1/16" x 10,000psi with 2" LP Female connection– 1 no.

XVI) 2" LP nipple (male) prepared for 1502 WECO Female Hammer Union connection on one end – 1 no.

XVII) VR plug to suit VR threads preparation in the spool -1 no.

NOTE: The Slip Seal Assembly and Plug Tester should be in the following ratio with the Casing Spool:

Slip and Seal Assembly: 1:1
Plug Tester: 1:1

E. SPOOL API 7-1/16”" X 10,000 psi TOP FLANGE -- API 11" X 10,000 psi BOTTOM FLANGE, AS PER API SPEC-6A (latest edition) - API MONOGRAMMED.

Casing Spool having a bottom flange of API **11" X 10,000** psi W.P. with an API ring groove of **BX-158** and a top flange of API **7-1/16" X 10,000** psi with an API ring groove of **BX-156** having two nos. of 77.79 MM (3.1/16 inches) x 10000 psi flanged side outlets with API ring groove **BX-154** in the opposite direction but in the same horizontal plane. The Side outlets should be prepared for VR threads as per API SPECN 6A (latest edition). The bottom flange should have preparation for System Pressure Energized FS or Equivalent Casing Seal rated up to 10000 psi to **pack off 7" OD** casing. Flange should have a packing arrangement & testing port. The height of the spool from bottom flange to top flange should be 26" (+/- 2"). The Spool should have a suitable bit pilot for 7"OD casing at the bottom and to pass 5-7/8" bit through it. Dimensions, metallurgy & pressure rating should confirm to API spec. 6A (Latest Edition) (PSL-3G, U, BB)

Material Class: BB [General service]
Temperature Class: U (-18 to 121 °C)
Production Service Level: PSL-3G (Gas well, working pressure 10,000 PSI)
PR Certification: PR-1

The following accessories are also to be provided along with the Casing Spools:

I) One Number combination BOP Test Plug and Wear Bushing R/R tool, having top connection as NC-50 Box up and bottom connection as NC-50 Pin down with two sets of extra seals.

Manufactured as per API Specification 6A (latest edition), Minimum Load Rating: **500,000 Lbs**.

II) Ring Joint Gasket (BX-158) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

III) Ring Joint Gasket (BX-156) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 02 (TWO) Numbers.

IV) Ring Joint Gasket (BX-154) – Pressure energised for use on type 6BX flanges as per API SPECN. 6A – 08 (EIGHT) Numbers.

V) Two sets of the requisite number of studs and bolts are to be supplied along with the Casing Spool for each flange as applicable.

VI) Two sets of the requisite number of studs and bolts are to be supplied along with the Casing Spool for the installation of 2 gate valves on one side

outlet and one gate valve on the other side outlet and to fix one companion and blind flange on each end.

VII) The bottom flange should be complete with self-energised pack-off seals (as specified against each of the items).

VIII) Gate valves 3-1/16" x 10,000 psi – 3 nos

IX) Wear Bushing suitable for the casing spool – 1 no.

X) Blind flange, 3-1/16"-10,000 psi WP, tapped 9/16" autoclave provided with autoclave valve – 1 no.

XI) 9/16" x 10,000 psi Autoclave valve to suit above blind flange – 1 no

XII) 9/16" Autoclave plug -1 no

XIII) Pressure Gauge 0 – 10,000 psi, 6"/4" face tapped for male autoclave bottom connection – 1 no.

XIV) Companion Flange 3-1/16" x 10,000psi with 2" LP Female connection– 1 no.

XV) 2" LP nipple (male) prepared for 1502 WECO Female Hammer Union connection on one end – 1 no.

XVI) VR plug to suit VR threads preparation in the spool -1 no.

NOTE: The Plug Tester should be in the following ratio with the Casing Spool:

Plug Tester: 1:1

A. SPECIAL NOTES

Items shall be brand new, unused and of prime quality.

1) Requisite number of studs, bolts and seal rings to be supplied along with housing and spools for each stack (total 2 sets)

2) Marking of the items shall be done as per API specification 6A latest edition including **API monogram**.

3) Ring Grooves of the casing head housing and all casing spools should be either **stainless steel or Inclo 625 lined**.

4) The studs and nuts of the casing head housing and all spools should be either **cadmium-plated or Zinc plated or Xylan coating**.

5) Each of the spools should be complete with pack-off seals (as specified against each of the items).

Section 2: 30" CONDUCTOR WITH MULTI-START CONNECTORS

No.	Item Description	Qty
1	30" Conductor Wall Thickness 1" Grade X-52 or X-56 with suitable Multi Start connector (Leopard SD or equivalent) Box up x Pin down protected with thread protector, Range R-3 and with necessary and spare O-Rings and 2 each of Tab shearing tools. Note: 3 numbers of conductors joints to be provided welded with 30" Stab-in Weldon type Float Shoe (Shoe to be taken from S. No. 1 of the Casing Accessories Scope and welded to the conductor). Top of the Float shoe joint to be a Multi Start Box connector to be run with other conductors)	48 joints

Section 3: Personnel

Contractor shall provide the following personnel on Call Out or 28 days on – 28 days off basis:

4.1 One experienced, qualified English-speaking Wellhead service engineer is to be stationed on the rig or at Company's shore base facility for equipment preparation and maintenance. He must have minimum 5 years of experience in providing similar services for the proposed surface wellhead including the wellhead installation / retrieval.

4.2 The proposed service engineer must be fully conversant with the equipment and should be able to check, redress and rectify such defects which are field rectifiable and test the equipment whenever necessary. He shall carry out jobs, but not limited to, as follows:

a) Prepare, dress the wellhead as per Companies requirement. Nipple up / nipple down and supervise the landing of the wellhead and to assist in the BOP tests at each casing point and as and when necessary.

b) Provide handling tools and spare parts in good and workable condition.

c) To provide routine maintenance of handling tools and repair them on drilling unit/Company's storage facility whenever necessary.

d) To perform any other related services normally provided within Contractor's capability which company may reasonably request.

11) WELL TESTING SERVICES, SURFACE AND DOWNHOLE TOOLS

1. SCOPE OF WORK:

OIL would like to hire Surface production testing (SPT), Tubing Conveyed Perforation (TCP), Drill Stem Testing, Well activation services & Slickline Services from Bidder to undertake operations in 1 (one) exploratory offshore drilling wells with an optional testing of another one exploratory drilling well in Kerala Konkan basin utilizing a Jack-Up rig. The quantum of job may vary depending upon the result of wire line logs.

The Bidder shall provide complete Production Testing Surface equipment (along with tools & accessories), Drill Stem Test equipment, Tubing Conveyed Perforation equipment and compatible X-overs suitable for well conditions along with operating crew to carry out production testing of the offshore wells. The Bidder shall provide the necessary documentation and equipment details as required by the Rig's Warranty Surveyor to get the same vetted and for the acceptance of equipment and their placement on deck, cooling requirements etc. The Bidder shall be responsible for ensuring that all the equipment provided satisfies Warranty Surveyors requirements/acceptance. If required, the bidder will be responsible for replacing the equipment to satisfy Warranty surveyor's requirements at no additional costs.

Any certification required by the Rig Service provider for onboarding the equipment on Rig, the service provider shall comply the requirement without any additional cost implication to company.

For well test package vetting, following activities would be required:

Package on Rig:

a) Submission of all documents stated in Warranty Surveyor's Memo on Well testing by the Well test service provider.

   i. Well Test Design Report including Process P&ID & Layouts
   ii. Flaring Simulation Report to determine cooling package requirements.

b) Layout review to check the loading on the rig to ensure sufficient structural strength (Rig service provider's responsibility).

c) Sea fastening Study by 3rd party to design adequate securing for all well test equipment, using 17deg list condition with an additional 10deg static angle applied to reflect inertial forces due to rig motions in the damage condition.

d) Sourcing of AR-AFFF Foam Monitors for firefighting.

e) Staging of all equipment at an onshore location for warranty Surveyor inspection prior to shipping, including certificates.

f) Offshore Inspection and Testing by warranty Surveyor after installation

A few key notes for Well Test service provider related to the above requirement:

a) Equipment must be Maritime Standard, i.e. Class society design compliant.

b) Equipment Certification by Classification Society must be up to date, i.e. inspection & testing records.

c) Ex Inspection compliance.

d) Well Test F&G Detection and ESD shall be tied into the rig RCS for notification and shut down. ESD valves must be fire rated.

e) Layout must consider adequate escape ways.

f) If any Methanol use is planned, special storing and handling from the arrival onboard and throughout operations is required.

g) All connections to rig equipment (i.e. choke manifold) must have minimum double block & bleed isolations installed

The details of Work / Services to be performed under the Contract are explained in the subsequent paragraphs.

The maximum anticipated flow rates for oil and gas during well testing is expected to be 1MMSCMCD gas and 400m^3/day oil.

1.1. SURFACE PRODUCTION TESTING (SPT) SERVICES:

The surface production testing equipment shall be capable of effectively deal with formation fluids produced during production testing. The production testing service shall consist of following:

a) Service of surface equipment like Flow head, choke manifold, oil and gas separator with oil and gas flow meter, pumps, heat exchangers, vertical surge tank, automatic remote controlled surface safety valves, adequate surface flow lines, temperature/pressure and flow measurement, Data acquisition facilities, ESD systems, spares and any other materials required to perform production testing services with an objective to deliver the followings:

   i) Flow rate data acquisition.

   ii) Reservoir pressure & temperature survey and analysis

   iii) Representative reservoir fluid collection and fluid sample analysis, compositional analysis and PVT analysis (Two PVT samples per Zone).

iv) To overcome operational complications such as hydrate formation, paraffin problem, sand incursion etc.

v) Well deliverability, AOFP-for gas wells, skin, permeability, reservoir boundaries (presence of faults, oil-water contacts) etc. Hydrocarbon In-place estimates.

vi) Fluid Analysis:

(i) Onsite fluid analysis and Tests as applicable on Oil / Gas samples should include:

- Density / Specific gravity / Deg API
- pH
- Water Salinity
- Pour Point
- BS&W
- GC up to at least C6+
- Measurement of Hydrogen Sulphide (H_2S) & Carbon Dioxide (CO_2) by Draeger tubes

(ii) PVT Samples: The analysis of PVT samples to determine the following parameters:

- Saturation Pressure (Bubble point / Dew point)
- Oil/Gas compressibility.
- Fluid density at bubble point / dew point and Reservoir conditions
- Constant composition expansion
- Flash GOR, molecular mass (sp. gravity)
- Stock tank oil / condensate density, composition up to C36, molecular mass.
- Flash Gas composition up to C12 and Z factor determination
- Reservoir fluid composition up to C36
- Stock tank and reservoir oil / condensate & gas viscosity.

vii) Phase Diagram construction

viii) Final Well Test Analysis Report preparation & submission.

b) Production Testing Manpower for (i) Pre Job planning and post job management (ii) Hydraulic testing (iii) Flow initialization and testing (iv) Operation and maintenance of surface equipment (v) Relief valve

calibration (vi) Sample collection and analysis (vii) Trouble shooting and (viii) System Inspection (ix) Test data interpretation (x) preparation of daily & post operation reports and (xi) Any other services required to ensure standard international practices for Production Testing operation.

c) To rig up setup for Production Testing tool/equipment, piping line-up for burner boom, equipment servicing and testing, spare part stock etc. at Company's well site.

d) Documentation to be provided may include but not limited to equipment certification, inventory report, recent pressure test chart, relief valve calibration report, P&I and lay out drawings, operating procedures and post job report.

e) Details of equipment & manpower to be deployed for well testing are enumerated under Annexure I & II respectively.

f) To flare produced hydrocarbons using burner booms & burner heads (Provided by Rig contractor).

g) Any water production shall be routed overboard.

1.2. WELL ACTIVATION SERVICES

After perforation, if the well does not displace its own, services of NITROGEN PUMPING UNIT (NPU) will be required to activate the well. The Bidder shall provide NPU services with all necessary equipment for well activation jobs at Jack-Up rig. The NPU service shall consist of the following:

a) Supply of suitable NPU with required spare parts, surface pipe fittings (including high pressure), and any other equipment/tools, materials required to provide unloading/well activation services.

b) Manpower for (i) job planning (ii) Rig up/down, operation & maintenance of the unit etc. (iii) Job evaluation (iv) Preparation of post job report and (iv) any other service required to ensure an efficient operation.

c) Operation & Maintenance of NPU.

1.3. TUBING CONVEYED PERFORATION SERVICES & DRILL STEM TESTING SERVICES

All the downhole sub-assemblies of the TCP-DST string should be rated to 15000 psi WP and 300 deg F and should be NACE certified across all temperature ranges (i.e. 0 to 300° F). The DST tools should have OD suitable to run inside 7", 32 lbs/ft and 9 5/8", 53.5 lbs/ft liner / casings, tensile strength at min. yield should be 160-320 klbf. The Bidder must demonstrate that the critical sealing components of all tools are manufactured using Corrosion Resistant Material. All tools should have premium end connections without elastomers.

Bidder shall provide fishing neck OD size to enable Operator to select the required fishing tool. The quantity per string indicated is the minimum number. If Bidder indicates requirement of any addition, element / quantity in the string for performing the job the same shall be included without any cost implication to company.

Permitted variation in OD of DST +0.5”/-0.25”. Packers shall have OD to match the casing size-weight. Permitted variation in ID of DST tools +0.5”/-0.1”.

In order to meet the requirement of availability of DST tools all the time for successive tests that Bidder should keep one set of all tools as listed from S. No. 1-14 with mandatory back-ups (1 for 1). However, the payments shall be made for only one set of TCP-DST tool.

All the DST tools should be readily available for use all the time. No extra time shall be provided for redressing / repair of the tools between two successive tests.

2. GENERAL NOTES

a. Details of Tools/Equipment and their operational requirement are given in Annexure-I. Any equipment, tools, consumables and services etc. that are not mentioned elsewhere in the tender but required to complete the scope of work shall also be made available without any additional cost implication to the company.

b. The Scope of Work under operation and maintenance of the equipment includes all that are required for safe, trouble-free and uninterrupted operation as per sound industry practices. The Bidder shall undertake operation and maintenance (O&M) of the equipment forthwith after supply and shall be responsible for arranging all resources including competent manpower as per requirements, its bye-laws & other legislations in force; employee insurance & benefits and all resources / facilities for continuous twenty four hour operations on shift basis**;** public liability insurance, routine & scheduled maintenance including running repairs and provisioning of relevant spares and consumables in relation thereto.

c. The Bidder shall maintain and preserve all records and documents relating to the performance of the Work mentioned in SOP and anything else that may reasonably be required to preserve for a period of two years from completion of this Contract.

d. Supply of all Tools/ Equipment/ Manpower/ Consumables / contingency tools for any trouble shooting operations required for ensuring trouble free efficient operation for the assigned services is the sole responsibility of the Bidder.

e. The tubing would be supplied under the scope of Bundle Services.

3900m of 4-1/2”, 18.90 lbs/ft, L-80 PH6/PH4 tbg
6300m of 3-1/2”, 15.5 lbs/ft, P-110, PH6/PH4 tbg

f. All x-overs required for the above string to connect WT tools and equipment would be supplied by WT Bidder.

g. The Bidder shall make themselves available for a joint discussion to formulate pre job planning after the award of Contract and prior to mobilization of equipment & services to Rig without any extra charge to OIL.

3. REFERENCE STANDARDS:

The total design and service shall be governed by the following reference standards wherever applicable –

1	API Spec 5CT	Specifications for tubulars and threads
2	API Spec 6A	Specifications for valves and wellhead equipment
3	API Spec RP 17B	Recommended practice for flexible pipes
4	API RP 44	Recommended practice for sampling petroleum reservoir fluids.
5	API RP 520	Recommended practice for sizing, selection and installation of pressure relieving devices.
6	API RP 521	Recommended practice for pressure relieving and de-pressuring systems
7	ASME-Section-VIII Divn. I and II	Rules for construction of pressure vessels
8	ANSI/ASME B 31.3	Chemical plant and petroleum refinery piping.
9	API RP 54	Recommended practice for Safety and health for oil & gas well drilling and servicing operation.
10	API spec 5L	Specifications for Oil & Gas pipeline
11	IRP-4	Industry Recommended Practices – Volume 4 (2012) for Well Testing and Fluid Handling
12	API RP 19B Section-1/RP-43	Recommended practice for well perforators

All International practices for equipment and personnel with respect to HSE standards needs to be strictly complied for offshore operations.

4. PERSONNEL:

a) The Bidder shall provide competent personnel with requisite experience & qualifications as per the **Annexure-II** on a round-the clock basis. OIL reserves the right to decide for engagement of these personnel on the basis of verification of relevant documents prior to engagement.

b) The Bidder shall confirm along with their bid to submit the detailed biodata and supporting documents regarding academic qualification and experience of all the crew members to be deployed under the Contract as

per Annexure-II, if awarded with the contract. The Bidder shall submit CV of the personnels to the company within 30 days of issue of letter of award or 45 days prior to commencement of contract (whichever later) for-Company's approval. The Bidder shall not deploy its personnel unless cleared by the Company.

c) Personnel deployed should be conversant with relevant safety practices.

d) Personnel should have good working knowledge in English.

e) If the Bidder is unable to provide the personnel approved by the Company and seek for deployment of alternate personnel having requisite qualification and experience set forth in the Contract, the Bidder may do so by taking prior approval from Company. In the event of change of manpower, the Bidder shall provide proper justification along with supporting document to the satisfaction of Company.

f) The Well Test Coordinator shall head the team of Bidder's crew and shall carry out all the jobs in consultation with Company's representative. The Well Test Coordinator shall be the single point of contact between the Company and the Bidder and shall be responsible for working closely with the Company to apply the appropriate planning, design and execution to benefit both the Company and the Bidder by offering specific solutions to cater to requirements. He must be available at well-site round the clock.

g) DST / TCP Specialist, Testing Supervisor and Well Test coordinator must be available for the entire testing operation at the Drilling Rig.

h) The Bidder may replace their personnel during their due off/ leave provided equivalent category of personnel is deployed and subject to approval from Company on their credentials.

i) The Bidder shall ensure that all the personnel shall have a full medical examination in accordance with the accepted medical standard prior to engagement. In Case of any medical emergency/treatment of Bidder's personnel's, the Bidder shall be responsible for their treatment i.e. all such treatment cost has to be borne by the Bidder.

j) The Company reserves the right to disqualify a person in case of indiscipline, unfit due to medical reason, incompetence etc. to Work under the Contract.

k) Bidder may deploy additional personnel, if required, by taking prior approval from the Company. Such additional personnel shall be provided by the Bidder at their own cost.

5. RESIDUAL LIFE OF EQUIPMENT AND TOOLS:

The residual life of all the PTS, DST, NPU and Slickline equipment shall not be less than 5 (Five) years as on the date of BCD. The equipment shall be certified after the issue of LOA by third-party certifying agencies like DNV/LLOYDS/BV etc. at the cost of the Bidder. All credentials such as manufacturing documents,

linking serial nos. embossed on the equipment offered with detailed specifications, must be submitted at the time of on-hire survey.

6. SAFETY, HEALTH AND ENVIRONMENT:

Bidder shall comply with applicable environmental laws, statutory regulations as applicable to Oil Mines in India.

The Bidder is required to provide all its personnel with Personal Protective Equipment as per international practice, which may include, as appropriate, but without limitation, the following:

a. Safety Helmet
b. 100% cotton or fireproof overalls
c. Safety Foot ware
d. Safety Goggles
e. Other PPE, including gloves. Safety goggles/visor, hearing protection, safety belts etc.

7. SUPPLY BASE:

The Bidder's onshore supply base should be equipped with all the facilities which will be required if the equipment / tools are required to be changed / serviced/ repaired, which cannot be done at the Drilling Unit. This requires good coordination between the Drilling rig and the Bidder's base during Well Testing Services. All costs associated with establishing and running such a facility will be to the Bidder's account.

The transportation of their equipment / tools from and to their supply base to OIL's Shore Base at Kollam, Kerala is Service Provider's responsibility at their own cost.

8. TOOLS/EQUIPMENT/SPARES/CONSUMABLES:

The Bidder shall provide tools/equipment for the complete services. Such equipment & tools shall be safe for operation, meeting HSE / Statutory requirements, effective and accurate to measure well test parameters and productivity. The Bidder shall keep sufficient back-up tools and equipment, spares, elastomers, redress kits, etc. in order to ensure uninterrupted services. An indicative list of tools and equipment are given as under. Any additional tools/equipment required to fulfil the scope of work but not covered in the list are also to be supplied by Bidder at no extra charge.

9. SUBSURFACE AND SURFACE EQUIPMENT FOR EACH WELL:

The details of the required Subsurface and Production Testing Surface (PTS) Equipment and accessories for well OKKA & optional well shall be suitable for 15000 PSI working pressure (pressure rating of equipment up to choke manifold), sour service as per NACE (National Association of Corrosion Engineers) Specifications MR-01-75 (latest edition) are as under and must be suitable for well conditions. The following mentioned quantity is for one well and the same quantity is required for second Optional well.

A.	SURFACE PRODUCTION TESTING (Package)	
Sr. No.	**Item**	**Qty**
1.	Surface Flow head /Control Head with hydraulic actuator for flow valve, Swivel & Crossovers	01 set
2.	Choke Manifold & accessories	01 set
3.	Data / Injection Header	02 nos.
4.	3" 45 ft long Flexible Flowline (Coflexip hose) of suitable length for connecting Flow head with standpipe and choke manifold, with x-overs	02 nos.
5.	Steam Heat Exchanger with Steam Generator	01 no.
6.	Three Phase Test Separator-1440 psi WP	01 no.
7.	Surge Tank	01 no.
8.	Gauge Tank/ Well Fluid Storage Tank, Total Capacity 200 bbls with 100 % Redundancy as backup whenever sought by OIL	01 Package
9.	Transfer Pump	01 no.
10.	Piping Package. 3" 1502 for high pressure; 3" hammer unions for downstream, Straight pipes & Swivel/Elbows of suitable length for connecting surface equipment.	01 set
11.	Chemical Injection Pump	01 no
12.	Surface Pressure & temperature Recorder	01 no.
13.	Dead Weight Tester	01 no.
14.	ESD Panel for shutdown	01 set
15.	Oil Manifold/ Diverter	01 no.
16.	Gas Manifold/ Diverter	01 no.
17.	Lab Cabin	01 no.
18.	Air Compressor	02 nos.
19.	Sand Filter / Sand Trap / Desander System with electronic sand detection facilities (10 K)	01 no.
20.	Surface Safety Valve	01 no.
21.	Well Test Workshop Container with Accessories	01 no.
22.	Surface Testing Data Acquisition Network	01 no.
23.	Data Acquisition Computer	01 no.
24.	Sample Bottles / Samplers	
	Conventional Gas Samplers, 1500 PSIG, 600 CC, IATA confirming	8
	Dead Oil Sample Cans, 1 Ltrs, IATA Confirming	20
	Dead Oil Sample Cans, 5 Ltrs, IATA Confirming	5
	Dead Oil Sample Cans, 10 Ltrs, IATA Confirming	5
	Water Sample Bottles, 1 Ltrs, Plastic or Glass	20
	Labels & Consumables for all the above	1

25.	PVT Samplers	4 Set
26.	Oil Barrels to collect Waste Oil, BS&W and oil contaminated water	1 Package
27.	Any other item(s) required but not mentioned above	As reqd.

B.	**WELL ACTIVATION (Package)**		
SL No	ITEMS	UNIT	QTY
1.	**Nitrogen Pumping Unit (NPU)** with all accessories. (N_2 conversion from liquid to gas will be at Bidder's account. Payment shall be made for Liquid Nitrogen against mobilized quantity as per the rate quoted by the Bidder. However, mobilization notice for liquid nitrogen shall be issued with a mobilization period of 14 days.) The unit shall meet the following minimum requirement: 1. Max Working Pressure: 10000 psi 2. Max Flow Rate (SCFH): 90000 SCFH Note: Any other equipment required with Nitrogen pumping Unit for successful well activation services on a Jack-up rig but not mentioned above shall be under Bidder's scope.	Package	01
2.	Surface piping and accessories	Set	01
3.	The minimum capacity of liquid nitrogen tank shall be 2000 gal. The Bidder should ensure continuous delivery of nitrogen during operations.	2000	08

C.	**TUBING CONVEYED PERFORATION (Package)**		
Sl. No.	ITEMS	UNIT	QTY
1.	Redundant firing head (HDF/HDF) and (HDF/BHF)	No.	1
2.	Hydraulic Firing Head Stand Alone	No.	1
3.	Mechanical Firing head Stand Alone	No.	1
4.	Automatic gun release assembly activated with gun firing action	No.	1
5.	Mechanical gun release assembly	No.	1
6.	Pressure operated under balance valve for use with hydraulic firing head, actuated by applying pressure through tubing without exposing the casing to applied pressure.	No.	1
7.	Portable surface shot detection kit with data acquisition system	No.	1
8.	Pup joints and tubing joints for TCP	No.	Min. 2 each

9.	Safety spacer for vertical shock absorption	No.	1
10.	Bull plug	No.	1
11.	Ported Flow Sub with Glass / Ceramic Disk below Ports along with Redress kit.	No.	1

Perforation Guns and Charges **Minimum Charge Performance required as per API 19B Sec-1, RP-43**	
1.	Perforating guns for 7" Casing / Liner Casing Gun Size - 4.5" or 4-5/8" or 4.72" Shot Density-12 spf ,135/45 deg or 150/30 deg EHD – 0.34 in Penetration – 30 inches
2.	Perforating guns for 9 5/8" Casing – Casing Gun Size -7" Shot Density -12 spf, 135/45 deg EHD – 0.44" to 0.39" Penetration – 43 inches

* Surface read-out tools shall be minimum 300^0 F rated.

D.	**DRILL STEM TESTING (Package)**		
Sl. No.	ITEMS	UNIT	QTY
1.	Single shot safety circulating valve		1
2.	Down hole safety valve with Pump Through		1
3.	Annulus / Tubing pressure operated, re-closable circulating valve		1
4.	Pressure control tester valve with hold open assembly		1
5.	Pipe tester valve with auto fill flapper		1
6.	Gauge carrier (to carry at least 4 quartz gauges)		1
7.	Quartz gauge (15000 psi and 347° F) with down hole batteries for carrying out 180 hrs tests.		3Nos. Quartz Gauge and 3 nos Battery
8.	Radioactive marker sub		1
9.	Retrievable packer (with option of hold down for pumping thru tubing) for 7" casing / Liner. - Packer setting should be non-rotational type, straight pickup & release type considering depth of the well. - Packer should be able to hang the TCP guns below - Compatible to run with TCP perforation operation Slip joints, x/overs, drill collars with premium connections along with any other accessories to be provided with this item.		2

10.	Retrievable packer with option of hold down for pumping thru tubing) for 9-5/8" Casing. - Packer setting should be non-rotational type, straight pickup & release type considering depth of the well. - Packer should be able to hang the TCP guns below - Compatible to run with TCP perforation operation Slip joints, x/overs, drill collars with premium connections along with any other accessories to be provided with this item.		2
11.	Surface read out facility for reading the quartz gauge data at the surface while recording down hole using Wireless system for gauges down hole for pressure data transmission to surface. Additionally, provision for lowering gauges on mono bore cable with LINK system should also be provided		1
12.	INLINE bottom hole sample chamber		1
13.	Tools and Parts		1
14.	Subs and all necessary X-overs		1+1 Back up
15.	Suitable Jar, safety joint, drill collars with premium connections and slip joints should be provided along with DST string for running above the retrievable packers (as required)		1 each

Note: The Bidder shall provide hydraulic packer setting tools for 9.5/8" (2 each) for items Sl. No. 10 above without any additional cost to Company

E.	**SLICKLINE SERVICES (Package)**		
SI. No.	ITEMS	UNIT	QTY
1.	Double Drum Slickline Unit	Set	1
2.	15K psi Slickline Lubricator	Set	1
3.	15K psi Stuffing Box	Each	1
4.	15K psi rated Slickline Double RAM Blow Out Preventer with Sinker Bar	Set	1
5.	Hydraulic Control Unit	no	1
6.	Tool Catcher	no	1
7.	Injection Sub	Set	1
8.	Slickline Clamps	Set	1
9.	Basic Tool Strings	Set	1
10.	Other tools (As defined in Scope)	Set	1
Items under Other Tools, Spares and Accessories			
11.	02 nos. of Bottom hole PVT samplers to be run in tandem, 1 no. of Transfer bench with 04 No. of	Set	1

	Shipping bottles with all accessories for analysis of 9nos. of PVT samples.		
12.	08 nos. of Gas sampling cylinders for GC analysis (600 cc) and 03 nos. of Liquid sampling cylinder with 20Litre capacity for collection of surface reservoir fluid sample.	Set	1
13.	Liquid Level Well Analyzer	Set	1

Notes

1. The Bidder shall provide sufficient back up of TCP, DST, SPT, NPU & Slickline equipment spares / consumables ('O' rings, elastomers / rubber seals, redressing kits etc.) in order to ensure uninterrupted services.

2. Any additional tools / equipment required to fulfil the scope of work but not covered in the above Table are also to be supplied by the Bidder at no extra cost.

3. The above list of tools / equipment / spares / consumables is indicative only and any other tools, equipment, spares and consumables are required, the Bidder shall arrange the same without any cost implication to company.

ANNEXURE – I

A. SPECIFICATION OF SOME OF THE MAJOR TOOLS AND EQUIPMENT:

A.1 General Design Considerations

1. All flow-wetted equipment components shall be manufactured from materials that:

   (i) Comply with NACE standard MR0175 for sulphide stress cracking resistant metallic materials.
   (ii) Can tolerate brief exposure to formation treatment acids and inhibitors, neat methanol, solvents, etc.

2. Unless specified otherwise, all equipment upstream of the test choke shall be rated to the following as a minimum:

   (i) 15000 PSI working pressure (Sand Filter may be 10000 psig with a provision of 15000 psi bypass arrangements)
   (ii) 300 F working temperature.
   (iii) Sour Service

3. Bidder shall provide crossovers as required to allow make-up of all downhole tools to 4.1/2" PH6 and 3.1/2" PH6 test tubing (connections as in the Drilling Tools section of this Bundled Services Scope of Work). The cost of these crossovers shall be included in the tool rental fees.

4. All tubular goods shall be manufactured in accordance with the latest revision of API Specification 5CT.

5. All equipment shall be equipped with closed-bottom skids with sides to provide spill control.

6. Necessary connections to the flare booms shall be on Bidder's scope. Flare Boom details shall be provided with the Bidder.

7. Bidder shall be required to provide sea-fastening and grounding materials. Sea fastening design needs to meet or exceed Company, Drilling Bidder and possibly DNV specifications.

8. Bidder shall comply with the certification of Production testing package as required by Drilling Rig / Rig Warranty Surveyor without any additional cost implication to the Company.

9. The Production testing package shall be strategically covered with F&G system. Necessary interfacing shall be made between ESD panel of SPT with Rig ESD system. Any compliance required in this regard, as advised by Rig Warranty Surveyor, shall be complied without any additional cost to the company.

10. All equipment that requires personnel to work at heights (surge tanks, etc.) shall be equipped with suitable / certified fall arrestor and harness.

All above equipment & tools must comply to Rig's Warranty Surveyor audit and should be replaced by the Bidder if not found suitable with no extra cost to Company.

1. SURFACE PRODUCTION TESTING (SPT) SERVICES

The Flow head, choke manifold and its upstream of all data headers and pressure bleed off points shall each be equipped with double block and bleed needle valves with minimum 15000 psi WP pressure rating. The details of the required Surface Production Testing (SPT) Equipment and accessories to be deployed by the Bidder are enumerated as under:

1.1 SURFACE FLOW HEAD / CONTROL HEAD / SURFACE TREE

Surface flow head should have heavy duty swivel and hydraulic actuator. The item should have the following specifications:

a) Solid block integral unitized body.

b) Minimum bore 3.1/16"

c) Working pressure 15000 psi.

d) Test pressure 22500 psi.

e) Temperature range: 32 Deg F to 300 Deg F

f) Complete unit should be suitable for Sour Service as per NACE Spec MR-0175 (latest edition)

g) Consisting of 04 nos. of 3.1/6" gate valve (1 no. master valve, 1 no. swab valve and 2 nos wing valves with one hydraulic actuator for flow line valve).

h) Acid resistance with suitable acid inhibitor.

i) Tensile strength 490,000 lbs at zero pressure.

j) Complete with lifting sub of suitable length,

k) Wing end connections should be 3", 1502, rated to 15000 Psi

l) Downstream of flow head should be provided with one no. of wing valve hydraulically controlled and actuated with remote control system including pump and hydraulic hose etc. Functioning of the valve should be pressure to open.

m) Suitable crossovers should be provided for connecting flow head bottom with Test string, lifting sub top with wire line BOP/ stuffing box and wing end connections. All the crossovers should have specifications as per clause 2.1.

1.2 CHOKE MANIFOLD AND ACCESSORIES

1.2.1 CHOKE MANIFOLD

a) Size 3" dual choke manifold with both positive and adjustable choke.

b) Working pressure 15,000 psi.

c) Test pressure 22500 psi.

d) Working temp. 32 to 300 Deg F

e) Suitable for sour service as per NACE specs MR 0175 (Latest Edition).

f) Wing end connections should be 3", 1502, rated to 15000 Psi

g) Choke Manifold should have 2 upstream, 2 downstream 3.1/16" Gate valves with hand wheels.

h) All the valves should be rated for same working pressure and temp as specified above.

i) Positive choke (Tungsten Carbide or Ceramic Lining) from 1/8" to 1½".

j) Manually adjustable choke on other side from 1/8" to 1.1/2".

k) Should have suitable ports for measuring pressure, temperature and ports for chemical injection and fluid sampling.

1.2.2 ESSENTIAL ACCESSORIES FOR ONE CHOKE MANIFOLD

a) Set of positive chokes (tungsten carbide or ceramic lined) from 1/8" to 1½" in with increment of 1/16" up to 1" and with increment of 1/8" up to 1½".

b) Pressure gauge with ½" /Autoclave Connection

i. 0-15000 psi - 3 nos.
ii. 0-10000 psi - 3 nos.
iii. 0-5000 psi - 3 nos.
iv. 0-1000 psi - 3 nos.
v. 0-500 psi - 3 nos.
vi. 0-100 psi - 3 nos.

c) Choke bean wrench - 1 no.

d) Hand wheel for valves - 2 nos.

e) Steel braided rubber tube with connection ½" Autoclave size 10' long suitable for 15,000 psi for sampling purpose - 1 no.

1.3 DATA / INJECTION HEADER

a) End connections 3", 1502 rated up to 15K psi

b) Working pressure 15000 psi and test pressure 22500 psi

c) Suitable for Sour service as per NACE Specification MR-0175 (Latest Edition).

d) Minimum 5 nos. of NPT ports for pressure and temp recording and

chemical injection.

e) Sufficient no. of Autoclave type needle valves (15000 psi WP) and ½" thermowells or strap-on thermo-transducers.

1.4 3" FLEXIBLE (COFLEXIP HOSE) – 2 Nos.

a) Should be of single length, suitable for connecting flow head with stand pipe.

b) Suitable for sour service as per NACE Specification MR-0175 (latest Edition).

c) Working pressure 15000 psi and test pressure 22500 psi

d) Working Temp. 32 Deg F to +266 Deg F

f) Inlet and outlet connection should be 3"1502 rated upto 15000 psi WP

Note: To make up the connection, if required, more than 2 nos. of 3" Coflexip hose may be required and bidder shall supply the same without any additional cost to the company.

1.5 STEAM HEAT EXCHANGER WITH STEAM GENERATOR – 1 No.

a) Skid mounted, suitable for offshore transportation

b) Unit should be suitable for sour service as per NACE Specification MR-0175 (latest Edition)

c) Working temperature – 0 Deg F to + 250 Deg F

d) Working pressure: 15000 psi

e) Minimum heat capacity: 4 MM BTU/hr

f) Unit should be complete with bypass manifold for bypassing exchanger.

g) Inlet and outlets are to be fitted with 3", WECO hammer union.

h) Unit should be complete with adjustable/Fixed choke system.

i) The unit should have suitable temperature sockets with thermometers fitted to indicate actual temperature of fluid at inlet & outlet.

j) Steam generator with following specification :

i. Steam output of 2000 KG/hr or 4.5 MMBTU
ii. Working pressure – 150 psi
iii. Fuel Tank capacity of 1500 liters
iv. Steam Generator shall be Zone 2 compliant.

1.6 THREE PHASE HORIZONTAL TEST SEPARATOR

a) Nominal WP: 1440 psi

b) Test pressure : 2150 psi

c) Inlet and outlet connection 3" 6000 psi.

d) Sour service as per NACE Specification MR-0175 (latest Edition)

e) Liquid rate 100 to 10,000 BPD

f) Gas rate: 60 MM SCF/Day

g) Water rate: 100 to 2000 BPD

h) Retention time = 1 Min

i) Fitted with two safety relief valves.

j) Should be fitted with shrinkage tester

k) Complete with Barton flow recorder range 0-400" differential pressure of water or electronic differential pressure measurement device

l) The gas outlet should have a Daniel orifice fitting with a full set of orifice plates.

m) Additionally, the gas outlet may have the Coriolis gas meter

n) Oil and water outlet should have turbine or Coriolis meters with accuracy of 5% for oil meter and 10% for water meter.

o) Unit should be as per API Spec 12-J / ASME Section VIII.Div. 1

1.7 SURGE TANK

a) WP 150 psi.

b) Shall have 2 single / 1 dual compartments with total capacity of 100 bbls, minimum. Must have the provision to divert the flow through either of the compartments without disturbing the flow from the well, through a suitable manifold.

c) Sour service as per NACE Specification MR-0175 (latest Edition).

d) Shall have high and low alarm.

e) Complete with level gauge and bypass manifold.

f) Should be equipped with Pressure Safety Valve (PSV) in each compartment for protection from overpressures.

1.8 GAUGE TANK (CRUDE OIL / FORMATION WATER STORAGE TANK)

a) Atmospheric working pressure

b) Minimum 200 Barrels capacity – 4 Nos.

c) Calibrated dip sticks

d) Externally mounted sight glass and by-pass manifold.

e) Associated pipe fittings for inlet & outlet connections

f) Fitted with staircase, dip measuring device, valves etc.

1.9 TRANSFER PUMP

a) Driven by flame proof electric motor.

b) Delivery rate 2,000 BOPD.

c) Should be hooked up in the manifold of surge tank for direct suction and delivery to Burner.

d) Should have non-return check valve fitted either in the Pump or Pump manifold to prevent any back flow.

1.10PIPING PACKAGE

a) 3", Fig 1502 Straight Pipes and Elbows for connecting choke manifold to heat exchanger

b) 3", Fig 206 Straight Pipes and Elbows for connecting all liquid lines downstream of the separator.

c) 4", Fig 206 Straight Pipes and Elbows for connecting all gas lines downstream of the separator.

d) Changeovers for end connections, wherever necessary, provided in sufficient quantity.

e) All the above piping package should be suitable for sour service as per NACE MR-0175 (latest Edition) and should have Acid resistance with suitable acid inhibitor.

f) Piping should have provision for methanol injection to avoid hydrate formation.

Note: The upstream lines connecting the flow head to the choke manifold should be in sufficient length to facilitate the string to be picked up by about 40' for stabbing out of the packer, without disconnecting the flowline. Also, the downstream lines should be in sufficient quantity for completing the surface hook-up from choke manifold to the Burner Booms.

1.11 CHEMICAL INJECTION PUMP

a) Pump should be pneumatically driven, positive displacement.

b) Fluid discharge capacity = 85 GPD (minimum) at 10,000 psi.

c) Working Pressure 10,000 psi

d) Provided with sufficient length of high pressure hose (10,000 psi WP) with 1/2" NPT connectors

e) Pump to be provided with check valve.

f) All chemical pumps shall be certified for use in Zone 1 areas.

g) All chemical pumps shall be equipped with a suitable relief valve system.

h) Bidder shall supply one (1) chemical injection pump with common manifold and spools for surface chemical injection. Pump shall be air driven and capable of rates between 0.1 and 1.0 gallons per minute. Possible services include methanol, de-foamer, wax inhibitors, etc. Injection points may be upstream or downstream of the choke.

i) High pressure chemical lines shall be equipped with JIC, Autoclave or

similar high-integrity connection with metal-to-metal seal. NPT and BSP-type connections shall not be used without written Company approval.

j) Bidder shall either supply certified tote tanks, for methanol and glycol or a drum carrier for the surface treatment chemicals.

k) All necessary chemicals like Methanol, Methanol/ Glycol for hydrate control, Pour Point Depressant (PPD), Defoamer, Demulsifier shall be made available as needed. Payment shall be made for consumable items (Methanol, PPD, Demulsifier, Defoamer and Liquid Nitrogen) against mobilized quantity as per the mobilisation notice issued by company. Mobilization notice for consumables shall be issued with a mobilization period of 14 days.

1.12 SURFACE PRESSURE & TEMPERATURE RECORDER

a) Pressure rating 15000 psi and temperature rating 300 Deg F.

b) Recorders should have only mechanical input and operation with provision for hook up to data acquisition computer to record of surface pressure, temperature, flow rate etc.

c) Suitable for sour service as per NACE Specification MR-0175 (latest Edition).

d) Pressure to be tapped from 1/2" NPT needle valve box.

e) Temperature to be measured from 1/2" NPT weld neck pocket or strap-on thermotransducer

f) Chart drive mechanical, one revolution in 24 hrs.

g) Should be able to be positioned on Christmas tree upstream of flow line valve.

h) Should have proven reliability and repeatability across the entire operating range.

1.13 DEAD WEIGHT TESTER

a) Mainly required for accurate measurement of pressure in the pipelines

b) Pressure range 50-15000 psi.

c) Pressure intervals 1 psi.

1.14 ESD PANEL FOR SHUT DOWN

a) Each set should have 3 nos. of high-low pilots

b) One no. high-low pilot each between

   a. Flow head & Choke manifold

b. Choke Manifold & Heater
c. Heater & separator

c) To control hydraulic valve on the flow head and the surface safety valve for pressure rating of 15000 psi.

d) Suitable number of pneumatic controls (min. 5) to be linked to ESD systems for rig wide access to ESD system. Necessary interfacing shall be carried out between ESD Panel of SPT to Rig ESD system. Any compliance in this regard as advised by Rig Warranty Surveyor shall be complied without any cost implication to company.

e) This system should be a "fail-safe" system in order that any loss of instrument air or hydraulic power to the system will cause the well to be safely shut down.

f) All hoses & connectors for pneumatic or hydraulic control of valves, sensors, connections for input sensors should be supplied by the Bidder with assured compatibility.

1.15 OIL MANIFOLD

a) Sour service as per NACE Specification MR-0175 (latest Edition)
b) WP 1440 psi.
c) Should have 3" ball/plug valves.
d) Should have 3" WECO Hammer union inlet/outlet connections.
e) Should be able to divert oil flow to burner or other surface equipment as required.

1.16 GAS MANIFOLD

a) Sour service as per NACE Specification MR-0175 (latest edition)
b) WP 1440 Psi.
c) Should have 3" ball/plug valves.
d) Should have 3" WECO Hammer union inlet/outlet connection.
e) Should be able to divert wellbore fluids flow to burner or other surface equipment as required.

1.17 LAB CABIN

Should have lab equipment like gas gravitometer, centrifuges, H_2S detection pump etc.

1.18 AIR COMPRESSOR – 2 Nos.

a) Should be able to supply sufficient quantity of air (600-700 scft at 100 psi) to burner for complete combustion of well effluents.

b) Rugged enough for offshore use.

c) Electrical/diesel powered, flame proof.

d) Provided with flexible hose and suitable end connection to connect with air line of burner.

e) The air line from compressor to burner should be fitted with a non-return check valve, to avoid any hydrocarbon mixture form burner.

f) Air compressor shall be Zone 2 compliant.

1.19 SAND FILTER

a) Suitable for removing sand from crude oil and / or gas flow.

b) Sour service as per NACE Specification MR-0175 (latest applicable edition).

c) Working Pressure 15,000 psi & temperature up to 300 deg F.

If 15000 psig Sand Filter is unavailable, then Sand filter with working pressure of 10000 psig, 300 F may be considered with a provision of 15000 psig additional bypass arrangement for the Sand filter. Necessary changeovers shall also be provided.

d) Should have double isolated accumulation vessel for continuous operation with filter size of 100 microns and 200 microns.

e) Sand hold up volume at least 75 lts.

f) Inlet/outlet connection 3" 1502 connection.

g) Interconnecting piping with by-pass and drain.

h) Clampon type electronic sand detection system, which needs to be clamped on upstream elbow.

i) Should be rugged for use in high-rate multiphase flow and high temperature environments.

1.20 SURFACE SAFETY VALVE

a) Line Size 3” to be rigged up between flowhead and choke manifold.

b) Working pressure 15,000 psi.

c) Test pressure 22500 psi.

d) Working temp. 32 to 250 Deg F

e) Suitable for sour service as per NACE Specification MR 01-75 (Latest Edition).

f) Inlet and outlet to be 3" 1502 rated to 15000 psi WP

g) Gate valve, hydraulically operated and fail safe configuration – to close in case of hydraulics line failure

h) Remote shut in with the help of ESD control panel.

i) Should be able to prevent any overpressure to downstream equipment by shutting-in the well immediately upon failure or leaks in any downstream equipment.

j) In case of emergency, should be able to close before SSSV valve gets closed, to reduce/prevent any damage to SSSV.

1.21 WELL TEST WORKSHOP CONTAINER WITH ACCESSORIES:

Workshop container should include following minimum items

a) Pressure gauges, ranges to include at minimum 0-15000 psi, 0-10000 psi, 0-5000 psi, 0-2000 psi, 0-200 psi
b) Thermometers
c) Gas gravitometer
d) Centrifuge (manual)
e) Hydrometer set
f) Dead weight tester
g) Gas sniffers
h) Portable H_2S (range 10 ppm) and CO_2 detection equipment
i) Tests on Oil / Gas samples should include:
   a. Density / Specific gravity / Deg API
   b. pH
   c. Measurement of the Hydrogen Sulfide (H_2S) Carbon Dioxide (CO_2) by Draeger tubes.
   d. Pour point
   e. BS&W
   f. GC up to at least C_6+
j) Fittings and needle valves required for the operation.
k) All tools required and necessary spares required for PTS operation.
l) Equipment to collect well fluid at surface for PVT analysis.

1.22 SURFACE TESTING ACQUISITION NETWORK: 01 No.

a) Means of recording and displaying following minimum parameters
   i) Wellhead Pressure
   ii) Wellhead Temperature
   iii) Annulus Pressure
   iv) Separator Pressure
   v) Upstream & Downstream choke pressure
   vi) Separator temperature
   vii) Separator gas temperature
   viii) Separator liquid temperature
   ix) Separator gas differential pressure

b) Capability of producing real time plots of Pressure vs. Time and of Flow rate vs. Time.
c) Acquisition Computer
d) All the required sensors for collecting the data should be provided by the Bidder, including all required cabling.
e) All sensors and metering devices should have valid calibration certificates.

1.23 Real Time Data Transmission

Real Time Data Transmission should have the Software package to properly store, organize and display all the data collected during the well test program in industry standard formats (WITSML) for transmission by RTOC Service Provider using Rig V-SAT connection so that the same can be downloaded or viewed online in real time at base.

Bidder is responsible for providing transmittable data to Company.

Data is to be transmitted through V-SAT connection to the base.

1.24 Sample Bottles

a) Conventional Gas Samplers, 1500 psi, 600 cc, IATA confirming, Qty. 8
b) Dead oil sample cans, 1 LITER, IATA conforming, qty. 20
c) Dead oil sample cans, 5 LITER, IATA conforming, qty. 5
d) Dead oil sample cans, 10 LITER, IATA conforming, qty. 5
e) Water sample bottles, 1 LITER, plastic or glass, qty. 20
f) Labels and consumables for all the above

1.25 Safety equipment

a) Fire extinguishers
b) Portable H_2S (Level-10 ppm and beyond) and CO_2 detection/measurement equipment
c) Portable explosimeter
d) Personnel protective equipment

1.26 Tools, Cross-overs & Spares

a) Containerized workshop / store with power and lighting
b) Includes all hand tools, all types of cross-overs, spare parts etc. required for surface testing operations
c) Hose baskets, pipe racks and baskets etc.

1.27 Fittings and needle valves

Needle valves and fittings to supply for all pressure, temperature and sampling point upstream of the heater with double block and bleed.

1.28 Other Items

Chemicals:

- Methanol/ Glycol for hydrate control
- Pour Point Depressant (PPD)
- Defoamer
- Demulsifier

2. EQUIPMENT & ACCESSORIES

2.1 CROSS-OVERS

1) All crossovers should be suitable for sour service as per NACE Spec MR-0175 (latest edition).
2) All crossovers should have Acid resistance with suitable acid inhibitor.
3) The minimum ID should be compatible with the Tubing string and as per the API recognized standards
4) The working and test pressure should be as per API-5CT standards
5) The minimum length should be 18 inches.

3. WELL ACTIVATION SERVICE

The job will involve unloading and activation of newly drilled wells using Nitrogen Pumping Unit (NPU). It involves displace the well fluid with nitrogen to the desired volume/ depth and make the well displace on its own. The job will also be applicable for unloading and lowering of fluid levels of wells prior to perforations.

The services of NPU shall be mobilized together or alone as per the job requirements.

NITROGEN PUMPING UNIT (NPU)

The Bidder shall provide Nitrogen pumping Unit (NPU), skid mounted, capable of pumping and vaporizing 180000 / 90000 (MAX) along with a minimum storage tank of capacity 2000 US gallons liquid nitrogen tank. The Bidder should provide all the necessary surface connections/fittings for smooth and successful operation of the job. The unit shall have nitrogen pumping vaporizing system capable of pumping up to 180000 / 90000 SCFH of gaseous nitrogen and pressure up to 10000 psi.

The Bidder shall provide any other equipment / tools/ spares required for successful well activation service, but not mentioned above.

Payment shall be made for Liquid Nitrogen against mobilized quantity. Mobilization notice for liquid nitrogen shall be issued with a mobilization period of 14 days.

4. DRILL STEM TESTING SERVICE

Cased Hole DST Service for 7" and 9-5/8" casing

The tools should have the following specifications:

a) Maximum OD: 5.5”
b) Minimum ID: 2.25”
c) Minimum tensile strength: 110 K lbs
d) Maximum differential pressure: 12,000 psi
e) Maximum temperature rating: 300 ˚F

4.1 Single Shot Circulating Valve

a) Annulus pressure activated rupture disc by applying predetermined annulus pressure
b) The flow ports shall have sufficient area and resistance to erosion to permit circulation at an efficient rate with a pressure that does not cause operation of other tools.

4.2 Downhole Safety Valve With pump through

a) The full opening downhole safety valve should be run in open position and should be able to close permanently with a flapper/ball valve once rupture disc is activated by applying pressure in the annulus.
b) Once the valve is closed, there should be provision to pump through this valve from the top to allow well kill operations through the tubing / annulus.
c) Can be of either ball or flapper type.

4.3 Annulus / Tubing pressure operated, multi-cycle circulating valve

a) The multi-cycle circulating valve is a re-closable valve operated by tubing pressure and is used to spot fluids and nitrogen.
b) The tool should be able to be run in lock open position during run-in-hole.
c) Once tool is at depth, the tool should be activated by differential pressure between tubing and annulus.
d) The tool should be able to operate by a pre-set number of pressure cycles in the tubing / annulus.
e) Able to accommodate forward circulating and reverse circulating operations
f) The flow ports shall have sufficient area and resistance to erosion to permit circulation at an efficient rate with a pressure that does not interfere with the operation of other tools.

4.4 Pressure control tester valve with hold open assembly

a) The pressure control tester valve should be operated by annulus pressure.
b) It is the primary downhole valve used to control downhole formation flows and shut-ins.
c) The tool should have a hold-open module to allow run in hole either in open or ball valve in closed.

4.5 Pipe tester valve with auto fill flapper

a) This tool should be used for pressure testing the DST string above the valve while running in hole.
b) The tool should have a flapper valve run normally closed and should open permanently on application of annulus pressure to rupture the disc.
c) While running in hole, the flapper valve should allow automatic filling up of cushion from below or it shall be possible to open the tester valve with a pressure differential of 50% of working pressure from below.
d) Should be annulus pressure operated to lock fully open upon completion of pressure testing

4.6 Gauge Carrier

a) Gauge carrier shall be internally concentric
b) Externally mounted gauge housing
c) Gauges shall be installed in the carrier while on deck and pressure integrity tested. It must be possible to connect the gauge carrier to the string without breaking tested seals
d) Outside of carrier shall not have any sharp edges that can get hung up
e) To be run between packer and tester valve.
f) Shall be able to carry up to four (4) gauges
g) Three gauges to sense tubing pressure and one gauge to sense annulus pressure.

4.7 Quartz Gauge with battery

a) Minimum requirements are as follows:
b) Accuracy ± 5 psi and ± 1 °C
c) Resolution 0.01 psi and 0.01 °C
d) Pressure range 0 – 15000 psi minimum
e) Temperature range including battery pack 0 – 180 deg C
f) Scanning rate 0.1 sec to 10 minutes
g) Quartz type
h) Temperature rating inc battery pack, 150°C
i) 100,000 datasets minimum capacity
j) Calibration certificate not older than 1 year.

4.8 Radioactive Marker Sub

a) Should have high visibility on gamma ray log compared to natural gamma ray response from the formation.

4.9 7” Retrievable Packer

The packer **used** shall comply with the following:

a) The packer shall be capable of holding pressure differential 12000 psi from above as well below and temperature rating: 300 ˚F
b) Packer setting should non-rotation type, straight pickup & release type considering depth of the well. Packer should be able to hang the TCP guns below and compatible with TCP perforation operation
c) Shall have Hydraulic hold down
d) Shall be suitable for 7”, casing

e) Compatible with TCP gun operation
f) Able to support tailpipe and TCP gun weight

4.10 9 5/8" Retrievable Packer

The packer used shall comply with the following:

a) The packer shall be capable of holding pressure differential 7500 psi from above as well below and temperature rating: 300 ˚F
b) Packer setting should non-rotation type, straight pickup & release type considering depth of the well. Packer should be able to hang the TCP guns below and compatible with TCP perforation operation
c) Shall have Hydraulic hold down
d) Shall be suitable for 9 5/8" casing
e) Compatible with TCP gun operation
f) Able to support tailpipe and TCP gun weight

4.11 Surface Read Out

a) Read the quartz gauges data at surface while recording downhole using Wireless connection to gauges down hole for on-line pressure data transmission to surface.
b) Read the quartz gauges data at surface while recording downhole using Wireline LINK connection to gauges down hole for on-line pressure data transmission to surface.

4.12 INLINE bottom-hole sample chamber

a) Annulus operated tool for collecting bottom hole samples from the tubing, either during flow or shut-in conditions.
b) Min 8 chambers with 300 cc capacity in each / 4 samplers of 600 cc each
c) Single Phase Sample Bottles -16 nos. for transfer of samples from samplers to single phase sample bottles

4.13 Tools and Parts

a) Containerized workshop/store with power and lighting
b) Includes all hand tools, spare parts, test subs, test pump, elastomers for DST tools, handling subs, crossovers etc. required for DST operations
c) Tool racks

4.14 SUBS AND CROSS OVERS

a) The Bidder shall mobilize all subs & cross over required for running in operation.

5 TUBING CONVEYED PERFORATION

5.1. PORTED FLOW SUB WITH GLASS / CERAMIC DISK BELOW PORTS ALONG WITH REDRESSKIT

a) Top Connection: 2.875" 6.5 ppf EUE Box
b) Bottom Connection: 2.875" 6.5 ppf EUE Pin

c) Material: L-80
d) Minimum ID: 2.44”
e) Maximum OD: 3.67”
f) Glass Description: Minimum 0.375” thick
g) Other: The flow area of the ports must be greater than the flow area of the tubing
h) Temperature Rating: 300°F

5.2. Safety spacer for vertical shock absorption

a) Maximum OD: Same as that of loaded gun
b) Top Connection: As required to make up to firing head
c) Bottom Connection: As required to make up to safety spacer and or ERHSC
d) Material: As required to meet the conditions described in preamble
e) Length: 10 ft minimum
f) Temperature Rating: 300^0 F minimum

5.3. PERFORATING GUN FOR 7” CASING

a) Maximum OD: 4.5” or 4-5/8” or 4.72”
b) Charge Type: HMX for use at 300°F.
c) Charge Size: The largest possible that will fit the 4.5” gun
d) Shot Density: 12 spf
e) Shot Phasing: 135/45 deg or 150/30 deg
f) Entry Hole Diameter: 0.34 inches
g) Penetration Depth: 30 inches
h) Prima Cord: HMX or other suitable for use at 300°F.
i) Temperature Rating: 300°F minimum
j) Top Connection: As required to make up to safety spacer and or ERHSC
k) Bottom Connection: As required to make up to safety spacer and or ERHSC
l) Material: As required to meet the conditions described in Preamble

5.4. PERFORATING GUN FOR 9-5/8” CASING

a) Maximum OD: 7”
b) Charge Type: HMX or other suitable for use at 300°F
c) Charge Size: The largest possible that will fit the 7” gun
d) Shot Density: 12 spf
e) Shot Phasing: 135/45 deg
f) Entry Hole Diameter: 0.44” to 0.39”
g) Penetration Depth: 43 inches
h) Prima Cord: HMX or other suitable for use at 300°F.
i) Temperature Rating: 300°F minimum
j) Top Connection: As required to make up to safety spacer and or ERHSC

k) Bottom Connection: As required to make up to safety spacer and or ERHSC
l) Material: As required to meet the conditions described in Preamble

It is planned to run the TCP guns along with the test string. However, Company may decide to run TCP guns on wireline or Drill Pipes if required. The Bidder shall be responsible for providing all necessary tools/equipment to run the TCP guns on wireline or Drill Pipes.

Bidder should provide separate prices for Perforating guns and accessories for "Shoot and Drop" and "Shoot and Retrieve" scenario as per Table FF in Price Schedule.

5.5. PRESSURE ACTIVATED FIRING HEAD WITH REDUNDANT HYDRAULIC FIRING HEAD FOR PERFORATING GUN ALONG WITH REDRESS KIT

a) Maximum OD: 3.68"
b) Top Connection: As required to make up to tubing/ ported flow sub above.
c) Bottom Connection: As required to make up to safety spacer
d) Material: As required to meet the conditions described in preamble
e) Temperature Rating: 300°F minimum
f) Charge Type/Percussion Detonator/Booster: HMX or other suitable for 300°F

5.6. SUB ASSEMBLY SPACE OUT TUBING PUP JOINTS

a) Top Connection: 2.875", 7.80 lbs/ft L-80 EUE Box. Equipped with special clearance EUE coupling
b) Bottom Connection: 2.875", 7.8 lbs/ft EUE Pin.
c) Material: L-80
d) Minimum ID: 2.323"
e) Maximum OD: 2.875" (Nominal Pipe body OD
f) Coupling: Special clearance with taper ends (3.68" OD)
g) Length: 4 ft/3ft/1 ft

6 SLICK LINE SERVICES:

6.1 The Slickline service is for well including but not limited to the following jobs:

6.1.1 Reservoir Testing and Well Bottom Tagging

The following jobs are required to be carried out during reservoir testing.

a) Pressure build-up studies, pressure draw-down studies, influx.
b) Studies, pressure fall-off studies, modified isochronal studies,
c) Reservoir Limit Test (RLT), Pressure interference test
d) Pressure gradient survey, Temperature gradient survey.
e) Well Bottom Tagging

6.1.2 Well Bottom Tagging

Under well bottom tagging, the job involves tagging of well bottom by slickline induced tool in live or shut in wells using slickline unit. It involves lowering of Slick line along with different size tools to the bottom of the well or to the final depth as decided by the Company. For different jobs, different tools need to be run in like Tubing gauge, Tubing swage, Sand bailer, Tubing broach, Impression block, Blind box, Star bit, Locator tool, Hydrates breaking tools etc.

6.1.3 Fish Recovery with Slickline unit

Fishing operation involves recovery of downhole fish lying inside the well bore using slickline conveyed fish recovery tools. The fishes are of different types and shapes. Experienced hands and necessary fish recovery tools are required for the job. The depth for fish recovery job may vary from 1 - 5000m.

6.1.4 Sub surface and surface Reservoir fluid sampling

This job involves lowering of PDS samplers for collection of reservoir representative bottom hole reservoir fluid samples and transferring them to shipping bottles for further PVT analysis. In case of high GOR wells, surface sampling also to be carried out and Bidder has to provide gas & liquid sampling bottles for collection of surface samples.

6.1.5 Any other job not covered above.

Any other job not spelt out above but involving the use of slickline unit and other equipment (if any) shall have to be carried out by the Bidder as and when necessary.

6.2. Scope of Work:

The work is defined and described by, but not necessarily limited to, any or all of the following. The Service provider shall -

a) Provide adequate equipment and personnel required to carry out slickline operations in the well.

b) Provide Slickline services for Bottom hole tagging, Fish recovery, collection of reservoir representative bottom hole reservoir fluid samples etc.

c) Provide PDS samplers, transfer bench and shipping bottles along with all relevant accessories for collection of sub surface reservoir fluid samples for PVT analysis. Also provide gas sample collection cylinders and liquid sample collection cylinders for surface reservoir fluid sample collection for PVT analysis.

d) Provide final report and all relevant data gathered at the end of each operation both as soft and hard copies.

e) Arrange and store sufficient spares and consumables for the units along with the manpower so that no interruption occurs on account of non-availability of spares and manpower.

6.3. Specification of accessories:

Double drum hydraulic Slick-line winch compatible to sour service(H2S) with power pack complete with 0.108" X 25,000 ft (min) slickline on one drum and 0.125" X 25,000 ft (min) slickline on the other drum. The detail specification of the unit is as under:

6.3.1. Spooling/Measuring Assembly

a) Level wind (spooling) assembly/counterwheel/depth measuring device shall be equipped.
b) Type O-measuring meter with minimum 10-inch register wheel, metric calibration.
c) Mechanical depth counters with cable and casing at operator's console, metric counters assembly.
d) Martin Decker or its equivalent weight indicator along with suitable hose and loadcell (one extra should be present as spare at all times)
e) Any other type of measuring device (viz. digital) provided shall be additional to the Mechanical counter.

6.3.2. Line Speed & Pull Desired

The unit shall be preferably of the following specification:
a) Max. 2700 FPM (820 M/MIN).
b) Max. 7400 Lbs. (3363 KG)- Adjustable by suitable hydraulic valve in the hydraulic circuit.

6.3.3. Other fittings and accessories:

a) The hydraulic slickline winch compatible to H2S sour gas service having dimension of 0.108" X 25,000 ft (min) in one drum and other drum with 0.125" X 25,000 ft (min) fitted onboard to the slickline unit.
b) Slickline tool string size: 1.75”
c) Measure meter (Remote readout/Veeder counter assembly) metric unit for both the lines - 2 nos.
d) Hay pulley assembly (for 0.108" and 0.125" slickline) -1 no.
e) Slickline Wire Clamp suitable for 0.108” and 0.125” wire - 2 nos.
f) Martin Decker weight indicator along with load cell and suitable hose- 1 no. each per unit. (One extra as spare)

g) Hydraulic Stuffing Box with 16" Sheave adaptable to slickline wire size 0.108" and 0.125" along with necessary hoses and handpump - 2 nos. Rating -W.P 15K (Standard) each.

h) 4" ID Lubricator assembly for 15000 psi total length not less than 32 feet complete with Quick Union. (One set with each unit).
   (i) LUB ASSY 4" ID x 8FT - 1 non ported, 1 ported (1/2" NPT) = 24 ft
   (ii) LUB ASSY 4" ID x 4FT - 1 ported (1/2" NPT), 1 non ported = 8 ft

i) Wireline BOP, Dual ram hydraulic 15000 psi, for 0.108" and 0.125" wire, hand pump operated and adoptable to Flow head.

j) Quick Test Sub 4" ID - 1 nos. Rating-W.P 10 K (Standard) psi

k) Necessary Crossovers/ Adaptor spool to connect Pressure control equipment with Flow Head.

l) Suitable Digital Tension measuring system (Line Minder) associated with Slickline Unit in addition to normal load cell (martin Decker' Combi gauge) type along with required accessories - 01 no.

m) Slickline Fishing Clamp or T Bar Clamp with suitable inserts of 0.108" and 0.125" wire - 2 (two) nos.

n) Digital Weight, Speed, Impact recorder compatible with Slickline unit - 01 no.

For Slickline Services, the list of equipment (slickline unit and Downhole Tools) to be provided by the Bidder are as follows:

S.No.	General	Qty	Description
A.	General	1	Rig up height – ~60 ft.
			Main deck space – 5.5 m x 2.0 m to be available to accommodate suitably sized units & equipment
			Capable of running all available wireline tools and third-party tools
			Equipped with spares and hand tools to be able to operate independently.
B.	Winch unit & Slickline – DOUBLE DRUM	1	Double drum hydraulic Slick–line winch Unit (Zone -II) having compatible to H2S gas service with 0.108" X 25,000 ft (min) slickline on one drum and 0.125" X 25,000 ft (min) slickline on the other drum. The detail specification of the unit is as under:
1.			Spooling/Measuring Assembly

2.			Level wind (spooling) assembly/counterwheel/depth measuring device shall be equipped.
3.			Type O−measuring meter with minimum 10−inch register wheel, metric calibration.
4.			Mechanical depth counters with cable and casing at operator's console, metric counters assembly.
5.			Martin Decker or its equivalent weight indicator along with suitable hose and loadcell (one extra should be present as spare at all times)
6.			Any other type of measuring device (viz. digital) provided shall be additional to the Mechanical counter.
7.			Line Speed & Pull Desired
8.			The unit shall be preferably of the following specification:
9.			Max. 2700 FPM (820 M/MIN).
10.			Max. 7400 Lbs. (3363 KG)− Adjustable by suitable hydraulic valve in the hydraulic circuit.
11.			Other fittings and accessories:
12.			Slickline (0.108" x 25,000 ft (min) piano slickline and 0.125" X 25,000 ft (min) slickline compatible to H2S Sour service) − one of each reel fitted with the unit.
C.	Power Pack	1	Power Pack
			Complete with spark arrestor (Zone-II Power Pack), safety shut down system, inertia starter, air/water cooled and equipped with all the necessary gauges to monitor operating conditions
			Capable of maintaining constant line speed of 15 ft/min and 50 ft/minute.
			Necessary hoses, fittings and connections to use this Power pack with Double drum unit
1.		1	4” ID BOP Double ram hydraulic BOP 15000 psi Working Pressure Complete with rams dressed for 0.108” and 0.125” wire Otis type 6.1/2” −4 acme or equivalent thread quick connections at top & bottom

			Hand pumps with 50 ft hose set to open & close BOP Equipped with equalising valve manifold and hydraulic cylinders supplied on shipping frame / Test stump Good for sour service Will be supplied with Lift cum test plug at top & bottom blind
2.		2	Lubricator sections of 4' lengths, 15000 psi
3.		4	Lubricator sections of 8' lengths, 15000 psi
4.		1	Lubricator Lifting clamp for 4"Lubricators
5.		1	Quick Test Sub – 4"
6.		1	Lubricator racks for 4" lubricators
7.			Suitable for transportation with full load
8.		2	Hay pulley for 0.108" & 0.125"wire.
9.			4" ID Hydraulic stuffing box, 15000 psi Working Pressure Otis type 6.1/2" 4 Acme or equivalent thread quick unions 16" sheave and bracket assembly, Hand pump with 80 ft hose set Bottom blowout gland Good for sour service
10.		2	Wire clamp for 0.108" & 0.125" wire.
11.		1 set each	Test Cap and Test Plug for all Bowen/Otis connections provided
12.		1	Wire Tester to test wire (Wrap Testing)
13.		2	Wire fishing clamp
14.		1	Pneumatic pressure test pump with 15000 psi working pressure rating, Bidder to provide zone−2 rated electrical equipment's wherever applicable. All diesel driven IC engine /equipment's shall be installed with spark arrestor and shall be fit for purpose
15.		1	Tool shack, containerised, to store tool string, wireline tools, hand tools, spares, complete with shelves, cupboards, racks, bench, vice etc. for tool redressing.

16.		1 set	All spares, tools, equipment required to maintain the above and ensure uninterrupted service.
17.		1	Tool box to store/transport 1 set of tools to and from various offshore locations
18.		1	Unit should have provision to operate the stuffing box and BOP from operator cabin through remote control
19.		1 each size	Lubricator Lifting clamp for 4" Lubricators

Following tools shall be provided for Slickline Services:

S.No.	Description	Qty
A	**1-7/8" QLS tool string including but not limited to the following:**	
1.	rope socket (Pear Drop Size)	2
2.	(5 ft, 3 ft, and 2 ft) normal stem	2
3.	(5ft, 3ft and 2 ft) Lead Filled stems	1
4.	(5ft, 3ft and 2 ft) Roller Stems (1 set roller OD: 2", 1 set roller OD: 2.5")	1
5.	knuckle joints	3
6.	Swivel joints	1
7.	30" spang jar (Stroke length – 30 inches)	1
8.	20" spang jar (Stroke length – 20 inches)	1
9.	accelerator	1
10.	tubular jar	1
11.	Flopetrol power / HD spring jar	1
12.	hydraulic jar	1
13.	Spring jars	1
14.	Roller Centralizers (OD: 2.25")	1
15.	Centralizers with inbuilt Swivels	1
16.	Dummy Rope Socket	1
17.	bowsping centralizer	1
B	**Tools:**	
1.	Gauge Cutter:	
2.	4" Gauge cutter	1
3.	3.8" Gauge cutter	1
4.	3.7" Gauge cutter	1
5.	3.5" Gauge cutter	1
6.	3.4" Gauge cutter	1
7.	3.2" Gauge cutter	1
8.	3.0" Gauge cutter	1
9.	2.8" Gauge cutter	1

10.	2.7” Gauge cutter	1
11.	2.5” Gauge cutter	1
C	**Blind Box:**	
1.	3.5” Blind box	1
2.	3” Blind box	1
3.	2.5” Blind box	1
4.	2” Blind box	1
D	**Lead Impression Block (Nominal size):**	
1.	4.0” LIB	1
2.	3.70” LIB	1
3.	3.5” LIB	1
4.	3.2” LIB	1
5.	3” LIB	1
6.	2.8" LIB	1
7.	2.70” LIB	1
8.	2.5” LIB	1
E	**Godevil:**	
1.	1−7/8” x 1 no. 5 ft Godevil (cutter Bar type)	1
2.	1−7/8” x 1 no. 3 ft Godevil (cutter Bar type)	1
3.	1−7/8” x 1 no. 5 ft Godevil (Flat bottom type)	1
4.	1−7/8” x 1 no. 3 ft Godevil (Flat Bottom type)	1
5.		
6.	Kinley Snapper & Cutter:	
7.	1−1/2” Kinley snapper with drop bar	1
F	**Wire Finder Split Skirt (Nominal size):**	
1.	4” xsplit skirt wire finder	1
2.	3.5” split skirt wire finder	1
3.	3” split skirt wire finder	1
4.	2.5” split skirt wire finder	1
5.	2” split skirt wire finder	1
6.		
7.	various sizes of Centre spears (1.5", 1.875", 2" & 2.5", 1 each)	2
8.	various sizes of 3-legged wire grabs (2.625", 3.375" & 3", 1 each)	2
G	**Universal Pulling Tool:**	
1.	2” UPT	1
2.	2.5” UPT	1
3.	3” UPT	1

4.	4” UPT	1
5.	Pulling Tools:	
6.	2", 2.5", 3" and 4" JDC	1
7.	2", 2.5", 3" and 4" JUC	1
H	**Bell Guide:**	
1.	Set of Bell guides to suites 3 1/2", 4 1/2" and 5 1/2" tubing (bell guide O.Ds 2.25", 2.7", 3.25" and 4")	1
2.	Slip Over Bow Spring Centralizer (for 1.5" tool string, 2.13"−5.5" OD range)	1
3.	Heavy duty releasable Bulldog Spear Collet Slip type (2.5", 3" & 4" Size, Slip range from 1.75" to 3.375")	1
I	**Tubing End Locators:**	
a.	Tubing end locators	1

ANNEXURE-II

QUALIFICATION AND EXPERIENCE OF PERSONNEL:

1. WELL TEST COORDINATOR

The Well Test coordinator shall have experience of minimum 5 years of offshore well testing operations. The Well Test Coordinator shall be available in Kakinada /OIL's Shore Base / at drilling rig site based on the company's requirement and shall be the single point of contact between the Company and Bidder for executing scope of work as mentioned in Exhibit 11 (TCP, DST, SPT, NPU & Slickline Services). Well Test coordinator shall be responsible for working closely with the Company to apply the appropriate planning, design and execution to benefit both the Company and the Bidder by offering specific solutions to cater to requirements. He shall be responsible for ensuring the preparation and dispatching of equipment and the execution of services in the field. The Well Test Coordinator shall also be responsible for planning, organizing, leading and controlling the HAZID, HAZOP, and Service Delivery Process, to ensure that the Bidder delivers consistent and superior service quality. The coordinator shall provide draft testing program to the company prior to commencement of operation.

He shall also be based at Wellsite and will be required to co-ordinate all the operations (TCP, DST, SPT, NPU & Slickline services) during well testing operations.

2. OPERATING PERSONNEL FOR PRODUCTION TESTING SURFACE EQUIPMENT:

The Bidder shall provide a team of technically qualified and experienced personnel as mentioned below:

a) Well Test Supervisor
b) Well Test Specialist
c) Well Test Operator
d) Data acquisition & Interpretation specialist

The above personnel will be responsible for operation and maintenance of SPT equipment and also for carrying out well testing safely and successfully.

The scope of well testing will include the following: -

i) To recommend Well testing plan including string design and SPT equipment layout to the Company for approval.
ii) To suggest well testing methodology and string design to do the production testing successfully.
iii) To carry out well testing operations, flow studies, data acquisition & Interpretation etc.
iv) To overcome operational complications such as hydrate formation, paraffin problem, sand incursion, high concentration of H_2S etc.
v) To prepare and submit well testing reports.

2.1 WELL TESTING SUPERVISOR

Well testing supervisor shall have a minimum of 5 years' experience in carrying out offshore production testing operations, including 3 years as testing supervisor.

The testing supervisor shall be able to work as an expert of well testing and shall be able to supervise operations, repair and maintenance of PTS equipment during well testing. He shall have the experience of testing at least 3 offshore wells.

He shall be well versed with the latest testing technology, work procedures, in accordance with internationally recognized safe well testing methodology.

He will also be responsible for preparing the different production testing plans as per the scope of work, for approval of the Company.

2.2 WELL TEST SPECIALIST

Well test specialist shall have a minimum of 5 years' experience in carrying out offshore production testing, including 2 years as well test specialist.

The well test specialist shall be able to carry out all well testing jobs as well as operations, repair and maintenance of SPT equipment'. He shall have the experience of testing at least 3 offshore wells.

2.3 WELL TEST OPERATOR

Well test Operator shall have a minimum of 3 years' experience in operating production testing surface equipment in offshore environment.

2.4 DATA ACQUISTION, PROCESSING & INTERPRETATION SPECIALIST

Person should have minimum 3 years of experience in Processing and interpretation of offshore wells and shall be responsible for data acquisition, interpretation and well test report.

The person is to report to Well Test Supervisor for any abnormality in the operation.

3. OPERATING PERSONNEL FOR TCP AND DST EQUIPMENT:

The Bidder shall provide a team of technically qualified and experienced personnel as mentioned below.

a) TCP Specialist
b) TCP Operator
c) DST Specialist
d) DST Operator

The above personnel will be responsible for operation and maintenance of Sub-Surface and PTS equipment and also for carrying out well testing safely and successfully.

3.1 TCP SPECIALIST:

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

3.2 TCP OPERATOR:

TCP Operator should have a minimum of 3 years' experience in operating TCP equipment in offshore wells.

3.3 DST SPECIALIST:

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

3.4 DST OPERATOR:

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

4. NITROGEN PUMPING (NPU) SERVICES AND SLICKLINE SERVICES

4.1 NPU SPECIALIST

a) The NPU specialist shall have minimum 5 years of offshore experience in operation and maintenance of well activation service equipment, ie., NPU.
b) The person will be responsible for all the operation and maintenance of NPU service.

4.2 NPU OPERATOR

a) The NPU operator should have minimum 3 years offshore experience in operation and maintenance of NPU.
b) The person will be responsible for all the operation mentioned in well activation service under Scope of work.

4.3 SLICKLINE SPECIALIST

a) The Slickline specialist shall have minimum 5 years offshore experience in operation and maintenance of slickline service equipment.

4.4 SLICKLINE OPERATOR

a) The Slickline operator should have minimum 3 years offshore experience in operation and maintenance of Slickline unit.

b) The person will be responsible for all the operation mentioned in slickline service under Scope of work.

5. Other Crew Members:

Personnel deployed by the Bidder, other than the mentioned above, in any operation should have minimum 2 years offshore experience in their relevant field.

Notes to well Testing Services, Surface and downhole Tools:

a) The Bidder shall provide above competent personnel with requisite experiences & qualifications on round the clock basis and deploy accordingly without compromising statutory norms.

b) OIL reserves the right to decide for engagement of these personnel on the basis of verification of relevant documents prior to engagement.

c) On issuance of mobilisation notice, the bidder should submit a list of personnel along with CV who are likely to be deployed for the subject services from bidder's HR to the Company for approval. They should fulfil the above qualifications and experience criteria.

d) The Bidder should agree to maintain the equipment in good operational condition throughout the contract period. The Bidder shall provide and maintain sufficient quantities of spare parts, tools, consumables etc. that are necessary for maintenance and operation of the equipment at no extra cost to Operator.

e) The Bidder must provide Surface Production Testing, well activation/stimulation/killing, surface sampling services confirming to good oil field practices comparable to international standards.

f) The Bidder shall ensure that the equipment quoted is complete in all respect to carry out the operations successfully, specified in Tender documents. The Bidder shall provide and maintain sufficient quantities of spare parts, tools, consumables etc. that are necessary for maintenance and operation of the equipment at no extra cost to company.

g) The Bidder shall also provide any additional item, tools and services etc., which is not listed in the Tender document but is essential for successful well testing operation without any additional cost to company.

h) All the said personnel should be conversant with the Industry Safety Practices and possess valid certificates pertaining to offshore operations from approved agencies in respect of Sea survival, fire prevention and firefighting and first aid in addition to medical fitness certificate etc.

i) The minimum required manpower mentioned above are indicative in nature. The Bidder shall provide manpower for round the clock operation and deploy accordingly without compromising statutory norms.

ADDITIONAL SPECIAL CONDITIONS OF CONTRACT
(WELL TESTING SERVICES)

1. DEFINITIONS:

The following terms and expression shall have the meaning hereby assigned to them unless the context otherwise requires:

1.1 "Equipment" means all Surface Production Testing Package, NPU, CTU and other accessories as listed in the Contract.

1.2 "Operation" means all operations required to be carried out pursuant to this Contract.

2. MOBILIZATION:

2.1 The Bidder shall mobilize the TCP, DST, Surface Production Testing equipment, NPU and Slickline service to the 1st well within 150 days from the date of mobilization notice.

2.2 Company at its discretion may allow commencing of the operation without complete mobilization; however necessary deduction for short, supplied items will be made as per cost evaluated by Company.

(i) For any items supplied by the Company rental will be calculated after amortizing the cost of the item over a period of 5 years applying 15% PTRR (Post tax rate of return). Similar deductions will also be made for short, supplied items.

(ii) A deduction will be calculated based on the Company's determined cost, which shall be treated as final, the basis of which shall be provided to the Bidder.

(iii) Notwithstanding this provision for partial mobilization, Bidder is deemed to have quoted in accordance with relevant clauses for full mobilization.

3. BIDDER'S PERSONNEL:

3.1 Except as otherwise hereinafter provided the selection, replacement, and engagement; determining remuneration of Bidder's personnel shall be the responsibility of the Bidder. Such employees shall be solely of Bidder's employees. Bidder shall ensure that its personnel will be competent and efficient. However, the Bidder shall provide details of experience, qualification and other relevant data of the personnel to be deployed for scrutiny and clearance by the Company before the actual deployment. The Bidder shall not deploy its personnel unless cleared by the Company.

3.2 The Bidder shall have a base office at Supply Base camp at Onshore area be manned by competent personnel, who shall act for the Bidder in all matters relating to Bidder's obligations under the Contract.

3.3 Bidder shall provide all manpower for necessary supervision and execution of all Work under this Contract to Company's satisfaction except where otherwise stated. The minimum number of key personnel to be deployed is mentioned in this document.

3.4 **Replacement of Bidder's personnel:** Bidder will remove and replace any Bidder's personnel within 15 days, who in the opinion of Company, is incompetent, or negligent or of unacceptable behavior or whose employment is otherwise considered by Company to be undesirable.

3.5 Bidder shall deploy on regular basis, all category of their employee required for economic and efficient Work servicing operations.

4. COMPANY'S REQUISITES:

4.1 Bidder shall, prior to mobilization, furnish to Company a list of all personnel who are to perform the Services. The list shall show each person's qualifications, details of Work history and previous employment with dates, training courses attended, and copies of all pertinent certifications. Personnel must be fluent in written and spoken English.

4.2 If the Bidder plans to change any personnel from the list, the Bidder shall notify Company in advance of the intended change and give Company the above-mentioned particulars of the new person.

Company reserves the right to reject any person on such list, and any subsequent changes to the list.

5. Bidder Items:

5.1 Bidder shall provide equipment and personnel to perform the services under the Contract as specified in this document.

5.2 Bidder shall be responsible for maintaining at its own cost adequate stock levels of items including spares and replenishing them as necessary.

5.3 Bidder shall be responsible for the maintenance and repair of all equipment and will provide all spare parts, materials, lubricants, consumables etc. during the entire period of the contractual period. Company shall provide Diesel fuel at Drilling unit.

5.4 Bidder will provide all POL for operation of Bidder's equipment at well-site at Bidder's cost. There shall be no escalation in the day rates and others throughout the duration of the Contract including extension, if any, on account of any price increase in fuel / lubricants.

5.5 Zero-day rate will be applicable for shutdown of operations on account of inadequate supply of Bidder's items, including but not limited to, POL, lubricants, personnel etc.

6. CONDUCTING OPERATIONS:

6.1 The Bidder shall carry out all operations mentioned hereunder with due diligence in a safe and workman like manner and in accordance with accepted international oilfield practices.

6.2 All the equipment and materials to be provided by Bidder shall be in first class working condition.

6.3 Bidder shall be solely responsible for the operation and maintenance of all the equipment and will provide all spare parts, materials, lubricants, consumables etc. during the entire period of the contractual period. Company shall provide Diesel fuel at Drilling unit.

6.4 Upon completion of an operation in a well, statement stating that the well has been completed in accordance with the terms of this Contract and signed by the representatives of both Bidder and Company, will be made available to Company.

6.5 **Safety:** The Bidder shall observe such safety regulations in accordance with acceptable oil field practice and applicable Indian Laws. Bidder shall take all necessary measures reasonably to provide safe working conditions and shall exercise due care & caution in preventing fire, explosion and blow out and maintain fire-fighting equipment in sound condition at all times during the operation. Bidder shall conduct safety drills etc. regularly.

6.6 **Adverse Weather:** Bidder, in consultation with Company, shall decide when, in the face of impending adverse weather conditions, to institute precautionary measures in order to safeguard the well, the equipment and personnel to the fullest possible extent.

6.7 **AMENDMENTS OF COMPLETION PROGRAMME:** It is agreed that Bidder shall carry out Operations in accordance with the program to be furnished by Company, which may be amended from time to time by reasonable modification as Company deems fit, in accordance with good oil field practices.

7. BIDDER's SPECIAL OBLIGATIONS:

7.1 It is expressly understood that Bidder is an independent party and that neither it nor its employees and its sub Bidder are employees or agents of Company provided, however, Company is authorized to designate its representative, who shall at all times have access to all the equipment and materials and all records, for the purposes of observing, inspecting and designating the Work to be performed hereunder by Bidder. The Bidder may treat Company's representative at well site as being in charge of Company's designated personnel at well site. The Company's representative may, amongst other duties, observe, test, check and

control implementation of operations, equipment and inspect works performed by Bidder or examine records kept at well site by Bidder.

7.2 The Bidder shall furnish full particulars of crews e.g. name, nationality, passport number, date and place of issue and expiry date of passport, father's name, date and place of birth, designation etc., four (4) weeks before the start of activities.

7.3 The Bidder shall primarily and solely be responsible for obtaining customs clearance for importation, if any, into India of the Bidder's equipment, spare parts, consumables etc. in connection with the execution of the Work. Any demurrage in this process will be at the Bidder's cost. Bidder shall bear all requisite port fees, clearance fees, transit agent fees, inland transportation charges from port of importation/point of origin to Company's Site etc.

7.4 The Bidder will be fully responsible for any unauthorized imports or wrong declaration of goods and will have to pay the penalty and other consequences as levied by the port/customs authorities for such unauthorized imports.

7.5 Subject to clauses in 'Special Conditions of Contract', the Bidder shall bear all expenses on account of repair/ replacement of all their equipment etc. consequent upon any damage/ loss/ non-performance during the course of operation.

7.6 The Bidder shall be bound by laws and regulations of Government of India and other statutory bodies in India in respect of use of wireless sets, maps, charts, entry regulations, security restrictions, foreign exchange, work permits, customs etc.

7.7 The Bidder shall use to the fullest extent all facilities available in India provided they are technically/ operationally acceptable.

7.8 The Bidder shall follow its own safety rules, in addition to rules prescribed under Indian Laws in this respect.

7.9 The Bidder shall arrange for security of their camp sites, fly camps, equipment, establishment etc. while in Bidder's custody at their own cost.

7.10 The equipment/tools to be furnished by the Bidder under this Contract is the Bidder's property and shall always remain in the possession of the Bidder with the exclusive right to use of such equipment/tools by the Bidder for providing services under this Contract.

7.11 The Contract Price shall remain firm and fixed during the execution of the Contract and not subject to variation on any account.

7.12 The Bidder shall be responsible for, and shall provide for all requirements of their personnel, and of their sub-Bidder, if any, including but not limited to their insurance, housing, medical services, messing, transportation (both air and land transportation), vacation, salaries and all amenities, termination payment and all immigration requirement and taxes, if any, payable in India or outside at no charge to the Company.

7.13 The Well Test Supervisor shall have all power requisite for performance of the Work. He shall liaise with the Company's representative for the proper co-ordination and timely completion of the job and on any other matters pertaining to the job.

7.14 **Compliance With Company's Instructions:** The Bidder shall comply with all instructions of Company consistent with the provision of this Contract, but not limited to Work program, safety instructions, confidential nature of information, etc. Such instructions shall, if the Bidder requests, be confirmed in writing by Company's representative.

7.15 **WELL RECORDS:** Bidder shall keep/provide the record of operation on daily basis of each well on to the Company's Representative.

7.16 Bidder shall arrange for all types of transportation of all equipment, etc. from their Supply base/port of import to the Site and back at the end of the Contract at their own expense. Arrangement of Road Permits and payment of Entry Tax for bringing equipment/material to Workplace shall be Bidder's responsibility.

8. RIGHTS AND PRIVILEGES OF COMPANY:

Company shall be entitled –

8.1 To check the Equipment and other Bidder's items before the commencement of operation. If they are not found in good order or do not meet specifications as per Annexure-I or in case of non-availability of some of the Bidder's items listed Annexure-I, the Bidder may not be allowed for commencement until the Bidder has remedied such default.

8.2 To approve the choice of sub-Bidder for any essential third-party contract, concerning materials, equipment, personnel and services to be rendered by Bidder.

8.3 To check, at all times, Bidder's stock level, to inspect Bidder's equipment and request for renovation or replacement thereof, if found in unsatisfactory condition or not conforming to regulations or specifications.

8.4 To order suspension of operations while and whenever:

a) Bidder's personnel is deemed by Company to be not satisfactory, and/ or

b) Bidder's equipment does not conform to regulations or to the specifications laid down in the Contract, and/ or

c) Bidder's equipment turns into a danger to personnel on or around the Equipment or to the well, and/ or

d) Bidder's insurance in connection with the operations hereunder is found by Company not to conform to the requirements set forth in the Contract, and/ or

e) Bidder fails to meet any of the provisions in the Contract, and/ or

f) Any shortage in key/additional (compulsory) personnel and inadequacy of other personnel.

9. HEADINGS:

The headings of the clauses of the Contract are for convenience only and shall not be used to interpret the provisions hereof.

10. PRE-CHECKS AND PRE-TESTS OF EQUIPMENT/ACCESSORIES:

10.1 The Bidder shall test, carry out all necessary pre-checks and pre-tests of the equipment/ accessories to ensure trouble free and safe operation prior to each job or as instructed by the Company's Representative. Bidder shall record results of all such tests in the daily job report.

10.2 **DISCIPLINE:** The Bidder shall maintain strict discipline and good order among their employees and their sub-Bidder, if any, and shall abide by and conform to all rules and regulations promulgated by the Company. Should the Company feel with just cause that the conduct of any of the Bidder's personnel is detrimental to Company's interest; the Company shall notify Bidder in writing the reasons for requesting removal of such personnel. The Bidder shall remove and replace such employees at their expense within 7 days from the time of such instruction given by the Company.

11. ASSOCIATION OF COMPANY'S PERSONNEL:

11.1 Company may depute one or more than one representative(s) / engineer(s) to act on its behalf for overall co-ordination and operational management at location. Company's representative will be vested with the authority to order any changes in the Scope of Work to the extent so authorized and notified by the Company in writing. He shall liaise with the Bidder and monitor progress to ensure timely completion of the jobs. He shall also have the authority to oversee the execution of jobs by the Bidder and to ensure compliance of provisions of the Contract.

11.2 Company's representatives shall have free access to all the equipment of the Bidder during operations as well as idle time for the purpose of observing/ inspecting the operations performed by the Bidder in order to judge whether, in Company's opinion, the Bidder is complying with the provisions of the Contract.

11.3 The Bidder should maintain sufficient stock of the critical spare part to avoid any major shut down. Bidder must observe all safety and statutory norms applicable to the Company to prevent surface pollution and injury to personnel working in the area.

Amended Exhibit 13

13) FISHING TOOLS AND SERVICES

1. GENERAL

In addition to providing the fishing tools and services, the Bidder shall carry out the following:

a) Maintenance of the tools and equipment.
b) Updating tool inventory.
c) A monthly inventory for the entire rental tools and consumables.
d) A monthly report on consumables consumed in the well with the details of replenishment of the stock to maintain spares level.
e) Tracking movement of tools from shore to rig.
f) Provide tools running / job records, any recommendations, and any other reports as requested.
g) Equipment failure reports.
h) Providing any other programs or reports relevant to the operations and to the contract.

2. BIDDER TO PROVIDE

a) Company reserves the right to select any, all, or part of any of the services, equipment, and options specified herein.
b) Bidder shall be able to provide all equipment, labour, materials, and services specified herein. Bidder shall be solely responsible for the operation of Bidder's Equipment including but not limited to the rigging up/preparation, testing, running, and laying down thereof.

3. Approvals

Bidder shall submit to Company for approval prior to the Commencement Date:

a) All Bidder's tools and equipment with all complete specifications.
b) List of minimum recommended spares.
c) Preventive maintenance schedule and plan for all Bidder's Equipment
d) Bidder's safety manual and procedures.
e) Detailed Mobilisation Schedule.

4. EQUIPMENT AND SERVICE LIST FOR FISHING TOOLS AND SERVICES

A minimum list of Fishing Tools, Services and personnel is provided below. Company reserves the right to order whole or any part of the list as required.

4.1 Personnel

Fishing Supervisor

He will be on call out basis and will perform the following tasks when required:

a) Prepare Fishing tool running procedures.
b) Measure, draw, and visually inspect all fishing tool BHAs.
c) Witness all of the tools being picked up, RIH and operated.
d) Track which tools are used in a daily log.
e) Submit a detailed report on the jobs performed on the rig / base.
f) Summarize all operations with their tools.
g) Summarize any equipment failures.
h) Present a list of accessories that must be replaced after use due to wear or loss (e.g., grapples, packers, cutter blades).
i) Arrange replacement of worn, broken, or missing tools if requested.
j) Make recommendations to improve future operations.
k) Maintenance of all tools, equipment and spare parts.

4.2 Schedules for Fishing tool operator

The fishing tool operator will be required on a call-out basis. Company shall give a maximum of 07 days' notice. The Bidder is required to mention the maximum time an individual is allowed to stay on the rig as per the Bidders company policy. The Bidder shall submit CVs of the personnel to the company within 30 days of issue of letter of award or 45 days prior to commencement of contract (whichever later) for Company's approval. The Bidder shall not deploy its personnel unless cleared by the Company.

5. Repair, maintenance and logistics

The Bidder shall provide the proposal for the provision of workshop facilities and the necessary manpower required at their operations base or agreed upon location in India to handle the servicing and redressing of tools, and the logistics of returning the tools to the drilling site or Company operations base. For the Bidder having existing workshop facilities and supply base in India for servicing and repairs of tool,

Company may exercise the option for servicing of downhole tools at Bidder's shore Base.

6. Reporting

6.1 General

Bidder shall comply with the following reporting requirements as a minimum. Bidder shall also provide additional reports to the Company Representative as may reasonably be requested during the Work.

a) Updated list of tools being provided on board.
b) Maintenance and inspection reports for all tools.
c) Updated tool inventory.
d) Complete file of detailed manifests of equipment sent to and from the Drilling Unit.
e) Providing job running records, recommendations, tool failure reports and any other reports as reasonably requested.
f) A daily and weekly summary of tools used in the operation.
g) Fishing and Abandonment tool running procedures.
h) Dimensioned drawings of all Fishing and Abandonment tool BHAs.
i) Summary of all operations with their tools.
j) Summary of any equipment failures.
k) A list of accessories that must be replaced after use due to wear or loss (e.g., grapples, packers, cutter blades).
l) A monthly report of the inventory and consumable consumption.

6.2 Tools & Equipment Inventory

Bidder shall maintain an up-to-date inventory of all tools and equipment held on the Drilling Unit, Shore Base, workboats or elsewhere. This report shall be submitted on a monthly basis to the Company Representative. Bidder is responsible to ensure that tools are picked up, made-up, and laid down according to the Bidder's Operating Guidelines and Procedures, which shall be approved by the Company prior to the commencement of operations.

6.3 End of Well Report

Bidder shall provide the following end of well reports within 14 days of the end of each well for each of the services provided as applicable:

a) A detailed recap of each job, including time breakdown.

b) A recap of any problems and equipment failures running fishing tools along with recommendations on how to prevent them.
c) A detailed cost breakdown by section for all of the tools and equipment to be provided.
d) A summary of all operations with their tools.
e) A lessons Learned Document with any recommendation to improve and optimize future jobs.
f) A final list of accessories that must be replaced due to wear or loss (e.g., grapples, packers, cutter blades, slip inserts).
g) A mobilisation plan for any tools that must be replaced including shipping time, cost, and importation plan.
h) A demobilization plan at the end of the project showing destination for all the tools, estimated shipping time and export plan.

6.4 Sample Reports

Bidder's outline example reports of those reports required as above should be attached. The final reporting format will be agreed upon with the Company prior to the commencement of work.

7. EQUIPMENT

7.1 Additional Equipment

The Bidder's entire list of Fishing Equipment and tools (Bidder's standard price table with applicable discounts) should be listed. Bidder shall maintain adequate stocks of consumables and accessories to manage the operation of the Work in a remote location.

7.2 Maintenance

Upon request by Company, Bidder shall provide proof of maintenance and service history of all items of equipment supplied.

7.3 Equipment to be Operational.

Bidder shall maintain all equipment in such operating condition to prevent downtime or waiting on equipment during operation. Bidder shall supply all relevant certification requested by Company. All spares required for the service of the equipment and tools shall be provided by the Bidder.

8. Inspection

Bidder acknowledges that Company may inspect Bidder's Equipment using a third-party inspection company as per Clause No: 8.0 of SCC and at any time during the duration of the contract. Bidder shall mobilize Bidder's Equipment to Shore Base at Kerala-Konkan as directed by Company to allow inspection to be carried out. Bidder acknowledges that Company may require random API testing of any/all tools by an independent third-party, at their cost. Alternatively, if instructed, the Bidder shall supply the tools inspected, at their cost, prior to mobilizing the same to the Shore Base, however in such case the Bidder will have to provide third party inspection certificates prior to the shipment.

9. Company's Standards

Company's standards for drilling tools and other related equipment are DS-1 Category 4. Bidder shall submit the inspection reports based on DS-1 Category 4 standards, prior to the mobilisation.

10. LOGISTICS

10.1 Shore Base

Bidder is required to mobilise all its equipment to the Shore Base at Kollam, Kerela. All the equipment supplied by the Bidder to the Company under the contract, shall be stored in Bidder's facilities at Kollam, Kerela and shall be delivered at Shore Base at Kollam, Kerela as per operational requirement and when instructed by the Company. Marine spread provided by the Bundle Service Provider will be used for transporting the equipment from Shore Base to the Drilling Unit and vice-versa.

10.2 Load Testing

All lifting and load bearing equipment of the Bidder shall be certified prior to use and all relevant certifications shall be available for inspection. All toolboxes and containers must be sent with certified slings and a copy of the certification should be sent with the equipment. The slings should be clearly identifiable as belonging to the Bidder.

TABLE-A LIST OF FISHING TOOLS

List of Fishing Tools		
S.No.	**Description of Equipment**	**Qty**
A	**8-1/4" Spear with Bull Nose**	
1.	8-1/4" OD Bowen / ITCO releasing spear including bull nose with 6-5/8" Reg box x 4-1/2" IF pin conn c/w protectors	1
A1	**20" Casing – 0.625" Wall Thickness**	
1.	Segment Grapple	1
2.	Spear Pack-off with 4-1/2" IF box x 4-1/2" IF pin conn c/w protector installed with rubber cup and spear pack off and crossover sub	1
3.	Stop sub with 6-5/8" Reg box x pin conn c/w protector with 21" OD welded stop ring	1
A2	**16" Casing - 84 lbs/ft**	
1.	Segment grapple	1
2.	Spear Pack-Off Assy with 4-1/2" If box x Bull nose c/w protector installed with rubber cap and spear pack off and cross over sub	1
3.	Stop sub with 6-5/8" Reg box x pin conn c/w protector with 17" OD welded stop ring	1
A3	**13-3/8" Casing - 68 lbs/ft**	
1.	Segment grapple	1
2.	Spear Pack-Off Assy with 4-1/2" If box x Bull nose c/w protector installed with rubber cap and spear pack off and cross over sub	1
3.	Stop sub with 6-5/8" Reg box x pin conn c/w protector with 14-3/8" OD welded stop ring	1
A4	**9-5/8" Casing – 53.5 lbs/ft**	
1.	Segment grapple	1
2.	Spear Pack-Off Assy with 4-1/2" If box x Bull nose c/w protector installed with rubber cap and spear pack off and cross over sub	1
3.	Stop sub with 6-5/8" Reg box x pin conn c/w protector with 10-5/8" OD welded stop ring	1
A5	**5-3/4" Spear (for 7" Casing - 32 lbs/ft)**	

1.	5-3/4" Bowen / ITCO releasing spear with 3-1/2" IF box x pin conn c/w protector installed with 7" 26-35 lbs/ft spear grapple, spear pack off and cross over sub	1
2.	Spear Pack-off Assy with 3-1/2" IF box x Bull nose installed with rubber cup	1
3.	Stop sub with 3-1/2" IF box x pin conn c/w protector with 8-1/4" OD welded stop ring	1
A6	**30" Casing Spear**	
1.	30" Casing Spear, D/W 30" CSG Segment Grapple – 6 5/8 Reg Conn	1
	Other Equipment	
B	**11 3/4" FS Overshot**	
1.	11-3/4" OD Bowen Series 150 Full Strength Overshot with standard accessories and 6.5/8" Reg. Box Conn c/w with protector	1
B1	**Extensions**	
1.	11-3/4" OD Bowen Series 150 Full Strength 36" long Upper Overshot Extension	1
B2	**Wall hook guide**	
1.	11 3/4" OD FS Overshot 26" Wall Hook Guide	1
B3	**Lip Guides**	
1.	11-3/4" OD Standard Guide for 11-3/4" OD Bowen Series 150 FS Overshot	1
2.	13" OD Oversize Guide for 11-3/4" OD Bowen Series 150 FS Overshot	1
3.	15" OD Oversize Guide for 11-3/4" OD Bowen Series 150 FS Overshot	1
4.	24" OD Oversize Guide for 11-3/4" OD Bowen Series 150 FS Overshot	1
B4	**Spiral Grapples**	
1.	9-1/2" OD Spiral Grapples with Type A Packer	1
2.	Spiral Grapple Controls	1
B5	**Basket Grapples**	
1.	9-3/8" OD Basket Grapples with Mill control Packers	1
2.	9-5/8" OD Spiral Grapples with Type A Packer	1

3.	8-1/2" OD Basket Grapples with Mill control Packers	1
4.	8-3/8" OD Basket Grapples with Mill control Packers	1
5.	8-1/4" OD Basket Grapples with Mill control Packers	1
6.	8-1/8" OD Basket Grapples with Mill control Packers	1
7.	8" OD Basket Grapples with Mill control Packers	1
8.	7-7/8" OD Basket Grapples with Mill control Packers	1
9.	7-3/4" OD Basket Grapples with Mill control Packers	1
10.	7” OD Basket Grapples with Mill control Packers	1
11.	6-7/8” OD Basket Grapples with Mill control Packers	1
12.	6-3/4” OD Basket Grapples with Mill control Packers	1
13.	6-5/8" OD Basket Grapples with Mill control Packers	1
14.	6-1/2" OD Basket Grapples with Mill control Packers	1
15.	6-3/8" OD Basket Grapples with Mill control Packers	1
16.	6-1/4" OD Basket Grapples with Mill control Packers	1
17.	6-1/8" OD Basket Grapples with Mill control Packers	1
18.	6 " OD Basket Grapples with Mill control Packers	
19.	5-7/8” OD Basket Grapples with Mill control Packers	1
20.	5-3/4" OD Basket Grapples with Mill control Packers	1
21.	5-1/2" OD Basket Grapples with Mill control Packers	1
22.	5-3/8" OD Basket Grapples with Mill control Packers	1

23.	5" OD Basket Grapples with Mill control Packers	1
24.	2-7/8” OD Basket Grapples with Mill control Packers	
B6	**Basket Grapple Control**	
1.	Basket Grapple Control	1
C	**8 1/8" FS Overshot**	
1.	8-1/8” OD FS Bowen Series 150 Releasing Overshot with Standard guide c/w 4-1/2” IF Box Connections	1
C1	**Extensions**	
1.	8-1/8” OD FS Bowen Series 150 Releasing 36” long Overshot Extension	1
C2	**Wallhook Guide**	
1.	8 1/8" OD FS 36" long Overshot Wallhook Guide	1
C3	**Lip Guides**	
1.	Standard Guide for 8-1/8” FS Overshot	1
2.	11-1/2” OD Oversize Guide for 8-1/8” FS Overshot	1
3.	15” OD Oversize Guide for 8-1/8” FS Overshot	1
C4	**Spiral Grapples**	
1.	6 1/2" Spiral Grapple C/W type "A" Packer	1
2.	6 3/8" Spiral Grapple C/W type "A" Packer	1
3.	6 1/4" Spiral Grapple C/W type "A" Packer	1
4.	6 1/8" Spiral Grapple C/W type "A" Packer	1
5.	6" Spiral Grapple C/W type "A" Packer	1
6.	5 7/8" Spiral Grapple C/W type "A" Packer	1
7.	Spiral Grapple Control	4
C5	**Basket Grapples**	
1.	5 3/4" Basket Grapple	1
2.	5 1/2" Basket Grapple C/W Mill Control Packer	1
3.	5-3/8" OD Basket Grapples with Mill control Packers	1
4.	5-1/4" OD Basket Grapples with Mill control Packers	1
5.	5" Basket Grapple C/W Mill Control Packer	1
6.	4-7/8" OD Basket Grapples with Mill control Packers	1

7.	4-3/4" OD Basket Grapples with Mill control Packers	1
8.	4-5/8" OD Basket Grapples with Mill control Packers	1
9.	4 1/2" Basket Grapple C/W Mill Control Packer	1
10.	4-1/4" OD Basket Grapples with Mill control Packers	1
11.	4-3/8" OD Basket Grapples with Mill control Packers	1
12.	3-1/2" OD Basket Grapples with Mill control Packers	1
13.	3-3/8" OD Basket Grapples with Mill control Packers	1
14.	2-7/8" OD Basket Grapples with Mill control Packers	1
C6	**Basket Grapple Control**	
1.	Basket Grapple Control	1
D	**8 1/8" SH Overshot**	
1.	8-1/8" OD SH Bowen Series 150 Releasing Overshot with Standard guide c/w 4-1/2" IF Box Connections	1
D1	**Extensions**	
1.	8-1/8" OD SH Bowen Series 150 Releasing 36" long Overshot Extension	1
D2	**Lip Guides**	
1.	Standard Guide for 8-1/8" SH Overshot	1
D3	**Spiral Grapples**	
1.	7" Spiral Grapple with Type A Packer	1
2.	6-7/8" Spiral Grapple with Type A Packer	1
3.	6-3/4" Spiral Grapple with Type A Packer	1
4.	6-5/8" Spiral Grapple with Type A Packer	1
5.	Spiral Grapple Controls	4
D4	**Basket Grapples**	
1.	6-3/8" OD Basket Grapples with Mill control Packers	1
2.	6-1/4" OD Basket Grapples with Mill control Packers	1
3.	6" OD Basket Grapples with Mill control Packers	1

4.	5-7/8" OD Basket Grapples with Mill control Packers	1
D5	**Basket Grapple Control**	
1.	Basket Grapple Control	1
E	**5 7/8" SH Overshot**	
1.	5-7/8" OD SH S150 Bowen Overshot with Standard guide with 3-1/2" IF Box Conn C/W protector	1
E1	**Extensions**	
1.	5-7/8" OD S H Overshot Extension 36" Long	1
E2	**Guides**	
1.	Standard Guide for 5-7/8" OD SH Overshot	1
E3	**Spiral Grapples**	
1.	5" Spiral Grapple C/W type "A" Packer	1
2.	4 7/8" Spiral Grapple C/W type "A" Packer	1
3.	Spiral Grapple Control	2
F	**5-3/4" FS Overshot**	
1.	5-3/4" OD FS S150 Bowen Overshot with Standard guide with 3-1/2" IF Box Conn C/W protector	1
F1	**Extensions**	
1.	5-3/4" OD F S Overshot Extension 36" long	1
F2	**Guides**	
1.	5-3/4 OD Standard Guide for 5-3/4" OD FS Overshot	1
2.	8" OD Oversize Guide for 5-3/4" OD FS Overshot	1
F3	**Spiral Grapples**	
1.	4-3/4" Spiral Grapple C/W type "A" Packer	1
2.	4-5/8" Spiral Grapple C/W type "A" Packer	1
3.	4-1/2" Spiral Grapple C/W type "A" Packer	1
4.	4-3/8" Spiral Grapple C/W type "A" Packer	1
5.	Spiral Grapple Control	4
F4	**Basket Grapples**	
1.	4-1/4" Basket Grapple C/W Mill Control Packer	1
2.	3-1/2" Basket Grapple C/W Mill Control Packer	1
3.	2.7/8" Basket Grapple c/w Mill control Packer	1

F5	**Basket Grapple Control**	
1.	Basket Grapple Control	1
G	**Reverse Circulation Junk Basket (RCJB)**	
1.	15" OD Bowen Reverse Circulating Junk Basket c/w 6-5/8" Regular Box Connection and with 17-1/2" OD Milling Head & Catchers.	1
2.	11" OD Bowen Reverse Circulating Junk Basket c/w 6-5/8" Regular Box Connection and with 12-1/4" OD Milling Head & Catchers.	1
3.	7-7/8" OD Bowen Reverse Circulating Junk Basket c/w 4-1/2" IF Box Connection and with 8-1/2" OD Milling ahead and catcher	1
H	**Ditch Magnet**	
1.	Ditch magnet 36"/24" long	1
I	**Flat Bottom Junk Mills**	
1.	17" OD Flat Bottom Junk Mill with 6-5/8" Reg pin up conn c/w protector	1
2.	12-1/8" Flat Bottom Junk Mill with 6-5/8" Reg pin up conn c/w protector	1
3.	8-1/4" OD Flat Bottom Junk Mill with 4-1/2" Reg pin up conn c/w protector	1
4.	5-3/4" OD Flat Bottom Junk Mill with 3-1/2" Reg pin up conn c/w protector	1
J	**Tapered Mills**	
1.	17" OD Tapered Mil with 6-5/8" Reg pin up conn c/w protector	1
2.	12" OD Tapered Mil with 6-5/8" Reg pin up conn c/w protector	1
3.	8-1/4" OD Tapered Mil with 4-1/2" Reg pin up c/w protector	1
4.	5-3/4" OD Tapered Mil with 3-1/2" Reg pin up c/w protector	1
K	**Fishing Magnets**	
1.	16" OD Bowen Fishing Magnet with 7-5/8" Reg Pin UP Conn C/W protector	1
2.	11-1/2" OD Bowen Fishing Magnet with 6-5/8" Reg PIN UP Conn C/W protector.	1

3.	7" OD Bowen Fishing Magnet with 4-1/2" Reg Pin UP Conn C/W protector	1
4.	5" OD Bowen Fishing Magnet with 3-1/2" Reg Pin up connection suitable to run inside 7", 32 ppf casing C/W protectors	1
L	**Impression Block**	
1.	16" LIB w/6-5/8" Reg Pin UP Conn	1
2.	14" LIB w/6-5/8" Reg Pin UP Conn	1
3.	11" LIB w/6-5/8" Reg Pin UP Conn	1
4.	8-1/2" LIB w/ 4-1/2" Reg Pin UP Conn	1
5.	5-3/4" LIB w/ 3-1/2" Reg Pin UP Conn	1
M	**Taper Tap**	
1.	Taper tap 7-3/4" OD C/W 6-5/8" Reg Box Connection wicker 4-3/4" x 3"	1
2.	Taper tap 6-1/8" OD, Catch size 3-1/4"- 4-5/8", 4-1/2" IF connection	1
3.	4-3/4" OD Taper tap C/W NC38 connection wicker 2-3/16"- 3-11/16	1
N	**Fishing Jar**	
1.	7-3/4" OD Bowen Fishing Jar with 6-5/8" Reg box x pin conn c/w protector	1
2.	6-1/2" OD Bowen Fishing Jar with 4-1/2" IF box x pin conn c/w protector	1
3.	4-3/4" OD Bowen Fishing Jar with 3-1/2" IF box x pin conn c/w protector	1
O	**Jar Intensifiers**	
1.	7-3/4" OD Bowen Jar Intensifier with 6-5/8" Reg box x pin conn c/w protector	1
2.	6-1/2" OD Bowen Jar Intensifier with 4-1/2" IF box x pin conn c/w protector	1
3.	4-3/4" OD Bowen Jar Intensifier with 3-1/2" IF box x pin conn c/w protector	1
P	**Bumper Sub**	
1.	7-3/4" or 8" OD Lubricated Fishing Bumper Sub c/w 6-5/8" Reg. Connections	1
2.	6 1/2" OD Standard Fishing Bumper Sub c/w 4-1/2" IF Conn.	1

3.	4-3/4" OD Standard Fishing Bumper Sub c/w 3-1/2" IF Conn.	1
Q	**Junk Sub**	
1.	15" OD Junk Sub c/w 7-5/8" Regular Pin x Box (OD should be 12-3/4", 7-5/8 Reg connections)	1
2.	13-3/8" OD Junk Sub c/w 7-5/8" Regular Pin x Box (OD should be 12-3/4", 7-5/8 Reg connections)	1
3.	9-5/8" OD Junk Sub c/w 6-5/8" Regular Pin x Box	1
4.	7" OD Junk Sub c/w 4-1/2" Regular Connection (OD should be 6-5/8")	1
5.	5" OD Junk Sub c/w 3-1/2" Regular Connection	1
R	**Safety Joints**	
1.	8" OD Drill Pipe Safety Joint with 6-5/8" Reg box x pin conn c/w protector	1
2.	6-1/2" OD Drill Pipe Safety Joint with 4-1/2" IF box x pin conn c/w protector	1
3.	4-3/4" OD Drill Pipe Safety Joint with 3-1/2" IF box x pin conn c/w protector	1
S	**Surface Bumper Jars**	
1.	7" OD Bowen Surface Bumper Jar with 4-1/2" IF box x pin conn c/w protector	1
T	**10-3/4" Wash pipe (on call-out basis)**	
1.	10-3/4" OD Wash pipe with 10-3/4" 51 lbs/ft FJWP box x pin conn c/w protectors	4
2.	10-3/4" OD 51lbs/ft FJWP Lifting Plug	2
3.	Drive sub with 4-1/2" IF box x 10-3/4" 51lbs/ft FJWP pin conn c/w protector	1
4.	12" OD x 9-1/2" ID Rotary Shoe with 10-3/4" 51lbs/ft FJWP box conn c/w protectors	3
T1	**Handling tools for 10-3/4" Wash pipe**	
1.	10-3/4" Elevator	1
2.	10-3/4" Single Joint Elevator	1

3.	Baash Ross type C-7 Slip dressed with liner to hold 10-3/4" OD Wash pipe	1
U	**7-5/8" Wash pipe (on call-out basis)**	
1.	7-5/8" OD Wash pipe with 7-5/8" 29lbs/ft FJWP box x pin conn c/w protectors	4
2.	7-5/8" 29lbs/ft FJWP lifting plug	3
3.	7-5/8" OD x 10FT Long Wash pipe Extension with 7-5/8" 29lbs/ft FJWP conn c/w protector	1
4.	7-5/8" OD x 15FT Long Wash pipe Extension with 7-5/8" 29lbs/ft FJWP conn c/w protector	1
5.	Drive sub with 4-1/2" IF box x 7-5/8" 29lbs/ft FJWP pin conn c/w protector	1
6.	8-1/2" OD x 6-15/16" ID Rotary shoe with 7-5/8" 29lbs/ft FJWP box conn c/w protectors	2
7.	8-1/2" x 6-5/8" ID Rotary Shoe with 7-5/8" 29lbs/ft FJWP box conn c/w protectors	2
8.	Triple connection sub with 4-1/2" IF box x 7-5/8" 29 lbs/ft FJWP pin x 4-1/2" Reg box conn c/w protectors	1
U1	**Handling tools for 7-5/8" Wash pipe**	
1.	7-5/8" Elevator	1
2.	7-5/8" Single Joint Elevator	1
3.	Baash-Ross type C-7 Slip dressed with Liner to hold 7-5/8" OD Wash pipe	1
4.	Safety Clamp - 10-3/4"-7 5/8"	1
V	**Section Mill (on call-out basis)**	
1.	8" Section Mill c/w 4-1/2" Reg conn	1
2.	Knives for 8" Mill to cut 9-5/8" Casing	1
3.	Friction Blocks for 8" Mill	1
4.	6-1/2" Griffith shock tools W/4-1/2" IF pin x box conn	1
5.	6-1/2" OD Non-rotating Stabilizer with 4-1/2" IF pin x box conn c/w 8-1/2" OD Sleeve	1
6.	Bit sub - 3-1/2" IF box x 3-1/2" Reg box	1

V1	**DELETED**	
W	**DELETED**	
X	**Multi-String Casing Cutter**	
1.	Multi-String casing cutter to cut the following cemented or non-cemented casings along with all necessary spares including knives 30”, 20”, 13-3/8”, 9-5/8” & 7”	2
Y	**Cargo Baskets and Boxes**	
1.	Cargo Baskets and Boxes to store & transport Fishing tools, Grapples etc.	1 Lot
Fishing Tools required for 5-7/8" Hole & 4-1/2" casing on Optional basis		
S.No.	**Description of Equipment**	**Qty**
A1	**3-1/4” Spear for 4-1/2 “15.1 lb/ft casing**	
1.	3-1/4” Bowen / ITCO releasing spear with 2-7/8” box x pin conn c/w protector installed with 4-1/2”, 15.1 lb/ft spear grapple, spear pack off and cross over sub	1
B1	**Flat Bottom Junk Mills**	
1.	3-1/4” OD Flat Bottom Junk Mill with 2-3/8" Reg pin up conn c/w protector	1
C1	**Tapered Mills**	
1.	3-1/4" OD Tapered Mil with 2-3/8" Reg pin up c/w protector	1
D1	**Fishing Magnets**	
1.	3" OD Bowen Fishing Magnet with 2-3/8” Reg Pin up connection suitable to run inside 4-1/2”, 15.1 ppf casing C/W protectors	1
E1	**Taper Tap**	
1.	Taper tap suitable for 3-1/2" DP & 2-7/8" PAC Drill pipes	1
F1	**Fishing Jar**	
1.	3-1/8" OD Bowen Jar with 2-3/8" API reg Connection	1
G1	**Reverse Circulation Junk Basket (RCJB)**	
1.	5-1/8" OD Bowen Reverse Circulating Junk	1

	Basket c/w 3-1/2" IF Box Connection – w/5-7/8” OD c/w Milling ahead and catcher	
H1	**Cargo Baskets and Boxes (for Optional tools)**	
1.	Cargo Baskets and Boxes to store & transport Fishing tools, Grapples etc.	1 Lot

AMENDED CHECKLIST-II

BEC CHECK LIST

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
1.0	**VITAL CRITERIA FOR ACCEPTANCE OF BIDS** The bid shall conform generally to the specifications and terms and conditions given in the Bid Document. Bidders are advised not to take any exception / deviation to the Bid Document. Exceptions / Deviations, if any, should be brought out during the Pre-Bid Conference as scheduled against this Tender. After processing such suggestions, Company may communicate the changes, if any, through an addendum to the tender document in this regard to the prospective bidders. Still, if any exceptions / deviations are maintained in the bid, such conditional / nonconforming bids may not be considered and rejected outright.		
1.1	**GENERAL CONFORMITY:** Bids will be rejected in case the equipment and services offered do not confirm to the required parameters as stipulated in the technical specifications of this bidding document. Notwithstanding the general conformity of the bid to the stipulated specifications, the following requirements will have to be particularly met by the bidders without which the same will be considered as non-responsive and will not be considered for evaluation.		
1.2	**Scope of Work / Technical Evaluation criteria:** The following vital technical conditions should be strictly complied with failing which the bid will be rejected: Bids should be complete and covering the entire scope of work / supply and should conform to the		

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	technical specifications indicated in the bid documents. Incomplete and non-conforming bids will be rejected outright. The Bidder shall be required to provide Bundled Services with capable and experienced service crew at the Rig / Base Personnel along with Shore Base & Marine Logistics Services as per Contract Document, for Shallow water Operations in Offshore Indian waters, for one Independent Leg Jack-Up Drilling Unit to be hired by the Company for exploratory drilling, testing and completions operations, in water depths between 60 m to 80 m and well depth up to 6500 m (TVD). The Services shall be capable of operating in the above specified water depths. The Bidder shall provide all services listed under Group-I & Group-II and should quote for all Group-I & Group-II Services. **Bundled Services (Group-I)**: 1) Cementing Equipment & Services, including slurry design, supply of oil well cement and additives along with Base Engineer for offshore wells. 2) Supply of floating & guiding equipment and casing accessories. 3) Casing and Tubing Running Tools and Services. 4) Drilling tools inclusive of Tubular for Well Testing. 5) Directional Drilling – LWD / MWD, Mud Motor and Directional Drilling Services along with Crew for offshore wells. 6) Mud Engineering Services, including supply of mud chemicals along with Mud Engineers for offshore wells. 7) Supply of Drill bits on a consignment basis. 8) Liner Hanger Equipment supply and Liner running Services. 9) Mud Logging Unit Services along with the crew for offshore wells. 10) Supply of Surface Wellheads and 30" Conductor Pipe. 11) Well Testing & TCP Services along with the crew for carrying out		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	production testing of exploratory wells. 12) Wireline Logging along with Crew for offshore wells. 13) Fishing & Milling tools rental Services. 14) Coring, Core Handling & Core Stabilization Services. 15) Project Coordinator and Rig Site Coordinators. **Bundled Services (Group-II):** 1) Shore Based Services. 2) Marine Vessels – AHTS with 100 bollard pull or more along with the crew.		
A.	**TECHNICAL EVALUATION CRITERIA**		
2.1	**ELIGIBILITY AND EXPERIENCE OF THE BIDDER**		
	a. The bidder should be an Offshore Oilfield Services Provider and must have in-house capability to provide at least any **3 out of the 5** services namely: (1) Cementing Services (2) Directional Drilling Services (3) Mud Engineering Services (4) Wire line Logging Services (5) Well Testing Services The bidder should have minimum experience for these services as indicated below: 1. <u>Cementing Services:</u> 1.1 The Bidder should have a minimum of five (05) years of experience in providing the Cementing Services to Drilling / E&P Companies with at least three (03) years in offshore areas. 1.2 The Bidder should also have the experience of cementing at least two (02) offshore Wells and should have executed at least one contract for Cementing services in offshore area in the last 07 years reckoned from original bid closing date. 2. <u>Directional Drilling Services:</u>		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	2.1 The bidder should have a minimum of five (05) years of experience in providing the Directional Drilling Services (LWD, MWD & RSS/Mud Motor) to Drilling/E&P Companies with at least three (03) years in offshore areas. 2.2 The Bidder should also have the experience in providing the Directional Drilling Services (LWD, MWD & RSS/Mud Motor) to at least two (02) Offshore Wells and should have executed at least one contract for Directional Drilling Services (LWD, MWD & RSS/Mud Motor) in offshore area in the last 07 years reckoned from original bid closing date. 3. <u>Mud Engineering Services:</u> 3.1 The bidder should have a minimum of five (05) years of experience in providing the Mud Engineering Services to Drilling/E&P Companies with at least three (03) years in offshore areas. 3.2 The Bidder should also have executed at least one contract of Mud Engineering Services using Synthetic Oil Base Mud System / Water Base Mud System, in Offshore Wells in the last 07 years reckoned from original bid closing date. 3.3 The Bidder should submit a laboratory test report (issued by ONGC, IDT-Dehradun or Bidder's own laboratory) of the formulations conforming to OIL's recommended parameters as per scope of work along with the technical bid. Bids not accompanied by a valid test report shall be rejected. Test report as above received after date opening of tender will not be accepted. 4. <u>Wire line Logging Services:</u>		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	4.1 The Bidder should have a minimum of five (05) years of experience in providing Wire Line Logging services to Drilling/E&P Companies with at least three (03) years in offshore areas. 4.2 The Bidder should also have the experience in providing Wire Line Logging services to at least two (02) Offshore wells and should have executed at least one contract for Wire Line Logging services in offshore area in the last 07 years reckoned from original bid closing date. 5. Well Testing Services: 5.1 Well Testing Services: (a) The bidder should have a minimum of five (05) years of experience in providing PTS Services to E&P companies/Drilling companies including 3 years in offshore area and should have experience of conducting testing in at-least 02 offshore wells. (b) Bidder should have executed at least one contract for the above services in offshore area in the last 07 years to be reckoned from the Original Bid Closing Date. 5.2 TCP Services (a) The bidder should have a minimum of five (05) years of experience in providing TCP operation to E&P companies/Drilling companies including 3 years on offshore area and should have experience of at-least 02 offshore wells. (b) Bidder should have executed at least one Contract for the above service in offshore area in the last 7 years to be reckoned from the Original Bid Closing Date. **b. Other Services in the Bundle (Group-I)**:		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	1. For all the other services mentioned in Group-I above, the bidder either may have their in-house capability or can have a pretender tie-up for those services only (Sub-contracting). 2. However, for other services, each individual service provider should meet the relevant experience criteria (as applicable) mentioned in the scope of work. **NOTE (For both a & b above):** The bidder's / sub-contractor's experience in ongoing contract involving multiple services (with no interdependence) shall also be considered in meeting the experience mentioned above subject to condition that the relevant service has been satisfactorily completed. **c. Group-II (Shore Base and Marine Services):** The bidder (Offshore Oilfield Services Provider) may either have a pretender tie-up (Sub-contracting) or form a Consortium with Shore Based and Vessel Service providers. If a Consortium is formed, then the Bidder (Offshore Oilfield Services Provider) should be the leader of the Consortium. Refer to Clause 2.4, below, for Consortium sub-clauses.		
2.2	DOCUMENTARY EVIDENCE In support of experience laid down at BEC Clause No A.2.1 (a); the following documents must be submitted along with the un-priced Techno-commercial bid. Copies of respective contracts (Relevant pages), along with documentary evidence in respect of satisfactory execution of each of those contracts, in the form of copies of any of the documents (indicating respective contract number and type of services), such as: (i) Satisfactory completion / performance report (OR) (ii) Proof of release of performance security after completion of the contract (OR)		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	(iii) Proof of settlement / release of final payment against the contract (OR) (iv) Any other documentary evidence that can substantiate the satisfactory execution of each of the contracts cited above.		
2.3	**Eligibility & Experience criteria for Indian Joint Venture bidder**: In case the bidder is an Incorporated Indian Joint Venture Company, registered in India and incorporated under the Companies Act 1956 and any amendments there under, then the technical experience criteria laid down in BEC Clause No. A.2.1 (a) above should be met as under: (i) The Joint Venture Company by itself should meet the experience criteria or (ii) The Joint Venture Partner (who can be either an Indian or a foreign company) having a stake of at least 26% in the Joint Venture Company should meet the technical experience criteria stipulated in the tender on its own and cannot rely on any other arrangement such as Consortium or Supporting company of the JV Partner or subsidiary / co-subsidiary / sister subsidiary / parent / holding / affiliating / associate company or through any other arrangement like technical collaborator for meeting the technical experience criteria. Documentary evidence in support of the above should be submitted along with the techno-commercial bid. (iii) In case of (ii) above, an undertaking from the Joint Venture partner, based on whose experience the JV seek qualification, shall be submitted with the techno-commercial bid stating they shall maintain minimum 26% shareholding in the JV till the execution of the contract. (iv) Members of the JV are not allowed to quote separately / independently against this tender. All the bids received in such a case shall be summarily rejected. Further, all bids from parties with		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	technical support from the same Principal shall be rejected. (v) Constitution of Joint Venture: The members of the JV should not be more than three. If during evaluation of bid, a JV leader proposes any alterations/changes in the constitution or replacement or inclusion or expulsion of any partner(s)/member(s) of the Joint Venture which had originally submitted the bid, to drive some advantages/benefits based on any development(s) having come to his knowledge at any time, the bid of such a JV shall be liable for rejection. Similarly, under such a situation the contract shall be liable for termination, if already awarded. (vi) Indian companies / Joint Venture companies (Incorporated JV): Indian bidders whose proposal for Joint Venture involves foreign equity participation or payment of royalty and / or lump sum for technical know-how and wherever Govt. approval is necessary, are required to submit their application submitted to SIA/RBI along with the bid and copy of Govt. approval prior to the date of price bid opening. Confirmation to this effect and declaration on the same to be provided as part of their technical offer.		
2.4	**Bids from Consortium:** In view of the complexity of the nature of work involved as covered by the Bidding Documents, it is anticipated that some of the intending bidders may pool their resources and experiences to form Consortia. **However, consortium can only be formed with sister subsidiary/co-subsidiary companies having the same parent/holding company or within the same ultimate parent/holding company.** **Note: For Shore Based Services and Marine Vessels, consortium may be formed with shore base and vessel service providers who need not be sister subsidiary/co-**		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	subsidiary companies having the same parent/holding company or within the same ultimate parent/holding company. 2.4.1 The leader of the consortium should themselves meet the minimum experience requirement as per BEC clause A.2.1(a) above. For proof of requisite experience against BEC clause A.2.1(a), the leader of the consortium shall submit relevant documents in line with BEC clause A.2.2 above. 2.4.2 The leader of the Consortium must submit bid on behalf of the consortium of Bidders. A Memorandum of Understanding (MOU) between the Consortium members duly executed by the CEO/Authorized person and certified by the competent authority of the respective organization of the consortium members and notarized, must accompany the bid which should clearly define the role/scope of work of each partner/member and should clearly define the leader of the consortium. Memorandum of Understanding (MOU) must also state that all the members of the consortium shall be jointly and severally responsible for discharging all obligations under the Contract. However, the Leader of the Consortium must submit an undertaking along with the technical bid towards unconditional acceptance of full responsibility for executing the "Scope of Work" of this bid document. In case of award, such MOU shall be kept valid through the entire contract period, including extensions, if any. 2.4.3 Only the Leader of the consortium should register		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	in the e-tender portal and submit bid on behalf of the Consortium. The other members of the Consortium shall ratify all the acts and decisions of the Leader of the Consortium, which are taken in connection with and/or during the evaluation of the tender and execution of the contract. 2.4.4 The Bid Security shall be in the name of the Leader of the consortium on behalf of the consortium with specific reference to the consortium bid and name & address of consortium members. Similarly, the Performance Security shall be in the name of the Leader on behalf of the consortium. 2.4.5 The leader of the Consortium on behalf of the Consortium shall coordinate with OIL during the period the bid is under evaluation, as well as, during the execution of works, in the event contract is awarded and he shall also be responsible for resolving the dispute/ misunderstanding/ undefined activities, if any, amongst all the Consortium members. 2.4.6 Any correspondence exchanged with the leader of the consortium shall be binding on all the consortium members. 2.4.7 Payment shall be made by OIL either to the leader of the consortium or to consortium members towards the fulfilment of contract obligations. 2.4.8 In the case of Consortium bids, the bid shall be digitally signed by the leader of the Consortium. The Power of Attorney from each member authorizing the leader for signing and		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	submission of Bid on behalf of the individual member must accompany the Bid offer. 2.4.9 Documents/details pertaining to the qualification of the bidder must be furnished by each partner/ member of the consortium complete in all respects along with the bid clearly bringing up their experience especially in the form of work in their scope. 2.4.10 CONSTITUTION OF CONSORTIUM: If during the evaluation of the bid, a consortium leader proposes any alterations/changes in the constitution or replacement or inclusion or expulsion of any partner(s)/ member(s) of the consortium which had originally submitted the bid, to drive some advantages/benefits based on any development(s) having come to his knowledge at any time, the bid of such a consortium shall be liable for rejection. 2.4.11 SIGNING OF CONTRACT: In the event of the award of the contract to the consortium, the contract is to be signed by all the members of the consortium and the liability of each one of them shall be jointly and severally. 2.4.12 Members of the consortium are not allowed to quote separately/independently against this tender. All the bids received in such cases will be summarily rejected. Further, all bids from parties with technical support from the same Principal shall be rejected. 2.4.13 Certified copies (attested by Director/Company Secretary) of Board resolutions passed by the respective Board of Directors of the companies		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	(Consortium leader and members) agreeing to enter into such consortium with each other for submission of bid for the NIT and authorizing designated executives of each company to sign in the MOU to be provided along with the technical bid. 2.5.14 The MOU/Agreement should be legally valid i.e. it should be on a non-judicial stamp paper and notarized. In case of involvement of an overseas bidder/consortium partner, the MOU/Agreement should be duly attested by Indian Embassy where MOU is signed / Notarized by the Notary where MOU is signed.		
2.5	**Eligibility Criteria in case bids are submitted on the basis of technical experience of the parent / subsidiary company:** Offers of those Primary bidder who themselves do not meet the experience criteria as stipulated in BEC Clause No. A.2.1(a) can also be considered provided the bidder is a wholly owned subsidiary company of the parent company [supporting company] or parent company can also be considered on the strength of its wholly owned subsidiary [supporting company]. However, the parent / subsidiary company of the bidder should on its own meet the experience as stipulated under BEC Clause A.2.1 (a) above and should not rely for meeting the experience criteria on its sister subsidiary / co-subsidiary company or through any other arrangement like Technical Collaboration agreement for meeting the experience criteria. In case of Primary bidder who is a subsidiary company dependent upon the experience of the parent company or vice-versa, with a view to ensure commitment and involvement of the parent / subsidiary company (Supporting Company) for successful execution of the contract, the participating		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	bidder should enclose the following with the techno-commercial bid: 1. An Agreement (**as per format enclosed as Annexure-I**) between the (bidder and supporting company) 2. Guarantee (**as per format enclosed as Annexure-II**) from the parent / subsidiary company (supporting company) to OIL INDIA LIMITED for fulfilling the obligation under the Agreement. 3. Undertaking from the supporting company to the effect that in addition to invoking the performance security submitted by the contractor, the performance security provided by supporting company shall also be invoked by OIL due to non-performance of the contractor.		
2.6	**Eligibility Criteria in case bids are submitted on the basis of technical experience of sister subsidiary / co-subsidiary company:** Offers of those primary bidders who themselves do not meet the experience criteria as stipulated in BEC Clause No A.2.1(a) can also be considered based on the experience criteria of their sister-subsidiary / co-subsidiary company within the ultimate parent / holding company subject to meeting of the following conditions: 1. Provided that the sister-subsidiary / co-subsidiary company and the bidding company are both wholly owned subsidiaries of an ultimate parent / holding company either directly or through intermediate wholly owned subsidiaries of the ultimate parent / holding company or through any other wholly owned subsidiary company within the ultimate / holding parent company. Documentary evidence to this effect to be submitted by the ultimate parent / holding company along with the technical bid. 2. Provided that the sister subsidiary / co-subsidiary company		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	on its own meets the experience criteria stipulated in the BEC Clause No.A.2.1(a) and not through any other arrangement like Technical Collaboration agreement. 3. Provided that with a view to ensure commitment and involvement of the sister subsidiary / co-subsidiary company for successful execution of the contract, the participating bidder submits an Agreement, as per format furnished vide Annexure-III, between their Sister Subsidiary / Co-Subsidiary Company and the Ultimate Parent / Holding Company of both the bidder and the Sister Subsidiary / Co-Subsidiary, along with the technical bid.		
	Note: In case of Clauses 2.5 & 2.6 above, bidders shall submit the following additional documents: a) Undertaking by the subsidiary / parent company to provide a Performance Security (as per format and instructions enclosed vide PROFORMA-Q), equivalent to 50% of the value of the Performance Security to be submitted by the bidding company in case the bidding company is the successful bidder. Note to (a): In case subsidiary / parent company fails to submit Performance Bank Guarantee as per (a) above, Bid Security submitted by the bidder shall be forfeited. b) In cases where subsidiary/parent companies do not have Permanent Establishment in India, the bidding company can furnish Performance Security which is sum of Performance Security amount to be submitted by the bidder and additional 50% Performance Security to be submitted by the subsidiary / parent / sister company. In such case bidding company shall furnish an undertaking that their subsidiary / parent / sister company is not having any Permanent Establishment in India in terms of Income Tax Act of India		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	c) Undertaking from the subsidiary / parent company to the effect that in addition to invoking the performance security submitted by the contractor, the performance security provided by them shall also be invoked by OIL INDIA LIMITED due to non-performance of the contractor.		
3.0	Wherever the pretender tie-up (sub-contracting) is envisaged [as per BEC clause A.2.1(b) & A.2.1(c)], the Bidders should: (i) Submit MOU/ Agreement with their sub-contractor(s) clearly indicating their roles under the scope of work. (ii) MOU/Agreement concluded by the bidder with their sub-contractor(s) should be addressed to OIL clearly stating that the MOU/Agreement is applicable to this tender and shall remain valid and binding on them for the contract period, including extensions if any. Notwithstanding the MOU/Agreement, the responsibility of completion of job under this contract will be of the bidder.		
4.0	Service crew: (i) The bidder should confirm to deploy the minimum number and the category of the crew personnel as indicated in the bid document. These personnel shall be included in the `List of Crew Personnel' in the Contract for the purpose of deployment and, for reduction of day rates due to short deployment. (ii) The experience of the personnel to be deployed under this contract shall be as per requirements stipulated in individual scope of work of various services. (iii) Training to the Crew personnel: All the crew members should have undergone Personal		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	Survival Training (PST), Fire Prevention & Fire Fighting (FPFF) Training/Basic Fire Fighting Training (BFF), Personnel Safety and Social responsibility (PSSR) and Elementary First Aid (EFA) from DGS approved agencies, and OPITO approved Helicopter Underwater Escape Training (HUET). Or All the crew members should have undergone OPITO approved BOSIET – Basic Offshore Safety Induction and Emergency Training (with EBS), which should cover at least PST, FPFF/BFF, PSSR, EFA, HUET. **No personnel are allowed to go on offshore rigs/marine vessels without undergoing the above training.** (iv) Confirmation in regard to Para 4(ii) and 4(iii) above is to be submitted along with the unpriced bid. However, the details of all personnel i.e. experience data, proof of qualification etc., shall be submitted within 30 days of issue of Mobilization Notice or 45 days prior to commencement of contract (whichever later) and got approved by Company before commencement of the work.		
5.0	Inspection Clause: OIL shall get the equipment of various services & Marine Vessels inspected on its own or through any of the following internationally reputed Third-Party Inspection Agencies as per tender specifications. OIL, at its option, can nominate any of the following Third-Party Inspection Agency (TPI) for inspection of various services & Marine Vessels and the cost of the third-party inspection will be borne by OIL. a. LRDISI b. ABS c. Oilfield Audit Services Inc. d. DNV GL e. OMCI f. OES, UAE		

<table>
<tr><th>Clause No.</th><th>Description</th><th>Bidder's response of the acceptance criteria and submission of required details in the form of
Confirmed /
Not confirmed /
Not applicable</th><th>Specify cross reference where the relevant documents are attached</th></tr>
<tr><td></td><td>g. Any other Agency nominated by the Company.

Bidder to confirm compliance (Refer to Inspection Clause 8.0 of SCC under Section – III for details).</td><td></td><td></td></tr>
<tr><td>6.0</td><td>Bidders are required to confirm that, they shall mobilize and deploy the Services along with the crew so as to commence operations at the designated offered location within the period as mentioned below from the date of issuance of the Mobilization Notice by Company. Bids with offer quoting more than the period mentioned below will be out rightly rejected.
<table>
<tr><th colspan="2">Particulars</th><th>Mobilization Time</th></tr>
<tr><td colspan="2">Group – I Services (Exclusive of Supply of Surface Wellheads, 30" Conductor Pipe, Liner Hanger Equipment supply and Liner running Services, Tubular for Well Testing and Well Testing & TCP Services).</td><td>Within 90 days of Mobilization notice issued by Company</td></tr>
<tr><td colspan="2">Group – I Services (Supply of Surface Wellheads).</td><td>Within 120 days of Mobilization notice issued by Company</td></tr>
<tr><td rowspan="3">Group – I Services (Supply of Mud Line Suspension).</td><td>30" landing ring, 20" shoulder type hanger & pup joint.</td><td>Within 150 days of Mobilization notice issued by Company</td></tr>
<tr><td>13-3/8" shoulder type hanger & pup joint.</td><td>Within 180 days of Mobilization notice issued by Company</td></tr>
<tr><td>9-5/8" Split Ring Hanger & pup joint.</td><td>Within 210 days of Mobilization notice issued by Company</td></tr>
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Clause No.	Description		Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	7" Split Ring Hanger & pup joint.	Within 240 days of Mobilization notice issued by Company		
	Running Tools for Casing Hangers & other tools.	Within 150 days of Mobilization notice issued by Company		
	Group – I Services (Supply of 30" Conductor Pipe).	Within 120 days of Mobilization notice issued by Company		
	Group – I Services (Liner Hanger Equipment supply and Liner running Services).	Within 150 days of Mobilization notice issued by Company		
	Group – I Services (Tubular for Well Testing).	Within 150 days of Mobilization notice issued by Company		
	Group – I Services (Well Testing & TCP Services).	For Well Testing & TCP Services: Within 150 days of Mobilization notice issued by the Company. For Consumables (liquid Nitrogen, Methanol, PPD, Demulsifier, & defoamer): Within 14 days of mobilization notice issued by the company		
	Group - II Services (Shore Based Services.)	Within 120 days of Mobilizatio		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached

	n notice issued by the Company
Group - II Services (Marine Vessels - 2 Nos. AHTS with 100 metric tons bollards pull or more along with the crew.)	Within 120 days of Mobilizatio n notice issued by the Company
Project Coordinator, Rig Site Coordinator and Rig Site Logistics Coordinator.	Within 30 days of Mobilizatio n notice issued by Company
Interim De-mobilization and Re-mobilization	
Coring, Core Handling & Core Stabilization equipment & services under Group – I Services	Within 45 days of Re-Mobilizatio n notice issued by the Company
Liner Hanger Rental Equipment & Liner Running Services under Group – I Services.	Within 45 days of Re-Mobilizatio n notice issued by the Company
Well testing Services & TCP Services under Group – I Services	For Well Testing Services: Within 45 days of Re-Mobilizatio n notice issued by the Company. For TCP Services: within 120 days of Re-Mobilizatio n notice issued by the Company.

Note:

1) Separate Mobilization notice will be issued for each of the mobilization timelines as mentioned above.

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	2) Separate Interim De-mobilization and Re-mobilization notice will be issued for Coring, Core Handling & Core Stabilization equipment & services, Liner Hanger Rental Equipment & Liner Running Services and Well testing & TCP Services. 3) The succeeding day of the issue of the Mobilization / Re-mobilization Notice shall be counted as Day 1 for the purposes of the Mobilization / Re-mobilization period. 4) Supply of all Consumables shall be in staggered manner as per OIL's well requirement.		
7.0	HSE CRITERIA: 7.1 The Bidder should have a valid HSE Management System (HSEMS) for each quoted Services certified as per ISO: 9001, ISO: 14001 & OSHAS: 18001 /ISO: 45001/ISRS on the date of the original bid opening date and should submit an undertaking that the certificate(s) shall be kept valid during execution of contract period. The documentary proof in the form of valid certificates should be provided along with the techno-commercial bid. 7.2 In case certified HSE management system is not available then the bidder must give an undertaking that he shall have the same in place during the period of mobilization so that specific certified HSE management system for each quoted Services is in place before the commencement of operations. 7.3 In case certified HSE management system for each quoted Services certified as per ISO: 9001, ISO: 14001 & OSHAS: 18001 /ISO: 45001/ISRS is not available, the bidder to submit details of their HSE management system approved by its highest authority not lesser than a director.		
8.0	VINTAGE: Vintage clauses for individual services shall be as		

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follows.

Service Details	Vintage Clause
Cementing Service	- Batch mixture and Cementing Equipment shall not be of more than 10 (Ten) years old as on the original bid closing date. - Bidder to submit relevant documents in support of this vintage clause.
Mud Engineering Service	- Lab equipment as applicable shall not be of more than 10 (Ten) years old as on the original bid closing date. - Bidder to submit relevant documents in support of this vintage clause.
Directional Drilling Service	- Downhole Tools should either be new or recently refurbished. In case of refurbished tools, the refurbishment should not be more than 06 (six) months old as on the original bid closing date.
Wire line Logging service	- All downhole tools including surface logging unit must be provided as per requirements mentioned in Scope of Work for Wireline Logging & Perforation services.
Mud Logging Unit service	- The Mud Logging Unit

Clause No.	Description		Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
		should not be more than 10 (Ten) years old and must be latest ISO/DNV certified as on the original bid closing date. - Bidder to submit relevant documents in support of this vintage clause.		
	Coring Services	- Coring Equipment should either be new or recently refurbished. In case of refurbished tools, the refurbishment should not be more than 06 (six) months old as on the original bid closing date.		
	Well Testing service	- The Residual life of the equipment for Well Testing services should be 5 (Five) years and shall be valid during the execution of contract duration. - Bidder to submit relevant documents in support of this clause.		
	Marine Vessels	- The vintage of the AHTS Vessels offered shall not be more than 20 years old from the date of manufacturing as on the original Bid closing date. - Bidder to submit relevant documents in support of this vintage clause.		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
9.0	Details of experience and past performance of the bidder and incorporated joint venture partner (in case of a joint venture), on works/ jobs done of similar nature in the past and details of current work in hand and other contractual commitments, indicating areas and clients are to be submitted along with the techno-commercial bid, in support of the experience laid down under BEC clause no. A.2.1(a) above.		
10.0	A job executed by a bidder for its own organization / subsidiary will not be considered as experience for the purpose of meeting BEC.		
11.0	11.0 The Bidder shall confirm to provide the full Scope of Work, covering the entire scope of work / supply and should conform to the technical specifications as indicated in the bid document, duly supported with technical catalogues / literatures wherever required. The Bidder should provide all the services as mentioned in the "Scope of Work" either on his own or through tie up. Incomplete and non-conforming bids will be rejected outright. 11.1 Marine logistics services will comprise of minimum two (02) numbers AHTS vessels with certified bollard pull of 100 metric tons or more and with deck areas of at least 400 square meters each. The vintage of the AHTS Vessels offered shall not be more than 20 years old from the date of manufacturing as on the original Bid closing date. The Bidder to confirm submission of documentary evidence prior to mobilization of the vessels if awarded with the Contract. 11.2 Lifesaving equipment and firefighting equipment: The bidders should confirm that Marine Vessels are equipped with all lifesaving equipment and fire-fighting equipment as per SOLAS and IMO regulations along with valid certificates from regulatory body. These certifications shall be		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	available all the time on board the Marine Vessels and shall be made available to OIL/OIL nominated TPI team.		
12.0	Statutory Certificates / Clearance / Permits: 12.1 Marine Vessels offered should have all statutory certificates, should meet the class requirement at all the times and should comply with IMO codes. Necessary certification to the above parameters authenticated by OIL nominated Third Party agencies to be submitted by the bidder along with the unpriced bid. No cost shall be reimbursed by OIL on this account to the bidder. 12.2 Bidder to confirm that they would secure all statutory permits and licenses as required under law for operations of the Marine Vessels in Indian waters and shall bear all expenses in this regard. 12.3 Bidder to confirm that they would obtain Naval Defence Clearance of Marine Vessels prior to commencement of contract from Ministry of Defence through Ministry of Petroleum and Natural Gas (India), at his cost. 12.4 Bidder to confirm that they would obtain the permission of DG Shipping for deploying the offered marine vessels in Indian waters, as required. 12.5 Bidder to confirm that they would secure all statutory permits, licences, clearances for the Marine Vessels, expat and local crew personnel like Naval/Customs/MOHA/IB/Police and any other such clearances as required for operations under this contract as per requirement and shall bear all expenses in this regard.		
B.	**FINANCIAL EVALUATION CRITERIA**		
1.	Annual Financial Turnover from operation of the bidder during any of preceding 03 (Three) financial/accounting years from the original bid closing date should be at least **INR 341.33 Cr. or USD**		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	39.55 Million (1 USD = INR 86.31).		
2.	Net worth of the bidder must be Positive for the financial / accounting year preceding the original bid closing date.		
	Note: i. Annual Financial Turnover of the bidder from operations shall mean: "Aggregate value of the realisation of amount made from the sale, supply or distribution of goods or on account of services rendered, or both, by the company (bidder) during a financial year" as per the Companies Act, 2013 Section 2 (91). ii. Net worth shall mean: "Share capital + Reserves created out of profits and securities Premium – Aggregate value of accumulated losses (excluding revaluation reserves) – deferred expenditure – Miscellaneous Expenditure to the extent not written off and carried forward Loss - Reserves created out of write back of depreciation and amalgamation".		
3.	If the Bidder is an Incorporated Joint Venture (JV) Company and does not meet Financial Criteria (BEC Clause Nos. B.1 & B.2 above) by itself, it can submit the bid based on the financial strength of its JV member having more than 26% stake in the JV Company and the following need to be complied/submitted: i) Annual Financial Turnover from the operation of the member having more than 26% stake in the JV during any of the preceding 03 (Three) financial / accounting years from the original bid closing date shall be as per BEC Clause B.1 above. ii) Net worth of the member having more than 26% stake in the JV (supporting company) should be positive for the accounting year preceding the original bid closing date as per BEC Clause B.2 above. iii) Corporate Guarantee		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	(Annexure-IV) on the letter head of the member having more than 26% stake in the JV signed by an authorized official undertaking that they would financially support their subsidiary company for executing the project / job in case the same is awarded to them. iv) An undertaking from the Joint Venture partner, based on whose experience the JV seek financial qualification, shall be submitted with the techno commercial bid stating that they shall maintain minimum 26% shareholding in the JV till execution of the contract is accomplished. v) A certificate from the statutory Auditor of the JV company on the shareholding pattern of the JV.		
4.0	In case the bidder is a subsidiary company (should be a wholly owned subsidiary of the parent / ultimate parent / holding company), who does not meet financial criteria by itself and submits bid based on the financial strength of its parent / ultimate parent / holding company, then documents need to be submitted along with the technical bid in support of the following: i) Annual Turnover from operation of last three accounting years of the parent / ultimate parent / holding company (supporting company) shall be as per BEC Clause B.1 above. ii) Net worth of the parent / ultimate parent / holding company (supporting company) shall be positive for the accounting year preceding the original bid closing date as per BEC Clause B.2 above. iii) Corporate Guarantee (Annexure-V) on parent / ultimate parent / holding company's (supporting company) letter head signed by an authorized official undertaking that they would financially support their subsidiary company for executing the project / job in case the same is awarded to		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	them. iv) A certificate from the statutory Auditor of the bidding company as well as of the parent / ultimate / holding parent company (supporting company) to establish the relationship and equity percentage holding between bidding company and the supporting company. The certificates should be duly certified by the Company Secretary or one of the Directors of the company concerned. Note: The above certificate should not be more than 30 days old as on the original bid closing date.		
4.1	In case the Bidder is a Consortium, then any one of the Consortium members individually shall have to meet the financial turn-over criteria as per BEC Clause B.1 above. Similarly, other Consortium members individually shall have minimum Annual financial turn-over of **INR 170.67 Cr. or USD 19.78 Million (1 USD = INR 86.31)** in any of preceding 03 (Three) financial / accounting years from the original bid closing date. Net worth of all Consortium members must be Positive for the preceding financial / accounting year from the original bid closing date.		
5.0	Notes to BEC Clause B1 & B2 above: a. For proof of Annual Turnover from operation, Net worth & Working Capital, any one of the following documents / photocopies must be submitted along with the bid: (i) Audited Balance Sheet along with Profit & Loss account. OR (ii) A certificate issued by a practicing Chartered / Cost Accountant (with Membership Number and Firm Registration Number), as per format prescribed in PROFORMA-H. Note: i. Mention of UDIN (Unique		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	Document Identification Number) is mandatory for all Certificates issued w.e.f. February 1, 2019 by Chartered Accountant in Practice. ii. In case the Audited Balance sheet and Profit Loss Account submitted along with the bid are in currencies other than INR, the bidder shall have to convert the figures in equivalent INR considering the prevailing conversion rate on the date on which the Audited Balance Sheet and Profit & Loss Account is signed. A CA Certificate is to be submitted by the bidder regarding converted figures in equivalent INR. Else, the Audited Balance Sheet and Profit & Loss Account shall be evaluated by considering the BC selling rate declared by State Bank of India (on the date on which the Audited Balance Sheet and Profit & Loss Account is signed) for conversion to INR. b. Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months / within the due date for furnishing of audit report as per Section 139(1) of IT Act, 1961 (read along with latest circulars / notifications issued by CBDT from time to time) reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an undertaking in support of the same along with their technical bid as per PROFORMA-L. c. Bid will be liable for rejection if not accompanied with adequate documentary proof in support of Annual turnover & Net		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	worth as mentioned above in Para B1 & B2.		
C.	**COMMERCIAL EVALUATION CRITERIA:**		
1.0	Bids shall be submitted under Single-Stage Two-Bid System i.e. Technical Bid and Priced Bid separately in the OIL's e-Tender portal. The Technical Bid is to be uploaded as per Scope of Work & Technical Specification of the tender in "Technical RFx Response" Tab and Priced Bid as per Proforma-B uploaded in the "Notes & Attachments" Tab. Bids shall be rejected outright if the prices are indicated in the technical bids. Bids not conforming to this two-bid system shall be rejected outright.		
2.0	Bidder shall offer firm prices. Price quoted by the successful bidder must remain firm during the execution of the Contract and not subject to variation on any account.		
3.0	Bids with shorter validity (i.e., less than **150 days** from the scheduled bid closing date) will be rejected as being non-responsive.		
4.0	Bid Security in Original shall be furnished as a part of the Technical Bid and shall reach OIL's office at Kakinada (KG Project Office) before bid closing date & time. A scanned copy of the bid security shall however be uploaded in OIL's e-procurement portal along with the Technical Bid. The amount of Bid Security shall be as specified in the Forwarding Letter of the Bid Document. Bid without proper & valid Bid Security shall be rejected.		
5.0	The Integrity Pact is applicable against this tender. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide PROFORMA-J of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be returned by the bidder (along with the Un-priced Techno-Commercial Bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit the Integrity Pact, their bid will be rejected.		
6.0	Bids submitted after the Bid Closing Date and Time will be rejected.		
7.0	Bids received through the e-procurement portal shall only be accepted. Bids received in any other form shall not be accepted.		
8.0	Bid documents are non-transferable. Bid can only be submitted in the name of the bidder in whose name the User ID and Password have been issued. Unsolicited bids will not be considered and will be straightway rejected.		
9.0	Bids shall be typed or written in indelible ink and shall be digitally signed by the bidder or his authorized representative.		
10.0	Any physical documents wherever called for, submitted by bidders shall contain no interlineations, white fluid erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such correction shall be initialed by the person or persons who has / have digitally signed the Bid.		
11.0	Any Bid containing false statement will be rejected.		
12.0	Bidders shall quote directly and not through their Agent / Representative / Retainer / Associate in India.		
13.0	Bidders must quote clearly and strictly in accordance with the price schedule outlined in "Price Bid Format" of Bid Document; otherwise, the Bid will be summarily rejected.		
14.0	Bidder must accept and comply with the following clauses as given in the Bid Document in toto failing which bid will be rejected. (i) Firm price (ii) Bid Security Clause (iii) Scope of Work (iv) Specifications (v) Price Schedule (vi) Completion Schedule (vii) Period of validity of bid (viii) Liquidated damage and penalty clause		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	(ix) Performance Guarantee Clause (x) Guarantee of material / work (xi) Arbitration / Resolution of Dispute (xii) Force Majeure (xiii) Acceptance of Jurisdiction and Applicable Law (xiv) Tax Liabilities Clause (xv) Safety & Labour Law (xvi) Termination Clause (xvii) Integrity Pact (xviii) Any other condition specifically mentioned in the tender document elsewhere that non-compliance of the clause lead to rejection of the bid.		
15.0	The Bids and all uploaded documents must be digitally signed using "Class 3" digital certificate [e-commerce application (Certificate with personal verification and Organization name)] as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India [except copies of the documents required in physical form] should invariably be submitted in the 'Technical Attachment Tab' through OIL's e-bidding portal, before the scheduled date and time for the tender closing. All the documents uploaded shall be digitally signed by the authorized signatory of the bidder. However, the original bid security should necessarily be submitted in physical form, in a sealed envelope.		
16.0	Bidders should not be under liquidation / bankruptcy / undergoing any insolvency resolution process as on Bid Closing date. Further neither the Bidder nor any of its allied concerns / partners or associates or directors or proprietors involved in any capacity should be under Holiday List / Banning List / Suspension List of OIL as on Bid Closing date. Bidders shall submit undertaking towards compliance of above as per the prescribed formats (Appendix-C & Appendix-D) along with the bid. If any bidder declines to submit the above undertakings,		

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	their bids shall be liable for rejection.		
D.	**PRICE EVALUATION CRITERIA:** The parties whose bids conform to the technical specifications, terms and conditions stipulated in the bidding document and are considered to be responsive after subjecting to Bid Evaluation Criteria mentioned above will be considered for further evaluation as per the Price Evaluation Criteria given below:		
1.0	The bidders must quote their charges / rates in the manner as called for vide "Schedule of Rates" under Section-IV and the summarized price schedule format vide enclosed Proforma-B.		
2.0	In the event of computational error between unit price and total price, the quoted unit price shall prevail. Similarly, in the event of discrepancy between rates quoted in words and figures, the unit rates quoted in words will prevail.		
3.0	Priced Bids shall be evaluated taking into account the Price quoted as per Proforma-B including quoted GST.		
4.0	Quoted price must include all liabilities and taxes including statutory liabilities but excluding GST, which shall be quoted separately in the Price Bid format.		
5.0	The quantities shown against each item in the "Price Bid Format (i.e. in Proforma-B)" shall be considered for the purpose of Bid Evaluation. It is, however, to be clearly understood that the assumptions made in respect of the number of months / number of days / parameters for various operations are only for the purpose of evaluation of the bid and the Contractor will be paid on the basis of the actual number of months / number of days / parameters, as the case may be.		
6.0	PRICED BID EVALUATION Price Evaluation of all the technically qualified bids will be done on the basis of rates quoted by the bidder as per PROFORMA-B. However, bidders must comply		

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	with the limits indicated against each of the following rates: The bidder's price shall be worked out as under: • Cementing Equipment & Services, including slurry design, supply of oil well cement and additives along with Base Engineer for offshore wells. (1) • Supply of floating & guiding equipment and casing accessories. (2) • Casing and Tubing Running Tools and Services. (3) • Drilling tools inclusive of Tubular for Well Testing. (4) • Directional Drilling – LWD/MWD, Mud Motor and Directional Drilling Services along with Crew for offshore wells. (5) • Mud Engineering Services, including supply of mud chemicals along with Mud Engineers for offshore wells. (6) • Supply of Drill bits on a consignment basis. (7) • Liner Hanger Equipment supply and Liner running Services. (8) • Mud Logging Unit Services along with the crew for offshore wells. (9) • Supply of Surface Wellheads, Mud Line Suspension and 30" Conductor Pipe. (10) • Well Testing & TCP Services along with the crew for carrying out production testing of exploratory wells. (11) • Wireline Logging along with Crew for offshore wells. (12) • Fishing & Milling tools rental Services. (13) • Coring, Core Handling & Core Stabilization Services. (14) • Project Coordinator (15) • Rig Site Coordinator (Day Tour) (16) • Rig Site Logistics Coordinator (Night Tour) (17) • Shore Based Services. (18) • Marine Vessels (19) TOTAL ESTIMATED CONTRACT COST FOR THE BUNDLE SERVICE AND MANPOWER ETC. FOR COMPLETION OF WELLS INCLUDING ALL TAXES & DUTIES		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	INCLUDING GST AND ALL OTHER TAXES AND DUTIES (EXCEPTING BASIC CUSTOMS DUTY ON ELIGIBLE IMPORTED ITEMS), T = [(1) + (2) + (3) + (4) + (5) + (6) + (7) + (8) + (9) + (10) + (11) + (12) + (13) + (14) + (15) + (16) + (17) + (18) + (19)] NOTES: (a) The items (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17), (18) & (19) are as defined in Schedule of Rates. (b) Bid evaluation will be carried out based on the sum of the total price quoted including GST. However, payment will be made against the actual job done. (c) Mobilization of the Bundle Service package will be to the designated locations as detailed under Clause 2.3 of SCC under Section – III. (d) Force Majeure Rate and Suspension Rate shall not be considered for bid evaluation. 6.1 To ascertain the inter-se-ranking, Price Bids shall be evaluated on overall lowest cost to OIL (L-1 offer) basis i.e. considering total quoted prices for all services including applicable GST (CGST & SGST/UTGST or IGST). Price Bid uploaded without giving any of the details of the taxes (Including rates and amounts) shall be considered as inclusive of all taxes including GST. When a bidder mentions taxes as extra without specifying the rates & amount, the offer shall be loaded with maximum value towards taxes received against the tender for comparison purposes. If the bidder emerges as lowest bidder after such loading, in the event of order on that bidder, taxes mentioned by OIL on the Purchase Order/Contracts shall be binding on the bidder. Input Tax Credit on GST (Goods & Service Tax) for this service is NOT available to OIL & the bids shall be evaluated based on total price including GST.		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	6.2 Bidders are required to ascertain themselves, the prevailing rates of GST and all other taxes and duties as applicable (along with rates of all related levies viz. Surcharges, Cess, etc.,) on the scheduled date of submission of Price Bids/ revised Price Bids (if any) and COMPANY would not undertake any responsibility whatsoever in this regard. 6.3 Accordingly, bidders should quote the prices, clearly indicating the applicable rate of GST / description of service as per GST rules (under which the respective service is covered) along with all other taxes and duties applicable. Details of abatements / deductions available, if any, should also be indicated specifically. 6.4 In the contracts involving multiple services or involving supply of certain goods / materials along with the services, the Bidder should give separate break-up for cost of goods and cost of various services, and accordingly quote GST as applicable for the taxable services. In case the Bidder does not give break-up of the quoted prices, separately indicating the components of taxable services and material to be supplied (if any), the GST will be loaded on entire quoted / contract value for evaluation considering abatement, if an, as per statute. 6.5 GST, if any applicable, on input services required to meet the scope of work will be borne by the Bidder within their quoted prices. The Bidder must avail eligible GST credit of tax/ duty paid on input services /capital goods/ Inputs and benefit of GST credit should be passed on to COMPANY by way of t quoting rate(s) net of GST credit i.e. gross value of service adjusted by GST credit available to the bidder. 6.6 Total Mobilisation charges quoted by the bidder shall not exceed 5% of the total quoted value. However, mobilization		

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	charges if quoted in excess of 5% of the total quoted value, the excess amount shall be paid at the end of the contract. 6.7 Total Demobilisation charges quoted by the bidder shall not be less than 0.5% of the total quoted value. If De-mobilization is quoted in deficit or less than 0.5% of the total quoted value, the deficit amount shall be withheld from the first invoice and the same will be paid at the end of the contract along with Demobilization charges. 6.8 Quoted Individual Service Day Rates (ISDR) of all the items shall not exceed 75% of the quoted corresponding Operating Component Day Rates (OCDR)/Operating Day Rates (ODR) of all the same items (wherever applicable as per Schedule of Rates). If the quoted Individual Service Day Rates (ISDR) of each of the individual items is/are found more than 75% of the corresponding Operating Component Day Rates (OCDR)/Operating Day Rates (ODR) quoted in the price bid, then evaluation will be done based on the price(s)/rate(s) quoted by the bidder in the price bid. However, in the event of award of contract and payment, Individual Service Day Rates (ISDR) of each of the individual items, whichever is/are quoted more than 75% of the corresponding Operating Component Day Rates (OCDR)/Operating Day Rates (ODR), will be paid @75% of the corresponding Operating Component Day Rates (OCDR)/Operating Day Rates (ODR). This shall be binding to the bidders and any deviation to the same shall lead to rejection of bid(s). 6.9 Suspension Rate (SR) of the Bundle Service Package shall be 75% of the respective Individual Service Day Rate / Operating Day Rate. (This rate will not be considered for price evaluation). 6.10 Force Majeure Day Rate of		

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
	the Bundle Service Package shall be 75% of the Individual respective Service Day Rate / Operating Day Rate. (This rate will not be considered for price evaluation). 6.11 OIL will prefer to deal with registered bidder under GST. Therefore, bidders are requested to get themselves registered under GST, if not registered yet. However, in case any unregistered bidder is submitting their bid, their prices will be loaded with applicable GST while evaluation of bid. 6.12 The Quoted Repair Day Rate of the Marine Vessels (AHTS) shall not exceed 50% of the respective Marine Vessels Operating Day Rate. If the quoted Repair Day Rate(s) of the Marine Vessel(s) (AHTS) is / are found more than 50% of the corresponding Marine Vessel Operating Day Rate quoted in the price bid, then evaluation will be done based on the price(s) / rate(s) quoted by the bidder in the price bid. However, in the event of award of contract and payment, Repair Day Rate(s) of the Marine Vessel(s), whichever is / are quoted more than 50% of the corresponding Marine Vessel Operating Day Rate, will be paid @ 50% of the corresponding Marine Vessel Operating Day Rate. This shall be binding to the bidders and any deviation to the same shall lead to rejection of bid(s). 6.13 For Marine Vessels, Bidders may quote different day rates, Mob. Charges, De-mob. Charges for each offered / quoted vessel.		
7.0	CONSIDERATION OF INDIAN AGENT Indian agent is not permitted to represent more than one foreign bidder (Supplier/ Manufacturer/ Contractor) in a particular tender. In case, an Indian agent represents more than one foreign bidder (Supplier/ Manufacturer/Contractor) in a particular tender, then offers of such foreign bidders (Suppliers/		

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	Manufacturers/ Contractors) shall be rejected in that tender.		
8.0	CUSTOMS DUTY: In terms of Sl. No. 404 of the Customs Notification No. 50/2017-Cus dated 30.06.2017 amended vide Customs Notification No. 02/2022-Customs dated 01.02.2022 and 40/2022 dated 13.07.2022 and amended further vide Customs Notification No. 30/2024 dated 23.07.2024, imports of the items specified in List 33 of the Notification are subject to levy of concessional rate of customs duty @12% (BCD Nil & IGST @12%) subject to conditions specified therein (Condition No. 48). Similarly, the domestic supply of such goods would attract 12% GST (i.e. IGST or CGST & SGST/UTSGT) on submission of EC in terms of GST Notification No. 3/2017-Integrated Tax (Rates) Dated 28.06.2017 and amended vide Notification No. 16/2019 Dated 30.09.2019 and 08/2022-Integrated Tax (Rate) dated 13.07.2022. Bidders shall take note of the prevailing customs notifications including the latest amendments vide and amended further vide Customs Notification No. 30/2024 dated 23.07.2024 while quoting their prices. Bidder should consider concessional Customs Duty only for those items appearing in List-33 therein. Items of their import other than those appearing in List-33 of the said gazette notification shall be considered as duty payable on merit basis in their respective bid. OIL shall issue the requisite undertaking/certificate on request from Contractor for availing concessional rate of customs duty only against the items explicitly covered under List-33 of Customs and amended further vide Customs Notification No. 30/2024 dated 23.07.2024 or against any other item(s) subsequently declared by the competent authority during the tenure of the contract to be duty exempted/concessional. However,		

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	in the event of refusal/denial by Customs Authority to accord exemption/concession of Customs Duty against import of items which are explicitly covered under List-33 of and amended further vide Customs Notification No. 30/2024 dated 23.07.2024, such applicable customs duty shall be reimbursed at actual by OIL to the Contractor on submission of documentary evidence. Similarly, the items other than those appearing in List-33 of the said gazette notification, if to be imported by the Contractor for the purpose of execution of contract against this tender, the same shall be considered as duty payable on merit basis and the applicable customs duty thereof must be included by the bidder in their respective bid value. OIL will not issue any Undertaking / Certificate towards customs duty concession/exemption for those items (not included in List-33 of Notification) and the duty payable on merit shall be borne by the Contractor. However, any other item if subsequently notified by the competent authority to be Duty free / concessional during the tenure of the contract, OIL will issue requisite Certificate / Undertaking for Contractor to avail the Customs Duty benefit and the duty benefit must be passed on to OIL. Additionally, for all those items against which the bidder considers the Customs Duty on merit, the list specifying the Customs Duty Rate (percentage) may be furnished, so that subsequent increase / decrease in Customs Duty, if any shall be reimbursed / recovered by OIL as the case may be on documentary evidence. Bidders should submit the list of items which are to be imported for execution of the contract against this tender as per Proforma-A prudently along with their bid. Undertaking/Certificate for availing concessional rate of Customs Duty shall be issued by OIL only for the eligible items, provide the same are included in		

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	the Proforma-A submitted by the bidder. Note: a) The customs notifications are subject to change as per Government guidelines and the provisions ruling at the time of Bid Closing will be applicable. b) The Bidder has to re-export the items / consumables / equipment after completion of the contract in case of imported items/consumables/equipment. The bidder will be fully responsible to pay the customs duty in case the items/consumables/equipment are taken by the Contractor to an area where the customs duty benefit is not applicable. This is applicable in case OIL issues Essentiality Certificate for availing concessional customs duty for the import of goods.		
9.0	PURCHASE PREFERENCE CLAUSE: 9.1 MSE Policy: Purchase Preference to Micro and Small Enterprises is applicable for this tender. i. Documentation required to be submitted by MSEs: Categorization and various criteria applicable to MSE bidders shall be guided by the Gazette Notification No. CG-DL-E-26062020-220191 dated 26.06.2020 and Amendment vide Gazette Notification no. CG DL-E-16062021-227649 dated 16.06.2021 and No. CG-DL-E-19012022-232763 dated 19.01.2022 and CG-DL-E-06052022-235600 dated 06.05.2022 issued by MINISTRY OF MICRO, SMALL AND MEDIUM ENTERPRISES and any amendment thereof. The bidder claiming the MSE status (MSE-General, MSE-SC / ST, MSE-Woman) against this tender has to submit Udyam Registration Number with Udyam Registration Certificate or availing		

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	the benefits applicable to MSEs. In case bidding MSE is owned by Schedule Caste or Schedule Tribe entrepreneur or Woman Entrepreneur, valid documentary evidence issued by the agency who has registered the bidder as MSE owned by SC / ST entrepreneur / Woman Entrepreneur should also be enclosed. ii. In case participating MSEs quote price within price band of L1+15%, such MSE shall be considered for award of contract by bringing down their price to L1 price in a situation where L1 price is from someone other than an MSE. iii. In case of more than one such MSE qualifying for 15% purchase preference, the contract shall be awarded to lowest eligible MSE amongst the MSEs qualifying for 15% purchase preference. iv. Provisions such as seeking support from another company by way of technical collaboration, submission of JV bid, consortium bid etc., wherever allowed in the tender document shall be available to all interested bidders including MSEs. However, in case of submission of bids by MSEs, in order to avail the benefits reserved for MSEs (i.e. exemption from payment of EMD and purchase preference), the MSE bidder shall have to rely on their own strength or on the strength of another MSE only to meet the various tender requirements including technical and financial evaluation criteria. In that case, all the members of the Consortium including the leader of the Consortium should be eligible MSEs. Further, in case of bid from JVC (incorporated), in order to avail the above MSE benefits, the bidder i.e., JVC shall have to be MSE unit. 9.2 MII Policy: Purchase preference to MII - notified under Public Procurement (Preference to Make in India) Order,		

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	2017 of Department for Promotion of Industry and Internal Trade (DPIIT), Govt. of India as revised vide Order No. P-45021/2/2017-PP (BE-II) dated 16th September 2020 (and as amended time to time) with modifications as notified vide MoPNG Order No. FP-20013/2/2017-FPPNG-Part (4) (E-41432) dated 26th April 2022, shall be applicable in this tender (Refer Appendix-A). Bidders to check the provisions of the Notification and their eligibility to bid and any claim on Purchase preference. Purchase preference will be applicable as per the Notification(s) and any amendment thereof. 9.3 Award Criteria: Contract shall be awarded for the entire scope of work under this tender subject to concurrent application of Public Procurement Policy for MSE Order 2012 and PP(MII) Order 2017 as per Order No. F.1/4/2021-PPD dated 18.05.2023 issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Govt. of India (enclosed as Appendix-B) and any subsequent amendment thereto.		
10.0	GENERAL NOTES: 10.1 In case bidder takes exception to any clause of bidding document not covered under BEC, then the Company has the discretion to load or reject the offer on account of such exception if the bidder does not withdraw/modify the deviation when/as advised by company. The loading so done by the company will be final and binding on the bidders. No deviation will however be accepted in the clauses covered under BEC. 10.2 To ascertain the substantial responsiveness of the bid the Company reserves the right to ask the bidder for clarification in respect of clauses covered under BEC also and such clarifications fulfilling the BEC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be		

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	evaluated based on the submission. However, mere submission of such clarification shall not make the offer responsive, unless company is satisfied with the substantial responsiveness of the offer. 10.3 If any of the clauses in the BEC contradict with other clauses of the Bid Document elsewhere, then the clauses in the BEC shall prevail. 10.4 Bidder(s) must note that requisite information(s)/financial values etc. as required in the BEC & Tender are clearly understandable from the supporting documents submitted by the Bidder(s); otherwise, Bids shall be rejected. 10.5 OIL will not be responsible for delay, loss or non-receipt of applications for participating in the bid sent by mail and will not entertain any correspondence in this regard. 10.6 The originals of such documents [furnished by bidder(s)] shall have to be produced by bidder(s) to OIL/Company as and when asked for.		
11.0	SUBMISSION OF FORGED DOCUMENTS: Bidders should note that Company (OIL) may verify authenticity of all the documents /certificates / information submitted by the bidder(s) against the tender. In case at any stage of tendering process or Contract execution etc., if it is established that bidder has submitted forged documents / certificates / information towards fulfilment of any of the tender / contract conditions, Company shall immediately reject the bid of such bidder(s) or cancel / terminate the contract besides taking action as per OIL's Banning Policy dated 6th January 2017, available in the OIL's website. Accordingly, service provider/vendor to submit the Undertaking of authenticity of information/documents submitted		

<table>
<tr><th>Clause No.</th><th>Description</th><th>Bidder's response of the acceptance criteria and submission of required details in the form of
Confirmed /
Not confirmed /
Not applicable</th><th>Specify cross reference where the relevant documents are attached</th></tr>
<tr><td></td><td>as per Proforma-K.</td><td></td><td></td></tr>
<tr><td>12.0</td><td>Verification and certification of documents by Independent Third-Party Inspection Agencies:

12.1 Oil India Limited (OIL) has engaged the following 17 (Seventeen) Independent Inspection Agencies for a period of 04 (four) years with effect from 07.06.2024 to verify and certify the documents pertaining to BEC of the tender:
<table>
<tr><th>Sl. No.</th><th>Name of Independent Inspection Agency</th><th>Contact E-Mail ID</th></tr>
<tr><td>1.</td><td>M/s. Dr. Amin Controllers Private Limited</td><td>rkjain@rcaindia.net; pradeep.mathur@rcaindia.net info@rcaindia.net</td></tr>
<tr><td>2.</td><td>M/s. TUV India Private Limited</td><td>noida@tuv-nord.com; mumbai@tuv-nord.com salim@tuv-nord.com</td></tr>
<tr><td>3.</td><td>M/s. Conformity India International Private Limited</td><td>mktg@ciindia.in</td></tr>
<tr><td>4.</td><td>M/s. Ravi Energie Private Limited</td><td>baroda@ravienergie.com tpia@ravienergie.com</td></tr>
<tr><td>5.</td><td>M/s. SGS India Private Limited</td><td>dhaval.vora@sgs.com sgs.india@sgs.com</td></tr>
<tr><td>6.</td><td>M/s. Assure Quality Management Certification Services</td><td>aqmcs@aqmcs.com</td></tr>
</table></td><td></td><td></td></tr>
</table>

Clause No.	Description			Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached
			Private Limited		
		7.	M/s. IRCLASS Systems and Solutions Private Limited	industrial_services@irclass.org Bhavesh.satam@irclass.org	
		8.	M/s. TUV Rheinland (India) Pvt. Ltd.	Shailesh.deotale@ind.tuv.com Kaushal.gohil@ind.tuv.com info@ind.tuv.com ravi.kumar@ind.tuv.com	
		9.	M/s. Gulf Lloyd Industrial Services(I) Pvt. Ltd.	contact@gulflloyds.com inspection@gulflloyds.com	
		10.	M/s. Baltic Testing India Pvt Ltd.	office@balticcontrolindia.com	
		11.	M/s. Sanmarg Engineering Validation & Assessment Pvt. Ltd.	Amrita@sanmargeva.com	
		12.	M/s. Meenar Global Consultants LLP	sales@mgcllp.in	
		13.	M/s. Rites Limited	nrinspn@rites.com info@rites.com sbu.ninsp@rites.com	

Clause No.	Description	Bidder's response of the acceptance criteria and submission of required details in the form of Confirmed / Not confirmed / Not applicable	Specify cross reference where the relevant documents are attached

14.	M/s. Bureau Veritas (India) Private Limited	bvindia.corporate@bureauveritas.com
15.	M/s. TUV SUD South Asia Private Limited	Hemant.chavan@tuvsud.com Jayashree.rane@tuvsud.com
16.	M/s. Adornment Engineers India Private Limited	jks@adornmentengineers.com
17	M/s. TCRC Inspections Pvt. Ltd.	admin@tcrcinspections.com ashismallick@tcrcgroup.com tenders@tcrcgroup.com

12.2 The Bidders have to get verified and certified the various documents required against BEC of the tender by any one of the above Independent Inspection Agencies and submit the duly certified Inspection Certificate by the Inspection Agencies along with the Technical Bid of the Tender. All Charges of the Third-Party Independent Inspection Agencies towards verification of bidder's documents and certification thereof shall be borne by the respective bidders and payments on account of above inspection, verification and certification shall be made directly by the Bidder to the Inspection Agency(s). OIL will not be responsible for any payment dispute between Bidders and Third-Party Inspection Agencies.

12.3 As mentioned above, Bidder(s) have to submit the verified documents along with the Technical Bids. Bid submitted with un-verified supporting documents

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	shall not be considered. However, in case a bidder submits its bid along with all relevant supporting documents as per BEC without getting all / some of them verified by the designated Independent Inspection agency, such bid can be provisionally considered provided it is accompanied by an Undertaking by the Bidder on their official letterhead to submit the duly verified copies / verification certificate within 07 (Seven) days of bid opening. Company will neither send any reminder nor seek any clarification in this regard from such bidders, and the bid will be rejected outright if the bidder fails to submit the verified copies / verification certificate within 07 (Seven) days of bid opening at its own risk and responsibility. If a bidder does not submit the undertaking towards submission of third-party certification within 07 (seven) days from date of Bid Closing date, but certified document(s) reaches OIL within the cut-off-date of above 07 (seven) days, then such bids shall be considered. 12.4 The methodology of inspection / verification of documents is broadly as under but not limited to: (a) It is obligatory on the part of the interested Bidders, who choose to participate against the tender, to understand the tender requirements in entirety and the requisite documents sought for in support of the Bid Evaluation Criteria (BEC) mentioned in the tender in particular. The Bidder must produce all the appropriate documents before any of the OIL's empanelled third-party certifying agencies for verification/certification. Neither OIL nor the third-party certifying agency shall be held accountable in any manner regarding the choice of documents by the bidder for verification. Therefore, getting the appropriate documents inspected / verified by the agency in support of BEC clauses is the sole responsibility of the Bidder.		

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	(b) The prospective bidder shall contact any of the empanelled inspection agencies. The agency shall go through the Tender Document, especially the requirements of BEC and list the documents to be verified. They shall depute their qualified / competent inspector to the Bidder's premises to check the original documents and certify the copies which the bidder shall submit along with their bids. OIL will reserve the right to ask the inspection agencies to verify the documents with source, if required at no extra cost to OIL. Verification of documents by OIL's empanelled third-party agency shall not automatically make the bidder eligible for award of contract. (c) Verification of documents (but not limited to) are normally categorized as under: i. General Requirement: • Check Bidder's PAN Card • Check Bidder's GST Certificate • Check ITR of company • Check Bidder's Certificate of Incorporation – Domestic Bidder ii. Additional Documents: (If applicable against the tender) • Joint Ventures Agreements – To cross-check with JV Partners • Consortium Agreements – To cross-check with Consortium Partners • Holding / Parent / Subsidiary / Sister Subsidiary / Co-Subsidiary Company – To check the Share Holding pattern iii. Technical Criteria • To check Experience Proof-Completion Certificates, Reference contact verification, Original Work Order / Contract Copy and any other document(s), if called for vide BEC of the Tender. iv. Financial Criteria • Check and verify Audited Balance Sheet / CA certificate • To check the Line of Credit, if incorporated in the tender.		

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	Notes: (i) If any documents LOI / LOA / Contracts, etc. are submitted towards BEC experience criteria issued by Oil India Limited, such documents need not be verified by TPI agency. Further TPI Verification and certification is not required for financial documents having Unique Document Identification Number (UDIN). Self-Undertaking furnished by the bidder in support of their bid may not be TPI verified. (iii) Undertaking from TPI Agency as per format (Proforma-N) enclosed should be submitted along with the Bid.		
13.0	**LAND BORDER SHARING**: Bidders should submit an Undertaking that, their bid is compliant to Order No. F.No. 6/18/2019-PPD dated 23.07.2020 issued by Ministry of Finance, Department of Expenditure, Public Procurement Division, Govt. of India (including subsequent amendments thereto, if any), regarding restrictions on procurement from a bidder of a country which shares land border with India.		
14.0	**COMPLIANCE OF THE COMPETITION ACT, 2002:** The bidder shall strictly comply with the provisions of the Competition Act, 2002, more particularly, Section-3 of the Act. Any violation the provisions of the Act shall attract penal action under the Act.		