

**OIL INDIA LIMITED  
KG BASIN PROJECT  
KAKINADA**

**AMENDMENT NO. 4 DATED 28.02.2025  
To TENDER NO. CEG7546P25**

1.0 Consequent of the Pre-bid Conference held on 27.09.2024, this amendment is issued to amend / correct the following clauses of bidding document:

Sl. No.	Section & Clause No.	Page No. of Original NIT	Original Clause	Amended Clause																		
1.	Forwarding Letter  Clause 2.0 j.  Mobilization Time	2 of 712	Table: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>SL. NO.</th> <th>Name of the Services</th> <th>Mobilization Period.</th> </tr> </thead> <tbody> <tr> <td>11.</td> <td>Wire line logging &amp; TCP services</td> <td>Within 90 days of Mobilization notice issued by Company</td> </tr> <tr> <td>12.</td> <td>Well testing Services</td> <td>Within 120 days of Mobilization notice issued by the Company</td> </tr> </tbody> </table>	SL. NO.	Name of the Services	Mobilization Period.	11.	Wire line logging & TCP services	Within 90 days of Mobilization notice issued by Company	12.	Well testing Services	Within 120 days of Mobilization notice issued by the Company	Table: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>SL. NO.</th> <th>Name of the Services</th> <th>Mobilization Period.</th> </tr> </thead> <tbody> <tr> <td>11.</td> <td>Wire line logging &amp; TCP services</td> <td><b>Wire line logging:</b> Within 90 days of Mobilization notice issued by Company  <b>TCP services:</b> Within 120 days of Mobilization notice issued by Company</td> </tr> <tr> <td>12.</td> <td>Well testing Services</td> <td>For SPT: Within 120 days of Mobilization notice issued by the Company. For NPU: within 60 days of Mobilization notice issued by the Company</td> </tr> </tbody> </table>	SL. NO.	Name of the Services	Mobilization Period.	11.	Wire line logging & TCP services	<b>Wire line logging:</b> Within 90 days of Mobilization notice issued by Company  <b>TCP services:</b> Within 120 days of Mobilization notice issued by Company	12.	Well testing Services	For SPT: Within 120 days of Mobilization notice issued by the Company. For NPU: within 60 days of Mobilization notice issued by the Company
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2.	Forwarding Letter  Clause 2.0 m.  Amount of Performance Security	3 of 712	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.  <b>To be submitted in two parts:</b>  <b>Part-1: 5% of total value excluding cost for Completions Equipment Supply &amp; Services and Supply of X-Mas Tree, Chokes &amp; Services</b>																		

				<b>Part-2: 5% of total value for Completions Equipment Supply &amp; Services and Supply of X-Mas Tree, Chokes &amp; Services</b>
3.	Forwarding Letter  Clause 2.0 n.  Validity of Performance Security	3 of 712	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 all contractual obligations of the contractor <b>for Part-1 of Performance Security.</b>  <b>For Part-2, the validity should be 15 (fifteen) months (12 months warranty period of completion equipment and X-Mas tree + 03 months) beyond the date of completion of all contractual obligations of the contractor.</b>
4.	Instruction to Bidders  Clause 8.0	15 of 712	Currencies of bid and payment  The Foreign Bidders are allowed to quote price (and get paid) in RBI's notified basket of foreign currencies - US Dollar or Euro or Pound Sterling or Yen etc., in addition to the Indian Rupees. Indian Bidders are required to quote their prices in INR only. If any Indian bidder quotes their price in currency other than INR, contract to the bidder shall be awarded (if successful) in INR only considering the conversion rate as per Clause No. 21.0 of ITB. However, currency once quoted will not be allowed to be changed.	Currencies of bid and payment  <b>FOR FOREIGN BIDDERS:</b>  Foreign Bidders are allowed to quote price (and get paid) in RBI's notified basket of foreign currencies - US Dollar or Euro or Pound Sterling or Yen etc., in addition to the Indian Rupees, except for expenditure incurred in India (including agency commission if any) which should be stated in Indian Rupees. For determining the expenditure incurred in India, the foreign bidder must quote the percentage of the Indian Component/expenditure against each line item of the Price Bid Format. During payment (if successful), the Expenses in India component of the price shall be converted to INR (if their quoted price is other than INR) considering the conversion rate as per Clause 21.0 of ITB. The bidder shall submit an Undertaking as per <b>Annexure-VI</b> along with the technical bid.  <b>FOR INDIAN BIDDERS:</b>  Indian Bidders are to quote in INR only. However, if any Indian bidder quotes their price in currency other than INR, contract to the bidder shall be awarded (if successful) in INR only considering the conversion rate as per Clause No. 21.0 of ITB.
5.	Instruction to Bidders  Clause 10.0 Bid Security		New Clause 10.15	Submission of Bid Security in the form of Electronic Bank Guarantee (e-BG) is also acceptable:

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6.	Instruction to Bidders Clause 22.3	22 of 712	Exchange rate risk:  Since Indian bidders are now permitted to quote in any currency and also receive payments in that currency, Company will not be	Exchange rate risk:  Company will not be compensating for any exchange rate fluctuations in respect of the services.																																																																								

			compensating for any exchange rate fluctuations in respect of the services.			
7.	BEC A.2.1. a. 6	30 of 712	<p>Well Completions Equipment supply and Services:</p> <p>(a) The bidder should have a minimum of five (05) years of experience in providing Well Completions equipment services to E&amp;P companies/Drilling companies including 3 years on offshore area and should have experience of supplying Well Completions equipment and services in at-least 02 offshore wells, including ICV installation.</p> <p>(b) Bidder should have executed at least one Contract for the above services in offshore area in the last 7 years to be reckoned from the Original Bid Closing Date.</p>		<p>Well Completions Equipment supply and Services:</p> <p>(a) The bidder should have a minimum of five (05) years of experience in providing Well Completions equipment services to E&amp;P companies / Drilling companies including 3 years on offshore area and should have experience of supplying Well Completions equipment and services in at-least 01 offshore well, including ICV installation.</p> <p>(b) Bidder should have executed at least one Contract for the above services in offshore area in the last 7 years to be reckoned from the Original Bid Closing Date.</p>	
8.	BEC, Clause A.6.0, MOBILIZATION PERIOD:	36 of 712	Group – I Services (Exclusive of Unitized Well heads with rental tools and running services and Liner Hanger Equipment supply & Liner running Services).	Within 90 days of Mobilization notice issued by Company	Group – I Services (Exclusive of <b>TCP services</b> , Unitized Well heads with rental tools and running services and Liner Hanger Equipment supply & Liner running Services).	Within 90 days of Mobilization notice issued by Company
			Group -II Services [Well Testing Services]	Within 120 days of Mobilization notice issued by the Company		<b>TCP services</b>
9.	BEC, Clause A.6.0, MOBILIZATION PERIOD:	37 of 712	<b>Interim De-mobilization and Re-mobilization</b>		<b>Interim De-mobilization and Re-mobilization</b>	
			Well testing Services under Group – II Services	Within 45 days of Re-Mobilization notice issued by the Company	Wellbore cleanout services under Group – II Services	Within 45 days of Re-Mobilization notice issued by the Company

			Completions equipment services under Group – II Services	Within 45 days of Re-Mobilization notice issued by the Company	Completions equipment services under Group – II Services	DELETED
10.	BEC, Clause A.8.0, VINTAGE:	38 of 712	Vintage clauses for individual services shall be as follows.  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. - Bidder to submit relevant documents in support of this vintage clause.		Vintage clauses for individual services shall be as follows.  Well Testing service - The Residual life of the equipment for Well Testing service 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 on issuance of mobilisation notice.	
11.	BEC / B. Financial Evaluation Criteria / 1.0	40 of 712	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 <b>INR 300 Cr. or USD 35.74 Million (1 USD = INR 83.89).</b>		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 <b>INR 302.23 Cr. or USD 36.03 Million (1 USD = INR 83.89).</b>	
12.	BEC / B. Financial Evaluation Criteria / 4.1	41 of 712	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. Other Consortium members individually shall have minimum Annual financial turn-over of <b>INR 150 Cr. or USD 17.87 Million (1 USD = INR 83.89)</b> 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. Other Consortium members individually shall have minimum Annual financial turn-over of <b>INR 151.11 Cr. or USD 18.01 Million (1 USD = INR 83.89)</b> 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.	
13.	BEC / D. Price Evaluation Criteria / 8.0 / Note (b)	48 of 712	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		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 <b>Essentiality</b>	

			applicable in case OIL issues recommendatory letters for availing concessional customs duty for the import of goods.	<b>Certificate</b> for availing concessional customs duty for the import of goods.																								
<b>14.</b>	Part-3 Section-I General Conditions of Contract  Clause 10.0 Performance Security		New Clause 10.12	Submission of Performance Security in the form of Electronic Bank Guarantee (e-BG) is also acceptable:  Beneficiary details for issue of e-BG are:  <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Particulars</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>NAME</td> <td>OIL INDIA LIMITED</td> </tr> <tr> <td>2</td> <td>PAN</td> <td>AAACO2352C</td> </tr> <tr> <td>3</td> <td>Date of Incorporation</td> <td>18-02-1959</td> </tr> <tr> <td>4</td> <td>Email ID</td> <td>chunduri.ramkumar@oilindia.in</td> </tr> <tr> <td>5</td> <td>Mobile No</td> <td>+91-9444490690</td> </tr> <tr> <td>6</td> <td>Local Address</td> <td>Kakinada, Andhra Pradesh-533003</td> </tr> <tr> <td>7</td> <td>Registered Address</td> <td>Duliajan, Dibrugarh, Assam-786602</td> </tr> </tbody> </table>	Sl. No.	Particulars	Details	1	NAME	OIL INDIA LIMITED	2	PAN	AAACO2352C	3	Date of Incorporation	18-02-1959	4	Email ID	chunduri.ramkumar@oilindia.in	5	Mobile No	+91-9444490690	6	Local Address	Kakinada, Andhra Pradesh-533003	7	Registered Address	Duliajan, Dibrugarh, Assam-786602
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<b>15.</b>	Exhibit-1 (Cementing Services)	97 of 712	<b>1.0 Responsibilities of the Bidder</b>  1.8 The Bidder shall be responsible for operation, maintenance, calibration of the Cementing Unit and Batch Mixer, calibration of Data Recording System, densimeter controls installed at the rig. The bidder shall be responsible for checking the order of cement plug loading / releasing, final circulation prior to cementing, mixing of exact dose of chemical powders / liquid (preferred), in the mixing water at rig in the presence of Company Representative, control of slurry density during pumping, and monitoring the displacement followed by plug bumping.	<b>1.0 Responsibilities of the Bidder</b>  1.8 The Bidder shall be responsible for operation whereas maintenance, calibration of the Cementing Unit, calibration of Data Recording System, densimeter controls installed at the rig will be responsibility of the rig Cementing Equipment supplier of the company. Batch Mixer has to be maintained by the Contractor. The bidder shall be responsible for checking the order of cement plug loading / releasing, final circulation prior to cementing, mixing of exact dose of chemical powders / liquid (preferred), in the mixing water at rig in the presence of Company Representative, control of slurry density during pumping, and monitoring the displacement followed by plug bumping.																								
<b>16.</b>	Exhibit-1 (Cementing Services)	100 of 712	This scope of SERVICES is related to the provisions of cementing pumping SERVICES as follows:  Miscellaneous pumping duties of wellbore fluids (drilling fluid, HSD, oil, water, brine, acid into the well, LCM pills etc.)	This scope of SERVICES is related to the provisions of cementing pumping SERVICES as follows:  Miscellaneous pumping duties of wellbore fluids (drilling fluid, HSD, oil, water, brine, LCM pills etc.)																								

17.	Exhibit-1 (Cementing Services)  Appendix – A-2 / SCOPE OF SERVICES	107 of 712	<b>1.0 EQUIPMENT REQUIREMENTS</b> <b>1.1 Accessories</b> <ul style="list-style-type: none"> <li>• Portable computer with display monitor, laser printer and standard software working under Windows, as well as the specific technical software needed to carry out the operations under the CONTRACT.</li> <li>• Monitoring and acquisition system</li> </ul>	<b>1.0 EQUIPMENT REQUIREMENTS</b> <b>1.1 Accessories</b> <ul style="list-style-type: none"> <li>• Portable computer with display monitor, laser printer and standard software working under Windows, as well as the specific technical software needed to carry out the operations shall be under the scope of Cementing Unit supplier.</li> <li>• Monitoring and acquisition system shall be under the scope of Cementing Unit supplier.</li> </ul>																										
18.	Exhibit-1 (Cementing Services)  Appendix – A-2 / SCOPE OF SERVICES	112 of 712	<b>2.0 BIDDER's BASE EQUIPMENT:</b>  <b>Table:</b>  Blaine Fineness apparatus: 1	<b>2.0 BIDDER's BASE EQUIPMENT:</b>  <b>Table:</b>  <b>DELETED.</b>																										
19.	Exhibit-1 (Cementing Services)  Appendix – A-2 / SCOPE OF SERVICES	113 of 712	<b>2.6 Extra Batch tanks (on call-out basis):</b>  On COMPANY's ORDER, BIDDER shall provide additional tanks (2 x 50 bbl.) with hoses, connections, and transfer pump to prepare, agitate, mixing water and/or cement spacer or cement slurry.	<b>2.6 DELETED.</b>																										
20.	Exhibit-1 (Cementing Services)  Appendix – A-3	114 of 712	<b>3.0 Equipment Description and Spare parts per rig:</b> <table border="1"> <thead> <tr> <th>ITEM</th> <th>DESCRIPTION</th> <th>COMPANY's REQUIREMENT</th> </tr> </thead> <tbody> <tr> <td>A3-2</td> <td>ADDITIONAL ITEM</td> <td></td> </tr> <tr> <td></td> <td>Pressurized mud balance</td> <td rowspan="3">1 on the rig site + 1 in the cement lab</td> </tr> <tr> <td></td> <td>Computer package to record all data of a cement job.</td> </tr> <tr> <td></td> <td>Connection to rig and COMPANY data acquisition system</td> </tr> </tbody> </table>	ITEM	DESCRIPTION	COMPANY's REQUIREMENT	A3-2	ADDITIONAL ITEM			Pressurized mud balance	1 on the rig site + 1 in the cement lab		Computer package to record all data of a cement job.		Connection to rig and COMPANY data acquisition system	<b>3.0 Equipment Description and Spare parts per rig:</b> <table border="1"> <thead> <tr> <th>ITEM</th> <th>DESCRIPTION</th> <th>COMPANY's REQUIREMENT</th> </tr> </thead> <tbody> <tr> <td>A3-2</td> <td>ADDITIONAL ITEM</td> <td></td> </tr> <tr> <td></td> <td>Pressurized mud balance</td> <td rowspan="3">1 on the rig site + 1 in the cement lab</td> </tr> <tr> <td></td> <td>DELETED</td> </tr> <tr> <td></td> <td>DELETED</td> </tr> </tbody> </table>	ITEM	DESCRIPTION	COMPANY's REQUIREMENT	A3-2	ADDITIONAL ITEM			Pressurized mud balance	1 on the rig site + 1 in the cement lab		DELETED		DELETED
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21.	Exhibit-1 (Cementing Services)  Appendix – A-3	114 of 712	<b>3.0 Equipment Description and Spare parts per rig:</b> <table border="1"> <tr> <td><b>A3-4</b></td> <td><b>CALL OFF EQUIPMENT</b></td> <td></td> </tr> <tr> <td></td> <td>Batch Mixer</td> <td>1 x 50 bbl.</td> </tr> <tr> <td></td> <td>Carboy tanks for ACID storage and</td> <td>500 gals</td> </tr> </table>	<b>A3-4</b>	<b>CALL OFF EQUIPMENT</b>			Batch Mixer	1 x 50 bbl.		Carboy tanks for ACID storage and	500 gals	<b>3.0 Equipment Description and Spare parts per rig:</b>  <b>Batch Mixer: 2 x 50 Bbls or 1 x 100 Bbls</b> <b>Carboy tanks for ACID storage: DELETED</b>			
<b>A3-4</b>	<b>CALL OFF EQUIPMENT</b>															
	Batch Mixer	1 x 50 bbl.														
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22.	Exhibit-1 (Cementing Services)  Appendix – A-5	122 of 712	5.0 Chemical Products  Table/Column 1: <table border="1"> <tr> <td>PRODUCTS APPLICATION</td> </tr> <tr> <td>ACID (add corrosion inhibitors and retarders suitable for each acid)</td> </tr> <tr> <td>HCl acid 15 %</td> </tr> <tr> <td>HCl acid 32 %</td> </tr> <tr> <td>Any other chemical</td> </tr> </table>	PRODUCTS APPLICATION	ACID (add corrosion inhibitors and retarders suitable for each acid)	HCl acid 15 %	HCl acid 32 %	Any other chemical	Deleted							
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Any other chemical																
23.	Exhibit-1 (Cementing Services)  Appendix – A-8	139 of 712	<b>8.0 WELLS TECHNICAL DATA AND SLURRY SPECIFICATIONS</b>  8.2.1 All slurries are designed using sea water, only gel slurry shall use fresh water.	<b>8.0 WELLS TECHNICAL DATA AND SLURRY SPECIFICATIONS</b>  8.2.1 All cement slurries are to be designed using fresh water.												

24.	Exhibit-1 (Cementing Services)  Appendix – A-8	141 of 712	<p>8.3 SLURRIES SPECIFICATIONS</p> <p>8.3.1 Well DGSA</p> <p>C. 7" Liner (shoe 2533.13 m, TOL: 2031.4 m)</p> <table border="1"> <tr> <td>Specifications</td> <td>SL 5 Tail</td> </tr> <tr> <td>UCA Compressive Strength, psi</td> <td></td> </tr> <tr> <td>- 12 hrs</td> <td>&gt;1500 psi at BHST</td> </tr> <tr> <td>- 24 hrs</td> <td>&gt;1500 psi at BHST</td> </tr> </table>	Specifications	SL 5 Tail	UCA Compressive Strength, psi		- 12 hrs	>1500 psi at BHST	- 24 hrs	>1500 psi at BHST	<p>8.3 SLURRIES SPECIFICATIONS</p> <p>8.3.1 Well DGSA</p> <p>C. 7" Liner (shoe 2533.13 m, TOL: 2031.4 m)</p> <table border="1"> <tr> <td>Specifications</td> <td>SL 5 Tail</td> </tr> <tr> <td>UCA Compressive Strength, psi</td> <td></td> </tr> <tr> <td>- 12 hrs</td> <td>&gt;1000 psi at BHST</td> </tr> <tr> <td>- 24 hrs</td> <td>&gt;1500 psi at BHST</td> </tr> </table>	Specifications	SL 5 Tail	UCA Compressive Strength, psi		- 12 hrs	>1000 psi at BHST	- 24 hrs	>1500 psi at BHST																																								
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25.	Exhibit-2 CASING & TUBING RUNNING TOOLS AND SERVICES	156 of 712	<p>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</p> <p>Table:</p> <p>SI. No. 2.2: 9-7/8", 350-ton, Side door Elevator with all spares.</p>	<p>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</p> <p>Table:</p> <p>SI. No. 2.2: 9-7/8", 250-ton, Side door Elevator with all spares.</p>																																																								
26.	Exhibit-2 CASING & TUBING RUNNING TOOLS AND SERVICES	156 of 712	<p>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</p> <table border="1"> <thead> <tr> <th>SL. NO.</th> <th>DESCRIPTION</th> <th>UOM</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>9-7/8" Casing</td> <td></td> <td></td> </tr> <tr> <td>New</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>9-5/8" Casing</td> <td></td> <td></td> </tr> <tr> <td>New</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>7" Casing</td> <td></td> <td></td> </tr> <tr> <td>New</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	SL. NO.	DESCRIPTION	UOM	Qty	2	9-7/8" Casing			New				3	9-5/8" Casing			New				4	7" Casing			New				<p>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</p> <table border="1"> <thead> <tr> <th>SL. NO.</th> <th>DESCRIPTION</th> <th>UOM</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>9-7/8" Casing</td> <td></td> <td></td> </tr> <tr> <td>2.8</td> <td>Stabbing Guides for 9-7/8" Casing</td> <td>Each</td> <td>2</td> </tr> <tr> <td>3</td> <td>9-5/8" Casing</td> <td></td> <td></td> </tr> <tr> <td>3.7</td> <td>Stabbing Guides for 9-5/8" Casing</td> <td>Each</td> <td>2</td> </tr> <tr> <td>4</td> <td>7" Casing</td> <td></td> <td></td> </tr> <tr> <td>4.7</td> <td>Stabbing Guides for 7" Casing</td> <td>Each</td> <td>2</td> </tr> </tbody> </table>	SL. NO.	DESCRIPTION	UOM	Qty	2	9-7/8" Casing			2.8	Stabbing Guides for 9-7/8" Casing	Each	2	3	9-5/8" Casing			3.7	Stabbing Guides for 9-5/8" Casing	Each	2	4	7" Casing			4.7	Stabbing Guides for 7" Casing	Each	2
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27.	Exhibit-2 CASING & TUBING RUNNING TOOLS AND SERVICES	158 of 712	<p><b>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</b></p> <p><b>Table:</b></p> <p><b>SI. No. 12:</b> 500 ton pneumatic / hydraulic spider with accessories and inserts for 13-5/8", 9-5/8" and 7" casings.</p> <p><b>SI. No.13:</b> 500 ton pneumatic / hydraulic spider elevator with accessories and inserts for 13-5/8", 9-5/8" and 7" casings</p>	<p><b>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</b></p> <p><b>Table:</b></p> <p><b>SI. No. 12:</b> 500 ton pneumatic / hydraulic spider with accessories and inserts for 13-5/8", 9-5/8", 9.7/8" and 7" casings.</p> <p><b>SI. No.13:</b> 500 ton pneumatic / hydraulic spider elevator with accessories and inserts for 13-5/8", 9-5/8", 9.7/8" and 7" casings</p>								
28.	Exhibit-2/ CASING & TUBING RUNNING TOOLS AND SERVICES	158 of 712	New Item	<p><b>1.0 Casing &amp; Tubing Running Tools &amp; Equipment including required consumables:</b></p> <p>Table:</p> <table border="1"> <thead> <tr> <th>SL. NO.</th> <th>DESCRIPTION</th> <th>UOM</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>Torque Monitoring system to be deployed during making up/breaking out of above tubulars.</td> <td>Each</td> <td>02</td> </tr> </tbody> </table>	SL. NO.	DESCRIPTION	UOM	Qty	19	Torque Monitoring system to be deployed during making up/breaking out of above tubulars.	Each	02
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19	Torque Monitoring system to be deployed during making up/breaking out of above tubulars.	Each	02									
29.	Exhibit-2 CASING & TUBING RUNNING TOOLS AND SERVICES	159 of 712	<p><b>2.0 Personnel for Casing &amp; Tubing Running &amp; Torque Turn Services on Call-out Basis:</b></p> <p>2.1 Personnel for Casing &amp; Tubing Running &amp; Torque Turn Services on 24-hr basis during casing &amp; tubing running operation:</p> <p>a. Casing Crew Chief – 01 Number  b. Casing Stabber – 02 Numbers  c. Casing Tong Operator – 02 Numbers  d. Bucking Unit Operator – 01 Number</p>	<p><b>2.0 Personnel for Casing &amp; Tubing Running &amp; Torque Turn Services on Call-out Basis:</b></p> <p>2.1 Personnel for Casing &amp; Tubing Running &amp; Torque Turn Services on 24-hr basis during casing &amp; tubing running operation:</p> <p>a. Casing Crew Chief – 01 Number  b. Casing Stabber – 02 Numbers  c. Casing Tong Operator – 02 Numbers  d. Bucking Unit Operator – 01 Number  e. Torque Turn Operator- 02 Numbers</p>								
30.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY	162 of 712	2.0 TOOLS SPECIFICATIONS (Short forms of tools indicated are COMPANY codes only):	<p>2.0 TOOLS SPECIFICATIONS (Short forms of tools indicated are COMPANY codes only):</p> <p>2.1 SET-A: For 17.1/2" HOLE SECTION:</p>								

	STEEREABLE SERVICES FOR DIRECTIONAL DRILLING		<p>2.1 SET-A: For 17.1/2" HOLE SECTION:</p> <p>i. Direction, Inclination with Temperature (DI):</p> <p>a. Collar Based MWD Tools (DI) should be of 8.0" - 8.5" API Collar size as applicable with respect to hole size, rated to well conditions and operate in flow range of minimum 300 GPM and maximum 1000 GPM or more.</p>	<p>i. Direction, Inclination with Temperature (DI):</p> <p>a. Collar Based MWD Tools (DI) should be of 8.0" - 8.5" API Collar size as applicable with respect to hole size, rated to well conditions and operate in flow range of minimum 400 GPM and maximum 1000 GPM or more.</p>
31.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	162 of 712	<p>2.0 TOOLS SPECIFICATIONS (Short forms of tools indicated are COMPANY codes only):</p> <p>2.2 SET-B: For 12 1/4" HOLE SECTION:</p> <p>i. Direction, Inclination with Temperature (DI):</p> <p>a. Collar Based MWD Tools (DI) should be of 8.0" - 8.5" API Collar size/ Nominal OD as applicable with respect to hole size, rated to well conditions and operate in flow range of minimum 300 GPM and maximum 1000 GPM or more.</p>	<p>2.0 TOOLS SPECIFICATIONS (Short forms of tools indicated are COMPANY codes only):</p> <p>2.2 SET-B: For 12 1/4" HOLE SECTION:</p> <p>i. Direction, Inclination with Temperature (DI):</p> <p>a. Collar Based MWD Tools (DI) should be of 8.0" - 8.5" API Collar size/ Nominal OD as applicable with respect to hole size, rated to well conditions and operate in flow range of minimum 400 GPM and maximum 1000 GPM or more.</p>
32.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	163 of 712	<p>2.0 TOOLS SPECIFICATIONS (Short forms of tools indicated are COMPANY codes only):</p> <p>2.2 SET-B: For 12 1/4" HOLE SECTION:</p> <p>ii. Annular Pressure While Drilling (APWD):</p> <p>d. Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density) in real time.</p> <p>g. Should be able to provide measurements in both OFF and ON conditions of the pumps.</p> <p>h. Should be able to take multiple pressure measurements during LOT.</p>	<p>2.0 TOOLS SPECIFICATIONS (Short forms of tools indicated are COMPANY codes only):</p> <p>2.2 SET-B: For 12 1/4" HOLE SECTION:</p> <p>ii. Annular Pressure While Drilling (APWD):</p> <p>d. Pressure sensor to identify ECD (Equivalent Circulating Density) in real time.</p> <p>g. Deleted.</p> <p>h. Deleted.</p>
33.	Exhibit – 3 / LWD, MWD, MUD MOTOR /	163 of 712	<p>2.3 SET-C: For 8 1/2" HOLE SECTION (for 2 wells in East):</p> <p>i. Direction, Inclination with Temperature (DI):</p>	<p>2.3 SET-C: For 8 1/2" HOLE SECTION (for 2 wells in East):</p> <p>i. Direction, Inclination with Temperature (DI):</p>

	ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING		a. Collar Based MWD Tools (DI) should be of 6.25" - 6.75" API Collar size / Nominal OD as applicable with respect to hole size, rated to maximum expected static bottomhole temperature of 120 deg C and mud hydrostatic of 7,000 psi and operate in flow range of minimum 150 GPM and maximum 700 GPM or more.	a. Collar Based MWD Tools (DI) should be of 6.25" - 6.75" API Collar size / Nominal OD as applicable with respect to hole size, rated to maximum expected static bottomhole temperature of 120 deg C and mud hydrostatic of 7,000 psi and operate in flow range of minimum 275 GPM and maximum 700 GPM or more.
34.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	164 of 712	2.3 SET-C: For 8 ½" HOLE SECTION (for 2 wells in East):  ii. Annular Pressure While Drilling (APWD):  c. Maximum allowable Flow Rate:1000 GPM or better.  d. Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density) in real time.  g. Should be able to provide measurements in both OFF and ON conditions of the pumps.  h. Should be able to take multiple pressure measurements during LOT.	2.3 SET-C: For 8 ½" HOLE SECTION (for 2 wells in East):  ii. Annular Pressure While Drilling (APWD):  c. Maximum allowable Flow Rate: 700 GPM or better.  d. Pressure sensor to identify ECD (Equivalent Circulating Density) in real time.  g. Deleted.  h. Deleted.
35.	Exhibit-3  2.4 TOOLS SPECIFICATION (Short forms of tools indicated are COMPANY codes only):	164 of 712	2.4 SET-D: For 8 ½" HOLE SECTION (for 2 high temperature wells in West):  i. Direction, Inclination with Temperature (DI):  a. Collar Based MWD Tools (DI) should be of 6.25" - 6.75" API Collar size / Nominal OD as applicable with respect to hole size, rated to maximum expected static bottomhole temperature of 163 deg C and mud hydrostatic of 7,000 psi and operate in flow range of minimum 150 GPM and maximum 700 GPM or more.	2.4 SET-D: For 8 ½" HOLE SECTION (for 2 high temperature wells in West):  i. Direction, Inclination with Temperature (DI):  a. Collar Based MWD Tools (DI) should be of 6.25" - 6.75" API Collar size / Nominal OD as applicable with respect to hole size, rated to maximum expected static bottomhole temperature of 163 deg C and mud hydrostatic of 7,000 psi and operate in flow range of minimum 350 GPM and maximum 700 GPM or more.
36.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY	165 of 712	2.4 SET-D: For 8 ½" HOLE SECTION (for 2 high temperature wells in West):  ii. Annular Pressure While Drilling (APWD):	2.4 SET-D: For 8 ½" HOLE SECTION (for 2 high temperature wells in West):  ii. Annular Pressure While Drilling (APWD):

	STEEREABLE SERVICES FOR DIRECTIONAL DRILLING		<p>c. Maximum allowable Flow Rate:1000 GPM or better.</p> <p>d. Pressure sensor to identify ECD (Equivalent Circulating Density) and ESD (Equivalent Static Density) in real time.</p> <p>g. Should be able to provide measurements in both OFF and ON conditions of the pumps.</p> <p>h. Should be able to take multiple pressure measurements during LOT.</p>	<p>c. Maximum allowable Flow Rate:700 GPM or better.</p> <p>d. Pressure sensor to identify ECD (Equivalent Circulating Density) in real time.</p> <p>g. Deleted.</p> <p>h. Deleted.</p>
37.	<p>Exhibit - 3</p> <p>2.4 TOOLS SPECIFICATION (Short forms of tools indicated are COMPANY codes only):</p>	166 of 712	<p>3a. SDDM (Steerable Downhole Mud Motor)</p> <p>i. 9-5/8" / 9-1/2" OD High Torque, low to medium speed, stabilized positive displacement multi-lobe mud motor for drilling in 17 1/2" hole size with provision for 17-3/8" screwed-on bearing housing stabilizer for drilling 17-1/2" hole along with adjustable kick off sub and rotor catcher with 7 5/8" API Regular Box down (bit box) and 6 5/8" API Regular Box Up assembly complete with lifting sub and having following specifications.</p> <p>Min. Flow Rate: 300 GPM &amp; Max. Flow Rate: 1000 GPM or more, Bit Speed: not less than 60 RPM to 200 RPM approx. or more, Operating differential pressure 550-1200 PSI, Operating torque 30000 NM maximum. Power output 400 HP minimum. Motors shall be able to provide 4° / 30 M or more build up rate and will be able to rotate where BUR of 4° / 30 m is obtained.</p>	<p>3a. SDDM (Steerable Downhole Mud Motor)</p> <p>i. 9-5/8" / 9-1/2" OD High Torque, low to medium speed, stabilized positive displacement multi-lobe mud motor for drilling in 17 1/2" hole size with provision for 17-3/8" screwed-on bearing housing stabilizer for drilling 17-1/2" hole along with adjustable kick off sub and rotor catcher with 7 5/8" API Regular Box down (bit box) and 6 5/8" API Regular Box Up assembly complete with lifting sub and having following specifications.</p> <p>Min. Flow Rate: 600 GPM &amp; Max. Flow Rate: 1000 GPM or more, Bit Speed: not less than 60 RPM to 200 RPM approx. or more, Operating differential pressure 550-1200 PSI, Operating torque 30000 NM maximum. Power output 400 HP minimum. Motors shall be able to provide 4° / 30 M or more build up rate and will be able to rotate where BUR of 4° / 30 m is obtained.</p>
38.	<p>Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING</p>	166 of 712	<p><b>3.0 MUD MOTORS, Downhole rotary steerable systems, AND ACCESSORIES</b></p> <p><b>3a. SDDM (Steerable Downhole Mud Motor):</b></p> <p>ii. 7¾" / 8.1/2" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle to horizontal drilling in 12 1/4" hole with 12 1/8" screw-on / built-in bearing housing stabilizer and adjustable kick off sub and rotor catcher with 6 5/8" API Regular Box down (bit box) and 6 5/8" API Reg. Box Up assembly complete with lifting sub and</p>	<p><b>3.0 MUD MOTORS, Downhole rotary steerable systems, AND ACCESSORIES</b></p> <p><b>3a. SDDM (Steerable Downhole Mud Motor):</b></p> <p>ii. 7¾" / 8.1/2" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle to horizontal drilling in 12 1/4" hole with 12 1/8" screw-on / built-in bearing housing stabilizer and adjustable kick off sub and rotor catcher with 6 5/8" API Regular Box down (bit box) and 6 5/8" API Reg. Box Up assembly complete with lifting sub and having following specifications.</p>

			<p>having following specifications. Min. Flow Rate: 250 GPM &amp; Max. Flow Rate: 1000 GPM or more, Bit Speed not less than 50 to 140 RPM approx. or more, Operating differential pressure 600 PSI (max) or more, Operating torque 20000 NM maximum. Power output 212 HP minimum. Motors shall be able to provide 5° / 30 m or more build up rate and will be able to rotate where BUR of 5° / 30 m is obtained.</p> <p>iii. 6 1/2" / 6 3/4" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle in 8 1/2" hole with 8 3/8" screw-on/built-in bearing housing stabilizer and adjustable kick off sub and rotor catcher with 4 1/2" API regular box down (bit box) and 4 API IF / 4.1/2 IF Box up assembly complete with lifting sub and having following specifications. Min. Flow Rate: 150 GPM, Max. Flow Rate: 700 GPM or more, Bit Speed: not less than 60 RPM to 200 RPM approx. or more, Operating torque:12000 NM maximum, Power output 173 HP minimum, Operating differential pressure 900 PSI (max) or more. Motors shall be able to provide 6°/ 30 m or more build up rate and will be able to rotate where BUR of 6°/ 30 m is obtained.</p>	<p>Min. Flow Rate: 450 GPM &amp; Max. Flow Rate: 1000 GPM or more, Bit Speed not less than 50 to 140 RPM approx. or more, Operating differential pressure 600 PSI (max) or more, Operating torque 20000 NM maximum. Power output 212 HP minimum. Motors shall be able to provide 5° / 30 m or more build up rate and will be able to rotate where BUR of 5° / 30 m is obtained.</p> <p>iii. 6 1/2" / 6 3/4" OD high torque low to medium speed stabilized positive displacement steerable multi-lobe mud motor for high angle in 8 1/2" hole with 8 3/8" screw-on/built-in bearing housing stabilizer and adjustable kick off sub and rotor catcher with 4 1/2" API regular box down (bit box) and 4 API IF / 4.1/2 IF Box up assembly complete with lifting sub and having following specifications. Min. Flow Rate: 350 GPM, Max. Flow Rate: 600 GPM or more, Bit Speed: not less than 60 RPM to 200 RPM approx. or more, Operating torque:12000 NM maximum, Power output 173 HP minimum, Operating differential pressure 900 PSI (max) or more. Motors shall be able to provide 6°/ 30 m or more build up rate and will be able to rotate where BUR of 6°/ 30 m is obtained.</p>
39.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	169 of 712	<p>3.0 MUD MOTORS, Downhole rotary steerable systems, AND ACCESSORIES:</p> <p>3b. Downhole Rotary Steerable System (DRSS):</p> <p>ii. DRSS tools are to be provided for drilling 8.1/2" hole section with following specifications (for 2 wells in East):</p> <p>10. Mud Flow range = 600 (or less) -1100 (or more) GPM. Max. RPM 220.</p>	<p>3.0 MUD MOTORS, Downhole rotary steerable systems, AND ACCESSORIES:</p> <p>3b. Downhole Rotary Steerable System (DRSS):</p> <p>ii. DRSS tools are to be provided for drilling 8.1/2" hole section with following specifications (for 2 wells in East):</p> <p>10. Mud Flow range = 600 (or less) - 700 GPM. Max. RPM 220.</p>
40.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	174 of 712	<p><b>Gyro services:</b></p>	<p><b>Gyro services</b> (Memory Multishot and Realtime Multishot):</p> <p>The gyro tool should be capable of providing survey data in various formats, including digital formats compatible with commonly used drilling software packages. Real-time data transmission capabilities may also be desirable for monitoring wellbore trajectory during drilling operations. Hence, both the Memory Multi shot and Realtime Multi shot services will be required. The service is intended to run inside the drill</p>

				pipe during the cleanout run and as a dedicated run inside the conductor without the drill pipe.
41.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	174 of 712	4.2 Gyro Services:  4.2.4 Survey accuracy for the tool should not be higher than +/- 0.02 for Inclination, +/- 0.04 for Azimuth, and +/- 0.1 for Tool face.	4.2 Gyro Services:  4.2.4 Survey accuracy for the tool should not be higher than +/- 0.05 for Inclination, +/- 0.1 for Azimuth, and +/- 0.1 for Tool face.
42.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	178 of 712	4.3.3 ENVIRONMENT CORRECTION CHARTS:  Latest Environment Correction Charts for the different type of logs used in log analysis must be provided by BIDDER. Also, the BIDDER will make available the Environmental Correction Charts in Hard-copy format. The Environmental Correction Software is also to be available in BIDDER's Data Services Centres.  MWD/LWD Unit must have the capability to transmit data from the Rigs over satellite/telephone lines to the COMPANY's base. MWD/LWD Unit must have capabilities of processing log data at site for quick look analysis. Two copies of Log data must be provided on DVD, in LIS or DLIS format for each operation.  Number of hard copies/films to be provided after each operation: 6 Prints in 1:500 & 1:200 scale. For image logs processed data will be provided in 1:20 scale.	4.3.3 ENVIRONMENT CORRECTION CHARTS:  Deleted.  MWD/LWD Unit must have the capability to transmit data from the Rigs over satellite/telephone lines to the COMPANY's base. MWD/LWD Unit must have capabilities of processing log data at site for quick look analysis. Two copies of Log data must be provided on DVD, in LIS or DLIS format for each operation.  Number of hard copies/films to be provided after each operation: 6 Prints in 1:500 & 1:200 scale. For image logs processed data will be provided in 1:20 scale.
43.	Exhibit – 3 / LWD, MWD, MUD MOTOR / ROTARY STEEREABLE SERVICES FOR DIRECTIONAL DRILLING	181 of 712	<b>4.3.9 DELIVERABLES:</b>  <b>Table:</b>  <u>Column-2: Equipment/ Description: Directional</u>  <u>Column-5: Processed Output (after completion of a hole section):</u>	<b>4.3.9 DELIVERABLES:</b>  <b>Table:</b>  <u>Column-2: Equipment/ Description: Directional</u>  <u>Column-5: Processed Output (after completion of a hole section):</u>  All raw channels also required to carry out independent environmental corrections on GR should also be provided. One copy in LAS/DLIS to OIL, Kakinada.

			All raw channels also required to carry out independent environmental corrections on GR and Resistivity should also be provided. One copy in LAS/DLIS to OIL, Kakinada.													
44.	MUD ENGINEERING SERVICES		Exhibit-4	<b>Revised Exhibit-4</b> enclosed herewith												
45.	Exhibit-5, SUPPLY OF DRILL BITS ON A CONSIGNMENT BASIS,	243 of 712	Clause 1.6  The BIDDER may be called upon to provide at short notice additional quantities of the above types of bits to meet COMPANY's actual operational requirements. In case of additional requirement in addition to the stipulated quantity of bits, Service provider shall be liable to supply the same within 20 days from the receipt of such advice from COMPANY.	Clause 1.6  The BIDDER may be called upon to provide at short notice additional quantities of the above types of bits to meet COMPANY's actual operational requirements. In case of additional requirement in addition to the stipulated quantity of bits, Service provider shall be liable to supply the same within 30 days from the receipt of such advice from COMPANY.												
46.	Exhibit-5/SUPPLY OF DRILL BITS ON A CONSIGNMENT BASIS	247 of 712	<b>Bits to be quoted and supplied</b> (Column 1,4 and 6 of the table): <table border="1"> <thead> <tr> <th>Bit/ Hole Size</th> <th>Drill Bit Type</th> <th>Other Details</th> </tr> </thead> <tbody> <tr> <td>6.0" (cleanout &amp; contingency)</td> <td>TCR, IADC 1-1-7</td> <td>• Bearing seal- Metallic/Twin or Dual high performance elastomeric seal (Temperature rating for seals: Max 163 deg C).</td> </tr> </tbody> </table>	Bit/ Hole Size	Drill Bit Type	Other Details	6.0" (cleanout & contingency)	TCR, IADC 1-1-7	• Bearing seal- Metallic/Twin or Dual high performance elastomeric seal (Temperature rating for seals: Max 163 deg C).	<b>Bits to be quoted and supplied</b> (Column 1,4 and 6 of the table): <table border="1"> <thead> <tr> <th>Bit/ Hole Size</th> <th>Drill Bit Type</th> <th>Other Details</th> </tr> </thead> <tbody> <tr> <td>6.0" (cleanout &amp; contingency)</td> <td>TCR, IADC 1-1-7</td> <td>• Bearing seal- single, high performance elastomeric seal (Temperature rating for seals: Max 163 deg C).</td> </tr> </tbody> </table>	Bit/ Hole Size	Drill Bit Type	Other Details	6.0" (cleanout & contingency)	TCR, IADC 1-1-7	• Bearing seal- single, high performance elastomeric seal (Temperature rating for seals: Max 163 deg C).
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47.	Exhibit-5/SUPPLY OF DRILL BITS ON A CONSIGNMENT BASIS	250 of 712	<b>3.0 – Optional bits</b>  3.4 Stock of such bits is to be maintained in such a way so that on demand it will be delivered at Kakinada (Shore base) with in maximum 20 days from the date of receipt of notice.	<b>3.0 – Optional bits</b>  3.4 Stock of such bits is to be maintained in such a way so that on demand it will be delivered at Kakinada (Shore base) with in maximum 30 days from the date of receipt of notice.												
48.	MUD LOGGING SERVICES		Exhibit-7	<b>Revised Exhibit-7</b> enclosed herewith												

49.	Exhibit-8 / Coring, core handling & core stabilization services / 1.3.1	295 of 712	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 & 325°F for 12-1/4" & 8-1/2" hole sections respectively.			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 & 325°F for 12-1/4" & 8-1/2" hole sections respectively.		
50.	Exhibit-8 / Coring, core handling & core stabilization services/1.3.3 Equipment list:	297 of 712	Sl. No.	Description		Sl. No.	Description	
			4	Other Equipment: i. Ball Drop Sub to allow core barrel to be run below motor.		4	Other Equipment: Deleted.	
51.	Exhibit-8 / Coring, core handling & core stabilization services/1.3.3 Equipment list:	297 of 712	Sl. No.	Description		Sl. No.	Description	
			4	Other Equipment: ii. Full strength Overshot and Grapples.		4	Other Equipment: Deleted	
52.	Exhibit-8 / Coring, core handling & core stabilization services/1.3.3 Equipment list:	297 of 712	4. Other Equipment:  Notes:  2. Tools / equipment deployed should not be older than five (5) 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. Other Equipment:  Notes:  2. Tools / equipment deployed should not be older than ten (10) years as on the original bid closing date and shall be preferably 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.		
53.	Exhibit-9 Supply of Unitized Wellhead with Rental Tools and Services	305 of 712	2.0 Wellhead System:  Item No.      Material Description      Qty 2      13-5/8" Mandrel Casing Hanger and associated components - 5,000 psi WP CC U PSL2 PR2 (Collapse & tensile ratings greater			2.0 Wellhead System:  Item No.      Material Description      Qty 2      13-5/8" Mandrel Casing Hanger and associated components - 5,000 psi WP AA U PSL2 PR2 (Collapse & tensile ratings greater		

			<p>than or equal to 13-5/8" 88.2 ppf, VAM TOP SC80) Connection will be VAM TOP SC80 equivalent - To be confirmed later.</p> <p>Quantity: - 05 (FIVE) Numbers</p> <p>Bottom connection: 13-5/8" with landing ring to land on 30" landing ring</p>			<p>than or equal to 13-5/8" 88.2 ppf, VAM TOP 13Cr) Connection will be VAM TOP 13Cr equivalent - To be confirmed later.</p> <p>Quantity: - 05 (FIVE) Numbers</p> <p>Bottom connection: 13-5/8" with landing ring to land on 30" landing ring</p>												
<b>54.</b>	Exhibit-9 Supply of Unitized Wellhead with Rental Tools and Services	306 of 712	<p><b>2.0 Wellhead System:</b></p> <table border="1"> <thead> <tr> <th>Item No.</th> <th>Material Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>9-7/8" Mandrel Casing Hanger and associated components - 10,000 psi WP CC U PSL2 PR2 (Collapse &amp; tensile ratings greater than or equal to 9-7/8" 65.3 ppf, VM110SS-D)  Connection will be Premium VAM SLIJ - II (Semi Flush) equivalent - To be confirmed later. Bottom connection 9-7/8"</td> <td>02</td> </tr> </tbody> </table>		Item No.	Material Description	Qty	5	9-7/8" Mandrel Casing Hanger and associated components - 10,000 psi WP CC U PSL2 PR2 (Collapse & tensile ratings greater than or equal to 9-7/8" 65.3 ppf, VM110SS-D)  Connection will be Premium VAM SLIJ - II (Semi Flush) equivalent - To be confirmed later. Bottom connection 9-7/8"	02	<p><b>2.0 Wellhead System:</b></p> <table border="1"> <thead> <tr> <th>Item No.</th> <th>Material Description</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>9-7/8" Mandrel Casing Hanger and associated components - 10,000 psi WP CC U PSL2 PR2 [Collapse &amp; tensile ratings greater than or equal to 9-7/8" 65.3 ppf, INCONEL 718 (120KSI yield)]  Connection will be Premium VAM SLIJ - II (Semi Flush) equivalent - To be confirmed later. Bottom connection 9-7/8"</td> <td>02</td> </tr> </tbody> </table>		Item No.	Material Description	Qty	5	9-7/8" Mandrel Casing Hanger and associated components - 10,000 psi WP CC U PSL2 PR2 [Collapse & tensile ratings greater than or equal to 9-7/8" 65.3 ppf, INCONEL 718 (120KSI yield)]  Connection will be Premium VAM SLIJ - II (Semi Flush) equivalent - To be confirmed later. Bottom connection 9-7/8"	02
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<b>55.</b>	Exhibit-9 SUPPLY OF UNITIZED WELLHEAD WITH RENTAL TOOLS AND SERVICES	307 of 712	<p><b>2.0 Wellhead Systems</b></p> <p><b>Item No-6:</b></p> <p>9-7/8" Mandrel Casing Hanger and associated components - 10,000 psi WP CC U PSL2 PR2 (Collapse &amp; tensile ratings greater than or equal to 9-5/8", 53.5 ppf, P110 premium casing) Connection will be Premium - To be confirmed later. Bottom connection to make up 9-5/8" premium casing</p>		<p><b>2.0 Wellhead Systems</b></p> <p><b>Item No-6:</b></p> <p>9-5/8" Mandrel Casing Hanger and associated components - 10,000 psi WP CC U PSL2 PR2 (Collapse &amp; tensile ratings greater than or equal to 9-5/8", 53.5 ppf, P110 premium casing) Connection will be Premium - To be confirmed later. Bottom connection to make up 9-5/8" premium casing</p>													
<b>56.</b>	Exhibit-9 SUPPLY OF UNITIZED WELLHEAD WITH RENTAL TOOLS AND SERVICES	311 of 712	<p><b>2.2 Gate Valves:</b></p> <p><b>Wellhead Annulus:</b></p> <p>All valves on the wellhead annulus must be manufactured, tested, and monogrammed to API 6A (latest edition), All gate valves must have a solid gate that seals equally well bi-</p>		<p><b>2.2 Gate Valves:</b></p> <p><b>Wellhead Annulus:</b></p> <p>All valves on the wellhead annulus must be manufactured, tested, and monogrammed to API 6A (latest edition), All gate valves must have a solid gate that seals equally well bi-directionally. Valves must be of a</p>													

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57.	Exhibit-9 SUPPLY OF UNITIZED WELLHEAD WITH RENTAL TOOLS AND SERVICES	314 of 712	<p><b>3.3 Inspection</b></p> <p><b>1<sup>st</sup> Para:</b></p> <p>All Equipment's/Materials to be supplied under the Contract will undergo, but not be limited to, Hydro testing, NDT, Heat Wise mechanical testing, witness including sampling, visual inspection (100%) and dimensions (100%), review of all test certificates etc. The calibration of all testing equipment to be certified by a reputed Third-party agency (at Bidder's cost) which shall be approved by Company and the same, must be furnished to the Company prior to dispatch of the materials/equipment. The cost of such tests will be to the Bidder's account. Assembly functional testing (including gas testing of tubing hanger, wellhead, and valve) is to be performed according to API 6A PSL 2.</p>	<p><b>3.3 Inspection</b></p> <p><b>1<sup>st</sup> Para:</b></p> <p>All Equipment's/Materials to be supplied under the Contract will undergo, but not be limited to, Hydro testing, NDT, Heat Wise mechanical testing, witness including sampling, visual inspection (100%) and dimensions (100%), review of all test certificates etc. The calibration of all testing equipment to be certified by a reputed Third-party agency (at Bidder's cost) which shall be approved by Company and the same, must be furnished to the Company prior to dispatch of the materials/equipment. The cost of such tests will be to the Bidder's account. Assembly functional testing is to be performed according to API 6A PSL 2.</p>																								
58.	Exhibit-10 FISHING AND MILLING TOOLS RENTAL SERVICES	319 of 712	<p><b>2.0 Fishing &amp; Milling Tools:</b></p> <p><b>2.1 Drilling specific fishing &amp; milling tools:</b></p> <table border="1"> <thead> <tr> <th>SL. NO.</th> <th>DESCRIPTION</th> <th>UOM</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td><b>A</b></td> <td><b>8 1/4" Spear</b></td> <td></td> <td></td> </tr> <tr> <td><b>1</b></td> <td>8 1/4" OD releasing spear with 6 5/8" Reg Box X 4 1/2" IF Pin Conn C/W protectors</td> <td><b>Each</b></td> <td><b>1</b></td> </tr> </tbody> </table>	SL. NO.	DESCRIPTION	UOM	Qty	<b>A</b>	<b>8 1/4" Spear</b>			<b>1</b>	8 1/4" OD releasing spear with 6 5/8" Reg Box X 4 1/2" IF Pin Conn C/W protectors	<b>Each</b>	<b>1</b>	<p><b>2.0 Fishing &amp; Milling Tools:</b></p> <p><b>2.1 Drilling specific fishing &amp; milling tools:</b></p> <table border="1"> <thead> <tr> <th>SL. NO.</th> <th>DESCRIPTION</th> <th>UOM</th> <th>Qty</th> </tr> </thead> <tbody> <tr> <td><b>A</b></td> <td><b>8 1/4" Spear with Bull Nose</b></td> <td></td> <td></td> </tr> <tr> <td><b>1</b></td> <td>8 1/4" OD releasing spear with Bull Nose with 6 5/8" Reg Box X 4 1/2" IF Pin Conn C/W protectors</td> <td><b>Each</b></td> <td><b>1</b></td> </tr> </tbody> </table>	SL. NO.	DESCRIPTION	UOM	Qty	<b>A</b>	<b>8 1/4" Spear with Bull Nose</b>			<b>1</b>	8 1/4" OD releasing spear with Bull Nose with 6 5/8" Reg Box X 4 1/2" IF Pin Conn C/W protectors	<b>Each</b>	<b>1</b>
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72.	Exhibit-10 FISHING AND MILLING TOOLS RENTAL SERVICES	325 of 712	<b>2.1 Drilling specific fishing &amp; milling tools:</b>				<b>2.1 Drilling specific fishing &amp; milling tools:</b>					
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			<b>T</b>	<b>Oil Jar</b>			<b>T</b>	<b>Oil Jar</b>				
			<b>1</b>	7 3/4" OD Bowen type "Z" Oil Jar with 6 5/8" Reg Box X Pin Conn C/W protector	<b>Each</b>	<b>1</b>	<b>1</b>	7 3/4" OR 8" OD Bowen type "Z" Oil Jar with 6 5/8" Reg Box X Pin Conn C/W protector	<b>Each</b>	<b>1</b>		
<b>2</b>	6 1/4" OD Bowen type "Z" Oil Jar with 4 1/2" IF Box X Pin Conn C/W protector	<b>Each</b>	<b>1</b>	<b>2</b>	6 1/4" OR 6.1/2" OD Bowen type "Z" Oil Jar with 4 1/2" IF Box X Pin Conn C/W protector	<b>Each</b>	<b>1</b>					
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<b>80.</b>	Exhibit-11 WIRELINE LOGGING & TCP SERVICES 2.0	331 of 712	In addition to above field personnel, contractor must identify a Base Co-Ordinator who will be in touch with OIL's operating office for planning and seamless execution of the wireline logging operations in the field.	Contractor at its cost shall provide Base Coordinator for Wireline Logging Services. The Base Coordinator will be primarily based in Kakinada or such other location in India as mutually agreed, be available for daily operational morning meetings (online/offline) and consultation at all times throughout the duration of the contract.																																				
<b>81.</b>	Exhibit-11/ WIRELINE LOGGING & TCP SERVICES	331 of 712	<b>2.0 SERVICE PROVIDER'S PERSONNEL</b>  1. Biodata of the <del>Base Co-ordinator</del> , Logging Engineer, specialists, Data processing personnel and the Crew personnel must be submitted to OIL at the time of bidding in their Unpriced Techno-Commercial bid as well as before mobilization as per Annexure-E. It also applies to the additional personnel which the Contractor may decide to keep in the operational areas. The personnel should have fulfilled the requisite experience as on or before the original bid closing date. Company reserves the right to accept or reject the Contractor's proposed personnel.	<b>2.0 SERVICE PROVIDER'S PERSONNEL</b>  1. Biodata of the Logging Engineer, specialists, Data processing personnel and the Crew personnel must be submitted to OIL 45 days before mobilization as per Annexure-E. It also applies to the additional personnel which the Contractor may decide to keep in the operational areas. The personnel should have fulfilled the requisite experience at the time of submission of their bio data. Company reserves the right to accept or reject the Contractor's proposed personnel.																																				

82.	Exhibit-11 WIRELINE LOGGING & TCP SERVICES	331 of 712	<p>2.1 Experience of Contractors personnel:</p> <p>The personnel provided for carrying out wireline logging, perforation and other associated operations under the Contract must be qualified, competent, and experienced as mentioned below. Period in this regard shall be reckoned from original bid closing date.</p>	<p>2.1 Experience of Contractors personnel:</p> <p>The personnel provided for carrying out wireline logging, perforation and other associated operations under the Contract must be qualified, competent, and experienced as mentioned below. Experience criteria of the personnel must be fully complied at the time of submission of their bio data.</p>
83.	Exhibit-11 WIRELINE LOGGING & TCP SERVICES 2.1 Experience of Contractors personnel	332 of 712	<p>Experience of Contractors personnel:</p> <p>1. Logging Engineer: The Logging Engineers deployed should be an engineering graduate with least 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.</p>	<p>Experience of Contractors personnel:</p> <p>1. Logging Engineer: The Logging Engineers deployed should be an engineering graduate with least 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, Logging engineers should have valid well control and offshore safety course certifications.</p>
84.	Exhibit-11 WIRELINE LOGGING & TCP SERVICES 2.1 Experience of Contractors personnel	332 of 712	<p>Experience of Contractors personnel:</p> <p>2. 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 engineers must be able to handle 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.</p>	<p>Experience of Contractors personnel:</p> <p>2. 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 at least 5 wells including 1 offshore well in an independent capacity in earlier assignments on the bid closing date. Apart from requisite experience, Logging operators should have valid offshore safety course certifications.</p>
85.	Exhibit-11 WIRELINE LOGGING & TCP SERVICES 2.1 Experience of Contractors personnel	333 of 712	<p>Experience of Contractors personnel:</p> <p>3. Logging Specialist: The Logging Specialist deployed should be an engineering graduate with least 5 (three) years of relevant experience of carrying out formation testing, perforation and well seismic logging and related services. Deployed logging specialist must be able to handle independent assignments and must have logged at least 10 wells including 3 Shallow water</p>	<p>Experience of Contractors personnel:</p> <p>3. Logging Tool Specialist: The Logging Tool Specialist deployed should be an engineering graduate/ diploma holder with least 5 (five) years of relevant experience of carrying out formation testing, perforation and well seismic logging and related services. Deployed tool specialist must be able to handle independent assignments and must have logged at least 10 wells including 3 offshore wells in an</p>

			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.	independent capacity in earlier assignments on the bid closing date. Apart from requisite experience, Tool specialist should have valid well control and offshore safety course certifications.
86.	Exhibit-11/ WIRELINE LOGGING & TCP SERVICES	334 of 712	A. WIRELINE LOGGING SERVICES:  Special Services: These services shall be mobilized/hiring period extended 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. Such services are listed in sub-heading B of Table-1 below. List services/tools required with corresponding OIL's service code (a reference code defined for each equipment/service); total quantity of each tool/equipment required is given in Table-1 below:	A. WIRELINE LOGGING SERVICES:  Special Services: These services shall be mobilized as per OIL's requirement. Once mobilized, these services shall be hired for a minimum period of 45 days. Some of the special services may be mobilized along with Logging Unit during initial mobilization which shall be mentioned in the LOA. Such services are listed in sub-heading B of Table-1 below.
87.	Exhibit-11 A. WIRELINE LOGGING SERVICES: TABLE-1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL	336 of 712	NOTES ON TABLE-1:  3. The following services must be fully combinable with each other so as to enable combo runs in any desired combination: A-1, A-2, A-3, A-4, A-5 & A-7. If it is found that the contractor is not able to take up combo runs due to restrictions in tool combinability of any of the tool(s) then the Contractor shall have to replace such tool(s) immediately so as to meet the above tool combinability requirement. Until suitable replacement is provided meeting the above combinability, all the above tools shall be under zero rental.	NOTES ON TABLE-1:  3. The following services must be fully combinable with each other so as to enable combo runs in any desired combination: A-1A/A-1B, A-2, A-3, A-4, A-5 & A-7. If it is found that the contractor is not able to take up combo runs due to restrictions in tool combinability of any of the tool(s) then the Contractor shall have to replace such tool(s) immediately so as to meet the above tool combinability requirement. Until suitable replacement is provided meeting the above combinability, all the above tools shall be under zero rental.
88.	Exhibit-11 A. WIRELINE LOGGING SERVICES TABLE-1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL	336 of 712	NOTES ON TABLE-1:  5. The package should also include down hole telemetry device, down hole tension device, knuckle joints, in-line centralizers, directional measurement device, down hole Max thermometer, standoffs etc. One tool of each type is expected to form the part of the package.	NOTES ON TABLE-1:  5. The package should include downhole accessories like knuckle joints, in-line centralizers, standoffs, BH temperature measurement, etc.

89.	Exhibit-11 A. WIRELINE LOGGING SERVICES TABLE-1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL	337 of 712	NOTES ON TABLE-1:  9. The tools and quantities mentioned in the Technical Specifications (Annexure - B) are tentative. Actual requirement shall be intimated to the Contractor in mobilization notice.	NOTES ON TABLE-1:  9. The estimated workload (Period of hiring, number of jobs etc.) mentioned in the Price Bid Format is indicative and is for the purpose of bid evaluation and estimation of Contract cost only. Payment shall be made for units & tools actually hired/ mobilized and work actually done.
90.	Exhibit-11 A. WIRELINE LOGGING SERVICES TABLE-1: LIST OF REQUIRED WIRELINE SERVICES AND TOOL	337 of 712	NOTES ON TABLE-1:  12. While perforating the wells, wireline logging Contractor should provide required radioactive markers / pip tags for placing in the casing threads or the perforation that can quickly and positively be found with a gamma ray log.	NOTES ON TABLE-1:  12. While perforating the wells, wireline logging Contractor should provide required radioactive markers / pip tags for placing in the casing threads that can quickly and positively be found with a gamma ray log.
91.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS / 4.1 VINTAGE	Page 338 of 712	Contractor shall provide the latest version of Equipment, Logging Tools, and Unit but not older than five (5) years. Contractor shall submit list of offered Unit, Equipment and Logging Tools, their documentary proof on the vintage with the year of manufacturing, history card and preventive maintenance to Company fifteen (15) days before mobilization for Company's physical inspection and verification before the actual start of Work at Contractor's designated Operating Base.	a) The wireline Logging unit must be State of the Art (latest version of Full Maxis 500, LOGIQ, ECLIPS or vendors latest acquisition system) capable of running all the tools and services under the Contract. Down-hole tools must be of current/latest technology. b) Deployed units/tools/equipment should be replaced by their latest upgrade / new version at the same rates, terms and conditions of the Contract after approval of OIL to that effect subject to the condition that they meet or exceed the Contract specifications and performances. c) Contractor shall provide the latest version of Equipment, Logging Tools, and Unit as on the original bid closing date. Contractor shall submit list of offered Unit, Equipment and Logging Tools (excluding accessories) , their documentary proof on the vintage with the year of manufacturing, history card and preventive maintenance to Company fifteen (15) days before mobilization for Company's physical inspection and verification before the actual start of Work at Contractor's designated Operating Base. d) Refurbished tools or equipment shall not be deployed against the Contract.

				<p>e) The Contractor has to provide fitness certificate for logging unit(s) at the time of mobilization and must be latest ISO/DNV certified as on the original bid closing date. During the period of Contract, the fitness certificate has to be renewed as per periodicity specified in the prevailing rules.</p> <p>f) Monitoring and maintaining record of inventory for Equipment, materials, spares, consumables along with associated Contractor's Equipment (RA sources and explosives, spare parts) required for the Services and providing such reports with recommendations for future requirements as per drilling schedule to Company.</p>
92.	Exhibit 11 WIRELINE LOGGING & TCP SERVICES	338 of 712	<p>CONTRACTOR shall mobilize the following essential equipment &amp; tools. The Equipment &amp; tools specifications are defined in Table 1, 2 &amp; 3 respectively. The open hole tools are required for 12-1/4" and 8-1/2" hole sizes whereas cased hole tools are required for 13-5/8", 9-5/8" /9-7/8" casing and 7" liner. CONTRACTOR is required to quote the price for all the Equipment and Tools defined in this section. <del>The final tools list will be shortlisted from Table 3 as per operational requirements.</del> Some of these tools may be required in phases and will be mobilized accordingly.</p>	<p>CONTRACTOR shall mobilize the following essential equipment &amp; tools. The Equipment &amp; tools specifications are defined in Table 1 &amp; 2 respectively. The open hole tools are required for 12-1/4" and 8-1/2" hole sizes whereas cased hole tools are required for 13-5/8", 9-5/8" /9-7/8" casing and 7" liner. CONTRACTOR is required to quote the price for all the Equipment and Tools defined in this section. Some of these tools may be required in phases and will be mobilized accordingly.</p>
93.	Exhibit 11 WIRELINE LOGGING & TCP SERVICES	339 of 712	<p><b>4.3 WIRELINE LOGGING UNIT</b></p> <p><b>Service Code: TR-1</b></p> <p><b>WIRELINE LOGGING UNIT:</b></p> <p>1.9 c) Well-site recording of data in CD/DVD in LIS/DLIS/LAS and ASCII formats.</p>	<p><b>4.3 WIRELINE LOGGING UNIT</b></p> <p><b>Service Code: TR-1</b></p> <p><b>WIRELINE LOGGING UNIT:</b></p> <p>1.9 c) Well-site recording of data in CD/DVD/USB in LIS/DLIS/LAS and ASCII formats.</p>
94.	Exhibit 11WIRELINE LOGGING & TCP SERVICES	339 of 712	<p><b>4.3 WIRELINE LOGGING UNIT</b></p> <p><b>Service Code: TR-1</b></p> <p><b>WIRELINE LOGGING UNIT:</b></p> <p>1.9 e) Logging speed, tension, magnetic marks, and tool current curves should be recorded on all logs.</p>	<p><b>4.3 WIRELINE LOGGING UNIT</b></p> <p><b>Service Code: TR-1</b></p> <p><b>WIRELINE LOGGING UNIT:</b></p> <p>1.9 e) Logging speed, tension and tool current curves should be recorded on all logs.</p>

95.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.3 Wireline Logging Unit	339 of 712	1.6 Logging While Fishing Equipment (OPTIONAL)  1.7 Down hole Telemetry Power Cartridge (DTPC)  1.8 Multi-Arm Caliper combinable with any logging string (OPTIONAL)  1.9 f) Online display of logs on a video screen for at least 25 m of log interval and scratch log on paper for depth control. Color and black & white printers capable of printing logs prints at scales specified by Company.	1.6 DELETED.  1.7 DELETED  1.8 DELETED.  1.9 f) Online display of logs on a video screen for at least 25 m of log interval and scratch log on paper for depth control. Printers capable of printing logs prints at scales specified by Company.												
96.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS	340 of 712	<p>4.4 STANDARD TOOLS/SERVICES TOOLS SPECIFICATIONS</p> <table border="1"> <tr> <td>Service Code: TR-3</td> <td><u>PRESSURE CONTROL EQUIPMENT FOR THROUGH TUBING OPERATIONS</u></td> </tr> <tr> <td colspan="2"><b>OIL's Required Specifications</b></td> </tr> <tr> <td>SPECIFICATIONS</td> <td>Pressure Control Equipment including riser for Through Tubing Operations for multiconductor and mono conductor cable. Minimum pressure rating: 10kpsi. (Contractor to provide details of the BOP system along with the rig up diagrams) The height of PCE should be able to accommodate 6m TTP gun perforation to be carried out in one run.</td> </tr> </table>	Service Code: TR-3	<u>PRESSURE CONTROL EQUIPMENT FOR THROUGH TUBING OPERATIONS</u>	<b>OIL's Required Specifications</b>		SPECIFICATIONS	Pressure Control Equipment including riser for Through Tubing Operations for multiconductor and mono conductor cable. Minimum pressure rating: 10kpsi. (Contractor to provide details of the BOP system along with the rig up diagrams) The height of PCE should be able to accommodate 6m TTP gun perforation to be carried out in one run.	<p>4.4 STANDARD TOOLS/SERVICES TOOLS SPECIFICATIONS</p> <table border="1"> <tr> <td>Service Code: TR-3</td> <td><u>PRESSURE CONTROL EQUIPMENT FOR THROUGH TUBING OPERATIONS</u></td> </tr> <tr> <td colspan="2"><b>OIL's Required Specifications</b></td> </tr> <tr> <td>SPECIFICATIONS</td> <td>Pressure Control Equipment including riser for Through Tubing Operations for mono conductor cable. Minimum pressure rating: 10kpsi. (Contractor to provide details of the BOP system along with the rig up diagrams) The height of PCE should be able to accommodate 6m TTP gun perforation to be carried out in one run.</td> </tr> </table>	Service Code: TR-3	<u>PRESSURE CONTROL EQUIPMENT FOR THROUGH TUBING OPERATIONS</u>	<b>OIL's Required Specifications</b>		SPECIFICATIONS	Pressure Control Equipment including riser for Through Tubing Operations for mono conductor cable. Minimum pressure rating: 10kpsi. (Contractor to provide details of the BOP system along with the rig up diagrams) The height of PCE should be able to accommodate 6m TTP gun perforation to be carried out in one run.
Service Code: TR-3	<u>PRESSURE CONTROL EQUIPMENT FOR THROUGH TUBING OPERATIONS</u>															
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97.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS	341 of 712	<p><b>Service Code: A-1A</b></p> <p><b>DUAL LATEROLOG RESISTIVITY + MICRO RESISTIVITY with SP</b></p> <p>Accuracy:  ± 0.2 ohm m at 0.2-1 ohm m</p>	<p><b>Service Code: A-1A</b></p> <p><b>DUAL LATEROLOG RESISTIVITY + MICRO RESISTIVITY with SP</b></p> <p>Accuracy:  the greater of +/- 2% or +/- 0.2 ohm.</p>												

	4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS		+/- 5 % at 1-1000 ohm m +/- 10 % at 1000–2000-ohm m	
98.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	342 of 712	Service Code: A-1A  OIL's Required Specifications for MICRO RESISTIVITY  TEMPERATURE RATING: 325° F Maximum	Service Code: A-1A  OIL's Required Specifications for MICRO RESISTIVITY  TEMPERATURE RATING: 325° F Minimum
99.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	342 of 712	Service Code: A-1B  ARRAY INDUCTION RESISTIVITY + MICRO RESISTIVITY with SP  RANGE:  0.1 to 2,000 ohm-m	Service Code: A-1B  ARRAY INDUCTION RESISTIVITY + MICRO RESISTIVITY with SP  RANGE:  0.2 to 1,000 ohm-m.
100.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS	342 of 712	Service Code: A-1B  ARRAY INDUCTION RESISTIVITY + MICRO RESISTIVITY with SP  ACCURACY	Service Code: A-1B  ARRAY INDUCTION RESISTIVITY + MICRO RESISTIVITY with SP  Accuracy12 kHz:

	4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS		$\pm 0.75\text{-ohm m}$ or $\pm 2\%$ (Whichever is greater)	<p>Not used, 6 and 10" receivers  <math>\pm 4\text{ mS/m} + 2\%</math>, 17" receiver  <math>\pm 2\text{ mS/m} + 2\%</math>, other receivers</p> <p>Accuracy 36 kHz:  <math>\pm 2\text{ mS/m} + 2\%</math>, 6 and 10" receivers  <math>\pm 1.5\text{ mS/m} + 2\%</math>, 17" receiver  <math>\pm 1\text{ mS/m} + 2\%</math>, other receivers</p> <p>Accuracy 72 kHz:  <math>\pm 2\text{ mS/m} + 2\%</math>, 6 and 10" receivers  <math>\pm 1.5\text{ mS/m} + 2\%</math>, 17" receiver  <math>\pm 1\text{ mS/m} + 2\%</math>, other receivers.</p>
101.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	343 of 712	<p><b>Service Code: A-2</b></p> <p><b>DUAL SPACED COMPENSATED NEUTRON POROSITY</b></p> <p>ACCURACY  <math>\pm 1.4\text{ PU}</math> for 0-20 PU  <math>\pm 3\text{ PU}</math> for 20-30 PU  <math>\pm 6\text{ PU}</math> for 30-45 PU</p>	<p><b>Service Code: A-2</b></p> <p><b>DUAL SPACED COMPENSATED NEUTRON POROSITY</b></p> <p>ACCURACY  <math>\pm 5\%</math> or <math>\pm 1\text{ p.u.}</math>, whichever is greater.</p>
102.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	343 of 712	<p><b>Service Code: A-3</b></p> <p><b>FORMATION DENSITY with Pe and CALIPER</b></p> <p>RESOLUTION</p> <p>Density: <math>\pm 0.015\text{ gm/cc}</math></p> <p>PE: <math>\pm 5\%</math></p>	<p><b>Service Code: A-3</b></p> <p><b>FORMATION DENSITY with Pe and CALIPER</b></p> <p>Best resolution</p> <p>Density: <math>\pm 0.007\text{ gm/cc}</math> at 10 Ft/min in 2.2 gm/cc formation.</p> <p>Pe: <math>\pm 0.05</math> at speed 10 Ft/min in 2.2 gm/cc formation.</p>

103.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	343 of 712	<b>Service Code: A-3</b>  <b>FORMATION DENSITY with Pe and CALIPER</b>  <b>ACCURACY</b>  <b>Density:</b> +/- 2% for 1.0-1.67 gm/cc +/- 1.5% for 1.67-3 gm/cc	<b>Service Code: A-3</b>  <b>FORMATION DENSITY with Pe and CALIPER</b>  <b>ACCURACY</b>  <b>Density:</b> +/-0.010 gm/cc below 2.8 gm/cc +/-0.015 gm/cc above 2.8 gm/cc
104.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	344 of 712	<b>Service Code: A-4</b>  <b>NATURAL GAMMA RAY SERVICE</b>  <b>ACCURACY:</b> ±7% of the reading	<b>Service Code: A-4</b>  <b>NATURAL GAMMA RAY SERVICE</b>  Precision:  At 30 ft/min (9 m/min) ± 5% or ± 5 API, whichever is greater. At 60 ft/min (18 m/min) ±7% or ± 7 API, whichever is greater. Accuracy ± 5 API
105.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	344 of 712	<b>Service Code: A-5</b>  <b>SPECTRAL GAMMA RAY SERVICE</b>  <b>ACCURACY:</b>  ±5 % of measurement (GR) ±4 % of measured value for U, Th and K	<b>Service Code: A-5</b>  <b>SPECTRAL GAMMA RAY SERVICE</b>  Accuracy: +/-4 API. Precision: ±4 % or ±4 API, whichever is greater.

106.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	345 of 712	<b>Service Code: A-7</b>  <b>BOREHOLE DEVIATION SURVEY</b>  RESOLUTION/ACCURACY  Azimuth: $\pm 4^\circ$ ,  Deviation: $\pm 2^\circ$	<b>Service Code: A-7</b>  <b>BOREHOLE DEVIATION SURVEY</b>  RESOLUTION  Azimuth: $\pm 1.25^\circ @ 7.5^\circ$ and $\pm 0.05^\circ$ at $> 20^\circ$ , Deviation: $\pm 0.025^\circ @ 7.5^\circ$ and above				
107.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	345 of 712	<b>Service Code: A-8</b>  <b>CEMENT BOND EVALUATION SERVICES</b>  <b>RANGE</b>  i) Acoustic amplitude 0-100 mV  ii) VDL 200-1200 $\mu$ s  iii) GR 0-200 API.	<b>Service Code: A-8</b>  <b>CEMENT BOND EVALUATION SERVICES</b>  <b>RANGE:</b>  1000 microsecond and accordingly can present VDL in 200-1200 micro-sec range.				
108.	Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS	348 of 712	<b>Service Code: A-14A/14B</b>  <b>THROUGH TUBING PERFORATION (SEMI-EXPENDABLE/RETRIEVABLE)</b>  <table border="1"> <tr> <td>2 1/8" Deep Penetration Charge (Spiral, 6 spf)</td> <td>SPF: 6 EHD <math>\geq</math> 0.26 inches TTP <math>\geq</math> 25 inches  (Bidder to provide API 19B/ API 43 certificate.)</td> </tr> </table>	2 1/8" Deep Penetration Charge (Spiral, 6 spf)	SPF: 6 EHD $\geq$ 0.26 inches TTP $\geq$ 25 inches  (Bidder to provide API 19B/ API 43 certificate.)	<b>Service Code: A-14A/14B</b>  <b>THROUGH TUBING PERFORATION (SEMI-EXPENDABLE/RETRIEVABLE)</b>  <table border="1"> <tr> <td>2"-2 1/8" Deep Penetration Charge (Spiral, 6 spf)</td> <td>SPF: 6 EHD <math>\geq</math> 0.26 inches TTP <math>\geq</math> 25 inches  (Bidder to provide API 19B/ API 43 certificate.)</td> </tr> </table>	2"-2 1/8" Deep Penetration Charge (Spiral, 6 spf)	SPF: 6 EHD $\geq$ 0.26 inches TTP $\geq$ 25 inches  (Bidder to provide API 19B/ API 43 certificate.)
2 1/8" Deep Penetration Charge (Spiral, 6 spf)	SPF: 6 EHD $\geq$ 0.26 inches TTP $\geq$ 25 inches  (Bidder to provide API 19B/ API 43 certificate.)							
2"-2 1/8" Deep Penetration Charge (Spiral, 6 spf)	SPF: 6 EHD $\geq$ 0.26 inches TTP $\geq$ 25 inches  (Bidder to provide API 19B/ API 43 certificate.)							

			<p>2 1/8" Deep Penetration Charge (Zero phase, 6 spf)</p> <p>SPF: 6 EHD ≥ 0.26 inches TTP ≥ 27 inches  (Bidder to provide API 19B/ API 43 certificate.)</p>		<p>2"-2 1/8" Deep Penetration Charge (Zero phase, 6 spf)</p> <p>SPF: 6 EHD ≥ 0.26 inches TTP ≥ 27 inches  (Bidder to provide API 19B/ API 43 certificate.)</p>					
109.	<p>Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS</p>	350 of 712	<p><b>Service Code: A-18</b></p> <p><b>PUNCTURE SERVICES</b></p> <p>REQUIREMENT: To puncture 2 7/8 inch OD tubing to 5-inch OD drill pipe.</p>	<p><b>Service Code: A-18</b></p> <p><b>PUNCTURE SERVICES</b></p> <p>REQUIREMENT: To puncture 2 7/8 inch OD tubing to 5-inch OD drill pipe. (Note: Tubing puncture is normally for tubing, for bigger ppf. drill pipe, deepstar at Zero degree shall be used)</p>						
110.	<p>Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS 4.4 STANDARD TOOLS / SERVICES TOOLS SPECIFICATIONS</p>	350 of 712	<p><b>New entry:</b></p> <p><b>Service Code: A-19</b></p> <p><b>Dump Bailer</b></p>	<table border="1"> <tr> <td>Service Code: A-19</td> <td>CEMENT DUMP BAILER</td> </tr> <tr> <td colspan="2">OIL's Required Specifications</td> </tr> <tr> <td>REQUIREMENT</td> <td> <p>a) Cement Dump Bailer service for casings ranging from 7" &amp; to 13-5/8".</p> <p>b) Should be able to dump a minimum cement volume of 20L in a single run.</p> </td> </tr> </table>	Service Code: A-19	CEMENT DUMP BAILER	OIL's Required Specifications		REQUIREMENT	<p>a) Cement Dump Bailer service for casings ranging from 7" &amp; to 13-5/8".</p> <p>b) Should be able to dump a minimum cement volume of 20L in a single run.</p>
Service Code: A-19	CEMENT DUMP BAILER									
OIL's Required Specifications										
REQUIREMENT	<p>a) Cement Dump Bailer service for casings ranging from 7" &amp; to 13-5/8".</p> <p>b) Should be able to dump a minimum cement volume of 20L in a single run.</p>									

				<table border="1"> <tr> <td>Tool diameter</td> <td>Industry standard to carry out operation in above mentioned casing/liner sizes.</td> </tr> <tr> <td>Temperature rating</td> <td>325° F minimum.</td> </tr> <tr> <td>Pressure rating</td> <td>10000 psi minimum.</td> </tr> </table>	Tool diameter	Industry standard to carry out operation in above mentioned casing/liner sizes.	Temperature rating	325° F minimum.	Pressure rating	10000 psi minimum.
Tool diameter	Industry standard to carry out operation in above mentioned casing/liner sizes.									
Temperature rating	325° F minimum.									
Pressure rating	10000 psi minimum.									
111.	<p>Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS</p> <p>SPECIAL TOOLS / SERVICES</p>	352 of 712	<p><b>Service Code: S-3: MICROELECTRIC IMAGER TOOL FOR OIL BASE MUD</b></p> <p><b>OIL's Required Specifications:</b></p> <p><b>MEASUREMENTS:</b> iii) At least 59% coverage in 7 7/8" hole or 67% in 8 1/2 " hole, in single pass.</p>	<p><b>Service Code: S-3: MICROELECTRIC IMAGER TOOL FOR OIL BASE MUD</b></p> <p><b>OIL's Required Specifications:</b></p> <p><b>MEASUREMENTS:</b> iii) At least 57% coverage in 8-inch hole in single pass.</p>						
112.	<p>Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS</p> <p>SPECIAL TOOLS / SERVICES</p>	352 of 712	<p><b>Service Code: S-3: MICROELECTRIC IMAGER TOOL FOR OIL BASE MUD</b></p> <p><b>OIL's Required Specifications:</b></p> <p><b>HOLE SIZE LIMIT:</b> 6.25 inch to 16-inch dia.</p>	<p><b>Service Code: S-3: MICROELECTRIC IMAGER TOOL FOR OIL BASE MUD</b></p> <p><b>OIL's Required Specifications:</b></p> <p><b>HOLE SIZE LIMIT:</b> 6.50 inch to 16-inch dia.</p>						
113.	<p>Exhibit-11 A. WIRELINE LOGGING SERVICES 4.0 TECHNICAL SPECIFICATIONS</p>	354 of 712	<p><b>Service Code: S-4</b></p> <p><b>DYNAMIC FORMATION TESTER</b></p> <p><b>OIL's Required Specifications:</b></p> <p><b>RESOLUTION:</b> Quartz Gauge: 0.01 psi (14.7-10000 psi) or better SG: 0.2 psi (14.7-10000 psi)</p>	<p><b>Service Code: S-4</b></p> <p><b>DYNAMIC FORMATION TESTER</b></p> <p><b>OIL's Required Specifications:</b></p> <p><b>RESOLUTION:</b> Quartz Gauge: 0.01 psi (14.7-10000 psi) or better SG: "+/- 0.001% (+/- 0.2 psi for 20,000 psi gauge)".</p>						

	SPECIAL TOOLS / SERVICES			
114.	Exhibit-11 A. WIRELINE LOGGING SERVICES	355 of 712	4.5 DATA PROCESSING & INTERPRETATION:  1. Basic Log Interpretation: The service provider ..... ..... from log data and submit the provisional result within 10 hours from the time the survey is completed/ <del>after handing over the recorded data to Contractor.</del> Final Report for Basic Log interpretation is to be submitted within 72 hrs (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.	4.5 DATA PROCESSING & INTERPRETATION:  1. Basic Log Interpretation: The service provider ..... ..... from log data and submit the provisional result within 48 hours from the time the survey is completed. Final Report for Basic Log interpretation is to be submitted within 72 hrs (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.
115.	Exhibit-11 A. WIRELINE LOGGING SERVICES	363 of 712	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>I. Data Acquisition:</b>  f. Down-hole tools offered by Bidder must be of recent generation.	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>I. Data Acquisition:</b>  f. Down-hole tools offered by Bidder must meet technical specifications mentioned under Scope of Work.
116.	Exhibit-11 A. WIRELINE LOGGING SERVICES	363 of 712	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>I. Data Acquisition:</b>  h. A minimum of seventy-five (75) meters of repeat log shall be run for each suite of logs run in hole unless otherwise instructed by Company's well site Geologist / Petro physicist. For Image Logs, the repeat run shall be for twenty (20) meters.	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>I. Data Acquisition:</b>  h. A minimum of seventy-five (75) meters of repeat log shall be run for each suite of logs run in hole unless otherwise instructed by Company's well site Geologist / Petro physicist. For Image and NMR Logs, the repeat run shall be for twenty (20) meters.
117.	Exhibit-11 A. WIRELINE LOGGING SERVICES	363 of 712	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>II. Logging Conditions, Tools &amp; Equipment:</b>  c. The unit must be capable of carrying out all the operations mentioned in the SOW up to a depth of 5000 m in	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>II. Logging Conditions, Tools &amp; Equipment:</b>  c. The unit must be capable of carrying out all the operations mentioned in the SOW up to a depth of 5000 m in vertical/deviated wells. Both

			vertical/deviated wells. Both sizes of cables (mono and multiconductor) should be at contractor's base to cater to the above well depth. <del>Spare logging cable of both sizes must be available to avoid any delay in operations.</del>	sizes of cables (mono and multiconductor) should be available simultaneously to cater to the above well depth.
118.	Exhibit-11 A. WIRELINE LOGGING SERVICES	364 of 712	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>II. Logging Conditions, Tools &amp; Equipment:</b>  f. Perforation charges, power charges, detonators, detonating cords and explosive materials to be available in the form of sizes and packing in accordance with IATA rules and standard for air freighting.	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>II. Logging Conditions, Tools &amp; Equipment:</b>  f. Bidder shall import the Perforation charges, power charges, detonators, detonating cords and explosive materials as per IATA rules and standard for air freighting and transport the same in PESO approved explosive vans till OIL's Supply Base.  The Company shall provide the supply vessel for the transportation of explosives container from OIL's Supply Base in India to the rig and vice-versa.
119.	Exhibit-11 A. WIRELINE LOGGING SERVICES	366 of 712	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>VII. Breakdown:</b>  The breakdown details must be filled for equipment, logging tools, logging unit malfunctioning. This should be done from the time of mobilization and thorough out the duration of the Contract. Following information (as a minimum) should be provided as a part of break down details on weekly basis: ..... ..... ..... .....  Contractor shall inform and invite Company's representative when the malfunction tool / unit / equipment is repaired, for its performance check and get breakdown sheet signed by "s representative, in the prescribed format given in above table.	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  <b>VII. Breakdown:</b>  The breakdown details must be filled for equipment, logging tools, logging unit malfunctioning. This should be done from the time of mobilization and thorough out the duration of the Contract. Following information (as a minimum) should be provided as a part of break down details on monthly basis: ..... ..... .....  Contractor shall inform and invite Company's representative when the malfunction tool / unit / equipment is repaired, for its performance check and get breakdown sheet signed by Company's representative, in the prescribed format given in above table.
120.	Exhibit-11 A. WIRELINE LOGGING SERVICES	367 of 712	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  IX. Calibration Requirements:	4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:  IX. Calibration Requirements:

			<p>c. The calibration report (before, after and master) along with the recorded log prints and films. The master calibration report shall not be more than one month old. If for any particular tool, calibration is not possible at the Contractor's operation base / well site then the place of calibration along with the details regarding the frequency of calibration, field verification etc. must be indicated. In such cases Contractor has to ensure that there is no delay caused to the Company's planned logging program at no extra cost to Company.</p>	<p>c. The calibration report (before, after and master) along with the recorded log prints and films. The master calibration report shall not be more than one month old or shall be within the validity limit of the tool literature/manuals. If for any particular tool, calibration is not possible at the Contractor's operation base / well site then the place of calibration along with the details regarding the frequency of calibration, field verification etc. must be indicated. In such cases Contractor has to ensure that there is no delay caused to the Company's planned logging program at no extra cost to Company.</p>
121.	Exhibit-11 A. WIRELINE LOGGING SERVICES	366 of 712 367 of 712	<p><b>4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:</b></p> <p><b>IX. Calibration Requirements:</b></p> <p><b>Contractor shall provide:</b></p> <p>a. All necessary calibration equipment, as per tool calibration procedure, at Contractor's operation base near / within block and on the rig for all the tools.</p>	<p><b>4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:</b></p> <p><b>IX. Calibration Requirements:</b></p> <p><b>Contractor shall provide:</b></p> <p>a. All necessary calibration equipment, as per tool calibration procedure, at Contractor's operation base near / within block and on the rig (as applicable) for all the tools.</p>
122.	Exhibit-11 A. WIRELINE LOGGING SERVICES	367 of 712	<p><b>4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:</b></p> <p><b>X. Log Quality Control (LQC):</b></p> <p>Contractor shall follow the log quality assurance procedure as per the standard industry practice desired by each tool. The log quality rating form shall be duly filled in and submitted with each log. At the time of logging operation, log quality will also be monitored by Company's Geologist / Petro physicist w.r.t. calibrations, repeatability and recording speeds and other necessary checks for different tools. Contractor shall follow the log quality assurance procedure as per the standard industry practice desired by each tool. The log quality rating form shall be duly filled in and submitted with each log. At the time of logging operation, log quality will also be monitored by Company's Geologist / Petro physicist w.r.t. calibrations, repeatability and recording speeds and other necessary checks for different tools.</p>	<p><b>4.6 OTHER REQUIREMENTS FOR WIRELINE LOGGING SERVICES:</b></p> <p><b>X. Log Quality Control (LQC):</b></p> <p>Contractor shall follow the log quality assurance procedure as per the standard industry practice desired by each tool. The log quality rating form shall be duly filled in and submitted with each log. At the time of logging operation, log quality will also be monitored by Company's Geologist / Petro physicist w.r.t. calibrations, repeatability and recording speeds and other necessary checks for different tools. Contractor shall follow the log quality assurance procedure as per the standard industry practice desired by each tool.</p>

123.	Exhibit-11 B. Tubing Conveyed Perforation (TCP) Services:	371 of 712	<b>Tubing Conveyed Perforation (TCP) Services:</b>  5. All the downhole sub-assemblies of the TCP string should be rated to 10,000 psi working pressure and 325 Deg F. The TCP tools should have maximum OD 5" and so as to be able to run in 7" 29 ppf P110 Liner and maximum OD 7" to be run in 9 5/8", 53.5 ppf casing, tensile strength at min. yield should be 160-320 klb. All tools should have premium end connections <del>without</del> <b>elastomers.</b>	<b>Tubing Conveyed Perforation (TCP) Services:</b>  5. All the downhole sub-assemblies of the TCP string should be rated to 10,000 psi working pressure and 300 Deg F. The TCP tools should have maximum OD 5" and so as to be able to run in 7" 29 ppf P110 Liner and maximum OD 7" to be run in 9 5/8", 53.5 ppf casing, tensile strength at min. yield should be 160-320 klb. All tools should have premium end connections.
124.	Exhibit-11 B. Tubing Conveyed Perforation (TCP) Services:	371 of 712	<b>1.0 TUBING CONVEYED PERFORATION EQUIPMENT FOR EACH WELL:</b>  * Surface read-out tools shall be minimum 300 F rated.	<b>1.0 TUBING CONVEYED PERFORATION EQUIPMENT FOR EACH WELL:</b>  * DELETED
125.	Exhibit-11 B. Tubing Conveyed Perforation (TCP) Services:	377 of 712	<b>1.3 Perforation Guns and Charges</b>  Sl. No. 1 Well: DGSA Gun Details: Perforating guns for 7" 29 ppf P110 Casing/Liner Casing gun size: 4 1/2" Shot density, Phasing: 5 spf, 72 deg. EHD: 0.42-0.47" API RP 43 5 <sup>th</sup> edition penetration: 59.2" Charges: HMX Prima cord: HMX or other suitable at 225 deg F with long exposure times due to TCP perforations after landing completion.	<b>1.3 Perforation Guns and Charges</b>  Sl. No. 1 Well: DGSA Gun Details: Perforating guns for 7" 29 ppf P110 Casing/Liner Casing gun size: 4 1/2" Shot density, Phasing: 5 spf, <b>60</b> deg. EHD: <b>0.33"</b> API RP 43 5 <sup>th</sup> edition penetration: <b>43"</b> Charges: HMX Prima cord: HMX or other suitable at 225 deg F with long exposure times due to TCP perforations after landing completion.

126.	Exhibit-11 B. Tubing Conveyed Perforation (TCP) Services:	378 of 712	<p>1.3 Perforation Guns and Charges</p> <p>Sl. No. 1 Well: DGSC (Upper zone) Gun Details: Perforating guns for 7" 29ppf P110 Casing / Liner Casing gun size: 4 1/2" Shot density: 5 spf, 72 deg. EHD optimized for lower drawdown. Charges: HMX Prima cord: HMX or other suitable at 300 degF.</p>	<p>1.3 Perforation Guns and Charges</p> <p>Sl. No. 1 Well: DGSC (Upper zone) Gun Details: Perforating guns for 7" 29ppf P110 Casing / Liner Casing gun size: 4 1/2" Shot density: 5 spf, 60 deg. EHD: 0.33" (optimized for lower drawdown). Charges: HMX Prima cord: HMX or other suitable at 300 deg F.</p>												
127.	Exhibit-11 Annexure-C Checklist for BEC	405 of 712	Checklist for BEC	<b>DELETED</b>												
128.	Exhibit-11 ANNEXURE-D	431 of 712	<p><b>CHECKLIST FOR SCOPE OF WORK/TERMS OF REFERENCE (Part 3; Section-II of tender document)</b></p> <table border="1"> <tr> <td>5.0</td> <td>OTHER REQUIREMENTS FOR WIRELINE LOGGING, PERFORATION, DATA PROCESSING AND INTERPRETATION SERVICES</td> </tr> <tr> <td>5.1</td> <td>ESSENTIAL CAPABILITIES REQUIRED FOR LOGGING UNITS: The logging unit must have the following general facilities/capabilities:</td> </tr> <tr> <td></td> <td>h) The contractor may keep a common spare cable drum good for immediate replacement during cable splicing requirements (as mentioned in clause 9.0 of SOR) and for logging in deeper wells up to 5000m.</td> </tr> </table>	5.0	OTHER REQUIREMENTS FOR WIRELINE LOGGING, PERFORATION, DATA PROCESSING AND INTERPRETATION SERVICES	5.1	ESSENTIAL CAPABILITIES REQUIRED FOR LOGGING UNITS: The logging unit must have the following general facilities/capabilities:		h) The contractor may keep a common spare cable drum good for immediate replacement during cable splicing requirements (as mentioned in clause 9.0 of SOR) and for logging in deeper wells up to 5000m.	<p><b>CHECKLIST FOR SCOPE OF WORK/TERMS OF REFERENCE (Part 3; Section-II of tender document)</b></p> <table border="1"> <tr> <td>5.0</td> <td>OTHER REQUIREMENTS FOR WIRELINE LOGGING, PERFORATION, DATA PROCESSING AND INTERPRETATION SERVICES</td> </tr> <tr> <td>5.1</td> <td>ESSENTIAL CAPABILITIES REQUIRED FOR LOGGING UNITS: The logging unit must have the following general facilities/capabilities:</td> </tr> <tr> <td></td> <td>h) The contractor may keep a common spare cable drum good for immediate replacement during cable splicing requirements (as mentioned in clause 11.5 of SOR) and for logging in deeper wells up to 5000m. In such an arrangement by</td> </tr> </table>	5.0	OTHER REQUIREMENTS FOR WIRELINE LOGGING, PERFORATION, DATA PROCESSING AND INTERPRETATION SERVICES	5.1	ESSENTIAL CAPABILITIES REQUIRED FOR LOGGING UNITS: The logging unit must have the following general facilities/capabilities:		h) The contractor may keep a common spare cable drum good for immediate replacement during cable splicing requirements (as mentioned in clause 11.5 of SOR) and for logging in deeper wells up to 5000m. In such an arrangement by
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			<p>In such an arrangement by Contractor, if the spare cable drum (containing longer cable for wells upto 5000m) is found to be unavailable at any point of time then penalty charge of 2% of monthly contract value shall be recovered every month until spare drum is provided. Additionally, for every month of delay, penalty shall be increased by 2% limited to a maximum of 6% (i.e., if delay is more than one month, penalty applicable shall be increased in steps of 2% every month, e.g., for 1st month – 2% penalty, 2nd month - 4% penalty, from 3rd month onwards- 6% penalty).</p> <p>However, for fished cable the above penalty shall be applicable only after the 1-month period allowed for cable splicing/replacement as mentioned in clause SOR 9.0.</p>			<p>Contractor, if the spare cable drum (containing longer cable for wells up to 5000m) is found to be unavailable at any point of time then penalty charge of 2% of monthly contract value shall be recovered every month until spare drum is provided.</p> <p>However, for fished cable the above penalty shall be applicable only after the 1-month period allowed for cable splicing/replacement as mentioned in clause SOR 11.5.</p>
129.	Exhibit-12 WELL TESTING SERVICES		Exhibit-12		Revised Exhibit-12 enclosed herewith	

130.	Exhibit-13 COMPLETIONS EQUIPMENT SUPPLY & SERVICES		Exhibit-13	Revised Exhibit-13 enclosed herewith												
131.	Exhibit-14 SUPPLY OF X- MAS TREE, CHOKES & Services		Exhibit-14	Revised Exhibit-14 enclosed herewith												
132.	<b>Annexure – B</b> Search & Rescue (SAR):		The vessel should comply with requirement of SOLAS convention of 2001 for cargo ships as amended till date and UKOOA guidelines for “Standing by Duty” Offshore Installations (Group B), as per the following:	The vessel should comply with requirement of SOLAS convention of 2001 for cargo ships as amended till date.												
133.	<b>Annexure – B</b> Vessel Specifications Fast Rescue Craft (FRC)		The vessel is to be equipped with at-least two fast rescue crafts with Inboard Diesel Engines of capacity of 09 persons each. These FRCs shall cover requirement of rescue boat required as per SOLAS	The vessel is to be equipped with at-least <b>one</b> fast rescue crafts with Inboard Diesel Engines of capacity of <b>06</b> persons each. These FRCs shall cover requirement of rescue boat required as per SOLAS.												
134.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	527 of 712	<b>2.3</b> The Contract shall commence when all of the services under Group – I (Exclusive of Coring Services, Liner Hanger Equipment & Liner Running Services) are mobilized as per the mobilization schedule, mentioned in clause 2.3, and are ready in all respects to commence operations as per the respective Scope of work and duly certified by the Company Representative;	<b>2.3</b> Date of deployment of the marine vessels after inspection and acceptance, shall be considered as the date of commencement of contract.												
135.	Part-3 Section-III SCC 2.4 Mobilization Time and Demobilization	528 of 712	3. Directional Drilling Designated location: At OIL’s OCTG Yard in Kakinada for Equipment and crew at OIL’s Heli Base in Rajahmundry – within 90 days of mobilization notice issued by Company	3. Directional Drilling Designated location: <b>At Contractor’s Base in Kakinada</b> for Equipment and crew at OIL’s Heli Base in Rajahmundry – within 90 days of mobilization notice issued by Company												
136.	Part-3 Section-III SCC 2.4 Mobilization Time and Demobilization	528 of 712	<table border="1"> <thead> <tr> <th>SL. NO.</th> <th>Name of the Services</th> <th>Mobilization Period.</th> </tr> </thead> <tbody> <tr> <td>11.</td> <td>Wire line logging &amp; TCP services</td> <td>Within 90 days of Mobilization notice issued by Company</td> </tr> </tbody> </table>	SL. NO.	Name of the Services	Mobilization Period.	11.	Wire line logging & TCP services	Within 90 days of Mobilization notice issued by Company	<table border="1"> <thead> <tr> <th>SL. NO.</th> <th>Name of the Services</th> <th>Mobilization Period.</th> </tr> </thead> <tbody> <tr> <td>11.</td> <td>Wire line logging &amp; TCP services</td> <td><b>Wire line logging:</b> Within 90 days of Mobilization notice issued by Company  <b>TCP services:</b></td> </tr> </tbody> </table>	SL. NO.	Name of the Services	Mobilization Period.	11.	Wire line logging & TCP services	<b>Wire line logging:</b> Within 90 days of Mobilization notice issued by Company  <b>TCP services:</b>
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11.	Wire line logging & TCP services	<b>Wire line logging:</b> Within 90 days of Mobilization notice issued by Company  <b>TCP services:</b>														

			12. Well testing Services Within 120 days of Mobilization notice issued by the Company		12. Well testing Services For SPT: Within 120 days of Mobilization notice issued by the Company. For NPU: within 60 days of Mobilization notice issued by the Company
137.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	530 of 712	<p><b>2.4 MOBILISATION TIME AND DEMOBILIZATION:</b></p> <p><b>Note:</b></p> <p>(viii). Mobilization charges shall become payable after the Bundled Services, ready in all respects as per scope of work, including obtaining all statutory clearances (as applicable) are mobilised to the respective locations as above and after on-hire survey by the Company Representative &amp; provided it is certified by the Contractor and accepted by Company Representative that all items are in good working condition.</p>	<p><b>2.4 MOBILISATION TIME AND DEMOBILIZATION:</b></p> <p><b>Note:</b></p> <p>(viii). Mobilization charges shall become payable against the services after the services, ready in all respects as per scope of work, including obtaining all statutory clearances (as applicable), are mobilised to the respective locations as above and after on-hire survey by the Company Representative &amp; provided it is certified by the Contractor and accepted by Company Representative that all items are in good working condition.</p>	
138.	Part 3 Section III Special Terms & Conditions of the Contract	531 of 712	<p><b>2.4 MOBILISATION TIME AND DEMOBILIZATION:</b></p> <p>(xi) 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.</p>	<p><b>2.4 MOBILISATION TIME AND DEMOBILIZATION:</b></p> <p>(xi) 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 cumulative 45 days, limited to twice in the duration of the Contract.</p>	
139.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	531 of 712	<p><b>2.4 MOBILISATION TIME AND DEMOBILIZATION:</b></p> <p><b>Note:</b></p> <p>(xii) De-mobilization charges shall become payable on clearance &amp; re-export of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base or Block Transfer or re-export to SEZ as permissible under applicable customs rules / regulations and provided Company is out of charge after Block Transfer or re-export to SEZ. However, Company shall not pay de-mobilization charges of services/tools/units/sets etc. which are not re-exported on</p>	<p><b>2.4 MOBILISATION TIME AND DEMOBILIZATION:</b></p> <p><b>Note:</b></p> <p>(xii) De-mobilization charges shall become payable on clearance &amp; re-export of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base or Block Transfer or re-export to SEZ as permissible under applicable customs rules / regulations and provided Company is out of charge after Block Transfer or re-export to SEZ. However, Company shall not pay de-mobilization charges of services/tools/units/sets etc. which are not re-exported or Block</p>	

			completion of Contract/termination and also if the Contractor deploys such services / tools / units / sets etc. against any other contract(s) for Company in India.	Transferred or re-exported to SEZ on completion of Contract/termination.					
140.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	532 of 712	<b>2.5 INTERIM DE-MOBILIZATION &amp; RE-MOBILIZATION:</b>	<b>2.5 INTERIM DE-MOBILIZATION &amp; RE-MOBILIZATION:</b>					
			<table border="1"> <tr> <td>Well testing Services under Group – II Services</td> <td>Within 45 days of Re-Mobilization notice issued by the Company</td> </tr> <tr> <td>Completions equipment services under Group – II Services</td> <td>Within 45 days of Re-Mobilization notice issued by the Company</td> </tr> </table>	Well testing Services under Group – II Services	Within 45 days of Re-Mobilization notice issued by the Company	Completions equipment services under Group – II Services	Within 45 days of Re-Mobilization notice issued by the Company	<table border="1"> <tr> <td>Wellbore cleanout services under Group – II Services</td> <td>Within 45 days of Re-Mobilization notice issued by the Company</td> </tr> <tr> <td>Completions equipment services under Group – II Services</td> <td>DELETED</td> </tr> </table>	Wellbore cleanout services under Group – II Services
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Completions equipment services under Group – II Services	DELETED								
141.	Part 3 Section III Special Terms & Conditions of the Contract	533 of 712	<b>2.6 DURATION OF CONTRACT:</b>  The duration of the contract shall be for a period of 300 days from the date of commencement of the contract or the completion of 04 (four) firm Wells whichever is earlier, subject to following conditions:	<b>2.6 DURATION OF CONTRACT:</b>  The duration of the contract shall be for a period of 300 days from the date of commencement (date of deployment of the marine vessels after inspection and acceptance, shall be considered as the date of commencement of contract) of the contract or the completion of 04 (four) firm Wells whichever is earlier, subject to following conditions:					
142.	Part 3 Section III Special Terms & Conditions of the Contract	534 of 712	<b>3.0 PROVISION OF GOODS:</b>  3.1.3 All warranties relating to the condition of the Goods whether implied by statute, common law or otherwise, other than those contained in the Contract, are excluded.  Without prejudice to any other rights or remedies which Company may have, if the Goods are not provided in accordance with the Contract, Company shall be entitled (whether or not any part of the Goods have been accepted by Company) to rescind the Contract or reject the Goods (in whole or in part) and return them to Contractor at the risk and cost of Contractor on the basis that a full refund for the Goods so returned shall be paid forthwith by Contractor.	<b>3.0 PROVISION OF GOODS:</b>  3.1.3 All warranties relating to the condition of the Goods whether implied by statute, common law or otherwise, other than those contained in the Contract, are excluded.  Without prejudice to any other rights or remedies which Company may have, if the Goods are not provided in accordance with the Contract, Company shall be entitled (whether or not any part of the Goods have been accepted by Company) to reject the Goods (in whole or in part) and return them to Contractor at the risk and cost of Contractor on the basis that a full refund for the Goods so returned shall be paid forthwith by Contractor.					
143.	Part 3 Section III Special Terms &	535 of 712	3.5.2 If Company at any time identifies any Defect in the documentation set out in Clause 3.5.1 the Company may give notice thereof to Contractor. Following receipt of such notice						

	Conditions of the Contract		Contractor shall forthwith at its own cost carry out any remedial work necessary to remedy such Defect. If Contractor fails to perform the required remedial work, or if agreed between the Parties, Company may carry out the required remedial work and recover all costs reasonably incurred by Company in connection therewith either directly from Contractor or by deducting such costs from any monies due or which become due to Contractor.	3.5.2 DELETED
144.	Part 3 Section III Special Terms & Conditions of the Contract	535 of 712	<p><b>3.6 Title and Risk</b></p> <p><b>3.6.1</b> Title to the Goods shall pass to Company upon the earlier of: (a) payment by Company in whole (or payment in part, but only where the Goods have been appropriated to the Contract); and (b) delivery of the Goods to Company.</p>	<p><b>3.6 Title and Risk</b></p> <p><b>3.6.1</b> Title to the Goods shall pass to Company upon the earlier of: (a) payment by Company in whole (or payment in part, but only where the Goods have been appropriated to the Contract); or (b) delivery of the Goods to Company.</p>
145.	Part 3 Section III Special Terms & Conditions of the Contract	536 of 712	<p><b>3.7 Defective Goods</b></p> <p>3.7.1 If Company, at any time during the Warranty Period, identifies or is made aware of any Defect in the Goods, Company may give notice thereof to Contractor. Following receipt of such notice, or at such other time as reasonably required by Company to comply with Company's operational requirements, Contractor shall forthwith remedy such Defect at its own cost by carrying out all work necessary to repair or replace the defective Goods at the point of use or at such other location as agreed between the Parties.</p>	<p><b>3.7 Defective Goods</b></p> <p>3.7.1 If Company, at any time during the Warranty Period, identifies or is made aware of any Defect in the Goods, Company may give notice thereof to Contractor during the Warranty Period. Following receipt of such notice, or at such other time as reasonably required by Company to comply with Company's operational requirements, Contractor shall forthwith repair or replace the defective Goods at the point of use or at such other location as agreed between the Parties.</p>
146.	Part 3 Section III Special Terms & Conditions of the Contract	536 of 712	<p><b>3.7 Defective Goods</b></p> <p>3.7.2 Upon compliance by Contractor with its obligations under Clause 3.7.1, a new Warranty Period shall apply from the date of completion of such repair or replacement and the provisions of this Clause 3.7 shall apply to such repaired or replaced Goods for such new Warranty Period.</p>	<p><b>3.7 Defective Goods</b></p> <p>3.7.2 DELETED.</p>
147.	Part 3 Section III Special Terms & Conditions of the Contract	536 of 712	<p><b>3.7 Defective Goods</b></p> <p>3.7.3 If Contractor fails to comply with its obligations under Clause 3.7.1, Company shall be entitled to have Contractor's obligations under such Clause performed by others and recover all costs reasonably incurred by Company in connection</p>	<p><b>3.7 Defective Goods</b></p> <p>3.7.3 If Contractor fails to comply with its obligations under Clause 3.7.1, Company shall be entitled to have Contractor's obligations under such Clause performed by others and recover costs reasonably incurred by Company in connection therewith directly from Contractor,</p>

			therewith either directly from Contractor or by deducting such costs from any monies due or which become due to Contractor.	<u>notwithstanding the foregoing such costs recoverable by Company shall not exceed 100% of the value of the defective Goods.</u>
148.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	540 of 712	<b>9.0 SHORT DEPLOYMENT RATES</b>  In case, crew personnel, as requested by the Company, of any particular service is not available at the rig or base, then no day rate will be payable for that position and additionally, 1.5 times of the corresponding quoted day rate for that position shall be deductible for that period and Contractor shall invoice the Company accordingly.	<b>9.0 SHORT DEPLOYMENT RATES</b>  In case, crew personnel, as requested by the Company, of any particular service is not available at the rig or base, then no day rate will be payable for that position and additionally, 0.5 times of the corresponding quoted day rate for that position shall be deductible for that period and Contractor shall invoice the Company accordingly.
149.	Part 3 Section III Special Terms & Conditions of the Contract	546 of 712	<b>14.0 ASSOCIATION OF COMPANY'S PERSONNEL:</b>  14.1 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 Contractor and monitor progress to ensure timely completion of the jobs. He shall also have the authority to oversee the execution of jobs by the Contractor and to ensure compliance of provisions of the Contract.	<b>14.0 ASSOCIATION OF COMPANY'S PERSONNEL:</b>  14.1 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 programme within the scope of work to the extent so authorized and notified by the Company in writing. He shall liaise with the Contractor and monitor progress to ensure timely completion of the jobs. He shall also have the authority to oversee the execution of jobs by the Contractor and to ensure compliance of provisions of the Contract.
150.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	547 of 712	<b>15.0 RIGHTS AND PRIVILEGES OF COMPANY:</b>  <b>15.5</b> To order suspension of operations while and whenever:  e) Contractor fails to meet any of the provisions in the Contract.	<b>15.0 RIGHTS AND PRIVILEGES OF COMPANY:</b>  <b>15.5</b> To order suspension of operations while and whenever:  e) Contractor fails to meet any of the material obligation affecting services under the Contract.
151.	Part 3 Section III Special Terms & Conditions of the Contract	548 of 712	<b>18.0 DAMAGE TO PIPELINE, PLATFORMS OR DRILLING RIGS</b>  Contractor shall be responsible and hold Company harmless for any damages to pipeline, platforms, drilling rigs, vessels and damage or loss of materials or equipment of Company and/or other third-party materials or equipment in the area of operation for reasons attributed to the gross negligence of the Contractor, provided that Contractor's liability shall not exceed US Dollars Five Hundred Thousand per occurrence. The Company shall be	<b>18.0 DAMAGE TO PIPELINE, PLATFORMS OR DRILLING RIGS</b>  Company shall be responsible and hold Contractor harmless for any damages to pipeline, platforms, drilling rigs, vessels (other than vessels subcontracted by Contractor) and damage or loss of materials or equipment of Company and/or other third-party materials or equipment in the area of operation.

			responsible for and shall indemnify and hold Contractor harmless for all amounts in excess thereof.	
152.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	548 of 712	<b>19.0 SUBSEQUENTLY ENACTED LAWS:</b>  Subsequent to the date of issue of letter of award if there is a change in or enactment of any law or interpretation of existing law, which results in additional cost / reduction in cost to Contractor on account of the operation under the Contract the Company / Contractor shall reimburse / pay Contractor / Company for such additional / reduced costs actually incurred subject to the submission of documentary evidence by Contractor / Company.	<b>19.0 SUBSEQUENTLY ENACTED LAWS:</b>  Subsequent to the <b>date of bid closing</b> , if there is a change in or enactment of any law or interpretation of existing law, which results in additional cost / reduction in cost to Contractor on account of the operation under the Contract the Company / Contractor shall reimburse / pay Contractor / Company for such additional / reduced costs actually incurred subject to the submission of documentary evidence by Contractor / Company.
153.	Part 3 Section III Special Terms & Conditions of the Contract	549 of 712	<b>20.5 USE OF CONTRACTOR'S EQUIPMENT:</b>  The Company shall have the right to use the Marine Vessels and all of Contractor's 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.	<b>20.5 USE OF CONTRACTOR'S EQUIPMENT:</b>  Subject to Clause 54 of SCC, Company shall have the right to use the Marine Vessels and all of Contractor's 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.
154.	Part 3 Section III Special Terms & Conditions of the Contract	551 of 712	<b>22.0 POLLUTION AND CONTAMINATION:</b>  (d) All the packing materials/empty drums of Contractor's supplied consumable materials like cement, chemicals, additives, liquids, etc. is the property of Contractor. The storage and disposal of these items as per prevailing pollution control laws is the responsibility of the Contractor.	<b>22.0 POLLUTION AND CONTAMINATION:</b>  (d) Subject to Waste Management Clause, all the packing materials/empty drums of Contractor's supplied consumable materials like cement, chemicals, additives, liquids, etc. is the property of Contractor. The storage and disposal of these items as per prevailing pollution control laws is the responsibility of the Contractor.
155.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	556 of 712	<b>33.0 FORCE MAJEURE:</b>  <b>33.1 CONDITIONS FOR FORCE MAJEURE:</b>  2 <sup>nd</sup> Para-  The term "Force Majeure" as employed herein shall mean floods, pandemic, endemic, tempest, war, civil riot, fire and Acts, Cyclone and Cyclones Consequences, Rules and Regulations of respective government of the two parties namely Company and the Contractor, directly affecting the performance of the Contract.	<b>33.0 FORCE MAJEURE:</b>  <b>33.1 CONDITIONS FOR FORCE MAJEURE:</b>  2 <sup>nd</sup> Para-  The term "Force Majeure" as employed herein shall mean floods, pandemic, endemic, tempest, war, civil riot, fire, Cyclone and Cyclones Consequences, Acts, Rules and Regulations of respective government of the two parties namely Company and the Contractor, directly affecting the performance of the Contract.

156.	PART-3 SECTION-III SPECIAL TERMS & CONDITIONS OF THE CONTRACT (SCC)	557 of 712	<b>35.2</b> If such fishing activity occurs due to Contractors' gross negligence, then "Zero Rates" will be applicable for the entire Bundle Services during the period of fishing operations.	<b>35.2</b> If such fishing activity occurs due to Contractors' wilful misconduct, then "Zero Rates" will be applicable for the entire Bundle Services during the period of fishing operations.
157.	Part 3 Section III Special Terms & Conditions of the Contract	562 of 712	<b>49.0 LOG INTERPRETATION:</b>  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 gross negligence on Contractor or his subcontractors 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, 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 willful misconduct or gross negligence.	<b>49.0 LOG INTERPRETATION:</b>  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 willful misconduct on Contractor or his subcontractors 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, 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 willful misconduct.
158.	Part 3 Section III Special Terms & Conditions of the Contract		<u>NEW CLAUSE 56.0</u>	All charges related to Kakinada seaport for berthing of AHTs only shall be borne by OIL.
159.	Part 3 Section III Special Terms & Conditions of the Contract		<u>NEW CLAUSE 57.0</u>	Performance Security of amount 5% of total estimated contract value, should be furnished by the Contractor within 30 days from the date of notification of the award, in two parts:  Part-1: 5% of total value excluding cost for Completions Equipment Supply & Services and Supply of X-Mas Tree, Chokes & Services  Part-2: 5% of total value for Completions Equipment Supply & Services and Supply of X-Mas Tree, Chokes & Services

				<p>Part-1 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.</p> <p>For Part-2, the validity should be 15 (fifteen) months (12 months warranty period of completion equipment and X-Mas tree + 03 months) beyond the date of completion of all contractual obligations of the contractor</p>
160.	Part 3 Section IV Schedule of Rates (SOR) D. Demobilization	569 of 712	<p>(v) De-mobilization charges shall become payable on clearance &amp; re-export of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base or Block Transfer or re-export to SEZ as permissible under applicable customs rules / regulations and provided Company is out of charge after Block Transfer or re-export to SEZ. However, Company shall not pay de-mobilization charges of services/tools/units/sets etc. which are not re-exported on completion of Contract/termination and also if the Contractor deploys such Services/tools/units/sets etc. against any other contract(s) for Company in India.</p>	<p>(v) De-mobilization charges shall become payable on clearance &amp; re-export of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base or Block Transfer or re-export to SEZ as permissible under applicable customs rules / regulations and provided Company is out of charge after Block Transfer or re-export to SEZ. However, Company shall not pay de-mobilization charges of services/tools/units/sets etc. which are not re-exported or Block Transfer or re-export to SEZ on completion of Contract/termination.</p>
161.	Part 3 Section IV Schedule of Rates (SOR)	573 of 712	<p><u>3. DIRECTIONAL DRILLING – SDMM/RSS/MWD/LWD &amp; GYRO SERVICES (3)</u></p> <p>3.1 Directional Drilling Tools will be mobilized to Company's OCTG Yard in Kakinada as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.3. The Contractor shall mobilize all of their tools and equipment to the Company's OCTG Yard in Kakinada and personnel at OIL's Heli Base in Rajahmundry as per the mobilization schedule. Mobilization shall be deemed to be completed only when Contractor's tools and equipment including personnel are placed at designated site and are in readiness to commence work as envisaged under the Contract duly certified by the Company's representative. However, Company reserves the right to mobilize the sets in a phased manner depending on its operational requirement. In that case, individual mobilization notice will be issued against each set as per Company's requirement. Contractor shall mobilize the particular number of set/sets (as applicable) as per instruction from Company.</p>	<p><u>3. DIRECTIONAL DRILLING – SDMM/RSS/MWD/LWD &amp; GYRO SERVICES (3)</u></p> <p>3.1 Directional Drilling Tools will be mobilized to Company's OCTG Yard in Kakinada as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.3. The Contractor shall mobilize all of their tools and equipment to <b>Contractor's Base in Kakinada</b> and personnel at OIL's Heli Base in Rajahmundry as per the mobilization schedule. Mobilization shall be deemed to be completed only when Contractor's tools and equipment are placed at designated site and are in readiness to commence work as envisaged under the Contract duly certified by the Company's representative. However, Company reserves the right to mobilize the sets in a phased manner depending on its operational requirement. In that case, individual mobilization notice will be issued against each set as per Company's requirement. Contractor shall mobilize the particular number of set/sets (as applicable) as per instruction from Company.</p>

<b>162.</b>	Part 3 Section IV Schedule of Rates (SOR)	576 of 712	<b><u>3.4 INDIVIDUAL SERVICE DAY RATE (ISDR) OF TOOLS &amp; EQUIPMENT:</u></b>  3.4.9 The Individual Service Day Rate will not be applicable for the 'Real time resistivity modelling software'. The Bidder to quote a Lumpsum amount for the entire duration of the Contract as per the Price Proforma.	<b><u>3.4 INDIVIDUAL SERVICE DAY RATE (ISDR) OF TOOLS &amp; EQUIPMENT:</u></b>  3.4.9 DELETED.
<b>163.</b>	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	585 of 712	<b>6.4 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (iii) ISDR will be payable during the period, from the acceptance of mobilization till the liner setting tool is pulled out of hole (after completion of cementing operation) and till receipt of the tool/equipment/spares etc. at Company's OCTG Yard at Kakinada after issue of demobilization / interim demobilization notice.	<b>6.4 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (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 Kakinada after issue of demobilization / interim demobilization notice.
<b>164.</b>	Part 3 Section IV Schedule of Rates (SOR)	586 of 712	<b>7.3 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (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.	<b>7.3 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (i) Contractor shall be paid ISRD 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..
<b>165.</b>	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	587 of 712	<b>8.3 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (iii) ISDR will be payable during the period, from the acceptance of mobilization till the Coring Equipment is pulled out of hole and till receipt of the tool/equipment/spares etc. at Company's OCTG Yard at Kakinada after issue of demobilization / interim demobilization notice.	<b>8.3 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (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 Kakinada after issue of demobilization / interim demobilization notice.
<b>166.</b>	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	593 of 712	<b>11.3 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (iv) Individual Service Day Rate (ISDR) will continue till issue of Demobilization notice or offloaded at the OIL's shore base in Kakinada after issue of Demobilization notice.	<b>11.3 INDIVIDUAL SERVICE DAY RATE (ISDR)</b>  (iv) Individual Service Day Rate (ISDR) will continue till issue of Demobilization notice or offloaded at the OIL's shore base in Kakinada after issue of Demobilization notice, whichever is later.

167.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	593 of 712	<b>11.4 OPERATING DAY RATE (ODR):</b>  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.	<b>11.4 OPERATING DAY RATE (ODR):</b>  iii) <b>DELETED.</b>
168.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	593 of 712	<b>11.4 OPERATING DAY RATE (ODR):</b>  (vi) Operating Day 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 13 of "Scope of Work". 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	<b>11.4 OPERATING DAY RATE (ODR):</b>  (vi) Operating Day 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 13 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 A-19 Dump Bailer A-20 RA – Pip Tag
169.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	594 of 712	<b>11.4 OPERATING DAY RATE (ODR):</b>  (viii) Operating rate / Re-dressing rate of Depth Determination service shall not be more than the lowest quoted Operating charge / Re-dressing charge of services A-1 to A-19 in the Standard services category.	<b>11.4 OPERATING DAY RATE (ODR):</b>  (viii) <b>DELETED</b>
170.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	594 of 712	<b>11.4 OPERATING DAY RATE (ODR):</b>  (x) Operating charge of Depth Determination (A-15) service shall not be more than the lowest Operating charge of services A-1 to A-18 in the Standard services category.	<b>11.4 OPERATING DAY RATE (ODR):</b>  (x) <b>DELETED</b>
171.	PART-3 SECTION-IV	594 of 712	<b>11.4 OPERATING DAY RATE (ODR):</b>	<b>11.4 OPERATING DAY RATE (ODR):</b>

	SCHEDULE OF RATES (SOR)		(xi) DEPTH DETERMINATION RUN (DD):  (a) Depth Determination run Preceding main Operation (DD-PO) (i) One Depth Determination run shall be provided at no separate charge to Company for services where hole probing is required prior to the main operation (such as perforation / explosive cutter / string shot / plug setting, etc.).	(xi) DEPTH DETERMINATION RUN (DD):  (a) Depth Determination run Preceding main Operation (DD-PO) (i) One Depth Determination run shall be provided at no separate charge to Company for services where hole probing is required prior to the main operation (such as perforation / explosive cutter / string shot / plug setting).
172.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	595 of 712	<b>11.4 OPERATING DAY RATE (ODR):</b>  (xiii) DYNAMIC FORMATION TESTER SERVICE:  c) In case of bad hole condition, if no data is acquired then 50% of Flat charge shall be payable.	<b>11.4 OPERATING DAY RATE (ODR):</b>  (xiii) DYNAMIC FORMATION TESTER SERVICE:  c) In case of bad hole condition, if no data is acquired then 20% of Operating Rate of the requested job quantities in the indent shall be payable as incomplete operation charge. In case of partial data, the operating charges payable shall be for tests/samples actually acquired or the above incomplete operation charge whichever is higher.
173.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	595 of 712	(xiii) <b>DYNAMIC FORMATION TESTER SERVICE:</b>  d) In case of incomplete formation testing operations due to bad hole condition or 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 proforma) but restricted to a minimum of 20%. (i.e., if prorated flat charge calculates to below 20%, then a minimum of 20% flat charge shall be payable).	(xiii) <b>DYNAMIC FORMATION TESTER SERVICE:</b>  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.
174.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	596 of 712	<b>11.5 CABLE SPILICING CHARGE:</b>  (i) During initial mobilization, the Contractor must mobilize one additional OH cable drum (meeting tender specifications) to be	<b>11.5 CABLE SPILICING CHARGE:</b>  (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.

			kept as spare at all times for immediate replacement of logging unit's cable in case of cable loss/damage in fishing operations.	.
175.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	596 of 712	<b>11.5 CABLE SPILICING CHARGE:</b>  (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.	<b>11.5 CABLE SPILICING CHARGE:</b>  (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 Kakinada Onshore supply base.
176.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)	597 of 712	<b>11 WIRELINE LOGGING SEVICES (11)</b>  11.9 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 Number). (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>11 WIRELINE LOGGING SEVICES (11)</b>  11.9 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 Number). (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.
177.	PART-3 SECTION-IV SCHEDULE OF RATES (SOR)		Clause Nos. 12, 13 & 14	Revised Clauses 12, 13 & 14 enclosed herewith.
178.	PRICE BID FORMAT		PROFORMA-B	Revised PROFORMA-B uploaded in OIL's e-portal under "Notes & Attachments" Tab.
179.	FORM OF BID SECURITY (BANK GUARANTEE)	632 of 712	PROFORMA-O	Revised PROFORMA-O enclosed herewith.
180.	BEC CHECK LIST	704 of 712	CHECKLIST-II	Revised CHECKLIST-II enclosed herewith.

2.0 **Annexure-VI in relation to ITB Clause 8.0, revised Exhibit Nos. 4 (Mud Engineering Services), 7 (Mud Logging Services), 12 (Well Testing Services), 13 (Completions Equipment Supply & Services) & 14 (Supply of X-Mas Tree, Chokes & Services), Revised SOR Clause Nos. 12, 13 & 14, Revised Proforma - O (Bid Security BG Format) 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 Bid Closing / Bid Opening extended as per following:

- i) Bid Closing Date & Time : Extended up to **02.04.2025** [1300 Hrs (IST)]
- ii) Bid Opening Date & Time : Extended up to **02.04.2025** [1500 Hrs (IST)]

5.0 All other terms and conditions of the Tender remain unchanged. Bidders are requested to submit their offer considering above amendments/notifications.

**Oil India Limited  
KG Basin Project**

**Format for undertaking by Foreign Bidders towards taking payment against Expenses in India (refer ITB Clause 8.0)  
(To be typed on the letter head of the bidder)**

Ref. No \_\_\_\_\_

Date \_\_\_\_\_

**Sub: Undertaking for taking payment against Expenses in India**

**To**

**The CGM-C&P (KGB & MBP)  
OIL, Kakinada**

**Sir,**

With reference to our quotation against your above-referred tender, we hereby confirm that we have gone through the Tender document in toto and quoted **Expenses to be incurred in India** in percentage (%) against each line item (wherever applicable) of the Price Bid Format (Proforma-B). We have quoted after proper due diligence and take full responsibility for the same. We agree to the condition that during payment (if successful), the “Expenses in India” component of the price shall be converted to INR (if quoted price is other than INR) considering the conversion rate as per Clause **21.0 of ITB**. If any Expense incur in India over and above the aforesaid percentage (%), then we will inform Oil India Limited in due course of time and same will also be considered while calculating “Expenses in India” component.

Yours faithfully,

For (type name of the firm here)

Signature of Authorized Signatory

Name:

Designation:

Phone No.:

Place:

Date:

(Affix Seal of the Organization here, if applicable)

**MUD ENGINEERING SERVICES**

The Bidder shall provide Mud Engineering Services for jack-up Drilling Rig of water depth capacity up to 10 m hired by the Operator for drilling FOUR development wells at KG Basin, Kakinada. The Services shall be capable of operating with well depths of 4000 m from seabed or more.

Capable and experienced Rig service crew/ based personnel as per contract documents.

Mud Services including Mud Chemicals supply and design as per international practices and API Guidelines along with Mud Engineers for offshore wells. Maintaining and repairing mud testing equipment and Laboratory. Capability of handling and execution of SOBMs as well as WBM system in shallow water drilling environment.

**A. SCOPE OF WORK FOR MUD SERVICES:**

Providing Mud Engineering Services in all phases of Drilling, that is 17.1/2", 12.1/4", 8 1/2" phase of shallow water wells. The Bidder shall also provide completion fluid services, comprising heavy weight brines. The Bidder shall provide:

- a. Personnel of Mud Engineering services.
- b. Supply of Chemicals, additives, and mud testing equipment.
- c. Provision of brine services and chemicals for well testing including well bore hole clean up chemicals and waste management services on hiring basis.

**B. TECHNICAL REQUIREMENT**

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

1. Design of Mud program (WBM & LT-SOBM & Brines)
2. Mud Engineering Services.
3. Well Completion Fluid Services at Rig (On Call Out).
4. Supply of Mud, Completion Chemicals and Additives.
5. Leftover Chemicals and Additives.
6. Well-site Laboratory and Mud Test Kit with reagents at Rig.
7. Drilling Fluids Program.
8. Base Fluid Requirements.
9. BIDDER's Facilities.
10. Liquid Storage Facilities.
11. Mud management Services.
12. Logistics and Product Packaging.
13. Cutting Drier Services at Rig.
14. Lab Equipment and Cutting sampling program.
15. Lab Mixing Protocol.
16. Waste Management System.
17. Safety, health, and Environment.
18. Reporting Procedures.
19. Key Performance Indicators.
20. Mud Formulation, Properties and Volume.
21. COMPANY's Fluid Specifications.
22. Quality Assurance - Quality Control.

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

### **1.0 Design of Mud Program (WBM & LT-SOBM & Brines)**

The Different sections of the well shall be drilled using following mud systems.

The sections are indicative only.

Top hole (17 ½") up to 1500m – PHB, High Vis sweeps and hole displacement fluids.

17 ½"/12 ¼" hole up to 2800m – LTSOBM system.

8 ½" Hole up to 3800 – LTSOBM System.

- 1.1 Depending upon the given Geological data, BIDDER shall design a phase-wise mud program, including mud weights, detailed mud formulation, chemical used and recommended doses, total volume usage for each hole section. Mud Weight(MW) will be decided by well designing /drilling team of OIL. However, bidder to submit formulation based on given MW in each section.
- 1.2 BIDDER shall submit detailed mud program for each section of hole, well in advance. The design mud program should be supported with software analysis.
- 1.3 The successful bidder is to submit the composition of LT-SOBM as per the parameter given in the sections for SOBMs in the dosage format with samples of chemicals, base Oil etc, to enable OIL to test submitted formulations independently.
- 1.4 BIDDER shall provide the mud engineering services of the "LTSOBM system".
- 1.5 BIDDER shall prepare a contingency plan to meet hole problems, anticipated contaminations etc. and have back up chemicals.
- 1.6 BIDDER shall also plan for treatment of cement contamination mud, caving, hole pack off, differential sticking, Mud loss, H<sub>2</sub>S, hole erosion/ or any other bore hole problems.
- 1.7 BIDDER shall keep provision for non-damaging LCM for pay zones. If required. The range of LCM includes polymer setting pills, high fluid loss squeeze slurries, Dilatant LCM, system LCM as well as advance particulate LCM.
- 1.8 BIDDER shall ensure that composite mud system (LT-SOBM) is environment friendly as per existing environmental laws including environmentally friendly spotting fluids.
- 1.9 BIDDER shall provide suitable brine chemicals and corresponding completion brines services for well testing as per well requirements and formulation of the brine pertaining to hole conditions.

#### 1.10 DELETED

1.11 The BIDDER is to submit one composition each of LT-SOBM as per the parameters given in the sections for SOBMs in the dosage format with samples of chemicals, base Oil etc. The rheology of the composition is to be measured at expected BHST after hot rolling for 16 Hours. The composition of LT-SOBM shall be verified by the BIDDER at Institute of Drilling Technology (IDT) or any other Institute of repute for conformance to desired parameters indicated. Alternatively, OIL's representative may witness the test at BIDDER's laboratory before submission of Bid. The BIDDER shall give at least 15 days prior notice to OIL in this regard. If OIL decides not to witness test formulation at bidder's lab, bidders shall submit test report of designated labs. BIDDERS must submit the test report / witness test report along with the Bid failing which the Bid shall be rejected. Test reports as above received after the date of opening of the tender will not be accepted. Only those compositions which pass the parameters as required shall be technically acceptable.

1.12 The BIDDER should submit a laboratory test report (issued by ONGC laboratory, IDT, Dehradun, or any other laboratory of international repute) of the formulations as per scope of work conforming to OIL's recommended parameters along with the bid. Alternatively, OIL's representative may witness the test at BIDDER's laboratory before submission of Bid. The BIDDER shall give at least 15 days prior notice to OIL in this regard. If OIL decides not to witness test formulation at bidder's lab, bidders shall submit test report of designated labs. BIDDERS must submit the test report / witness test report along with the Bid failing which the Bid shall be rejected. Test reports as above received after the date of opening of the tender will not be accepted.

1.13 In order to meet the indicated mud properties, BIDDER must include against “any other Chemicals” in addition to the indicated Chemicals in the price format, which will be taken into consideration for evaluation.

1.14 Bidder shall supply the quantity of Chemicals and additive required for preparation and maintenance of both WBM and SOBMs mud system for 04 nos. of wells as per Annexure-X under Price bid Format. Payment shall be made on actual consumption of Chemicals as certified by Company’s representatives at Site.

## **2.0 Mud Engineering Services.**

The Mud Engineer Service Provider:

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

- 2.2 **Lead Mud Engineers** to be deployed by the Bidder shall have minimum 7 years mud engineering Experience along with the relevant work experience of at least 5 offshore wells, out of which with at least experience of working in One Well having BHST >150 deg C and Maximum Mud weight 15ppg, using SOB/WBM mud system. The Mud Engineers shall have work experience in handling heavy weighted brines up to 15ppg. Bidders must submit an undertaking confirming compliance with the above criteria during bid submission. Upon issuance of the Letter of Award (LOA), the successful bidder must furnish Individual CVs of each personnel detailing their experience and qualification, valid offshore safety training certificates, Valid Passport etc within the specified timeline for OIL's approval, as outlined in the scope of work.
- 2.3 2nd Mud engineer shall have minimum three years of experience and at least one well in offshore environment with SOB/WBM.
- 2.4 High Temperature experience (Onshore/offshore) is required: Lead Eng minimum 5 wells & 2nd Eng 2 wells.)
- 2.5 The Liquid Mud Plant Engineer to be deployed by the Bidder shall have a minimum of 5 years' experience to manage day-to-day operations of liquid mud plant, ensuring that all equipment is functioning correctly and efficiently. He should have experience in overseeing the mixing, testing, and storage of liquid mud. He should have experience in inventory management, coordination with the rig, equipment troubleshooting, quality control, safety & environmental compliance, and detailed documentation & reporting.

- 2.6 BIDDER shall carry out Mud Engineer planning and designing, mud preparation and maintenance required for drilling and completing all phases of wells by using rig equipment and details drilling planned by OIL. The contractor shall submit Drilling Fluid engineering programs for each well at least 15 days prior to the commencement of drilling the well. Depending upon the given geological data, Contractor shall design phase-wise Drilling Fluid program, including Drilling Fluid weights, detailed Drilling Fluid composition, recommended doses, total volume usage for each hole section. For each phase, the Contractor shall provide the drilling fluid composition to achieve the required parameters.
- 2.7 The Wells in this contract shall be drilled using stated drilling fluids system.
- 2.8 Provide Well completion services (on call out basis).
- 2.9 BIDDER shall provide all the required mud testing equipment, reagents, and accessories for testing drilling fluid & Completion fluid as per the requirement of the well.
- 2.10 BIDDER shall provide round the clock Mud Engineering service by employing two site Mud Engineers at a time one each of 12 hours shift. Engineers deployed during completion phase, shall have experience in working with heavy brines and use of brine Chemicals.
- 2.11 The Engineers and supervisors shall be able to communicate in English/Hindi.
- 2.12 The on-site Drilling Fluid Engineer shall provide OIL with the daily drilling fluid reports as per standard industry practices. Shall also run hydraulics analysis, surge and swab pressure analysis and advise Drilling Supervisor, accordingly.
- 2.13 The onsite Drilling fluid/Completion fluid Engineers shall communicate with Company Representative/Drilling Superintendent on a daily basis.
- 2.14 The Drilling fluid engineers shall Record, document well program, prepare complication report and drilling fluid recap of the well.

- 2.15 BIDDER shall provide all technical literature, mud hydraulic, surges and swap pressure report etc. and all other drilling fluid-related calculations and detail mud history and mud programs.
- 2.16 BIDDER shall provide at the rig site, software base daily mud parameter test report, daily mud volume Report Mud hydraulic and hole cleaning optimization report in real time.
- 2.17 BIDDER shall be required to collect the various drilling fluid samples/brine samples/water samples as per OIL for onward dispatch to OIL laboratories.
- 2.18 BIDDER may be required to collect various HSE related drilling fluid samples, drill Cuttings, effluent drill, and wastewater samples as per requirement of the Environment Regulations of OIL. Drill cutting generated at site shall be transported to the shore by OIL. OIL will make separate arrangements for treatment and disposal of drill cutting as per Environment regulation CPCB/SPCB guidelines.
- 2.19 The maximum age of Mud Engineers or personnel, deployed on offshore rigs shall not exceed 50 Years. However, age relaxation up to 60 years may be granted, provided the mud engineer or personnel is certified medically fit for offshore operations.

### **3.0 PERSONNEL TO BE DEPLOYED BY CONTRACTOR:**

- 3.1 Contractor warrants that it shall provide competent, qualified, and sufficiently experienced personnel to perform the work correctly and efficiently.

- 3.2 The Contractor 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. The Contractor 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 of that Mud Engineers by 75% until such replacement has been provided.
- 3.3 The Contractor shall be solely responsible throughout the period of the Contract for providing all requirements of their personnel including but not limited to, their transportation to & from helicopter base at Rajahmundry, enroute/local boarding, lodging, personal protective gear & medical attention etc. The company shall have no responsibility or liability in this regard.
- 3.4 Contractor's personnel shall be fluent in English language (both writing and speaking in English).
- 3.5 The Contractor shall (if required by the Company) provide the following Personnel to perform mud engineering services at the drilling location:
1. Mud Specialist(s)/Mud Engineer(s), National or Expatriate, who are familiar with the proposed mud systems. The Personnel shall also have experience specific to the area or be experienced in drilling areas prone to overpressure, lost circulation and reactive clays or any downhole complications related to drilling.
  2. In addition, the Base Coordinator shall be provided at the Contractors' cost in Kakinada to perform various administrative duties and to liaise with the Company.
  3. Liquid Mud Plant Engineer shall be provided at Company's cost in Kakinada to provide uninterrupted LMP services.

4. The working schedule of the Contractors personnel at the drilling location shall be on rotational basis unless otherwise agreed by the Company in advance. All Personnel shall be on 24-hour call whilst at the drilling location unless otherwise advised by the company.
5. The Contractor shall provide appropriate Personal Protective Equipment (PPE) and work clothing for all its Personnel at the drilling location for the proposed drilling fluids. The Company requires that all personnel at the drilling location should be furnished as a minimum but not limited to:
  - a. safety helmet
  - b. safety footwear
  - c. work clothes (suit or coverall)
  - d. protective gloves
  - e. hearing protection
  - f. eye protection
  - g. Any special PPE required for SOBM or Brine
6. The Contractor shall be solely responsible for all transportation of its personnel to and from the airport or base location designated by the Company. Transportation of Contractor's personnel between the drilling location and Company designated airport or base location, shall be the responsibility of the company.
7. Personnel supplied by the contractor must be approved by the Company in writing prior to the commencement of the contract.
8. The Contractor must furnish Individual CVs of all personnel detailing their experience and qualification, valid offshore safety training certificates, Valid Passport upon issuance of Letter of Award within the specified timeline for OIL's approval, as outlined in the scope of work.
9. The contractor shall submit detailed curriculum vitae for all personnel proposed for the contract upon issuance of the Letter of Award (LOA). The successful bidder must furnish Individual CVs of each personnel detailing their experience and qualification, valid offshore safety training certificates, Valid Passport within the specified timeline for OIL's approval, as outlined in the scope of work.

10. Personnel must be fully experienced in monitoring and maintaining the proposed drilling mud under all the anticipated drilling conditions at the drilling location.
11. Personnel shall monitor time to time the mud chemical concentrations in mud prior to discharges for any potential environmental impact.
12. Personnel shall test and 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.
13. Personnel shall monitor endeavor for their equipment to optimize all solids-control equipment with operating efficiencies. They shall also ensure that all necessary and appropriate spares and consumables for their equipment are available and advise the Company representative(s) of any deficiencies.
14. The Company shall be entitled to designate a Company representative at the drilling location who shall at all times have access for the purpose of observing mud tests, evaluating the engineering services performed by the Contractor or verifying the record of items furnished by the Contractor. Such Company representative(s) shall be empowered to act for the Company in all matters relating to the Contractors' operational performance under the CONTRACT.

3.6 The contractor shall submit to the Company the resume of the personnel, for its approval, to be deployed showing the technical qualifications, training, and mud engineering related experience as per the format given below. The Company reserves the right to accept or reject any personnel proposed by the Contractor. The Contractor shall submit the resume of the personnel at least 45 days prior to deployment for OIL's approval.

NAME	:
NATIONALITY	:
DATE AND PLACE OF BIRTH	:
PASSPORT NO AND VALIDITY	:

(Wherever applicable)  
 POSITION :  
 QUALIFICATIONS :  
 TRAINING :  
 WORKING EXPERIENCE\* :  
 \*(Experience in SOBM and WBM  
 system in offshore wells) :  
 NUMBER OF WELLS WITH DETAILS :

Note: 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 checkup with the concerned authorities prior to selecting their crew personnel.

#### 4.0 Well Completion Fluid

4.1 The BIDDER shall supply all the required brine and its corresponding salt, brine chemicals, corrosion inhibitor (chloride base, Bromide base, Amine base, Silicon base) oxygen scavenger etc to formulate any one of the following well completion fluid or in its blending form as per the well data provided during well testing.

- Sodium Chloride Salt for making 10ppg brine at site or at LMP,
- 13ppg Potassium formate brine in IBC and its corresponding salt of Potassium formate for weight make up.
- 15ppg Calcium Chloride-Calcium Bromide blended brine in IBC and its corresponding salt(CaCl<sub>2</sub> and CaBr<sub>2</sub> salts) for weight make up.
- 14.2 ppg Calcium Bromide brine (in IBC) and its corresponding salt of Calcium Bromide for weight make-up .
- Contractor shall supply Calcium Chloride and Calcium Bromide Brine separately and blend the same at LMP as required.

4.2 The BIDDER shall provide an experienced completion/ Drilling fluid engineer on call out basis having a minimum experience of 3 wells in offshore environment of the proposed brines, in case Chloride based brines or formate based brines or bromide-based brines or a blended brines are required for testing and completions of well. Contractor may also supply Calcium Chloride and Calcium Bromide Brine separately and blend the same at LMP as required.

Completion Engineer should have experience in heavy brines in high temperatures wells. The contractor must furnish Individual CVs of completion fluid engineers detailing their experience and qualification, valid offshore safety training certificates, Valid Passport upon issuance of Letter of Award within the specified timeline for OIL's approval, as outlined in the scope of work.

4.3 BIDDER shall supply complete list of well completion Chemicals, Brine in IBCs and its corresponding Salts and other compatibility chemical additives like Hydroxy Ethyl Cellulose, XC-Polymer, PAC-R, Corrosion inhibitor (Chloride base, Amine Base, Silicon base) Oxygen Scavenger, Tracer chemicals, Fluid loss reducer, weighing material such as Barite, Calcium Carbonate required for preparation and maintenance of the specific completion fluid systems.

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

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

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

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

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

- 4.9 The Chemicals shall be in original packing of manufacturer. The packing of Chemicals shall be seaworthy, in bags of 25kg / 50 kg or Lbs, and in drums or jars of not more than 220 Ltr capacities. Bidder is required to supply Barite in 1.5 MT/1.0 MT jumbo bag (Sp.gr $\geq$ 4.1) and Bentonite in 1MT Jumbo bags which shall withstand the rigorous sea transportation. Chemicals susceptible to moisture shall be packed in moisture proof multiwall paper bags with polyethene lining. Each container or pallet shall have clearly legible identification marks including the name of chemical, name and address of Manufacturer, date of manufacture and address of consignee. All Chemicals / drum shall be delivered at shore supply base in proper pallet/containers/Jumbo Bags for safe & smooth transportation to rig. Specific Gravity of barite should not be less than 4.1.
- 4.10 BIDDER shall be responsible for replacing the chemicals received in torn packing or leaky/broken drums as it will not be sent to rig. BIDDER shall deliver all Chemicals, packed in waterproof pallets, container ready for loading directly into OSV's. No separate pallets / containers shall be provided by OIL.
- 4.11 Payment shall be made as per actual consumption of Chemicals certified by OIL Representative. OIL shall not buy back any leftover and unopened chemicals/consumables/SOBM base oil etc. brought by the Contractor after completion of the project/expiry of the contract under any circumstances except below:
- Brine chemicals – Potassium Formate, Calcium Bromide, Calcium Chloride-Bromide Blended Brine. Any leftover quantities from the call-out of these Brine would be charged back to client. Company to issue separate call-out for these specialized brine with mobilization timeline of 60 days.
- Base Oil – Since Base oil will be provided by Bidder in Bulk, unused bulk quantities as per call-out would be charged back to client. It is the responsibility of the contractor to take back Left-over Chemicals at Rig and shore base after completion of the project/expiry of the contract.
- Payment for specialty brine (Calcium Bromide and Potassium Formate) to be made on delivery (DDP Kakinada basis).
- Base Oil to be paid after delivery.

## **5.0 Supply of Mud, Completion Chemicals and Additives.**

- 5.1 The BIDDER shall submit detailed specification of all the offered Chemicals along with their bid. The specifications of each chemical should reflect the relevant parameters of that particular additive and indicate its performance required in the test report.
- 5.2 BIDDER shall supply complete list of Mud Chemicals and additives including Barites required for preparation and maintenance of the specific mud systems.
- 5.3 BIDDER shall ensure sufficient quantities of Chemicals and additives shall be made available to allow smooth and uninterrupted operations.
- 5.4 BIDDER shall furnish the test report as per specifications prior to delivery of chemicals at Shore supply base to OIL. All the test reports must reflect the brand name and manufacture as quoted in the bid and the Chemicals used in the wells shall be of same brand and manufacturer and shall be in no way inferior to the quality indicated in the test reports submitted in the bid document.
- 5.5 BIDDER shall provide the complete Chemical product data including brand name and Manufacturer's name of Chemicals, specifications / test report of chemical and MSDS in respect of all chemicals proposed to be used along with bid.
- 5.6 OIL reserves the right to check the quality of Mud Chemicals at random as per test report / specification submitted by BIDDER at any point during the duration of contract at supply base and at rig.
- 5.7 BIDDER shall arrange storage area near supply base during the period of contract and shall deliver the chemicals and additives to shore base supply base as and when required at their own cost.

5.8 The Chemicals shall be in original packing of manufacturer. The packing of Chemicals shall be seaworthy, in bags of 25kg / 50 kg or Lbs, and in drums or jars of not more than 220 Litre capacities which shall withstand the rigorous sea transportation. Chemicals susceptible to moisture shall be packed in moisture proof multiwall paper bags with chemical lining. Each container or pallet shall have clearly legible identification marks including the name of chemical, name and address of Manufacturer, date of manufacture and address of consignee. All Chemicals / Drum shall be delivered at shore supply base in proper pallet/containers for safe & smooth transportation to rig. If well testing requires brine of higher density, then Bidder shall supply Calcium Bromide (CaBr<sub>2</sub>) brine and Blended CaCl<sub>2</sub>+CaBr<sub>2</sub> Brine in IBCs i.e. Intermediate Bulk Container having density 14.2 ppg and 15 ppg respectively of requisite volume. The barites of API specifications (min 4.1 sp gr or above) shall be supplied by BIDDER to the shore supply based.

NOTE: Barite less than 4.1 specific gravity will not be accepted if it is found after joint testing. If the contractor supplies below 4.1 sp gr barite to well site, the contractor will replace the barite lot completely in his own cost and no payment will be made for the consumed barite to the specific lot.

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

5.10 Payment shall be made as per actual consumption of Chemicals, consumables, Brine Chemicals (including Calcium Bromide/Blended CaCl<sub>2</sub>+CaBr<sub>2</sub>) on tonnage quantity in IBC as certified by OIL Representative.

5.11 **Quality Control:**

**5.11.1** BIDDER shall have an effective QC procedure that ensures that all chemicals and materials meet the design requirement and comply with the relevant API/BIS standards as appropriate, and OIL reserves the right to Audit Bidder's QC operation.

**5.11.2** To ensure quality of materials as per specifications, Bidder shall submit the test report of each of chemical brought to their warehouse prior to usage at the rig.

**5.11.3** BIDDER shall perform the QC test on mud samples and all mud related products on request. The bidder can submit the Test Reports not older than 06 months from the date of submission of Bid as per Mud parameters of SOW.

**5.11.4** BIDDER shall perform laboratory testing of formulations on request to ascertain the performance of fluids and measure of rheology. After testing, Bidder shall issue the report summery of test and test results.

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

**5.11.6** The bidder shall submit the details of QA/QC procedures as they pertain to supply of Chemicals.

## **6.0 Leftover Chemicals and Additives**

6.1 The BIDDER shall lift the unused / left over Chemicals including unused base oil for SOBM **and leftover SOBM**, after completion of contract from shore supply based and rig, within **30 days** from the intimation about the same. If due to any reason the left over/ unused chemicals including unused base oil for SOBM and leftover SOBM, are not lifted from the shore supply base then BIDDER will be liable to pay warehouse charges as decided by OIL.

Containers belonging to the BIDDER used to transport materials to the rig shall be return back to BIDDER. All unused/ left over materials (Chemicals) on the rig shall be transported back from the rig to the shore supply base at Company's expense. Leftover Chemicals, base Oil etc. shall be taken back by supplier within **30 days** of the expiry of contract from their supply base.

- 6.2 Delivery of Base Oil, SOBM, Pre-mix to/from LMP from/to OSV would be done by OIL or OIL's Contractor.
- 6.3 It would be the responsibility of the BIDDER to re-export or dispose-off as deemed fit, as per existing regulations, the left-over Chemicals and additives, Base Oil etc within **60 days** after the completion / expiry of Contract under intimation to OIL.
- 6.4 Waste Disposal responsibility remains with the Company. It would be the responsibility of the Company to manage for disposing of all the empty barrels/empty chemical bags/Carboys/empty IBC/used filter Cartridges/Oily sludge.

**7.0 Wellsite & Shore base Laboratory and Mud Test Kit(1 Set of equipment for Well site and 1 set of equipment for Liquid Mud Plant as applicable)**

- 7.1 BIDDER shall have a laboratory with desired equipment, spares, reagents, mud test kits etc for testing of drilling fluid (Water base fluid, Synthetic oil Base fluid) used for different stage of drilling as per API 13A/13B.The bidder shall have mud lubricity testing equipment either at its base laboratory or at well site.
- 7.2 BIDDER shall have a regional lab support in India or BIDDER's own laboratory, where any specific test such as particle size distribution (PSD) XRD, shale dispersion test and capillary suction test are required can be carried out.
- 7.3 BIDDER shall be able to perform the following laboratory tests:

- For Fluid density: 4nos.Standard mud balance and 2 nos. pressurized mud balance and 4 nos. of Marsh Funnel Viscometers.
- For Mud Rheology properties (rotational 6 speed Viscometer FAN35 with heating jacket).
- Rheometer (of make Silverstein or Antan par or Grace) for measuring viscosity of synthetic oil and Oil Base Mud
- API standard Fluid loss test apparatus.
- Barite Sag test
- Pilot test
- Electrical Stability
- Retort Kit(50ml kit)
- Filtration test
- HTHP filtration Apparatus with cartridge's
- Static aging at base laboratory of Bidder
- Dynamic aging at base laboratory of Bidder
- CST and Clay swelling at base laboratory of Bidder
- PPT at base laboratory of Bidder
- X-Ray analysis at base laboratory of Bidder
- Return Perm test at base laboratory of Bidder
- Roller oven
- Ageing cells (Big and Small)
- Any other specialized test required for new formulations.

7.4 List of the Laboratory equipment & Chemicals: -

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

**TABLE-1**

Sl. No.	Items	Qty.
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1	Fann VG Meter with thermo cup	2
2	API Filter Press	1
3	Marsh Funnel with Cup/ H2S detection kit	3
4	API Mud Balance with Mud Cup	3
5	API Sand Content Apparatus	1set
6	Hamilton Beach Mixer	2
7	Mud Filtrate Test Kit	1
8	Methylene Blue Test Kit	1
9	Glass Thermometer (50-500 degrees F.)	3
10	Hot Plate with magnetic stirrer	1set
11	pH Meter and pH strips	2pH Meter & 10 packets of pH Strips of 0 to14
12	Lubricity tester	1nos
13	Pressurized Mud Balance	2 nos
14	Refractor for Glycol/Polyol measurement.	1 set
15	Test kit for SOBM system (ES Meter, HPHT Fluid loss apparatus,50ml retort and corresponding lab reagents)	1 set
16	PHPA testing apparatus with reagent for determination of PHPA concentration in mud	1no

17	Nephelometric Turbidity Unit (NTU) meter for turbidity test of brine	1no
18	Glass thermometer as per ASTM D1298(full range from 50 to 300 deg F)	1set
19	Glassware, Reagents, Distilled water,	As per Requirement
20	Hatch test apparatus for H <sub>2</sub> S with accessories	1No
21	Refractometer for glycol measurement	1No
22	Hydrometers (complete set) 0.6 gm/cc to 1.1 gm/cc	1no
23	UV spectrophotometer for oil content determination in effluents and cuttings	1no
24	Digital Balance 300 gm, readability 0.01 gm	1no
25	Lab centrifuge	1no
26	Measuring cylinder (10, 50, 100, 500 and 1000 ml)	1no. each
27	Measuring Conical flask 25 ml, 50 ml, 100 ml and 250 ml	2nos of each
28	Rheometer	1no
29	Emulsion tester	
30	Lab Stirrer (REMI or equivalent)	
31	Thermometer (0 to 100°C), (0 to 300°C)	
32	Various range of Hydrometer for measuring density of fluid from 0.7 to 1.9	

**TABLE-2**

<b>Chemicals and Reagents</b>	<b>Quantity</b>
Distilled Water	25 litres
Buffer Solution pH 4.0	250 cc
Buffer Solution pH 7.0	250 cc
Buffer Solution pH 10.0	250 cc
Defoamer	100 cc
Sulphuric Acid 0.02N	3 x 500 cc
Sulphuric Acid 0.1N	500 cc
Sulphuric Acid 5N	500 cc
Hydrochloric Acid 0.1N	250 cc
Phenolphthalein Indicator	100 cc
Thymolphthalein Indicator	100 cc
Methyl orange Indicator	100 cc
Silver Nitrate Solution (dark bottles) 0.282N	3 x 500 cc
Silver Nitrate Solution (dark bottles) 0.0282N	3 x 500 cc
Potassium Chromate Indicator	100 cc
EDTA-Solution 0.02N	2 x 250 cc
EDTA-Solution 0.1M	
Sodium Hydroxide Solution 0.1N	2 x 250 cc
Sodium Hydroxide Solution 1N	3 x 500 cc

Calver II Indicator (calcium)	250 g
Cresol Red Indicator	100 cc
Sodium Perchlorate Solution (150g/100cm <sup>3</sup> H <sub>2</sub> O)	500 cc
Standard Potassium Chloride Solution	100 cc
Stannic Chloride 0.5M	100 cc
Hardness Indicator Solution	100 cc
Hardness Buffer Solution	250 cc
Methylene Blue Indicator	2 x 500 cc
Hydrogen Peroxide 3%	2 x 500 cc
Xylene	5 litres
Propylene Glycol Normal Propyl Ether(PNP) solvent	5 litres
Bromo Cresol Green	100 ml
Sodium Hydroxide buffer solution(1N) (500ml X 2)	1000ml
Deionised water	20 litres
Any other reagents required during testing of SOBM mud, PHPA, KCl, Lime and NaCl concentration	

**TABLE-3**

Glassware	Quantity
Graduated Cylinders (10 ml & 25 ml)	5 each
Graduated Cylinders (50 ml)	2
Graduated Cylinders (250 ml & 500 ml)	1

Glassware	Quantity
Volumetric Pipettes (0.5, 1, 2, 5, 10 ml)	4 each
Graduated Pipettes (1, 2, 5, 10 ml)	4 each
Syringes (1, 2, 5, 10)	10 each
Volumetric Flasks (100, 250, 500 ml)	2 each
Beakers/Erlenmeyer (250, 400, 500 ml)	2 each
Storage Bottles (white)	2 each
Storage Bottles (Brown)	2 each
Titration Vessel (150 ml)	4
Spray Bottles – for distilled water (500 ml)	4
Dropper Bottles (50 & 100 ml)	4
Winchester bottles	4
Jerry Cans- 5 litres capacity	4

#### 7.5 Mud Parameters:

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

- Specific gravity (Mud & Brines)
- Funnel Viscosity
- Plastic Viscosity.
- Yield Point.
- Gel Strength.
- RPM (3, 6, 100, 200, 300, 600)
- API Filtration Loss
- Solid %.

- pH
- Sand %
- Brook Field Viscosity
- HPHT Filtrate Loss @ 150 OC/ 500 PSI.
- Salinity.
- MBC
- Metal Concentration, if applicable.
- Behaviour for the quoted systems for 12 ¼" and 8 ½" Phase variable pressure / temperature Viscometer.
- Any other system specific deemed necessary or required by OIL.

## **8.0 Drilling Fluids Program**

BIDDER shall also develop a planned general drilling fluid program for each system to be used. The Program shall address for each drilling phase the following issues as a minimum requirement:

- Drilling fluid System Discussion
- Recommended Drilling fluid Properties, including API/BIS tests: PPT, HP/HT filtration.
- Expected problems.
- Formulations, per BBL
- Products Functions,
- Mixing Procedures,
- Planned volumes.
- Engineering comments
- Lost Circulation
- Stuck Pipe
- Products Consumption
- Planned and expected Cost, Cost/BBL and Cost/m
- Contingency procedures &Material

## **9.0 Base Fluid Requirements**

9.1 BIDDER shall provide base fluid for synthetic base mud as per below specification.

9.2 Bidder shall provide base fluid specification in the “Supplied by BIDDER” column.

<b>Description</b>	<b>COMPANY’S requirement</b>	<b>Supplied by BIDDER</b>
Base Fluid Classification	Class III- V	
Specific Gravity at 15 deg C	< 0.82 SG	
Kinematic Viscosity at 40 deg C	< 4 Cst	
Flash point (Pensky Martens (ASTMD 93)	> 85 degC	
Aromatic content	< 0.05% (UV)	
Aniline Point (EN ISO 2977 /ASTMD 611)	> 75 degC	
Biodegradability (OECD 306-28 days)	> 60%	
Skin Irritation (OECD 404 test)	None	
Sulphur content	< 3 ppm	
LC-50 (GOI approved lab report is required)	Non-Toxic	
CAS number		

**9.4** The base oil should be approved by Government of India approved lab or NEERI for offshore use. Base oil and formulations, environmental Test report to be submitted with bid.

**9.5** Base Oil Payment methodology: OIL shall link the base oil price to the gas oil index on the given date, to the average gas oil index published by Platts, Singapore (Mean of Platts, Singapore, and Gas Oil index 50ppm Sulphur – MOPS GO 50 ppm). Base oil price shall be calculated as sum of fixed component and variable component. Fixed component includes charges on account of transportation, insurance, port clearance & handling charges & other charges up to Kakinada Fixed price component once quoted shall remain in force till completion of the contract period and payment shall be made accordingly. The variable component of the base oil will be average of MOPS GO 50 ppm index.

The Variable component of base oil cost for tender evaluation will be average of MOPS GO 50 ppm index for the previous month of NIT date; e.g. if the tender downloading date starts from the month of August’2023 MOPS GO 50 ppm for the month of July’2023 will be taken for evaluation purpose.

The Variable component of base oil cost for payment will be the Average gas oil index MOPS GO 50 ppm for the previous month in which the base oil has been purchased. Date of bill of lading shall be considered as a date of purchase.

In case of MOPS GO 50 PPM base oil reference index is not available in the market, MOPS GO 10 PPM index will be applicable for all purposes.

### **10.0 Mud Management Services**

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

- 10.1 The inventory control both at the rig site and at the shore base. Bidder shall ensure that sufficient quantities of materials and Chemicals shall be available to allow for a smooth, uninterrupted operation, Bidder shall also provide actual delivery verification.
- 10.2 Shore base service provider will run the mud plant and will be responsible for the mixing of mud and brine. Mud plant service provider shall provide Mud plant supervisor and will be responsible for keeping proper record of each tank, its content, volume, and properties of same. Mud plant service provider to provide a mud lab to carry out necessary testing of mud/brine and skilled lab technician to test the parameters of mud /brine. Mud plant service provider will provide manpower required for mixing, however, bidder in consultation with OIL will be responsible for advising the chemicals and required dosages of same to get required volumes and properties of mud/brine.
- 10.3 The Bidder shall provide copies of daily progress report inclusive of drilling fluid hydraulic generated with the help of suitable software package to the OIL representative. The report should also incorporate drilling operations, complete mud parameters analysis, chemicals consumed, volume of mud prepared and loss of mud and operation of solid control equipment as per standard practices.
- 10.4 Literature and details of software package for mud hydraulics, hole cleaning and engineering shall also be provided by the Bidder.
- 10.5 Bidder shall provide details of Mud Engineering programs, including completion fluid design for the proposed well prior to commencement of well.
- 10.6 Bidder shall submit details mud Engineering program for the well at least 15 days prior to commencement of well.
- 10.7 The program shall include but not limited to the following: -
- The mud system proposed for different sections.
  - Detailed mud system formulation for each section.

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

#### 10.8 Software and Technical support:

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

#### **11.0 Logistics and Product Packaging**

11.1 BIDDER must coordinate with COMPANY REPRESENTATIVE and to issue requests for transportation of EQUIPMENT, PRODUCTS, and consumables as per formats mutually agreed with COMPANY and in due time to fit within the planned schedule of COMPANY's supply boats (or helicopters).

11.2 COMPANY shall make its supply boats (or helicopters if appropriate) available to transport BIDDER's EQUIPMENT, PRODUCTS, and consumables but COMPANY shall not modify the planned schedule of its supply boats (or helicopters) for such transportation, unless specifically requested in writing by BIDDER REPRESENTATIVE.

11.3 BIDDER shall organize the logistics of EQUIPMENT, PRODUCTS, and consumables as to ensure that all of EQUIPMENT, PRODUCTS, and consumables as per scope of work are available for the start of each drilling phase.

- Shall be packaged as per COMPANY's specifications.
- Packaging (tote tanks, steel basket, drum etc.) shall be clearly identified.
- Packaging shall be waterproof for transportation and open-air storage during the transfer.

11.4 BIDDER shall ensure that all bulk PRODUCTS must be loaded through a rock-catcher.

11.5 BIDDER shall provide necessary document for purposes of logistic, transportation and importation/exportation including, but not limited to:

- delivery tickets,
- shipping invoices,
- manifests,

11.6 All products shall be packed, boxed, crated and/or palletized in an adequate manner to ensure sufficient protection and safe handling during transportation. The receptacle and any associated packaging shall be made of materials, which shall not be affected by the products nor subject to reaction with the products.

11.7 Liquid products shall preferably be transported and delivered in 1000Lt IBC's to be able to enter a Mini Container MC.

11.8 All delivery must have MSDS in English language, attached to the package.

11.9 The minimum requirements of packaging are as follows:

**11.9.1** Brine (by intermediate bulk container)

- T 304 Stainless Steel tank or Heavy-duty plastic tank c/w steel frame protector completed with sling and shackles.
- Heavy duty lifting lugs and leg positions for easy stacking and lifting.
- Certificate of test and examination
- Bar code label & description label including:
  - Manufacturer
  - Date of manufacturer
  - Date first put in use.
  - Tare weight in MT.
  - Safe working load/payload in MT
  - Maximum gross weight in MT
- Caustic soda and sodium silicate should be delivered in plastic drums.
- Toxicity signs
- Identification marking should be prominently display on 3 sides of the container/bag.

#### 11.9.2 Deleted

#### 11.9.3 Packaging

- All PRODUCTS shall be packed, boxed, crated and/or palletized in an adequate manner to ensure sufficient protection and safe handling during transportation. The receptacle and any associated packaging shall be made of materials, which shall not be affected by the PRODUCTS nor subject to reaction with the PRODUCTS.
- Liquid PRODUCTS shall preferably be transported and delivered in Tote tanks.
- All delivery must have MSDS in English language and attached to the package.

#### 11.9.4 Sack Material Packaging

All sacked chemical PRODUCTS shall be palletized, jungle boxed, double wrapped, strapped and capped for shipment.

### 11.9.5 Pallets

The **maximum weight** of a pallet shall not exceed **1.5 MT**. The **maximum height** of a pallet shall not exceed **125 cm**. **However, for Brine in IBCs**, the size and weight restrictions do not apply. The **COMPANY reserves the right to refuse any products** not packaged in compliance with the following specifications.

Pallets shall be properly labelled and shall have the following information:

- BIDDER/SUPPLIER Name,
- Name of PRODUCTS,
- Weight of unit,
- Number of units on the pallet,
- Total Pallet net weight,
- Must have Safety Warning Sticker such as: "CORROSIVE", "FLAMMABLE, if considered toxic then TOXICITY etc.
- Pallets must be constructed with a loading capacity of 2000 kg. The design of the pallet must provide slots to place the sling bar for lifting and entrance for forklift forks.
- Plastic Liner 2mm thick, sacks placed inside plastic liner.
- Minimum 0.25-inch Plywood Cap on top,
- Minimum of three (3) (PLASTIC) 1/2" inch wide Polypropylene straps with clips in each direction,
- No steel banding material, material delivered that has steel banding will be considered to be non-conforming and rejected.
- Pallet covers (after banding) - Double Shrink-wrapped - plastic is to be minimum 2mm.
- Packing of Drum:
  - BIDDER shall supply drums handlers for each rig. Packing of Drum shall follow below specification,
  - Minimum 0.25-inch Plywood Cap on top of each layer,
  - Minimum of three (3) (PLASTIC) 1/2" inch wide Polypropylene straps with clips straps in each direction,
  - Pallet cover - Double Shrink-wrapped - plastic is to be minimum 2mm.

- Strapping must be inside of double shrink-wrapped plastic cover.
- Packing of EQUIPMENT:
  - Must be in a proper manner with strong wooden box or basket and must have the following:
    - Thick plastic covering the Inner part (bottom and wall) of the wooden box.
    - Strong metal strapping surrounds the outer part of the wooden box.
    - Fork pockets at the bottom part of the wooden box
    - Suitable to suffer opening (unpack-pack) of maximum two (2) times.
    - Basket shall be built to avoid any sand and water accumulation.
- Slings and shackles:
 

All lifting sets used in the handling of containers/bag should be manufactured in accordance with BS 1290. Sling assemblies should be selected on the basis of complying with BS 1290 at a rating 1.3 times the specified MGW of the container/bag to which it is to be fitted.

11.10 BIDDER shall be responsible for the disposal of any drums, tanks, empty sacks, pallet covers, pallets and pails returned to or used at BIDDER's base.

## **12.0 Other Equipment**

12.1 It is BIDDER's responsibility to ensure that BIDDER EQUIPMENT is ready to perform the SERVICES at all times, as well as be compatible with COMPANY's SPECIFICATIONS and/or drilling program requirements.

12.2 BIDDER shall perform post analyses of technical difficulties encountered and/or any BIDDER EQUIPMENT failure or services non-conformance.

12.3 BIDDER shall ensure that proper preventive maintenance plan has been implemented on all of BIDDER EQUIPMENT utilized for the performance of the SERVICES. BIDDER shall have the tracking system and submit the maintenance report upon COMPANY's request.

12.4 BIDDER shall ensure that BIDDER EQUIPMENT provided under this CONTRACT shall be rated for operation in Zone 1 or Zone 2 hazardous area. All skid mounted equipment must have valid load test certificates. All lifting gears must have valid inspection certificates.

12.5 BIDDER shall be responsible for acquisition and maintenance of BIDDER EQUIPMENT certificate, import and export document, permits, licenses, or any other documentation as may be required by APPLICABLE LAWS for the performance of the SERVICES, at BIDDER's cost.

12.6 BIDDER shall manage and update the inventory of BIDDER EQUIPMENT and spare part both at rig site and BIDDER's base on weekly basis.

12.7 BIDDER shall have sufficient back-up BIDDER EQUIPMENT sets in order to change in case of failure or during inspection and/or maintenance.

12.8 BIDDER shall indicate Model and Brief description of BIDDER EQUIPMENT proposed to be utilized under this CONTRACT in "Supplied by BIDDER" column below:

<b>BIDDER EQUIPMENT PACKAGE PER RIG</b>			
<b>Item</b>	<b>Required by COMPANY</b>	<b>Qty.</b>	<b>Supplied by BIDDER</b>
1	Mud cooler (optional required for 2 wells, on west block platform, during drilling 8 ½" Hole section) <ul style="list-style-type: none"> <li>· Hot side flow rate: 1000 GPM</li> <li>· Cold side flow rate: 2000 GPM</li> <li>· Inlet Temp hot side 185 °F (85 °C). cold side 90 °F (32 °C)</li> <li>· Outlet temperature hot side 145 °F (62 °C). cold side 126 °F (52 °C)</li> </ul> The expected flow line temperature of mud is 85°C(mini)- 100°C(max) Inlet of Mud cooler Cold side 55°C(max)	1 No with inlet processing capacity 1000GPM(Minimum)	
2	Screw Conveyor with minimum 40	1	

	mt/hrs. carrying capacity requirement of the following specification:		
	· Variable speed drive		
	· Diameter of 12" diameter		
	· Operating capacity of 40 ton per hour		
	· Fitted with explosion prove emergency remote shut down system.		
	· 1 conveyer unit to transfer the cutting between shale shaker and cutting dryer.		
	· 1 conveyer unit to transfer the cutting between cutting dryer and discharged point.		
3	Cuttings Dryer		
	1. The capacity of the Cuttings Dryer and screw conveyor should process the cuttings in the range of 30 - 50 TPH	1	
	• G Force – 200-250G		
	• Explosion Proof		
4	Pressure washer air operated portable pump with working pressure of 200 psi	1	

12.9 BIDDER shall maintain sufficient volume of spare parts to allow smoothness of operation.

12.10 All moving parts and parts subject to wear shall be available either on the rig or at the BIDDER warehouse.

12.11 All moving parts and parts subject to wear all be replaced every year at the minimum.

### 13.0 Lab Equipment and Cutting sampling program.

13.1 BIDDER shall provide Lab as per below and indicate Model and Brief description of Equipment.

13.2 BIDDER EQUIPMENT proposed to be utilized under this CONTRACT in  
 “Supplied by BIDDER” column below.

<b>Lab Equipment per Rig</b>			
<b>Item</b>	<b>Required by COMPANY</b>	<b>Supplied by BIDDER</b>	<b>Qty</b>
1	Electronic Balance 1000 g capacity, 0.01 g accuracy		1
2	Retort Kit		2
3	Sampling Cup		2+2
4	Mud Pressurized balance		2
5	Bucket for discharge rate measurement		1
6	Flow meter (Optional for Dryer Package)		1

13.3 BIDDER shall ensure that each piece of equipment is able to follow the below sampling program, collect the sample and test as illustrated below.

<b>Sampling Program</b>		
<b>Equipment</b>	<b>Samples to collect by Mud Engineer</b>	<b>Testing by Mud Engineer</b>
Shakers	Solid Discharge	% Oil on Cutting
Centrifuge	Solid Discharge	% Oil on Cutting
	Liquid Discharge	% HGS and % LGS
	Feed	% HGS and % LGS
Cutting Dryer	Cutting Discharge	% Oil on Cutting

#### **14.0 Lab Mixing Protocol**

##### **Mixing Protocol for Synthetic base mud:**

Mixing shall be performed as per the following API recommendations.

1. Mixer                                      Silverson L2R or L4R with square hole high shear impeller screen.
2. Mixing volume                            4 laboratory barrels (1400 mls)
3. Total mixing time                        1 hour
4. Mixing speed                              6000 rpm
5. Mixing Temperature                    Ambient to 150°F (66 °C) maximum

14.1 For SBM premix CaCl<sub>2</sub> brine prior to addition to invert emulsion. (97% CaCl<sub>2</sub> powder)

14.2 When more than one product is added from a product group, mix for the recommended mixing time between each product addition.

14.3 If mixing time for total product additions is less than the total mixing time, continue mixing fluid after the last product addition until the total mixing time has been reached.

14.4 After heat aging or contaminations if any additional dosages are required, same need to be mentioned in formulation and added in commercial sheet for that section.

14.5 After heat aging, mix fluid on the Hamilton Beach mixer at 10,000 rpm for five (5) minutes prior to testing.

**Mixing Protocol for Synthetic base mud:**

Mixing shall be performed as per the following API recommendations.

- |                       |   |
|-----------------------|---|
| 1. Mixer              | Hamilton Beach, Single or Multi mixer                               |
| 2. Mixing volume      | 4 laboratory barrels (1400 ml)                                      |
| 3. Total mixing time  | 1 hour  |
| 4. Mixing speed       | Speed 1 during product addition and then speed 3 for 1 hour mixing. |
| 5. Mixing Temperature | Ambient   |
| 6. Order of addition  |   |

14.6 When more than one product is added from a product group, mix for the recommended mixing time between each product addition.

14.7 If mixing time for total product additions is less than the total mixing time, continue mixing fluid after the last product addition until the total mixing time has been reached.

**Procedure for WBM mixing:**

<b>Product</b>	<b>Mixing Time (Minute)</b>	<b>TYPICAL PRODUCTS AS EXAMPLE</b>
Base Fluid		
NaCl or KCl	1	

Bentonite	5	
Viscosifier	10	
Alkalinity	2	Caustic
Thinner	2	
Polymer	3	
Speciality Product	3	
Oxygen Scavenger	2	
Bridging Agent CaCO3	5	
Weight Material	5	Barite
Final Mixing	15	

### 15.0 Safety, Health, and Environment

Bidder shall ensure safe conditions and methods of work and maintained the same throughout the period of contract. Bidder shall carry out all the activities in accordance with the highest international standards practices of the Off-shore oil and gas Industries, ensure safe conditions and methods of work, and maintained the same for the entire period of contract.

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

15.2 In-order to determine the validity thereof, OIL shall have the right to require all Bidder/Bidder personnel travelling to a worksite to produce originals or at corporation's discretion, copies of the following documents as applicable-

- a. Passport.
- b. Work Permit.
- c. Employer's Liability Insurance Certificate.
- d. Safety Training Certificates including sea survival and HUET Certificates.
- e. Medical Examination Report.

Any Bidder personnel do not produce the documents listed above when so requested by OIL shall not be allowed to travel to or work at the

worksite. Any cost arising directly or indirectly from such event will be borne solely by the Bidder.

15.3 Bidder shall comply with and shall ensure the Bidder personnel comply with the OIL requirements in relations to its weapons, alcohol, and drug free policy as-

- a. Alcohol and drugs, except those prescribed by qualified medical practitioner, are prohibited from any offshore installation, worksite, or other locations.
- b. Bidder shall ensure that any Bidder personnel who are either temporarily or permanently taking drugs under medical supervision are able to produce to OIL on request an appropriate letter from the recognised medical practitioner.
- c. Any person travelling Off-shore with prescribed drugs/medications shall surrender them to the Embarkation Officer who will forward them directly to Medical Officer who in-turn will supervise the use of drugs/medications while the person is on Offshore.
- d. Bidder/Bidder shall obey all local rules, regulations and custom pertaining to Alcohol and drugs prevailing in the country where the work is to be performed.
- e. Any person reporting to work either under or appearing to be under the influence of alcohol or drugs shall not be allowed to commence work or travel to worksite. Bidder shall be responsible for all costs relating to the replacement of such persons.
- f. Bidder shall provide OIL representative with copies of any report or statements or written evidence incident or dangerous events which occurs during the performance of work or any other incident indicating the existence of adverse safety conditions of which Bidder personnel may become aware.
- g. Bidder shall supply with the copies of all reports and documents regarding safety matters upon request by OIL as it is required by

Legislation to Comply or maintain together with such other reports as OIL may require.

- h. If Bidder shall consider it is necessary to suspend the work any time of the reason (s), Bidder shall immediately do so and inform OIL of such reasons.
- i. Bidder shall provide appropriate protective clothing where necessary for the protection of Bidder personnel whilst performing the work. The cost of providing such protection shall be deemed to be included in the rates contained in this Contract.
- j. Bidder shall ensure all standard safety practices are adhered to during loading and unloading base oil/LTSOBM from tanker to supply vessels / Liquid mud plant vice versa. Bidder shall deliver Base oil in bulk via Tankers to Liquid Mud Plant. Delivery of Base oil, SOBM, Pre-mix to/from LMP from/to OSV would be done by OIL.
- k. Bidder shall also ensure that persons being deployed for loading/unloading of based Oil/LTSOBM are well versed in standard safety practices.
- l. Bidder shall ensure that tankers transportation Based Oil/LTSOBM are approved for transportation of such type of Fluids.

#### 15.4 ENVIRONMENT PROVISION –

The Bidder shall in connection with the work hereunder.

15.4.1 Observed all local customs, rules, and regulations, where unclear, prior consultation must be conducted with OIL.

15.4.2 Protect environment resources by applying the best available techniques to eliminate or minimize any direct or indirect impact from operations.

15.4.3 Ensure that all activities are planned in a manner that will not create unnecessary danger, disturbance, or effects on the environment or to other users.

15.4.4 Ensure that all the Chemicals and formulation used under this contract comply with company standards and/or Legislation concerning the Environment in the location where the work is to be carried out.

15.4.5 Ensure that all persons affected or likely to be affected by executions of the work are not exposed to the substances or agents which may give rise to adverse health effects. The Bidder shall ensure that all Bidder personnel are fully trained in appropriate control measures to be implemented and have been provided with and use the correct personal protective equipment.

15.4.6 Ensure that notice is given to OIL with the reasonable time prior to the delivery or removal from the work site of any substance which is Toxic and Hazardous to Health or potentially harmful to the Environment. The notice shall identify the hazards and effects and assess the risk to personnel and the environment. Details of precautions to be taken when using, handling, transportation, storing or any other means of contact will also be provided. Bidder shall ensure that the substance is suitably packaged and labelled at all times.

15.4.7 Make available for all inspection by OIL upon request all registers, records or any other documentary or environmental aspects of the activity being carried out or on the environmental management system implemented by Bidder.

15.4.8 Bidder shall Prepare and maintain a plan documentary requirements, responsibilities, and organization for environment management. The plan should be readily understandable by all personnel and should cover routine, non-routine and emergency operations and be agreed in advance with OIL.

15.4.9 If applicable, ensure that prior to the commencement of work all Companies, Organizations and Communities that could potentially be affected by the activity have been notified.

15.4.10 Minimize, where reasonably practicable, nuisance, disturbance or interference to the community, their activities and local fishing and any other forms of Aquaculture, agriculture, and other users of the environment.

15.4.11 Unless otherwise directed by OIL, avoid conducting activities in protected areas or where there is intolerable risk of damage to the sensitive environmental resources.

15.4.12 Ensure that Bidder personnel shall not engage in Fishing, hunting, and gathering of Flora and Fauna or any other environmental resources.

15.4.13 Be fully accustomed with Company's Oil spill emergency procedure and plan.

15.4.14 Document and report immediately to OIL any incident of Environment damage, any unforeseen activity or event, released of Hydrocarbons, breaches of Environmental regulations or complaint from local groups, Organizations, or individuals.

15.4.15 Establish, maintain, and document any contract with the authorities and other interested parties, be reasonable for ensuring the acceptable disposal of waste in accordance with all local requirements and for the activities conducted Offshore and maintain waste logbooks.

15.4.16 Where Bidder is responsible for disposal of waste at Company's cost and ownership produced or occurring because of its activities under the Contract, all such disposals shall be in accordance with the OIL Industries standards, Legislation and best practices wherever same is for Hazardous and non-hazardous waste. Bidder/Bidder shall be responsible for ensuring all necessary approvals or licenses are obtained and that any sub-Bidders utilized for this purpose shall fully comply with the requirements.

15.4.17 Maintain a logbook where the waste generated from the mud system is recorded.

## **16.0 Reporting Procedures**

16.1 Bidder shall comply with the following minimum reporting requirements.

Bidder shall also provide additional report to the OIL representative at Rig and OIL Chemist at rig as may be requested during the work.

16.2 Daily mud reports on daily basis to Company representative and OIL Chemist at Rig and to the OIL mud services section at base.

16.3 End of Well Recap: A detailed well completion report shall be prepared and submitted within 14 days of completion of well.

16.4 Complication Report: In-case of any complications, such as pipe stuck, loss circulation, Well Kick, unusual caving, undesirable cutting bed formations etc. The Bidder / on-site Mud Engineer of the Bidder shall notify the OIL Chemist immediately. A detail draft report shall be submitted by the Bidder, within 24 Hours of the incident (Operation permitting), with full details and reason of the same and remedial measures / recommended that shall be followed to ensure safe and complication free drilling.

**17.0 COMPANY’s Fluid Specifications**

BIDDER shall provide test result of fluids as per COMPANY’s Specification. All these required parameters to be reported after 16 hrs Hot rolling at given temperature.

17.1 10.0 ppg PHB Starch Mud 60 deg C

<b>Mud Parameters</b>	<b>Company Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
Mud weight	10.0 ppg	
YP	>25	
Fluid loss below 500m depth	<15 ml	
PHPA	0.5ppb(max)	
Barite stock	As required	

17.2 11.0 ppg SOBM 64 deg C

<b>Mud Parameters</b>	<b>Company Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
Base-fluid / water	80:20	

ratio O/W		
ppg (@ 65 °C)	10.5-12	
6 RPM "	10-16	
3 RPM "	8-14	
Gels (@ 65 °C) 10s/10min/30min	10-15/15-20 /<30	
PV (@ 65 °C)	ALAP	
YP (@ 65 °C)	15 -25	
True Yield Stress (@ 65 °C) = [2 x 3 rpm] - 6 rpm	>8	
Excess lime kg/m3	> 5	
E.S volt	> 600	
HP/HT (@ 120°C/ 500 psi)	< 5	
Cake thickness mm	<1	
Salinity in %	24% - 30%	

17.3 14.0 ppg SOBM Max temp 108 deg C

<b>Mud Parameters</b>	<b>Company Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
Base-fluid / water ratio O/W	85:15	
ppg (@ 65 °C)	14.0	
6 RPM "	10-16	
3 RPM "	8-14	
Gels (@ 65 °C) 10s/10min/30min	10-15/15-20 /<30	
PV (@ 65 °C)	ALAP	
YP (@ 65 °C)	15 -25	
True Yield Stress (@ 65 °C) = [2 x 3 rpm] - 6 rpm	>8	
Excess lime kg/m3	> 5	
E.S volt	> 800	
HP/HT (@ 150°C/ 500 psi)	< 3	
Cake thickness mm	<1	
Salinity in %	24% - 30%	

17.4 12.0 ppg SOBM Max temp 124 deg C

<b>Mud Parameters</b>	<b>Company</b>	<b>Bidders Parameters AHR 16 hrs at</b>
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	<b>Specs</b>	<b>BHST</b>
Base-fluid / water ratio O/W	80:20	
ppg (@ 65 °C)	12	
6 RPM "	10-16	
3 RPM "	8-14	
Gels (@ 65 °C) 10s/10min/30min	10-15/15-20 /<30	
PV (@ 65 °C)	ALAP	
YP (@ 65 °C)	15 -25	
True Yield Stress (@ 65 °C) = [2 x 3 rpm] - 6 rpm	>8	
Excess lime kg/m3	> 5	
E.S volt	> 600	
HP/HT (@ 120°C/ 500 psi)	< 5	
Cake thickness mm	<1	
Salinity in %	24% - 30%	

17.5 14.0 ppg SOBM Max temp 162 deg C

<b>Mud Parameters</b>	<b>Company Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
Base-fluid / water ratio O/W	85:15	
ppg (@ 65 °C)	14.0	
6 RPM "	10-16	
3 RPM "	8-14	
Gels (@ 65 °C) 10s/10min/30min	10-15/15-20 /<30	
PV (@ 65 °C)	ALAP	
YP (@ 65 °C)	15 -25	
True Yield Stress (@ 65 °C) = [2 x 3 rpm] - 6 rpm	>8	
Excess lime kg/m3	> 5	
E.S volt	> 800	
HP/HT (@ 150°C/ 500 psi)	< 3	
Cake thickness mm	<1	
Salinity in %	24%	

17.6 CONTRATCOR should Report parameters obtained after thermal aging for 16 hrs at BHST.

17.7 For Brine, BIDDER should report required dosages of salt for desired weight.

### **18.0 Quality Assurance – Quality Control**

COMPANY is committed to the Quality Assurance (QA) management principles.

BIDDER shall be committed to quality assurance and follow internationally recognized standards in delivering a quality of products and SERVICES.

#### **18.1 Product Specifications**

18.1.1 BIDDER shall supply drilling and completion fluid products that meet or exceed high quality standards, complying with API / ISO or OCMA specifications and or meet COMPANY specifications or above. Where an API / ISO specification does not apply then material supplied shall be to a recognized industry standard or accepted BIDDER Standard approved by COMPANY such as BS, ASTM, and EC, etc.

18.1.2 COMPANY reserves the right to perform third party tests on all of BIDDER's EQUIPMENT/ products to verify quality. Such tests may be performed to determine both product specification and their economical use. The COMPANY may require such product testing at any time during the CONTRACT.

18.1.3 All products shall be complied with environmental regulations and follow recognized standards such as MOEFCC (Ministry of Environment and Forests), CPCB (Central Pollution Control Board), Environment Protection Act (EPA), Offshore Chemical Notification Scheme (OCNS).

#### **18.2 Quality Management System**

18.2.1 COMPANY requires BIDDER to have a QMS that is fully functional and that meets the requirements of an internationally recognized series of Standards such as the ISO 9001:2015 series as a minimum requirement.

18.2.2 BIDDER's QMS shall cover all aspects of the present CONTRACT.

18.2.3 BIDDER shall specify the Standard with which he complies.

18.2.4 BIDDER shall give detailed procedures to assess his local and international suppliers. BIDDER shall provide the list of his local and international suppliers and specify if they are certified by an international body such as ISO 9001: 2015.

18.2.5 BIDDER shall provide to COMPANY for review, BIDDER's quality control and quality assurance procedures.

18.2.6 BIDDER shall provide the list of the approved vendors locally and internationally. BIDDER shall also provide the latest date of assessment and any QA/QC audit report performed on his suppliers.

18.2.7 A Quality Inspection of the BIDDER's facilities and equipment shall be made prior to award of the CONTRACT.

18.2.8 BIDDER shall: -

- As part of his Quality Management System, develop and implement a comprehensive Quality Plan.
- Develop and implement comprehensive procedures for each aspect of the work.
- Issue his procedures to COMPANY for COMPANY's comments. BIDDER shall take into account COMPANY's comments prior to implementation of its procedures.

18.2.9 BIDDER shall take timely action to identify and correct deficiencies in BIDDER's and his SUBBIDDER /suppliers Quality Systems in order to avoid potential non-conformances and correct any actual non-conformances. Corrective actions undertaken by the BIDDER, SUB BIDDER/ supplier as a result of Non-Conformances being identified during Quality Audits or Inspections shall be undertaken at no cost to the COMPANY.

18.2.10 Bidder shall provide Certificate of Analysis or System Integrity Test to COMPANY of their supplied chemicals as and when asked for .

**18.2.10** Bidder shall compile all necessary documentation in accordance with specified requirements and ensure that such relevant documentation shall be made available to the COMPANY and/or the Certifying Authority when and where appropriate.

**18.2.11** Bidder shall provide the specifications of Chemicals, Name of the supplier/ manufacturer, latest MSDS, products data sheet along with the offer. For Proprietary products supplier name may not be disclosed but for commercial products supplier name should be disclosed.

### **18.3 Quality Assurance – Quality Control Standards**

18.3.1 COMPANY reserves the right throughout the term of the CONTRACT to make random collections of BIDDER's products at BIDDER's BASE and/ or COMPANY's Operation Base and Drilling rigs.

18.3.2 Random samples of products and drilling fluids may be taken for testing at any juncture in the supply chain from the Port of delivery to BIDDER's base to drilling rigs.

18.3.3 Quality/performance tests could include but not limited to:

- Gas chromatography/Mass spectrometry/IR-UV spectrometry
- X-Ray analysis
- Density measurements at 20°C
- Clarity, Color

- Aromatic content
- Pour Point
- Flash Point
- Rheology (Fann viscosity and kinematic viscosity)
- Purity
- PH
- Any other tests characterizing products.

18.3.4 COMPANY may at its discretion conduct independent laboratory analysis. Sample testing is for COMPANY's account. However, in the event that the products fail to meet the approved standard(s) the cost of the testing will be for Company's account.

The governing standards are as follows:

- American Petroleum Institute and ISO, ASTM, BS, EC, OCMA
- COMPANY Standards if more stringent or specific.
- BIDDER Quality Assurance Manual and Quality Control Procedures with specific criteria for all of BIDDER's products.
- In addition, COMPANY reserves the right to use any standard which is deemed to be adequate to assess the purity of a product.

18.3.5 BIDDER shall maintain and update at BIDDER's Base and at the rigs site a full set of:

- MSDS sheets (English language) and products data sheet for all products supplied to COMPANY.
- Procedures for Handling and lifting.
- Pre-Delivery Inspection of Products

18.3.6 All BIDDER's products shall be fully inspected by BIDDER prior to loading. The inspection shall include the quantities in relation to the required load out list, weight or volume checks, the packaging and marking of the products and Material Safety Data Sheets (MSDS).

#### **18.4 Non-Conformance products and/or Equipment:**

18.4.1 BIDDER shall replace any non-conforming products and or EQUIPMENT immediately without causing any delay to COMPANY operations.

18.4.2 All costs incurred in returning non-conforming products and or EQUIPMENT to BIDDER's base, and shipping the replacement products and or EQUIPMENT shall be at BIDDER's own expenses. Any cost incurred by the COMPANY for transportation from rig sites or COMPANY Storage base shall be charged to BIDDER.

18.4.3 In the event BIDDER fails to supply the requested products and/or EQUIPMENT in due time either in amount or quality as per this CONTRACT, the COMPANY reserves the right to purchase from a third-party supplier the required products and/ or EQUIPMENT. Without prejudice the right of COMPANY under the CONTRACT and/ or at laws, BIDDER shall be back charged at the price difference.

18.4.4 COMPANY may require the BIDDER to provide an equivalent product, of equal or greater specification, from any source at a cost equal to or less than the original product CONTRACT price.

18.4.5 For any non-conformance, BIDDER shall inform COMPANY of:

- The origin of the product and or EQUIPMENT.
- SHE data.
- Traceability.
- Composition of the product.
- Reason for the failure to comply.
- Action taken.

## **18.5 Product Specifications**

18.5.1 As the following tables show, BIDDER is required to make full disclosure of his manufacturers and suppliers for each individual product.

18.5.2 The manufacturers and suppliers stated may not be changed throughout the duration of the CONTRACT without the written consent of COMPANY.

18.5.3 BIDDER shall disclose the procedures with which the products are QA/QC checked and give the reference of the procedures.

18.5.4 The following products tables shall be completed with all the required information. The table can be amended if required to include criteria used as QAQC control. **Regarding Environmental classification rating of synthetic oil based mud mentioned under Column#9 in the Product table**, the formulation should be low toxic having composite toxicity of 96 hrs. LC-50 values at greater than 30,000 mg/l as per mysid toxicity or toxicity test conducted on locally available sensitive sea species at MOEF&CC approved National laboratories such as NEERI, NIO or equivalent.

PRODUCT NAME	PRODUCT NAME AS STATED IN INVOICE	REQUIRED DATA	TEMP LIMIT °C	CRITERIA FOR QC	COUNTRY OF ORIGIN	SELF LIFE	BIDDER TESTING PROCEDURE	ENVIRONMENTAL CLASSIFICATION RATING of SOBM
SYNTHETIC BASE OIL		FLASH POINT						
PRIMARY VISCOSIFIER								
SECONDARY VISCOSIFIER								
PRIMARY EMULSIFIER		70 % min active component						
SECONDARY EMULSIFIER		50 % min active component						
PRIMARY F/L AGENT-SBM		95 % min active component						
SECONDARY F/L AGENT-SBM		98 % min active component						
THINNER FOR FLAT END RHEOLOGY FOR SOBM								
RHEOLOGY MODIFIER FOR SOBM								
HT VISCOSIFIER								
HT EMULSIFIER								
HT F/L AGENT								

HT WETTING AGENT								
CALCIUM CHLORIDE		(97%PURE-MINIMUM)						
BARITE		API: SG4.1(Min) + Heavy Metal						
BIOCIDE		50 % min active component						
CORROSION INHIBITOR 1		50 % min active component water content						
CORROSION INHIBITOR 2 _AMINE BASED		55 % min active components water content						
HEC		90 % min purity						
HEC LIQUID		30%min purity						
Pot.Chloride (KCl)		97% min purity						
CELLULOSE FIBRE -LCM (ALL GRADES)								
GRAPHITE		PSD						
Bridging Agent -marble -all grades (F,M,C)		PSD						
LCM -CaCO3 All grades (F,C &M)		PSD						
LIME HYDRATED 96% PURITY		96% min purity						
LOW SHEAR RATE MODIFIER SBM		70 % active components						
MUTUAL SOLVENT		50 % min purity						
NACL PURIFIED 99%		99% purity						
OIL WETTING AGENT		95 % active components						
OIL WETTING AGENT HT		% active components						
GELLING AGENT FOR LOW END RHEOLOGY		50% active components						
OIL GELLING AGENT (1) FOR PACKER FLUID INSULATION		98 % active components						
ORGANOPHILI C CLAY 1		98 % active components						
ORGANOPHILI C CLAY 1 HP/HT		98 % active components						

ORGANOPHILIC CLAY 2		98 % active components						
ORGANOPHILIC CLAY 2 HP/HT		98 % active components						
OXYGEN SCAVENGER 1		60 % min active components						
OXYGEN SCAVENGER 2		65 % active components						
POTASSIUM FORMATE		% purity						
RHEOLOGY MODIFIER SBM		70 % active components						
RIG DETERGENT		N/A						
SECONDARY EMULSIFIER 1		70 % active components						
SECONDARY EMULSIFIER 2		N/A						
SODA ASH		98 % purity						
SOLVENT		35 % min active components						
STARCH MODIFIED		API						
THINNER FOR SOBM		95 % active components						
CALCIUM BROMIDE		14.2 PPG						
WELL CLEAN UP FLOCCULANT		70 % min active components						
WELL CLEAN UP SURFACTANT		55 % min active components						
WETTING AGENT		95 % active components						
XCD POLYMER		100 % active components						

~~Add more rows if any other chemical is added by the bidder.~~

~~Note to bidder:-~~

Tentative Lists of Chemicals for 4 Nos. of wells Loc: DGSA, DGSB, DGSC & DGSD

SL No	Name of the Chemicals	UNIT	TOTAL QUANTITY	REMARKS
1	Barite	MT	5200	1MTor 1.5MT/JUMBO
2	Bentonite	MT	650	1MT/JUMBO
3	CMC-LVG	Bags/Kg	378	25KG/BAG
4	CMC-H (Extreme high viscosity in sea water)	Bags	420	25KG/BAG

5	XC-Polymer	Bags	420	25KG/BAG
6	PAC-R	Bags	420	25KG/BAG
7	PAC-L	Bags	800	25KG/BAG
8	Caustic Soda (NaOH)	Bags	80	25KG/BAG
9	Caustic Potash (KOH)	Bags	80	25KG/BAG
10	PHPA	Bags	430	25KG/BAG
11	Sodium Bicarbonate	Bags	80	25KG/BAG
12	Modified Guargum	Bags	420	25KG/BAG
13	HEC	Bags	420	25KG/BAG
14	Base Oil (MOEF Compliance, NEERI /NIO/Certified Govt institute approved)	BBL	14630	
15	Chemical for Brine phase Salinity CaCl <sub>2</sub> anhydrous purity by 96%(min)	Bags	8459	25KG/BAG
16	Fluid Loss Additive	Bags	2275	25KG/BAG
17	Fluid Loss Additive-HPHT	Bags	2275	25KG/BAG
18	Viscosifier -1	Bags	3035	25KG/BAG
19	Viscosifier -2(HPHT)	KG	22245	DM, (55 GA)
20	Emulsifier-1	LITER	104158	DM, (55 GA)
21	Emulsifier-2(HPHT)	LITER	22245	DM, (55 GA)
22	Lime	Bags	10763	25KG/BAG
23	Wetting Agent	KG	44282	DM, (55 GA)
24	Barite	MT	1722	BG,1MT/1.5MT
25	CaCO <sub>3</sub>	Bags	6315	25KG/Sx
26	Fluid Loss Control Agent	KG	5405	DM, (55 GA)

Tentative List of Brine Chemicals

Sl No	Description	UOM	Quantity	Remarks
1	Sodium Chloride(10ppg)	MT	700	25KG/Sx
2	Potassium Formate	MT	2000	25KG/Sx
3	Calcium Bromide (14.2ppg)	BBL	2500	IBC
4	Calcium Chloride + Calcium Bromide (15ppg)	BBL	2500	IBC

5	Corrosion Inhibitor (acidic base)	KG	4000	
6	Oxygen Scavenger	KG	4000	DRUM/ BAG
7	Biocide	LITER	2000	DRUM/BAG
8	H2S Scavenger	KG	1000	DRUM/BAG
9	CaBr <sub>2</sub> powder	MT	100	25KG/BAG OR 50KG/BAG

#### Tentative Lists of contingency and Special Chemicals with Quantity

Sl No	Description	UOM	Quantity	Remarks
1	Kwik seal (F, M, C) or Equivalent	KG	10000	Can/Drum/Sx
2	Mix-II (F, M, C) or Equivalent	KG	10000	Can/Drum/Sx
3	Walnut Shell (F, M, C)	KG	5000	Can/Drum/Sx
4	MICA	KG	5000	Can/Drum/Sx
5	Gel Flakes	KG	5000	Can/Drum/Sx
6	SAPP	KG	1000	Can/Drum/Sx
7	TEEPOL	LITER	1000	Can/Drum/Sx
8	Saw Dust	KG	5000	Can/Drum/Sx
9	Oxygen Scavenger	LITER	8316	Can/Drum/Sx
10	Biocide	LITER	3000	Can/Drum/Sx
11	Defoamer	LITER	3000	Can/Drum/Sx
12	Corrosion Inhibitor Brine	LITER	8316	Can/Drum/Sx
13	Corrosion Inhibitor Mud	LITER	6237	Can/Drum/Sx
14	H2S Scavenger for brine	KG	2000	Can/Drum/Sx
15	Polyamine based Shale stabilizer	KG	100000	Can/Drum/Sx
16	Cross linked based non-damaging LCM Pill	LITER	18900	Can/Drum/Sx
17	Oil wetting agent for SOBMs	KG	7000	Can/Drum/Sx
18	Rheology modifier for SOBMs	KG	6000	Can/Drum/Sx
19	Low Temperature Clouding Glycol (Cloud point 25 to 35 Deg <sup>0</sup> C)	LITER	5000	Can/Drum/Sx
20	Thinner for Flat Rheology SOBMs	LITER	7000	Can/Drum/Sx
21	Organophilic clay	KG	20000	Can/Drum/Sx
22	SOBMs HPHT Fluid loss Reducer	KG	40000	Can/Drum/Sx
23	Calcium Chloride	KG	40000	Can/Drum/Sx
24	Calcium Carbonate	KG	40000	1MT /JUMBO BAG
25	Acid Soluble LCM	KG	20000	Can/Drum/Sx

26	Stuck Pipe Fluid/Spotting Fluid for SOBM	LITER	10000	Can/Drum/Sx
27	Zinc Carbonate	KG	8000	Can/Drum/Sx
28	Potassium Chloride (WBM)	KG	150000	Can/Drum/Sx
29	Starch (WBM)	KG	10000	Can/Drum/Sx
30	Defoamer for WBM	LITER	2000	Can/Drum
31	Mono Ethylene Glycol	LITER	5000	Can/Drum/Sx
32	Magnesium Oxide	MT	2000	Can/Drum/Sx
33	Clean up Chemical Package	BBL	2000	Can/Drum/Sx
34	CMC (Extreme High Viscosity in Sea Water)	KG	5000	25KG/BAG
35	Monoethanolamine e.g. PTS 200	LITER	5000	Can/Drum
36	Polyamine	LITER	50000	Drum/CAN
37	PAC (SL)	KG	5000	25KG/BAG
38	Soda Ash	KG	2000	Can/Drum/Sx
39	HCl	LITER	1000	Can/Drum/Sx
40	Ammonium Bi Fluoride	KG	1000	Can/Drum/Sx

Notes to Bider: The quantities of mud chemicals, brine, brine chemicals, contingency, Special Chemicals, Synthetic base Oil and SOBM related chemicals mentioned in the chemical lists are indicative and intended for bid evaluation purposes. However, if the actual requirements during operations exceed the specified quantities, the bidder is responsible for supplying the additional chemicals as per well requirements, ensuring uninterrupted well operations.

<b>Formulation of Mud properties for 12.25" Hole with SOBM System at 65 Deg C</b>			
<b>SL No</b>	<b>Mud Parameters</b>	<b>Company's Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
1	Density (ppg)/Sg. Gr	<b>11 PPG</b>	
2	PV (cp)	<b>ALAP</b>	
3	YV (Lbs/100ft2)	<b>15 - 25</b>	
4	Gel 0'/10' ( Lbs/100ft2)	<b>6 -12 / 15 -25</b>	
5	O: W	<b>70:30</b>	
6	HPHT Fluid Loss cc/ 30 min, 300 Deg F	<b>&lt; 5 cc</b>	
7	Emulsion Stability Volt at 120 Deg F	<b>&gt; 600</b>	
8	WPS (Chloride) g/l	<b>180±10</b>	
9	6 RPM	<b>10 to 16</b>	
10	3 RPM	<b>8 to 14</b>	
11	Gel 0'/10'/30' ( Lbs/100ft2)	<b>10-15/15-20/&lt; 30</b>	
12	Free Lime (lb/bbl.)	<b>&gt; 5</b>	
13	True Yield Stress (@65 0C = 2X3rpm) -6rpm	<b>&gt; 8</b>	
14	Cake thickness mm	<b>&lt; 1</b>	
15	Salinity in %	<b>24 % -30%</b>	
<b>Formulation of Mud properties for 8.5" Hole with SOBM System 120 Deg C (for Two wells)</b>			
<b>SL No</b>	<b>Mud Parameters</b>	<b>Company's Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
1	Density (ppg)/Sg. Gr	<b>14 PPG</b>	
2	PV (cp)	<b>ALAP</b>	
3	YV (Lbs/100ft2)	<b>15 - 30</b>	
4	Gel 0'/10' ( Lbs/100ft2)	<b>6 -12 / 15 -25</b>	
5	O: W	<b>75:25:00</b>	
6	HPHT Fluid Loss cc/ 30 min, 300 OF	<b>&lt; 3 cc</b>	
7	Emulsion Stability Volt at 1200F	<b>&gt; 800</b>	
8	WPS (Chloride) g/l	<b>180 - 220</b>	
9	3 RPM	<b>8 to 14</b>	
10	6 RPM	<b>11 to 16</b>	

11	Gel 0'/10'/30' ( Lbs/100ft2)	<b>10-15/15-20/&lt; 30</b>	
12	Free Lime (lb/bbl)	<b>&gt; 5</b>	
13	True Yield Stress (@65 0C = 2X3rpm) -6rpm	<b>&gt; 8</b>	
14	Cake thickness mm	<b>&lt; 1</b>	
15	Salinity in %	<b>24 % -30%</b>	
<b>Formulation of Mud properties for 8.5" Hole with SOBM System at 160 Degree C (For Two wells)</b>			
SL No	<b>Mud Parameters</b>	<b>Company's Specs</b>	<b>Bidders Parameters AHR 16 hrs at BHST</b>
1	Density (ppg)/Sg. Gr	<b>14 PPG</b>	
2	PV (cp)	<b>ALAP</b>	
3	YV (Lbs/100ft2)	<b>15 - 30</b>	
4	Gel 0'/10' ( Lbs/100ft2)	<b>6 -12 / 15 -25</b>	
5	O: W	<b>80:20:00</b>	
6	HPHT Fluid Loss cc/ 30 min, 300 OF	<b>&lt; 3 cc</b>	
7	Emulsion Stability Volt at 1200F	<b>&gt; 800</b>	
8	WPS (Chloride) g/l	<b>200 - 250</b>	
9	6 RPM	<b>8 to 11</b>	
10	7 RPM	<b>11 to 16</b>	
11	Gel 0'/10'/30' ( Lbs/100ft2)	<b>10-15/15-20/&lt; 30</b>	
12	Free Lime (lb/bbl.)	<b>&gt; 5</b>	
13	True Yield Stress (@65 0C = 2X3rpm) -6rpm	<b>&gt; 8</b>	
14	Cake thickness mm	<b>&lt; 1</b>	
15	Salinity in %	<b>24 % -30%</b>	

## MUD LOGGING SERVICES

### 1.0 SERVICE PROVIDER'S EXPERIENCE

- 1.1** The Bidder should have a minimum of five years of experience in providing Mudlogging services to Drilling/E&P Companies with at least three (03) years in offshore areas.
- 1.2** The Bidder should also have the experience in providing Mudlogging services to **at least 2 Shallow water Wells (WD<100 meters)** and should have executed at least one contract for providing all the Mudlogging services mentioned under Scope of Work in offshore area **in the last 07 years** reckoned from original bid closing date.

Towards the same, has the bidder submitted along with bid, the relevant supporting documents in respect of satisfactory execution of each of the contracts.

### 2.0 SERVICE REQUIREMENTS

#### A. BASIC MUDLOGGING

The Successful Bidder shall provide Mud Logging Unit and services along with required manpower, equipment, and software in full operating condition suitable to work in shallow offshore locations around Kesanapalli / Odalarevu areas of Krishna-Godavari Basin having water depths ranging from 5 to 15m. Mud Logging should be deployed at development drilling wellsites for Drilling Safety and Geological Surveillance. The set-up of mudlogging unit should be able to acquire, display, process, store as well as transmit real-time data. Bidder will, as a minimum, adhere to the latest international standards and standard operating procedures. The Bidder should Rig up and calibrate all equipment, gas detection panels and sensors and provide mud logging services including but not limited to the following:

#### I. Drilling Safety:

- i. Continuous monitoring of Drilling parameters, Mud volumes, Mud Flow, Mud properties; and report any abnormal behavior of drilling & Mud parameters.
- ii. Maintain pit volume sheets, trip sheets, and kill sheets. Provide summary of mud losses and gains regularly via daily reports.
- iii. Continuous Monitoring and reporting of well hydraulics using Mudlogging hydraulics package calculating pressure drops in mud circuit, jetting velocity, bottom dynamic pressure, and Equivalent Circulation Density.
- iv. Immediate detection and reporting of high gas shows, connection gases, cavings, influxes, Mud losses, vibrations, mechanical failure, and pressure changes in drill string through observed drilling parameters.

**II. Geological Surveillance:**

- i. Collection, examination, and description of drill cuttings / core chips including fluorescence using standard color charts and procedures as per Depth Data & Drilling Policy (DDDP) provided by OIL.
- ii. All Drill cutting and fluids (gas, oil, water, mud, etc.) samples collected at the wellsite while drilling/logging or production testing operations to be labelled, packaged robustly using specified storage and packaging material and kept ready for onward transportation to Company warehouse, ensuring that the samples are protected from damage as much as possible during transport.
- iii. Carry out calcimetry & Shale density and report same with routine reports and on the Mudlog.
- iv. Compute, Monitor and regularly report Pore Pressure and Fracture Pressure using Drilling parameters, D-Exponent and shale density data while drilling.
- v. Assist Company representatives in recovery, sampling, description, and packaging of any conventional core / side wall core taken during the drilling and wireline logging operations of the well.

**III. Gas Data Acquisition and Interpretation:**

- i. Continuous recording and monitoring of Gas data recorded through Total Hydrocarbon Gas Detector, Gas chromatograph and CO2 detector.
- ii. IsoTube/Geotube samples to be collected at all the significant gas show in consultation with Company representative.
- iii. Identification and reporting connection gases, recycled gases, and trip gases.
- iv. QC, Analysis and Interpretation of total gas, chromatograph data (C1-C5) acquired while drilling along with background gases.

**IV. Data Reporting & Transmission:**

- i. Regularly prepare and provide daily Reports, data, and logs as well as Final Well Report as specified under Paragraph 16 about Reporting.
- ii. Collection of LWD-MWD and wireline data; preparation of Composite Logs after integrating LWD/wireline data with mudlogging data.
- iii. Transmission of Real-time data from wellsite to OIL office including supply, installation, operation, and maintenance of necessary hardware/ software interface required for data transmission.

**B. ADVANCED MUDLOGGING (Optional Services)**

**I. Realtime Pore Pressure Prediction**

Formation pressure analysis and monitoring services shall be carried out in real time. Pore pressure services shall include but not limited to real time pore pressure estimation of drilled section and forecasting of sections to be drilled along with identification of potential zones with abnormal formation pressure, predicting kicks & mud loss zones, and other well control challenges.

**II. Early Kick & Loss Detection**

Early Kick & Loss detection services utilizing accurate flow metering device for Realtime detection gains or losses shall be required for fastest detection of fluid influx or loss in the well. Early Kick detection shall include but not limited to quick detection of kicks & mud loss events monitoring the changes in Mud flows, Mud Density, pit levels, abnormal flowbacks and Connection Flows using dedicated hardware and software.

### **III. Advanced Gas Detection System**

Advanced Gas Detection system for continuous extraction and Gas Chromatography analysis will be required to be deployed on requirement basis comprising of High-resolution chromatography for identification and analysis of C1 to C8 including aromatic & cyclic components. Software for advanced Gas Detection should accommodate different dedicated channels for Total Gas out, Total Gas in and the difference between them (delta) with synchronized chromatograph analysis for both gas out as well as gas in should be recorded and displayed.

## **3.0 TECHNICAL SPECIFICATIONS**

### **3.1 MUD LOGGING UNIT**

- i. Mud logging Services is to be provided through an online computerized Mud Logging Unit for continuous online data acquisition, display process and storage of various drilling, mud, Gas, Geological and calculated parameters. The unit shall be air conditioned and pressurized and certified for placement in Zone 1 hazardous area. LWD and MLU data shall be combined to stream as real time WITSML.
- ii. The Mud Logging Unit shall be suitable for Jackup drilling unit of water depth capability of up to 50m.
- iii. The Contractor shall provide all equipment, materials, consumables, literature etc. in the Mud Logging Unit and shall ensure good industrial quality. The Contractor at its cost shall provide suitable accessories and mountings for all sensors and detectors and to be compatible with provisions of the rig. Contractor to ensure providing MLU equipment and sensors as per the appropriate safety standards and certifications at par with the rig's requirement.
- iv. The Contractor must provide environmentally suitable Mud Logging Unit complete with all intrinsically safe and explosion proof motors, ATEX certified (or equivalent) sensors and detectors having digital display, audio/visual alarm.
- v. **Dimension:** Approx. 20' X 08' X 08'

- vi. **Material:** G.I Sheet, preferably corrugated with internal laminates, moth proof coating and vinyl flooring, skid mounted/steel frame base, suitable for lifting by Crane.
- vii. **Weight: 13 ton approx. or as per ISO standard**
- viii. Details of all certifications for the unit and any lifting equipment to be provided in advance of mobilization.
- ix. **Power Supply:** Company shall provide power to the MLU from the drilling rig. Since availability of stabilized power supply from rig is a big constraint because of high voltage spikes and harmonics during operation, Contractor is required to provide necessary equipment etc. to handle the spikes and harmonics. MLU is required to be equipped with isolation transformer and online UPS system having modern filter circuits (linear power supply for all the sensitive equipment connected with MLU) to eliminate spikes and harmonics during operation. Company will not be responsible for damage to any equipment/computer system of the MLU due to spikes and harmonics arising out of power supplied from rig. The MLU must be equipped with 3-phase transformer, isolation transformer etc. as required to obtain required power output and to take care of high voltage spikes.

**3.2 MUDLOGGING EQUIPMENT QUANTITIES:**

The mud logging unit provided by the service provider should be equipped with but not limited to the following:

S. No.	Equipment Description	Quantity*
A	MUDLOGGING UNIT	
A1	Certified for placement in Zone 1 Hazardous area	1
A2	Cabin Insulation	
A3	Air-conditioning (02 nos. new AC)	
A4	Pressurization System	
A5	LEL Gas Detector	
A6	Smoke Detectors	
A7	H <sub>2</sub> S Detectors	
A8	Automatic shutdown	

A9	UPS with minimum 30 minutes of power backup	
B	SENSORS WITH EXPLOSION PROOF JUNCTION BOXES	
B1	Hook Position / Depth	1
B2	Hook Load / Weight on Bit	1
B3	Rotary Speed (RPM)	1
B4	Rotary Torque	1
B5	Standpipe Pressure (15K)	1
B6	Cementing Unit Pressure (15K)	1
B7	Casing Pressure (15K)	1
B8	Pump Stroke Counter (SPM)	3
B9	Pit Level Sensors (Sonic)	6
B10	Mud Density IN & OUT	2
B11	Mud Temperature IN & OUT	2
B12	Mud Conductivity IN & OUT	2
B13	Flow Out Rate	1
C	GAS DETECTION SYSTEM	
C1	Explosion proof Electric or Pneumatic Constant Volume Degasser	1
C2	Total Hydrocarbon Gas Detector	1
C3	Gas Chromatograph	1
C4	99% Pure Methane mixture cylinders (Certified) with connectors and injection lines for Total Hydrocarbon Gas Detector Calibration (At least 3 concentrations)	2
C5	C1-C5 mixture Gas cylinders (Certified) with connectors and injection line for Chromatograph Calibration (At least 2 concentrations)	2
C6	Air Compressor / Hydrogen Generator / Hydrogen or Helium Cylinder for Carrier Gas	1
C7	CO <sub>2</sub> Detector	1
C8	H <sub>2</sub> S Sensors with external alarm (visual and audible)	4
D	DATA ACQUISITION & REPORTING	
D1	Data Acquisition Panel	1
D2	Set of Computers to Acquire, Process, Analyse and Transmit Realtime mudlogging data.	1

D3	Offline computers for Data Engineer and Mud logger	1
D4	Licensed versions of Mudlogging Software suite capable of Acquiring, processing, Analysing and Transmitting mudlogging data in Real-Time, including but not limited to the following modules: 1. Data Acquisition 2. Sensor & Gas Panel Calibration 3. Hydraulic Package 4. Stick & Slip Analysis 5. Well Deviation. 6. Log plotting in MD as well as TVD scales. 7. Gas data Analysis and Interpretation 8. Pore Pressure Estimation 9. Surge & Swab 10. Kick monitoring and control. 11. Licensed versions of Reporting software including Microsoft Office (2019 or higher version), Adobe Acrobat (PDF writer).	1
D5	One Real Data Display for Wellsite Geologist inside Mudlogging Unit	1
D6	Explosion proof Real-Time Display for Rig Floor	1
D7	Minimum two remote display computers in wellsite offices, one each for Company man and Wellsite Geologist, capable of displaying and downloading Realtime as well as historic data.	2
D8	Software should accommodate different dedicated channels for Total Gas out, Total Gas in and the difference between them (delta) with chromatograph analysis for both gas out as well as gas in should be recorded and displayed	1
D9	The Data Acquisition system should be capable of recording, storing, and retrieving Depth data base at minimum of 0.1m interval	1
D10	The Data Acquisition system should be capable of recording, storing, and retrieving Time data base at minimum of 10 seconds interval	1
E	<b>GEOLOGICAL SURVEILLANCE</b>	
E1	Digital Microscope with Light	1
E2	Fluoroscope	1
E3	Auto calcimeter	
E4	Shale Density Kit	1

E5	Sample drying oven (OBM adapted)	1
E6	Electronic Balance	1
E7	Set of Cuttings sample processing equipment (Buckets, Mugs, Rubber Gloves)	1
E8	Rock Colour charts	2
E9	Grain Size Charts	4
E10	Resistivity Meter	1
E11	Stationery set, Geometry set, Scales and drawing materials	1
E12	IsoTubes/Geotubes Sampling Manifold with sufficient IsoTubes/Geotubes	1
E13	Set of Sieves including sizes 5mm, 2mm & 68-90micron	2
E14	Set of Geological equipment for cuttings analysis (including forceps, dissecting needles)	1
E15	Set of Chemicals (including but not limited to Hydrochloric Acid, Nitric Acid, Trichloroethane, Acetone, Phenolphthalein, Barium Chloride, bactericide, Alizarin Red etc...)	1
E16	Stainless Steel Sample processing trays	50
E17	Set of Laboratory equipment (including beakers, pipettes, test tubes, small bottles with droppers for chemicals, watch glasses, porcelain spot trays, watch glasses, etc.)	1
E19	Toolbox	1
E20	Hubco Bags with Inner Plastic bags for Unwashed Samples (Approx. 1000 Samples per Well) x 3 Sets	Sufficient for 3 wells of 4500m each
E21	100 ml Plastic Jars for Wash & dried Samples (Approx. 1000 Samples per Well) x 2 Sets	
E22	Mud Sample Cans (500 ml) (Approx. 50 Samples per Well) x 1 Set	
E23	Geochemical Sampling jars (Approx. 50 Samples per Well) x 1 Sets	
E24	Samples Trays (Approx. 1000 Samples per Well) x 1 Set	

E25	Set of Samples Packing Materials including Plastic Crates, wooden pellets, Permanent Marker Pens and Paint Marker Pens aluminium foil, plastic cling wrap, wax, packing tape, gas sampling bags etc.	Sufficient to Pack above samples
F	OTHER EQUIPMENT	
F1	Colour printers for Continuous Log printing	1
F2	Off-Line Colour Printer	1
F3	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.	1
F4	Fire Extinguishers, Eye Wash Station, First Aid Kit and Safety Harness (Full-Body Type).	1
F5	Ditch Magnet of 1-meter length	1

### 3.3 TECHNICAL SPECIFICATIONS FOR SENSORS & EQUIPMENT

The Bidder must provide Mud Logging Unit with all intrinsically safe and explosion proof sensors and detectors having digital display, audio/visual alarm & external alarms. The technical specifications of the Mud Logging Unit, tools and services required are given below. Bidders must fill up their offer and Tool Specifications against OIL's required specification for each service in the matrix below and declare compliance/non-compliance to OIL's required specifications.

I	Hook Position / Depth	
a	Sensor Type	Proximity
b	Accuracy	± 0.01 m
c	Range	0 to 50 m
ii	Hook Load / Weight on Bit	
a	Sensor Type	Strain Gauge / Pressure Transducer
b	Accuracy	± 1%
c	Range	0 to 1000 Tons
iii	Rotary Speed (RPM)	
a	Sensor Type	Proximity
b	Accuracy	± 1% (+/- 1 RPM)

c	Range	0 to 200 RPM
iv	Rotary Torque	
a	Sensor Type	Electric / Hydraulic
b	Accuracy	± 1%
c	Range (Electric)	0 to 1000 Amps
v	Standpipe Pressure, Cementing Unit Pressure & Casing Pressure	
a	Sensor Type	Electric/Hydraulic/Pressure Transducer
b	Accuracy	± 1%
c	Range	0 to 15000 psi
d	Linearity	0.5%
vi	Pump Stroke Counter (SPM)	
a	Sensor Type	Proximity
b	Accuracy	± 1 Stroke
c	Range	0 to 200 SPM
vii	Pit Level Sensors	
a	Sensor Type	Ultrasonic
b	Accuracy for Mud Pits	± 1.25bbl in a tank of 2.5mx 2m
c	Accuracy for Trip Tank	± .5 bbl in a tank of 2.5m x 2m
d	Range	0 to 700 bbl per pit
viii	Mud Weight In and Out	
a	Sensor Type	Coriolis sensors
b	Accuracy	± 0.5%
c	Range	6 to 24ppg
ix	Mud Temperature In and Out	
a	Sensor Type	Platinum Resistance
b	Accuracy	± 1%
c	Range	0 to 150°C
x	Mud Conductivity In and Out	
a	Sensor Type	Toroidal Transformer

b	Accuracy	± 1%
c	Range	0 to 300 m Mhos/Cm
xi	Flow Out Rate	
a	Sensor Type	Sonic / Electromagnetic
b	Accuracy	(+/-1%)
c	Range	0 to 100% flow.
xii	Autocalcimeter	
a	Detection Range	0 to 100%
b	Sensitivity	± 1%
c	Balance	As suitable

### 3.4 DATA ACQUISITION SYSTEM

- i. Mudlogging data acquisition system including hardware and Software should be in line with latest international industrial standard practice and capable of providing all the services as mentioned in Paragraph 8.0 SCOPE OF SERVICES.
- ii. Mudlogging data acquisition system should be capable of acquiring, recording, processing, storing, and printing the data being acquired through various sensors and gas panels in real time.
- iii. All the Mudlogging equipment including sensors and gas panels should be calibrated in presence of Company Representative before starting operations at any wellsite, and the calibration records should be submitted to Company representative.
- iv. The data monitoring system should be equipped with Audio/Visual alarms alerting at any abnormal changes or fluctuations in Realtime data parameters.
- v. The Data Acquisition system should be capable of recording, storing, and retrieving Depth data base at minimum of 0.1m interval.
- vi. The Data Acquisition system should be capable of recording, storing, and retrieving Time data base at minimum of 10 seconds interval.
- vii. The mudlogging system should be capable of retrieving the stored data for analysis and regular or spot reporting as per Depth Data Drilling Policy given by OIL.

- viii. The service provider will be responsible for Installation, operation and Maintenance of necessary hardware and software for transmission of all data acquired by the mud logging unit and third-party data in REAL TIME (as in WITSO or higher version) from well site to specified Operator Locations. Necessary software(s) with multiple user ids (minimum 20 nos.) must be provided for remote viewing of mud logging and third-party data in real time at operator's office/remote location with scroll back as well as data downloading facility for historic data.
- ix. A state-of-art computer systems of recent generation or higher shall be installed in the mudlogging unit. The On-line and Off-line PC should be compatible for interchange and loaded with both on-line software and off-line software. At least one back-up computer loaded with all the online as well as offline software should be available in the mudlogging unit.
- x. Software should have provisions for import/export of digital data in standard formats such as ASCII and LAS.
- xi. Reporting software should be capable of generating output reports in formats like pdf or MS- word, excel, PowerPoint etc.
- xii. Technical Specifications for all the Computers to be deployed in Mudlogging units are as follows:

1	Processor	Intel Core I7, 3.4 GHz, 8 MB L2 Cache or higher
2	RAM	16 GB or higher
3	Hard disk	1 TB (or more)
4	Video card	Single head SVGA card 1920 x 1080
5	USB	USB 3.0 and above
6	Monitor	23" Desktop LED monitor
7	Off-line colour printer	For printing, scanning, photocopying reports, graphics of minimum 600 dpi.

### 3.5 GEOLOGICAL SURVEILLANCE

#### 3.5.1 Sample Collection & Packaging:

Tentative Sampling program for wells in this development drilling campaign is as follows:

Sl. No.	ITEM	Quantities	No. of Sets	Containers#	Frequency*
1	Unwashed samples	500 gms	Three (03)	Hubco bags with Plastic liners	5m in non-Reservoir Section 3m in reservoir section
2	Wash and dried samples	100 gms	Two (02)	Plastic jars (100ml)	5m in non-Reservoir Section 3m in reservoir section
3	Mud Sample	500 ml	One (01)	Glass bottles	Every 250m + Beginning and TD of each hole section.
4	Geochemical Samples	500 gms	One (01)	Metal Tins (500ml)	Every 50m across reservoir section
5	IsoTubes/ Geotubes Sampling	One Isotube/ Geotube per Sample	One (01)	Isotubes/ Geotubes with manifold	For collection of Gas samples at major gas shows while drilling as and when required
6	Final Packing for Transportation of all cutting and mud samples	As required		Plastic Crates, Marker Pens, Packaging tapes and other material	

**Notes:**

- a. All consumable required for sampling should be provided by the mudlogging service provider at no additional cost.

- b. The samples Should be collected in container and quantities as specified in above table.
- c. Sampling should be carried out as per the sampling program given in OIL's Depth Data Drilling Policy. Actual Sampling frequency may slightly vary depending upon ROP as well as subsurface geology encountered while drilling. Additional samples like bottoms up samples at coring points casing points or samples from the mud cleaning equipment, etc. should be collected upon the request of Company Representative.
- d. During fast drilling, the Wellsite Geologist may vary the sampling interval so as to collect optimized number of samples.
- e. Drill cutting samples from water base mud should be collected utilizing at least two or more sieves and cleaned them under running tap water thoroughly enough to remove the mud film but not washing away the soft and fine drill cuttings.
- f. All the containers, bags and boxes used for collecting and storing the drill cutting samples, core chip samples, mud samples collected while drilling operations must be appropriately labelled with well name, depth, Sample type, Date and time using permanent marker pens; then boxed and stored in plastic crates to be ready for shipment.
- g. The sample package should be accompanied by a manifest with details of depths, sample types, sets, approximate weight, and quantities of the samples collected.

#### 3.5.2 Lag time:

- Mudlogging crew should input correct details of the drill string and other lag time related parameters into the system for automatic calculation in the system.
- Lag time should be verified at least once a week by manual calculations.
- Lag test for hole diameter enlargement should be carried out every 200m using an appropriate tracer material such as Calcium Carbide or rice; and corrections should be applied in mudlogging system if hole enlargement is observed from the Lag test results.

### 3.5.3 Lithology Descriptions:

Systematic Description are required to be done for collected drill cuttings, core chips and sidewall core samples following industry standards and utilizing standard colour charts, grain size charts & appropriate chemical tests. While describing the drill cuttings samples, a single layer of representative sample should be used for lithological descriptions. Foreign material such as mud additives, loss circulation material, cement and pipe dope, bit scraps should be identified and mentioned under remarks columns of the sample description sheets. Cavings in drill cuttings should be identified, mentioned and monitored for their increasing percentages. If size or percentage of cavings is found to be increasing beyond 10%, it should be immediately reported to the company representative.

Microscopic examination shall be carried on all the samples by utilizing Digital microscope to describe the lithological characteristics. Description of rock types, percentages and visual characteristics using standard classification system, comparison chart to determine grain size, sorting, roundness, Visual porosity, Fossil identification, Accessory mineral identification (calcite, clay, glauconite, silica, metallic minerals etc.).

### 3.5.4 Digital Microscopy System: Required specifications are as follows:

Zoom stereo microscope body with zoom range 4:1. Microscope shall be linked to digital camera and computer for capturing, storing the sample images and for transmitting the data to base. Microscope shall be capable for displaying sample image over monitor.

Basic magnification continuously variable between 8X and 32 X (minimum) without extra objective and eyepieces. Built-in binocular tube with 10X/20 mm fixed or focusable eyepieces that cover large areas of sample 25 mm to 6 mm (minimum). Resolution up to 170 Lp/mm (minimum)

Integrated LED illumination for reflected and transmitted light. Light quality homogenous with variable light intensity control. Additional optic fiber illuminators are also preferable with spare bulbs.

Microscope should be equipped with dedicated phototube, digital camera & fitting for Digital photomicrography (minimum 5MP digital imaging) with colour bar and grain size reference for all images. Microscope should have facility to transfer image to online computer and logs.

Note: Documentary evidence in support of the microscope specification should be enclosed with the technical bid.

#### 3.5.5 Fluoroscopy:

All the cutting and core chip samples must be examined under fluoroscope to describe the nature and intensities of Oil Shows and described using following criteria:

- Odor
- Direct Fluorescence
- Solvent Cut Fluorescence
- Residual Fluorescence
- Natural Fluorescence

Specifications for Fluoroscope: The Fluoroscope should have minimum two UV tubes of different wave lengths and one white tube with guarded viewing glass. The tube arrangement shall be detachable. Sample chamber doors on left and right side with opening size of 12 cms. X 12 cms. Each tube shall have separate on-off switch. Bulb section to be detachable for use in scanning of cores.

#### 3.5.6 Shale Density

Shale Density measurement should be carried out on shale cuttings every at interval of 10m by utilizing appropriate shale density apparatus. The results and Shale Density Plot of shale density studies should be accordingly interpreted and incorporated in the final well report.

3.5.7 Flow back finger printing, for quick detection of well ballooning, volume variation should be provided.

3.5.8 Chemicals and Material Safety Data Sheets (MSDS):

Chemicals required for geological studies should be safely stored in designated cool and dry space inside Mudlogging unit. The chemical storage should be properly labelled, and chemicals should be handled with due care following instructions as given in their Material Safety Data Sheets MSDS so as to avoid any safety incidents. For each chemical, laminated copies of respective MSDS MUST be handily available in the mudlogging unit for quick reference.

### 3.5.9 Drying Facility

The Mudlogging unit should be equipped with drying oven for drying of sample cuttings. The Oven should have space for drying at least ten sample plates / trays of up to 6” diameter / length at a time. Drying oven must be certified for drying cutting samples collected from Oil base mud.

## 3.6 GAS DETECTION SYSTEM

Mudlogging Unit should be equipped with latest Gas detection system comprising of but not limited to Gas Trap, Shaker to Unit Sample lines, moisture filters, pneumatic control panel, Total gas detector, Chromatograph & CO2 detector. Mudlogging software should also be capable of recording and storing calibration as well as drilling gas data continuously as specified below.

### 3.6.1 Technical Specifications for Gas Detection Equipment:

1	Total Hydrocarbon Gas Detector	
a	Detector type	Flame ionization detection (FID)
b	Accuracy	± 5% for the whole evaluation range.
c	Range	0 to 100%
d	Resolution	10 ppm.
e	Sampling mode	Automatic / manual
f	Calibration Gas	Minimum 3 concentrations of CH <sub>4</sub> gas (99.9% pure)
2	Gas Chromatograph	
a	Detector Type	Flame ionization detection (FID)
b	Accuracy	10 ppm
c	Range	0-100%

d	Sensitivity	1-100% (1-5ppm)
e	Sampling mode	Automatic / manual
f	Cycle time	45 sec or less
g	Components	C <sub>1</sub> to C <sub>5</sub>
h	Measurement Unit	ppm
i	Calibration Mixtures	Minimum 2 concentrations of C <sub>1</sub> -C <sub>5</sub> gas (99.9% pure)
3	H <sub>2</sub> S Detection (Four Channels)	
a	Sensor Type	Solid state semiconductor/electro-chemical sensing element
b	Accuracy	± 1 ppm
c	Range	0 to 100 ppm
d	Calibration ampoules	15 ppm and 60 ppm
iv	CO <sub>2</sub> Detection	
a	Sensor Type	Non-Dispersive Infra-red
b	Accuracy	5% of reading
c	Range	0-20 (non-diluted), 100% (Diluted 5X)

### 3.6.2 Mud Degasser system

Mud degasser system should be a Constant Volume Degasser type so as to maintain constant volume of mud during degassing process irrespective of fluctuation in mud level in flow line or any other factors including volume, flow rate. The degasser motor should have explosion proof electric or pneumatic degasser motor with agitator mounted on degasser trap, capable of extracting only gas from mud and preventing cuttings, mud, and moisture from entering the gas suction line and choking the outlet.

### 3.6.3 Carrier Gas Supply

Source for carrier gases required for Gas Panels such as air compressor, Hydrogen generator and Hydrogen or Helium gas cylinders should be safely installed or stored in the Mudlogging Unit without causing any safety hazards for mudlogging operations as well as other activities at the wellsite.

### 3.6.4 Back-up Gas Panels.

A complete set of Gas detection system including Total Gas detector and Chromatograph, Degasser and spare sample line must be installed as backup and kept ready to be switched over in case any of the gas detection system components in use fail.

#### 3.6.5 Calibration of Gas Panels.

All the peripherals, sensors, and gas detection panels to be regularly serviced and checked for calibration. Calibration of gas panels must be carried out in consultation with Wellsite / Operations Geologist and the calibration record along with comments regarding difference between actual Vs observed values should be submitted to OIL.

#### 3.6.6 Gas Data Interpretation.

Gas data acquired while drilling should be Quality controlled, analysed and interpreted regularly to differentiate the non-representative gases and identify the quality and composition of hydrocarbon in potential zones for production using appropriate gas ratio techniques such as character ratios, balance ratios, wetness ratios, C1/C2 ratios, triangular plots, and pixler plots etc.

Normalized gas curves should be computed in real time using an appropriate formula to eliminate the effect of drilling parameters such as ROP, bore hole diameter, flowrates etc.

Connection Gases along with mud weight and ECD must be monitored with care and reported immediately to the company representative.

Gas Ratio log: The log should be prepared in 1:240, 1:500 and 1:600 scale with a summary of interpretation displaying the following ratios:

1. Wetness Ratio (Wh) =  $(C2+C3+C4+C5)/C1+C2+C3+C4+C5$
2. Balance Ratio (Bh) =  $(C1+C2) / (C3+C4+C5)$
3. Character Ratio (Ch) =  $(C4+C5) / C3$

### **3.7 Realtime Pore Pressure Prediction**

Formation pressure analysis and monitoring services shall be carried out in real time. Pore pressure services shall include but not limited to real time pore pressure estimation of drilled section and forecasting of sections to be drilled

along with identification of potential zones with abnormal formation pressure, predicting kicks & mud loss zones, and other well control challenges using the following:

- The service company must provide a dedicated software to carry out pore pressure studies generating and analyzing the D-exponent, Pore Pressure, Fracture Pressure curves using suitable equations, drilling parameters, and calibrating them with LWD / wireline, formation pressure and LOT data from current and offset wells.
- Monitoring of Pore Pressure indicators while drilling.
- Monitoring and continuous recording of Drill cuttings with special attention to pressure cavings and hydrocarbon shows.
- Monitoring and continuous recording of formation Gases (Including produced gas, trip gas and connection gas) Vs ROP & background gas levels.
- Monitoring and continuous recording of In/Out mud flows.
- Monitoring and continuous recording of In/Out mud temperatures, chloride changes.
- Monitoring and continuous recording of bulk density & shale density.
- Surge and Swab pressure calculations.

**Deliverables:**

1. Daily Pore Pressure log and Pore Pressure report with estimated current pore pressure & Fracture pressures and recommendations for safe drilling fluid parameters for drilling ahead.
2. Interim Pore Pressure report at the end of each hole section with pore pressure analysis of drilled section and recommended safe mud weight window for next section to be drilled.
3. Dedicated Final Pore Pressure Report at the end of well.

**3.8 Real-Time Display Monitors:**

The service provider shall make available the following Realtime displays:

- (i) An explosion proof purged LCD monitor with real time display should be installed at the Rig floor.

- (ii) Suitable numbers of remote desktops (2 or more) to display various real time sensor signals and parameters as well as capable of displaying and downloading Realtime as well as historic data should be installed in Wellsite Geologist's office and Company representatives' office at Wellsite.

### **3.9 Early Kick Detection – (Optional Services)**

Early Kick detection services utilizing accurate flow metering device for Realtime detection gains or losses shall be required for fastest detection of fluid influx or loss in the well. Early Kick detection shall include but not limited to quick detection of kicks & mud loss events monitoring the changes in Mud flows, Mud Density, pit levels, abnormal flowbacks and Connection Flows using dedicated hardware and software.

#### **Measurements:**

Changes in Mud Density, Changes in Mud flow In Vs Mud Flow Out, abnormal flowbacks, Connection Flow Monitoring.

#### **Tools:**

1. Hardware, and sensors for data acquisition including but not limited to Coriolis Flowmeter or equivalent, motion-compensated pit volume sensors or equivalent.
2. Software should be capable of applying Pipe movement correction, mud compressibility and heave compensation, flow back fingerprinting.
3. Software should have provision for Recording, analysis and display of kick monitoring parameters including mud flows, density and logs and plots.

#### **Deliverables:**

1. Daily kick detection reports with QC sheets, Log / plots & Interpretation of monitored kick detection parameters.
2. Interim kick detection reports with QC sheets, Log / plots & Interpretation of monitored kick detection parameters at the end of section.

3. Dedicated Final well Report on Early Kick Detection at the end of well.

### **3.10 Advanced Gas Detection System (Optional Services)**

Advanced Gas Detection system for continuous extraction and Gas Chromatography analysis will be required to be deployed on requirement basis comprising of High-resolution chromatography for identification and analysis of C1 to C8 including aromatic & cyclic components. Software for advanced Gas Detection should accommodate different dedicated channels for Total Gas out, Total Gas in and the difference between them (delta) with synchronized chromatograph analysis for both gas out as well as gas in should be recorded and displayed.

#### **Measurements:**

Measurement of C1 to C8 including light aromatic & cyclic components, and nonhydrocarbons such as CO<sub>2</sub> and H<sub>2</sub>S.

#### **Tools:**

Hardware and sensors for advanced gas data acquisition including but not limited to:

1. Constant volume gas traps at suction pit as well as flowline / shale shakers.
2. high resolution chromatographs capable of detecting and recording data for light aromatic & cyclic components and nonhydrocarbons such as CO<sub>2</sub> and H<sub>2</sub>S.
3. Computer software for recording, interpretation, and analysis of required gas parameters with Monitors to display output logs and plots.

#### **Deliverables:**

1. Daily Gas Report including QC, Interpretation & fluid typing for recorded gas data along with Gas ratio log with columns for interpreted parameters curves and fluid typing.
2. End of section report including QC, Interpretation & fluid typing for recorded gas data along with Gas ratio log with columns for interpreted parameters curves and fluid typing.

3. Dedicated Final well Report on Gas Data Interpretation at the end of well.

### **3.11 Real-Time Display Monitors:**

The service provider shall make available the following Realtime displays:

1. An explosion proof purged LCD monitor with real time display should be installed at the Rig floor.
2. Suitable numbers of remote desktops (2 or more) to display various real time sensor signals and parameters as well as capable of displaying and downloading Realtime as well as historic data should be installed in Wellsite Geologist's office and Company representative's office at Wellsite.

**3.12 Remote Real Time Monitors:** Remote display LED screen of size not less than 55" capable of displaying graphic and alpha numerical real time data from MLU shall be placed in OIL's KGB office, Offshore base office and E&D directorate, Delhi office. The real time monitoring system should also include necessary software for manual playback/ scroll back for viewing earlier events.

The Real Time Monitor system should include:

1. Remote, secure real time monitoring of time depth-based data from any global location.
2. Data viewing through any web browser/web enabled device that include PC, laptop, smart phone and tablet (app based).
3. Support and visualization for mud logging & drilling data.
4. Number of access license at least 30 numbers
5. Facility of streaming in of 3<sup>rd</sup> party data like MWD, LWD or any other data stream in WITS, WITSML from the rig site.

Note: i) Clientless remote desktop access is not acceptable

### **3.13 Determination Of Geological / Drilling Parameters:**

1. Determination of Shale Density (preferably with Zinc Bromide solution and Density beads), Shale Factor.
2. Determination of kill mud weight, volume etc.
3. Real time plots of continuous recording of gas and FID based analysis of gas (C1-C5).
4. Determination of volume and mud loss in case of circulation loss.
5. Determination of pressure drops in mud circuit, jetting velocity, bottom dynamic pressure, and Equivalent Circulation Density (ECD).
6. Determination of Gas Quality Control.

**3.14 Detection of down-hole problems/ anomalies, etc.:**

1. High/ Abnormal pressure prediction: Analysis/ computation of relevant data for detection of high-pressure zones based on Dc Exponent, Shale Density, Shale Factor, Sigma log and detection of H<sub>2</sub>S, CO<sub>2</sub> etc. with accuracy up to 10 ppm and 5% respectively.
2. Immediate detection of kick and monitoring of pipe pressure
3. Detection of mechanical failure of bit, drill string and pumps.
4. Promptly inform rig floor, Company Man & wellsite Geologist above down hole problems.

**3.15 Accessories:** the bidder shall make available the following accessories in mud logging unit:

1. An explosion proof purged LCD or LED monitor with real time display should be installed at the rig floor along with provision for an intrinsically safe audio alarm.
2. A suitable LCD or LED monitor (minimum 42") to display various real time sensor signal, parameters and also to represent graphical display of parameters with time-to-time comments in the mud logging unit.
3. Three suitable LCD or LED monitors in MLU for Data engineer, Mud logger and Sample catcher.
4. CD/DVD writer with necessary software
5. One online repeater LCD or LED monitor to be installed in each of Company Supervisor's office, Geologist office, mud engineer's office or at mud pit area.

6. Back-up facility of 24 hours online graphical screen saving with comments.
7. Sufficient nos. of tools and spare sensors (minimum 2 sets) should be available at MLU for smooth day to day operations.
8. UPS for backup power for the data processing/ acquisition systems. UPS capable of supplying at-least 30 minutes of electrical power to the equipment within the unit in the event of a power failure.
9. Intercoms with minimum 6 (six) terminals connecting derrick floor, mud attendant, company representative office, geologist's office, mud engineer's office and MLU.
10. Fire extinguishers, one (1) eye wash station, First aid kit and safety harness (full-body type).
11. Ditch Magnet of at least 1 meter length.
12. All other supplies as required to complete the services including but not limited to bactericide for samples intended for geochemistry and paleontological analysis, aluminium foil, plastic cling wrap, wax, packing tape, indelible marker pens etc..

#### **4.0 BACK-UP EQUIPMENT AND MATERIALS:**

Bidder is responsible for supplying all back-up equipment, materials in order to provide smooth and uninterrupted mud logging services to Oil India Ltd.

Back up tools will be maintained either on the rig or at CONTRACTOR's designated base (Details to be given in tender) for all tools listed above.

All equipment and materials noted above are to be provided, in quantities required to meet operational requirements, at no additional charge to the COMPANY over and above "Daily Rates".

#### **5.0 REPORTING:**

Mudlogging service provider should produce and submit the data and reports as per the schedule discussed in the following paragraphs.

##### **5.1 Routine Reports:**

Tentative structure to be followed for routine Mudlogging reports is tabulated below. However, reports and their schedule may be altered by the company if and as required.

Report	Format	Report Coverage	Submission Time	Remarks
Midnight Report	pdf	0000 – 2400 Hrs	Daily 1 am	
Daily Mudlogging Report	pdf	0600 – 0600 Hrs	Daily 7 am	
Evening Report	pdf	0600 – 1600 Hrs	Daily 4.30 pm	Brief Operational / geological update since 0600 Hrs.
Time Database	Las	0000 – 2400 Hrs	Daily 7 am	10 seconds interval
Operations Log	pdf	0000 – 2400 Hrs	Daily 7 am	
Depth database	Las	Start Current Depth	Daily 7 am	0.1m interval
Gas Data	Las		Daily 7 am	0.1m interval
Percentage & Interpreted Lithology	Excel		Daily 7 am	
Cutting description Sheets	MS Word / Excel		Daily 7 am	
Mudlog	pdf		Daily 7 am & 4.30 pm	1: 500 scale
Drilling Log	pdf		Daily 7 am	1: 500 scale
Gas Ratio Log	pdf		Daily 7 am	1: 500 scale

Notes:

1. Report Templates and sample Logs for above reports should be submitted by bidder with the bid. Original Time/Depth data may be imported in offline computers for QC, analysis, interpretation, and

reporting purposes. However, manipulation of original Time or Depth data is strictly prohibited.

2. Apart from regular reports, additional information / data to be provided if and as desired by the Company Representative.
3. In case, the report templates proposed by bidder are not acceptable to OIL, OIL may modify / provide new templates for reporting, which will be required to be followed by the service provider during service period.
4. Midnight report including but not limited to 24 hours break-up of operations, drilling parameters with brief summary of oil and gas shows and geology encountered in from previous midnight, should be submitted by 1am.
5. Daily Mudlogging Report including but not limited to brief summary of operations, drilling parameters, and details of geology and oil & gas shows encountered along with all the logs and digital data mentioned in above table for 24 hours period from previous 0600 hrs. should be submitted in the agreed format by 7am as mentioned in above table.
6. **Mud Log:** To use an industry standard mud log format, generate and maintain current mud logs in the computer and prepare their plots as requested by OIL geologists in 1:240, 1:500 and 1:600 scale including the followings:
  - a) The mud log should display lithological information in percentage terms of rock description and interpretative in which the recovered rocks are correlated with drill rate and gas. Abbreviation of lithology should be given in remarks column.
  - b) Total gas curve and component gas curves to be plotted on log scales in units of ppm.
  - c) Presentation of Mud weight in and mud weight out should be in the fourth cycle of the gas track on all depth scales. Mud weights need to be recorded as a comment every 12 hours while drilling and whenever a mud weight change is made. Also to record and plot all trip gas, bottom-up gas and connection gas.

- d) To record hole problematic events (such as lost returns, drill pipe sticking etc.) on the log.
- e) To record all casing and logging points on the master log.
- f) To record all bit details in master log.
- g) Mud additive information on the log as remarks.
- h) To plot Rate of penetration (ROP) as meter/hour and weight on bit with rate increasing towards the left edge of the log. Gamma ray (from MWD/Wireline) plot should be increasing towards right side.
- i) End of drilling a well composite log to be provided with mud logging and basic wire line log details. Also, “Dc” Exponent and Equivalent Circulation Density (ECD) calculation needs to be plotted post computation.

## 5.2 End of section Report:

End of section Report should be submitted at end of each hole section, which should be comprising of following reports updated till current section TD:

Report	Format	Remarks
Well Completion Report	Word	Updated till current depth and section.
Depth database	Las	0.1m interval
Gas Data File	Las	0.1m interval
Percentage & Interpreted Lithology	Excel	
Cutting description Sheets	MS Word/ Excel	
Mud log	pdf	1: 500 scale
Drilling Log	pdf	1: 500 scale
Pore Pressure Log	pdf	1: 500 scale
Gas Ratio Log	pdf	1: 500 scale

## 5.3 Final Well Report:

Writing of Final Well Report should commence from the date when mudlogging unit starts to function at any well. It should be continuously

updated as the data keeps arriving. Final Well Report should be submitted at end of well before rig down of the mudlogging unit.

The template for mudlogging Final well report will be agreed between OIL and the service provider in the beginning, which needs to be used for writing the Final well Report.

The Final Well Report should comprise of but not limited to the following chapters:

FINAL WELL REPORT	
Chapter no.	Chapter
1	General Information
1.1	Introduction, well objective and results
1.2	Well summary table
1.3	Location map
1.4	Well profile
1.5	Scope of services
1.6	Service companies
1.7	Mudlogging Personnel
2	Engineering Summary
2.1	Section wise Drilling summary
2.2	Mud Engineering summary
2.3	Casing summary
2.4	Cementation summary
2.5	Operational complications
2.6	Drilling Progress Chart- planned vs actual
2.7	LOT/FIT details
2.8	NPT break-up Analysis
2.9	Time analysis: section wise
2.10	Deviation profile
3	Geological Summary
3.1	Formation tops
3.2	Litho-stratigraphic units
3.3	Gas shows
3.4	Oil shows
3.5	Gas Data Interpretation and analysis

3.6	Conventional cores
3.7	Side wall cores
3.8	IsoTube/Geotube sampling details
3.9	Pore pressure summary (including D-Exponent plot)
3.10	ROP vs depth plot
3.11	Flowline temperature plot
3.12	Shale density plot
3.13	Calcimetry
3.14	Wireline Logging
3.15	Cutting sample record
Annexures	
A	Drilling fluid: Planned Vs Actual
B	Bit record
C	BHA details
D	Deviation Data
E	Date wise operations summary
F	Lithological cutting description sheets
Enclosures*	
A	Composite Log (1: 500) + (1:200) MD as well as TVD* Scales
B	Mudlog (1: 500) + (1:200) MD as well as TVD* Scales
C	Drilling Log (1: 500) + (1:200) MD as well as TVD* Scales
D	Pore Pressure Log (1: 500) + (1:200) MD as well as TVD* Scales
E	Gas Ratio Log (1: 500) + (1:200) MD as well as TVD* Scales

#### 5.4 Final Deliverables

The service provider should deliver 3 (Three) hard copies of Final Well Report including Annexures and Enclosures mentioned under paragraph 16.3 for each well. Also, three digital copies of Final deliverables as tabulated below, should be archived separately in three digital storage devices (pen drive or portable Hard disk) readable on USB 3.0 Ports and handed over to the

company. All above deliverables shall be submitted to OIL after completion of each well within 15 (fifteen) days from the date of rig-down notice.

Final Deliverables for Realtime Pore Pressure Prediction, Early Kick Detection & Advanced Gas Detection services should be as per their deliverables mentioned in Paragraphs 2.10, 2.11 & 2.12 respectively. Details of digital data, logs and report templates for these services will be shared before the job.

Final Deliverables for other routine should be comprising of data and reports covering entire well information from spud to TD of the well. In case, the well is spudded before mudlogging unit is functional, the data from spud till mudlogging startup date will be provided by OIL to the service provider.

Along with the final deliverables, service provider will be required to prepare and submit the composite log for the well. The required template and data from wireline / LWD and coring services will be provided to service provider by the company.

<b>Report</b>	<b>Format</b>	<b>Final Deliverables</b>
Well Completion Report along with Annexures and Enclosures mentioned under paragraph 16.3	Word	3 hard copies with 3 electronic copies
Composite Log (1: 500) + (1:200) MD as well as TVD* Scales	pdf	
Mudlog (1: 500) + (1:200) MD as well as TVD* Scales	pdf	
Drilling Log (1: 500) + (1:200) MD as well as TVD* Scales	pdf	
Gas Ratio Log (1: 500) + (1:200) MD as well as TVD* Scales	pdf	
Operations Plot (For each day of Operation)	pdf	3 electronic copies
Time database 10 seconds interval	Las	
Depth database 0.1m interval	Las	

Gas Data File	Las
Percentage & Interpreted Lithology	Excel

\* Applicable in case of deviated wells only.

## 6.0 PERSONNEL

To perform the SERVICES stipulated in the Contract, the Contractor will assign personnel as specified by the COMPANY in this Appendix. The COMPANY will exercise its right to reject personnel found not to be suitable and Contractor will replace with acceptable personnel at no cost to the COMPANY.

For individual jobs or projects, the COMPANY may, from time to time, require Specialists and/or Support Staff other than those listed below, but which are included in Contractor standard price list. The Specialists and/or Support Staff so required will be made available to the COMPANY consistent with Contractor standard price list and conditions stated elsewhere in this Contract.

For all contractor's personnel provided, daily Rates shall begin when personnel arrive in India and shall cease upon departure from India. No double rates shall be charged during change-out periods of PERSONNEL.

(Optional Services) <b><u>Job Description</u></b>		<b><u>No. Required</u></b>
<b>Realtime Pore Pressure Engineer (Optional)</b> Surveillance, monitoring, and acquisition of Geomechanics and Pore Pressure Engineering studies using Wireline data, LWD data & drilling parameters specifically required for precise estimation, monitoring & forecasting of formation pressure & fracture pressure for drilling safety. <b>Minimum requirements:</b>		2
1.	M.Tech/M.Sc. / BE / B. Tech degree in Geology/Petroleum Technology/ Petroleum Engineering,	
2.	At least 5 years Oil & Gas industry experience with minimum experience of two years in Geomechanics / Pressure Engineering studies with duties as above. Period in this regard shall be reckoned from original bid closing date.	

3.	At least 1-year previous experience on offshore drilling rigs.	
4.	Conversational and written English language fluency.	
5.	Basic HS&E and Safety training.	

### 6.1 Advanced Gas Data Analyst

<b>Job Description</b>		<b>No. Required</b>
<b>Advanced Gas Data Analyst – (Optional)</b> Surveillance, monitoring, and acquisition of Advanced Gas Data using High resolution gas data acquisition systems and software specifically required for QC, Analysis, and interpretation of C <sub>1</sub> to C <sub>8</sub> hydrocarbons including light aromatic & cyclic components, and nonhydrocarbons such as CO <sub>2</sub> and H <sub>2</sub> S. <b>Minimum requirements:</b>		2
1.	M.Tech/M.Sc. / BE / B. Tech degree in Geology/Petroleum Technology/ Petroleum Engineering,	
2.	At least 5 years Mudlogging experience with minimum experience of two-year experience of working on Advanced Gas Detection services as on bid closing date. Period in this regard shall be reckoned from original bid closing date.	
3.	At least 1-year previous experience on offshore drilling rigs.	
4.	Conversational and written English language fluency.	
5.	Basic HS&E and Safety training.	

### 6.2 Kick Detection Engineer

<b>Job Description</b>		<b>No. Required</b>
<b>Kick Detection Engineer (Optional)</b> Surveillance, monitoring, and acquisition of drilling parameters using dedicated hardware and software specifically required for early detection and monitoring of kick and loss events. <b>Minimum requirements:</b>		2
1.	M.Tech/M.Sc. / BE / B. Tech degree in Geology/Petroleum Technology/ Petroleum Engineering,	

2.	At least 5 years Oil & Gas industry experience with minimum experience of one year experience of working on Early Kick Detection services with duties as on bid closing date. Period in this regard shall be reckoned from original bid closing date	
3.	At least 1-year previous experience on offshore drilling rigs	
4.	Conversational and written English language fluency.	
5.	Basic HS&E and Safety training.	

### 6.3 Data Engineer

<b><u>Job Description</u></b>		<b><u>No. Required</u></b>
<b>Data Engineer</b> Surveillance, monitoring, and acquisition of geological and drilling parameters. Minimum requirements:		2
1.	M. Tech/M.Sc. / BE / B. Tech degree in Geology/Petroleum Technology/Petroleum Engineering,	
2.	At least 5 years Mudlogging experience in Mud Logging services with minimum 3 (three) years' as Data Engineer as on bid closing date. Period in this regard shall be reckoned from original bid closing date	
3.	At least 1-year previous experience on offshore drilling rigs.	
4.	Conversational and written English language fluency.	
5.	Basic HS&E and Safety training.	
6.	Ability to maintain and smoothly operate all hardware and software contained in the mud-logging unit.	

### 6.4 Mud Logger

<b><u>Job Description</u></b>		<b><u>No. Required</u></b>
<b>Mud Logger</b> Surveillance, monitoring, and acquisition of geological and drilling parameters. Preparation of lithologic strip log. Preparation, packaging for transportation and analysis of cutting samples. Minimum requirements:		2

1.	M.Sc. / BE / B. Tech degree in Geology/Petroleum Technology/Petroleum Engineering,	
2.	At least 3 years Mudlogging experience in Mud Logging services with minimum 1 (one) year as Mud logger as on bid closing date. Period in this regard shall be reckoned from original bid closing date	
3.	At least 1-year previous experience on offshore drilling rigs.	
4.	Conversational and written English language capability.	
5.	Basic HS&E and Safety training.	

### 6.5 Sample Catcher

<b><u>Job Description</u></b>		<b><u>No. Required (Optional)</u></b>
<b>Sample Catcher</b> To Assist Mud Logger as required, responsibilities including but not limited to sample catching. Minimum requirements:		2
1.	Qualified up to 10+2 standard or equivalent in science stream	
2.	Conversational and written English language capability preferred.	
3.	Basic HS&E and Safety training	

6.5.1 All the above personnel are required to be on the rig on a continuous basis throughout the term of the Contract, except as specified by the Company. The company's representative may temporarily release the above personnel during operations deemed appropriate. The Contractor will rotate its personnel on an appropriate schedule with prior approval of schedule by the Company.

6.5.2 When mobilized, the Contractor will rotate these personnel on an appropriate schedule with prior approval of schedule by the Company.

6.5.3 The Contractor, at its sole cost, will provide the Contractors personnel required to work at the Drilling Site, appropriate and adequate safety equipment required by the Company to be used by personnel on the rig including, but not limited to, hard hats, safety boots (steel toe), rubber gloves, slicker suits, eye protection and hearing protection.

## 6.6 Duty Pattern

The Bidder shall provide well qualified, trained, and experienced Four men crew to efficiently operate and maintain Mudlogging Unit round the clock at the wellsite, following the shift pattern to ensure smooth running of operations as specified below:

<b>Sl. No.</b>	<b>Description</b>	<b>Nos.</b>
1	Data Engineer	2 (1 day shift + 1 night shift)
2	Mud Logger	2 (1 day shift + 1 night shift)
3	Sample Catcher	2 (1 day shift + 1 night shift)
4	Pore Pressure Engineer (Optional)	2 (1 day shift + 1 night shift)
5	Early Kick Detection Engineer (Optional)	2 (1 day shift + 1 night shift)
6	Advanced Gas Data Analyst (Optional)	2 (1 day shift + 1 night shift)

## 7.0 DATA CONFIDENTIALITY:

**7.1** Contractor shall take full responsibility for the protection, security, and confidentiality of records, digital or physical data till the date it is handed over to the Company.

**7.2** Contractor shall upon completion of the work return to OIL all originals and copies of maps, documents, recorded magnetic tapes/cartridges and all other data supplied to them or generated by them in connection with the work. These are the absolute property of the OIL. Contractor has to ensure that after completion of the work, all the information will be deleted from the system.

**7.3** The Contractor will be required to sign a confidentiality agreement as per format Appendix-A before the commencement of work & Appendix-B at the time of demobilization with OIL for the data security during and after the contract period.

## **8.0 SERVICES TO BE FURNISHED BY THE COMPANY**

The following services shall be provided by the Company at no cost to the BIDDER:

- All transportation of the Contractors personnel between the company's drilling location and Company designated airport or shore base.
- Labour and equipment for loading and unloading the Contractors mud chemicals, Equipment and Supplies at the Drilling Location.
- Accommodation, meals, housekeeping services, and supplies at the drilling location for the Contractor's personnel.
- First-Aid and other emergency medical aid for the Contractor's personnel at the drilling location to the same extent as furnished to the COMPANY'S own employees.

**9.0 MAINTENANCE OF MLU:** The complete Mud logging unit and all its sensors & accessories are to be maintained in proper working condition by bidder throughout the period of contract, including extension, if any to deliver uninterrupted services. The MLU crew to be deployed by the bidder must be capable, competent and experience enough to carry out routine maintenance of the unit to provide round the clock trouble free services. Any breakdown, defect, malfunction etc. of any item/equipment will be attended / replaced immediately as may require. For this purpose, necessary spares and consumables to carry out on site repair/maintenance will need to be kept readily available at the units.

**10.0 DGMS APPROVAL CERTIFICATE:** Bidder must ensure that all electronic /electrical equipment to be used in the well-sites under hazardous zones 1 & 2 shall satisfy the clauses of Indian Oil Mines Regulation Act (OMR), 2017.

**11.0 HEALTH SAFETY AND ENVIRONMENT:** Bidder shall submit the safety manual and operating procedure manual well in advance to the company for review and comments, if any. The Contractor shall also submit a tool preventive maintenance system to exhibit that a pro-active/ predictive system can be in place to avoid unforeseen down -time and valid ISO/DNV certificates. Bidder must strictly follow all the HSE rules and regulations and follow safety rules practiced in the well-site and provide safety gears to their personnel (viz. Coverall, safety shoes, Helmets, Breathing mask, safety glass, hand gloves, PPE kits etc.). The MLU should be fitted with safety equipment as per international practice. MSDS sheets should be available for all the chemicals to be used at site.

**12.0 POLLUTION CONTROL:** Bidder undertakes that substances or rubbish in any form originating from Contractor's equipment shall not be dumped or discharged at, or around the well location offshore. However, in the event of such dumping or discharge by bidder, bidder shall immediately assume aa responsibility for the cost of removal of items, substances or rubbish so dumped or discharged and for any resulting pollution or contamination in any form, in the well location and the surrounding sea area.

**13.0 INSPECTION AND CERTIFICATES:** Company reserves the right to inspect the complete Mud Logging unit, sensors and other related accessories at Contractor's works/workshop or any other suitable place (to be arranged by the bidder) before its mobilization to the first drilling location under this contract as ascertain & certify its suitability and completeness. Bidder will arrange for testing facilities etc. to the satisfaction of company personnel. Any complain/ rectification/ replacement etc. as may be advised during such inspection must be set right before mobilizing the unit to site. Company will not assume any responsibility in this regard whatsoever, leading to delay in completion of mobilization.

Contractor shall acknowledge the company may audit tools and equipment used by the contractor at any time during the contract period. Contractor's personnel at wellsite will ensure free access for Company 's inspector/site geologists to the MLU at any time during the contract and will co-operate in carrying out random testing of the tools used for its operation. Upon successful commissioning of MLU at the designated drilling locations company will provide MLU commissioning certificates to the contractor. Additionally, the contractor must generate a monthly working certificate of MLU operations as per format to be provided by OIL and obtain signature thereon of the Company's well site geologist. The MLU commissioning certificate and monthly working certificates as aforesaid must be submitted along with all monthly running invoices/ bills of the contractor for release of payment by Company.

#### **14.0 SERVICES TO BE FURNISHED BY THE COMPANY**

The following services shall be provided by the Company at no cost to the Bidder:

- All transportation of the Bidders personnel between the company's drilling location and Company designated airport or shore base.
- Labour and equipment for loading and unloading the Bidders mud chemicals, Equipment and Supplies at the Drilling Location.
- Accommodation, meals, housekeeping services and supplies at the drilling location for the Bidders personnel.
- First-Aid and other emergency medical aid for the Bidders personnel at the drilling location to the same extent as furnished to the Company's own employees.

#### **15.0 QUALITY MANAGEMENT SYSTEM REQUIREMENTS**

The Contractor will comply with, and take cognizance of, applicable latest editions of all Statutes and Specifications in supporting the CONTRACT.

The Terms of the CONTRACT shall apply to all SUBBIDDERS engaged by the Contractor and utilized in support of the CONTRACT. Implementation of these Terms shall form part of the Contractors responsibilities.

**WELL TESTING SERVICES**

**SCOPE OF WORK:**

OIL intended to hire Surface production testing (SPT) and Nitrogen Pumping Unit (NPU – optional) Well Activation Services to undertake operations in 4 (Four) Development offshore drilling wells in KGB DSF II Shallow Water Offshore Block. The quantum of job may vary depending upon the result of wireline logs and other drilling evidences.

The Bidder shall provide complete Production Testing Surface (PTS) equipment (along with tools & accessories) and compatible X-overs suitable for well condition along with operating crew, tools, and accessories to carry out production testing of the offshore wells.

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

**1.0 WELL TESTING SERVICES, SURFACE AND DOWNHOLE TOOLS**

**A. Surface Production Testing (SPT) Services**

The Surface Production Testing (SPT) shall be capable of effectively dealing with formation fluid produced during production testing. The production testing service shall consist of following:

1. Service of surface equipment like Connections to & from X-mass Tree, 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:

- a. Flow rate data acquisition.
- b. Reservoir pressure & temperature analysis.
- c. Representative reservoir fluid collection and fluid sample analysis, compositional analysis, and PVT analysis. (Two PVT samples per zone)
- d. To overcome operational complications such as hydrate formation, paraffin problem, sand incursion etc.
- e. Well deliverability, AOFPP-for gas wells, skin, permeability, reservoir boundaries (presence of faults, oil-water contacts) etc. Hydrocarbon In-place estimates.
- f. 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 C<sub>6</sub>+
    - Measurement of Hydrogen Sulphide (H<sub>2</sub>S) & Carbon Dioxide (CO<sub>2</sub>) 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 C<sub>36</sub>, molecular mass.
    - Flash Gas composition up to C<sub>12</sub> and Z factor determination

- Reservoir fluid composition up to C<sub>36</sub>
  - Stock tank and reservoir oil / condensate & gas viscosity.
  - Phase Diagram construction
- g. Final Well Test Analysis Report preparation & submission.
2. 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.
  3. To rig up setup for Production Testing tool/equipment, piping line-up for flare stack, equipment servicing and testing, spare part stock etc. at Company's well site.
  4. 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.
  5. Details of equipment & manpower to be deployed for well testing are enumerated under Annexure I & II respectively.
  6. To flare produced hydrocarbons using burner booms & burner heads (provided by Rig contractor).
  7. Any water production shall be routed overboard.

**B. WELL ACTIVATION SERVICES (OPTIONAL)**

After perforation, if the well does not displace of its own, services of NITROGEN PUMPING UNIT (NPU), as an optional, will be required to activate the well. The Contractor shall provide NPU services with all necessary equipment for well activation jobs at offshore Drilling 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.

Well activation services are kept as optional through Nitrogen Pumping Unit (NPU) services and shall be utilised only if required.

## **2.0 GENERAL NOTES**

- a. Details of Tools/Equipment and their operational requirement are given in Annexure-I. Any tools / equipment / consumables 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.

### 3.0 SPECIAL NOTES

- a. Supply of Tool/ 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.
- b. 2.7/8” x L80, 13 Cr. Tubing with Hunting Seal lock XD premium connection (supplied by OIL) would be used for well testing purposes.
- c. All x-overs required for above string to connect Well Testing and or TCP tools and equipment shall be responsibility of the bidder.
- d. 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’s to Rig without any extra charge to OIL.

### 4.0 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	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.

#### **5.0 PERSONNEL FOR SPT & NPU SERVICES:**

- 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 contractor shall submit CV 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 Contractor shall not deploy its personnel unless cleared by the Company. The CV of the personnel shall be duly certified by HR of the Bidder.
- 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 initially identified in their offer 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 OIL. In the event of change of manpower, the Bidder shall provide proper justification along with supporting document to the satisfaction of OIL.
- 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. 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 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. 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.

#### **6.0 RESIDUAL LIFE OF EQUIPMENT AND TOOLS:**

The residual life of all the SPT & NPU equipment shall not be less than 05 (Five) years. The equipment's shall be re-certified by reputed third-party certifying agency on issuance of mobilisation notice and shall be kept valid for minimum 5 years including the contract period. All credentials such as manufacturing documents, linking serial nos. embossed on the equipment's offered with detailed specifications, must be submitted before mobilizing the equipment and at the time of on-hire survey.

#### **7.0 BIDDER'S EXPERIENCE:**

Bidder shall provide following data for the offshore wells for which the Bidder has provided services:

1. Client name
2. Project / Field/Block name
3. Contract Duration / Project duration.
4. Contract reference number/ well completion certificate.

**7.1 Well Testing Services & NPU Services:** The bidder should have minimum of 5 years of experience in providing the SPT & NPU Services to E&P companies / Drilling companies including 3 years in offshore Rigs and should have experience of at least 02 offshore wells through a single or multiple contracts to be reckoned from the original Bid Closing Date.

#### **8.0 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:

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

#### **9.0 SUPPLY BASE:**

The Bidder onshore supply base should be equipped with all the facilities which may be required if the equipment/ tools are required to be changed/ serviced/ repaired and which cannot be done at the Drilling rig. This requires good coordination between the Drilling rig and the Bidder 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 Kakinada is Service Provider's responsibility at their own cost.

#### **10.0 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 backup 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.

**10.1 SURFACE PRODUCTION TESTING EQUIPMENT FOR EACH WELL:**

The details of the required Surface Production Testing (STP) Equipment and accessories suitable for 10,000 psi working pressure, sour service as per NACE MR-0175 (Latest Applicable Edition) are as follows.

<b>A. SURFACE PRODUCTION TESTING</b>		
<b>Sr. No.</b>	<b>Item</b>	<b>Qty</b>
1	Choke Manifold & accessories	01 set
2	Data / Injection Header	02 nos.
3	3"x45 ft long Flexible Flowline (Coflex hose) of suitable length for connecting X-Mas Tree and choke manifold.	02 nos.
4	Steam Heat Exchanger with Steam Generator	01 no.
5	Three Phase Test Separator-1440 psi WP	01 no.
6	Surge Tank	01 no.
7	Gauge Tank/ Well Fluid Storage Tank, Total Capacity 200 bbls with 100 % Redundancy as backup whenever sought by OIL.	PKG
8	Transfer Pump	01 no.
9	Piping Package. 3", 1502, rated to 10000 psi for high pressure; 3" hammer unions for downstream, Straight pipes & Swivel/Elbows of suitable length for connecting surface equipment.	01 set
10	Chemical Injection Pump	01 no.
11	Surface Pressure & temperature Recorder	01 no.
12	Dead Weight Tester	01 no.
13	ESD Panel for shutdown	01 set
14	Oil Manifold/ Diverter	01 no.
15	Gas Manifold/ Diverter	01 no.
16	Lab Cabin	01 no.
17	Air Compressor	02 nos.
18	Sand Filter / Sand Trap / Desander System with electronic sand detection facilities (10K)	01 no.

19	Surface Safety Valve	01 no.
20	Well Test Workshop Container with Accessories	01 no.
21	Surface Testing Data Acquisition Network	01 no.
22	Data Acquisition Computer	01 no.
23	Sample Bottles / Samplers	
	Conventional Gas Samplers, 1500 PSIG, 600 CC, IATA confirming	08 nos.
	Dead Oil Sample Cans, 1 Ltrs, IATA Confirming	20 nos.
	Dead Oil Sample Cans, 5 Ltrs, IATA Confirming	5 nos.
	Dead Oil Sample Cans, 10 Ltrs, IATA Confirming	5 nos.
	Water Sample Bottles, 1 Ltrs, Plastic or Glass	20 nos.
	Lables & Consumables for all the above	1 set
24	PVT Samplers	4 set
25	Oil Barrels to collect Waste Oil, BS&W and oil contaminated water	1 Package
26	Any other item(s) required but not mentioned above	As reqd.

<b>B.</b>	<b>WELL ACTIVATION (OPTIONAL)</b>		
Sr. No	ITEMS	UNIT	QTY
<b>1.</b>	<p><b>Nitrogen Pumping Unit (NPU)</b> with all accessories. (N<sub>2</sub> conversion from liquid to gas will be at Contractor's account but actual liquid nitrogen will be charged to Company for every gallon consumed as per the rate quoted by Contractor.)</p> <p>The unit shall meet the following minimum requirement:</p> <ol style="list-style-type: none"> <li>1. Max Working Pressure: 10000 psi</li> <li>2. Max Flow Rate (SCFH): 90000 SCFH</li> </ol> <p>Note: Any other equipment required with Nitrogen pumping Unit for successful well activation services on offshore Drilling rig but not mentioned above shall be under Contractor's scope.</p>	Package	01
<b>2.</b>	Surface piping and accessories	Set	01

3.	The minimum capacity of liquid nitrogen tank shall be 2000 gal. The Contractor should ensure continuous delivery of nitrogen during operations.	2000	08
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Notes:

1. The Contractor shall provide sufficient back up of SPT & NPU (Optional) 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 Contractor at no extra cost.
3. The above list of tools / equipment / spares / consumables is indicative and shall be used for evaluation purpose only and any other tools, equipment, spares and consumables are required, the contractor shall arrange the same without any cost implication to company.

**11.0 MOBILIZATION / DEMOBILIZATION SCHEDULE:**

Bidder is required to provide the equipment and manpower as per the scope of work. They are further advised to keep well testing equipment and manpower ready for mobilization before testing operation. The mobilization will be construed completed when the SPT & NPU equipment's are ready in all respects as per scope of work, including obtaining all statutory clearances (as applicable), are mobilised to designated location and after on-hire survey by the Company Representative & provided it is certified by the bidder and accepted by Company Representative that all items are in good working condition.

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.

In case of termination of this Contract before mobilization of testing equipment to Bidders shore base, OIL has no obligation to pay. In case the cancellation / termination by the OIL after mobilization of Bidder Equipment to Bidder's shore base, only quoted mobilization, and demobilization charges for the testing equipment, shall be paid as per the price format.

BIDDER will also be responsible for planning and co-coordination of all requirements in consultation with the OIL.

BIDDER is required to provide permit with escort for the mobilization of explosive(s) from the Bidder supply base to the Offshore Drilling rig.

**SPECIFICATION OF SOME OF THE MAJOR TOOLS AND EQUIPMENT:**

**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. 10,000 PSI working pressure.
  - ii. 250 Deg F working temperature.
  - iii. Sour Service
3. Bidder shall provide crossovers as required to allow make-up of all surface connections.
4. Bidder shall be required to provide sea-fastening and grounding materials. Sea fastening design needs to meet or exceed Company, Drilling contractor and TPI agencies specifications.
5. Bidder shall comply with the certification of Production testing package as required by Drilling Rig without any additional cost implication to company.
6. The Production testing package shall be strategically covered with F&G system and shall be connected to the central ESD system.
7. All equipment that requires personnel to work at heights (surge tanks, etc.) shall be equipped with suitable / certified fall arrestor and harness.

**1.0 Production Testing Services**

The 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 10000 psi 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 Choke Manifold and Accessories

#### Choke Manifold

- Size 3" dual choke manifold with both positive and adjustable choke.
- Working pressure 10,000 psi.
- Test pressure 15,000 psi.
- Working temp. 32 to 250 Deg F.
- Suitable for sour service as per NACE specs MR 0175 (Latest Edition).
- Wing end connections should be 3", 1502, rated to 10 K Psi
- Choke Manifold should have 2 upstream, 2 downstream 3.1/16" Gate valves with hand wheels.
- All the valves should be rated for the same working pressure and temp as specified above.
- Positive choke (Tungsten Carbide or Ceramic Lining) from 1/8" to 1.1/2".
- Manually adjustable choke on other side from 1/8" to 1.1/2".
- Should have suitable ports for measuring pressure, temperature and ports for chemical injection and fluid sampling.

#### Essential Accessories for One Choke Manifold

- 2 Sets of positive chokes (tungsten carbide or ceramic lined) from 1/8" to 1.1/2" in with increment of 1/16" upto 1" and with increment of 1/8" up to 1 1/2".
- 1 set of manually adjustable choke on other side with calibrated orifice size in 64<sup>th</sup> of an inch from 1/8" to 1-1/2 inch.
- Pressure gauge with 1/2" NPT Connection
  - i. 0-10000 psi - 4 nos.
  - ii. 0-1000 psi - 4 nos.
  - iii. 0-500 psi - 4 nos.
  - iv. 0-100 psi - 4 nos.
- Choke bean wrench - 2 nos.
- Hand wheel for valve - 2 nos.

- Steel braided rubber tube with connection ½” NPT size 10’ long suitable for 10,000 psi for sampling purpose - 1 no.

## 1.2 Data Header

- End connection 3”, 1502 rated up to 10K psi
- Working pressure 10000 psi and test pressure 15000 psi
- Suitable for Sour service as per NACE Specification MR-0175 (Latest Edition).
- Minimum 5 nos. of ½" NPT ports for pressure and temp recording, sand detection and chemical injection.
- Sufficient no. of 1/2" NPT type needle valves (10000 psi WP) and ½” thermowells or strap-on thermo-transducers.

## 1.3 3” Flexible (Coflexip Hose) – 2 Nos.

- Should be of single length, suitable for connecting kill line from Christmas tree.
- Suitable for sour service as per NACE Specification MR-0175 (latest Edition).
- WP 10,000 psi
- Working Temp. 32 Deg F to +250 Deg F
- Inlet and outlet connection should be 3”1502 rated up to 10000 psi.
- Should allow safe pumping of all completion brines.

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.

## 1.4 Steam Heat Exchanger with Steam Generator – 1 No.

- Skid mounted, suitable for offshore transportation.
- Unit should be suitable for sour service as per NACE Specification MR-0175 (latest Edition)
- Working temperature – 0 Deg F to + 250 Deg F
- Working pressure: 10000 psi
- Minimum heat capacity: 4 MM BTU/hr

- Unit should be complete with bypass manifold for bypassing exchanger.
- Inlet and outlets are to be fitted with 3", WECO hammer union.
- Unit should be complete with adjustable/Fixed choke system.
- The unit should have suitable temperature sockets with thermometers fitted to indicate actual temperature of fluid at inlet & outlet.
- Steam generator with following specification:
  - Steam output of 2000 Kg/hr or 4.5 MMBTU
  - Working pressure – 150 psi
  - Fuel Tank capacity of 1500 litres.
  - Steam Generator shall be Zone 2 compliant.

#### 1.5 Three Phase Horizontal Test Separator

- Nominal WP: 1440 psi
- Test pressure: 2150 psi
- Inlet and outlet connection 3" 6000 psi.
- Sour service as per NACE Specification MR-0175 (latest Edition)
- Liquid rate 100 to 10,000 BPD
- Gas rate: 60 MM SCF/Day
- Water rate: 100 to 2000 BPD
- Retention time = 1 Min
- Fitted with two safety relief valves.
- Should be fitted with shrinkage tester.
- Complete with Barton flow recorder range 0-400" differential pressure of water or electronic differential pressure measurement device
- The gas outlet should have Daniel orifice fitting with a full set of orifice plates or Coriolis gas meter.
- Oil and water outlet should have turbine or Coriolis meters with accuracy of 5% for oil meter and 10% for water meter.
- Unit should be as per API Spec 12-J / ASME Section VIII.Div. 1

#### 1.6 Surge Tank

- Working Pressure 150 psi.

- 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.
- Sour service as per NACE Specification MR-0175 (latest Edition).
- Shall have high and low alarm.
- Complete with level gauge and bypass manifold.
- Should be equipped with Pressure Safety Valve (PSV) in each compartment for protection from overpressures.

#### 1.7 **GAUGE TANK (CRUDE OIL / FORMATION WATER STORAGE TANK)**

- Atmospheric working pressure
- Minimum 200 Barrels capacity – 4 Nos.
- Calibrated dip sticks
- Externally mounted sight glass and by-pass manifold.
- Associated pipe fittings for inlet & outlet connections
- Fitted with staircase, dip measuring device, valves etc.

#### 1.8 Transfer Pump

- Driven by flame proof electric motor.
- Delivery rate 2,000 BOPD.
- Should be hooked up in the manifold of surge tank for direct suction and delivery to Burner.
- Should have non-return check valve fitted either in the Pump or Pump manifold to prevent any back flow.

#### 1.9 Piping Package

- 3", 10,000 psi working pressure coflex hose for connecting Christmas tree to choke manifold, with a temperature rating in the range of -20 Deg F to 250 Deg F.
- 3", 10000 psi Straight Pipes and Elbows for connecting choke manifold to heat exchanger

- 3", 10000 psi Straight Pipes and Elbows for connecting heat exchanger to Separator.
- 3", 2000 psi straight Pipes and Elbows for connecting all liquid lines downstream of the separator.
- 4", 2000 psi Straight Pipes and Elbows for connecting all gas lines downstream of the separator.
- Change overs for end connections, wherever necessary, provided in sufficient quantity.
- All the above piping package should be suitable for sour service as per NACE MR-0175 (latest Edition) and should have Acid resistance up to 30% HCl with suitable acid inhibitor.
- Piping should have provision for methanol injection to avoid hydrate formation.

**Note:** All the upstream & downstream lines for connecting the Christmas tree, choke manifold, heat exchanger, Separator, surge tanks, Burner Booms etc., should be in sufficient length.

#### 1.10 Chemical Injection Pump

- Pump should be pneumatically driven, positive displacement.
- Fluid discharge capacity = 85 GPD (minimum) at 10,000 psi.
- WP 10,000 psi
- Provided with sufficient length of high pressure hose (10,000 psi WP) with 1/2" NPT /Autoclave/Suitable connectors
- Pump to be provided with check valve
- Should be equipped with a pressure relief device, in case maximum pump pressure is higher than the maximum working pressure of the component it is pumping in to.
- All necessary chemicals like Methanol, Methanol/ Glycol for hydrate control, Pour Point Depressant (PPD), Defoamer, Demulsifier shall be made available as needed and will be paid as per actual consumption.

#### 1.11 Surface Pressure & Temperature Recorder

- Pressure rating 10000 psi and temperature rating 250 Deg F.

- 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.
- Suitable for sour service as per NACE Specification MR-0175 (latest Edition).
- Pressure to be tapped from 1/2" NPT needle valve box.
- Temperature to be measured from 1/2" NPT weld neck pocket or strap-on thermotransducer
- Chart drive mechanical, one revolution in 24 hrs.
- Should be able to be positioned on Christmas tree upstream of flow line valve.
- Should have proven reliability and repeatability across the entire operating range.

#### 1.12 Dead Weight Tester

- Mainly required for accurate measurement of pressure in the pipelines
- Pressure range 50-10000 psi.
- Pressure intervals 1 psi.

#### 1.13 ESD Panel for Shutdown

- Each set should have 3 nos. of high-low pilots.
- One no. high-low pilot each between
  - X-mass Tree & Choke manifold.
  - Choke Manifold & Heater
  - Heater & Separator
- To control hydraulically actuated valves on the Christmas Tree and the surface safety valve for pressure rating of 10000 psi.
- Suitable number of pneumatic controls (min. 5) to be linked to ESD systems for rig wide access to ESD system.
- 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.

- All hoses & connectors for pneumatic or hydraulic control of valves, sensors, connections for input sensors should be supplied by the Bidder with assured compatibility.

#### 1.14 Oil Diverter Manifold

- Sour service as per NACE Specification MR-0175 (latest Edition)
- Working pressure 1440 psi.
- Should have 3" ball/plug valves.
- Should have 3" WECO Hammer union inlet/outlet connections.
- Should be able to divert oil flow to burner or other surface equipment as required.

#### 1.15 Gas Manifold

- Sour service as per NACE Specification MR-0175 (latest edition)
- WP 1440 Psi.
- Should have 3" ball/plug valves.
- Should have 3" WECO Hammer union inlet/outlet connection.
- Should be able to divert wellbore fluids flow to burner or other surface equipment as required.

#### 1.16 Lab Cabin

Should have lab equipment like gas gravitometer, centrifuges, H<sub>2</sub>S detection pump etc.

#### 1.17 Air Compressor – 2 Nos.

- Should be able to supply sufficient quantity of air (600-700 scf/min at 100 psi) to burner for complete combustion of well effluents.
- Rugged enough for offshore use.
- Electrical/diesel powered, flame proof.
- Provided with flexible hose and suitable end connection to connect with air line of burner.
- The air line from compressor to burner should be fitted with a non-return check valve, to avoid any hydrocarbon mixture form burner.
- Air compressor shall be Zone 2 compliant.

### 1.18 Sand Filter/ Sand Trap / Desander System

- Suitable for removing sand from crude oil and / or gas flow.
- Sour service as per NACE Specification MR-0175 (latest applicable edition).
- Working Pressure 10,000 psi & temperature upto 275 deg F.
- Should have double isolated accumulation vessel for continuous operation with filter size of 100 microns and 200 microns.
- Sand hold up volume at least 75 lts.
- Inlet/outlet connection 3" x 10000 psi connection.
- Interconnecting piping with by-pass and drain
- Clamp on type electronic sand detection system, which needs to be clamped on upstream elbow.
- Should be rugged for use in high-rate multiphase flow and high temperature environments.

### 1.19 Surface Safety Valve

- Line Size 3" to be rigged up between Christmas Tree and choke manifold.
- Working pressure 10,000 psi.
- Test pressure 15,000 psi.
- Working temp. 32 to 250 Deg F
- Suitable for sour service as per NACE Specification MR 01-75 (Latest Edition).
- Inlet and outlet to be 3" 1502 rated to 10000 psi.
- Gate valve: hydraulically operated and fail-safe configuration – to close in case of hydraulics line failure. It should properly connect and work with Emergency Shut Down (ESD) system.
- Remote shut in with the help of ESD control panel.
- Should be able to prevent any overpressure to downstream equipment by shutting-in the well immediately upon failure or leaks in any downstream equipment.

- In case of emergency, should be able to close before SSSV valve gets closed, to reduce/prevent any damage to SSSV.

#### 1.20 Well Test Workshop Container with Accessories:

Workshop container should include following minimum items.

- Pressure gauges, ranges to include at minimum 0-10000 psi, 0-5000 psi, 0-2000 psi, 0-200 psi
- Thermometers
- Gas gravitometer
- Centrifuge (manual / pneumatic)
- Hydrometer set
- Dead weight tester
- Gas sniffers
- Portable H<sub>2</sub>S (range 10 ppm) and CO<sub>2</sub> detection equipment
- Tests on Oil / Gas samples should include:
  - Density / Specific gravity / Deg API
  - pH
  - Measurement of the Hydrogen Sulphide (H<sub>2</sub>S) Carbon Dioxide (CO<sub>2</sub>) by Draeger tubes.
  - Water salinity
  - Pour point
  - BS&W
  - GC up to at least C<sub>6</sub>+
- Fittings and needle valves required for the operation.
- All tools required and necessary spares required for PTS operation.
- Equipment to collect well fluid at surface for PVT analysis.

#### 1.21 Surface Testing Acquisition Network: 01 No.

- Means of recording and displaying following minimum parameters
  - Wellhead Pressure
  - Wellhead Temperature
  - Annulus Pressure
  - Separator Pressure

- Upstream & Downstream choke pressure
- Separator temperature
- Separator outlet gas temperature
- Separator outlet liquid temperature
- Separator gas differential pressure
- Capability of producing real time plots of Pressure vs. Time and of Flow rate vs. Time.
- Acquisition Computer
- All the required sensors for collecting the data should be provided by the Bidder, including all required cabling.
- All sensors and metering devices should have valid calibration certificates.

#### 1.22 Real Time Data Transmission

The 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.

#### 1.23 Sample Bottles

- Conventional Gas Samplers, 1500 psi, 600 cc, IATA confirming, Qty. 8
- Dead oil sample cans, 1 litre, IATA conforming, qty. 20
- Dead oil sample cans, 5 litre, IATA conforming, qty. 5
- Dead oil sample cans, 10 litre, IATA conforming, qty. 5
- Water sample bottles, 1 litre, plastic or glass, qty. 20
- Labels and consumables for all the above

#### 1.24 Safety Equipment

- Fire extinguishers.
- Portable H<sub>2</sub>S (Level-10 ppm and beyond) and CO<sub>2</sub> detection/measurement equipment
- Portable explosimeter

- Personnel protective equipment

#### 1.25 Tools, Crossovers & Spares

- Containerized workshop / store with power and lighting
- Includes all hand tools, all types of crossovers, spare parts etc. required for surface testing operations.
- Hose baskets, pipe racks and baskets etc.

#### 1.26 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.

#### 1.27 Other Items

Chemicals:

- Methanol/ Glycol for hydrate control
- Pour Point Depressant (PPD)
- Defoamer
- Demulsifier

## **2.0 WELL ACTIVATION SERVICES - OPTIONAL**

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 perforation.

The services of NPU shall be mobilized together or alone as per the job requirements.

### **2.1 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 Contractor 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.

**QUALIFICATION AND EXPERIENCE OF PERSONNEL**

**1.0 Operating Personnel for Surface Production Testing (SPT) Equipment:**

The Bidder shall provide a team of technically qualified and experienced personnel as mentioned below:

- a. Well Test Coordinator – 1 at Kakinada base/at drilling site.
- b. Well Test Supervisor – 2 (One per shift)
- c. Well Test Operator – 4 (Two per shift)
- d. Data acquisition & Interpretation specialist – 2 (One per shift)

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 points: -

- 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<sub>2</sub>S etc.
- v. To prepare and submit well testing reports.

**1.1 Well Test Coordinator**

Well Test Coordinator shall be based in Kakinada/at drilling rig site based on the company requirement and shall have a minimum of 7 years' experience in carrying out surface production testing operations in Offshore Drilling rig including 3 years as Well Test Coordinator.

The well testing coordinator shall be responsible for monitoring of the operations and work as an expert of well testing and shall have the experience of testing at least 6 offshore wells as a Supervisor.

The well testing coordinator shall be well versed with the latest testing technology, work procedures, in accordance with internationally recognized safe well testing methodology.

The well testing coordinator will also be responsible for preparing the different production testing plans as per the scope of work, for approval of the Company.

## **1.2 Well Test Supervisor**

Well testing supervisor shall have a minimum of 5 years' experience in carrying out surface production testing operations in Offshore Drilling rig including 3 years as testing supervisor.

The testing supervisor shall be able to work as an expert of well testing and shall be responsible for operations and maintenance of SPT equipment during well testing.

The well testing supervisor shall be well versed with the latest testing technology, work procedures, in accordance with internationally recognized safe well testing methodology.

## **1.3 Well Test Operator**

Well test Operator shall have a minimum of 3 years' experience in operating production testing surface equipment on Offshore Drilling rigs.

## **1.4 Data Acquisition, Processing & Interpretation Specialist**

The Person(s) should have minimum 3 years of experience in their respective Data Acquisition, 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.

## **2.0 Operating Personnel for Surface Production Testing (NPU) Equipment:**

### **2.1 NPU Specialist (Optional)**

Person should have minimum 3 years of experience in leading NPU operations in offshore wells and shall be responsible for NPU operations.

## **2.2 NPU Operator (Optional)**

Person should have minimum 3 years of experience in operating NPU for offshore wells and shall be assisting NPU specialist.

## **3.0 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:

1. The Bidder shall provide above competent personnel with requisite experiences & qualifications on round the clock basis and deploy accordingly without compromising statutory norms.
2. OIL reserves the right to decide for engagement of these personnel on the basis of verification of relevant documents prior to engagement.
3. 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.
4. 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.
5. The Bidder must provide Surface Production Testing services confirming to good oil field practices comparable to international standards.
6. 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 Operator.

7. The Bidder shall also quote for any additional item which is not listed in the Tender document but is essential for operation.
8. 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.
9. 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.
10. The Bidder should submit a list of personnel at the beginning of the contract who are likely to be deployed for the subject services to Operator for approval. They should fulfil the above qualifications and experience.

## COMPLETIONS EQUIPMENT SUPPLY & SERVICES

### Description:

1. The scope of work includes supply of all materials (Except Free issue items by COMPANY i.e., 2.7/8" #6.4 PPF, L80, 13Cr tubing and pup joints with premium connection), equipment/tools, providing services and execution for completion of Four (04) deviated wells.
2. The above activities are planned through hiring of upper completion services. The contingency tools required for any trouble shooting operation of the downhole equipment's shall be in Bidder's scope.

**Note:** For any contingency requirements during the entire scope of work like problem in DHSV opening/closing during testing, unable to get packer to depth, unable to set packer, malfunction of DHSV, ICVs, Downhole gauges, control lines etc. the required tools & services are to be arranged by the BIDDER. Contingency tools/services are to be readily available during operations as per requirements.

3. The scope shall include (but not limited to):
  - a. Supply, installation & commissioning of all down-hole items (including backup) viz ICVs, Completion packers, Downhole gauges (DHG), DHG mandrel, Downhole mandrel along with Chemical Injection string, Downhole Safety Valve (DHSV), associated Clamps, hydraulic control line, DHG cables, crossovers etc. and any other item not indicated but required for successful upper completion.
  - b. Supply installation & commissioning of surface control & acquisition units to include: -
    - Smart Completion Controller Unit with Surface Acquisition Unit (SAU) with necessary hardware & software
    - Downhole pressure and temperature gauges with Surface Acquisition Unit (SAU)
    - The Cabinet housing with the smart well completion controllers and SAUs

- Hydraulic Power Unit (HPU) package on redundant mode with necessary hydraulic oils catered for 2 wells in each platform for controlling ICVs, DHSVs, X-mass tree Master Valve, Wing Valve, Positive Chokes.
- Surface Pumping Unit for Chemical injection c/w tanks
- c. BIDDER shall provide all tools and equipment (including back up) and service personnel as per prepared well design for installation & commissioning at well site (offshore rig/platform).
- d. Provide backup items, tools, and equipment for ensuring continuous operations in case of any emergency situations viz. breakdown of primary equipment.
- e. To provide all auxiliary handling tools/equipment like shackles, hooks, tools, etc. required for handling all components of their equipment's and maintain the tools/equipment with sufficient spares and consumables like lubricants, grease, gaskets etc.
- f. To provide setting, testing, operation SOPs for tools and equipment's including contingency procedures and acquaint COMPANY personnel with the procedures.
- g. To submit cross sectional drawing or detailed engineering drawings along with QAP from OEM before supply for OIL's verification & approval.
- h. To provide trained, proficient, and experienced service personnel for successful installation, testing, operation of upper & lower completion assembly i.e., setting and testing of packers, etc. Personnel should be able to communicate in English.
- i. To mobilize all supply items, equipment, and personnel as per schedule and demobilize the same on receipt of demobilization notice from the company on completion of contract.
- j. The BIDDER should provide all cross overs and in sufficient numbers for interface of their down-hole items, tools, and equipment's with the completion string/ work string and for hook up with associated rig equipment including FOSV for operational requirements. COMPANY will not provide any crossover for interface.

- k. To provide matching hydraulic connectors (3/8", 1/4" and crossovers as per requirements - M/P Hydraulic) for connection of hydraulic control/injection lines to down-hole equipment and connection to tubing hanger.
- 1. Guarantee/warranty: Goods/materials to be supplied shall be new, of recent make of the best quality/workmanship and shall be guaranteed for a period of 12 months from the date of installation/commission. Defective GOODS/ materials or part notified, if any on receipt by OIL shall be made good by the bidder immediately.

**Notes:**

- 1. The list of equipment's items is indicative only. Any critical item (including backup) that is necessary for continuous & successful completion of full scope of intended services, but not mentioned anywhere in the tender, the bidder shall provide without any additional cost to Company.
- 2. BIDDER shall work in close co-ordination with Company's representative and other working agencies at offshore rig / platform for planning and execution of entire scope till successful completion of well.
- 3. All equipment mobilised for execution are for use in PML area where applicable customs duty is nil.
- 4. BIDDER to provide a list of all tools and equipment's being mobilized which will have to be re-exported back. The list must include all installation & commissioning spares and spares for equipment mobilized for different services under scope of work.
- 5. The outline of functional scope involved for single zone well is as follows:

Sl. No	Description
1	Perform wellbore cleanout.
2	Make up gun string for TCP below upper completion.
3	Make up and RIH of upper completion.
4	Set Packer at Desired depth. Land set and test completion.
5	Suspend well by closing DHSV and setting up RBP/TWCV for XMT installation.
6	Install production tree.
7	Clean up well by firing guns and clean up. Perform well clean-up to well test package.

Table 1-1 Single zone well

6. The outline of functional scope involved for dual zone well is as follows:

Sl. No	Description
1	Perform wellbore cleanout.
2	Make up upper zone guns with DP and perforate upper zone.
3	Make up gun string for lower zone below seal bore retrievable packer on drill pipe and set packer with proper depth correlation. POOH drill pipe assembly.
4	RIH upper completion string with ICVs and stab-in tail pipe into seal bore retrievable packer.
5	Land set and test completion.
6	Suspend well by closing DHSV for XMT installation.
7	Install production tree.
8	Perforate lower zone and perform well clean-up.

Table 1-2 Dual zone well

The operations listed below are planned under the functional scope detailed in this document through “Hiring of completion services. Provision of Well Completion Equipment & Services” consists of following:

1. Make up and RIH of seal bore retrievable packer with TCP guns on drill pipe.
2. Make up and RIH of Upper completion services including Lower and upper completion packers, DHG, ICV, No-go locator, DHSV along with specified control lines and DHG cable.
3. Land, set and test completion.
4. Any other material & services required, but not mentioned in the tender.
5. Completion string design considerations:
  - A. Lower TCP assembly below upper completion consisting of:
    - Bullnose, perforating guns, safety spacer, auto-release gun hanger, dual electronic firing heads, seal bore retrievable packer, etc.
  - B. Upper completion assembly consisting of:
    - Perforated pup-joint: To circulate and condition wellbore for DGSA.

- Tail pipe: To ensure mechanical access to lower completion. To mitigate potential water loading effects.
- Wireline entry guide: For re-entry of wireline tool from casing to tubing string.
- Feed through production packer: For annulus isolation acting as a barrier during production. Hydraulic or hydrostatic set based on single zone or dual zone completion.
- No-go locator: For locating top of 7” liner to facilitate correct space-out of the perforating guns for DGSA and DGSB.
- Blast joints: To mitigate any potential erosion risk of tubulars set across open perforations (relevant once upper zone starts producing in dual zone wells).
- ICV: To allow flow control of production or injection flow rates without intervention.
- Downhole gauge: For online monitoring of bottom-hole pressure & temperature of wells.
- Downhole mandrel along with Chemical injection string.
- Downhole Safety Valve (DHSV): Failsafe valve to prevent uncontrolled release of hydrocarbons in an emergency situation.

Other required sub assembly including interface items that may be required to complete the upper completion as per specific well design.

## **1.0 Technical Specifications**

### **1.1 General Information**

Bidders should detail out technical features of products quoted in bid. It should also include the ones which is not specified in the tender but required for successful installation and commissioning.

The bidder shall furnish technical literature, cross sectional drawings with dimensions and catalogues of the equipment / items to be supplied along with the detailed technical specifications. Offers without supporting literatures, drawings and catalogue will not be considered and these supporting documents must include the main features, setting & releasing mechanism of the packer/service tools etc. It is important that such provided details of the proposed equipment and the corresponding quote, for such equipment do not vary.

The bidder should indicate make/model/part No. (Unique Part No. for each item is preferred) for quoted items, as the case may be.

All items, tools and equipment's shall be rated as per the well design.

All the equipment supplied for down-hole installation should have minimum ID and sufficient drift ID clearance to ensure and facilitate smooth entry of running in and pull out of all tools and accessories installed below the specified equipment in the. Upper completion hardware via wire line or Company tubing as and when required.

### **1.2 Upper Completion Service**

1.2.1 The completion equipment storage is to be for tropical conditions.

1.2.2 For all completion equipment metallurgy shall be L-80 13 CR (For flow wet segment) or superior grade, Quenched & Tempered as per API-5CT.

1.2.3 Elastomers:

- **HNBR: For east block**
- **Alfas: For west block**

1.2.4 The other necessary equipment is to be indicated with full description and functions.

### 1.3 Specifications for Completion Equipment for East part of Wells

<b>A</b>	<b>Interval control valve (ICV) for DGSB</b>
1	2 7/8" ON/OFF type interval control valve.
2	Hydraulically controlled type with suitable hydraulic oil to be provided by vendor
3	To be run with 2-7/8", 6.4 ppf, 13Cr tubing. To be installed below upper and lower packers.
4	Shrouded ICV for Lower zone
5	Compatible for installation in 7", 29ppf casing for lower zone and compatible for installation in 9 5/8", 53.5 ppf, casing for upper zone.
6	Working pressure 7500 psi or higher. Working Temperature 325 deg F.
7	Upper zone ICV able to handle max liquid rate of 475 stb/d and max gas rate of up to 1500000 scf/d.
8	Lower zone ICV able to handle designed gas rate of up to 1000000 scf/d and designed 11 stb/d condensate rate.
9	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment).
10	Connection: 2 7/8", 100% T&C efficiency.
11	Min ID not less than 2.313". Max OD such that able to pass through 7" (Drift ID 6") liner top.
12	Minimum hydraulic pressure rating required to actuate ICV in conditions that require maximum operation power should be mentioned.
13	Valve should operate with max HPU supply pressure of 5000 psi.
14	Contingent operating mechanism to be mentioned.
15	With bypass for 2 control lines as well as protection for control lines from damage due to flow from reservoir for upper zone.
16	Maximum DLS it will pass through 3 deg/100ft and will be set in 0 deg/100ft zone.
17	Upper zone ICV: Setting depth 2353m at an angle of 24 deg. Lower zone ICV: Setting depth 2900m at an angle of 23.34 deg.
Note: If 3-1/2" ICV rated to 325 deg F is proposed by the bidder, then necessary crossovers for 2-7/8" tubing to be provided to convert that with compatible string without any additional cost implication to OIL.	
<b>A 1</b>	<b>Hydraulic Control lines for ICV</b>

1	¼” encapsulated control line
2	To be installed from ICV to surface
3	Encapsulation Material: Polyamide
4	To be welded and drawn.
5	Fluid type: NAS 6 certified
6	Material Class: Incoloy 825
7	Temperature Rating: 300 Deg F, Pressure Rating: 10,000 psi
8	Testing in accordance with ASTM A-269, ASTM B-163 and B-751
9	Hydraulic Flat pack for 1/4” x 3 control lines. TRIPLE
<b>B</b>	<b>COMPLETION PACKER (FOR DGSA), HNBR, Feed Through</b>
1	Tubing conveyed Hydraulic set packer with hydraulic contingency, retrievable type.
2	Suitable for 7” 29 ppf L80 production casing (Details mentioned in exhibit E). To be run with 2 7/8” 6.4ppf L80 13Cr tubing.
3	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
4	Packer slips should be bi-directional type.
5	Differential pressure rating 5000 psi or higher. Temperature rating for 250 deg F. (Price schedule)
6	Slips protected from debris with debris barrier.
7	Elastomer: HNBR or greater.
8	Design validation as per V0. Quality control as per Q2 of ISO14310 / API-11 D1.
9	Premium connections, to be provided with appropriate x-overs to make it compatible with 2 7/8”, 6.4ppf, L80, 13Cr.
10	Packer retrieval mechanism should be cut to release type.
11	Packer setting depth and deviation at setting depth mentioned in Exhibit-A.
<b>B1</b>	<b>FEEDTHROUGH COMPLETION PACKER (FOR DGSB)</b>
1	Tubing conveyed, Hydraulic set packer, retrievable type.
2	The packer should be installable by pressurising against closed ICV i.e., higher tubing pressure than annulus pressure.
3	Suitable for 9 5/8” 53.5 ppf P110 production casing. It should allow bypass of three control line with ¼” size.
4	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
5	Packer slips should be bi-directional type.
6	Differential pressure rating 5000 psi or higher. Temperature rating for 250 deg F.
7	Slips protected from debris with debris barrier.
8	Elastomer: HNBR or greater

9	Design validation as per V1. Quality control as per Q2 of ISO14310 / API-11 D1
10	Premium connection to be provided with appropriate x-overs to make it compatible with 2 7/8", 6.4ppf, 13Cr.
11	Packer retrieval mechanism should be cut to release type.
12	Packer setting depth and deviation at setting depth mentioned in Exhibit-B.
<b>B2</b>	<b>SEALBORE RETRIEVABLE PACKER (FOR DGSB)</b>
1	Drill pipe conveyed, Hydraulic set packer, retrievable type.
2	The packer setting mechanism should be hydraulically set by ball drop.
3	Suitable for 9 5/8" 53.5 ppf P110 production casing. To be run with 5" 19.5ppf drill pipe.
4	No specific metallurgy requirement as packer won't be a part of well barrier envelope.
5	Packer slips should be bi-directional type.
6	Differential pressure rating 5000 psi or higher. Temperature rating for 250 deg F.
7	Slips protected from debris with debris barrier.
8	Elastomer: HNBR or greater
9	Design validation as per V0. Quality control as per Q2 of ISO14310 / API-11 D1
10	Connections to be provided with appropriate x-overs to make it compatible with 5" 19.5ppf drill pipe.
11	Packer should be retrievable type by packer retrieval tool.
12	Packer setting depth and deviation at setting depth mentioned in Exhibit-B.
13	Suitable bore diameter for allowing 2 7/8" tailpipe of upper completion to be stabbed in.
<b>C</b>	<b>NO-GO LOCATOR</b>
1	For locating top of 7" Liner.
2	Min. OD should be 7" or bigger. Drift ID should be min 2.313".
3	No square shoulders to be present.
4	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
5	Connection: 2 7/8", 6.4ppf, 13Cr Premium connection or with appropriate x-over.
6	Burst/collapse/tensile should meet or exceed production tubing.
<b>D</b>	<b>DOWNHOLE GAUGE</b>
1	Pressure range: 200 to 10000 psi.

2	Temperature range: 70-300 deg F.
3	Pressure accuracy (% FS): 0.02 Temperature accuracy: 0.5 C
4	Pressure resolution<0.05 psi/sec Temperature resolution: 0.005 C/sec
5	Repeatability< 0.01 (Pressure) and < 0.1 C (Temperature)
6	Drift at atm Pressure and 70 F (%FS/year): Negligible
7	Drift at max pressure and 300 deg F (%FS/year): 0.02
8	Drift at max temperature (%FS/year): < 0.1 C
9	Gauge to be provided with its fittings and spares required for its preparation.
10	Preparation, testing, installation, and configuration to be done by BIDDER service personnel.
11	Wellhead termination kit including feed through assembly, junction box/flameproof enclosure for termination of downhole gauge cable and connecting to topside surface cable.
12	Surface armoured cable of appropriate length.
<b>E</b>	<b>DOWNHOLE GAUGE MANDREL</b>
1	Max OD: 5.4” Min ID: 2.313”
2	Working pressure 5000 psi
3	Working temperature 40-250 F
4	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
5	Connection: 2 7/8”, 6.4ppf, 13Cr, Premium connection or with appropriate x-over.
6	Burst/collapse/tensile should meet or exceed production tubing.
7	Should have bypass for allowing three ICV control lines to pass through it.
8	Appropriate sealing system providing long term integrity of tubing-annulus system.
9	Should protect downhole gauge during deployment and production.
<b>F</b>	<b>DOWNHOLE GAUGE CABLE</b>
1	Tubing material Incoloy 825.
2	Wall thickness 0.71mm or more based on working pressure and temperature conditions below.
3	Working pressure 5000 psi and working temperature 250 deg F.
4	Yield strength min. 80000 psi.
5	Voltage rating 1000V DC.
6	American Wire Gauge 18AWG.
7	Capacitance (min 92pF/m) and Insulation resistance (min 2900 Mohm/km) to be mentioned.

8	Cable encapsulation material PP with round or square construction.
9	Spoolers and other equipment for reliable installation for cable.
<b>G</b>	<b>CHEMICAL INJECTION MANDREL WITH STRING</b>
1	Working pressure 5000 psi, Working temperature 50-250 deg F.
2	To be run with 2 7/8" 6.4ppf 13CrL80 tubing inside 9 5/8" 53.5 ppf P110 casing for DGSA.
3	To be run with 2 7/8" 6.4ppf 13CrL80 tubing inside 9 5/8" 53.5 ppf P110 casing for DGSA.
4	Service Environment: $CO_2 \leq 4\%$ mol, $H_2S = 0$ ppm.
5	Working pressure 5000 psi, Working temperature 25-250 deg F., Maximum Flow Rate: 85 GPD
6	1/4" OD Control line, 0.049in wall thickness. (refer H)
<b>H</b>	<b>DOWNHOLE SAFETY VALVE</b>
1	Working pressure 5000 psi, Working temperature 50 -250 deg F.
2	To be run with 2 7/8" 6.4ppf 13CrL80 tubing inside 9 5/8" 53.5 ppf P110 casing for DGSA.
3	To be run with 2 7/8" 6.4ppf 13CrL80 tubing inside 9 5/8" 53.5 ppf P110 casing for DGSA.
4	Service Environment: $CO_2 \leq 4\%$ mol, $H_2S = 0$ ppm.
5	Setting depth: 50m below tubing hanger.
6	Self-equalising type.
7	Flapper type closure
8	Seal type: Metal to metal
9	Min ID: 2.312".
10	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
11	Connection: 2 7/8", 6.4ppf, 13Cr, Premium connection or with appropriate x-over.
12	Tensile rating should exceed end connections at max working pressure at max design temperature.
13	Valve should open with max HPU supply pressure of 5000 psi.
14	Preparation, testing, installation, and configuration to be done by BIDDER service personnel.
15	Minimum closing pressure 700 psi.
16	Design validation as per standard API 14A.
17	Permanent lock opening tool
18	The DHSV shall have No go nipple for installation of Permanent lock opening tool
<b>I</b>	<b>CONTROL LINE for Safety Valve</b>

1	¼” OD Control line, 0.049in wall thickness.
2	Seamless manufactured.
3	Single control line without stress cable encapsulation.
4	Material Incoloy 825 with Teflon FEP encapsulation.
5	Working pressure 5000 psi and temperature 250 deg F
6	To be run with 2 7/8” 6.4ppf 13Cr tubing inside 9 5/8” 53.5 ppf P110 casing
7	Design validation as per ASTM.
8	Supplied with suitable control line fluid to operate ICV and DHSV as per operating conditions specified earlier.
<b>J</b>	<b>CONTROL LINE PROTECTORS</b>
1	To be run with 2 7/8”, 6.4ppf, L80,13Cr tubing inside 9 5/8”, 53.5 ppf, P110 casing, and 7”, 29 ppf, L80 Liner.
2	Ideal for ¼” Control line for DHSV operation along with ¼” Downhole gauge cable i.e., protector having 5 grooves for downhole gauge cable and four control lines or suitable to run control lines proposed.
3	Ideal for ¼” Control line for ICV’s operation along with ¼” Downhole gauge cable i.e., protector having 4 grooves for downhole gauge cable and three control lines or suitable to run control lines proposed.
4	Support up to 100ft of four control lines and one cable weight without damaging control lines and DHG cable.
5	No loose parts should be there which can fall out during or after installation.
6	Assembly trial, drift test, lateral load test or any reliable test reports should be provided with the clamps.
<b>K</b>	<b>PERFORATED PUP-JOINT (For DGSA)</b>
1	Total cross section area of the holes should be at least equivalent to the cross-sectional area to internal diameter of 2 7/8” 6.4ppf 13Cr tubing.
2	Drift ID should be min 2.313”.
3	Metallurgy: 13Cr(L-80) or superior grade.
4	Connection: Compatible with 2 7/8”, 6.4ppf, Premium connection.
5	Length: 4 m
<b>L</b>	<b>BLAST JOINT</b>
1	Suitable for 7” 29 ppf L-80 (Special drift 6.00 inch) production liner.

2	To be installed with 2 7/8" 6.4 ppf L-80 13Cr tubing.
3	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
4	Working pressure 5000 psi or higher. Working Temperature 250 deg F.
5	Joints in standard length of 2 ft, 4ft, 20ft.
6	Connection: 2 7/8", 6.4ppf, 13Cr, Premium connection or with appropriate x-over.
<b>M</b>	<b>WIRELINER ENTRY GUIDE (For DGSB)</b>
1	Full open internal diameter.
2	Drift ID should be min 2.313".
3	With a bevelled guide for re-entry of wireline tool back into the tubing.
4	Metallurgy: 13Cr(L-80) or superior grade.
5	Connection: Compatible with 2 7/8", 6.4ppf, Premium connection.

#### 1.4 Specifications for Completion Equipment for West part of Wells

<b>A</b>	<b>Interval control valve (ICV) for DGSC &amp; DGSD</b>
1	2 7/8" ON/OFF type interval control valve.
2	Hydraulically controlled type.
3	To be run with 2-7/8" size, 6.4 ppf or higher, 13 Cr tubing. To be installed below upper and lower packer.
4	Compatible for installation in 7", 29ppf casing for lower zone and compatible for installation in 9 7/8", 65.3 ppf casing or 9 5/8", 53.5 ppf casing for upper zone.
5	Shrouded ICV for Lower zone
6	Working pressure 7500 psi or higher. Working temperature rating 325 deg F.
7	ICV able to handle designed gas rate of up to 3.5MMscf/d and designed 385 stb/d condensate rate.
8	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment).
9	Connection: 2 7/8", 6.4ppf, 13Cr Premium connection or with appropriate x-over.
10	Min ID not less than 2.313".
11	Minimum hydraulic pressure rating required to actuate ICV in conditions that require maximum operation power should be mentioned.
12	Valve should operate with max HPU supply pressure of 10000 psi.
13	Contingent operating mechanism to be mentioned.

14	With bypass for control lines as well as protection for control lines from damage due to flow from reservoir.
15	Maximum DLS it will pass through 3 deg/100ft and will be set in 0 deg/100ft zone.
Note: If 3-1/2" ICV rated to 325 deg F is proposed by the bidder, then necessary crossover for 2-7/8" tubing to be provided to convert that with compatible string without any additional cost implication to OIL.	
<b>A 1 Hydraulic Control lines for ICV</b>	
1	1/4" encapsulated control line
2	To be installed from ICV to surface
3	Encapsulation Material: Polyamide
4	To be welded and drawn.
5	Fluid type: NAS 6 certified
6	Material Class: Incoloy 825
7	Temperature Rating: 300 Deg F, Pressure Rating: 10,000 psi
8	Testing in accordance with ASTM A-269, ASTM B-163 and B-751
9	Hydraulic Flat pack for 1/4" x 3 control lines. TRIPLE
<b>B COMPLETION PACKER (FOR DGSC and DGSD) – Feed Through Packer</b>	
1	Tubing conveyed, Hydraulic set packer, retrievable type.
2	Suitable for 7" 29ppf L80 production liner . To be run with 2 7/8" 6.4ppf L8013Cr tubing.
3	Upper zone packer should allow bypass of three control lines with 1/4" size.
4	Lower zone packer should allow bypass of two control lines with 1/4" size.
5	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
6	Packer slips should be bi-directional type.
7	Differential pressure rating 7500 psi or higher. Temperature rating for 325 deg F.
8	Slips protected from debris with debris barrier.
9	Elastomer: AFLAS or greater
10	Design validation as per V0. Quality control as per Q2 of ISO14310 / API-11 D1
11	Premium connection to be provided with appropriate X-overs to make it compatible with 2 7/8", 6.4ppf, L-80 13Cr tubing.
12	Packer retrieval mechanism should be cut to release type.
13	Packer setting depth and deviation at setting depth mentioned in Exhibit-C & Exhibit-D.

<b>B1</b>	<b>SEALBORE RETRIEVABLE PACKER</b>
1	Drill pipe conveyed, Hydraulic set packer, retrievable type.
2	The packer setting mechanism should be hydraulically set by ball drop.
3	Suitable for 7" 29 ppf L80 production casing Exhibit. To be run with 5" 19.5ppf drill pipe.
4	No specific metallurgy requirement as packer won't be a part of well barrier envelope.
5	Packer slips should be bi-directional type.
6	Differential pressure rating 6300 psi or higher. Temperature rating for 325 deg F.
7	Slips protected from debris with debris barrier.
8	Elastomer: AFLAS or greater
9	Design validation as per V3. Quality control as per Q2 of ISO14310 / API-11 D1
10	Connections to be provided with appropriate x-overs to make it compatible with 5" 19.5ppf drill pipe.
11	Packer should be retrievable type by packer retrieval tool.
12	Packer setting depth and deviation at setting depth mentioned in Exhibit-B.
13	Suitable bore diameter for allowing 2 7/8" tailpipe of upper completion to be stabbed in.
<b>C</b>	<b>NO-GO LOCATOR/LANDING SUB</b>
1	For locating top of 7" Liner.
2	Min. OD should be 7" or bigger. Drift ID should be min 2.313".
3	No square shoulders to be present.
4	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment).
5	Connection: Compatible with 2 7/8", 6.4ppf, 13Cr Premium connection or with appropriate x-over.
6	Burst/collapse/tensile should meet or exceed production tubing.
<b>D</b>	<b>DOWNHOLE GAUGE</b>
1	Pressure range: 25 to 10000 psi.
2	Temperature range: 23-350 deg F.
3	Pressure accuracy (%FS): 0.02 Temperature accuracy: 0.5 C
4	Pressure resolution<0.01 psi/sec Temperature resolution: 0.002 C/sec
5	Repeatability< 0.01 (Pressure) and < 0.1 C (Temperature)
6	Drift at atm Pressure and 70 F (%FS/year): Negligible
7	Drift at max pressure and 300 deg F: +/- 1 per year
8	Drift at 300 deg F temperature: +/- 0.16 per year

9	Gauge to be provided with its fittings and spares required for its preparation.
10	Preparation, testing, installation, and configuration to be done by BIDDER service personnel.
11	Wellhead termination kit including feed through assembly, junction box/flameproof enclosure for termination of downhole gauge cable and connecting to topside surface cable.
12	Surface armoured cable of appropriate length.
<b>E</b>	<b>DOWNHOLE GAUGE MANDREL</b>
1	Max OD: 5.4” Min ID: 2.313”
2	Working pressure = 10000 psi
3	Working temperature = 325F
4	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
5	Connection: 2 7/8”, 6.4ppf, 13Cr, Premium connection or with appropriate x-over.
6	Burst/collapse/tensile should meet or exceed production tubing.
7	Should have bypass for allowing three ICV control lines to pass through it.
8	Appropriate sealing system providing long term integrity of tubing-annulus system.
9	Should protect downhole gauge during deployment and production.
<b>F</b>	<b>DOWNHOLE GAUGE CABLE</b>
1	Tubing material Incoloy 825.
2	Wall thickness 0.71mm or more based on working pressure and temperature conditions below.
3	Working pressure 10000 psi and working temperature 325 deg F.
4	Yield strength min. 80000 psi.
5	Voltage rating 1000V DC.
6	American Wire gauge 18mm.
7	Capacitance (min 92pF/m) and Insulation resistance (min 2900 Mohm/km) to be mentioned.
8	Cable encapsulation material PP/ Nylon with round or square construction.
9	Spoolers and other equipment for reliable installation for cable.
<b>G</b>	<b>CHEMICAL INJECTION MANDREL WITH STRING</b>
1	Working pressure 6500 psi, Working temperature 325 deg F. Maximum Flow Rate: 85 GPD

2	To be run with 2 7/8" 6.4ppf L8013Cr tubing inside 9 7/8" 65.3 ppf or 9 5/8" 53.5 ppf P110 casing.
3	Service Environment: $CO_2 \leq 4\%$ mol, $H_2S = 0$ ppm.
4	1/4" OD Control line, 0.049" wall thickness.
<b>H</b>	<b>DOWNHOLE SAFETY VALVE</b>
1	Working pressure 6500 psi, Working temperature 250 deg F.
2	To be run with 2 7/8" 6.4ppf L80, 13Cr tubing inside 9 7/8", 65.3 ppf casing or 9 5/8", 53.5ppf casing
3	Service Environment: $CO_2 \leq 4\%$ mol, $H_2S = 0$ ppm.
4	Setting depth: 50m below tubing hanger.
5	Self-equalising type.
6	Flapper type closure.
7	Seal type: Metal to metal.
8	Min ID: 2.312".
9	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment).
10	Connection: 2 7/8", 6.4ppf, 13Cr, Premium connection or with appropriate x-over.
11	Tensile rating should exceed end connections at max working pressure at max design temperature.
12	Valve should open with max HPU supply pressure of 10000 psi.
13	Minimum closing pressure 700 psi.
14	Preparation, testing, installation, and configuration to be done by BIDDER service personnel.
15	Design validation as per standard API 14A.
16	Permanent lock opening tool
17	The DHSV shall have No go nipple for installation of Permanent lock opening tool
<b>I</b>	<b>CONTROL LINE for TRSSV</b>
1	1/4" OD Control line, 0.049" wall thickness.
2	Seamless manufactured.
3	Single control line without stress cable encapsulation.
4	Material Incoloy 825 with PP encapsulation.
5	Working pressure 6500 psi and temperature 325 deg F
6	To be run with 2 7/8" 6.4ppf L80 13Cr tubing inside 9 7/8" 65.3 ppf VM110SS-D or 9 5/8" 53.5 ppf P110 casing.
7	Design validation as per ASTM.
8	Supplied with suitable control line fluid to operate ICV and DHSV as per operating conditions specified earlier.
<b>J</b>	<b>CONTROL LINE PROTECTORS</b>

1	To be run with 2 7/8" 6.4ppf tubing inside 9 7/8" 65.3 ppf VM110SS-D or 9 5/8" 53.5 ppf P110 casing and 7" 29 ppf L80 Liner.
2	Ideal for 1/4" Control line for DHSV operation along with 1/4" Downhole gauge cable i.e., protector having 5 grooves for downhole gauge cable and four control lines or suitable to run control lines proposed.
3	Ideal for 1/4" Control line for ICV's operation along with 1/4" Downhole gauge cable i.e., protector having 4 grooves for downhole gauge cable and three control lines or suitable to run control lines proposed.
5	Support up to 100ft of four control lines and one cable weight without damaging control lines and DHG cable.
6	No loose parts should be there which can fall out during or after installation.
7	Assembly trial, drift test, lateral load test or any relatable test reports should be provided with the clamps.
8	Special protectors for DHSV to prevent damage of control line/Downhole gauge cable around bigger OD of DHSV.
<b>K</b>	<b>BLAST JOINT</b>
1	Suitable for 7" 29 ppf L-80 (Special drift 6.00 inch) production liner.
2	To be installed with 2 7/8" 6.4 ppf L-80 13Cr tubing.
3	Metallurgy: 13Cr(L-80) or superior grade (for flow wet segment)
4	Working pressure 10000 psi or higher. Working Temperature 325 deg F.
5	Joints in standard length of 2 ft, 4ft, 20ft.
6	Connection: 2 7/8", 6.4ppf, 13Cr, Premium connection or with appropriate x-over.
<b>L</b>	<b>WIRELINER ENTRY GUIDE</b>
1	Full open internal diameter.
2	Drift ID should be min 2.313".
3	With a bevelled guide for re-entry of wireline tool back into the tubing.
4	Metallurgy: 13Cr(L-80) or superior grade.
5	Connection: Compatible with 2 7/8", 6.4ppf, Premium connection.

**1.5 Specifications for Cleanout string (Rental Equipment):**

<b>A</b>	<b>SHORT TRIP BOP JETTING SUB</b>
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1	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe.
2	Bottom connection compatible with NC38 3 1/2" 13.3ppf Drill pipe.
3	Compatible with casing bore protector retrieval tool to retrieve and jet BOP in one single trip.
4	Minimum six replaceable jet nozzles with minimum flow area to allow pumping at minimum 10 bpm.
5	Should be able to jet BOP of bore diameter 13-5/8" & unitized wellhead.
6	Tool OD and drift ID comparable to 3 1/2" 13.3 ppf drill pipe.
7	Nozzles placement should be directed upwards and downwards to get maximum cleaning efficiency.
<b>B</b>	<b>9 5/8" FILTER SUB</b>
1	Top connection compatible with Drill pipe conns TBA.
2	Bottom connection compatible with drill pipe/bull nose TBA.
3	Tool OD minimum 8.374" to prevent debris generated from BOP cleanout to fall into wellbore.
4	Sufficient capacity to collect debris matching industry standards.
5	Should have threads below to install bull nose.
<b>C</b>	<b>7" FILTER SUB</b>
1	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe.
2	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe.
3	Tool OD minimum 6" to prevent debris generated from liner cleanout to fall down.
4	Sufficient capacity to collect debris matching industry standards.
5	Screen mesh for filtering suspended solids from wellbore fluid and retrieving when pulling out of the hole.
6	Working temperature 325 deg F.
<b>D</b>	<b>BULL NOSE</b>
1	Bull nose to be provided with Top connection NC 38 compatible with filter sub detailed above.
<b>E</b>	<b>PORTED BYPASS SUB</b>
1	To open communication between the ID of drill pipe and annulus.
2	Tool to be able to run in closed position while run in.

3	Can be activated by dropping a ball in the hole and allow fluid circulation through ports and down through the tool.
4	Compatible to be run in 7" 29ppf P110 (Special drift 6.0") casing.
5	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe or with suitable crossover.
6	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe.
7	Working temperature 325 deg F.
<b>F</b>	<b>CASING MAGNET ASSEMBLY</b>
1	Should remove ferrous metals during wellbore cleanout operations.
2	Working temperature 325 deg F.
3	Compatible to be run in 7" 29ppf P110 (Special drift 6.0") casing.
4	Compatible to be run in 9 5/8" 53.5 ppf P110 production casing.
5	Compatible to be run in 9 7/8" 65.3 ppf P110 production casing.
6	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe or with suitable crossover.
7	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe.
8	It should have minimum or no damage to the casing on rotation.
9	It should allow a generous flow area to prevent flow restrictions when packed full of debris.
10	It should provide maximum surface area for magnetic coverage to extract maximum ferrous debris from wellbore.
<b>G</b>	<b>SCRAPER FOR 9-5/8" &amp; 9-7/8" CASING</b>
1	Should have 360° scraping coverage to scour mud cake, cement sheaths, pipe scale and other restrictive material from wellbore casing interior wall surfaces.
2	Should have suitable large flow area between exterior of tool and casing ID to reduce ECD.
3	Working temperature 325 deg F.
4	Compatible to be run in 9 5/8" 53.5ppf P110 and P110 casing.
5	Compatible to be run in 9 7/8" 65.3ppf P110 and P110 casing.
6	Top connection compatible with Drill pipe coons TBA or with suitable crossover.
7	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe.
8	It should have minimum or no damage to the casing on rotation.
9	Should have suitable large flow area between exterior of tool and casing ID to reduce ECD.

<b>H</b>	<b>SCRAPER FOR 7" CASING</b>
1	Should have 360° scraping coverage to scour mud cake, cement sheaths, pipe scale and other restrictive material from wellbore casing interior wall surfaces.
2	Should have suitable large flow area between exterior of tool and casing ID to reduce ECD.
3	Working temperature 325 deg F.
4	Compatible to be run in 7" 29ppf P110 (Special drift 6.0") casing.
5	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe or with suitable crossover.
6	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe.
7	It should have minimum or no damage to the casing on rotation.
8	Should have suitable large flow area between exterior of tool and casing ID to reduce ECD.
<b>I</b>	<b>INFLOW TEST PACKER</b>
1	To perform isolated negative inflow flow test on liner top.
2	To be compatible to be run in conjunction with other wellbore cleaning tools.
3	Drill pipe conveyed, Mechanical set packer, retrievable type.
4	The packer should set by tagging the TOL and weight slack off.
5	Suitable for 9 5/8" 53.5 ppf P110 production casing.
6	Suitable for 9 7/8" 65.3 ppf P110 production casing.
7	Differential pressure rating 6500 psi or higher. Temperature rating for 325 Deg F.
<b>J</b>	<b>9 5/8" CASING BRUSH</b>
1	To assist mechanically in cleaning wellbore casing by removing mud film and other restrictive material.
2	Material of brush should be compatible with chrome casing and casing wear should be minimum.
3	Should have 360° coverage without rotation.
4	Casing wear should be minimum.
5	Spring loaded brush inserts.
6	Compatible to be run in 9 5/8" 53.5ppf P110 casing.
7	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe or with suitable crossover.
8	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe.
9	Working temperature 325 deg F.

<b>K</b>	<b>7" CASING BRUSH</b>
1	To assist mechanically in cleaning wellbore casing by removing mud film and other restrictive material.
2	Material of brush should be compatible with chrome casing and casing wear should be minimum.
3	Should have 360° coverage without rotation.
4	Casing wear should be minimum.
5	Spring loaded brush inserts.
6	Compatible to be run in 7" 29 ppf P110 (Special drift 6.0") casing.
7	Top connection compatible with NC38 3 1/2" 13.3ppf Drill pipe or with suitable crossover. For 7" Casing Brush
8	Bottom connection NC38 compatible with NC38 3 1/2" 13.3ppf drill pipe for 7" Casing Brush.
9	Working temperature 325 deg F.

**1.6 Supply, Installation & Commissioning of surface control & acquisition units: -**

The bidder shall supply, install & commission the followings;

- Smart Completion Controller Unit on redundant mode with Surface Acquisition Unit (SAU) with necessary hardware & software.
- Downhole pressure and temperature gauges with Surface Acquisition Unit (SAU)
- The Cabinet housing with the smart well completion controllers and SAUs
- Hydraulic Power Unit (HPU) package on redundant mode with necessary hydraulic oils catered for 2 wells in each offshore platforms for Controlling ICVs, DHSVs, X-mass Tree Master Valves, Wing Valves and Positive Chock as per the quantities to be supplied by the bidder.
- Surface Pumping Unit for Chemical injection c/w tanks

- 1.6.1 The ICVs, DHSV, X-mass Tree Master Valves, Wing Valves & Positive Chock (as per the quantities to be supplied) shall be controlled through HPU to be supplied & installed by the bidder in the Well Head Platform. The motive force for HPU and Surface Pumping Unit (on redundant mode) shall be treated Instrument Gas. The HPU shall have common manifold feeding to downstream supplies for ICVs, DHSV, X-mass Tree Master Valves, Wing Valves & Positive Chock. Each of the downstream supply from the common manifold shall have pressure regulators, safety valves and Non Return Valve (NRV)s. The safety valve outlet shall be hooked up to Hydraulic Storage Tank. The hydraulic oil storage tanks are to be provided with high level and low level alarm in PLC based RTU system and Low Low level will trip the respective pumps and HH alarm will initiate alarm for operator action. The HPU package shall work on fail safe mode and shall be controlled from Smart Completion Controller Unit with Surface Acquisition Unit (SAU) and shall also be able to monitor and controlled from the PLC based RTU system at the offshore and in turn to onshore control system through telemetry system for control and monitoring of HPU package.
- 1.6.2 The downhole gauging shall consist of Sensors installed sub-surface and connected to Surface Acquisition Unit (SAU).
- 1.6.3 The Smart Completion Controller on redundant mode and SAUs shall be installed in IP65 rated panel which shall be located in the well head platform RTU room. 24 VDC power supply shall be provided for the Smart Completion Controller cabinet.
- 1.6.4 The smart completion controller shall have MODBUS RS 485 communication with the PLC based RTU system at the offshore and in turn with onshore control system through telemetry system for control of ICVs, Downhole Gauges, DHSVs, X-mass Tree Master Valves, Wing Valves and Positive Chock and downhole well process parameters monitoring.

1.6.5 Bidder's team through Company's representative shall coordinate and assist for establishing the connectivity between Smart Completion Controller on redundant mode and SAUs with PLC based RTU System and or ESD Panel for monitor and control of ICVs, Downhole Gauges, DHSVs, X-mass Tree Master Valves and Wing Valves and subsequent hookup and connectivity with onshore control system for monitor & control operation from onshore. Bidder shall also provide Necessary hardware's and software's required to establish the connectivity at Offshore Control system and between offshore control system to onshore control system.

There might be two (02) scenarios for installation and commissioning of Downhole & Surface completion equipment / item(s) along with consumables.

(i) **Scenario-I:** Installation & Commissioning on Platforms (ie., Jacket & Topsides together)

Immediate to completion of Drilling activities to facilitate well testing operation, the bidder shall carryout Installation and Commissioning of Downhole & Surface completion equipment / item(s) including interfacing, synchronization & establishing communication with both offshore & onshore control systems for regular monitor & control for continuous production. There might be time gap for installation & commissioning of Downhole & Surface completion equipment / item(s) from one well to another well. The bidder shall take into consideration on the above while submitting the bid.

(ii) **Scenario-II:** Installation & Pre-Commissioning on Jackets with Temporary Deck followed by Reinstallation Surface Control Equipment and Commissioning post Topsides erection:

In this scenario, the bidder shall carryout Installation and Pre-Commissioning of Downhole & Surface completion equipment / item(s) immediate to completion of Drilling activities on Temporary Deck on Jackets to execute well testing operation. Subsequently,

to facilitate erection of Topsides on Jackets, the bidder shall disconnect and remove all the surface completion equipment except Christmas Trees. If the bidder anticipates any potential damage to the Christmas tree while topsides erection, the bidder shall provide “Temporary Bullet Protection” to safeguard the Christmas trees and the same shall be taken back by the bidder after topsides installation. Post installation of topsides, the bidder shall reinstall and Commission the disconnected surface control equipment including interfacing, synchronization and establishing communication with both Control Systems at Offshore and Onshore for regular monitor & control.

Notes to Scenario I:

(1) The bidder shall be paid PF-2: DEPLOYMENT OF SERVICE PERSONNEL under Price bid Proforma for Exhibit 13 and no payment shall be made for “PF-2A as the same is not applicable for Scenario I.

Notes to Scenario II:

- (1) In case of Scenario II, after drilling is completed, the Permanent topside facility is to be installed. Hence, the Bidder will be provided one (01) month notice, based on Topside installation schedule & Onshore Control System readiness, to enable Bidder to mobilize required personal / vendor representative(s) to accomplish the above task. This is an essential requirement as the Platforms will be operated unmanned from Onshore Control systems.
- (2) The bidder shall abide by the clause 1.6.5 above and the cost quoted under “PF-2A: DEPLOYMENT OF SERVICE PERSONNEL POST TOPSIDES INSTALLATION” under Price bid Proforma for Exhibit 13 shall be paid additionally in this scenario.

**Common Note:** Evaluation of Price bids shall be done considering the cost quoted against both PF-2 and PF-2A.

### 1.6.6 Downhole Chemical Injection System

Downhole corrosion inhibitor injection package with interconnection piping/tubing and arrangement shall be supplied, installed & commissioned for each producer well by Bidder.

The motive force for chemical injection pumps shall be treated as Instrument Gas.

The chemical storage tanks are provided with high level and low level alarm in PLC based RTU system and Low Low level will trip the respective pumps and HH alarm will initiate alarm for operator action.

The chemical injection package shall operate on fail safe mode and shall be monitored / controlled from the PLC based RTU system at the offshore and in turn to onshore through telemetry system for control and monitoring of Chemical Injection package.

The following are included in Bidder's scope. The Bidder to coordinate with well head platform contractor to sort out interface issues

1. Installation of Corrosion Inhibitor package and hook-up instrument gas supply.
2. Hook-up pump discharge chemical injection tubing with X-mass tree.
3. Lay instrument cables from CI package to PLC based RTU system
4. Supply of above tubing, cables and required accessories.
5. Required configuration in Offshore PLC based RTU system and Onshore OPC Server

1.6.7 The following scope shall be carried out for Offshore to Onshore interface mapping, monitoring, control, shutdown and commissioning pertaining to Christmas Equipment / Valves & Downhole Assemblies shall be carried-out upon completion of onshore facilities.

Once the Onshore Control System is ready, the bidder shall deploy required resources to map and monitor the following functionalities

pertaining to X-mas Tree & Downhole assemblies in Onshore and Offshore Control Systems.

- a) Remote platform Emergency Shutdown (ESD) signal shall also be provided from the Onshore Control system. This shall close SSSV (DHSV), SSV (Master Valve) and Wing Valves and closed status of these Valves shall be controlled & monitored in the Onshore PLC Control System HMI display and recorded.
- b) Remote platform Process Shutdown (PSD) signal shall be provided from Onshore Control system. This shall close SSV (Master Valve) and Wing Valves which shall be controlled & monitored in the Onshore PLC Control System HMI display and recorded.
- c) Opening and closing of individual wells shall be performed from onshore control system, except for opening of SSSV, which can only be opened from offshore WHCP. The open / close status of X-mass tree valves shall be monitored from Onshore control system and recorded.
- d) Remote SSSV close signal shall be provided from Onshore Control system. This shall close SSSV which shall be monitored in the Onshore PLC Control System HMI display and recorded.
- e) Remote open/close signal for SSV and wing Valve shall be provided from Onshore Control system. This shall Open/Close SSV and Wing Valve which shall be monitored in the Onshore PLC Control System HMI display and recorded.
- f) The Interval Control Valves (ICV) open/close status shall be monitored & controlled from Onshore Control System.
- g) Downhole Pressure & Temperature of the wells shall be monitored from Onshore Control System.
- h) Remote start/stop of downhole corrosion inhibitor pumps shall be performed from Onshore Control System. The status of the pumps shall be monitored in the Onshore Control System.

The Bidder shall co-ordinate with Onshore / Offshore LSTK Contractors and Control System Vendors to carry out necessary mapping, configuration for interface of Smart Completion Controller Units, SAU, HPU Package, CI Package and ESD with both Onshore and Offshore Control System for remote control and monitor purpose. All such remote controls shall be tested and commissioned.

All technical details with dimensions, P & ID, power requirement shall be provided by the contractor along with the technical submission.

### **1.7 Service Personnel Details:**

1. Completion Supervisor (2 no.):

Completion supervisor shall have minimum of 5 years of experience as completion supervisor running similar completions for at least 2 offshore drilling wells. He must be qualified to install upper completion equipment, run wellbore cleanout string, and maintain inventory list on the worksite/base. Trained to maintain and repair and to instruct for the change of equipment listed in the tender document.

2. Completion Engineer (2 no.):

Completion engineer shall have minimum of 3 years of experience as completion engineer running similar completions for at least 2 offshore drilling wells. He must be qualified to manage and repair BIDDER's equipment and completion tools as per direct instructions from completion supervisor.

3. Wellbore cleanout Supervisor (1 no.):

Wellbore cleanout supervisor shall have minimum of 3 years of experience at same position running similar operations for at least 2 offshore drilling wells. He must be qualified to manage BIDDER's equipment and completion tools as per direct instructions from completion supervisor.

4. ICV Specialist (2 no):

ICV specialist shall have minimum of 3 years of experience at same position running similar operations for at least 2 offshore drilling wells. He must be qualified to manage BIDDER's equipment and perform ICV

installation and operations as per direct instructions from completion supervisor.

Notes:

- Company reserves the right to refuse any personnel, if found unsuitable for the job/task.
- Company requires that BIDDER personnel must have completed relevant safety and skills training (Basic Safety Training, Medical Certificate stating fit to work and any other statutory training) to work in offshore environment within the stated frequency prior to the commencement date. Copy of training certificates in proof shall be submitted along with the bid.
- COMPANY reserves the right to conduct technical interviews.
- Personnel deployed shall be fluent in English and responsible for safe handling of their respective material at site to ensure rig crew follow correct procedures, including safe loading /unloading of completion equipment from supply vessels and safe stacking on site.
- CVs of service personnel shall be shared with OIL in advance ie., 60 days before execution of jobs for OIL's approval.

### **1.8 Quality Assurance**

COMPANY may at its option and cost, arrange an inspection by a third party for the materials, tools, and equipment under the scope. Scope of third-party inspection detailed in section 1.9.

Wherever applicable BIDDER or his manufacturer should have valid API certificates viz. API 14A (for DHSV), API 11D1(for packers) etc. as on date of opening of techno-commercial bid. The Bidder / Manufacturer should give an undertaking to keep these certificates valid till the completion of the contract on all applicable equipment against this tender.

As a minimum the latest governing document shall be referred to with specific codes, applicable standards, relevant regulations, and recommended practices to be used detailed in the individual discipline specifications and design bases as applicable.

Prior to shipment completion hardware, equipment & accessories shall be tested in accordance with the quality-assurance and quality-control program of the BIDDER.

All documents related to such tests shall be forwarded to the COMPANY. BIDDER shall provide the details of date of manufacture and shelf life for the material / equipment supplied.

BIDDER shall pack all its equipment, chemicals & goods for sea-freight or airfreight in packages designed for preservation and storage under humid conditions before containerizing them for freight. All such packages/containers should be able to withstand rough handling during transportation and should be sea and air-worthy and comply with import requirements to India.

### 1.9 List of Service Equipment

Indicative list of equipment along with back-up to be provided against each services as per scope of work as below:

<b>Upper completion equipment</b>			
Sl. No	Items	UM	Quantity
(i)	Installation kit for all upper completion equipment.	Set	As required
(ii)	Installation kit for clamps.	Set	As required
(iii)	Toolbox with handling tools.	Set	As required
(iv)	Pressure & Electrical Test kit.	Set	As required
(v)	Downhole gauge preparation, testing and configuration kit.	Set	As required
(vi)	Transportation Basket, workshop container	Each	As required
(vii)	C-Plate and Slotted bushing with Five (5) minimum slots.	Each	As required
(viii)	Any other equipment (To be specified and supplied)	---	As required
<b>Note:</b> In case of failure/breakdown of any equipment, alternate equipment shall be provided to ensure continuous operations.			

### Notes:

- Any additional equipment tools & quantity (if required) including backup items to complete intended scope of work is to be indicated and provided, without any cost implication to OIL, to ensure smooth and continuous operation.
- Ratings of equipment described above should be equivalent or greater to the ratings described in scope of work and technical specifications.
- Critical spares and consumables for all tools/equipment's are to be always made available to meet any contingencies.

**1.10 List of Supply Equipment (As per Specifications listed in section 2.1)**

**For Eastern Wells (DGSA+DGSB): Maximum Estimated Res. Temp: 250 deg F & Res. Pressure: 3539 psi**

Description	UM	Quantity	Back up quantity	Total quantity
Interval Control Valve for DGSB 7500 psi 250 deg F	No	1	1	2
Hydraulic Control Lines for ICV	Meters	10000	1000	11000
Completion Packer for DGSA 7" x 2 7/8"; 5000 psi, 250 deg F	No	1	1	2
Feedthrough Completion Packer for DGSB 9-5/8" x 2 7/8"; 5000 psi, 250 deg F	No	1	1	2
Feedthrough Completion Packer for DGSB 7" x 2 7/8"; 5000 psi, 250 deg F	No	1	1	2
Sealbore Retrievable Packer for DGSB 7" x 2 7/8"; 5000 psi, 250 deg F	No	1	1	2
No-go locator/Landing sub	No	2	1	3
Downhole Gauge; 7500 psi, 250 deg F	No	2	1	3
Downhole Gauge Mandrel; 7500 psi, 250 deg F	No	2	1	3
Downhole Gauge Cables	Meters	4500	450	4950
Chemical Injection Mandrel with String	No	2	1	3
Control Lines for Chemical Injection	Meters	2000	500	2500

Downhole Safety Valve; 5000 psi, 250 deg F	No	2	1	3
Control Line for Safety Valve; 5000 psi, 250 deg F	Meters	200	50	250
Control Line Protectors for all control lines	No	500	50	550
Perforated pup joint for DGSA	No	1	1	2
Blast joint 2ft, 5000 psi, 250 deg F	No	1	1	2
Blast joint 4ft; 5000 psi, 250 deg F	No	1	1	2
Blast joint 20 ft; 5000 psi, 250 deg F	No	1	1	2
Wireline Entry Guide for DGSB	No	1	1	2
Smart Completion Controller (Redundant) Unit with Surface Acquisition Unit (SAU)	Set	1	-	1
Downhole pressure and temperature gauges with Surface Acquisition Unit (SAU)	Set	1	-	1
The Cabinet housing with the smart well completion controllers and SAUs	Set	1	-	1
Hydraulic Power Unit (HPU) with redundant mode for control of ICV, DHSV & X-mass Tree Master Valve & Wing Valve with all accessories i.e regulator, Safety valve, NRV etc	Set	1	-	1
Surface Pumping Unit for Chemical injection c/w tanks	No	1	-	1

**For Western Wells (DGSC+DGSD) Maximum Estimated Res. Temp: 325 deg F & Res. Pressure: 6519 psi**

Description	UM	Quantity	Back up quantity	Total quantity
Interval Control Valve 7500 psi 325 deg F	No	4	1	5
Hydraulic Control Lines for ICV	Meters	22000	2200	24200
Feedthrough Completion Packer for DGSC & DGSD; 7" x 2 7/8"; 7500 psi, 325 deg F	No	4	1	5

Sealbore Retrivable Packer for DGSC & DGSD; 7" x 2 7/8"; 6300 psi, 325 deg F	No	2	1	3
No-go locator/Landing sub	No	2	1	3
Downhole Gauge; 10000 psi, 325 deg F	No	2	1	3
Downhole Gauge Mandrel; 10000 psi, 325 deg F	No	2	1	3
Downhole Gauge Cable; 10000 psi, 325 deg F	Meters	5000	500	5500
Chemical Injection Mandrel with String	No	2	1	3
Control Lines for Chemical Injection	Meters	2000	500	2500
Downhole Safety Valve; 6500 psi, 250 deg F	No	2	1	3
Control Line for TRSSV; 10000 psi, 325 deg F	Meters	200	50	250
Control Line Protectors for all control lines	No	750	100	850
Blast joint 2ft; 10000 psi, 325 deg F	No	1	1	2
Blast joint 4ft; 10000 psi, 325 deg F	No	1	1	2
Blast joint 20 ft; 10000 psi, 325 deg F	No	1	1	2
Wireline Entry Guide	No	2	1	3
Smart Completion Controller (Redundant) Unit with Surface Acquisition Unit (SAU)	Set	1	-	1
Downhole pressure and temperature gauges with Surface Acquisition Unit (SAU)	Set	1	-	1
The Cabinet housing with the smart well completion controllers and SAUs	Set	1	-	1
Hydraulic Power Unit (HPU) with redundant mode for control of ICV, DHSV & X-mass Tree Master Valve & Wing Valve with all accessories i.e regulator, Safety valve, NRV etc	Set	1	-	1
Surface Pumping Unit for Chemical injection c/w tanks	No	1	-	1

**Notes:**

1. For Control lines and downhole gauge cable the Bidder payment will be done according to the actual quantities consumed.
2. The following criteria needs to be complied by the bidder.
  - a. Bidder needs to declare the Country and address of the Manufacturing plant from where the Downhole equipment will be manufactured and supplied at the time of bid submission.
  - b. Manufacturing plant should have valid API Q1 certificate and bidder to provide the same at the time of bid submission. Bidder to ensure that all the Completion downhole equipment proposed by bidder must be delivered from the declared Manufacturing plant only.
  - c. Bidder to provide the 100% traceability report of supplied Downhole completion equipment at the time of Delivery of equipment. Traceability report shall consist of below as a minimum requirement:
    - Mill test certificate (MTC) of Each metallic component.
    - Test certificates of Elastomers/Non-Elastomers.
    - Traceability report of Nut, spring, screw, pins etc.

**1.11** List of Rental Equipment for Wellbore Clean Out (As per Specifications Listed in section 2.2.3)

<b>A</b>	<b>Equipment</b>		
Sr. No.	Description	UoM	Quantity
1	Short trip BOP Jetting sub	EA	2
2	Filter sub for short trip	EA	2
3	Bull nose – 6”	EA	2
4	Ported bypass sub	EA	2
5	Filter sub for deep WBCO	EA	2
6	Casing Magnet for 9 7/8” casing	EA	2
7	Casing magnet for 7” casing	EA	2
8	Scraper for 9-7/8” casing	EA	2
9	Scraper for 7” casing	EA	2
10	Inflow test packer	EA	2
11	Casing brush for 9 7/8” casing	EA	2
12	Casing brush for 7” casing	EA	2

**Note:** The BIDDER shall always carry a backup set of wellbore cleanout string and its redressing material along with the main wellbore cleanout string at well site, to avoid any delay of operation. The BIDDER shall avoid repair/redress of any cleanout equipment at well site causing any rig downtime. The BIDDER shall only quote for 1(one) set of such complete wellbore cleanout equipment with any accessories and no charge shall be paid by COMPANY for the backup wellbore cleanout equipment carried by the BIDDER. The backup wellbore cleanout equipment with accessories must be indicated by the BIDDER separately at the time of mobilization and inspected accordingly.

**1.12 Free Issue Materials (By Company)**

<b>Tubing and Accessories</b>		
Sl. No	Item Description	Quantity
1	Tubing 2 7/8", L-80 13Cr, 6.4 ppf Premium	As required
2	Pup joint 2 7/8", L-80 13Cr, 6.4 ppf Premium (2 Ft length)	
3	Pup joint 2 7/8", L-80 13Cr, 6.4 ppf Premium (4 Ft length)	
4	Pup joint 2 7/8", L-80 13Cr, 6.4 ppf Premium (6 Ft length)	
5	Pup joint 2 7/8", L-80 13Cr, 6.4 ppf Premium (8 Ft length)	
Note: 2.7/8" tubing with Hunting Seal lock XD premium thread connection.		

**Note:**

- i. Any other requirement for above tubing string (other than listed above) are to be arranged and provided by BIDDER.
- ii. BIDDER to provide all the fittings for downhole gauge, ICV, DHSV viz. connectors, ferrules etc. in sufficient quantity for down-hole installation, medium pressure hydraulic autoclave fittings for connecting lines to the tubing hanger and for surface tests. Material of fittings should be INC825 or superior.
- iii. Interface cross overs for above are in the scope of BIDDER. COMPANY will not provide any crossovers.

**1.13 Scope of third-party inspection**

TPI agency shall carry out inspection of items to be procured, Service equipment / item(s) and Service tools utilized for final of well completion at

destination (i.e., Kakinada). Company/company representatives may witness the inspection by TPI for which the bidder shall intimate well in advance (at least 30 days prior to inspection).

The broad scope for inspection shall cover following (but not limited to):

S/N	Details	Sale Items	Service Equipment's/tools
1	Conformation to technical specifications.	Yes	Yes
2	Physical inspection for quantity, physical damage/shortage, quality check.	Yes	Yes
3	Visual inspection and sampling for dimensional check, marking (Make/Model/Part no.)	Yes	---
	Visual inspection and certifications (e.g., Residual life etc.)	---	Yes
4	Performance test and pressure test records	Yes	Yes
5	Quality Assurance Plan (QAP)/Inspection Test Plan (ITP).	Yes	---
6	API/ISO requirement and approved drawings, datasheets of manufacture.	Yes	---
7	Material test certificates and traceability records of raw materials.	Yes	---
8	Manufacturer's/Sub vendor's internal QC records, Inspection release notes.	Yes	---
9	Warranty/Guarantee Certificate.	Yes	---
10	Any other activities/work not specifically mentioned in scope but required to complete final inspection.	Yes	Yes

The Equipment / item(s) and all associated equipment shall be verified by OIL's approved TPI agency and are subject to inspection and acceptance testing by COMPANY/PMC and its agents. Said inspection is without prejudice to Bidder's obligation to provide Equipment / item(s) and associated equipment which are fully capable of performing in accordance with good international petroleum industry practice and which conform to Bidder's listing and description of said Equipment elsewhere in this tender. By performing this inspection, neither the COMPANY nor its agents warrant operational safety of Bidder's Equipment or associated equipment, and in no way are the indemnity provisions as set forth in this Contract affected by this inspection.

The COMPANY will inspect Bidder's equipment / item(s). Where the equipment/material is found not in conformity with stated quality standards or equipment/materials request, COMPANY shall notify Bidder of the lack of conformity and Bidder shall replace such non-conforming equipment/materials immediately after receiving such notification. All costs incurred in meeting COMPANY's specification shall be for BIDDER's account.

In the event BIDDER is unable or fails to supply the requested equipment/materials either in amount or quality as per agreement in this contract, COMPANY reserves the right to procure from a third-party supplier the required equipment on BIDDER's account and BIDDER will be responsible for any price differential.

Third party inspection shall be carried out for dimension verification, hydrotest, material (chemical) composition, NDT (Radiography), etc. by OIL's approved inspection agency. Company representative(s) will witness the TPI for which the bidder shall intimate company at least 1 (one) month in advance.

#### 1.1 Equipment Inventory

BIDDER shall provide all spares required for Well Completion Equipment / Item(s) for the supply equipment if not specified in the detailed equipment list. All spares, if identified later by the bidder during the operations will be provided by the BIDDER at its own cost.

## 1.2 Guarantee/ Warranty:

GOODS/Materials to be supplied shall be of new, of recent make, of the best quality & workmanship against defects from faulty materials, workmanship, or design and shall be guaranteed for a period of 12 months from the date of installation/commission. Defective GOODS/materials or part notified, if any on receipt by OIL shall be made good of immediately by the bidder.

## Appendix-1

### References, Standards & Applicable Codes

<b>References, Standards and Applicable codes (non-exhaustive)</b>	
API RP14B/ISO 10417	Petroleum and natural gas industries – Subsurface safety valve systems, –Design, installation, operation, and repair.
API 14A/ISO 10432	Petroleum and natural gas industries – Down-hole equipment – Subsurface.
ISO 23936 (All parts)	Non-metallic materials in contact with media related to Company and gas production.
API 5CT/ISO 11960	Petroleum and natural gas industries – Steel pipes for use as casing or tubing for wells.
API 11D1/ISO 14310	Petroleum and natural gas industries – Down-hole equipment – Packers and bridge plugs.
API RP 14L/ISO 16070	Petroleum and natural gas industries – Down-hole equipment - Lock Mandrels & Landing Nipples.
ISO 14998	Petroleum and natural gas industries – Down-hole equipment - Completion accessories.
<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• As a minimum latest governing document shall be referred with specific codes and recommended practices to be used detailed in the individual discipline specifications and design bases as applicable.</li> <li>• In all cases, the latest edition of the relevant regulations, codes, standards, and guidance notes shall be used.</li> </ul>	

<b>Terms &amp; Definitions</b>	
COMPANY	COMPANY or “Owner” shall mean COMPANY, its affiliated companies, partners, co-lessees, co-owners, joint ventures, and their agents, third party inspectors, officers, and employees.
BIDDER	Also referred to as “Vendor”, “Seller” or “Supplier” shall mean the party to whom COMPANY’S Purchase Order, Work Order, or other written CONTRACT is awarded.
May	Indicates possible course of action.
Shall	Indicates mandatory requirement.
Should	Indicates preferred course of action.
Will	Indicates an intention of action.

## Appendix-2

### Format for Curriculum Vitae of Bidders Personnel

Sl. No	Details	Remarks
1	Name and address	
2	Age and date of Birth	
3	Nationality	
4	Schooling and education (Including industry and specialty courses),	
5	Employment history	
6	Type of Work/Job responsibility	
7	Summary of projects worked	

**CHRISTMAS TREE & CHOKES SUPPLY & SERVICES**

**2.0 Introduction**

The scope includes supply of Christmas trees, Choke valves & other equipment / item(s) built to API 6A specifications latest edition (or as specified) including installation and commissioning.

Table below gives details of Planned wells: -

**Note:** Detailed Description for each Christmas Tree & Choke type is given separately.

**3.0 Specifications**

3.1 Applicable Standard

The Equipment supplied under the Contract shall be API-6A latest edition. Equipment has to be manufactured and assembled in certified locations and monogrammed as per the code.

3.2 Design Life

Equipment shall be designed and manufactured to API 6A latest editions for a design life of minimum 15 years. Equipment shall have an API monogram where appropriate. Use RX and BX gaskets only. All elastomers must be proven suitable for the well conditions.

3.3 Protective Coating

All equipment exposed to the atmosphere in service shall be provided with suitable and adequate corrosion protection.

3.4 Paint Requirements

- First coat – Zinc type primer 50 to 75 microns.
- Second coat – High build epoxy – 125 microns.
- Third coat – Recoatable 2 pack gloss topcoat 50 microns.

- Color Blue for X-trees (specifications to be approved by company before bidder goes ahead with painting).

### 3.5 Cleaning and Fasteners

- Degrease all surfaces prior to painting.
- Solvent clean carbon steel surfaces and abrasive clean to Sa 2.5 prior to painting.
- Carbon steel bolting to be over-coated with PTFE or equivalent.

### 3.6 Production Tree Specifications

Production tubing to be installed will be **2 7/8" 6.4# 13Cr L80** with Hunting Seal lock XD **Premium Connection**.

Sl. No.	Equipment	Details
<b>TREE ASSEMBLY, 2-9/16" 10K X 2-1/16"-10K, M/C - CC, TEMP-U, PSL-2, PR-2</b>		
1	X-Mas Tree	<p><b>X-mas tree 2-9/16" 10000 psi, M/C - CC, PSL-2, PR-2 comprising:</b></p> <ul style="list-style-type: none"> <li>• 1 x block assembly, 2-9/16"-10K Flange bottom studded, Top with 2-9/16" studded and side outlets 2-1/16" 10K studded with pre-installed studs and ring gaskets on block body for UMV, LMC, SV, double arm valves.</li> <li>• 1 x Manual 2-9/16" 10K Lower master valve.</li> <li>• 1 x Hydraulically actuated 2-9/16" 10K Upper master valve and shall have manual override.</li> <li>• 1 x Hydraulically actuated 2-1/16" 10K Flow wing valve and shall have manual override.</li> <li>• 1 x Manual 2-1/16" 10K kill wing valve.</li> <li>• 1 x Manual 2-9/16" 10K swab valve.</li> <li>• 2 x Manual 2 1/16" 10K arm valve</li> <li>• 1 x Swab cap with 2-9/16" flanged bottom connection, 5 3/4-4 ACME-2G top w/ 2-7/8" EUE 8rd box lift thread, with blacking plug and 1/2" NPT tapped.</li> <li>• 2 x Needle valve 10K 1/2" NPT Pin X Box.</li> <li>• 2 x 10K pressure gauge 4 1/2" dial (liquid filled) 1/2" NPT pin.</li> <li>• 2 x Blind flanges 2-1/16" 10K with 1/2" NPT port.</li> </ul>

		<ul style="list-style-type: none"> <li>• 2 x fitting blind/grease ½” NPT.</li> <li>• 9 x ring gaskets BX-152 (2-1/16” for body to gate valve and gate valve to blind connections.)</li> <li>• 6 x ring gasket BX-153 (2-9/16” for body to swab valve, top cap, LMV &amp; UMV connections).</li> <li>• 56 x 3/4” Stud and 64 x bolts for 2-1/16” body to gate valve connection.</li> <li>• 40 x 7/8” Stud and 40 x bolts for 2-9/16” body to swab valve, top cap, LMV &amp; UMV connection.</li> <li>• 16 x 3/4” Stud and 32 x bolts for gate valve to blind connections.</li> <li>• <b>X-mass Tree Quantity:</b> 05 sets</li> </ul>
	Chokes	<p><b>a) Manual -2.1/16"-10,000 PSI, CC Trim</b>  <b>Compliance:</b> Chokes should be compliant to API 6A (API monogrammed equipment), PR2, PSL2.  <b>Maximum pressure drop:</b> 20 psi at full opening and full flow.  <b>Temperature class:</b> U  <b>Material Class:</b> CC [General service. (0 psi H<sub>2</sub>S, 4 % CO<sub>2</sub>)]  <b>Valve type:</b> Adjustable.  <b>Quantity:</b> 5 Nos.</p> <p><b>b) Hydraulic – 2.1/16"-10,000 PSI, CC Trim, shall also have manual override.</b>  <b>Compliance:</b> Chokes should be compliant to API 6A (API monogrammed equipment), PR2, PSL2.  <b>Maximum pressure drop:</b> 20 psi at full opening and full flow.  <b>Temperature class:</b> U  <b>Material Class:</b> CC [General service. (0 psi H<sub>2</sub>S, 4 % CO<sub>2</sub>)]  <b>Valve type:</b> Adjustable.  <b>Quantity:</b> 5 Nos.</p>

#### 4.0 General Requirements

##### 4.1 Summary of scope of work:

The Scope of Work is for the supply and field installation of Christmas tree, chokes, and associated components in offshore KG-Basin.

It includes provision of the following supply equipment: -

- Supply & field installation of X-mas tree and Chokes, 05 nos. each by OEM.
- All associated equipment and accessories.
- Xmas trees/valve maintenance parts.
- All spare parts and consumables related to the supply equipment during the life of field for maintenance.

Provision of bidder's personnel to install and commission X-mass tree. Field level performance test shall be completed for hydraulic actuated valves from smart control unit through HPU.

Provision of specialist engineering design and support services for the design and testing of the equipment. This will include but not be limited to design optimization, specialized performance testing programmes, material testing programs, and development of installation & operating procedures. A significant component of this support needs to be available to attend COMPANY premises in India.

Bidder is responsible for calibration of choke during (post) installation or offline if asked by the COMPANY. Any additional requirement, such as equipment, software etc., will be the bidders' responsibility without any cost implication to company.

The bidder shall be responsible for the complete design of all equipment detailed in this specification as well as the procurement and supply of all material required for its manufacture. All material shall be new and meet the latest requirements of all relevant standards referenced in this specification. Proven designs should be used wherever possible. Use of prototype or unproven designs is not preferred by COMPANY for this project.

It is preferable to supply Christmas Tree Assembly from the same source of Unitized Well head for compatibility. If the bidder supplies Christmas Tree from a different source, the bidder is solely responsible for the compatibility & supply of any changeover, if required.

Compliance with specification or any other referenced specification does not relieve the Bidder's responsibility of furnishing equipment of proper design and construction in order to meet the specified operating performances.

It is the Bidder's responsibility to identify and include in its proposal any additional items not specifically identified by the COMPANY but are nonetheless required to perform the work in a safe and efficient manner according to standard oilfield practice.

Any additional items not specified herein, which are not included in the Bidder's technical and commercial proposals, but which are subsequently required by the Bidder to complete the work in a safe and efficient manner according to standard oilfield practice shall be provided at the Bidder's cost.

The bidder shall provide the spares for supplied equipment for during design life of equipment from OEM. In case the BIDDER is unable to supply the equipment, BIDDER shall direct the COMPANY to the Vendor who can provide required spares.

The bidder shall submit cross sectional / detailed engineering drawings, QAP from OEM showing measurements, parts list, quantity, plan and elevation view and recommended clearances before supply for OIL's verification & approval.

The equipment shall be painted in accordance with the technical specifications and Bidder recommendations.

If chokes are supplied from THIRD PARTY vendor, the vendor shall be approved by COMPANY first.

The scope includes the provision of all drawings, manuals, procedures, QA/QC plans and HSE plans relating to the equipment.

The Bidder shall nominate one of its key senior personnel as a nominated Project Manager / Coordinator, who shall co-ordinate the performance of the Work and act as the focal point for communications between the Bidder and the COMPANY. The Bidder's representative shall communicate with the Company's drilling/PE and procurement department. Supplier and shall be aware about Company's drilling/ workover program, inventory level, order backlog and goods in transition. The Bidder's representative is obliged to agree with Company's drilling/PE and procurement department for suitable ordering quantity for new production to ensure uninterrupted supply for drilling /workover program and should be continuously available to liaison at Company Kakinada office during the contract duration.

The bidder will interface with Company Project and Drilling teams as required. Bidder will attend formal HAZID, HAZOP and SIMOPS meetings as required at Bidder's cost.

All equipment, materials and services shall be fit for the purpose intended and in compliance with COMPANY and industry (e.g., QPI, NACE, ANSI, ASME, ISO etc.) standards and specification as required. Equipment shall be maintained in a condition suitable for performing the expected operations. Only API licensed manufacturers will be used. Manufacturers must have recognized Quality Management Systems in place.

Further detail on the equipment specifications is given in the Technical Specifications.

Bidder shall provide all lubricants for Bidder's Equipment and support the well construction operations for the wells covered in this scope.

## **5.0 Equipment requirements:**

### **5.1 Actuators:**

Actuators for upper master valve, flow wing valve, hydraulic choke are to be of the hydraulic type, non-wire-cutting type.

All the actuators are to be operated from HPU at surface.

They are to be easily maintainable with no requirement to bleed down the X-mas tree for servicing or removal.

They must include position indicators, both visual and electrical (Zone I rated, intrinsically safe), and a fusible plug on the hydraulic system to provide automatic shut down in the case of fire.

Normal operating pressure of all actuators (FWV, UMV, Hydraulic Choke): 2000-2200psi

Maximum working pressure available for hydraulics: 10,000 psi.

The displacement volume of the actuator piston is to be a maximum of 47 cubic inches.

Actuator shall have provision for fail safe override mechanism. Fusible lock out caps to be provided along with an actuator.

Actuators for flow wing valves are to be of the same specification as for upper master valves given above; however, there is no requirement for wire cutting capability.

Actuators to be painted with alkyd enamel protective paint.

Actuators for the X-mas tree valves should be designed for offshore environmental conditions and must be field replaceable/repairable.

Actuators with all accessories should be provided by the X-mas tree supplier to minimize interface issues.

Bidder to provide Limit Switches with each actuator.

## 5.2 Inspection and Testing:

The Equipment / item(s) and all associated equipment shall be verified by OIL's approved TPI agency and are subject to inspection and acceptance testing by COMPANY/PMC and its agents. Said inspection is without prejudice to Bidder's obligation to provide Equipment and associated equipment which are fully capable of performing in accordance with good international petroleum industry practice and which conform to Bidder's listing and description of said Equipment elsewhere in this tender. By performing this inspection, neither the COMPANY nor its agents warrant operational safety of Bidder's Equipment or associated equipment, and in no way are the indemnity provisions as set forth in this Contract affected by this inspection.

The COMPANY will inspect Bidder's equipment. Where the equipment/material is found not in conformity with stated quality standards or equipment/materials request, COMPANY shall notify Bidder of the lack of conformity and Bidder shall replace such non-conforming equipment/materials immediately after receiving such notification. All costs incurred in meeting COMPANY's specification shall be for BIDDER's account.

In the event BIDDER is unable or fails to supply the requested equipment/materials either in amount or quality as per agreement in this contract, COMPANY reserves the right to procure from a third-party supplier the required equipment on BIDDER's account and BIDDER will be responsible for any price differential.

Third party inspection shall be carried out for dimension verification, hydrotest, material (chemical) composition, NDT (Radiography), etc. by OIL's approved agency. Company representative(s) will witness the TPI for which the bidder shall intimate company at least 1 (one) month in advance.

## 5.3 Equipment Inventory

BIDDER shall provide all spares required for X-mas tree for the supply equipment if not specified in the X-mas tree detailed equipment list. All

spares, if identified later by the bidder during the operations will be provided by the BIDDER at its own cost.

#### 5.4 Guarantee/ Warranty:

GOODS/Materials to be supplied shall be of new, of recent make, of the best quality & workmanship against defects from faulty materials, workmanship, or design and shall be guaranteed for a period of 12 months from the date of installation/commission. Defective GOODS/ materials or part notified, if any on receipt by OIL shall be made good of immediately by the bidder.

### **6.0 BIDDER's Personnel Requirements on Callout basis**

6.1 One (1) X-mass Tree Specialist on call out basis will need to adhere to the following requirements: -

- Should have a minimum of 5 years' experience for installation and commission of hydraulically activated Christmas Tree & Choke Assembly in Offshore Wells in particular with the same equipment as proposed in this tender. This must be clearly shown on his C.V.
- Should attend meetings at COMPANY's Kakinada office or at well site as required.
- Should act as a single point of contact for all technical / engineering queries raised by the COMPANY, delivery-related issues and contractual issues for supply.
- Should have valid certificates for Offshore Safety Training

6.2 X-mass Tree Technician:

- One (1) X-mass Tree Technician to be deployed and present at the well site for installation and commissioning of hydraulically activated Christmas Tree & Choke Assembly on a call out basis. The X-mass Tree Technician shall have at least 3 years' relevant X-mass tree experience in Offshore Wells, and in particular with the same equipment as proposed in this tender scope.
- Should have valid certificates for Offshore Safety Training

- BIDDERS shall submit the CVs of personnel on issuance of mobilization notice for company's approval. COMPANY reserves the right to reject bidder's personnel that they consider unsuitable, and the BIDDER must replace with an acceptable alternative at no cost to COMPANY. The Engineer shall be fluent in the English language.

6.3 There might be two (02) scenarios for installation and commissioning of Downhole & Surface completion equipment.

(i) Scenario-I: Installation & Commissioning on Platforms (ie., Jacket & Topsides together)

Immediate to completion of Drilling activities to facilitate well testing operation, the bidder shall carryout Installation and Commissioning of Christmas tree and Chokes including interfacing, synchronization & establishing communication with both offshore & onshore control systems for regular monitor & control during continuous production. There might be time gap for installation & commissioning of Christmas tree and Chokes from one well to another well. The bidder shall take into consideration on the above while submitting the bid.

(ii) Scenario-II: Installation & Pre-Commissioning on Jackets with Temporary Deck followed by Reinstallation of Surface Control Equipment and Commissioning post Topsides erection:

In this scenario, the bidder shall carryout Installation and Pre-Commissioning of Christmas tree and Chokes immediate to completion of Drilling activities on Temporary Deck on Jackets to execute well testing operation. Subsequently, to facilitate erection of Topsides on Jackets, the bidder shall disconnect and remove all the "surface control equipment" for controlling & operation of Christmas Tree & Chokes. If the bidder anticipates any potential damage to the Christmas tree while topsides erection, the bidder shall provide "Temporary Bullet

Protection” to safeguard the Christmas trees and the same shall be taken back by the bidder after topsides installation. Post installation of topsides, the bidder shall reinstall and Commission the disconnected surface control equipment including interfacing, synchronization and establishing communication with both Control Systems at Offshore and Onshore for regular monitor & control.

Notes to Scenario I:

(1) The bidder shall be paid PF-10: X-mass tree & chokes under Price bid Proforma for Exhibit 14 and no payment shall be made for “PF-10A as the same is not applicable for Scenario II.

Notes to Scenario II:

- (1) In case of Scenario II, after drilling is completed, the Permanent topside facility is to be installed. Hence, the Bidder will be provided one (01) month notice, based on Topside installation schedule & Onshore Control System readiness, to enable Bidder to mobilize required personal / vendor representative(s) to accomplish the above task. This is an essential requirement as the Platforms will be operated unmanned from Onshore Control systems.
- (2) The bidder shall abide by the clause 6.3 above and the cost quoted under “PF-10A: DEPLOYMENT OF SERVICE PERSONNEL POST TOPSIDES INSTALLATION” under Price bid Proforma for Exhibit 14 shall be paid additionally in this scenario.

#### 6.4 Transportation and Lodging for BIDDER’S Personnel

COMPANY will be responsible for transporting personnel to and from the Company’s Shore base and Helicopter Base to Offshore Drilling Rig. COMPANY will only provide accommodation and meals while on the Offshore Drilling Rig. The personnel will be sent back to base as and when offshore work is completed. COMPANY shall not be responsible

for accommodation and expenditure for personnel while they are back to onshore.

#### 6.5 Compliance with COMPANY'S policies

BIDDER shall ensure that all BIDDER's Personnel comply with the spirit and intent of COMPANY's environmental, safety and contracting policies, and other policies and instructions that may be issued by COMPANY from time to time.

### **7.0 Documentation and Quality Assurance:**

7.1 The BIDDER shall supply to company a certificate of compliance stating that the material and equipment has been manufactured, sampled, tested, and inspected in accordance with the stated and applicable API specifications as quoted in this specification and any other industry referenced specifications or standards.

7.2 BIDDER shall be required to prepare and submit a specific Quality Assurance Plan (inclusive of scope of Inspection) for this equipment to COMPANY for approval before manufacturing.

7.3 BIDDER shall provide all documentation including blueprints with the envelope dimensions and complete description of all assemblies and parts, part number lists and pertinent procedures for assembling, testing, operating, and repairing the equipment, inspection and testing reports, bill of materials and design features, and storage and handling procedures. All documentation will be combined into a package and not be issued separately.

7.4 BIDDER will supply four sets of detailed manuals for the equipment prior to delivery of the equipment. The manual shall be reviewed and approved by the COMPANY representative prior to shipment. These manuals will include at a minimum:

- Description of the equipment.
- Detailed dimensional drawings of equipment including laminated large-scale presentation.

- Design features including operating envelopes.
  - Bill of materials.
  - Detailed description of handling and installation procedures for each equipment.
  - Operating and maintenance instruction.
  - Unloading, Storage and handling procedures.
  - Coloured wall charts of the Christmas tree and other equipment.
- 7.5 BIDDER shall assist the COMPANY in the preparation of well construction procedures, particularly in relation to the installation of this equipment.
- 7.6 Training workshops will also be conducted as agreed with the Company. Manuals for training purposes shall be prepared by the BIDDER.
- 7.7 RCA shall be submitted by the BIDDER within 7 days from the date of event, consequences may be hold of invoices till issue is resolved.
- 7.8 Unless otherwise approved by the Company, all “Manufacturing Test Certificates” shall be produced in EN 10204 3.1/ 3.2 types.
- 7.9 The following technical documentation shall be submitted with the tender response:
- Technical proposal including detailed drawings of the assemblies and tools.
  - Quality management proposal including the copy of BIDDER’s Quality Manual, Standard Operating Procedures, Applicable Quality System / Product Certifications.
  - Procedure for hard facing / case hardening to be used on X-mas tree valves and Chokes (if applicable).
  - Procedure for Welding, “Post Weld Heat Treatment” / “Surface Heat Treatment” (if applicable).
  - Valid API Licenses.
  - Draft Index for Installation, Operating and Maintenance Manual.

- Detailed Bill of Materials for the Equipment.
- Material Specifications.
- Details of the place of manufacture.
- Manufacturing lead time and manufacturing program clearly identifying critical dates for completion of documentation, stack-up test, and delivery of first set of each type of x-mas tree system and accessories.
- A list of recommended spare parts and tools and accessories.
- A proposal for how BIDDER will manage the logistics.
- BIDDER may submit alternate designs (in addition to that requested by the Company) and full technical details on alternate designs shall be included.
- Scope of TPA as per QAP
- The following criteria needs to be complied by the bidder.
  - a. Bidder needs to declare the Country and address of the Manufacturing plant from where the Downhole equipment will be manufactured and supplied at the time of bid submission.
  - b. Manufacturing plant should have valid API Q1 certificate and bidder to provide the same at the time of bid submission. Bidder to ensure that all the Completion downhole equipment proposed by bidder must be delivered from the declared Manufacturing plant only.
  - c. Bidder to provide the 100% traceability report of supplied Downhole completion equipment at the time of Delivery of equipment. Traceability report shall consist of below as a minimum requirement:
    - Mill test certificate (MTC) of Each metallic component.
    - Test certificates of Elastomers/Non-Elastomers.
    - Traceability report of Nut, spring, screw, pins etc.

## **8.0 Logistics**

### 8.1 Mobilization & Demobilization requirements

BIDDER shall submit within one (1) month after the effective date of Contract to COMPANY a mobilization plan with respect to all equipment. Thereafter BIDDER will update COMPANY on the progress of the mobilization plan at least once a month. BIDDER will ensure that all equipment is delivered on schedule.

Further to the above point, an updated delivery schedule must be provided by the bidder to the COMPANY on demand after contract commencement & up till it expires.

BIDDER shall honor and accept manual callouts and delivery terms will be applicable from the date of manual callout.

All Equipment shall be adequately crated, containerized and/or palletized and strapped as necessary to ensure protection during transportation. Each crate, container, and pallet must be marked according to the owner, name of materials/equipment, weight, destination, and other relevant information about the materials/equipment being transported. Any hazardous material must meet relevant marking and packing codes.

Some material may require additional preparation for storage and weather protection which may include installation of protective covering prior to final delivery. The bidder's quotation must include the cost and complete documentation of necessary preservation requirements needed to protect the material against adverse weather and/or storage conditions from initial shipment until such a time it is used. The bidder shall advise and submit a recommended storage procedure for the Christmas tree.

No mobilization or demobilization charges shall apply for purchased equipment.

**Amended Clauses (Nos. 12, 13 & 14) of Part-3 Section-IV: Schedule of Rates**  
**(SOR)**

**12. SURFACE WELL TESTING SERVICES (EXHIBIT-12)**

**12.1 MOBILIZATION**

Mobilization charges as lump sum amount against Surface Production Testing Services and NPU services, as detailed in the SCOPE OF WORK / TERMS OF REFERENCE PART-3, SECTION-II, will be payable when:

- (i) 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 mobilised to the Company's base at Kakinada as per the mobilisation notice issued by 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 as mentioned in the mobilisation notice issued by the company & 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.

Mobilization will be considered as completed only when all equipment/tools are in good condition and delivered to the company's OCTG Yard at Kakinada as follows.

- a. All operating Tools/equipment are tested/calibrated to its rated specifications to the satisfaction of Company.
  - b. Where appropriate all equipment and materials must be delivered on/in suitable skids, tool racks, baskets, containers, pallets, etc. as the case may be.
  - c. Dangerous goods and explosives must be suitably packaged, labelled, and otherwise marked according to all regulations and MSDS sheets should accompany the package.
  - d. Appropriate packaging must be utilized for all deliveries.
  - e. 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.
  - f. Bidder shall supply appropriate lifting gear for all equipment; current load test certificates for all slings, rigging and lifting gear will be required.
- (ii) In case, any Service(s) which require mobilization at rig are not sent to rig after on-hire survey due to any reason not attributable to Contractor, then Individual

Service Day Rate charges as applicable shall be payable after 7 days onwards from on-hire survey date e.g., in case on-hire survey is done on Day 1, then Individual Service Day Rate shall start from Day 8. However, if any of the Equipment / Tools of the above service(s) are found to be defective or not in operating condition or not available as per its intended operations during hookup or pressure testing or startup / commissioning operations at Offshore Drilling site, the ISDR charges shall be revoked from the date of ISDR considered till the Equipment / Tools / Services brought into operation.

- (iii) Mobilization charges are inclusive of transportation, sea/airfreight, loading/unloading, shipping, wharfage/demurrage and harbour fees, port or airport fees, packing and handling charges, permit, import clearance charges and all insurance adequate to cover the shipment from the place of origin until arrival at company's OCTG Yard where equipment is ordered to be mobilized.

This Mobilization charges shall cover 'all cost' of the Contractor to mobilize the above services to the Company's OCTG Yard at Kakinada.

- (iv) The Company will issue EC as required for custom clearance as the service will be used in PEL/ML area, only on receipt of request from the Contractor and all such requests must be made by the Contractor well in advance, so that the Company can make necessary arrangements for providing the documents in time without causing any delay for the customs/port clearance.
- (v) Contractor to ensure sufficient backup tools/spares/consumables /personnel/equipment over and above the minimum quantity specified in the SOW for ensuring uninterrupted drilling operation.
- (vi) Company reserves the right to allow operations to start without complete mobilization, provided it is possible to start work with the items mobilized. However, the shortfall items must be mobilized by the Contractor immediately thereafter. If the Company permits the Contractor to start Operations without completing mobilization, only 80% of Mobilization charges will become payable to the Contractor and the remaining 20% of mobilization charges will be paid only after the shortfall items are made available. The Liquidated Damages as set out in the Contract shall be applicable up to the date the shortfall items are made available. However, notwithstanding this provision for partial mobilization, the Contractor must make all effort for mobilization of Contractor's items as per the contractual provisions.
- (vii) Company shall have the option to ask for delayed mobilization of any unit / tools to be mobilized 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. In such case, mobilization can be delayed for cumulative 45 days, limited to twice in the duration of the contract.
- (viii) 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.

## **12.2 DEMOBILIZATION CHARGES**

- (i) The Contractor shall arrange for and execute demobilization of the Surface Production Testing Services and NPU services upon receipt of notice from the Company. The Well Testing Service Package shall be demobilized after issue of Demobilization notice and offloaded to the Company's base at Kakinada.
- (ii) Demobilization charges for the above services shall be quoted on lump sum basis and shall include all charges for demobilization of the Well Testing Service Package from the company's OCTG Yard at Kakinada, Andhra Pradesh to Contractor's base in India or abroad.
- (iii) All charges on Tools/Equipment/Spare/Accessories etc. shall cease to exist with effect from the day the Contractor is issued de-mobilization notice by the Company and Tools/Equipment/Spare/Accessories etc. are offloaded to the Company's base at Kakinada. The Contractor will ensure that demobilization is completed, and the company's OCTG Yard is cleared-off Contractor's property within 07 days from the date of offloading at the company's OCTG Yard. No day rates will be payable to the crew once they are offloaded from the Drilling Unit.
- (iv) De-mobilization charges shall become payable on clearance & re-export of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base or Block Transfer or re-export to SEZ as permissible under applicable customs rules / regulations and provided Company is out of charge after Block Transfer or re-export to SEZ. However, Company shall not pay demobilization charges of services/tools/units/sets etc. which are not re-exported or Block Transfer or re-export to SEZ on completion of Contract/termination.
- (v) The demobilization charge will include all expenses for inland transport, sea-freight/airfreight, loading and unloading, shipping, wharfage and harbour fees, port or airport fees, packing and handling charges, permit charges (if any), export clearance charges and all insurance adequate to cover the shipment until arrival at Contractor's base in India or abroad.
- (vi) Upon completion of duration of the contract, the contractor shall submit their last invoice for payment along with any document(s) as required by the Indian laws and asked for by the Company to enable release of payment.

## **12.3 INDIVIDUAL SERVICE DAY RATE (ISDR)**

- (i) Contractor shall be paid ISDR as per conditions stipulated in the scope of work / SCC and respective price formats. Individual Service Day Rate charges will be payable for full day or part thereof on pro-rata basis up to the nearest hour and shall commence after completion of the mobilization and ready for operation of the respective items at the drilling unit. If the services are not mobilised to the drilling unit within 7 days of complete mobilisation at at company's OCTG Yard and certified by company representative, clause 12.1 (ii) shall apply.

(ii) Individual Service Day Rate (ISDR) will continue till offloading of complete equipment to the Company's OCTG Yard at Kakinada after issue of Demobilization notice.

(iii) Break Down clause under Part-3; Section-III; SCC Clause No: 8.2 will be applicable if contractor's tool/equipment fails to perform its intended operations until the tool/equipment is brought into operation.

(iv) At any point of time, either OCDR or ISDR will be payable.

#### **12.4 OPERATING COMPONENT DAY RATE (OCDR)**

Under the contract, the Contractor shall be entitled to Operating Component Day rate (OCDR) charges as detailed below. OCDR will be payable for full day or part thereof on pro-rata basis up to the nearest hour and these rates are inclusive of spares etc., if required for the successful completion of the work.

(i) The OCDR for production testing services shall be payable for the period when the equipment are setup and pressure tested at site, ready for well test operation and hooked up with the X-Mass Tree.

(ii) The OCDR for NPU shall be payable for the period when the unit is hooked up, pressure tested and is carrying out well activation operation.

(iii) If the Bidder's tool/equipment fails to perform, for any reason in the duration of operation, then zero rate shall become payable for the entire unit of the service until the equipment/tool is put back into operating condition or evidence by demonstration of operation in actual tests or use to the satisfaction of Company. If the equipment couldn't be brought into operation within 4 hours, then Break Down clause under Part-3; Section-III; SCC Clause No: 8.2 will be applicable.

(iv) In case Company utilizes the services/tools/units/sets etc. after part mobilization, only 80% OCDR charges shall be paid.

(v) At any point of time, either OCDR or ISDR will be payable.

#### **12.5 CONSUMABLES**

(i) Liquid nitrogen for well activation using NPU and Methanol, PPD, Demulsifier, Defoamer required for Surface Production Testing shall be delivered at OIL's OCTG Yard at Kakinada on FOR/CIF/CRF destination basis.

(ii) Payment to the Contractor for consumable items shall be made on actual consumption basis as Certified by Company representative against the submission of invoice.

#### **12.6 SERVICE PERSONNEL DAY RATE**

Company shall pay the Contractor the quoted **DAY RATE** to following service personnel.

- Well Test Coordinator (01 Number)
- Surface Production Well Test Supervisor (02 Number)
- Surface Production Well Test Operator (04 Numbers)
- Data Acquisition & Interpretation Specialist (02 Number)
- NPU Specialist (01 Number)
- NPU Operator (01 Number)

Bidders may propose additional manpower to successfully carry out the intended SOW at no additional cost to the Company.

Notes:

1. The above manpower is for 24 hours operation on shift basis. The quoted day rate of national and expatriate service personnel shall be all-inclusive of their mobilization, local travel, boarding, lodging, and demobilization, including any remobilization. The Company shall provide transportation from Company designated Heli-base to the Drilling Unit, the Company will also provide accommodation and food while the personnel is on the Drilling Unit. Any day rates for personnel will be paid only when on the drilling unit. If any person/personnel are mobilized/remobilized to the Company's Shore Base or offloaded from the Drilling Unit by the Company due to any other reason or contingencies at the Company's request, except demobilisation, the Company shall pay only the quoted day rate which will be inclusive of local travel, boarding, lodging, etc.
2. Charge of Service Personnel shall be 24 hours a day (pro rata basis for part thereof up to the completed full hours only) basis. Besides the required no. of Experts as per the Contractual T&C, if the contractor engages any other personnel to assist their Engineer or Expert for any other purposes, it will be at their cost.
3. Personnel will be required on a call out basis. Company shall give a maximum of 15 days' notice.
4. Only key personnel are mentioned in the tender. Optimum utilization of the supporting personnel is the responsibility of the bidder and to be quoted accordingly.

### **13 SUPPLY & SERVICES OF WELL COMPLETIONS EQUIPMENT / ITEM(S) - EXHIBIT 13**

#### **13.1 WELL COMPLETIONS EQUIPMENT / ITEM(S)**

- (i) The contractor shall supply four sets of well completions equipment / item(s) along with consumables, as per Exhibit 13, to be delivered at Company's OCTG Yard at Kakinada, India on DDP (Kakinada) basis as per

- the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.4.
- (ii) The contractor shall supply one more set of well completions equipment along with consumables, as per Exhibit 13, on a buy back basis, to be delivered at Company's OCTG Yard at Kakinada, India on DDP (Kakinada) basis as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.4. All unused completions related equipment will be returned to Contractor at the completion of drilling campaign. Contractor must quote buy-back charges (minimum 30% of the quoted rate) for all unused completions equipment which will be considered for price evaluation.
  - (iii) The Company will issue EC as required for custom clearance as the service will be used in PEL/ML area, only on receipt of request from the Contractor and all such requests must be made by the Contractor well in advance, so that the Company can make necessary arrangements for providing the documents in time without causing any delay for the customs/port clearance.
  - (iv) Contractor to ensure sufficient backup tools/spares/consumables /personnel/equipment over and above the minimum quantity specified in the SOW for ensuring uninterrupted drilling operation.
  - (v) Well Completion Equipment / Item(s) along with consumables, as per Exhibit 13, charges shall include all costs towards mobilisation, demobilisation of equipment (if any), cost of well completion equipment / items, tools, installation kits, consumables, duties, insurances, transportation etc., required for installation & commissioning of the Surface & Downhole Equipment / item(s). No other charges shall be payable to the contractor on any account.
  - (vi) Payment for Well Completion Equipment / items along with consumables under Price Proforma of Exhibit -13 shall be made as below:
    - 80 % of payment on arrival of Materials at Company's OCTG Yard at Kakinada followed by inspection & acceptance by company representative.
    - 20 % of remaining payment on completion of
      - (a) Installation & Commissioning (in case of scenario 1 reference clause 1.6.5 of Exhibit -13) for well testing and followed by regular production.
      - (b) Pre-commissioning for Well Testing Operations and Re-Installation, commissioning of Surface items at both Offshore & Onshore control rooms (In case of Scenario 2 reference clause 1.6.5 of Exhibit -13).
  - (vii) Payment to the Contractor for Well Completion Equipment / Item(s) as per Price proforma of Exhibit 13 shall be made as Certified by Company representative against the submission of invoice along with all documents related to supply, installation & commissioning.
  - (viii) In case of any failure of any supplied equipment / item(s) during testing or installation & commissioning, the contractor shall provide replacement without any additional cost to company to complete the intended job successfully.
  - (ix) The total cost for demobilizing the unused sets of well completions equipment's/ items, as per quantities mentioned in the price proforma,

from the Company's OCTG Yard at Kakinada to Contractor's base in India or abroad should be borne by the Contractor within the quoted rate of buy back items.

- (x) In case of Scenario 1, the manpower cost on callout basis against the scope of work shall be paid as per Proforma PF 2 of Exhibit 13 for the jobs executed for installation & commissioning of Well Completion equipment / item(s) followed by interfacing & establishing communication with offshore control system as well as onshore control systems.
- (xi) In case of Scenario 2, the manpower cost on callout basis against the scope of work shall be paid as per Proforma PF 2A of Exhibit 13 shall be in addition to PF2 of Exhibit 13 for the jobs executed after topsides installation & commissioning of surface control equipment followed by interfacing & establishing communication with offshore control system as well as onshore control systems.
- (xii) If the contractor's equipment / tool fails to perform, for any reason in the duration of operation, then zero rate shall become payable for the entire unit of the service until the equipment/tool is put back into operating condition or evidence by demonstration of operation in actual tests or use to the satisfaction of Company. If the equipment / tool couldn't be brought into operation within 4 hours, then Break Down clause under Part-3; Section-III; SCC Clause No: 8.2 will be applicable.

## **13.2 WELL BORE CLEANOUT SERVICES (WBCO)**

### **13.2.1 MOBILISATION CHARGES**

- (i) The well bore cleanout services shall be as per Exhibit 13 shall be mobilized to Company's OCTG Yard at Kakinada as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.4.
- (ii) Mobilization charges (excluding manpower) shall become payable after the WBCO Services, ready in all respects as per scope of work, including obtaining all statutory clearances (as applicable) are mobilised to the Company's OCTG Yard at Kakinada as per the mobilisation notice issued by 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 as mentioned in the mobilisation notice issued by the company & 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.
- (iii) Mobilization will be considered as completed only when all equipment/tools are in good condition and delivered to the company's OCTG yard at Kakinada as follows.
  - a. All operating Tools/equipment are tested/calibrated to its rated specifications to the satisfaction of Company.
  - b. Where appropriate all equipment and materials must be delivered on/in tool racks, baskets, containers, pallets, etc as the case may be.

- c. Dangerous goods and explosives must be suitably packaged, labelled, and otherwise marked according to all regulations and MSDS sheets should accompany the package.
  - d. Appropriate packaging must be utilized for all deliveries.
  - e. 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.
  - f. Bidder shall supply appropriate lifting gear for all equipment; current load test certificates for all slings, rigging and lifting gear will be required.
- (ix) Mobilization charges are inclusive of transportation, sea/airfreight, loading/unloading, shipping, wharfage/demurrage and harbour fees, port or airport fees, packing and handling charges, permit, import clearance charges and all insurance adequate to cover the shipment from the place of origin until arrival at Company's OCTG Yard at Kakinada where equipment is ordered to be mobilized.

This Mobilization charges shall cover 'all cost' of the Contractor to mobilize the above services to the Company's OCTG Yard at Kakinada.

- (x) The Company will issue EC as required for custom clearance as the service will be used in PEL/ML area, only on receipt of request from the Contractor and all such requests must be made by the Contractor well in advance, so that the Company can make necessary arrangements for providing the documents in time without causing any delay for the customs/port clearance.
- (xi) Contractor to ensure sufficient backup tools/spares/consumables /personnel/equipment over and above the minimum quantity specified in the SOW for ensuring uninterrupted drilling operation.
- (xii) Company shall have the option to ask for delayed mobilization of any unit / tools to be mobilized as per Contract. A minimum notice period of 15 days before the schedule date of mobilization shall be applicable at the time of asking for such delay in mobilization. In such case, mobilization can be delayed for a maximum of 45 days limited to twice in the duration of the contract.
- (xiii) Each downhole equipment, tool 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.
- (xiv) Mobilization charges shall be payable on lump sum basis which cover 'all cost' of the Contractor to mobilize the WBCO services to the Company's OCTG Yard at Kakinada.

### **13.2.2 DEMOBILIZATION CHARGES:**

- (i) The Contractor shall arrange for and execute demobilization of the WBCO Services with Tools / Equipment / Spares / Accessories etc. upon receipt of notice from the Company. The WBCO Service Package shall be demobilized after issue of Demobilization notice and offloaded to the company's OCTG Yard at Kakinada.
- (ii) Demobilization charges for the above services shall be quoted on lump sum basis and shall include all charges for demobilization of the WBCO Package from the company's OCTG Yard at Kakinada, Andhra Pradesh to Contractor's base in India or abroad.
- (iii) All charges on Tools/Equipment/Spare/Accessories etc. shall cease to exist with effect from the day the Contractor is issued de-mobilization notice by the Company and Tools/Equipment/Spare/Accessories etc. are offloaded to the Company's OCTG Yard at Kakinada. The Contractor will ensure that demobilization is completed, and the company's OCTG Yard is cleared-off Contractor's property within 07 days from the date of offloading at the Company's OCTG Yard. No day rates will be payable to the crew once they are offloaded from the Drilling Unit.
- (iv) De-mobilization charges shall become payable on clearance & re-export of all equipment from Indian Port / Custom authorities for re-export of equipment to Contractor's base. However, Company shall not pay de-mobilization charges of services/tools/units/sets etc. which are not re-exported on completion of Contract/termination and also if the Contractor deploys such services/tools/units/sets etc. against any other contract(s) for Company in India.
- (v) The demobilization charge will include all expenses for inland transport, sea-freight/airfreight, loading and unloading, shipping, wharfage and harbour fees, port or airport fees, packing and handling charges, permit charges (if any), export clearance charges and all insurance adequate to cover the shipment until arrival at Contractor's base in India or abroad.
- (vi) Upon completion of duration of the contract, the contractor shall submit their last invoice for payment along with any document(s) as required by the Indian laws and asked for by the Company to enable release of payment.

### **13.2.3 INTERIM DEMOBILIZATION & INTERIM REMOBILISATION CHARGES**

- (i) WBCO services shall be interim demobilised to Contractor's base and interim remobilized to Company's OCTG Yard at Kakinada as per the interim demobilisation and interim remobilization notice issued by the company.
- (ii) The Contractor shall arrange for and execute interim demobilization and interim remobilization of their WBCO services along with Tools / Equipment / Spares / Accessories etc. upon receipt of notice from the Company from the Company's OCTG Yard at Kakinada to Contractor's base and vice versa

(Contractor's base to Company's OCTG Yard) after issue of interim demobilization and interim remobilisation notice respectively. The contractor shall bear all such costs/charges towards interim demobilization / interim Remobilisation of the same from Company's OCTG Yard at Kakinada.

- (iii) Interim Demobilisation & Interim Remobilization charges for the WBCO services with complete set of tools, equipment and spares shall be quoted on lump sum basis and shall include all charges for interim demobilisation / interim remobilization of the complete set of tools, equipment, accessories & unutilized spares etc. to & from the Company's OCTG Yard at Kakinada.
- (iv) Interim Demobilisation & Interim Remobilization charges shall be payable on lump sum basis which cover 'all cost' of the Contractor to mobilize & demobilise the WBCO services to Company's OCTG Yard at Kakinada.
- (v) If the interim demobilised services for WBCO is not called for remobilisation, then demobilisation notice shall be become effective & considered as final demobilisation of WBCO services.

#### **13.2.4 INDIVIDUAL SERVICE DAY RATE (ISDR)**

- (i) Individual Service Day charges of WBCO services 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 / interim remobilization till receipt of the tool/equipment/spares etc. at Company's OCTG Yard at Kakinada after issue of demobilization / interim demobilization notice.
- (ii) ISDR charges shall also be inclusive of preparatory work to make ready the WBCO services with tools & accessories.
- (iii) Break Down clause under Part-3; Section-III; SCC Clause No: 8.2 will be applicable if contractor's tool/equipment fails to perform in downhole condition until the tool/equipment is back in operating condition.
- (iv) At any point of time, either OCDR or ISDR will be payable.

#### **13.2.5 OPERATING COMPONENT DAY RATE (OCDR)**

Under the contract, the Contractor shall be entitled to Operating Component Day rate (OCDR) charges as detailed below. OCDR will be payable for full day or part thereof on pro-rata basis up to the nearest hour and these rates are inclusive of spares etc., if required for the successful completion of the work.

- (i) The OCDR for Well Bore Clean out Tools (WBCO) shall be payable from the period for the time the WBCO components are run below the rotary (BRT) and till it is pulled out of hole.
- (ii) If the Bidder's tool/equipment fails to perform, for any reason in the duration of operation, then zero rate shall become payable for the entire unit of the service until the equipment/tool is put back into operating condition or evidence by demonstration of operation in actual tests or use to the satisfaction of Company. If the equipment couldn't be brought into

operation within 4 hours, then Break Down clause under Part-3; Section-III; SCC Clause No: 8.2 will be applicable.

(iii) At any point of time, either OCDR or ISDR will be payable.

### **13.3 SERVICE PERSONNEL DAY RATE (Exhibit 13 & Exhibit 14)**

Company shall pay the Contractor the quoted DAY RATE to following service personnel.

- a. Completions Supervisor (02 Numbers) – as per PF 2 of Exhibit 13
- b. Completions Engineer (02 Numbers) – as per PF 2 of Exhibit 13
- c. Well Bore Clean Out Supervisor (01 Number) – as per PF 2 of Exhibit 13
- d. ICV Specialist (02 Numbers) – as per PF 2 of Exhibit 13
- e. Commissioning Engineer (01 number) – as per PF 2A of Exhibit 13
- f. Commissioning Specialist (05 number) – as per PF 2A of Exhibit 13

The above Service Personnel on a call out basis is for 24 hours operation on shift basis. The quoted day rate of national and expatriate service personnel shall be all-inclusive of their mobilization, local travel, boarding, lodging, and demobilization, including any remobilization. The Company shall provide transportation from Company designated Heli-base to the Drilling Unit, the Company will also provide accommodation and food while the personnel is on the Drilling Unit. Any day rates for personnel will be paid only when on the drilling unit. Personnel day rate shall be paid from the time the personal reported in the Drilling unit and ready for operation till demobilisation notice for the personnel is issued. If any person/personnel are mobilized/remobilized to the Company's Shore Base or offloaded from the Drilling Unit by the Company due to any other reason or contingencies at the Company's request, except demobilisation, the Company shall pay only the quoted day rate which will be inclusive of local travel, boarding, lodging, etc.

Only key personnel are mentioned in the tender. Bidder may propose additional manpower to successfully carry out the intended SOW at no additional cost to the Company. Optimum utilization of the supporting personnel is the responsibility of the bidder and to be quoted accordingly.

The service personnel day rate shall be applicable for the followings:

- (1) In case of Scenario I as mentioned in scope of Exhibit 13, the Service charges for manpower shall be paid under PF-2 of Price Proforma Exhibit 13 for installation, commissioning of Well Completion Equipment / Items and surface control equipment followed by interfacing, synchronisation & establishing communication with both onshore & offshore control units for monitor & control and removal of surface control systems (if any). OIL will give 15 days' notice for mobilization of the personnel to work site/rig.
- (2) In case of Scenario II as mentioned in scope of Exhibit 13, the services of the manpower shall be paid as below:
  - As per PF-2 of Price Proforma for Exhibit 13 for Installation, Pre-commissioning of Well Completion Equipment / Item(s) along with consumables for Well Testing including removal & handover of surface control units (if any).

And

- As per PF-2A of Price Proforma for Exhibit 13 shall be utilised (after installation of Topsides and Onshore Control Systems for reinstallation

of surface control equipment followed by interfacing, synchronisation & establishing communication with both onshore & offshore control units for monitor & control. One month mobilisation time will be issued for mobilisation of the manpower for the purpose.

## **14 SUPPLY & SERVICES OF CHRISTMASS TREE & CHOKES (EXHIBIT 14)**

### **14.1 CHRISTMASS TREE & CHOKES / ITEM(S)**

- (i) The contractor shall supply four sets of Christmas Tree and Chokes along with consumables, as per Exhibit 14, to be delivered at Company's OCTG Yard at Kakinada, India on DDP (Kakinada) basis as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.4.
- (ii) The contractor shall supply one more set of Christmas Tree and Chokes along with consumables, as per Exhibit 14, on a buy back basis, to be delivered at Company's OCTG Yard at Kakinada, India on DDP (Kakinada) basis as per the mobilization schedule defined under Part-3; Section-III; SCC Clause No: 2.4. All unused Christmas Tree and Chokes related equipment / item(s) will be returned to Contractor at the completion of drilling campaign. Contractor must quote buy-back charges (minimum 30% of the quoted rate) for all unused completions equipment which will be considered for price evaluation.
- (iii) Christmas Tree and Chokes along with consumables, as per Exhibit 14, charges shall include all costs towards mobilisation, demobilisation of equipment (if any), cost of Christmas Tree and Chokes, tools, installation kits, consumables, duties, insurances, transportation etc., required for installation & commissioning. No other charges shall be payable to the contractor on any account.
- (iv) Payment for Christmas Tree and Chokes along with consumables under Price bid Proforma of 14 shall be made as below:
  - 80 % of payment on arrival of Materials at Company's OCTG Yard at Kakinada followed by inspection & acceptance by company representative.
  - 20 % of remaining payment on completion of
    - (c) Installation & Commissioning (in case of scenario 1 reference clause 6.3 of Exhibit 14) for well testing and followed by regular production.
    - (d) Pre-commissioning for Well Testing Operations and Re-Installation, commissioning of Surface items at both Offshore & Onshore control rooms (In case of Scenario 2 reference clause 6.3 of Exhibit 14).
- (v) Payment to the Contractor for Christmas Tree and Chokes as per Price proforma of Exhibit 14 shall be made as Certified by Company representative against the submission of invoice along with all documents related to supply, installation & commissioning.
- (vi) In case of any failure of any supplied Christmas Tree and Chokes / item(s) during testing or installation & commissioning, the contractor shall

provide replacement without any additional cost to company to complete the intended job successfully.

- (vii) The total cost for demobilizing the unused sets of Christmas Tree and Chokes, as per quantities mentioned in the price proforma, from the Company's OCTG Yard at Kakinada to Contractor's base in India or abroad should be borne by the Contractor within the quoted rate of buy back items.
- (viii) In case of Scenario 1, the manpower cost on callout basis against the scope of work shall be paid as per PF 10A of Exhibit 14 for the jobs executed for installation & commissioning of Christmas Tree and Chokes / item(s) followed by interfacing & establishing communication with offshore control system as well as onshore control systems.
- (ix) In case of Scenario 2, the manpower cost on callout basis against the scope of work shall be paid as per Proforma PF 10B of Exhibit 14 shall be in addition to PF10A of Exhibit14 for the jobs executed after topsides installation & commissioning of surface control equipment followed by interfacing & establishing communication with offshore control system as well as onshore control systems.
- (x) If the contractor's Christmas Tree and Chokes / item(s)/ tool(s) fails to perform, for any reason in the duration of operation, then zero rate shall become payable for the entire unit of the service until the Christmas Tree and Chokes / item(s) / tool(s) is put back into operating condition or evidence by demonstration of operation in actual tests or use to the satisfaction of Company. If the equipment / tool couldn't be brought into operation within 4 hours, then Break Down clause under Part-3; Section-III; SCC Clause No: 8.2 will be applicable.

## **14.2 SERVICE PERSONNEL DAY RATE**

Company shall pay the Contractor the quoted DAY RATE to following service personnel.

- a. X-mass Tree Specialist (01 Number) – as per PF 10A & PF10B of Exhibit 14
- b. X-mass Tree Technician (01 Number) – as per PF 10A & PF10B of Exhibit 14

The above Service Personnel on a call out basis is for 24 hours operation on shift basis. The quoted day rate of national and expatriate service personnel shall be all-inclusive of their mobilization, local travel, boarding, lodging, and demobilization, including any remobilization. The Company shall provide transportation from Company designated Heli-base to the Drilling Unit, the Company will also provide accommodation and food while the personnel is on the Drilling Unit. Any day rates for personnel will be paid only when on the drilling unit. If any person/personnel are mobilized/remobilized to the Company's Shore Base or offloaded from the Drilling Unit by the Company due to any other reason or contingencies at the Company's request, except demobilization, the Company shall pay only the quoted day rate which will be inclusive of local travel, boarding, lodging, etc.

Only key personnel are mentioned in the tender. Bidder may propose additional manpower to successfully carry out the intended SOW at no additional cost to the Company. Optimum utilization of the supporting personnel is the responsibility of the bidder and to be quoted accordingly.

The service personnel day rate shall be applicable for the followings:

- (1) In case of Scenario I as mentioned in scope of Exhibit 14, the Service charges for manpower shall be paid under PF-10A of Price Proforma for Exhibit 14 for installation, commissioning of Christmas Tree and Chokes / Item(s) and surface control equipment followed by interfacing, synchronisation & establishing communication with both onshore & offshore control units for monitor & control and removal of surface control systems (if any). OIL will give 15 days' notice for mobilization of the personnel to work site/rig.
- (2) In case of Scenario II as mentioned in scope of Exhibit 14, the services of the manpower shall be paid as below:
  - As per PF-10A of Price Proforma for Exhibit 14 for Installation, Pre-commissioning of Christmas Tree and Chokes / Item(s) along with consumables for Well Testing including removal & handover of surface control units (if any).

And

  - As per PF-10B of Price Proforma for Exhibit 14 shall be utilised (after installation of Topsides and Onshore Control Systems for reinstallation of surface control equipment followed by interfacing, synchronisation & establishing communication with both onshore & offshore control units for monitor & control. One month mobilisation time will be issued for mobilisation of the manpower for the purpose.

**FORM OF BID SECURITY (BANK GUARANTEE)**

Ref. No.:  
Bank Guarantee No.:

To,  
OIL INDIA LIMITED  
KG BASIN PROJECT  
D. NO. 11-4-7, 3<sup>RD</sup> FLOOR,  
NOOKALAMMAA TEMPLE STREET,  
RAMARAO PETA, KAKINADA 533004  
ANDHRA PRADESH, INDIA

WHEREAS, (Name of Bidder) ..... (hereinafter called “the Bidder”) has submitted their Bid No. .... dated .....for the provision of certain oilfield services (hereinafter called “the Bid”) against OIL INDIA LIMITED, KG BASIN PROJECT, KAKINADA (hereinafter called the “Company”)’s IFB No.....

KNOW ALL MEN by these presents that we (Name of Bank) ..... having our registered office at ..... (hereinafter called “the Bank”) are bound unto the Company in the sum of (.....)\* for which payment well and truly to be made to Company, the Bank binds itself, its successors and assignees by these presents.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws their Bid within its original/extended validity; or
2. The Bidder modifies/revises their bid suo moto; or
3. The Bidder does not accept the contract; or
4. The Bidder does not furnish Performance Security Deposit within the stipulated time as per tender/contract; or
5. If it is established that the Bidder has submitted fraudulent documents or has indulged into corrupt and fraudulent practice.

We undertake to pay to Company up to the above amount upon receipt of its first written demand (by way of letter/fax/cable/email), without Company having to substantiate its demand, provided that in its demand Company will note that the

amount claimed by it is due to it owing to the occurrence of one or two or all of the conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including the date (\*\*) and any demand in respect thereof should reach the bank not later than the above date.

SEALED with the common seal of the said Bank this ..... Day of ....., 20.....

The details of the issuing bank and controlling bank are as under:

A. Issuing Bank

BANK FAX NO:

BANK EMAIL ID:

BANK TELEPHONE NO.:

IFSC CODE OF THE BANK:

B. Controlling Office

1. Address of the Controlling Office of the BG issuing bank:

2. Name of the Contact Person at the Controlling Office with Mobile No. and email address:

Notwithstanding anything contained herein:

a) Our liability under this Bank Guarantee shall is restricted up to Rs.

\_\_\_\_\_

b) This guarantee shall be valid till .....

c) We are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ..... (Date of Expiry of BG PLUS one year claim period).

d) At the end of the claim period that is on or after ..... (Date of expiry of the Bank Guarantee Plus Minimum of 1 year claim period shall be stipulated) all your rights under this Guarantee shall stand extinguished and we shall be discharged from all our liabilities under this Guarantee irrespective of receipt of original Bank Guarantee duly discharged, by Bank.

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

SIGNATURE AND SEAL OF THE GUARANTOR.....

Name of Bank & Address.....

Witness .....

Address.....

-----

(Signature, Name and Address)

Date.....

Place.....

\* The Bidder should insert the amount of the guarantee in words and figures denominated in the currency of the Company's country or an equivalent amount in a freely convertible currency.

\*\* The Date of Expiry of Bank Guarantee should be minimum 195 days after the bid closing date as stated in the tender document.

**REVISED CHECKLIST-II****BEC CHECK LIST**

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
<b>1.0</b>	<b>VITAL CRITERIA FOR ACCEPTANCE OF BIDS</b>  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.		
<b>1.1</b>	<b>GENERAL CONFORMITY:</b>  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.		
<b>1.2</b>	<b>Scope of Work / Technical Evaluation criteria:</b>  The following vital technical conditions should be strictly		

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
	<p>complied with failing which the bid will be rejected:</p> <p>Bids should be complete and covering the entire scope of work / supply and should conform to the technical specifications indicated in the bid documents. Incomplete and non-conforming bids will be rejected outright.</p> <p>The Bidder shall be required to provide Bundled Services with capable and experienced service crew at the Rig / Base Personnel along with Marine Logistics Services as per Contract Document, for Shallow water Operations in Offshore Indian waters, for one Independent Leg / Mat type Jack-Up Drilling Unit to be hired by the Company for development drilling, testing and completions operations, in water depths of 10 m and well depth up to 4000 m (TVD). The Services shall be capable of operating in the above specified water depths.</p> <p>The Bidder shall provide all services listed under <b>Group-I, Group-II &amp; Marine Vessels</b> and should quote for all <b>Group-I, Group-II &amp; Marine Vessels</b>.</p> <p><b><u>Bundled Services (Group-I):</u></b></p> <p>1) Cementing Equipment &amp; Services, including slurry design, supply of oil well cement, additives, floating &amp; guiding equipment, casing accessories and consumables, along with Base Engineer for offshore wells.</p> <p>2) Casing and Tubing Running Tools and Services.</p> <p>3) Directional Drilling – SDMM/RSS/MWD/LWD &amp; Gyro</p>		

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
	<p>services along with Crew for offshore wells.</p> <p>4) Mud Engineering Services including supply of mud chemicals, along with Mud Engineers for supervision and operation of offshore wells and liquid mud plants (LMP).</p> <p>5) Supply of Drill bits on a consignment basis.</p> <p>6) Liner Hanger Equipment supply and Liner running Services.</p> <p>7) Mud Logging Unit Services along with the crew for offshore wells.</p> <p>8) Coring, Core Handling &amp; Core Stabilization Services.</p> <p>9) Compact/Unitized Well heads with rental tools and running services.</p> <p>10) Fishing &amp; Milling tools rental Services.</p> <p>11) Wireline Logging &amp; TCP Services along with Crew for offshore wells.</p> <p><b>Bundled Services (Group-II):</b></p> <p>12) Well testing Services</p> <p>13) Downhole Completions equipment supply &amp; services</p> <p>14) Supply of X-mas tree &amp; chokes</p> <p><b><u>Project Coordinator and Rig Site Coordinator</u></b></p> <p>15) Project Coordinator, primarily based in Kakinada.</p> <p>16) Rig Site Coordinator (Day Tour) based at the Drilling Unit.</p> <p>17) Rig Site Logistics Coordinator (Night Tour) based at the Drilling Unit.</p> <p><b><u>Marine Vessels</u></b></p> <p>18) Marine Vessels – AHTS with 120 bollards pull or more along with the crew.</p> <p>19) Marine Vessels – AHTS with 80 bollards pull or more along with the crew.</p>		

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
<b>A.</b>	<b>TECHNICAL EVALUATION CRITERIA</b>		
<b>2.1</b>	<b>ELIGIBILITY AND EXPERIENCE OF THE BIDDER</b>		
	<p><b>a.</b> The bidder should be an Offshore Oilfield Services Provider and must have in-house capability to provide at least any <b>3 out of the 6</b> services namely:</p> <ul style="list-style-type: none"> <li>(1) Cementing Services</li> <li>(2) Directional Drilling Services</li> <li>(3) Mud Engineering Services</li> <li>(4) Wire line Logging Services</li> <li>(5) Well Testing Services</li> <li>(6) Well Completions Equipment supply and Services</li> </ul> <p>The bidder should have minimum experience for these services as indicated below:</p> <ul style="list-style-type: none"> <li>1. <u>Cementing Services:</u> <ul style="list-style-type: none"> <li>1.1 The Bidder should have a minimum of five (05) years of experience in providing the Cementing Services to Drilling/E&amp;P Companies with at least three (03) years in offshore areas.</li> <li>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.</li> </ul> </li> <li>2. <u>Directional Drilling Services:</u> <ul style="list-style-type: none"> <li>2.1 The bidder should have a minimum of five (05) years of</li> </ul> </li> </ul>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>experience in providing the Directional Drilling Services (LWD, MWD &amp; RSS/Mud Motor) to Drilling/E&amp;P Companies with at least three (03) years in offshore areas.</p> <p>2.2 The Bidder should also have the experience in providing the Directional Drilling Services (LWD, MWD &amp; RSS/Mud Motor) to at least two (02) Offshore Wells and should have executed at least one contract for Directional Drilling Services (LWD, MWD &amp; RSS/Mud Motor) in offshore area in the last 07 years reckoned from original bid closing date.</p> <p>3. <u>Mud Engineering Services:</u></p> <p>3.1 The bidder should have a minimum of five (05) years of experience in providing the Mud Engineering Services to Drilling/E&amp;P Companies with at least three (03) years in offshore areas.</p> <p>3.2 The Bidder should also have executed at least one contract of Mud Engineering Services using Synthetic Oil Base Mud System, in Offshore Wells in the last 07 years reckoned from original bid closing date.</p> <p>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</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>a valid test report shall be rejected. Test report as above received after date opening of tender will not be accepted.</p> <p>4. <u>Wire line Logging Services:</u></p> <p>4.1 The Bidder should have a minimum of five (05) years of experience in providing Wire Line Logging services to Drilling/E&amp;P Companies with at least three (03) years in offshore areas.</p> <p>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.</p> <p>4.3 TCP Services</p> <p>(a) The bidder should have a minimum of five (05) years of experience in providing TCP operation to E&amp;P companies/Drilling companies including 3 years on offshore area and should have experience of at-least 02 offshore wells.</p> <p>(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.</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>5. <u>Well Testing Services:</u></p> <p>5.1 Well Testing Services:</p> <p>(a) The bidder should have a minimum of five (05) years of experience in providing PTS Services to E&amp;P companies/Drilling companies including 3 years in offshore area and should have experience of conducting testing in at-least 02 offshore wells.</p> <p>(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.</p> <p>6. <u>Well Completions Equipment supply and Services:</u></p> <p>(a) The bidder should have a minimum of five (05) years of experience in providing Well Completions equipment services to E&amp;P companies/Drilling companies including 3 years on offshore area and should have experience of supplying Well Completions equipment and services in at-least 01 offshore well, including ICV installation.</p> <p>(b) Bidder should have executed at least one Contract for the above services in offshore area in the last 7 years to be reckoned from the Original Bid Closing Date.</p>		

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
	<p><b>b. Other Services in the Bundle (Group-I) &amp; (Group-II):</b></p> <p>1. For all the other services mentioned in <b>Group-I &amp; Group-II</b> above, the bidder either may have their in-house capability or can have a pretender tie-up for those services only (Sub-contracting) or form a consortium (as per Clause 2.4 below).</p> <p>2. However, for other services, each individual service provider should meet the relevant experience criteria (as applicable) mentioned in the scope of work.</p> <p><b>NOTE (For both a &amp; b above):</b> 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.</p> <p><b>c. Marine Services:</b></p> <p>The bidder (Offshore Oilfield Services Provider) may either have a pretender tie-up (Sub-contracting) or form a Consortium with 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.</p>		
2.2	<p>DOCUMENTARY EVIDENCE</p> <p>In support of experience laid down at BEC Clause No A. 2.1 (a); the following documents must be</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>submitted along with the un-priced Techno-commercial bid.</p> <p>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:</p> <p>(i) Satisfactory completion / performance report (OR)  (ii) Proof of release of performance security after completion of the contract (OR)  (iii) Proof of settlement / release of final payment against the contract (OR)  (iv) Any other documentary evidence that can substantiate the satisfactory execution of each of the contracts cited above.</p>		
<p>2.3</p>	<p><b>Eligibility &amp; Experience criteria for Indian Joint Venture bidder:</b></p> <p>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 Clause No. BEC Clause No. A.2.1 (a) above should be met as under:</p> <p>(i) The Joint Venture Company by itself should meet the experience criteria</p> <p style="text-align: center;">or</p> <p>(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</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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.</p> <p>(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.</p> <p>(iv) Members of the JV are not allowed to quote separately / independently against this tender. All the bids received in such case shall be summarily rejected. Further, all bids from parties with technical support from the same Principal shall be rejected.</p> <p>(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.</p>		

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
	(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	<p><b>BIDS FROM CONSORTIUM:</b></p> <p>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. <b>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.</b></p> <p><b>Note: For Marine Vessels, consortium may be formed with vessel service providers who need not be sister subsidiary/co-subsidiary companies having the same parent/holding company or within the same ultimate parent/holding company.</b></p> <p>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</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>documents in line with BEC clause A.2.2 above.</p> <p>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.</p> <p>2.4.3 Only the Leader of the consortium should register 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</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>Consortium, which are taken in connection with and/or during the evaluation of the tender and execution of the contract.</p> <p>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 &amp; address of consortium members. Similarly, the Performance Security shall be in the name of the Leader on behalf of the consortium.</p> <p>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.</p> <p>2.4.6 Any correspondence exchanged with the leader of the consortium shall be binding on all the consortium members.</p> <p>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.</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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 submission of Bid on behalf of the individual member must accompany the Bid offer.</p> <p>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.</p> <p>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.</p> <p>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.</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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.</p> <p>2.4.13 Certified copies (attested by Director/Company Secretary) of Board resolutions passed by the respective Board of Directors of the companies (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.</p> <p>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.</p>		
<b>2.5</b>	<p><b>Bids submitted on the basis of technical experience of the parent / subsidiary company:</b></p> <p>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</p>		

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
	<p>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.</p> <p>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 bidder should enclose the following with the techno-commercial bid:</p> <ol style="list-style-type: none"> <li>1. An Agreement (<b>as per format enclosed as Annexure-I</b>) between the (bidder and supporting company)</li> <li>2. Guarantee (<b>as per format enclosed as Annexure-II</b>) from the parent / subsidiary company (supporting company) to OIL INDIA LIMITED for fulfilling the obligation under the Agreement.</li> <li>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</li> </ol>		

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
	also be invoked by OIL due to non-performance of the contractor.		
2.6	<p><b>Bids submitted on the basis of technical experience of sister subsidiary / co-subsidiary company:</b></p> <p>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:</p> <ol style="list-style-type: none"> <li>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.</li> <li>2. Provided that the sister subsidiary / co-subsidiary company 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.</li> <li>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</li> </ol>		

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
	<p>participating bidder submits an Agreement, as per format furnished vide <b>Annexure-III</b>, 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.</p>		
	<p><b>Note:</b> In case of Clauses 2.5 &amp; 2.6 above, bidders shall submit the following additional documents:</p> <p>(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.</p> <p>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.</p> <p>(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 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.</p>		

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	<p>Wherever the pretender tie-up (sub-contracting) is envisaged [as per BEC clause A.2.1(b) &amp; A.2.1(c)], the Bidders should:</p> <p>(i) Submit MOU / Agreement with their sub-contractor(s) clearly indicating their roles under the scope of work.</p> <p>(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.</p>		
4.0	<p>Service crew:</p> <p>(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.</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>(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.</p> <p>(iii) Training to the Crew personnel: All the crew members should have undergone Personal Survival Training (PST), Fire Prevention &amp; 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).</p> <p>Or</p> <p>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.</p> <p>No personnel are allowed to go on offshore rigs/marine vessels without undergoing the above training.</p> <p>(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</p>		

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				
	by Company before commencement of the work.						
5.0	<p>Inspection Clause:</p> <p>OIL shall get the equipment of various services &amp; 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 &amp; Marine Vessels and the cost of the third-party inspection will be borne by OIL.</p> <p>a. LRDISI b. ABS c. Oilfield Audit Services Inc. d. DNV GL e. OMCI f. OES, UAE g. Any other Agency nominated by the Company.</p> <p>Bidder to confirm compliance (Refer to Inspection Clause 10.0 of SCC under Section – III for details).</p>						
6.0	<p>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.</p> <table border="1"> <thead> <tr> <th>Particulars</th> <th>Mobilization Time</th> </tr> </thead> <tbody> <tr> <td>Group – I Services (Exclusive of <b>TCP services</b> Unitized Well heads with rental tools and running services and Liner</td> <td>Within 90 days of Mobilization notice issued by Company</td> </tr> </tbody> </table>	Particulars	Mobilization Time	Group – I Services (Exclusive of <b>TCP services</b> Unitized Well heads with rental tools and running services and Liner	Within 90 days of Mobilization notice issued by Company		
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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
	Hanger Equipment supply & Liner running Services).			
	Group - I Services (TCP services)	Within 120 days of Mobilization notice issued by Company		
	Unitized Well heads with rental tools and running services and Liner Hanger Equipment supply & Liner running Services under Group - I Services.	Within 150 days of Mobilization notice issued by Company		
	Group -II Services [Well Testing Services]	For SPT: Within 120 days of Mobilization notice issued by the Company.  For NPU: within 60 days of Mobilization notice issued by the Company		
	Group -II Services [Completions equipment supply & services inclusive of Supply of X-Mass Tree & Chokes.]	Within 150 days of Mobilization notice issued by the Company		
	Project Coordinator, Rig Site Coordinator and Rig Site Logistics Coordinator.	Within 30 days of Mobilization notice issued by 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
	Marine Vessels (2 Nos. AHTS with 120 bollards pull or more along with the crew)	Within 150 days of Mobilization notice issued by the Company		
	Marine Vessels (1 No. AHTS with 80 bollards pull or more along with the crew)	Within 60 days of Mobilization notice issued by the Company		
	<b>Interim De-mobilization and Re-mobilization</b>			
	Coring, Core Handling & Core Stabilization equipment & services under Group - I Services	Within 45 days of Re-Mobilization notice issued by the Company		
	Liner Hanger Rental Equipment & Liner Running Services under Group - I Services.	Within 45 days of Re-Mobilization notice issued by the Company		
	Gyro Services under Group - I Services.	Within 45 days of Re-Mobilization notice issued by the Company		
	Wellbore cleanout services under Group - II Services	Within 45 days of Re-Mobilization notice issued by the Company		
	Marine Vessels - 1 Nos. AHTS with 80 bollards pull or more along with the crew	Within 30 days of Re-Mobilization notice issued by the Company		
Note:				

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>1) Separate Mobilization notice will be issued for each of the mobilization timelines as mentioned above.</p> <p>2) Separate Interim De-mobilization and Re-mobilization notice will be issued for Coring, Core Handling &amp; Core Stabilization equipment &amp; services, Liner Hanger Rental Equipment &amp; Liner Running Services, Gyro Services, Well testing &amp; TCP Services, Completions equipment services and AHTS with 80 bollards pull or more along with the crew.</p> <p>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.</p> <p>4) Supply of all Consumables shall be in staggered manner as per OIL's well requirement.</p>		
<b>7.0</b>	<p>HSE CRITERIA:</p> <p>7.1 The Bidder should have a valid HSE Management System (HSEMS) for each quoted Services certified as per ISO: 9001, ISO: 14001 &amp; 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.</p> <p>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</p>		

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								
	<p>certified HSE management system for each quoted Services is in place before the commencement of operations.</p> <p>7.3 In case certified HSE management system for each quoted Services certified as per ISO: 9001, ISO: 14001 &amp; 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.</p>										
<b>8.0</b>	<p>VINTAGE: Vintage clauses for individual services shall be as follows.</p> <table border="1"> <thead> <tr> <th>Service Details</th> <th>Vintage Clause</th> </tr> </thead> <tbody> <tr> <td>Cementing Service</td> <td>           - 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.         </td> </tr> <tr> <td>Mud Engineering Service</td> <td>           - 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.         </td> </tr> <tr> <td>Directional Drilling Service</td> <td>           - Downhole Tools should either be new or recently refurbished. In case of refurbished tools, the refurbishment should not be more than 06(six)         </td> </tr> </tbody> </table>	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)		
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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
		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 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 service 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 on issuance of mobilisation notice.		

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		
	<table border="1"> <tr> <td>Marine Vessels</td> <td> <ul style="list-style-type: none"> <li>- The vintage of the AHTS Vessels offered shall not be more than 20 years old.</li> <li>- Bidder to submit relevant documents in support of this vintage clause.</li> </ul> </td> </tr> </table>	Marine Vessels	<ul style="list-style-type: none"> <li>- The vintage of the AHTS Vessels offered shall not be more than 20 years old.</li> <li>- Bidder to submit relevant documents in support of this vintage clause.</li> </ul>		
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9.0	<p>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.</p>				
10.0	<p>A job executed by a bidder for its own organization / subsidiary will not be considered as experience for the purpose of meeting BEC.</p>				
11.0	<p>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.</p> <p>11.1 Marine logistics services will comprise of minimum two (02) numbers AHTS vessels with certified bollard pull of 120 tons or more and with deck areas of at least 400 square meters each and one (01) number AHTS vessel with certified bollard pull of 80 tons or more and with deck area of at least 400 square meters. The vintage of the AHTS Vessels offered shall not be more than 20 years old. The Bidder to confirm submission of</p>				

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>documentary evidence prior to mobilization of the vessels if awarded with the Contract.</p> <p>11.2 Lifesaving equipment and firefighting equipment:</p> <p>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 available all the time on board the Marine Vessels and shall be made available to OIL/OIL nominated TPI team.</p>		
<b>12.0</b>	<p>Statutory Certificates / Clearance / Permits:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>12.5 Bidder to confirm that they would secure all statutory permits,</p>		

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
	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>B.</b>	<b>FINANCIAL EVALUATION CRITERIA</b>		
<b>1.</b>	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 <b>INR 302.23 Cr. or USD 36.03 Million (1 USD = INR 83.89).</b>		
<b>2.</b>	Net worth of the bidder must be Positive for the financial / accounting year preceding the original bid closing date.		
	<p>Note:</p> <p>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).</p> <p>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".</p>		
<b>3.</b>	If the Bidder is an Incorporated Joint Venture (JV) Company and does not meet Financial Criteria (BEC Clause Nos. B.1 & B.2 above)		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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:</p> <p>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.</p> <p>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.</p> <p>iii) Corporate Guarantee (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.</p> <p>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.</p> <p>v) A certificate from the statutory Auditor of the JV company on the shareholding pattern of the JV.</p>		
<b>4.0</b>	<p>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</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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:</p> <p>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.</p> <p>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.</p> <p>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 them.</p> <p>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.</p>		

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
	<p>Note: The above certificate should not be more than 30 days old as on the original bid closing date.</p> <p>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. Other Consortium members individually shall have minimum Annual financial turn-over of <b>INR 151.11 Cr. or USD 18.01 Million (1 USD = INR 83.89)</b> 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.</p>		
5.0	<p>Notes to BEC Clause B1 &amp; B2 above:</p> <p>a. For proof of Annual Turnover from operation, Net worth &amp; Working Capital, any one of the following documents / photocopies must be submitted along with the bid:</p> <p>(i) Audited Balance Sheet along with Profit &amp; Loss account.</p> <p>OR</p> <p>(ii) A certificate issued by a practicing Chartered / Cost Accountant (with Membership Number and Firm Registration Number), as per format prescribed in PROFORMA-H.</p> <p>Note:</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>i. Mention of UDIN (Unique Document Identification Number) is mandatory for all Certificates issued w.e.f. February 1, 2019 by Chartered Accountant in Practice.</p> <p>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 &amp; 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 &amp; 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 &amp; Loss Account is signed) for conversion to INR.</p> <p>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.</p>		

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	<p>However, the bidder has to submit an undertaking in support of the same along with their technical bid as per PROFORMA-L.</p> <p>c. Bid will be liable for rejection if not accompanied with adequate documentary proof in support of Annual turnover &amp; Net worth as mentioned above in Para B1 &amp; B2.</p>		
<b>C.</b>	<b>COMMERCIAL EVALUATION CRITERIA:</b>		
<b>1.0</b>	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.		
<b>2.0</b>	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.		
<b>3.0</b>	Bids with shorter validity (i.e., less than <b>150 days</b> from the scheduled bid closing date) will be rejected as being non-responsive.		
<b>4.0</b>	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		

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. Bid without proper & valid Bid Security shall be rejected.		
<b>5.0</b>	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 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.		
<b>6.0</b>	Bids submitted after the Bid Closing Date and Time will be rejected.		
<b>7.0</b>	Bids received through the e-procurement portal shall only be accepted. Bids received in any other form shall not be accepted.		
<b>8.0</b>	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.		
<b>9.0</b>	Bids shall be typed or written in indelible ink and shall be digitally signed by the bidder or his authorized representative.		
<b>10.0</b>	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		

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	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	<p>Bidder must accept and comply with the following clauses as given in the Bid Document in toto failing which bid will be rejected.</p> <ul style="list-style-type: none"> <li>(i) Firm price</li> <li>(ii) Bid Security Clause</li> <li>(iii) Scope of Work</li> <li>(iv) Specifications</li> <li>(v) Price Schedule</li> <li>(vi) Completion Schedule</li> <li>(vii) Period of validity of bid</li> <li>(viii) Liquidated damage and penalty clause</li> <li>(ix) Performance Guarantee Clause</li> <li>(x) Guarantee of material / work</li> <li>(xi) Arbitration / Resolution of Dispute</li> <li>(xii) Force Majeure</li> <li>(xiii) Acceptance of Jurisdiction and Applicable Law</li> <li>(xiv) Tax Liabilities Clause</li> </ul>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	(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.		
<b>15.0</b>	<p>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.</p>		
<b>16.0</b>	<p>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 &amp; Appendix-D) along with the bid. If any bidder declines to submit the above undertakings, their bids shall be liable for</p>		

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	rejection.		
<b>D.</b>	<p><b>PRICE EVALUATION CRITERIA:</b></p> <p>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:</p>		
<b>1.0</b>	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.		
<b>2.0</b>	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.		
<b>3.0</b>	Priced Bids shall be evaluated taking into account the Price quoted as per Proforma-B including quoted GST.		
<b>4.0</b>	Quoted price must include all liabilities and taxes including statutory liabilities but excluding GST, which shall be quoted separately in the Price Bid format.		
<b>5.0</b>	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		

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	Contractor will be paid on the basis of the actual number of months / number of days / parameters, as the case may be.		
<b>6.0</b>	<p>PRICED BID EVALUATION</p> <p>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 with the limits indicated against each of the following rates:</p> <p>The bidder's price shall be worked out as under:</p> <ul style="list-style-type: none"> <li>• Cementing Services (inclusive of casing accessories and consumables) (1)</li> <li>• Casing &amp; Tubing Running services (2)</li> <li>• Directional Drilling – SDMM/RSS/MWD /LWD &amp; Gyro services (3)</li> <li>• Mud Engineering and Solid Control &amp; Filtration Equipment services (inclusive of consumables) (4)</li> <li>• Supply of Drilling Bits on Consignment Basis (5)</li> <li>• Liner Hanger Equipment &amp; Liner Running Services (6)</li> <li>• Mud logging services (7)</li> <li>• Coring, Core Handling &amp; Core Stabilization Services (8)</li> <li>• Supply of Unitized Wellhead with rental tools and running services (9)</li> <li>• Fishing and Milling Tools rental services (10)</li> <li>• Wire line logging &amp; TCP</li> </ul>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>services (11)</p> <ul style="list-style-type: none"> <li>• Well testing Services (12)</li> <li>• Completions equipment supply &amp; services (13)</li> <li>• Supply of X-mas tree &amp; chokes (14)</li> <li>• Project Coordinator (15)</li> <li>• Rig Site Coordinator (Day Tour) (16)</li> <li>• Rig Site Logistics Coordinator (Night Tour) (17)</li> <li>• Marine Services (18)</li> </ul> <p>TOTAL ESTIMATED CONTRACT COST FOR THE BUNDLE SERVICE AND MANPOWER ETC. FOR COMPLETION OF WELLS INCLUDING ALL TAXES &amp; DUTIES INCLUDING GST AND ALL OTHER TAXES AND DUTIES (EXCEPTING BASIC CUSTOMS DUTY ON ELIGIBLE IMPORTED ITEMS),</p> <p><math>T = [(1) + (2) + (3) + (4) + (5) + (6) + (7) + (8) + (9) + (10) + (11) + (12) + (13) + (14) + (15) + (16) + (17) + (18)]</math></p> <p>NOTES:</p> <p>(a) The items (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16), (17) &amp; (18) are as defined in Schedule of Rates.</p> <p>(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.</p> <p>(c) Mobilization of the Bundle</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>Service package will be to the designated locations as detailed under Clause 2.3 of SCC under Section – III.</p> <p>(d) Force Majeure Rate and Suspension Rate shall not be considered for bid evaluation.</p> <p>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 &amp; 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 &amp; 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 &amp; Service Tax) for this service is NOT available to OIL &amp; the bids shall be evaluated based on total price including GST.</p> <p>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.</p>		

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	<p>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.</p> <p>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.</p> <p>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.</p> <p>6.6 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</p>		

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	<p>submitting their bid, their prices will be loaded with applicable GST while evaluation of bid.</p> <p>6.7 Total Mobilisation charges quoted by the bidder shall not exceed 5% of the total quoted value. However, mobilization charges if quoted in excess of 5% of the total quoted value, the excess amount shall be paid at the end of the contract.</p> <p>6.8 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.</p> <p>6.9 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</p>		

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	<p>(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).</p> <p>6.10 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).</p> <p>6.11 Force Majeure Day Rate of 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).</p> <p>6.12 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.</p> <p>6.13 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</p>		

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
	<p>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).</p> <p>6.14 For Marine Vessels, Bidders may quote different day rates, Mob. Charges, De-mob. Charges for each offered / quoted vessel.</p>		
<b>7.0</b>	<p>CONSIDERATION OF INDIAN AGENT</p> <p>Indian agent is not permitted to represent more than one foreign bidder (Supplier/ Manufacturer/ Contractor) in a particular tender. In case, an Indian agent represents more than one foreign bidder (Supplier/ Manufacturer/Contractor) in a particular tender, then offers of such foreign bidders (Suppliers/ Manufacturers/ Contractors) shall be rejected in that tender.</p>		
<b>8.0</b>	<p>CUSTOMS DUTY:</p> <p>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 &amp; IGST @12%) subject to conditions specified</p>		

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	<p>therein (Condition No. 48). Similarly, the domestic supply of such goods would attract 12% GST (i.e. IGST or CGST &amp; 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.</p> <p>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, 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</p>		

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	<p>evidence.</p> <p>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.</p> <p>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 the Proforma-A submitted by the bidder.</p>		

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	<p>Note:</p> <p>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.</p> <p>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.</p>		
<b>9.0</b>	<p><b>PURCHASE PREFERENCE CLAUSE:</b></p> <p>9.1 MSE Policy:</p> <p>Purchase Preference to Micro and Small Enterprises is applicable for this tender.</p> <p>i. Documentation required to be submitted by MSEs:</p> <p>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-</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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.</p> <p>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 the benefits applicable to MSEs.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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.</p> <p>9.2 MII Policy:</p> <p>Purchase preference to MII - notified under Public Procurement (Preference to Make in India) Order, 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.</p> <p>9.3 Award Criteria:</p> <p>Contract shall be awarded for the</p>		

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	<p>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.</p>		
<b>10.0</b>	<p>GENERAL NOTES:</p> <p>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.</p> <p>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 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.</p> <p>10.3 If any of the clauses in the BEC contradict with other clauses of the Bid Document elsewhere,</p>		

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	<p>then the clauses in the BEC shall prevail.</p> <p>10.4 Bidder(s) must note that requisite information(s)/financial values etc. as required in the BEC &amp; Tender are clearly understandable from the supporting documents submitted by the Bidder(s); otherwise, Bids shall be rejected.</p> <p>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.</p> <p>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.</p>		
<b>11.0</b>	<p><b>SUBMISSION OF FORGED DOCUMENTS:</b></p> <p>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</p>		

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																					
	information/documents submitted as per Proforma-K.																							
<b>12.0</b>	<p>Verification and certification of documents by Independent Third-Party Inspection Agencies:</p> <p>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:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Name of Independent Inspection Agency</th> <th>Contact E-Mail ID</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>M/s. Dr. Amin Controllers Private Limited</td> <td><a href="mailto:rkjain@rcaindia.net">rkjain@rcaindia.net</a>; <a href="mailto:pradeep.mathur@rcaindia.net">pradeep.mathur@rcaindia.net</a> <a href="mailto:info@rcaindia.net">info@rcaindia.net</a></td> </tr> <tr> <td>2.</td> <td>M/s. TUV India Private Limited</td> <td><a href="mailto:noida@tuv-nord.com">noida@tuv-nord.com</a>; <a href="mailto:mumbai@tuv-nord.com">mumbai@tuv-nord.com</a> <a href="mailto:salim@tuv-nord.com">salim@tuv-nord.com</a></td> </tr> <tr> <td>3.</td> <td>M/s. Confor mity India Interna tional Private Limited</td> <td><a href="mailto:mktg@ciindia.in">mktg@ciindia.in</a></td> </tr> <tr> <td>4.</td> <td>M/s. Ravi Energie Private Limited</td> <td><a href="mailto:baroda@ravienergie.com">baroda@ravienergie.com</a> <a href="mailto:tpia@ravienergie.com">tpia@ravienergie.com</a></td> </tr> <tr> <td>5.</td> <td>M/s. SGS India Private Limited</td> <td><a href="mailto:dhaval.vora@sgs.com">dhaval.vora@sgs.com</a> <a href="mailto:sgs.india@sgs.com">sgs.india@sgs.com</a></td> </tr> <tr> <td>6.</td> <td>M/s. Assure Quality</td> <td><a href="mailto:aqmcs@aqmcs.com">aqmcs@aqmcs.com</a></td> </tr> </tbody> </table>	Sl. No.	Name of Independent Inspection Agency	Contact E-Mail ID	1.	M/s. Dr. Amin Controllers Private Limited	<a href="mailto:rkjain@rcaindia.net">rkjain@rcaindia.net</a> ; <a href="mailto:pradeep.mathur@rcaindia.net">pradeep.mathur@rcaindia.net</a> <a href="mailto:info@rcaindia.net">info@rcaindia.net</a>	2.	M/s. TUV India Private Limited	<a href="mailto:noida@tuv-nord.com">noida@tuv-nord.com</a> ; <a href="mailto:mumbai@tuv-nord.com">mumbai@tuv-nord.com</a> <a href="mailto:salim@tuv-nord.com">salim@tuv-nord.com</a>	3.	M/s. Confor mity India Interna tional Private Limited	<a href="mailto:mktg@ciindia.in">mktg@ciindia.in</a>	4.	M/s. Ravi Energie Private Limited	<a href="mailto:baroda@ravienergie.com">baroda@ravienergie.com</a> <a href="mailto:tpia@ravienergie.com">tpia@ravienergie.com</a>	5.	M/s. SGS India Private Limited	<a href="mailto:dhaval.vora@sgs.com">dhaval.vora@sgs.com</a> <a href="mailto:sgs.india@sgs.com">sgs.india@sgs.com</a>	6.	M/s. Assure Quality	<a href="mailto:aqmcs@aqmcs.com">aqmcs@aqmcs.com</a>		
Sl. No.	Name of Independent Inspection Agency	Contact E-Mail ID																						
1.	M/s. Dr. Amin Controllers Private Limited	<a href="mailto:rkjain@rcaindia.net">rkjain@rcaindia.net</a> ; <a href="mailto:pradeep.mathur@rcaindia.net">pradeep.mathur@rcaindia.net</a> <a href="mailto:info@rcaindia.net">info@rcaindia.net</a>																						
2.	M/s. TUV India Private Limited	<a href="mailto:noida@tuv-nord.com">noida@tuv-nord.com</a> ; <a href="mailto:mumbai@tuv-nord.com">mumbai@tuv-nord.com</a> <a href="mailto:salim@tuv-nord.com">salim@tuv-nord.com</a>																						
3.	M/s. Confor mity India Interna tional Private Limited	<a href="mailto:mktg@ciindia.in">mktg@ciindia.in</a>																						
4.	M/s. Ravi Energie Private Limited	<a href="mailto:baroda@ravienergie.com">baroda@ravienergie.com</a> <a href="mailto:tpia@ravienergie.com">tpia@ravienergie.com</a>																						
5.	M/s. SGS India Private Limited	<a href="mailto:dhaval.vora@sgs.com">dhaval.vora@sgs.com</a> <a href="mailto:sgs.india@sgs.com">sgs.india@sgs.com</a>																						
6.	M/s. Assure Quality	<a href="mailto:aqmcs@aqmcs.com">aqmcs@aqmcs.com</a>																						

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
		Management Certification Services Private Limited		
7.	M/s. IRCLAS Systems and Solutions Private Limited		<a href="mailto:industrial_services@irclass.org">industrial_services@irclass.org</a> <a href="mailto:Bhavesh.satam@irclass.org">Bhavesh.satam@irclass.org</a>	
8.	M/s. TUV Rheinland (India) Pvt. Ltd.		<a href="mailto:Shailesh.deotale@ind.tuv.com">Shailesh.deotale@ind.tuv.com</a> <a href="mailto:Kaushal.gohil@ind.tuv.com">Kaushal.gohil@ind.tuv.com</a> <a href="mailto:info@ind.tuv.com">info@ind.tuv.com</a> <a href="mailto:ravi.kumar@ind.tuv.com">ravi.kumar@ind.tuv.com</a>	
9.	M/s. Gulf Lloyd Industrial Services(I) Pvt. Ltd.		<a href="mailto:contact@gulflloyd.com">contact@gulflloyd.com</a> <a href="mailto:inspection@gulflloyd.com">inspection@gulflloyd.com</a>	
10.	M/s. Baltic Testing India Pvt Ltd.		<a href="mailto:office@balticcontrolindia.com">office@balticcontrolindia.com</a>	
11.	M/s. Sanmarg Engineering Validation & Assessment Pvt. Ltd.		<a href="mailto:Amrita@sanmargeva.com">Amrita@sanmargeva.com</a>	
12.	M/s. Meenar Global Consultants LLP		<a href="mailto:sales@mgcllp.in">sales@mgcllp.in</a>	

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
	13.	M/s. Rites Limited	<a href="mailto:nrinspn@rites.com">nrinspn@rites.com</a> <a href="mailto:info@rites.com">info@rites.com</a> <a href="mailto:sbu.ninsp@rites.com">sbu.ninsp@rites.com</a>		
	14.	M/s. Bureau Veritas (India) Private Limited	<a href="mailto:bvindia.corporate@bureauveritas.com">bvindia.corporate@bureauveritas.com</a>		
	15.	M/s. TUV SUD South Asia Private Limited	<a href="mailto:Hemant.chavan@tuvsud.com">Hemant.chavan@tuvsud.com</a> <a href="mailto:Jayashree.rane@tuvsud.com">Jayashree.rane@tuvsud.com</a>		
	16.	M/s. Adornment Engineers India Private Limited	<a href="mailto:jks@adornmentsengineers.com">jks@adornmentsengineers.com</a>		
	17	M/s. TCRC Inspections Pvt. Ltd.	<a href="mailto:admin@tcrcinspections.com">admin@tcrcinspections.com</a> <a href="mailto:ashismallick@tcrcgroup.com">ashismallick@tcrcgroup.com</a> <a href="mailto:tenders@tcrcgroup.com">tenders@tcrcgroup.com</a>		
	<p>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</p>				

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>the Inspection Agency(s). OIL will not be responsible for any payment dispute between Bidders and Third-Party Inspection Agencies.</p> <p>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 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.</p> <p>12.4 The methodology of inspection / verification of documents is broadly as under but not limited to:</p> <p>(a) It is obligatory on the part of the interested Bidders, who choose to participate against the</p>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<p>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.</p> <p>(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.</p> <p>(c) Verification of documents (but not limited to) are normally categorized as under:</p> <p>i. General Requirement:</p> <ul style="list-style-type: none"> <li>• Check Bidder's PAN Card</li> </ul>		

<b>Clause No.</b>	<b>Description</b>	<b>Bidder's response of the acceptance criteria and submission of required details in the form of</b>  <b>Confirmed /</b>  <b>Not confirmed /</b>  <b>Not applicable</b>	<b>Specify cross reference where the relevant documents are attached</b>
	<ul style="list-style-type: none"> <li>• Check Bidder's GST Certificate</li> <li>• Check ITR of company</li> <li>• Check Bidder's Certificate of Incorporation – Domestic Bidder</li> </ul> <p>ii. Additional Documents: (If applicable against the tender)</p> <ul style="list-style-type: none"> <li>• Joint Ventures Agreements – To cross-check with JV Partners</li> <li>• Consortium Agreements – To cross-check with Consortium Partners</li> <li>• Holding / Parent / Subsidiary / Sister Subsidiary / Co-Subsidiary Company – To check the Share Holding pattern</li> </ul> <p>iii. Technical Criteria</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p>iv. Financial Criteria</p> <ul style="list-style-type: none"> <li>• Check and verify Audited Balance Sheet / CA certificate</li> <li>• To check the Line of Credit, if incorporated in the tender.</li> </ul> <p>Notes:</p> <p>(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</p>		

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
	<p>Identification Number (UDIN). Self-Undertaking furnished by the bidder in support of their bid may not be TPI verified.</p> <p>(iii) Undertaking from TPI Agency as per format (Proforma-N) enclosed should be submitted along with the Bid.</p>		
<b>13.0</b>	<p><b>LAND BORDER SHARING:</b> 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.</p>		
<b>14.0</b>	<p><b><u>COMPLIANCE OF THE COMPETITION ACT, 2002:</u></b> 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.</p>		