

Technical Specifications of Frac tree and associated accessories
Well Services, Rajahmundry Asset

List of materials:

S. No	EDP No	Description of well head equipment	UOM	Qty
1	160000365	7-1/16" x 5-1/8" x 5-1/8" -15M Frac Tree	NO	1
2	160000366	7-1/16" x 5-1/8" 15M Bonnet flange with Nut & Bolts and Ring Gaskets	NO	1
3	060000294	3-1/16"-15M x 2-9/16"-15M change over flange with Nut and Bolts and Ring Gaskets	NO	2
4	060000481	3-1/16"-15M x 2-9/16"-10M change over flange with Nut and Bolts and Ring Gaskets	No	2
5	150006073	4-1/16"-15M x 4-1/16"-10M change over flange with Nut and Bolts and Ring Gaskets	No	2
6	060000483	3-1/16"-15M x 3-1/16"-10M change over flange with Nut and Bolts and Ring Gaskets	No	2
7	060000486	4-1/16"-15M x 3-1/16"-15M change over flange with Nut and Bolts and Ring Gaskets	No	2
8	150009957	5-1/8"-15M x 4-1/16"-15M change over flange with Nut and Bolts and Ring Gaskets	NO	2
9	150009955	7-1/16"-10M x 7-1/16"-15M Change over spool with Nut & Bolts and Ring Gaskets	NO	1
10	150007673	2-9/16"-15M x 2-9/16"-10M Change over spool with Nut & Bolts and Ring Gaskets	NO	1

Item 01:

Description	7 1/16" x 5 1/8" x 5 1/8" -15 M Frac tree : 01 no	Mat Code: 160000365
<p>Detailed Specifications</p> <p>➤ API 6A Standards: ✓ Pressure Rating: 15000 Psi</p>		

- ✓ Temperature Classification: U
- ✓ Material Class: EE-1.5
- ✓ Product Specification Level: 3G
- ✓ Performance Requirement: 2 Annex F qualified.

- Frac tree design: 2-1-2 type, suitable for single completion.
- INTEGRAL FLANGED TUBING HEAD ADAPTER (BONNET) 7-1/16" X 15,000 PSI FLANGED BOTTOM X 5-1/8" 15,000 PSI STUDDED TOP PROVIDED WITH TWO 9/16" AUTO CLAVE TEST PORTS WITH BLEEDER VALVE AND STUDS, NUTS AND RING JOINT GASKETS (SS 316). **- 1 NO.**
- GATE VALVE (LOWER MASTER, UPPER MASTER & SWAB VALVE), 5-1/8" 15,000 PSI INTEGRAL FLANGED ENDS THROUGH CONDUIT, FULL BORE, FORGED STEEL, HWO WITH METAL TO METAL SEAL & COMPLETE WITH STUDS, DOUBLE NUTS & RING JOINT GASKETS (SS316). **- 3 NO's VALVE.**
- GATE VALVE (MANUAL WING VALVES), 5-1/8" 15,000 PSI INTEGRAL FLANGED ENDS THROUGH CONDUIT, FULL BORE, FORGED STEEL, HWO WITH METAL TO METAL SEAL & COMPLETE WITH STUDS, DOUBLE NUTS & RING JOINT GASKETS (SS316). **- 2 NO's VALVE.**
- FORGED STUDDED TEE (HEXAGONAL BLOCK) 5-1/8" X 5-1/8" X 5-1/8" 15,000 PSI **- 1 NO.**
- 5-1/8" 15,000 PSI TREE CAP QUICK UNION TYPE WITH 9/16" AUTOCLAVE TAPPED TOP – **1 NO.**
- NEEDLE VALVE 9/16" AUTOCLAVE 15,000 PSI. **– 3 NOS.**
- PRESSURE GAUGE, 0–15,000 PSI, 4-1/2" DIAL FACE GLYCERIN FILLED WITH 9/16" AUTOCLAVE BOTTOM CONNECTION. **- 3 NOS.**
- COMPANION/ADAPTOR FLANGE 5-1/8" 15,000 PSI (WP) WITH 3" FIG 22O2 (F) HAMMER UNION CONNECTION (PR2 CERTIFIED) WITH SUITABLE STUDS AND RING GASKETS FOR MAKING FLOW LINE CONNECTIONS POST HF FLOW BACK **- 1 NO**
- FRAC TREE SHOULD BE SUPPLIED IN ASSEMBLED AND TESTED CONDITION FOR READY TO INSTALL.
- Complete set of spares for Frac tree and associated accessories (for Item No. 1 to 10) – **10 SETS**
 - ✓ STUDS AND NUTS FOR ALL FLANGES IN FRAC TREE AND ASSOCIATED ACCESSORIES (FOR ITEM NO. **1 TO 10**).
 - ✓ SUITABLE API SIZE RING JOINT GASKETS OF SS316 MATERIAL CLASS FOR ALL FLANGES.

- ✓ 9/16" AUTO CLAVE VALVES AND 15K PRESSURE GAUGES FOR FRAC TREE AND ACCESSORIES.
- ✓ ONE (01) NUMBER OF PNEUMATIC GREASE GUN WITH SUITABLE CONNECTORS FOR GREASING OF GATE VALVES OF FRAC TREE AND RECCOMONDED DOPE (100KG) TO BE SUPPLIED ALONG WITH COMPLETE SET OF SPARES.

Item 02:

Description	7-1/16" x 5-1/8" -15 M Tubing Bonnet Assembly : 01 no.	Mat code: 160000366
<p>Detailed Specifications</p> <ul style="list-style-type: none"> ➤ API 6A Standards: <ul style="list-style-type: none"> ✓ Pressure Rating: 15000 Psi ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified ➤ INTEGRAL FLANGED TUBING HEAD ADAPTER (BONNET) 7-1/16" X 15,000 PSI FLANGED BOTTOM X 5-1/8" 15,000 PSI STUDED TOP COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316). 		

Item 03:

Description	3-1/16"-15M x 2-9/16"-15M change over flange : 02 nos.	Mat code : 060000294
<p>Detailed Specifications</p> <ul style="list-style-type: none"> ➤ API 6A Standards: <ul style="list-style-type: none"> ✓ Pressure Rating: 15000 Psi ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified. ➤ INTEGRAL FLANGED CHANGE OVER WITH 3-1/16" X 15,000 PSI FLANGED TOP X 2-9/16" 15,000 PSI FLANGED BOTTOM COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316). 		

Item 04:

Description	3-1/16"-15M x 2-9/16"-10M change over flange : 02 nos.	Mat code : 060000481
<p>Detailed Specifications</p> <ul style="list-style-type: none"> ➤ API 6A Standards: <ul style="list-style-type: none"> ✓ Pressure Rating: 10000 Psi ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified ➤ INTEGRAL FLANGED CHANGE OVER WITH 3-1/16" X 15,000 PSI FLANGED BOTTOM X 2-9/16" 10,000 PSI FLANGED TOP COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316). 		

Item 05:

Description	4-1/16"-15M x 4-1/16"-10M change over flange: 02 no.	Mat code : 150006073
<p>Detailed Specifications</p> <ul style="list-style-type: none"> ➤ API 6A Standards: <ul style="list-style-type: none"> ✓ Pressure Rating: 10000 Psi ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified. ➤ INTEGRAL FLANGED CHANGE OVER WITH 4-1/16" X 15,000 PSI FLANGED BOTTOM X 4-1/16" 10,000 PSI FLANGED TOP COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316). 		

Item 06:

Description	3-1/16"-15M x 3-1/16"-10M change over flange : 02 nos.	Mat code : 060000483
<p>Detailed Specifications</p> <ul style="list-style-type: none"> ➤ API 6A Standards: <ul style="list-style-type: none"> ✓ Pressure Rating: 10000 Psi 		

<ul style="list-style-type: none"> ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified. <p>➤ INTEGRAL FLANGED CHANGE OVER WITH 3-1/16" X 15,000 PSI FLANGED BOTTOM X 3-1/16" 10,000 PSI FLANGED TOP COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316).</p>
--

Item 07:

Description	4-1/16"-15M x 3-1/16"-15M change over flange: 02 nos.	Mat code : 060000486
<p>Detailed Specifications</p> <p>➤ API 6A Standards:</p> <ul style="list-style-type: none"> ✓ Pressure Rating: 15000 Psi ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified. <p>➤ INTEGRAL FLANGED CHANGE OVER WITH 4-1/16" X 15,000 PSI FLANGED BOTTOM X 3-1/16" 15,000 PSI FLANGED TOP COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316).</p>		

Item 08:

Description	5-1/8"-15M x 4-1/16"-15M change over flange: 02 nos.	Mat code : 150009957
<p>Detailed Specifications</p> <p>➤ API 6A Standards:</p> <ul style="list-style-type: none"> ✓ Pressure Rating: 15000 Psi ✓ Temperature classification: U ✓ Material Class: EE-1.5 ✓ Product Specification Level: 3G ✓ Performance Requirement: 2 Annex F qualified. <p>➤ INTEGRAL FLANGED CHANGE OVER WITH 5-1/8" X 15,000 PSI FLANGED BOTTOM X 4-1/16" 15,000 PSI FLANGED TOP</p>		

COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316).

Item 09:

Description	7-1/16"-10M x 7-1/16"-15M Change over spool : 01 no.	Mat code : 150009955
Detailed Specifications		
<ul style="list-style-type: none">➤ API 6A Standards:<ul style="list-style-type: none">✓ Pressure Rating: 10000 Psi✓ Temperature classification: U✓ Material Class: EE-1.5✓ Product Specification Level: 3G✓ Performance Requirement: 2 Annex F qualified.➤ INTEGRAL FLANGED CHANGE OVER WITH 7-1/16" X 15,000 PSI FLANGED BOTTOM X 7-1/16" 10,000 PSI FLANGED TOP COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316).➤ MINIMUM POSSIBLE HEIGHT TO BE MAINTAINED.		

Item 10:

Description	2-9/16"-15M x 2-9/16"-10M Change over spool: 01 no.	Mat code : 150007673
Detailed Specifications		
<ul style="list-style-type: none">➤ API 6A Standards:<ul style="list-style-type: none">✓ Pressure Rating: 10000 Psi✓ Temperature classification: U✓ Material Class: EE-1.5✓ Product Specification Level: 3G✓ Performance Requirement: 2 Annex F qualified.➤ INTEGRAL FLANGED CHANGE OVER WITH 2-9/16" X 15,000 PSI FLANGED BOTTOM X 2-9/16" 10,000 PSI FLANGED TOP		

COMPLETE WITH STUDS, NUTS AND RING JOINT GASKETS (SS 316).

NOTE:

SPECIFICATION FOR 10 SETS OF COMPLETE SET OF SPARES FOR FRAC TREE AND ACCESSORIES (ITEM NO. 1 TO 10) ARE INCLUDED AS PART OF LINE ITEM NO.1.

TECHNICAL REQUIREMENT FOR FRAC TREE AND ASSOCIATED ACCESSORIES

1. Valves should be full bore through conduit, non-rising stem type with metal to metal seal and confirming to API standard 6A (Latest edition) with hard facing between gate & seat ring. Valve should be designed for easy manual operation in pressurized conditions also. Valves should have an external feature to indicate the position of the gate.
2. All stud bolts and nuts should be Xylan coated & should confirm to standard ASTM-A 194 & 193 respectively.
3. All technical specifications & test standards etc. of Frac tree and associated accessories should be as per API- 6A latest edition.
4. Manufacturer should be API approved & product should bear API monogram.
5. The offered equipment shall be new & of recent manufacture.
6. All ring joint gaskets of Frac tree and associated accessories shall be made of SS 316 as per detailed specifications.
7. A plate bearing following information (engraved/embossed) should be on Frac tree and associated accessories
 - a. Name of Manufacturer.
 - b. Serial No.
 - c. Year of manufacture.
 - d. Size and pressure rating of Frac tree and associated accessories.
8. Installation & Operational Manuals of Frac tree and associated accessories to be supplied in separate packing.

NOTE: The bidder shall quote and supply all necessary items required for installation and operation of each Frac tree and associated accessories.

(Bidders are required to consider the cost of these items to be included with main Item (Frac tree & Accessories) in the Price Format- No separate Break-up is required).

The manufacturer would submit undertaking to this effect that manufacturer has quoted all necessary items required for installation, operation & testing of Frac tree and associated accessories.

TECHNICAL INSTRUCTIONS

1. All spare and components provided by the vendor shall be properly wrapped and packaged so that they will be preserved in original and new condition under the normal condition of storage to be anticipated in India and shall be properly tagged and coded so that later identification as to intended equipment usage is facilitated.
2. Ring Gasket to be packed in such a way that it does not get damaged during transit.
3. The ring grooves should be properly protected against damage during transit.
4. No packing should contain any loose material i.e. everything should be fastened either with or each other.
5. Each section should be packed separately.

Note:

1. Please indicate item wise price of Frac tree and associated accessories required for installation & operation in the invoices.
(However, the Break-up is not required to be submitted during the Bid Evaluation).
2. Please indicate item wise part no. (For all the items.)