



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

No: AAI/CIA/AMED-VI/FMC-WS/2022-23/A-56

Date: 31.03.2023

To

M/s. Chennai Engineering Services.,
Plot No.30, Door No.1-536,
Krishna Nagar, 1st Street,
Manapakkam, Chennai-600 125.

Sub: Facility Management of Water Supply System and Sewage Treatment Plant at Chennai Airport. **Sub Head:** Providing Operation & Maintenance Service of Water Supply System for Old & New Water Treatment Plant, Sewage Treatment Plant, CISF Barracks, Borewells and Open wells at various locations, RO Plant & De-Watering System **(For the year 2023-24 & 2024-25).**

Ref: Tender ID: 2023_AAI_142170_1

Tender Ref. No.: AAI/CHE/AMED-VI/2022-23/02

Dear Sir(s),

1. Your e-Tender for the above mentioned work is hereby accepted by the Competent Authority on behalf of Chairman, Airports Authority of India, at the items rates quoted by you totaling to **Rs.5,91,31,126.00** (Rupees Five Crores Ninety One Lakhs Thirty One Thousand One Hundred Twenty Six Only) which is 26.20% below the Justified Cost of **Rs.8,01,27,430.00** (Rupees Eight Crores One Lakh Twenty Seven Thousand Four Hundred Thirty Only) which is inclusive of all the taxes, duties, levies and octroi etc., but exclusive of GST, EPF, ESI/Mediclaim, Difference in Minimum wages & Bonus which shall be reimbursed as per actual on submission of documentary proof.
2. Joint General Manager (Engg. -Elect)-I, AMED, Operational Office, Airport Authority of India, Chennai Airport, Chennai-600 016 shall be the Engineer-In-Charge of the work. You are requested to attend the office of Joint General Manager (Engg -Elect)-I, AMED, AAI, Chennai Airport on or before **10.04.2023** to sign and complete the contract agreement. The contract agreement shall be executed on a non-judicial stamp paper of value of Rs.100/- (Rupees One Hundred Only) and the cost of the stamp paper shall be borne by you.
3. Please deposit the amount of **Rs.29,56,556.00/-** (Rupees Twenty Nine Lakhs Fifty Six Thousand Five Hundred Fifty Six Only) towards Security Deposit within 10 days from the date of issue of this letter failing which the same will be deducted as per Clause-1A on Page No.17 of General conditions of contract.
4. You shall submit Performance Guarantee within 30 days of issue of award letter, as per GCC clause No.1 for an amount of **Rs.17,73,934.00** (Rupees Seventeen Lakhs Seventy Three Thousand Nine Hundred Thirty Four only) in the form of Bank Guarantee on the Proforma appended at Annexure -XI on Page No.110 of GCC of Contract Document.

Contd.....2



भारतीय विमानपत्तन प्राधिकरण AIRPORTS AUTHORITY OF INDIA

-2-

5. You are also directed to contact the Joint General Manager (Engg-Elect)-I, Airport Maintenance Electrical Division, Operational Office, Airports Authority of India, Chennai Airport or his Authorised representative immediately for the execution of the above work.
6. You are requested to comply with the provision of Contract Labour (Regulation and Abolition) Act 1970 and Contract Labour (Regulation and Abolition) Central Rules 1971 and Minimum Wages Act and Rules thereof Central and State Governments.
7. Please note that the time allowed for carrying out the work shall be **24 (Twenty Four) Months** and same shall be reckoned for **Phase-I: 1st Year from 01.04.2023 to 31.03.2024 and Phase-II: 2nd Year from 01.04.2024 to 31.03.2025.**
8. Any further correspondence in connection with the contract should normally be addressed to the Engineer-In-Charge.
9. Please acknowledge the receipt and return the duplicate copy of this letter enclosed herewith after signing it to the undersigned as a token of acceptance.

Encl: Schedule of Quantities (Page No.1 to 56)

Yours faithfully,


31/03/2023
(G.N.D.KENNEDY)

Jt. Gen. Manager (Engg - Elect)-I


31/03/23
Jt. Gen. Manager

AIRPORTS AUTHORITY OF INDIA
CHENNAI AIRPORT :: CHENNAI-600 016.

ABSTRACT OF WORK

Name of Work: Facility Management of Water Supply System and Sewage Treatment Plant at Chennai Airport. Sub Head: Providing Operation & Maintenance Service of Water Supply System for Old & New Water Treatment Plant, Sewage Treatment Plant, CISF Barracks, Bore wells and Open wells at various locations, RO Plant & De-Watering System. (For the year 2023 -24 & 2024-25).

Sl.No	Details	First Year	Second Year	Total Amount
1	SUB HEAD - I (AMC)	2,32,43,880.00 ✓	2,36,99,880.00 ✓	4,69,43,760.00 ✓
2	SUB HEAD - II (ARC)	22,30,714.00 ✓	22,31,512.00 ✓	44,62,226.00 ✓
3	SUB HEAD - III (Maintainance works)	24,25,865.00 ✓	21,13,176.00 ✓	45,39,041.00 ✓
4	Sub Head-IV Supply of Spares	8,57,120.00 ✓	8,57,619.00 ✓	17,14,739.00 ✓
5	Sub head - V Supply of Chemicals	3,49,417.00 ✓	3,49,417.00 ✓	6,98,834.00 ✓
6	Sub head - VI Replacement of Filtration media	89,998.00 ✓	6,49,996.00 ✓	7,39,994.00 ✓
7	Sub head - VII Contingency	16,266.00 ✓	16,266.00 ✓	32,532.00 ✓
	Total Amount (Excluding EPF, ESI/Mediclaim, Bonus & GST) RS.	2,92,13,260.00 ✓	2,99,17,866.00 ✓	5,91,31,126.00 ✓
		GRAND TOTAL Rs.		5,91,31,126.00 ✓
			SAY Rs.	5,91,31,126.00 ✓

(Rupees Five Crore Ninety One Lakhs Thirty One Thousand One Hundred Twenty Six Only)
(Excluding EPF, ESI/Mediclaim, Bonus & GST)


(G.N.D. Kennedy)
Jt. Gen. Manager (Engg-Elect)-I

**AIRPORTS AUTHORITY OF INDIA
CHENNAI AIRPORT :: CHENNAI - 600 016**

SCHEDULE OF QUANTITY

Name of Work: Facility Management of Water Supply System and Sewage Treatment Plant at Chennai Airport.

Sub Head: Providing Operation & Maintenance Service of Water Supply System for Old & New Water Treatment Plant, Sewage Treatment Plant, CISF Barracks, Bore wells and Open wells at various locations, RO Plant & De-Watering System.

1st YEAR: 12 MONTHS

It.No	Description of Items	Qty	Unit	Rate	Amount
SUB HEAD - I (AMC)					
1	Providing Operation Services of Water Supply System in Operational area at Cowl bazaar & New Fire station pump House, Cargo & MES open well, Runway - 25 End, Old Fire station and Old Pump Houses etc. as per inventory in "Annexure -A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of preventive & normal maintenance records, log books as required etc. and cleaning, upkeeping on all days. These services should be ensured for above mentioned Water Supply System equipment's, Electric motor driven pump sets, borewells, open wells, MCC & starter panels and control panels on round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For First year	12	Month	2,54,999.00	30,59,988.00

It.No	Description of Items	Qty	Unit	Rate	Amount
2	Providing Operation Services of water treatment and supply system at Old Water Treatment Plant (WTP) associated borewells etc. as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring output treated water quality to specifications, chemical testing / sample analysis / corrective actions by chemist, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of lab, normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services including supervision of all above activities shall be ensured, covering Water Treatment and Supply System equipment's, Electric motor driven pump sets, associated borewells, open wells, Sumps, MCC & starter panels and control panels round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For First year	12	Month	3,39,999.00	40,79,988.00

It.No	Description of Items	Qty	Unit	Rate	Amount
3	Providing Operation Services of water treatment and supply system at New Water Treatment Plant (NWTP) including Reverse Osmosis (RO) Plant of capacity 14 cum/hr x 2 nos. with all relevant water sources as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring output treated water quality to specifications, chemical testing / sample analysis / corrective actions by chemist, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of lab, normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services including supervision of all above activities shall be ensured for WTP and RO Plant equipment's, Electric motor driven pump sets, associated borewells, open wells, Sumps, MCC & starter panels and control panels round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For First year	12	Month	4,94,999.00	59,39,988.00

It.No	Description of Items	Qty	Unit	Rate	Amount
4	Providing Operation Services of Sewage System installations at Sewage Treatment plant (STP) of capacity 2MLD and associated Tertiary Treatment Plant (TTP) with all relevant water sources as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring output treated water quality to specifications, chemical testing / sample analysis / corrective actions by chemist, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of lab, normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services including supervision of all above activities shall be ensured for STP and TTP Plant equipment's, Electric motor driven pump sets, associated borewells, open wells, Sumps, MCC & starter panels and control panels round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For First year	12	Month	2,85,999.00	34,31,988.00

It.No	Description of Items	Qty	Unit	Rate	Amount
5	Providing Operation Services of water supply system in CISF Barracks pump House associated borewells etc. as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring serviceability / satisfactory working condition of the systems, maintenance activity updation of preventive & normal maintenance records, log books as required etc. and cleaning, upkeeping on all days. These services should be ensured for above mentioned Water Supply System equipment's, Electric motor driven pump sets, borewells, drain sump, MCC & starter panels and control panels on round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For First year	12	Month	1,29,999.00	15,59,988.00
6	Providing Operation Services of De-watering and Sewage pump sets installed at various location at basement of New Domestic and New International Terminal Buildings and connecting tunnel as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, monitoring & ensuring serviceability of the systems, maintenance activity as per attached "Annexure-A2" normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services should be ensured for above mentioned de-watering and sewage pump system, Electric motor driven pump set, MCC & starter panel and control panels on round the clock (3 Shift X 8 Hrs.) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For First year	12	Month	64,999.00	7,79,988.00

It.No	Description of Items	Qty	Unit	Rate	Amount
7	Providing of day-to-day, preventive maintenance, installation, dismantling, rectification, Repair Service of all Electro-Mechanical Inventory with water supply division covering, Mechanical, Electrical and Plumbing works involved, covering the entire scope of preventive maintenance, repair activities indicated but not limited to special condition of contract, technical specification, maintenance & operation manual of AAI, OEM manuals ensuring serviceability / satisfactory working of all water supply system equipment on all days including Sundays / holidays attending minor & major faults, cleaning, upkeeping of the installations , preventive maintenance (as per "Annexure-A2)" related records, log books, timely appraising equipment health status, repairs, replacements (if any) etc. reporting as and when required as per direction of Engineer-In-Charge etc. complete as per the site requirement.				
a	For First year	12	Month	1,85,999.00	22,31,988.00
8	Testing of following water samples from Government laboratory every month and production of Test Report to the Engineer-In-Charge.				
a	Samples: i) Old WTP Raw Water (ii) Old WTP Treated Water (iii) New WTP Domestic Water iv) Domestic (SHA) Terminal (NDT) (v) International (SHA) Terminal (NIT)				
	(i) to (v) - One job				
	For First year	12	Job	19,999.00	2,39,988.00

It.No	Description of Items	Qty	Unit	Rate	Amount
9	Testing of following sewage samples from existing STP at State / Central Govt. Laboratory every month and submit the original analysis test report to Engineer -In-charge etc. Complete as required.				
	Samples:				
	(i) Sewage Treated Water				
	(i) One Job				
	For First year	12	Job	9,999.00	1,19,988.00
10	Providing Services of one number New Mahindra Bolero/Mahindra Scorpio vehicle alongwith driver for distance upto 60 KM/day or 1800 KM/month on round the clock basis for day-to-day maintenance services and attending Inspection/Preventive & Break down maintenance for Water Supply Systems Plant rooms, Pump rooms on both the city side and apron side at Chennai Airport.				
a	For First year	12	Month	1,49,999.00	17,99,988.00
	Sub Head-I (AMC) Total Rs.				2,32,43,880.00
	<u>SUB HEAD - II (ARC)</u>				
1	Supply and Installation of RO filter catridge for RO plant etc. complete as required				
a	2.5" OD X 1" ID X 40" L	62	No	399.00	24,738.00
b	2.5" OD X 1" ID X 20" L	24	No	199.00	4,776.00
2	Replacement of existing Damaged 8" dia RO-Filter Membrane (6 Nos/Housing) for RO plant at New Water Treatment Plant etc complete as required.	3	Job	44,999.00	1,34,997.00

It.No	Description of Items	Qty	Unit	Rate	Amount
3	Chemical Cleaning and overhauling of filter membranes of RO system unit (3Housing/plant) of capacity 14 cum/hr. with required chemicals in WTP to bring the water quality to the desired level as specified in technical specification etc complete as required.	2	Job	9,999.00	19,998.00
4	Cleaning of Stainless Steel RO water storage tank (30,000 Ltr) using necessary chemicals, rinse clean and draining out complete etc as required.	4	Job	4,999.00	19,996.00
5	Dismantling, overhauling and servicing of all type of centrifugal pumpsets including replacement of pump spares (such as impeller, Gland/ mechanical Seal, Gland packing, set of bearings, shaft sleeve, terminal board, terminal box, gasket, liquid reflector, impeller lock nut, cooling fan etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	Upto 3 HP	5	Job	1,999.00	9,995.00
b	5 HP to 10 HP	5	Job	1,999.00	9,995.00
c	above 10HP upto 20 HP end suction pump.	8	Job	1,999.00	15,992.00
d	above 10HP upto 20 HP Split case pump	2	Job	1,999.00	3,998.00
6	Dismantling the existing centrifugal pumpset of following capacity including rewinding, servicing, replacement of motor spares (such as bearings, cooling fan, Terminal Board, terminal box with top), rebate for wound out copper and re-installing the same etc. as required.				
a	Upto 1.5HP	6	Job	1,999.00	11,994.00
b	above 1.5HP upto 3HP	3	Job	1,999.00	5,997.00
c	above 3HP upto 10HP	6	Job	1,999.00	11,994.00
d	above 10HP upto 20HP	3	Job	1,999.00	5,997.00

It.No	Description of Items	Qty	Unit	Rate	Amount
7	Dismantling, lifting, lowering, painting and re-installation of existing sewage submersible pumpset of following capacity including servicing, replacement of all pump spares (such as Impeller, Mechanical seal, Cutter, Set of 'O' rings, Oil seal, Oil for seal cooling etc.) and Testing, Commissioning etc complete as required.				
a	upto 1 HP	1	Job	2,999.00	2,999.00
b	above 1HP upto 3HP	1	Job	2,999.00	2,999.00
c	above 3HP upto 7.5HP	4	Job	2,999.00	11,996.00
8	Dismantling, lifting, lowering, painting, rewinding and re-installation of existing sewage submersible pumpset motor of following capacity, including replacement of motor spares (if any required), rebate for wound out copper and Testing, Commissioning etc complete as required.				
a	Upto 1 HP	1	Job	5,999.00	5,999.00
b	above 1HP upto 3HP	1	Job	5,999.00	5,999.00
c	above 3HP upto 7.5HP	4	Job	5,999.00	23,996.00
9	Dismantling, lifting, lowering, painting, re-installation of sewage submersible pumpset from existing sewage well including rewinding , servicing, replacement of all spares (such as Impeller, Mechanical seal, Cutter, Set of 'O' rings, Oil seal, Oil for seal cooling, Set of bearings etc), rebate for wound out copper and testing, commissioning, Complete etc as required.				
a	Above 7.5 HP upto 12.5HP- At STP Collection Well and Grid 72	2	Job	4,999.00	9,998.00
b	30 HP - At IAD Residential Colony	1	Job	4,999.00	4,999.00

It.No	Description of Items	Qty	Unit	Rate	Amount
10	Lowering of Borewell Submersible pump sets for New borewell (upto 200 feet depth) including couplings, pipe fittings (nipple, elbow, flange valves, clamps etc) lowering and fixing of pipes, submersible cables, cable panel connections etc., complete as required. (Note: Borewell Pump, GI pipe and fittings shall be supplied by AAI)	6	Job	1,999.00	11,994.00
11	Lifting and Lowering of Borewell submersible pumpset (upto 200 feet depth) from existing borewell of 2"/1.5" dia G.I pipe including cutting, re-threading of existing pipes, pipe fittings (nipple, elbow, flange valves, clamps etc) and installations of submersible pump set (Provided by AAI) along with submersible cables, cable and panel connections etc., complete as required.	10	Job	2,999.00	29,990.00
12	Servicing of existing Borewell submersible pump of following capacity including replacement of all pump spares (such as Impeller, Diffusers, Pump Shaft, Set of shaft sleeves, Retainer ring, Pump Coupling etc) and re-assembling the same etc complete as required.				
a	Upto 3 HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 5HP	2	Job	2,999.00	5,998.00
c	above 5HP upto 7.5HP	1	Job	2,999.00	2,999.00
13	Rewinding and servicing of Borewell Submersible Pump -motor, replacement of spares (if any), including rebate for wound out copper of following capacity etc complete as required.				
a	Upto 3 HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 5HP	2	Job	2,999.00	5,998.00
c	above 5HP upto 7.5HP	1	Job	2,999.00	2,999.00

It.No	Description of Items	Qty	Unit	Rate	Amount
14	Servicing of existing Borewell submersible pump-motor of following capacity including replacement of all motor spares (such as Thrustpad, Thrust bearing assembly, Diapharam, Set of keys, Oil Seal, Diapharam Plate etc.) and re-assembling the same etc complete as required.				
a	Up to 3HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 5HP	2	Job	2,999.00	5,998.00
c	above 5HP upto 7.5HP	1	Job	2,999.00	2,999.00
15	Dismantling, lifting, lowering, painting and re-installation of openwell/ sump submersible pumpset including servicing, re-threading, replacement of pump spares (such as Impeller, Oil Seal, Thrustpad, Thrust bearing assembly, Diapharam, Gasket, Impeller locknet, Strainer, Diapharam Plate etc.) and installation, testing, and commissioning of the same complete etc, as and when required.				
a	Upto 3HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 7.5	2	Job	2,999.00	5,998.00
c	above 7.5HP upto 10HP	2	Job	2,999.00	5,998.00
d	above 10HP upto 15HP	4	Job	2,999.00	11,996.00
16	Dismantling, lifting, lowering, painting, rewinding and re-installation of open well submersible pumpset motor of following capacity including pipes & plumping accessories, rebate for wound out copper, and Testing, Commissioning etc complete as required.				
a	Upto 3HP	4	Job	2,999.00	11,996.00
b	above 3HP to upto 7.5	2	Job	2,999.00	5,998.00
c	above 7.5HP upto 10HP	2	Job	2,999.00	5,998.00
d	above 10HP upto 15HP	4	Job	2,999.00	11,996.00

It.No	Description of Items	Qty	Unit	Rate	Amount
17	Dismantling, Lifting, lowering, painting and re-installation of all types of De-watering submersible pump sets of following capacity including rewinding, servicing, replacement of spares (shaft seal, O ring, Bearings etc.) for pump & motor, rebate for wound out copper, testing and commissioning etc., complete as required.				
a	Upto 3HP	5	Job	2,999.00	14,995.00
18	Dismantling, overhauling and servicing of all type of HPS vertically mounted centrifugal pump sets/RO High pressure pumpset (Grundfos Make) including replacement of pump spares (such as impeller, shaft seal, 'O' ring, Head spring, bearings etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	RO High Pressure Pump-20 HP	2	Job	1,49,999.00	2,99,998.00
b	RO Backwash (Chemical wash) Pump-5.5HP	2	Job	1,24,999.00	2,49,998.00
c	Domestic HPS Pump-25HP	2	Job	1,84,999.00	3,69,998.00
d	RO HPS Pump-1.5HP	2	Job	14,999.00	29,998.00
19	Dismantling the existing HPS vertically mounted centrifugal pump sets/RO High pressure pumpset (Grundfos Make) including rewinding, servicing, replacement of motor spares (such as bearings, cooling fan, Terminal Board, terminal box with top), rebate for wound out copper and re-installing the same etc. as required.				
a	RO High Pressure Pumpset Motor -20HP	1	Job	29,999.00	29,999.00
b	RO Backwash (Chemical wash) Pumpset Motor -5.5HP	1	Job	17,999.00	17,999.00
c	Domestic HPS Pumpset Motor -25HP	1	Job	39,999.00	39,999.00
d	RO HPS Pumpset Motor -1.5HP	1	Job	59,999.00	59,999.00

It.No	Description of Items	Qty	Unit	Rate	Amount
20	Dismantling the existing centrifugal pump sets (Grundfos Make) including rewinding, servicing, replacement of motor spares (such as bearings, cooling fan, Terminal Board, terminal box with top), rebate for wound out copper and re-installing the same etc. as required.				
a	PSF Feed Pump-15HP	1	Job	34,999.00	34,999.00
b	PSF Back wash -15HP	1	Job	34,999.00	34,999.00
21	Dismantling, overhauling and servicing of all type of de-watering pump sets (Grundfos make) including replacement of pump spares (Such as impeller, shaft seal, O ring, head spring, bearing etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	De-watering Pump -1.5HP	1	Job	29,999.00	29,999.00
b	De-watering Pump -2.5HP	1	Job	39,999.00	39,999.00
c	De-watering Pump -3HP	1	Job	39,999.00	39,999.00
d	De-watering Pump -25HP	1	Job	49,999.00	49,999.00
22	Dismantling, overhauling and servicing of all type of sewage pump sets (Grundfos make) including replacement of pump spares (Such as impeller, shaft seal, O ring, head spring, bearing etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	Sewage Pump -2.5HP	1	Job	49,999.00	49,999.00
b	Sewage Pump -3HP	1	Job	49,999.00	49,999.00
23	Providing man power to attend any urgent / emergency work with necessary tools and plants on round the clock basis etc complete as required.				
a	Highly skilled labour	60	Man-Days	849.00	50,940.00
b	Skilled labour	30	Man-Days	799.00	23,970.00

It.No	Description of Items	Qty	Unit	Rate	Amount
c	Semi skilled labour	90	Man-Days	799.00	71,910.00
d	Unskilled labour	90	Man-Days	799.00	71,910.00
24	Providing Excavater (JCB) including Operator for emergency / un anticipated break down / maintenance work, cable works etc., complete as required.	16	Hrs	1,099.00	17,584.00
25	Providing Tractorwith Trolley including driver and loaders-3, loaders for shifting of debris / wastes from water supply system locations, pump houses etc. to waste dump yard or for emergency / un-anticipated break down / maintenance works etc as required.	16	Hrs	1,099.00	17,584.00
26	Providing One Welder alongwith Electric welding machine and welding rods for carrying out welding works during any urgent Preventive Maintenance/ Breakdown Maintenance /Emergency work as and when required.	50	Hrs	149.00	7,450.00
	Sub Head-II (ARC) Total				22,30,714.00
	<u>SUB HEAD - III (Maintainance works)</u>				
1	Supply of Activated Sludge (MLSS) to Chennai 2 MLD Sewage Treatment Plant at Chennai Airport as and when required (Note: 1 Lot of MLSS = 9000 Litres)	3	Lot	4,999.00	14,997.00
2	Supply of Moving Bed Bio Reactor media MOC:polyproplene,400 M2/M3, cylindrical external fins, Height/Dia of 15mm/22mm, PSA/TSA of minimum 75 % - confirmaing to technical specifications in existing aeration tank including transport, unloading at AAI store etc. complete as required.	10	CUM	4,999.00	49,990.00

It.No	Description of Items	Qty	Unit	Rate	Amount
3	Provision of fibreglas re-inforced (FRP) lining on existing MS/GI pipe line external surface complete with cleaning,wrapping, fixing with binding components, pigment compund layer as per technical specification complete etc as required.	150	Sq.Mtr	149.00	22,350.00
4	Mechanized Cleaning of Clarifier tank including disposal of silt and rubbish etc complete as required as per the direction of Engineer-In-Charge. The cleaning shall consist of following operations: 1. De-watering of sump. 2. Entire surface area (walls, floor etc) of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with high pressure water jet. 3.Wall painting of entire clarifier surface inside and outside with approved paint to achieve even shade and color. 4.Painting of all metallic parts of the reactor clarifier-Detention Hood, Draft tube, Drive wheel (Iylam), clarifier scrapper arm, Bridge, Impeller, staircase etc after through scrapping, Sodium hypo treatment of submerged parts and replacing the rusted nut, bolt washer, scrapper blade etc., complete as per the site requirements.	1	Job	24,999.00	24,999.00
5	De-silting of Equivalization tank (open to air) of 13600X 14350 X 3600 SWD draining out, collection, lifting from Tank floor spreading in sludge bed for proper drying complete with sundries, lighting, blower fan, speciliased labour with protective gear etc., complete as required.	1	Job	19,999.00	19,999.00
6	Mechanised Cleaning & de-silting of sewage collection well using compressor and associated equipment including dosing of stabaliser chemical for dilution of sludge and disposal of left out sludges away from Airport premises etc., complete as required.				
a	STP Collection well at 2 MLD STP-(10 depth X 14 Mtr Dia)	1	Job	49,999.00	49,999.00
b	Grid-72 well- (8 X 9 X 6 depth Mtr)	2	Job	49,999.00	99,998.00

It.No	Description of Items	Qty	Unit	Rate	Amount
c	Residential colony-sewage wells i) 2.36 dia X 7 Mtr Depth - 2No ii) 3.56 dia X 7.9 Mtr Depth -1No Sl.No.i) & ii) = 1Job	1	Job	49,999.00	49,999.00
7	Cleaning of sewage (sumps of depth 10 to 15 feet, size from 500 Cubic feet to 1000 cubic feet) in Domestic and International terminal basement with mechanised de-silting compressor, sump scrubbing, debris removal and disposal of left out sludges away from Airport premises as per direction of Engineer-In-Charge etc complete as required.				
a	Sewage sump with depth 10 to 15 feet -all size (500 Cubic feet to 1000 cubic feet)	8	Job	24,999.00	1,99,992.00
8	Supply and Installation of various Mild Steel structure fabricated using single section MS Channel/angle/flat/bar etc including cutting, welding, drilling, fixing in position using appropriate fasteners, grinding, painting with approved steel primer and two coats enamel paint etc. complete as required.	1000	Kg	79.00	79,000.00
9	Brush/Spray Painting of various metal surfaces after cleaning/scrapping the surface with emery paper and applying 02 coat anti-corrosive metal red-oxide primer & 2 coats Enamel paint of approved brand and colour to give an even shade complete etc as required (Paint Colour to be decided by Engineer-In-Charge).	1000	Sq.Mtr	79.00	79,000.00

It.No	Description of Items	Qty	Unit	Rate	Amount
10	Repair of existing 275 m3/Hr Kay Make twin-lobe air blowers including dismantling, servicing, replacement of damaged spares (roller bearing, rings, O-ring, oil seal, gasket, shaft, bearing collar, suction air filter, pressure guage, pressure relief valve, NRV, belt pulley with machining, bolts, nuts, washer etc) re-alignment, installation, testing and commissioning at New Water Treatment Plant etc complete as required. (Note: Repair of 01 Blower is considered as 01 Job.)	3	Job	14,999.00	44,997.00
11	Repair of existing 30KVA DG Set trolley located at STP including replacement of 4 Nos tyres with new non- marking tyre and servicing/ replacement of turn table, bearings, welding of damaged parts, scrubbing, painting it with 01 coat of primer and 02 coats of enamel paint complete as required and as per the direction of Engineer-In-Charge.	1	Job	4,999.00	4,999.00
12	Supply and replacement of 100mm dia pressure guages, 0-200PSI, H.Guru make or as per the approved make, specification including welding of GI nipple and necessary connection as required & as per direction of Engineer-In-Charge.	30	No	599.00	17,970.00
13	Supply and fixing of non-corrosive Fiberglass Reinforced Plastic (FRP) molded grating (Load : atleast 500Kg/Sq.mtr) walkway of Mesh size 38mm X 38mm , Height: 38 mm, 3 mm thickness Chequered plate molded onto FRP Grating, With Rib thickness 5/7 mm on existing sump including fixing of newly fabricated bottom Frame using MS L-Channel 50mm X 50mm X 5mm, painting of metal surface with 01 coat anticorrosive metal primer and 02 coats enamel paint, providing of MS/GI hooks for lifting and civil modification works (CC chipping, filling, finishing) for proper insertion & seating etc. complete as required.	150	Sq.Mtr	749.00	1,12,350.00

It.No	Description of Items	Qty	Unit	Rate	Amount
14	Supplying and Installing following size of perforated Hot Dipped Galvanised Iron cable tray with perforation not more than 17.5%, in convenient sections, joined with connectors, supported at various locations with appropriate supports including G.I. bolts & nuts, etc as required.				
a	150 mm width X 50 mm depth X 1.6 mm thickness	30	Mtr	599.00	17,970.00
b	300 mm width X 50 mm depth X 1.6 mm thickness	30	Mtr	649.00	19,470.00
c	450 mm width X 50 mm depth X 2.0 mm thickness	30	Mtr	699.00	20,970.00
15	Supplying, fixing, testing and commissioning of Butterfly Valve (Manual) with CI body,SS disc,SS stem, nitrile/EPDM rubber seal,O - ring & PN 16 pressure rating alongwith bolt, nut ,washer as per following sizes etc including dismantling the existing valve complete as required.				
a	Butterfly Valve-200 mm Dia	20	No	1,999.00	39,980.00
b	Butterfly Valve-150 mm Dia	35	No	1,499.00	52,465.00
c	Butterfly Valve- 125 mm Dia	3	No	1,499.00	4,497.00
d	Butterfly Valve- 100 mm Dia	20	No	999.00	19,980.00
e	Butterfly Valve- 80 mm Dia	10	No	999.00	9,990.00
f	Butterfly Valve- 65 mm Dia	2	No	999.00	1,998.00
g	Butterfly Valve- 50 mm Dia	20	No	999.00	19,980.00
16	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a	50 mm	300	Mtr	249.00	74,700.00

It.No	Description of Items	Qty	Unit	Rate	Amount
17	Replacement of full pressure tank (Tank.Bladder,drain kit,flange etc) including dismantling the existing tank and installation of following capacity tank alongwith providing necessary pipeline connection for satisfactory working of Hydro Pneumatic Syatem (HPS) at various location of Chennai Airport etc complete as				
a	Wellmate pressure tank WM9 or equivalent	2	No	34,999.00	69,998.00
b	Wellmate pressure tank WM35 or equivalent	4	No	49,999.00	1,99,996.00
c	Wellmate pressure tank WM80 or equivalent	3	No	74,999.00	2,24,997.00
18	Replacement of following Pressure Tank Bladder including removing of damaged bladder and providing New Bladder,filling air upto required pressure alongwith providing necessary pipeline connection for satisfactory working of Hydro Pneumatic Syatem (HPS) at various location of Chennai Airport etc complete as required.				
a	Wellmate pressure tank WM9 or equivalent	2	No	14,999.00	29,998.00
b	Wellmate pressure tank WM35 or equivalent	2	No	34,999.00	69,998.00
c	Wellmate pressure tank WM80 or equivalent	2	No	34,999.00	69,998.00
d	Zilmat ultra pro 500LV pressure Tank or equivalent	2	No	29,999.00	59,998.00
19	Periodical health checkup of entire Hydro Pneumatic System on Quarterly basis by OEM M/s.Grundfos or OEM authorized agency and attending minor faults of Equipment's, filling of air in Pressure tank using compressor upto required presurre,ensuring 100% Serviceability/ Satisfactory Working Condition of the system as per Standard Manufacturers' Practices, replacement of spares which will be supplied by AAI and submission of Service Reports etc as required and as per direction of Engineer-In-Charge. Note: Health check up of 01 HPS system will be treated as 01 Job	36	Job	4,999.00	1,79,964.00

It.No	Description of Items	Qty	Unit	Rate	Amount
20	Maintenance of 62.5 KVA Cummins Make DG Set mounted on Grundfos make dewatering Trolley by OEM/OEM Authorised Service Dealer, carrying out Routine/Preventive Maintenance on Quarterly Visit Basis, attending All Breakdown Maintenance Calls, carrying out "B" Check of Engines and attending minor faults of Equipment's, ensuring 100% Serviceability/ Satisfactory Working Condition of the Engine, as per Standard Manufacturers' Practices as per Special Terms and Conditions and submission of Service Reports etc as required and as per direction of Engineer-In-Charge.				
a	Quarterly visit Charges/ DG coupled Pumpset	8	Job	9,999.00	79,992.00
b	B Check Charge/ Engine	2	Job	9,999.00	19,998.00
21	Maintenance of 156HP Kirloskar make dewatering Pumpset alongwith Diesel Engine by OEM/OEM Authorised Service Dealer, carrying out Routine/Preventive Maintenance on Quarterly Visit Basis, attending All Breakdown Maintenance Calls, carrying out "B" Check of Diesel Engines and attending minor faults of Equipment's, ensuring 100% Serviceability/ Satisfactory Working Condition of the Engine, as per Standard Manufacturers' Practices as per Special Terms and Conditions and submission of Service Reports etc as required and as per direction of Engineer-In-Charge.				
a	Quarterly visit Charges/Dewatering Pumpset	8	Job	4,999.00	39,992.00
b	B Check Charge/ Engine	2	Job	4,999.00	9,998.00
22	Maintenance & Servicing of following diesel engine operated dewatering pumpset and carrying out 'B' Check as per Special Terms and Conditions and submission of Service Reports etc as required and as per direction of Engineer-In-Charge				
a	5 HP Kirloskar Diesel engine coupled dewatering pump	6	Job	4,999.00	29,994.00
b	5 HP Grundfos Diesel engine coupled dewatering pump	3	Job	9,999.00	29,997.00

It.No	Description of Items	Qty	Unit	Rate	Amount
23	Calibration of Digital Electro-Magnetic Flow meter available at various locations from the certified agency and submitting report to Engineer-In-Charge	22	Job	1,999.00	43,978.00
24	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc. , complete as required				
a	40mm Dia DWC HDPE Pipe	50	Mtr	149.00	7,450.00
b	50mm Dia DWC HDPE Pipe	50	Mtr	149.00	7,450.00
25	Providing and Fixing of 'B' Clase GI pipe complete with GI fittings of following sizes including cutting, welding, threading and suitable size flanges etc. complete as required.				
a	2 inch Dia 'B' Clause GI Pipe	10	Mtr	699.00	6,990.00
b	4 inch Dia 'B' Clause GI Pipe	10	Mtr	1,249.00	12,490.00
c	5 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
d	6 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
e	8 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
f	10 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
g	12 inch Dia 'B' Clause GI Pipe	10	Mtr	1,999.00	19,990.00
	<u>SUB HEAD - III (Maintainance works) Total</u>				24,25,865.00
	Sub Head-IV Supply of Spares				
1	Supply of following Plumbing accessories/Submersible Pump accessories for various installations & locations etc as and when required.				
i	50mm B-Class GI Pipe (10 feet) (Threaded both Ends) Tata make Only	100	Each	999.00	99,900.00
ii	2 inch coupling -100 mm long (Threaded Coupling)	50	No	149.00	7,450.00

It.No	Description of Items	Qty	Unit	Rate	Amount
iii	50 mm X 12 mm C- clamp set with nut bolt.	20	Set	299.00	5,980.00
iv	GI elbow-2" (50 mm) Threaded	10	No	299.00	2,990.00
v	GI Flange-2" (50mm) Threaded	10	set	299.00	2,990.00
vi	GI Pipe Nipple-2" X 12" long	20	No	199.00	3,980.00
vii	Water Meter-2" (50 mm) Flanged End	10	No	1,999.00	19,990.00
viii	GI flexible Conduit PVC coated-2"	100	Mtr	199.00	19,900.00
ix	Water Level Controller (Make: L&T Model:XM810530000 or equivalent)	4	No	999.00	3,996.00
x	Water Level Controller Probes (Make:L&T Model: XM810760000 or equivalent) (Set of 6Nos)	4	Set	799.00	3,196.00
xi	NRV wafer type: Body CI, disc SS, Seat:Nitrile/EPDM PN-16				
a	150 mm Dia	2	No	2,499.00	4,998.00
b	100 mm Dia	2	No	1,999.00	3,998.00
c	80 mm Dia	2	No	999.00	1,998.00
d	50 mm Dia	2	No	499.00	998.00
xii	NRV Dual Plate type: Body CI, disc SS, Seat:Nitrile/EPDM PN-16				
a	150 mm Dia	2	No	4,999.00	9,998.00
b	100 mm Dia	5	No	2,499.00	12,495.00
c	80 mm Dia	2	No	1,999.00	3,998.00
xiii	NRV: MOC-Gun Metal of approved quality (screwed end) :				
a	40 mm nominal bore (Horizontal)	2	No	999.00	1,998.00
b	50 mm nominal bore (Horizontal)	5	No	999.00	4,995.00
c	80 mm nominal bore (Horizontal)	1	No	999.00	999.00
xiv	Gate Valve: MOC-Gun Metal with C.I. wheel of approved quality (screwed end) :				
a	80 mm nominal bore	1	No	4,999.00	4,999.00
b	50 mm nominal bore	5	No	2,499.00	12,495.00
c	40 mm nominal bore	2	No	1,999.00	3,998.00

It.No	Description of Items	Qty	Unit	Rate	Amount
d	25 mm nominal bore	2	No	999.00	1,998.00
xv	Dummy Flange:MOC-Mild Steel with suitable Nuts & Bolts etc.				
a	6" MS Dummy Flange-20mm Thick	2	No	1,499.00	2,998.00
b	4" MS Dummy Flange-20mm Thick	2	No	999.00	1,998.00
xvi	Supply of hand lever operated Cast Steel ball valve approved quality (screwed end) :				
a	2" Ball Valve	6	No	999.00	5,994.00
b	1" Ball Valve	2	No	499.00	998.00
c	3/4" Ball Valve	2	No	499.00	998.00
xvii	Supply of float switch sensor for water level controller approved Quality				
a	Float Switch	50	No	399.00	19,950.00
2	Supply of Flat Three Core PVC Insulated & PVC Sheathed Industrial Cable for Submersible Pump Motors 1100 Volts, conforming to IS: 694, suitable for installation with Deep Borewell pump of suitable length etc., as required.				
a	2.5 Sqmm X 3 Core flat cable	600	Mtr	49.00	29,400.00
b	4 Sqmm X 3 Core flat cable	400	Mtr	59.00	23,600.00
c	6 Sqmm X 3 Core flat cable	100	Mtr	149.00	14,900.00
3	Supply of following panel board starter suitable to operate with 415 V, 50 Hz, 3 phase AC power supply various installations & locations etc as and when required.				
a	3HP/2.2 KW DOL Starter Panel	5	No	3,999.00	19,995.00
b	7.5HP/5.5KW Star-Delta Starter Panel	2	No	4,999.00	9,998.00
4	Supply of following panel board starter suitable to operate with 230 V, 50 Hz, 1 phase AC power supply various installations & locations etc as and when required.				
a	1.5HP DOL Starter with Auto level controller	1	No	1,499.00	1,499.00

It.No	Description of Items	Qty	Unit	Rate	Amount
5	Supply of Borewell type Submersible Pumpset of Suitable rating, water filled cooling type, with SS strainer, SS Body, Noryl Impellers using anti-friction bearing, energy efficient type operated on 415V, 3 Phase, 50Hz power for installation into 6" dia borewell including loading, unloading at site complete etc as required. (Maximum borewell depth 250 feet)				
a	5HP 3Phase - Borewell pump (Model No:KS4D 5025, Make: Kirloskar)	2	No	24,999.00	49,998.00
b	3HP 3Phase- Borewell Submersible pump (Model No:KS4D 3017, Make: Kirloskar)	2	No	19,999.00	39,998.00
6	Supply of Borewell type Submersible Pumpset of Suitable rating, water filled cooling type, with SS strainer, SS Body, Noryl Impellers using anti-friction bearing, energy efficient type operated on 230V, 1 Phase, 50Hz power for installation into 4" dia borewell including loading, unloading at site complete etc as required. (Maximum borewell depth 100 feet)				
a	1.5HP 1Phase- Borewell Submersible pump (Model No:KU4-0318S, Make: Kirloskar)	2	No	14,999.00	29,998.00
7	Supply & fixing of following Hydro Pneumatic system spares for various location as and whwn required.				
a	Drain Kit for WM9 Pressure Tank	2	No	4,999.00	9,998.00
b	Drain Kit for WM35 Pressure Tank	2	No	4,999.00	9,998.00
c	Flange for Zilmat ultra pro pressure Tank	2	No	4,999.00	9,998.00
d	Multi pump control CU352	2	No	79,999.00	1,59,998.00
e	IO351B Module digital/analog	2	No	19,999.00	39,998.00
f	R core transformer 100VA	2	No	4,999.00	9,998.00
g	R core transformer 150VA	2	No	4,999.00	9,998.00
h	Pressure Transmitter 0-16 Bar	2	No	9,999.00	19,998.00

It.No	Description of Items	Qty	Unit	Rate	Amount
8	Supply of following size of butterfly valve for Hydro Pneumatic System as and when required				
a	200 mm Dia Butterfly valve	2	No	4,999.00	9,998.00
b	150 mm Dia Butterfly valve	2	No	4,999.00	9,998.00
c	100 mm Dia Butterfly valve	2	No	2,999.00	5,998.00
d	50 mm Dia Butterfly valve	2	No	1,999.00	3,998.00
e	40 mm Dia Butterfly valve	2	No	999.00	1,998.00
9	Supply of spares for 156HP Kirloskar make Diesel Generator Trolley Mounted De-watering Pumpset etc complete as an when required.				
a	Impeller Nut	1	No	1,999.00	1,999.00
b	Shaft Sleeve	1	No	2,499.00	2,499.00
c	Set of Keys	1	No	1,999.00	1,999.00
d	Set of Fastener	1	No	1,999.00	1,999.00
e	Set of Bearing	1	No	19,999.00	19,999.00
f	Set of Gland Packing	1	No	6,999.00	6,999.00
g	Set of Gasket	1	No	999.00	999.00
h	Set of Oilseals	1	No	1,999.00	1,999.00
i	Set of Ring	1	No	999.00	999.00
10	Supply of pulse lite 12V, 65 AH, battery complete as required. Make: Cummins	1	No	6,999.00	6,999.00

It.No	Description of Items	Qty	Unit	Rate	Amount
11	Supply of 12V, model: XP1800 Exide battery complete as required.	1	No	9,999.00	9,999.00
12	Supply of spares for 5HP Grundfos make Diesel Generator Trolley Mounted De-watering Pumpset etc complete as an when required.				
a	Maintenance Kit for Hartz Engine	2	Kit	2,999.00	5,998.00
	Sub Head-IV Supply of Spares Total Rs.				8,57,120.00
	Sub head - V Supply of Chemicals				
1	Supply of following chemicals for water treatment plant and tertiary treatment plant to be supplied as and when required as per site requirement.				
	Per Year requirement				
A1	Solid Dosing chemical				
1	Hydrant Lime 80% concentration	500	Kg	14.99	7,495.00
2	Dolomite 70% concentration	500	Kg	39.00	19,500.00
3	Soda Ash 98% concentration	500	Kg	49.00	24,500.00
A2	Liquid Dosing Chemicals				
1	Hydro Chloric Acid 35% concentration	10000	Ltr	3.99	39,900.00
2	Sodium Hypo Chlorite 6% concentration	15000	Ltr	4.99	74,850.00
3	Aluminium sulphate 24% concentrate (Alum)	1500	Ltr	19.00	28,500.00
A3	Test Kit				
1	Hardness Test kit-atleast 250 sample (Aquasol AE-211 or	8	Kit	799.00	6,392.00
2	Chloride Test Kit-atleast 300 sample (Aquasol AE-203 or equivalent)	8	Kit	999.00	7,992.00
A4	Testing Regants, consumables				
1	Universal Indicator solution PH 4.0-11.0	6	No	299.00	1,794.00
2	PH Indicator Paper	6	Box	199.00	1,194.00
A5	Chemicals for RO Plant (14 Cum/Hr)				
1	R.O. Antiscalant	100	Kg	99.00	9,900.00
2	Sodium Meta Bi Sulphate (SMBS)	100	Kg	49.00	4,900.00

It.No	Description of Items	Qty	Unit	Rate	Amount
A6	Supply of Bioculture chemical for dilution of sludge in sewage collection wells and Sewage Sumps etc complete as required.				
1	Super24 Bioculture	500	Kg	49.00	24,500.00
2	Oxysuper	500	Kg	49.00	24,500.00
A7	Supply of Nanozyme Wastewater Treatment Culture chemical for dilution of sludge in sewage collection open well etc complete as required.				
1	Nanozyme-Bet-STP-9013	500	Kg	49.00	24,500.00
2	Nutrition-Bet-Nutri-9003	500	Kg	49.00	24,500.00
A8	Supply of stabilizer chemical for dilution of sludge in sewage collection open well etc complete as required.	500	Ltr	49.00	24,500.00
	Sub head - V Supply of Chemicals Total Rs.				3,49,417.00
	Sub head - VI Replacement of Filtration media				
1	Replacement of outdated filter media in Pressure sand filter (PSF-90 Cum/Hr) including removal of old outdated media, replacing all strainer nozzles, rinse-cleaning, application of thinner, industrial marine grade epoxy painting, refilling of different gradient media (pebbles, silex, sand) in layers as per standard design and disposal of unserviceable media away from chennai airport etc as required. PSF Vessel: 3100 Ø X 1850 HOS	2	Job	44,999.00	89,998.00
	Sub head - VI Replacement of Filtration media Total Rs.				89,998.00
	Sub head - VII Contingency				
1	Supply of following accessories for contingency/Emergency situations etc complete as required.				
a	PVC Flexible Green Hose-4"	30	Mtr	199.00	5,970.00
b	PVC Green Hose-3"	30	Mtr	149.00	4,470.00
c	PVC Green Hose-2"	30	Mtr	49.00	1,470.00

It.No	Description of Items	Qty	Unit	Rate	Amount
d	Fire Hose-4"	30	Mtr	69.00	2,070.00
e	Stainless Steel Hose Clamp-4"	4	No	99.00	396.00
f	Stainless Steel Hose Clamp-3"	6	No	49.00	294.00
g	CI Foot valve-3"	2	No	699.00	1,398.00
h	CI Hose collar-3"	2	No	99.00	198.00
	Sub head - VII Contingency Total Rs.				16,266.00
Total Rs.					2,92,13,260.00

1st Year Total Amount (Excluding EPF, ESI/Mediclaim, Bonus & GST) Rs. 2,92,13,260.00


31/07/2023

(G.N.D. Kennedy)
Jt. Gen. Manager (Engg-Elect)-I

**AIRPORTS AUTHORITY OF INDIA
CHENNAI AIRPORT :: CHENNAI - 600 016**

SCHEDULE OF QUANTITY

Name of Work: Facility Management of Water Supply System and Sewage Treatment Plant at Chennai Airport.

Sub Head: Providing Operation & Maintenance Service of Water Supply System for Old & New Water Treatment Plant, Sewage Treatment Plant, CISF Barracks, Bore wells and Open wells at various locations, RO Plant & De-Watering System.

2nd YEAR: 12 MONTHS

It.No	Description of Items	Qty		Rate	Amount
SUB HEAD - I (AMC)					
1	Providing Operation Services of Water Supply System in Operational area at Cowl bazaar & New Fire station pump House, Cargo & MES open well, Runway - 25 End, Old Fire station and Old Pump Houses etc. as per inventory in "Annexure -A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of preventive & normal maintenance records, log books as required etc. and cleaning, upkeeping on all days. These services should be ensured for above mentioned Water Supply System equipment's, Electric motor driven pump sets, borewells, open wells, MCC & starter panels and control panels on round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For Second year	12	Month	2,59,999.00	31,19,988.00

It.No	Description of Items	Qty		Rate	Amount
2	Providing Operation Services of water treatment and supply system at Old Water Treatment Plant (WTP) associated borewells etc. as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring output treated water quality to specifications, chemical testing / sample analysis / corrective actions by chemist, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of lab, normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services including supervision of all above activities shall be ensured, covering Water Treatment and Supply System equipment's, Electric motor driven pump sets, associated borewells, open wells, Sumps, MCC & starter panels and control panels round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For Second year	12	Month	3,44,999.00	41,39,988.00

It.No	Description of Items	Qty		Rate	Amount
3	Providing Operation Services of water treatment and supply system at New Water Treatment Plant (NWTP) including Reverse Osmosis (RO) Plant of capacity 14 cum/hr x 2 nos. with all relevant water sources as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring output treated water quality to specifications, chemical testing / sample analysis / corrective actions by chemist, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of lab, normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services including supervision of all above activities shall be ensured for WTP and RO Plant equipment's, Electric motor driven pump sets, associated borewells, open wells, Sumps, MCC & starter panels and control panels round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For Second year	12	Month	4,99,999.00	59,99,988.00

It.No	Description of Items	Qty		Rate	Amount
4	Providing Operation Services of Sewage System installations at Sewage Treatment plant (STP) of capacity 2MLD and associated Tertiary Treatment Plant (TTP) with all relevant water sources as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring output treated water quality to specifications, chemical testing / sample analysis / corrective actions by chemist, ensuring serviceability / satisfactory working condition of the systems, maintenance activity as per attached "Annexure-A2" updation of lab, normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services including supervision of all above activities shall be ensured for STP and TTP Plant equipment's, Electric motor driven pump sets, associated borewells, open wells, Sumps, MCC & starter panels and control panels round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For Second year	12	Month	2,89,999.00	34,79,988.00
5	Providing Operation Services of water supply system in CISF Barracks pump House associated borewells etc. as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, ensuring serviceability / satisfactory working condition of the systems, maintenance activity updation of preventive & normal maintenance records, log books as required etc. and cleaning, upkeeping on all days. These services should be ensured for above mentioned Water Supply System equipment's, Electric motor driven pump sets, borewells, drain sump, MCC & starter panels and control panels on round the clock (Three shift X 8 Hours) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For Second year	12	Month	1,34,999.00	16,19,988.00

It.No	Description of Items	Qty		Rate	Amount
6	Providing Operation Services of De-watering and Sewage pump sets installed at various location at basement of New Domestic and New International Terminal Buildings and connecting tunnel as per inventory in "Annexure - A1" covering the scope of activities given in special condition of contract and technical specification, attending faults, monitoring & ensuring serviceability of the systems, maintenance activity as per attached "Annexure-A2" normal & preventive records, log books as required etc. and cleaning, upkeeping on all days. These services should be ensured for above mentioned de-watering and sewage pump system, Electric motor driven pump set, MCC & starter panel and control panels on round the clock (3 Shift X 8 Hrs.) on all days including Sundays / holidays as per site requirement etc. complete as required.				
a	For Second year	12	Month	69,999.00	8,39,988.00
7	Providing of day-to-day, preventive maintenance, installation, dismantling, rectification, Repair Service of all Electro-Mechanical Inventory with water supply division covering, Mechanical, Electrical and Plumbing works involved, covering the entire scope of preventive maintenance, repair activities indicated but not limited to special condition of contract, technical specification, maintenance & operation manual of AAI, OEM manuals ensuring serviceability / satisfactory working of all water supply system equipment on all days including Sundays / holidays attending minor & major faults, cleaning, upkeeping of the installations , preventive maintenance (as per "Annexure-A2)" related records, log books, timely appraising equipment health status, repairs, replacements (if any) etc. reporting as and when required as per direction of Engineer-In-Charge etc. complete as per the site requirement.				
a	For Second year	12	Month	1,89,999.00	22,79,988.00

It.No	Description of Items	Qty		Rate	Amount
8	Testing of following water samples from Government laboratory every month and production of Test Report to the Engineer-In-Charge.				
a	Samples: i) Old WTP Raw Water (ii) Old WTP Treated Water (iii) New WTP Domestic Water iv) Domestic (SHA) Terminal (NDT) (v) International (SHA) Terminal (NIT)				
	(i) to (v) - One job				
	For Second year	12	Job	19,999.00	2,39,988.00
9	Testing of following sewage samples from existing STP at State / Central Govt. Laboratory every month and submit the original analysis test report to Engineer -In-charge etc. Complete as required.				
	Samples: (i) Sewage Treated Water				
	(i) One Job				
	For Second year	12	Job	9,999.00	1,19,988.00
10	Providing Services of one number New Mahindra Bolero/Mahindra Scorpio vehicle alongwith driver for distance upto 60 KM/day or 1800 KM/month on round the clock basis for day-to-day maintenance services and attending Inspection/Preventive & Break down maintenance for Water Supply Systems Plant rooms, Pump rooms on both the city side and apron side at Chennai Airport.				
a	For Second year	12	Month	1,54,999.00	18,59,988.00
	Sub Head-I (AMC) Total				2,36,99,880.00
	SUB HEAD - II (ARC)				
1	Supply and Installation of RO filter catridge for RO plant etc. complete as required				
a	2.5" OD X 1" ID X 40" L	64	No	399.00	25,536.00
b	2.5" OD X 1" ID X 20" L	24	No	199.00	4,776.00

It.No	Description of Items	Qty		Rate	Amount
2	Replacement of existing Damaged 8" dia RO-Filter Membrane (6 Nos/Housing) for RO plant at New Water Treatment Plant etc complete as required.	3	Job	44,999.00	1,34,997.00
3	Chemical Cleaning and overhauling of filter membranes of RO system unit (3Housing/plant) of capacity 14 cum/hr. with required chemicals in WTP to bring the water quality to the desired level as specified in technical specification etc complete as required.	2	Job	9,999.00	19,998.00
4	Cleaning of Stainless Steel RO water storage tank (30,000 Ltr) using necessary chemicals, rinse clean and draining out complete etc as required.	4	Job	4,999.00	19,996.00
5	Dismantling, overhauling and servicing of all type of centrifugal pumpsets including replacement of pump spares (such as impeller, Gland/ mechanical Seal, Gland packing, set of bearings, shaft sleeve, terminal board, terminal box, gasket, liquid reflector, impeller lock nut, cooling fan etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	Upto 3 HP	5	Job	1,999.00	9,995.00
b	5 HP to 10 HP	5	Job	1,999.00	9,995.00
c	above 10HP upto 20 HP end suction pump.	8	Job	1,999.00	15,992.00
d	above 10HP upto 20 HP Split case pump	2	Job	1,999.00	3,998.00
6	Dismantling the existing centrifugal pumpset of following capacity including rewinding, servicing, replacement of motor spares (such as bearings, cooling fan, Terminal Board, terminal box with top), rebate for wound out copper and re-installing the same etc. as required.				
a	Upto 1.5HP	6	Job	1,999.00	11,994.00
b	above 1.5HP upto 3HP	3	Job	1,999.00	5,997.00
c	above 3HP upto 10HP	6	Job	1,999.00	11,994.00
d	above 10HP upto 20HP	3	Job	1,999.00	5,997.00

It.No	Description of Items	Qty		Rate	Amount
7	Dismantling, lifting, lowering, painting and re-installation of existing sewage submersible pumpset of following capacity including servicing, replacement of all pump spares (such as Impeller, Mechanical seal, Cutter, Set of 'O' rings, Oil seal, Oil for seal cooling etc.,) and Testing, Commissioning etc complete as required.				
a	upto 1 HP	1	Job	2,999.00	2,999.00
b	above 1HP upto 3HP	1	Job	2,999.00	2,999.00
c	above 3HP upto 7.5HP	4	Job	2,999.00	11,996.00
8	Dismantling, lifting, lowering, painting, rewinding and re-installation of existing sewage submersible pumpset motor of following capacity, including replacement of motor spares (if any required), rebate for wound out copper and Testing, Commissioning etc complete as required.				
a	Upto 1 HP	1	Job	5,999.00	5,999.00
b	above 1HP upto 3HP	1	Job	5,999.00	5,999.00
c	above 3HP upto 7.5HP	4	Job	5,999.00	23,996.00
9	Dismantling, lifting, lowering, painting, re-installation of sewage submersible pumpset from existing sewage well including rewinding , servicing, replacement of all spares (such as Impeller, Mechanical seal, Cutter, Set of 'O' rings, Oil seal, Oil for seal cooling, Set of bearings etc), rebate for wound out copper and testing, commissioning, Complete etc as required.				
a	above 7.5 HP upto 12.5HP- At STP Collection Well and Grid 72	2	Job	4,999.00	9,998.00
b	30 HP - At IAD Residential Colony	1	Job	4,999.00	4,999.00
10	Lowering of Borewell Submersible pump sets for New borewell (upto 200 feet depth) including couplings, pipe fittings (nipple, elbow, flange valves, clamps etc) lowering and fixing of pipes, submersible cables, cable panel connections etc., complete as required. (Note: Borewell Pump, GI pipe and fittings shall be supplied by AAI)	6	Job	1,999.00	11,994.00

It.No	Description of Items	Qty		Rate	Amount
11	Lifting and Lowering of Borewell submersible pumpset (upto 200 feet depth) from existing borewell of 2"/1.5" dia G.I pipe including cutting, re-threading of existing pipes, pipe fittings (nipple, elbow, flange valves, clamps etc) and installations of submersible pump set (Provided by AAI) along with submersible cables, cable and panel connections etc., complete as required.	10	Job	2,999.00	29,990.00
12	Servicing of existing Borewell submersible pump of following capacity including replacement of all pump spares (such as Impeller, Diffusers, Pump Shaft, Set of shaft sleeves, Retainer ring, Pump Coupling etc) and re-assembling the same etc complete as required.				
a	Upto 3 HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 5HP	2	Job	2,999.00	5,998.00
c	above 5HP upto 7.5HP	1	Job	2,999.00	2,999.00
13	Rewinding and servicing of Borewell Submersible Pump -motor, replacement of spares (if any), including rebate for wound out copper of following capacity etc complete as required.				
a	Upto 3 HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 5HP	2	Job	2,999.00	5,998.00
c	above 5HP upto 7.5HP	1	Job	2,999.00	2,999.00
14	Servicing of existing Borewell submersible pump-motor of following capacity including replacement of all motor spares (such as Thrustpad, Thrust bearing assembly, Diapharam, Set of keys, Oil Seal, Diapharam Plate etc.) and re-assembling the same etc complete as required.				
a	Up to 3HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 5HP	2	Job	2,999.00	5,998.00
c	above 5HP upto 7.5HP	1	Job	2,999.00	2,999.00

It.No	Description of Items	Qty		Rate	Amount
15	Dismantling, lifting, lowering, painting and re-installation of openwell/ sump submersible pumpset including servicing, re-threading, replacement of pump spares (such as Impeller, Oil Seal, Thrustpad, Thrust bearing assembly, Diapharam, Gasket , Impeller locknet, Strainer, Diapharam Plate etc.,) and installation, testing, and commissioning of the same complete etc, as and when required.				
a	Upto 3HP	4	Job	2,999.00	11,996.00
b	above 3HP upto 7.5	2	Job	2,999.00	5,998.00
c	above 7.5HP upto 10HP	2	Job	2,999.00	5,998.00
d	above 10HP upto 15HP	4	Job	2,999.00	11,996.00
16	Dismantling, lifting, lowering, painting, rewinding and re-installation of open well submersible pumpset motor of following capacity including pipes & plumping accessories, rebate for wound out copper, and Testing, Commissioning etc complete as required.				
a	Upto 3HP	4	Job	2,999.00	11,996.00
b	above 3HP to upto 7.5	2	Job	2,999.00	5,998.00
c	above 7.5HP upto 10HP	2	Job	2,999.00	5,998.00
d	above 10HP upto 15HP	4	Job	2,999.00	11,996.00
17	Dismantling, Lifting, lowering, painting and re-installation of all types of De-watering submersible pump sets of following capacity including rewinding, servicing, replacement of spares (shaft seal, O ring, Bearings etc.) for pump & motor, rebate for wound out copper, testing and commissioning etc., complete as required.				
a	Upto 3HP	5	Job	2,999.00	14,995.00
18	Dismantling, overhauling and servicing of all type of HPS vertically mounted centrifugal pump sets/RO High pressure pumpset (Grundfos Make) including replacement of pump spares (such as impeller, shaft seal, 'O' ring, Head spring, bearings etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as				
a	RO High Pressure Pump-20HP	2	Job	1,49,999.00	2,99,998.00

It.No	Description of Items	Qty		Rate	Amount
b	RO Backwash (Chemical wash) Pump-5.5HP	2	Job	1,24,999.00	2,49,998.00
c	Domestic HPS Pump-25HP	2	Job	1,84,999.00	3,69,998.00
d	RO HPS Pump-1.5HP	2	Job	14,999.00	29,998.00
19	Dismantling the existing HPS vertically mounted centrifugal pump sets/RO High pressure pumpset(Grundfos Make) including rewinding, servicing, replacement of motor spares (such as bearings, cooling fan, Terminal Board, terminal box with top), rebate for wound out copper and re-installing the same etc. as required.				
a	RO High Pressure Pumpset Motor -20HP	1	Job	29,999.00	29,999.00
b	RO Backwash (Chemical wash) Pumpset Motor -5.5HP	1	Job	17,999.00	17,999.00
c	Domestic HPS Pumpset Motor -25HP	1	Job	39,999.00	39,999.00
d	RO HPS Pumpset Motor -1.5HP	1	Job	59,999.00	59,999.00
20	Dismantling the existing centrifugal pump sets (Grundfos Make) including rewinding, servicing, replacement of motor spares (such as bearings, cooling fan, Terminal Board, terminal box with top), rebate for wound out copper and re-installing the same etc. as required.				
a	PSF Feed Pump-15HP	1	Job	34,999.00	34,999.00
b	PSF Back wash -15HP	1	Job	34,999.00	34,999.00
21	Dismantling, overhauling and servicing of all type of de-watering pump sets (Grundfos make) including replacement of pump spares (Such as impeller, shaft seal, O ring, head spring, bearing etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	De-watering Pump -1.5HP	1	Job	29,999.00	29,999.00
b	De-watering Pump -2.5HP	1	Job	39,999.00	39,999.00
c	De-watering Pump -3HP	1	Job	39,999.00	39,999.00
d	De-watering Pump -25HP	1	Job	49,999.00	49,999.00

It.No	Description of Items	Qty		Rate	Amount
22	Dismantling, overhauling and servicing of all type of sewage pump sets (Grundfos make) including replacement of pump spares (Such as impeller, shaft seal, O ring, head spring, bearing etc) re-assembling, painting, re-installing the same, testing and commissioning etc., complete as required.				
a	Sewage Pump -2.5HP	1	Job	49,999.00	49,999.00
b	Sewage Pump -3HP	1	Job	49,999.00	49,999.00
23	Providing man power to attend any urgent / emergency work with necessary tools and plants on round the clock basis etc complete as required.				
a	Highly skilled labour	60	Man-Days	849.00	50,940.00
b	Skilled labour	30	Man-Days	799.00	23,970.00
c	Semi skilled labour	90	Man-Days	799.00	71,910.00
d	Unskilled labour	90	Man-Days	799.00	71,910.00
24	Providing Excavater (JCB) including Operator for emergency / un anticipated break down / maintenance work, cable works etc., complete as required.	16	Hrs	1,099.00	17,584.00
25	Providing Tractorwith Trolley including driver and loaders-3, loaders for shifting of debris / wastes from water supply system locations, pump houses etc. to waste dump yard or for emergency / un-anticipated break down / maintenance works etc as required.	16	Hrs	1,099.00	17,584.00
26	Providing One Welder alongwith Electric welding machine and welding rods for carrrying out welding works during any urgent Preventive Maintenance/ Breakdown Maintenance /Emergency work as and when required.	50	Hrs	149.00	7,450.00
Sub Head-II (ARC) Total					22,31,512.00

It.No	Description of Items	Qty		Rate	Amount
	<u>SUB HEAD - III (Maintainance works)</u>				
1	Supply of Activated Sludge (MLSS) to Chennai 2 MLD Sewage Treatment Plant at Chennai Airport as and when required (Note: 1 Lot of MLSS = 9000 Litres)	3	Lot	4,999.00	14,997.00
2	Supply of Moving Bed Bio Reactor media MOC:polyproplene,400 M2/M3, cylindrical external fins, Height/Dia of 15mm/22mm, PSA/TSA of minimum 75 % - confirmaing to technical specifications in existing aeration tank including transport, unloading at AAI store etc. complete as required.	10	CUM	4,999.00	49,990.00
3	Provision of fiberglas re-inforced (FRP) lining on existing MS/GI pipe line external surface complete with cleaning,wrapping, fixing with binding components, pigment compund layer as per technical specification complete etc as required.	100	Sq.Mtr	149.00	14,900.00
4	Mechanized Cleaning of Clarifier tank including disposal of silt and rubbish etc complete as required as per the direction of Engineer-In-Charge. The cleaning shall consist of following operations: 1. De-watering of sump. 2. Entire surface area (walls, floor etc) of the sump shall then scrubbed thoroughly with wire brush etc. and pressure washed with high pressure water jet. 3.Wall painting of entire clarifier surface inside and outside with approved paint to achieve even shade and color. 4.Painting of all metallic parts of the reactor clarifier-Detention Hood, Draft tube, Drive wheel (Iylam), clarifier scrapper arm, Bridge, Impeller, staircase etc after through scrapping, Sodium hypo treatment of submerged parts and replacing the rusted nut, bolt washer, scrapper blade etc., complete as per the site requirements.	1	Job	24,999.00	24,999.00

It.No	Description of Items	Qty		Rate	Amount
5	De-silting of Equivalization tank (open to air) of 13600X 14350 X 3600 SWD draining out, collection, lifting from Tank floor spreading in sludge bed for proper drying complete with sundries, lighting, blower fan, speciliased labour with protective gear etc., complete as required.	1	Job	19,999.00	19,999.00
6	Mechanised Cleaning & de-silting of sewage collection well using compressor and associated equipment including dosing of stabaliser chemical for dilution of sludge and disposal of left out sludges away from Airport premises etc., complete as required.				
a	STP Collection well at 2 MLD STP-(10 depth X 14 Mtr Dia)	1	Job	49,999.00	49,999.00
b	Grid-72 well- (8 X 9 X 6 depth Mtr)	2	Job	49,999.00	99,998.00
c	Residential colony-sewage wells i) 2.36 dia X 7 Mtr Depth - 2No ii) 3.56 dia X 7.9 Mtr Depth -1No Sl.No.i) & ii) = 1Job	1	Job	49,999.00	49,999.00
7	Cleaning of sewage (sumps of depth 10 to 15 feet, size from 500 Cubic feet to 1000 cubic feet) in Domestic and International terminal basement with mechanised de-silting compressor, sump scrubbing, debris removal and disposal of left out sludges away from Airport premises as per direction of Engineer-In-Charge etc complete as required.				
a	Sewage sump with depth 10 to 15 feet -all size (500 Cubic feet to 1000 cubic feet)	8	Job	24,999.00	1,99,992.00
8	Supply and Installation of various Mild Steel structure fabricated using single section MS Channel/angle/flat/bar etc including cutting, welding, drilling, fixing in position using appropriate fasteners, grinding, painting with approved steel primer and two coats enamel paint etc. complete as required.	1000	Kg	79.00	79,000.00

It.No	Description of Items	Qty		Rate	Amount
9	Brush/Spray Painting of various metal surfaces after cleaning/scrapping the surface with emery paper and applying 02 coat anti-corrosive metal red-oxide primer & 2 coats Enamel paint of approved brand and colour to give an even shade complete etc as required (Paint Colour to be decided by Engineer-In-Charge).	1000	Sq.Mtr	79.00	79,000.00
10	Repair of existing 275 m3/Hr Kay Make twin-lobe air blowers including dismantling, servicing, replacement of damaged spares (roller bearing, rings, O-ring, oil seal, gasket, shaft, bearing collar, suction air filter, pressure guage, pressure relief valve, NRV, belt pulley with machining, bolts, nuts, washer etc) re-alignment, installation, testing and commissioning at New Water Treatment Plant etc complete as required. (Note: Repair of 01 Blower is considered as 01 Job.) Air blowers for PSF backwash at New WTP	3	Job	14,999.00	44,997.00
11	Repair of existing 30KVA DG Set trolley located at STP including replacement of 4 Nos tyres with new non- marking tyre and servicing/ replacement of turn table, bearings, welding of damaged parts, scrubbing, painting it with 01 coat of primer and 02 coats of enamel paint complete as required and as per the direction of Engineer-In-Charge. DG set located at STP	1	Job	4,999.00	4,999.00
12	Supply and replacement of 100mm dia pressure guages, 0-200PSI, H.Guru make or as per the approved make, specification including welding of GI nipple and necessary connection as required & as per direction of Engineer-In-Charge.	10	No	599.00	5,990.00

It.No	Description of Items	Qty		Rate	Amount
13	Supply and fixing of non-corrosive Fiberglass Reinforced Plastic (FRP) molded grating (Load : atleast 500Kg/Sq.mtr) walkway of Mesh size 38mm X 38mm , Height: 38 mm, 3 mm thickness Chequered plate molded onto FRP Grating, With Rib thickness 5/7 mm on existing sump including fixing of newly fabricated bottom Frame using MS L-Channel 50mm X 50mm X 5mm, painting of metal surface with 01 coat anticorrosive metal primer and 02 coats enamel paint, providing of MS/GI hooks for lifting and civil modification works (CC chipping, filling, finishing) for proper insertion & seating etc. complete as required.	100	Sq.Mtr	749.00	74,900.00
14	Supplying and Installing following size of perforated Hot Dipped Galvanised Iron cable tray with perforation not more than 17.5%, in convenient sections, joined with connectors, supported at various locations with appropriate supports including G.I. bolts & nuts, etc as required.				
a	150 mm width X 50 mm depth X 1.6 mm thickness	30	Mtr	599.00	17,970.00
b	300 mm width X 50 mm depth X 1.6 mm thickness	30	Mtr	649.00	19,470.00
c	450 mm width X 50 mm depth X 2.0 mm thickness	30	Mtr	699.00	20,970.00
15	Supplying, fixing, testing and commissioning of Butterfly Valve (Manual) with CI body,SS disc,SS stem, nitrile/EPDM rubber seal,O - ring & PN 16 pressure rating alongwith bolt, nut ,washer as per following sizes etc including dismantling the existing valve complete as required.				
a	Butterfly Valve-200 mm Dia	4	No	1,999.00	7,996.00
b	Butterfly Valve-150 mm Dia	5	No	1,499.00	7,495.00
c	Butterfly Valve- 125 mm Dia	1	No	1,499.00	1,499.00
d	Butterfly Valve- 100 mm Dia	4	No	999.00	3,996.00
e	Butterfly Valve- 80 mm Dia	2	No	999.00	1,998.00
f	Butterfly Valve- 65 mm Dia	1	No	999.00	999.00
g	Butterfly Valve- 50 mm Dia	4	No	999.00	3,996.00

It.No	Description of Items	Qty		Rate	Amount
16	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.				
a	50 mm	200	Mtr	249.00	49,800.00
17	Replacement of full pressure tank (Tank.Bladder,drain kit,flange etc) including dismantling the existing tank and installation of following capacity tank alongwith providing necessary pipeline connection for satisfactory working of Hydro Pneumatic Syatem (HPS) at various location of Chennai Airport etc complete as required.				
a	Wellmate pressure tank WM9 or equivalent	1	No	34,999.00	34,999.00
b	Wellmate pressure tank WM35 or equivalent	4	No	49,999.00	1,99,996.00
c	Wellmate pressure tank WM80 or equivalent	2	No	74,999.00	1,49,998.00
18	Replacement of following Pressure Tank Bladder including removing of damaged bladder and providing New Bladder,filling air upto required pressure alongwith providing necessary pipeline connection for satisfactory working of Hydro Pneumatic Syatem (HPS) at various location of Chennai Airport etc complete as required.				
a	Wellmate pressure tank WM9 or equivalent	2	No	14,999.00	29,998.00
b	Wellmate pressure tank WM35 or equivalent	2	No	34,999.00	69,998.00
c	Wellmate pressure tank WM80 or equivalent	2	No	34,999.00	69,998.00
d	Zilmat ultra pro 500LV pressure Tank or equivalent	2	No	29,999.00	59,998.00

It.No	Description of Items	Qty		Rate	Amount
19	Periodical health checkup of entire Hydro Pneumatic System on Quarterly basis by OEM M/s.Grundfos or OEM authorized agency and attending minor faults of Equipment's, filling of air in Pressure tank using compressor upto required pressure, ensuring 100% Serviceability/ Satisfactory Working Condition of the system as per Standard Manufacturers' Practices, replacement of spares which will be supplied by AAI and submission of Service Reports etc as required and as per direction of Engineer-In-Charge. Note: Health check up of 01 HPS system will be treated as 01 Job	36	Job	4,999.00	1,79,964.00
20	Maintenance of 62.5 KVA Cummins Make DG Set mounted on Grundfos make dewatering Trolley by OEM/OEM Authorised Service Dealer, carrying out Routine/Preventive Maintenance on Quarterly Visit Basis, attending All Breakdown Maintenance Calls, carrying out "B" Check of Engines and attending minor faults of Equipment's, ensuring 100% Serviceability/ Satisfactory Working Condition of the Engine, as per Standard Manufacturers' Practices as per Special Terms and Conditions and submission of Service Reports etc as required and as per direction of Engineer-In-Charge.				
a	Quarterly visit Charges/ DG coupled Pumpset	8	Job	9,999.00	79,992.00
b	B Check Charge/ Engine	2	Job	9,999.00	19,998.00
21	Maintenance of 156HP Kirloskar make dewatering Pumpset alongwith Diesel Engine by OEM/OEM Authorised Service Dealer, carrying out Routine/Preventive Maintenance on Quarterly Visit Basis, attending All Breakdown Maintenance Calls, carrying out "B" Check of Diesel Engines and attending minor faults of Equipment's, ensuring 100% Serviceability/ Satisfactory Working Condition of the Engine, as per Standard Manufacturers' Practices as per Special Terms and Conditions and submission of Service Reports etc as required and as per direction of Engineer-In-Charge.				
a	Quarterly visit Charges/Dewatering Pumpset	8	Job	4,999.00	39,992.00

It.No	Description of Items	Qty		Rate	Amount
b	B Check Charge/ Engine	2	Job	4,999.00	9,998.00
22	Maintenance & Servicing of following diesel engine operated dewatering pumpset and carrying out 'B' Check as per Special Terms and Conditions and submission of Service Reports etc as required and as per direction of Engineer-In-Charge				
a	5 HP Kirloskar Diesel engine coupled dewatering pump	6	Job	4,999.00	29,994.00
b	5 HP Grundfos Diesel engine coupled dewatering pump	3	Job	9,999.00	29,997.00
23	Calibration of Digital Electro-Magnetic Flow meter available at various locations from the certified agency and submitting report to Engineer-In-Charge	22	Job	1,999.00	43,978.00
24	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc. direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc. , complete as required				
a	40mm Dia DWC HDPE Pipe	50	Mtr	149.00	7,450.00
b	50mm Dia DWC HDPE Pipe	50	Mtr	149.00	7,450.00
25	Providing and Fixing of 'B' Clase GI pipe complete with GI fittings of following sizes including cutting, welding, threading and suitable size flanges etc. complete as required.				
a	2 inch Dia 'B' Clause GI Pipe	10	Mtr	699.00	6,990.00
b	4 inch Dia 'B' Clause GI Pipe	10	Mtr	1,249.00	12,490.00
c	5 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
d	6 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
e	8 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00

It.No	Description of Items	Qty		Rate	Amount
f	10 inch Dia 'B' Clause GI Pipe	10	Mtr	1,499.00	14,990.00
g	12 inch Dia 'B' Clause GI Pipe	10	Mtr	1,999.00	19,990.00
	SUB HEAD - III (Maintainance works) Total				21,13,176.00
	Sub Head-IV Supply of Spares				
1	Supply of following Plumbing accessories/Submersible Pump accessories for various installations & locations etc as and when				
i	50mm B-Class GI Pipe (10 feet) (Threaded both Ends) Tata make Only	100	Each	999.00	99,900.00
ii	2 inch coupling -100 mm long (Threaded Coupling)	50	No	149.00	7,450.00
iii	50 mm X 12 mm C- clamp set with nut bolt.	20	Set	299.00	5,980.00
iv	GI elbow-2" (50 mm) Threaded	10	No	299.00	2,990.00
v	GI Flange-2" (50mm) Threaded	10	set	299.00	2,990.00
vi	GI Pipe Nipple-2" X 12" long	20	No	199.00	3,980.00
vii	Water Meter-2" (50 mm) Flanged End	10	No	1,999.00	19,990.00
viii	GI flexible Conduit PVC coated-2"	100	Mtr	199.00	19,900.00
ix	Water Level Controller (Make: L&T Model:XM810530000 or equivelant)	4	No	999.00	3,996.00
x	Water Level Controller Probes (Make:L&T Model: XM810760000 or equivelant) (Set of 6Nos)	4	Set	799.00	3,196.00
xi	NRV wafer type: Body CI, disc SS, Seat:Nitrile/EPDM PN-16				
a	150 mm Dia	2	No	2,499.00	4,998.00
b	100 mm Dia	2	No	1,999.00	3,998.00
c	80 mm Dia	2	No	999.00	1,998.00
d	50 mm Dia	2	No	499.00	998.00
xii	NRV Dual Plate type: Body CI, disc SS, Seat:Nitrile/EPDM PN-16				
a	150 mm Dia	2	No	4,999.00	9,998.00

It.No	Description of Items	Qty		Rate	Amount
b	100 mm Dia	5	No	2,499.00	12,495.00
c	80 mm Dia	2	No	1,999.00	3,998.00
xiii	NRV: MOC-Gun Metal of approved quality (screwed end) :				
a	40 mm nominal bore (Horizontal)	2	No	999.00	1,998.00
b	50 mm nominal bore (Horizontal)	5	No	999.00	4,995.00
c	80 mm nominal bore (Horizontal)	1	No	999.00	999.00
xiv	Gate Valve: MOC-Gun Metal with C.I. wheel of approved quality (screwed end) :				
a	80 mm nominal bore	1	No	4,999.00	4,999.00
b	50 mm nominal bore	5	No	2,499.00	12,495.00
c	40 mm nominal bore	2	No	1,999.00	3,998.00
d	25 mm nominal bore	2	No	999.00	1,998.00
xv	Dummy Flange:MOC-Mild Steel with suitable Nuts & Bolts etc.				
a	6" MS Dummy Flange-20mm Thick	2	No	1,499.00	2,998.00
b	4" MS Dummy Flange-20mm Thick	2	No	999.00	1,998.00
xvi	Supply of hand lever operated Cast Steel ball valve approved quality (screwed end) :				
a	2" Ball Valve	6	No	999.00	5,994.00
b	1" Ball Valve	2	No	499.00	998.00
c	3/4" Ball Valve	2	No	499.00	998.00
xvii	Supply of float switch sensor for water level controller approved Quality				
a	Float Switch	50	No	399.00	19,950.00
2	Supply of Flat Three Core PVC Insulated & PVC Sheathed Industrial Cable for Submersible Pump Motors 1100 Volts, conforming to IS: 694, suitable for installation with Deep Borewell pump of suitable length etc., as required.				
a	2.5 Sqmm X 3 Core flat cable	600	Mtr	49.00	29,400.00
b	4 Sqmm X 3 Core flat cable	400	Mtr	59.00	23,600.00
c	6 Sqmm X 3 Core flat cable	100	Mtr	149.00	14,900.00

It.No	Description of Items	Qty		Rate	Amount
3	Supply of following panel board starter suitable to operate with 415 V, 50 Hz, 3 phase AC power supply various installations & locations etc as and when required.				
a	3HP/2.2 KW DOL Starter Panel	5	No	3,999.00	19,995.00
b	7.5HP/5.5KW Star-Delta Starter Panel	2	No	4,999.00	9,998.00
4	Supply of following panel board starter suitable to operate with 230 V, 50 Hz, 1 phase AC power supply various installations & locations etc as and when required.				
a	1.5HP DOL Starter with Auto level controller	2	No	1,499.00	2,998.00
5	Supply of Borewell type Submersible Pumpset of Suitable rating, water filled cooling type, with SS strainer, SS Body,Noryl Impellers using anti-friction bearing, energy efficient type operated on 415V, 3 Phase,50Hz power for installation into 6" dia borewell including loading, unloading at site complete etc as required. (Maximum borewell depth 250 feet)				
a	5HP 3Phase - Borewell pump (Model No:KS4D 5025, Make: Kirloskar)	2	No	24,999.00	49,998.00
b	3HP 3Phase- Borewell Submersible pump (Model No:KS4D 3017, Make: Kirloskar)	2	No	19,999.00	39,998.00
6	Supply of Borewell type Submersible Pumpset of Suitable rating, water filled cooling type, with SS strainer, SS Body,Noryl Impellers using anti-friction bearing, energy efficient type operated on 415V, 3 Phase,50Hz power for installation into 6" dia borewell including loading, unloading at site complete etc as required. (Maximum borewell depth 250 feet)				
a	1.5HP 1Phase- Borewell Submersible pump (Model No:KU4-0318S, Make: Kirloskar)	2	No	14,999.00	29,998.00

It.No	Description of Items	Qty		Rate	Amount
7	Supply & fixing of following Hydro Pneumatic system spares for various location as and whwn required.				
a	Drain Kit for WM9 Pressure Tank	2	No	4,999.00	9,998.00
b	Drain Kit for WM35 Pressure Tank	2	No	4,999.00	9,998.00
c	Flange for Zilmat ultra pro pressure Tank	2	No	4,999.00	9,998.00
d	Multi pump control CU352	2	No	79,999.00	1,59,998.00
e	IO351B Module digital/analog	2	No	19,999.00	39,998.00
f	R core transformer 100VA	2	No	4,999.00	9,998.00
g	R core transformer 150VA	2	No	4,999.00	9,998.00
h	Pressure Transmitter 0-16 Bar	2	No	9,999.00	19,998.00
8	Supply of following size of butterfly valve for Hydro Pneumatic System as and when required				
a	200 mm Dia Butterfly valve	2	No	4,999.00	9,998.00
b	150 mm Dia Butterfly valve	2	No	4,999.00	9,998.00
c	100 mm Dia Butterfly valve	2	No	2,999.00	5,998.00
d	50 mm Dia Butterfly valve	2	No	1,999.00	3,998.00
e	40 mm Dia Butterfly valve	2	No	999.00	1,998.00
9	Supply of spares for 156HP Kirloskar make Diesel Generator Trolley Mounted De-watering Pumpset etc complete as an when required.				
a	Impeller Nut	1	No	1,999.00	1,999.00
b	Shaft Sleeve	1	No	1,499.00	1,499.00
c	Set of Keys	1	No	1,999.00	1,999.00
d	Set of Fastener	1	No	1,999.00	1,999.00
e	Set of Bearing	1	No	19,999.00	19,999.00

It.No	Description of Items	Qty		Rate	Amount
f	Set of Gland Packing	1	No	6,999.00	6,999.00
g	Set of Gasket	1	No	999.00	999.00
h	Set of Oilseals	1	No	1,999.00	1,999.00
i	Set of Ring	1	No	999.00	999.00
10	Supply of pulse lite 12V, 65 AH, battery complete as required. Make: Cummins	1	No	6,999.00	6,999.00
11	Supply of 12V, model: XP1800 Exide battery complete as required.	1	No	9,999.00	9,999.00
12	Supply of spares for 5HP Grundfos make Diesel Generator Trolley Mounted De-watering Pumpset etc complete as an when required.				
a	Maintenance Kit for Hartz Engine	2	Kit	2,999.00	5,998.00
	Sub Head-IV Supply of Spares Total Rs.				8,57,619.00
	Sub head - V Supply of Chemicals				
1	Supply of following chemicals for water treatment plant and tertiary treatment plant to be supplied as and when required as per site requirement.				
	Per Year requirement				
A1	Solid Dosing chemical				
1	Hydrant Lime 80% concentration	500	Kg	14.99	7,495.00
2	Dolomite 70% concentration	500	Kg	39.00	19,500.00
3	Soda Ash 98% concentration	500	Kg	49.00	24,500.00
A2	Liquid Dosing Chemicals				
1	Hydro Chloric Acid 35% concentration	10000	Ltr	3.99	39,900.00
2	Sodium Hypo Chlorite 6% concentration	15000	Ltr	4.99	74,850.00
3	Aluminium sulphate 24% concentrate (Alum)	1500	Ltr	19.00	28,500.00
A3	Test Kit				
1	Hardness Test kit-atleast 250 sample (Aquasol AE-211 or equivalent)	8	Kit	799.00	6,392.00
2	Chloride Test Kit-atleast 300 sample (Aquasol AE-203 or equivalent)	8	Kit	999.00	7,992.00

It.No	Description of Items	Qty		Rate	Amount
A4	Testing Regants, consumables				
1	Universal Indicator solution PH 4.0-11.0 (500ML)	6	No	299.00	1,794.00
2	PH Indicator Paper	6	Box	199.00	1,194.00
A5	Chemicals for RO Plant (14 Cum/Hr)				
1	R.O. Antiscalant	100	Kg	99.00	9,900.00
2	Sodium Meta Bi Sulphate (SMBS)	100	Kg	49.00	4,900.00
A6	Supply of Bioculture chemical for dilution of sludge in sewage collection open well etc complete as required.				
1	Super24 Bioculture	500	Kg	49.00	24,500.00
2	Oxysuper	500	Kg	49.00	24,500.00
A7	Supply of Nanozyme Wastewater Treatment Culture chemical for dilution of sludge in sewage collection open well etc complete as required.				
1	Nanozyme-Bet-STP-9013	500	Kg	49.00	24,500.00
2	Nutrition-Bet-Nutri-9003	500	Kg	49.00	24,500.00
A8	Supply of stabilizer chemical for dilution of sludge in sewage collection open well etc complete as required.	500	Ltr	49.00	24,500.00
	Sub head - V Supply of Chemicals Total Rs.				3,49,417.00
	Sub head - VI Replacement of Filtration media				
1	Replacement of outdated filter media in Activated Carbon filter and Multi Grade Filter at old water treatment plant including removal of old outdated media, rinse-cleaning,application of thinner,industrial marine grade epoxy painting, refilling of different gradient media (pebbles, sand, silex,Granular Activated Carbon) in layers as per standard design, technical specifications and disposal of unserviceable media away from chennai airport complete as per the direction of Engineer-in-Charge etc as required.				
a)	Activated Carbon filter (110 M3/Hr): 2600mm Dia X 2000mm HOS Top Distrubution Header: Inverted Bell Mouth Bottom Collector : lateral system	1	Job	1,99,999.00	1,99,999.00

It.No	Description of Items	Qty		Rate	Amount
b)	Activated carbon filter (30 M3/Hr): 1600mm Dia X 2000mm HOS Top Distrubution Header: Inverted Bell Mouth Bottom Collector: Lateral system	1	Job	1,49,999.00	1,49,999.00
c)	Muti-Grade filter (110 M3/Hr)-3000mm Dia X 1800mm HOS Top Distrubution Header: Inverted Bell Mouth Bottom Collector: Lateral system	1	Job	1,49,999.00	1,49,999.00
d)	Muti-Grade filter (30 M3/Hr)-2000mm Dia X 1500mm HOS Top Distrubution Header: Inverted Bell Mouth Bottom Collector: Lateral system	1	Job	1,49,999.00	1,49,999.00
	Sub head - VI Replacement of Filtration media Total Rs.				6,49,996.00
	Sub head - VII Contingency				
1	Supply of following accessories for contingency/Emergency situations etc complete as required.				
a	PVC Flexible Green Hose-4"	30	Mtr	199.00	5,970.00
b	PVC Green Hose-3"	30	Mtr	149.00	4,470.00
c	PVC Green Hose-2"	30	Mtr	49.00	1,470.00
d	Fire Hose-4"	30	Mtr	69.00	2,070.00
e	Stainless Steel Hose Clamp-4"	4	No	99.00	396.00

It.No	Description of Items	Qty		Rate	Amount
f	Stainless Steel Hose Clamp-3"	6	No	49.00	294.00
g	CI Foot valve-3"	2	No	699.00	1,398.00
h	CI Hose collar-3"	2	No	99.00	198.00
	Sub head - VII Contingency Total Rs.				16,266.00
Total Rs.					2,99,17,866.00

2nd Year Total Amount (Excluding EPF, ESI/Mediclaim, Bonus & GST) Rs. 2,99,17,866.00


31/03/2023

(G.N.D. Kennedy)

Jt. Gen. Manager (Engg-Elect)-I