



APARNA CONSTRUCTIONS AND ESTATES PVT. LTD.

#802, Astral Heights, D.No: 6-3-352/2 & 3,
Road No 1, Banjara Hills,, Hyderabad - 500034
Ph No : +91-40-23352068/72 Fax : + 91-40-23350329



Ref No : ACEPL_CONS/FV113-EXT.SER\S00680\ACE\WO\01123\1516\A0 (FRESH)

Date : 01/06/2015

To :

REVOLVE ENGINEERS PVT LTD,
Plot No.52, H.No.7 - 1 - 282/C/1/52/C,
Linsiah Nagar, Balkampet,,
Hyderabad.

TIN NUMBER : 36100120859
PAN NUMBER : AACCR3708B
SERVICE TAX NUMBER : AACCR3708BST001

Project : EXTERNAL SERVICES HILL PARK LAKE BREEZE at Aparna Hill Park Lake Breeze, Chnada

Subject : **STP** - 935 KLD capacity to Lake Breeze

Area Allocated :
STP

Kind Attention : **MR.BHASKAR** Cell No.040 44545100 9848912752

Dear Sir,

With reference to ~~the~~ above subject, and subsequent discussions we had with you, we are pleased to place the work ~~Order~~ for STP - 935 KLD capacity to Lake Breeze as per the specifications Terms and Conditions.

We are pleased to award this order to you to carry out the above works. The total order amount is Rs. 9666901.00(Rupees Ninety Six Lakhs Sixty Six Thousands Nine Hundred One Only) based on your offer referred above ~~and our~~ discussions.

As per the discussions, you shall execute above works to our fullest satisfaction on the critical project control parameters like quality, time schedule for completion of above works.

All terms & conditions as discussed are valid except for the under noted variations & stipulations.



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 Phone+91-40-23352068/72 Fax :+ 91-40-23350329



Annexure-1 (BOQ)

Project : 113-EXT.SER - EXTERNAL SERVICES HILL PARK LAKE BREEZE
 Contractor : S00680 - REVOLVE ENGINEERS PVT LTD
 Subject : STP - 935 KLD capacity to Lake Breeze
 Ref. No : ACEPL_CONSV113-EXT.SER\S00680\ACEWO\01123\1515\A0 (FRESH)
 Plumbing & Sanitary Works

S/n	Work Area	Description of Work	UOM	Quantity	Rate	Amount	WBS ID
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STP Electro Mechanical Works

Mechanical Equipment

1	STP	Supplying, installing, testing and commissioning of Fine BAR SCREEN 1000 x 600 mm Size SS bars of 6 mm thick 10mm space between the bars welded to a "L" angle of epoxy coated with anticorrosive treatment. 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	Nos	1.00	31040.00	31040.00	F3.06.01.01
					10.00 %	3104.00	
					15.00 %	4656.00	
					50.00 %	15520.00	
					25.00 %	7760.00	
2	STP	Supplying, installing, testing and commissioning of Fine BAR SCREEN 1000 x 600 mm Size SS bars of 6 mm thick 8mm space between the bars welded to a "L" angle of epoxy coated with anticorrosive treatment. 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	NOS	1.00	38840.00	38840.00	F3.06.01.02
					10.00 %	3884.00	
					15.00 %	5826.00	
					50.00 %	19420.00	
					25.00 %	9710.00	
3	STP	Supplying, installing, testing and commissioning of Fine BAR SCREEN 1000 x 600 mm Size SS bars of 6 mm thick 6mm space between the bars welded to a "L" angle of epoxy coated with anticorrosive treatment. 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	NOS	1.00	45555.00	45555.00	F3.06.01.03
					10.00 %	4555.50	
					15.00 %	6833.25	
					50.00 %	22777.50	
					25.00 %	11388.75	
4	STP	Supplying, installing, testing and commissioning of Raw Sewage Transfer Pumps purpose-Submersible 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	Nos	2.00	184260.00	368520.00	F3.06.01.04
					10.00 %	36852.00	
					15.00 %	55278.00	
					50.00 %	184260.00	
					25.00 %	92130.00	
5	STP	Accessories for Raw Sewage Transfer Pumps like Auto coupling, Lifting hot dip galvanized, Wll 0.8 mt 6 mtr and guld rails 1"-GI pipe 12 mtrs 1.Advance 2.Approval of drawings 3.Supply	SET	2.00	50990.00	101980.00	F3.06.01.05
					10.00 %	10198.00	
					15.00 %	15297.00	
					50.00 %	50990.00	

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Ref. No : ACEPL_CONSV\113-EXT.SER\SO0680\ACE\WO\01123\1516\AO (FRESH)

Plumbing & Sanitary Works

S/n	Work Area	Description of Work	UOM	Quantity	Rate	Amount	WBS ID
		4.Erection & Handing Over			25.00 %	25495.00	
6	STP	Supplying, installing, testing and commissioning of Return Sludge Transfer Pumps Purpose-Submersible	Nos	4.00	72255.00	289020.00	F3.06.01.06
		1.Advance			10.00 %	28902.00	
		2.Approval of drawings			15.00 %	43353.00	
		3.Supply			50.00 %	144510.00	
		4.Erection & Handing Over			25.00 %	72255.00	
7	STP	Supplying, installing, testing and commissioning of twin lobe, roots type Air Blowers for SBR Tank 1 & 2 along with anti distribution pads, Capacity ; 690m3/hr @ 0.65/cm2, Make : Everest	NOS	2.00	325160.00	650320.00	F3.06.01.07
		1.Advance			10.00 %	65032.00	
		2.Approval of drawings			15.00 %	97548.00	
		3.Supply			50.00 %	325160.00	
		4.Erection & Handing Over			25.00 %	162580.00	
8	STP	Supplying, installing, testing and commissioning of twin lobe, roots type Air Blowers for Collection Tank & Sludge holding tank with anti distribution pads, Capacity ;250 m3/hr @0.55 kgs/cm2, Make : Everest	NOS	2.00	134880.00	269760.00	F3.06.01.08
		1.Advance			10.00 %	26976.00	
		2.Approval of drawings			15.00 %	40464.00	
		3.Supply			50.00 %	134880.00	
		4.Erection & Handing Over			25.00 %	67440.00	
9	STP	Supplying, installing, testing and commissioning of diffused coarse bubble air system for Equalization tank-	Nos	26.00	1446.00	37596.00	F3.06.01.09
		1.Advance			10.00 %	3759.60	
		2.Approval of drawings			15.00 %	5639.40	
		3.Supply			50.00 %	18798.00	
		4.Erection & Handing Over			25.00 %	9399.00	
10	STP	Supplying, installing, testing and commissioning of required number of fine bubble diffusers in Aeration tank	Nos	172.00	2170.00	373240.00	F3.06.01.10
		1.Advance			10.00 %	37324.00	
		2.Approval of drawings			15.00 %	55986.00	
		3.Supply			50.00 %	186620.00	
		4.Erection & Handing Over			25.00 %	93310.00	
11	STP	Supplying, installing, testing and commissioning of Decanter mechanism- Manually operated valves with SS mesh, Valves -10 nos set, Make : Intervales	NOS	1.00	390450.00	390450.00	F3.06.01.11
		1.Advance			10.00 %	39045.00	
		2.Approval of drawings			15.00 %	58567.50	
		3.Supply			50.00 %	195225.00	
		4.Erection & Handing Over			25.00 %	97612.50	
12	STP	Supplying, installing, testing and commissioning of Electronic Dosing System for dosing chlorine into treated water, Capacity : 0-12 LPH, 100 ltrs, Make : Asia LMI	Nos	2.00	29000.00	58000.00	F3.06.01.12
		1.Advance			10.00 %	5800.00	
		2.Approval of drawings			15.00 %	8700.00	
		3.Supply			50.00 %	29000.00	
		4.Erection & Handing Over			25.00 %	14500.00	
13	STP	Supplying, installing, testing and commissioning of Centrifugal type	Nos	4.00	30100.00	120400.00	F3.06.01.13

04/06/2015

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Ref. No : ACEPL_CONS\F\113-EXT.SER\S00680\ACE\WO\01123\1516\A0 (FRESH)

Plumbing & Sanitary Works

S/n	Work Area	Description of Work	UOM	Quantity	Rate	Amount	WBS ID
		Monobloc pumps for Filter Feed Water inside the pump room					
		1.Advance			10.00 %	12040.00	
		2.Approval of drawings			15.00 %	18060.00	
		3.Supply			50.00 %	60200.00	
		4.Erection & Handing Over			25.00 %	30100.00	
14	STP	Supplying, installing, testing and commissioning of Pressure Sand Filter, Size : 86"x70", Media ; 6080 kgs, Make; REPL	Nos	2.00	429500.00	859000.00	F3.06.01.14
		1.Advance			10.00 %	85900.00	
		2.Approval of drawings			15.00 %	128850.00	
		3.Supply			50.00 %	429500.00	
		4.Erection & Handing Over			25.00 %	214750.00	
15	STP	Supplying, installing, testing and commissioning of Activated Carbon Filter with necessary accessories,the cost of filter shall also include initial charge of underbed & activated carbon filter, Capacity : 86"X 70", Make : REPL, Media : 2280 kgs	Nos	2.00	507500.00	1015000.00	F3.06.01.15
		1.Advance			10.00 %	101500.00	
		2.Approval of drawings			15.00 %	152250.00	
		3.Supply			50.00 %	507500.00	
		4.Erection & Handing Over			25.00 %	253750.00	
16	STP	Supply,Installation,Testing & Commissioning of Centrifuge Feed Pumps with lifting chain & guide rails of capacity 5 M3/hr at 10mtrs-Submersible cutter pumps	NOS	2.00	69270.00	138540.00	F3.06.01.16
		1.Advance			10.00 %	13854.00	
		2.Approval of drawings			15.00 %	20781.00	
		3.Supply			50.00 %	69270.00	
		4.Erection & Handing Over			25.00 %	34635.00	
17	STP	Centrifuge of capacity ; 5M3/Hr, SS304 solid bowl type, Make : Hiller	NOS	1.00	1508000.00	1508000.00	F3.06.01.17
		1.Advance			10.00 %	150800.00	
		2.Approval of drawings			15.00 %	226200.00	
		3.Supply			50.00 %	754000.00	
		4.Erection & Handing Over			25.00 %	377000.00	
18	STP	Supplying, installing, testing and commissioning of polymer dosing system, Capacity ; 100 LPH, Make : Asia	NOS	1.00	58560.00	58560.00	F3.06.01.18
		1.Advance			10.00 %	5856.00	
		2.Approval of drawings			15.00 %	8784.00	
		3.Supply			50.00 %	29280.00	
		4.Erection & Handing Over			25.00 %	14640.00	
19	STP	Supplying, installing, testing and commissioning approved make on-line UV Sterilizer- Only Provision	Nos	2.00	17500.00	35000.00	F3.06.01.19
		1.Advance			10.00 %	3500.00	
		2.Approval of drawings			15.00 %	5250.00	
		3.Supply			50.00 %	17500.00	
		4.Erection & Handing Over			25.00 %	8750.00	

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Ref. No : ACEPL_CONS/FM113-EXT.SER/IS00680/ACE/WO/01123/1516/A0 (FRESH)

Plumbing & Sanitary Works

S/n	Work Area	Description of Work	UOM	Quantity	Rate	Amount	WBS ID
20	STP	Electro Magnetic Flow Meters , Capacity : 100mm, Make : Krohne Marshal, set : 4 nos 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	LS	1.00	475500.00	475500.00	F3.06.01.20
					10.00 %	47550.00	
					15.00 %	71325.00	
					50.00 %	237750.00	
					25.00 %	118875.00	
21	STP	Compressor & Compressor Air Line, Capacity : 20m3/hr, Make : ELGI 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	Lot	1.00	156100.00	156100.00	F3.06.01.21
					10.00 %	15610.00	
					15.00 %	23415.00	
					50.00 %	78050.00	
					25.00 %	39025.00	
22	STP	Alkanity Dosing System, Capacity : 0-10 lph, Make: Asia 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	NOS	1.00	39000.00	39000.00	F3.06.01.22
					10.00 %	3900.00	
					15.00 %	5850.00	
					50.00 %	19500.00	
					25.00 %	9750.00	
		Supplying, laying, jointing, testing & commissioning approved make class 'B' G.I. pipes and fittings confirming to IS 1239 PI & II including all fittings and accessories as per drawing. i) Supplying, installing, testing and commissioning approved make G.M body ball valves confirming to PN-16 IS 1703-1977 ii) Supplying, installing, testing and commissioning approved make C.I butterfly valves confirming to PN-16 & IS13039 iii) Supplying, installing, testing and commissioning approved make C.I Check valves confirming to PN-16 & IS 5312-1969 iv) Supply, Erection, Calibration and commissioning of instruments, cables, Accessories, Mounting arrangements, termination, Junction boxes all complete including Flow Indicators, Level Switches/Controllers, Pressure Gauges and Rota Meter - PIPING SYSTEM WORKS					
23	STP	Supplying, laying, jointing, testing & commissioning Class 'B' G.I. pipes and fittings, G.M body ball valves, C.I butterfly valves, C.I Check Valves, Instruments, cables, Accessories, Mounting arrangements, termination, Junction boxes all complete including Flow Indicators, Level Switches/Controllers, Pressure Gauges and Rota Meter 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over Electrical & Instrumentation Works	Lot	1.00	1193720.00	1193720.00	F3.06.02.01
					10.00 %	119372.00	
					15.00 %	179058.00	
					50.00 %	596860.00	
					25.00 %	298430.00	
24	STP	Supplying, installing, testing and commissioning Approved make Common control panel & cable trays for Filter feed pumps, Raw sewage transfer pumps, Return sludge transfer pumps, Blowers & Screw Pumps etc 1.Advance 2.Approval of drawings 3.Supply 4.Erection & Handing Over	Lot	1.00	1150000.00	1150000.00	F3.06.03.01
					10.00 %	115000.00	
					15.00 %	172500.00	
					50.00 %	575000.00	
					25.00 %	287500.00	

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Ref. No : ACEPL_CONS/F113-EXT.SER/00680VACE/WO/01123/1516/A0 (FRESH)

Plumbing & Sanitary Works

S/n	Work Area	Description of Work	UOM	Quantity	Rate	Amount	WBS ID
Mechanical Equipment							
25	STP	Accessories for Return sludge transfer pumps like Auto coupling , Lifting hot dip galvanized, WII 0.8 mt 6 mtr and guid rails 1"-Gi pipe 12 mtrs	SET	4.00	43960.00	175840.00	F3.06.01.23
		1. Advance			10.00 %	17584.00	
		2. Approval of drawings			15.00 %	26376.00	
		3. Supply			50.00 %	87920.00	
		4. Erection & Handing Over			25.00 %	43960.00	
26	STP	Accessories for Sludge Dewatering Pumps like Auto coupling , Lifting hot dip galvanized, WII 0.8 mt 6 mtr and guid rails 1"-Gi pipe 12 mtrs	SET	2.00	43960.00	87920.00	F3.06.01.24
		1. Advance			10.00 %	8792.00	
		2. Approval of drawings			15.00 %	13188.00	
		3. Supply			50.00 %	43960.00	
		4. Erection & Handing Over			25.00 %	21980.00	
Grand Total						9668901.00	

Amount in words Rupees Ninety Six Lakhs Sixty Six Thousands Nine Hundred One Only

(Signature)

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ANNEXURE-II

THIS ANNEXURE FORMS AN INTEGRAL PART OF STP-935KLD FOR LAKE BREEZE PROJECT

A. Supply & Installation

1. Supply, installation, testing, commissioning and handing over of STP of 935 KLD capacity on SBR[Sequential Batch Reactor] process.
2. Design and makes of material used in the system shall confirm to Indian standards, BOQ, our tender document and mutual discussions & approvals. Incase of any variations, prior approval shall be taken from our AGM-MEP or VP-Projects.
3. After receiving this work order, you shall submit us shop drawings and obtain approval from AGM-MEP or VP-Projects and start the work.
4. Electrical panels SLD and instrumentation details to be submitted and approval to be taken from AGM-MEP or VP-Projects.
5. Test certificates to be provided by Revolve for all electro-mechanical equipments supplied to us.
6. Any statutory related agreemens/proposals to be taken care by Revolve. All unspecified parameters shall be as per tender document given by Aparna.
7. **Any kind of problems/defects related to design, process, workmanship or performance of the plant shall be rectified by Revolve at no extra cost to Aparna, at any given point of time for next 5 years period from the date of handing over.**
8. You should ensure, plant shall handle 935KLD input at any point of time.
9. The plant shall be handed over to us after completion of contract period in good working condition, at its full efficiency.
10. In case, any breakdown happens, provision shall be made by Aparna to transfer/bypass raw sewage through bypass line. But the plant should be stabilized by Revolve at the earliest.
11. Bypassing the raw sewage by tankers till 25% load comes into the plant shall be to Aparna scope.
12. O&M shall start immediately after handing over of plant to Aparna.



13. Supply of consumables, chemicals, lubricants shall be to Aparna scope during O & M period.
14. Over and above, all other terms and conditions shall be as per tender document which is a part of work order.

B. Taxes

The above price is inclusive of all existing taxes, duties, octroi, levies, royalties, fees, insurance, premiums, contributions towards employee benefits and funds, site establishments, infrastructure, overheads and all other charges.

WCT VAT exemption letter shall be provided by us, WCT ST shall be paid extra. All statutory deductions shall be made from your bills as applicable.

C. Payment Terms

10% advance payment along with work order

15% after approval of drawings,

50% after supply of material at site

25% after erection and handing over of the plant and submission of BG for 50% order value.

Bank Guarantee for 50% of order value valid for a period of 3 years from the date of handing over of plant to Aparna shall be submitted by Revolve.

D. Warranty

2.0 years on total plant [Electro-mechanical equipment] from the date of handing over.

E. Parameters of output water

PH	6.5 to 8.5
BOD5	250-350 mg/ltr
COD	600-800 mg/ltr
SS	400 mg/ltr
Oil & Grease	Upto 50 mg/ltr
Ecoli	10 MPN
Odour	Odourless
Color	Colorless



F.Parameters of output sewage

PH	6.5 to 8.5
BOD5	Less than 10mg/ltr
S solids	Less than 10mg/ltr
COD	Less than 60mg/ltr
Oil & Grease	Less than 10mg/ltr
E coli after treatment	Nil

G.O & M cost

1. Revolve shall exercise all good practices during their O&M period. Revolve shall run the plant efficiently and get desired outputs.
2. Based on sewage input, Revolve and Aparna shall review and arrange required manpower by Revolve.
3. Below prices of O & M are valid for 2 years from the date of handing over of plant.
4. You shall do periodic preventive maintenance at regular intervals as per approved checklist.
5. Repairs and spares cost shall be to Aparna's scope.
6. However, minor repairs shall be to Revolve scope.
7. Water test reports shall be submitted by Revolve once in a month, from the date 25% load comes into plant.

S.No	Man Power details	O & M cost per month [Rs.] valid for 2 years from the date of handing over
1	One operator in general shift and 4 visits of one supervisor & as and when required per month	Rs.25,000/-
2	Two operators in two shifts and 4 visits of one supervisor & as and when required per month	Rs.42,000/-
3	Three operators in three shifts and one supervisor in general shift and providing water test reports monthly once	Rs.80,000/-
4	Six operators in three shifts and one supervisor in general shift and providing water test reports monthly once	Rs.1,35,000/-

[Signature]

From 3rd year onwards, 7.5% per year shall be increased on previous year O & M cost.

Revolve must produce BG worth 5% of plant cost valid for next 2 years at no extra cost to **Aparna** after expiry of earlier BG.

HLAMC cost

1. In case, we opt for AMC in place of O & M, then we shall pay 2.5% of total plant cost per year after warranty period.
2. You shall do periodic preventive maintenance at regular intervals as per approved checklist during AMC period.
3. Repairs and spares cost shall be to **Aparna's** scope during AMC period.
4. However, minor repairs shall be to **Revolve** scope during AMC period.

I. Water & Electricity

We shall provide you water & electricity at one point.

J. Insurance & Others

1. You shall provide at your cost insurance coverage for all the workers, labour, workmens compensation policy and third party liability.
2. You shall be wholly responsible for full compliance with the provisions under all labour laws.
3. You shall not employ any labour less than 18 years of age on the job.
4. You shall be responsible and liable for payment for all personnel employed by you and statutory liability like PF, ESI payments under workmen compensation act.
5. You must provide us proof of compliances of above in the event of non-compliance of above, we shall deduct the same from your bills and pay to the concerned statutory authorities.
6. You shall comply with safety precautions, protective measures, house keeping requirements etc.
7. You are held responsible for non-compliances if any injuries, fatalities and compensation arising out of such incidents.
8. You shall cooperate with all other agencies at this site to ensure smooth execution of the project.

[Signature]

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4/16/15

ANNEXURE-III

THIS ANNEXURE FORMS AN INTEGRAL PART OF SCO-ACE\WO\01123\1516, DT: 01.06.15

S.No	Item Description	UOM	Qty	Unit rate
	Sewage Treatment Plant of 935 KLD			
1	Bar Screen, SS 304, Size :1000 X 600 mm of 10mm spacing Make : REPL, 6mm thick	Nos	1	31040
2	Bar Screen, SS 304, Size :1000 X 600 mm of 8mm spacing Make : REPL, 6mm thick	Nos	1	38840
3	Bar Screen, SS 304, Size :1000 X 600 mm of 6mm spacing Make : REPL, 6mm thick	Nos	1	45555
4	Raw sewage Transfer Pumps Centrifugal type, Submersible, 100M3/hr at 9 mtrs head, Make ; Grundfos	Nos	2	184260
5	Accessories for Raw sewage transfer pumps Includes Auto coupling, Lifitng chain hot dip galvanized, Guide rails & Intermediate guide rails as per site condition	Set	2	50990
6	Return sludge pump Centifugal type, Submersible, Capacity ; 20 m3/hr Head - 9 mtrs,, Make: Grundfos, 2 nos for SBR 1 & 2 nos for SBR 2	Nos	4	72255
7	Accessories for Return sludge pumps Includes Auto coupling, Lifitng chain hot dip galvanized, Guide rails & Intermediate guide rails as per site condition		4	43960
8	Blowers for SBR 1 & 2 Capacity : 690 m3/hr @ 0.65kg/cm2 for SBR 1 & 2, Make : Everest, motor make ; ABB, with anti distribution pads	Nos	2	325160
9	Blowers for Collection Tank & Sludge holding tank Capacity of Each Blower: 250 m3/hr @ 0.55 kgs/cm2 for CT & SHT, Make : Everest, set =2, Motor make : ABB, with anti distribution pads	Nos	2	134880
10	Coarse Bubble diffusers Size : 760X90mm Make ; Scogen, Retrievable type	Nos	26	1446
11	Fine Bubble diffusers Size : 1000X90mm Make ; Scogen, Retrievable type	Nos	172	2170
12	Decanter mechanism, Manually operated valves Manually operated valves with SS mesh, 10 nos set, Make :Intervalve	Nos	1	390450
13	Cholorine dosing System 0-12 Lph, 100ltrs capacity, Make : Asia LMI, manual adjustment	Nos	2	29000
14	Filer feed pumps 33m3/Hr at 30-35mtrs , Make : Kirloskar, Monoblock	Nos	4	30100
15	Pressure Sand Filter Size :86" X 70", Make: REPL, Capacity : 33m3/Hr, Media ; 6080 kgs, WS with GI alignment at bottom	Nos	2	429500
16	Activated carbon Filter Size :86" X 70", Make: REPL, Capacity : 33m3/Hr, Media : 2280 kgs, WS with GI alignment at bottom	Nos	2	507500
17	Sludge Dewatering pumps Cutter pump, Submersible, Capacity : 5m3/hr, Make :Grundfos	Nos	2	69270

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18	Accessories for Sludge Dewatering pumps	Set	2	43960
	Includes Auto coupling, Lifting chain hot dip galvanized, Guide rails & Intermediate guide rails as per site condition			
19	UV sterilizer - Only provision	Nos	2	17500
	Provision to connect two nos of UV sterilizers			
Sub Total Part - A				5086021
20	Acidity Dosing System to control PH level	Nos	1	39000
	Capacity : 0-10 Lph , Make : Asia			
21	Compressor & Compressor Air line	Lot	1	156100
	Make : ELGI, capacity : 20m3/hr at 2 kg/cm2			
22	Centifuge	Nos	1	1508000
	Make : Hiller, Capacity : 5 KLH, Solid bowl type, SS304			
23	Poly Dosing System	Nos	1	58560
	PE dosing system including SS 304 mixer 1000 ltrs, Carbouy & Pump			
Sub Total Part - B				1761660
24	Interconnecting pipes with below accessories	Lot	1	1669220
	a) Flow indicators			
	Make : Krohne marshall, Size : 100mm, Set=4 nos			
	b) Level switches / controller			
	c) Pressure guages			
	d) Rota meter			
	Valves, Make : Intervolve & Interconnecting pipes			
25	PLC and UPS with below accessories	Lot	1	1150000
	Cable & Cable Trays			
	Compartmental type STP panel, GI perforated cable trays with			
Sub Total Part - C				2819220
Grand Total				9666901

4/06/15
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Cap

18	Accessories for Sludge Dewatering pumps	Set	2	43960
	Includes Auto coupling, Lifting chain hot dip galvanized, Guide rails & Intermediate guide rails as per site condition			
19	UV sterilizer - Only provision	Nos	2	17500
	Provision to connect two nos of UV sterilizers			
Sub Total Part - A				5086021
20	Alkalinity Dosing System to control PH level	Nos	1	39000
	Capacity : 0-10 Lph , Make : Asia			
21	Compressor & Compressor Air line	Lot	1	156100
	Make : ELGI, capacity : 20m3/hr at 2 kg/cm2			
22	Centifuge	Nos	1	1508000
	Make : Hiller, Capacity : 5 KLH, Solid bowl type, SS304			
23	Poly Dosing System	Nos	1	58560
	PE dosing system including SS 304 mixer 1000 ltrs, Carbouy & Pump			
Sub Total Part - B				1761660
24	Interconnecting pipes with below accessories	Lot	1	1669220
	a) Flow indicators			
	Make : Krohne marshall, Size : 100mm, Set=4 nos			
	b) Level switches / controller			
	c) Pressure guages			
	d) Rota meter			
	Valves, Make : Intervolve & Interconnecting pipes			
25	PLC and UPS with below accessories	Lot	1	1150000
	Cable & Cable Trays			
	Compartmental type STP panel, GI perforated cable trays with			
Sub Total Part - C				2819220
Grand Total				9666901

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Cap

$P_p = 754 \text{ W}$
 $\therefore 4000 \text{ W}$
 $\frac{4000}{754}$

$$\frac{4000}{154}$$


S.No.	ITEM	TECHNICAL SPECIFICATIONS	QTY
4.1	Air Blowers for ET and SHT	<p>Type : Twin Lobe compressor consist of V-belt, Drive and Driven Pulleys</p> <p>Capacity : 250 CUM/HR at 0.55 kg/cm²</p> <p>MOC : Cast Iron</p> <p>Drive : Belt Driven Type</p> <p>Accessories : Base frames, Air filter for suction line and silencer for Discharge, safety valve & Pressure Gauge, V belt, V belt guard.</p> <p>Make : Everest</p> <p>MOTOR</p> <p>Type : Horizontal Foot Mounted motor</p> <p>Motor Rating : 12.5HP</p> <p>1 Set : 1 W + 1 S,</p> <p>Make : ABB</p>	1 Set.
5.	Coarse Bubble Diffusers	<p>Type : Coarse Bubble Diffusers</p> <p>Size : 90 MM Dia X760 mm Long</p> <p>MOC : PVC</p> <p>Make : SCOGEN</p>	26 Nos
6.	Fine Bubble Diffusers	<p>Type : Fine Bubble</p> <p>Size : 90 mm Dia x 1000 mm Long</p> <p>MOC : EPDM Membrane</p> <p>Make : SCOGEN</p>	172 Nos
7.	Decanter Mechanism	<p>Supply ,Installation, Testing and Commissioning of Heavy Duty Piping inside SBR Tanks with Manually operated Butterfly Valves and with SS Mesh at outlet.</p> <p>Valves make: Intervolve</p>	01 Lot
8.	Chlorine Dosing System	<p>Capacity : 0-12 Lph with manual adjustment</p> <p>MOC : PP</p> <p>Make : Asia LMI</p> <p>Dosing Tank Volume : 100 Ltrs</p> <p>MOC of Tank : HDPE</p> <p>Make : Sintex</p>	2 Nos



S.No.	ITEM	TECHNICAL SPECIFICATIONS	QTY
9.	Filter Feed Pumps	Type : Monoblock, Centrifugal. Capacity : 33 m3/Hr Head : 30-35 mtrs MOC : CI Motor Rating : 5.5 KW Make : Kirloskar	4 Nos
10.	Pressure Sand Filter	Type : Vertical Cylindrical Capacity : 33 M3/Hr Filtration Velocity : 9 M3/M2/Hr Make : REPL Size : 2200mm x 1800mm Shell Thickness : 8 mm Dish Thickness : 10 mm Design Pressure : 3Kg/Cm2 Test Pressure : 5Kg/Cm2 Internal Finish : Epoxy Paint External Finish : Anti Corrosive Paint Filter Media : Graded sand Pebbles of Various sizes Quantity : 6080 Kgs Accessories : MS 'B' Class Frontal piping with Manual Butterfly valves	2 Nos
11.	Activated Carbon Filter	Type : Vertical Cylindrical Capacity : 33 M3/Hr Filtration Velocity: 9 M3/M2/Hr Make : REPL Size : 2200mm x 1800mm Shell Thickness : 8 mm Dish Thickness : 10 mm Design Pressure : 3Kg/Cm2 Test Pressure : 5Kg/Cm2 Internal Finish : Epoxy Paint External Finish : Anti Corrosive Paint Filter Media : Carbon Quantity : 2280 Kgs Accessories : MS 'B' Class Frontal piping with Manual Butterfly valves	2 Nos

George

S.No.	ITEM	TECHNICAL SPECIFICATIONS	QTY
12	Compressor & compressed Air for Filter Back wash	Capacity: 170Lts Make: ELGI/Eq Compressed Air Line: GI Make: Jindal	1Set
13	Centrifuge Feed pumps with lifting chain and guide rails	Type : Grinder system Capacity : 5 KLH Head : 15 mtrs; MOC : CI Motor Rating : 1.2 KW Qty : (1W+1S) Make : Grundfos	2 Nos.
13.1	Centrifuge System with motor	Type : Solid bowl type centrifuge Moc of Wetted parts: SS 304 Moc of Housing :Carbon steel Capacity : 5 KLH % of Inlet solid concentration : 1-2%w/w Solids in cake : up to 20%w/w depending on inlet solid concentration Recovery : 90-95%w/w without poly dosing Poly dosing :1.5-2.5kg/ ton of Dry solids at concentration of 0.1%w/w Make : Hiller.	1 No
13.2	Poly Dosing System	Capacity : 100 Lph MOC : PP Make : Asia Lmi Dosing Tank Volume : 1000 Ltrs MOC of Tank : HDPE Make : Sintex	1 No
14	UV Sterilizer	Provision to connect two nos of UV sterilizers	2 Nos
15	Alkanity Dosing System	Capacity : 0-10 Lph MOC : PP Make : Asia Lmi Dosing Tank Volume : 100 Ltrs MOC of Tank : HDPE Make : Sintex	1 No

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S.No.	ITEM	TECHNICAL SPECIFICATIONS	QTY
12	Compressor & compressed Air for Filter Back wash	Capacity: 170Lts Make: ELGI/Eq Compressed Air Line: GI Make: Jindal	1Set
13	Centrifuge Feed pumps with lifting chain and guide rails	Type : Grinder system Capacity : 5 KLH Head : 15 mtrs; MOC : CI Motor Rating : 1.2 KW Qty : (1W+1S) Make : Grundfos	2 Nos.
13.1	Centrifuge System with motor	Type : Solid bowl type centrifuge Moc of Wetted parts: SS 304 Moc of Housing :Carbon steel Capacity : 5 KLH % of Inlet solid concentration : 1-2%w/w Solids in cake : up to 20%w/w depending on inlet solid concentration Recovery : 90-95%w/w without poly dosing Poly dosing :1.5-2.5kg/ ton of Dry solids at concentration of 0.1%w/w Make : Hiller.	1 No
13.2	Poly Dosing System	Capacity : 100 Lph MOC : PP Make : Asia Lmi Dosing Tank Volume : 1000 Ltrs MOC of Tank : HDPE Make : Sintex	1 No
14	UV Sterilizer	Provision to connect two nos of UV sterilizers	2 Nos
15	Alkanity Dosing System	Capacity : 0-10 Lph MOC : PP Make : Asia Lmi Dosing Tank Volume : 100 Ltrs MOC of Tank : HDPE Make : Sintex	1 No

Cecilia

S.No.	ITEM	TECHNICAL SPECIFICATIONS	QTY
B	Piping, Fittings, Valves	Supply, Installation, Testing and commissioning all interconnecting piping (PB) within the plant room GI B Class Piping : Jindal Valves : Intervolve	1 Lot.
	Flow meter at each filter outlet	Size : 100mm Type : Electro Mechanical Make : Krohne Marshal	4 Nos
C	Control Panel	Supply, Installation, Testing and commissioning of suitable compartmental type control panel for electro mechanical items mentioned above with spare feeders for Ventilation, dewatering, tank cleaning pumps, back wash pumps and HNS System Make: Power Max	1 No.
	Cable & Cable Trays	Supply, Installation, Testing and commissioning of GI Perforated cable trays with armoured cables of Aluminum/Copper. Cable Make: Polycab	1 Lot.

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