

AMARAVATI METROPOLITAN REGION DEVELOPMENT AUTHORITY

Lenin Center, Governorpet, Vijayawada, Andhra Pradesh - 520002

Phone: 0866 – 2577475 Fax: 0866 – 2577357

File no. CRDA-14023(40)/3/2018-ENV1-LEENV-APCRDA

To

**Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (SEZ),
1st and 2nd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai – 600 034**

Sir,

Sub: AMRDA – Environmental clearance – 1st half yearly Compliance report – 2020 for Interim Government Complex Buildings, Amaravati – Submission – Regarding.

Ref: Order No. SEIAA/AP/GNT/CON/01/2016/18 Dt:09.02.2016.

Adverting to the reference cited above and as per the General Condition No. (iii) of the Environmental clearance, I am herewith submitting the 1st half yearly compliance report for the year 2020 for Interim Government Complex Buildings, Amaravati.

Encl:

1st HY 2020-EC Compliance Report.

**(Dr.P.Lakshmi Narasimhan,IAS)
Metropolitan Commissioner:AMRDA**

Copy to:

The Chairman, State Level Environment Impact Assessment Authority (SEIAA), AP, D.No. 33-2614 D/2, Near Sunrise Hospital, Pushpa Hotel center, Chalamavari street, Kasturibaipet, Vijayawada–520010 for information.

Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)

1st Half Yearly Compliance Report for 2020

Part-A: Special Conditions:

S.No	EC Conditions	Compliance status
1	The project falls within in the “Greenfield Capital City Amaravati” which was accorded Environmental clearance vide order No. SEIAA/AP/GTN- 151/2015, dated 09.10.2015 and the project proponent shall comply with EC conditions applicable to this construction project.	Noted and compliance to the applicable conditions are given in annexure 1.
2	The project proponent shall provide adequate parking space for the vehicles of the staff and visitors.	Adequate parking space has been provided inside the complex.
3	The project proponent shall provide parking for the vehicles of visitors in two areas at designated places around the complex and in the public facilities area adjoining the complex.	Separate parking spaces are provided on eastern side of the complex for the floating population.
4	The proponent shall provide the sewage treatment plant (STP) of 150KLD. As the treated effluent is proposed for recycle, suitable disinfection system is to be provided in addition to the STP.	A STP with a capacity of 0.5 MLD is under operation and is provided with hypochlorite dosing pump for disinfection.
5	Dual Plumbing system to be provided for reuse of the treated effluent for flushing and other purposes.	The treated waste water is being used for the maintenance of greenery within the complex.
6	Solar Energy systems to be planned to utilize at least one third of the roof area to generate 1.2 MW of solar power as committed. The proponent shall meet at least 10% of the total energy requirement for the complex through the solar energy sources.	Roof top solar plant of capacity 842.5 KW was installed and Two Solar Trees of total capacity 20.8 KW were installed near the parking space. An average 16% of the total energy requirement of the complex is being met from the Roof top solar plant.
7	The building shall be designed for compliance with earth quake resistance and resisting other natural hazards.	The building was designed in compliance with earth quake resistance and to resist from other natural hazards.
8	The proponent shall use fly ash based products for construction, such as cement or concrete, fly ash bricks or tiles or clay fly ash bricks, blocks, or tiles or cement fly ash bricks or similar products or a combination or aggregate of them as required under MoEF Notifications S.O. 763(E) dt 14.09.1999 amended thereof.	Fly ash based Autoclaved Aerated Concrete bricks were used in construction.

**Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)**

9	The proponent shall use fly ash for filling/levelling purposes as required under the MoEF notification S.O. 763(E)dt 14.09.1999 amended thereof.	C & D waste was used in for filling and levelling the site.
10	Provision of Rain water Harvesting is to be made for collection, usage and also for ground water table maintenance.	Noted.
11	The proponent shall use only LED lights in the common areas and internal roads.	LED lights were used in the common areas and internal roads.
12	The proponent shall ensure availability of funds toward operation and maintenance of the STP.	Noted.
13	The proponent shall obtain required clearances if any from all regulatory departments including fire department, before starting the construction.	Noted.
14	The proponent shall develop green cover in an area not less than 10% of the complex area in addition to green cover in set-back areas.	Around 26% of the total land area is developed and maintained as green cover.
15	The proponent shall utilize excess treated waste water after recycling for gardening and for watering of avenue plantation in the area.	The treated waste water is being used for the maintenance of greenery within the complex.

Part-B Specific Conditions:

I. Construction Phase:

S.No	EC Conditions	Compliance status
1	Provision shall be made for the housing of the construction labour within/nearby the site with all necessary infrastructure and facilities such as safe drinking water, fuel for cooking, mobile toilets, mobile STP, Medical health care, crèche etc., the housing may be in the form of temporary structures to be removed after the completion of the project. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	Complied.
2	A First Aid Room shall be provided in the project both during construction and operation of the project.	Complied.
3	All the topsoil excavated during construction activities should be stored for use in Horticulture/Landscape development within the project site.	The excavated topsoil during construction activities was used within the site for the development of landscape.
4	Disposal of muck/debris during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary	Complied.

**Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)**

	precautions for general safety and health aspects of people, only in approved sites within the approval of competent authority.	
5	Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.	Water samples have been tested and no toxic contaminants were found.
6	Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate water courses and the dumpsites for such material must be secured so that they should not leach into the ground water.	Care was taken with respect to all materials on site to avoid any contact or leaching into the water courses and ground water.
7	Any Hazardous waste including Biomedical waste, if any should be disposed of as per applicable rules and norms with necessary approval of the Andhra Pradesh Pollution Control Board.	No hazardous wastes or Bio medical wastes generated.
8	The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environment Protection rules prescribed for air and Noise emissions.	Complied.
9	Vehicles hired for bringing construction material to the site should be in good condition and should conform to applicable air and noise emissions standards and should be operated only during non-peak hours.	The vehicles hired for transportation of construction material were of good condition and were regularly maintained to limit the air and noise emissions.
10	Ambient noise levels should conform to the residential standards both during day and night as notified by the MoEF&CC, GOI from time to time. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase.	Complied.
11	Prefabricated/readymade blocks/ready mixed concrete must be used in building construction.	The construction was done using the autoclaved aerated concrete blocks and ready mix concrete. Ready mix concrete plant was established adjacent to the site.
12	Storm water control and its reuse shall be as per CGWB and BIS standards for various applications.	The storm water drains were provided throughout the site.
13	Permission to draw ground water shall be obtained from the competent authority prior to construction/operation of the project, if any.	Only surface water, sourced from River Krishna was used for construction.
14	Water demand during construction should be reduced by reuse of pre-mixed concrete, curing agents and other best practices referred.	The water demand during construction is reduced by using ready mixed concrete.
15	Fixtures for showers, toilet flushing and drinking should be of low flow either by use	Complied.

**Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)**

	of aerators or pressure reducing devices of sensor based control.	
16	Minimum use of glass shall be made to reduce the electricity consumption and load on air-conditioning. If necessary, high quality double glass with special reflective coating in window is to be used.	Double glazing glass units were used for the building.
17	Roof should meet prescriptive requirement as per energy conservation building code by using appropriate thermal insulation material to fulfil requirement.	Complied.
18	Adequate measure to reduce air and noise pollution during construction keeping in mind CPCB norms.	Adequate measures were taken during construction phase to reduce air and noise emissions.
19	Opaque wall should meet prescriptive requirement as per Energy Conservation Building Code which is proposed to be mandatory for all air conditioned spaces while it is aspirational for non-air conditioned spaces by use of appropriate thermal insulation material to fulfil requirement.	Complied.
20	The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipment, etc. as per National Building Code including protection measures from lightening etc.	Complied.
21	Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.	Complied.

II. Occupational Phase:

S.No	EC Conditions	Compliance status
1	<ul style="list-style-type: none"> The installation of Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the SEIAA before the project is commissioned for operation. Discharge of treated sewage shall conform to the norms and standards of the Andhra Pradesh Pollution Control Board. Sewage treatment plant should be monitored on a regular basis. No waste water shall be discharged outside the premises until outlet is connected to public sewer line with terminal treatment facility. 	<p>Yes, complied. The certification from the independent expert is already submitted.</p> <p>The analysis results of the treated waste water are attached in Annexure 2.</p> <p>Treated waste water from the STP is being used for greenery development within the complex.</p>

**Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)**

2	Rainwater Harvesting for roof run-off should be implemented. Before recharging the surface runoff, pre-treatment must be done to remove suspended matter, oil and grease.	Noted.
3	The solid waste generated should be properly collected and segregated and will be sent for disposal as per MSW rules.	Noted. Segregated dry and wet waste is being collected and handed over to panchayat for final disposal.
4	The D.G. sets shall be provided with acoustic enclosures and adequate stack height as per the CPCB norms. The fuel used for the diesel generator sets should be low sulphur diesel and should conform to E (P) rules prescribed for air and noise emission standards.	The D.G sets installed are as per the ARAI norms. Fuel used for DG sets is of low sulphur and the air and noise emissions will be complied.
5	The greenery design along the periphery of the site shall achieve attenuation factor conforming to the day and night noise standards for the prescribed land use by the MoEF&CC, GOI/CPCB. The open spaces inside the complex should be suitably landscaped and covered with vegetation of indigenous variety. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with prevalent regulations.	The complex is developed with two parks, courtyard garden, peripheral plantation using natives species and ornamental species. Interim government complex is the state secretariat and activities are restricted to day time.
6	Incremental pollution loads on the ambient air quality, noise and water quality should be periodically monitored after commissioning of the project.	Ambient Air Quality data of the IGC is Attached in Annexure 3.
7	Application of the solar energy should be incorporated for illumination of the common areas, lighting of gardens and street lighting in addition to provision for solar water heating. A hybrid systems or fully solar system for a portion of the complex should be provided by utilizing at least 1/3 rd roof area for the solar energy system to generate 1.2 MW of solar power as committed. The proponent shall meet at least 10% of the total energy requirement for the complex through the solar energy sources.	Roof top solar plant is installed and an average 16% of the total complex energy requirement is being met from the roof top solar.
8	Traffic congestion near the entry and exit points from the road adjoining the proposed project site must be avoided. Visitors and staff parking must adhere to the Master Plan standards.	Adequate parking space of around 10 acres has been provided within the complex.
9	Adequate number of parking spaces shall be provided for visitor vehicles. Rest room facilities provided for floating population. The proponent shall provide public convenience facilities such as toilets, bathrooms, waiting rooms etc. for the visitors	Adequate parking spaces are provided for visitors. Toilets for men and women were constructed for visitors.

**Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)**

	to the complex so as to maintain cleanness/hygienic conditions in the surroundings of the project.	Waiting areas at bus shelters and at security buildings were provided for visitors.
10	The proponent shall comply with energy conservation practices, energy efficient practices and energy audit practices. Green building concepts shall be adopted as stipulated in the EC accorded to capital city project. Use of Solar Panels may be done to the Extent possible.	<p>Energy conservation practices are adopted. Sensor based LED lights, solar trees, roof top solar plant etc are provided.</p> <p>Parameters considered</p> <p><u>Energy conservation</u></p> <ul style="list-style-type: none"> • Infrared sensor based light fixtures and temperature sensor based VRV indoor units. • LED lights with motion sensors • All inductive loads are considered with three star and above efficiency ratings along with the IE ratings of not less than 3 and suitable capacitor banks has been used in the APFC panels to maintain the highest possible power factor. (>0.95). <p><u>Energy audit practice</u></p> <ul style="list-style-type: none"> • Electrical installations are done by Class A Government license holder employed by the contractor, • Prior to testing and commissioning of the electrical installations the same were approved by AP state CEIG and cross checked by the APSPDCL officials. <p><u>Green Building concept</u></p> <ul style="list-style-type: none"> • Solar power panels are being used to energize the compound wall and the complex and every building main distribution panel has been provided with an incomer ACB for solar power panels on the terrace. • STP recycled water is currently being used for irrigation and provision has also been made to provide soft water for future provisioning of chiller. <p>DG exhaust has been taken to the height considering the PCB norms for the environmental clearance.</p>

**Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)**

11	Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.	Odour control measures through plantation has been taken up. Daily disposal of solid waste is taken up.
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Part - C. General Conditions:

S.No	EC Conditions	Compliance status
1	This order is valid for a period of 7 years.	Noted
2	“Consent for Establishment” shall be obtained from Andhra Pradesh Pollution Control Board under Air and Water Act before the start of any construction work at site.	Consent for Establishment has been obtained vide order No. 373/APPCB/CFE/RO-GNT/HO/2016 Dt:20.02.2016
3	The proponent shall submit half-yearly compliance reports in respect of the terms and conditions stipulated in this order & monitoring reports in hard and soft copies to the SEIAA and Ministry's Regional office, Chennai on 1st June and 1st December of each calendar year.	It is being complied.
4	Officials from the Regional Office MoEF&CC, Chennai who would be monitoring the implementation of environmental safeguards should be given full co-operation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents shall be submitted to the CCF, Regional Office, MoEF&CC, Chennai.	Noted
5	In the case of any change (s) in the scope of the project, the project would require a fresh appraisal by this SEIAA. No further expansion or modifications in the project shall be carried out without prior approval of the SEIAA, AP.	Noted
6	The project proponent shall submit the copies of the environmental clearance to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	Complied.
7	The proponent shall obtain clearance from fire department. All other statutory clearances shall be obtained, as applicable by project proponents from the	Complied.

Compliance Status on Environmental Clearance Conditions of Interim Government Complex
(Order No. SEIAA/AP/GNT/CON/01/2016/18, Dated: 09.02.2016)

	competent authorities.	
8	The project proponent should advertise in at least two local News paper widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the Andhra Pradesh Pollution Control Board. The advertisement should be made within 7 days from the day of issue of the clearance letter and a copy of the same should be forwarded to the Regional Office of MOEF&CC at Chennai.	Complied.
9	The funds earmarked for environmental measures (capital cost- Rs. 1335 Lakhs and recurring cost Rs.159 Lakhs/annum) should be kept in separate budget head and should not be diverted for other purpose. Year wise expenditure should be reported to the SEIAA and Ministry's Regional Office located at Chennai.	Noted
10	Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Noted
11	The SEIAA may revoke or suspend the order, if implementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.	Noted
12	Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986 without any prior notice.	Noted
13	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.	Noted

P. *[Signature]*
Authorized Signature
11/11/20

Annexure 1

Capital City Environmental Clearance Condition wise Compliance with respective to Interim Government Complex Buildings

S. No.	EC Conditions	Compliance Status
Water Environment		
7	Water pumping system and sewage conveyance and treatment systems are energy intensive and as such the proponent shall follow Bureau of Energy Efficiency Norms.	It is complied
12	All roads should have rain water drains connected separately (from the sewage network) to the treatment facility of the zone.	Noted
15	The proponent shall prepare water footprint and carry auditing every year.	Noted
Air Environment		
13	The proponent shall ensure installation of solar panels by all buildings by allocating at least 1/3 of roof top for this purpose. This is in addition to installation of solar heaters. The proponent shall incorporate these guidelines in Bye-laws.	Roof top Solar plant of capacity 842.5 KW was installed and Two Solar Trees of total capacity 20.8 KW were installed near the parking space.
14	The proponent shall incorporate energy efficiency guidelines (Energy Conservation Building Code) and Green Building Concepts (GRIHA/IGBC/LEED) in the Bye-laws. Buildings shall utilize natural lighting and ventilation to the maximum extent. All point light sources shall be CFL or LEDs or equivalent. All linear light sources shall be T-5 or atleast 4* BEE rated TFLs or equivalent. The distributed cooling system shall be at least BEE 3* rated products. All the major buildings having connected load of more than 100 KW shall maintain power factor of above 0.95. All multi story residential apartment / complexes shall meet atleast 15% of total external lighting load through renewable energy sources and all commercial, institutional, industrial and mixed use buildings shall meet atleast 5% of the total lighting loads through the renewable energy sources. All residential buildings having plot area of more	Noted

Annexure 1

	<p>than 500 Sq.mtrs., multi story residential apartments / complexes, hotels and banquet halls, hospitals, all government buildings, residential schools, educational institutes, hostels and industries requiring hot water shall install solar water heating systems to meet at least 20% of hot water requirement. 24 hours use buildings like hospitals, hotels, call centers, shall ensure that thermal performance of external walls and roof shall conform to ECBC 2007 requirements i.e., maximum U-factor (W/m²K) of 0.44 and 0.261 respectively and for day time use buildings U-factor of 0.44 and 0.409 respectively. U-factor for windows shall not be more than 3.30. All major buildings and complexes shall meet Energy Performance Index of less than 150kWh/Sq.m per year. All commercial buildings with connected load of 100kW and above shall invariably comply with energy conservation building code. All the Capital complexes, Commercial, institutional and major residential complexes should be constructed following Green Building concepts and ensure – energy efficiency, low carbon footprint, resources conservation etc. The proponent shall ensure that all the bulk consumers of the energy, shall meet a greater part of their demand through renewable energies and avoid use of fossil fuels; The proponent shall incorporate these in Bye-laws.</p>	
Solid Waste Management		
1	<p>The proponent shall ensure that occupiers of all premises to keep two receptacles, one for the storage of food / organic / biodegradable waste and another for non biodegradable / recyclable and other types of solid waste generated. Hazardous waste generated by households shall be kept separately in suitable container as and when such a waste is generated.</p>	<p>Noted. Segregated dry and wet waste is being collected and handed over to panchayat for final disposal.</p>
8	<p>The proponent shall ensure that a separate adequate space for segregation / storage and decentralized processing of solid waste is</p>	<p>Segregated dry and wet waste is being collected and handed over to panchayat for final disposal.</p>

Annexure 1

	demarcated in the plan for group housing or commercial / institutional or any non residential complex exceeding 200 dwellings or having a plot area of more than 10000 Sq.mtrs.	
16	Proponent shall ensure proper collection and scientific disposal of sludge from the water treatment plants, sewage treatment plants, water seal latrines and septic tanks.	Noted
20	The proponent shall ensure usage of fly ash for levelling / reclamation of low lying areas, road embankments, for raising platforms in inundated areas, and usage of fly ash based products for construction purpose including fly ash bricks, PPC cement, Concrete etc., in compliance with Fly Ash Notification issued by the MoEF under Environment (Protection) Act. The proponent shall incorporate usage of fly ash by construction agencies in the Bye-laws.	Fly ash bricks (Autoclaved Aerated Concrete bricks) were used in construction.
Ecology		
2	All construction activities by the proponent should ensure that the activities do not alter or do not adversely affect the water bodies and their ecology;	It is complied
4	No untreated or treated wastewater shall be discharged in any of the water bodies including Krishna River under any circumstances.	It is complied
8	A buffer of 30m on either side of canals and streams; 50m around water bodies and 100m along the Krishna River Front shall be reserved as greenbelt without allowing any development. Plantation along the side of the roads and in the open spaces shall be developed to act as sinks of air pollutants.	It is complied. No water bodies located around the site
12	The proponent shall utilize treated sewage water for irrigation of primary and secondary green areas by laying pipeline network.	It is being complied. The treated waste water is being used for the maintenance of greenery within the complex.
24	Mitigation measures like providing adequate drainage, embankment consolidation and slope stabilization shall be taken on the built up areas and along the city roads to avoid soil erosion.	It is complied

Annexure 1

	Top soils (30 cm) of the borrow pit sites shall be conserved and restored after completion of excavation. All the topsoil excavated during construction activities shall be stored for use in horticulture / landscape development within the project site. Proper erosion control and sediment control measures shall be adopted.	
Environmental Management during Construction Phase		
1	The proponent shall ensure safe and secure accommodation, clean drinking water, hygienic sanitation facilities like mobile toilets, community level gas supply, rest areas for female workers, nutrition development programme for workers at all construction sites for the projected work force of 5000 – 10000 spread in about 40 labour camps as committed in EIA report.	It is complied
2	<p>The proponent shall ensure following mitigation measures as committed, to minimize pollution problems during construction stage.</p> <ul style="list-style-type: none"> • All the loose material either stacked or transported shall be provided with suitable covering such as tarpaulins etc. • Water sprinkling shall be done at the location where dust generation is anticipated. • Construction equipment be maintained and serviced regularly such that the gaseous emissions from these equipment are maintained within the design specifications. • Provision for insulating caps and aids at the exit of noise source on the machinery. • The use of dampening materials such as thin rubber/ lead sheet for wrapping the work places like compressors, generator, etc. • Inlet and outlet mufflers shall be provided. • Earmuffs shall be provided to workers and enforced to be used by the workers. • Noise prone activities shall be restricted to the extent possible 	It is complied

Annexure 1

	during the night time, in order to have minimum environmental impact on the workers as well as on the neighbourhood.	
3	Groundwater should not be used for any activities during the construction phase also; and a policy for the use of water by different users in the project area be developed for their sustainable use and submitted.	It is complied
General Conditions		
1	Any change(s) in the scope of the project, shall require a fresh appraisal by the SEIAA. As the details of the Inter Linked Projects for the Government Complexes, Housing Complexes, Cultural Centers, Industrial / IT Park, Commercial Complexes, Education Institutions etc. have not been submitted with-respect to built-up area, excavation, water consumption, sewage generation, solid wastes generation, power requirement, pollution control arrangements, environmental safeguards, construction material etc. for construction and operation phases, the respective project proponents shall obtain separate Environmental Clearances for all the projects which falls under the schedule of Environment Impact Assessment Notification, 2006 from State Level Environmental Impact Assessment Authority, as per provisions of Environment Impact Assessment Notification 2006.	Noted
6	The environmental statement for each financial year ending 31st march in Form-V as mandated is to be submitted by the project proponent to the A.P. Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the Proponent along with the status of compliance of environmental clearance conditions and shall also be sent to the Regional office of the MoEF & CC, Chennai by e-mail.	Noted

Annexure 1

Hon'ble NGT Final Judgement - Conditions		
5	All bulk generators of municipal solid waste in the proposed constructions, both residential and non-residential, must necessarily segregate waste at the source and process entire biodegradable waste by composting or biomethanation within the premises.	Segregated dry and wet waste is being collected and handed over to panchayat for final disposal.
6	The State or its instrumentalities should notify Building bye laws for rain water harvesting, use of solar energy, to have water saving fittings and fixtures in buildings, including use of treated grey water for non-consumptive uses like flushing and gardening and other horticultural and agricultural uses.	It will be complied.

ANNEXURE - 2



Aqua Engineers and Consultants India Pvt Ltd
(An ISO 9001 : 2015 Certified Company)
Innovative Technologies For Sustainable Solutions...

TEST REPORT

Test Report No: AECIPL/L&T AP /2019-20/1640

Date: 31.03.2020

SAMPLE SUBMITTED BY THE CUSTOMER AND IDENTIFIED AS : TREATED SEWAGE WATER.

CUSTOMER NAME AND ADDRESS : Larsen & Toubro Construction,
AP Secretariat Interim Complex,
Velagapudi Village Guntur District
Andra pradesh - 522503.

SAMPLE DESCRIPTION : Treated sewage water.

SAMPLE QUANTITY : 2 Litres

PACKING : Received in 1Litre plastic Bottle.

SAMPLE RECEIVED ON : 23.03.2020

ANALYSIS STARTED ON : 24.03.2020

ANALYSIS COMPLETED ON : 30.03.2020

Tests	Test Method	Result	TNPCB limits
pH	4500-H+-B APHA 22 nd Edition 2012	7.4	5.5 - 9.0
Total suspended solids	2540-D- APHA 22 nd Edition 2012	11 mg/l	<30 mg/l
BOD 5 days @ 20 deg	5210-B APHA 22 nd Edition 2012	17 mg/l	<20 mg/l
COD	5220-B APHA 22 nd Ed. 2012	35 mg/l	250 mg/l

End of Report

Authorized Signatory

Page 1 of 1

Note: 1) this test report relates only to the items tested. 2) This test report shall not be reproduced anywhere except in full and in same format without the approval of the laboratory. 3) Sample is not drawn by us unless otherwise stated. 4) Retention period of tested samples is 15 days from the date of issue of test report unless otherwise specified.

Corporate Office :
Chennai
No.5 IGP Complex,
First Floor, Near Porur Tollplaza
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Chennai - 600 095, Tamil Nadu, India.
Phone : +91-44-66444190

Branch Office
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MES Ring Road, Mythyala Nagar,
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Karnataka, India

Branch Office
Kochi
No.33/195, Arakkadava Road,
Alinchavadu, Vennala,
Kochi - 682028,
Kerala, India.



K. Raja Ramesh
31/3/20

ANNEXURE - 3



CENTRAL POLLUTION CONTROL BOARD

CONTINUOUS AMBIENT AIR QUALITY

State Andhra Pradesh
City Amaravati
Station Secretariat, Amaravati - APPCB
Parameter NO₂,SO₂,CO,Ozone,PM₁₀,PM_{2.5},NH₃,Benzene
AvgPeriod 24 Hours
From 01-03-2020T00:00:00Z 00:00
To 31-03-2020T12:33:59Z 00:00

Secretariat, Amaravati - APPCB						
Prescribed Standards		0-200	0-80	0-4	0-180	0-1000
Exceeding Standards		NA	NA	NA	NA	NA
From Date	To Date	NO ₂	SO ₂	CO	Ozone	PM ₁₀
01-03-2020 00:00	02-03-2020 00:00	8.52	19.71	0.49	51.55	56.54
02-03-2020 00:00	03-03-2020 00:00	12.16	24.35	0.58	46.82	61.41
03-03-2020 00:00	04-03-2020 00:00	10.51	23.31	0.57	44.65	63.64
04-03-2020 00:00	05-03-2020 00:00	12.2	17.43	0.55	38.44	57.35
05-03-2020 00:00	06-03-2020 00:00	7.56	20.46	0.48	26.82	31.39
06-03-2020 00:00	07-03-2020 00:00	5.33	16.26	0.49	30.32	30.95
07-03-2020 00:00	08-03-2020 00:00	6.76	12.63	0.52	26.4	25.39
08-03-2020 00:00	09-03-2020 00:00	8.14	29.26	0.49	25.45	22.4
09-03-2020 00:00	10-03-2020 00:00	10.27	16.99	0.54	17.25	23.69
10-03-2020 00:00	11-03-2020 00:00	7.59	25.08	0.48	23.95	21.84
11-03-2020 00:00	12-03-2020 00:00	5.73	21.34	0.48	24.54	18
12-03-2020 00:00	13-03-2020 00:00	5.54	16.91	0.49	25.64	26.25
13-03-2020 00:00	14-03-2020 00:00	6.04	14.46	0.46	25.91	34.99
14-03-2020 00:00	15-03-2020 00:00	8.51	22.86	0.5	27.28	44.24
15-03-2020 00:00	16-03-2020 00:00	7.68	21.85	0.47	29.49	44.82
16-03-2020 00:00	17-03-2020 00:00	9.19	20.71	0.58	30.64	46.79
17-03-2020 00:00	18-03-2020 00:00	8.81	21.01	0.64	36.15	48.7

18-03-2020 00:00	19-03-2020 00:00	9.43	14.66	0.58	31.11	36.47
19-03-2020 00:00	20-03-2020 00:00	8.23	20.38	0.55	31.9	35.2
20-03-2020 00:00	21-03-2020 00:00	7.1	25.88	0.49	28.72	28.21
21-03-2020 00:00	22-03-2020 00:00	5.12	24.96	0.49	25.96	26.51
22-03-2020 00:00	23-03-2020 00:00	4.36	20.78	0.49	26.97	43.33
23-03-2020 00:00	24-03-2020 00:00	4.66	25.4	0.46	28.99	50.61
24-03-2020 00:00	25-03-2020 00:00	4.84	21.1	0.46	28.31	39.79
25-03-2020 00:00	26-03-2020 00:00	4.32	19.08	1.51	27.85	35.6
26-03-2020 00:00	27-03-2020 00:00	4.98	18.74	0.73	29.78	43.64
27-03-2020 00:00	28-03-2020 00:00	4.74	21.41	0.2	38.19	51.74
28-03-2020 00:00	29-03-2020 00:00	4.74	21.97	0.25	41.35	51.58
29-03-2020 00:00	30-03-2020 00:00	5.16	19.13	0.36	38.49	53.33
30-03-2020 00:00	31-03-2020 00:00	5.24	22.28	0.39	42.38	58.93
31-03-2020 00:00	31-03-2020 12:33	4.7	21.75	0.17	30.14	46

Prescribed Standards
Exceeding Standards

0-1000
NA

0-400
NA

NA
NA

From Date	To Date	PM2.5	NH3	Benzene
01-03-2020 00:00	02-03-2020 00:00	33.53	12.66	0.26
02-03-2020 00:00	03-03-2020 00:00	39.88	12.82	0.26
03-03-2020 00:00	04-03-2020 00:00	39.84	12.79	0.27
04-03-2020 00:00	05-03-2020 00:00	35.36	12.14	0.27
05-03-2020 00:00	06-03-2020 00:00	19.54	10.8	0.12
06-03-2020 00:00	07-03-2020 00:00	18.54	10.2	0.13
07-03-2020 00:00	08-03-2020 00:00	13.94	10.53	0.13
08-03-2020 00:00	09-03-2020 00:00	10.19	8.32	0.1
09-03-2020 00:00	10-03-2020 00:00	13.06	9.42	0.1
10-03-2020 00:00	11-03-2020 00:00	10.45	9.47	0.09
11-03-2020 00:00	12-03-2020 00:00	10.65	8.77	0.03
12-03-2020 00:00	13-03-2020 00:00	13.51	10.57	0.01
13-03-2020 00:00	14-03-2020 00:00	18.58	8.95	0.02
14-03-2020 00:00	15-03-2020 00:00	23.83	9.87	0.12
15-03-2020 00:00	16-03-2020 00:00	25.93	9.88	0.18
16-03-2020 00:00	17-03-2020 00:00	26.83	10.83	0.18

17-03-2020 00:00	18-03-2020 00:00	29.83	9.93	0.18
18-03-2020 00:00	19-03-2020 00:00	20.28	9.28	0.11
19-03-2020 00:00	20-03-2020 00:00	18.11	9.37	0.11
20-03-2020 00:00	21-03-2020 00:00	15.07	10.06	0.07
21-03-2020 00:00	22-03-2020 00:00	14.08	8.58	0.04
22-03-2020 00:00	23-03-2020 00:00	25.86	10.17	0.06
23-03-2020 00:00	24-03-2020 00:00	26.19	8.63	0.07
24-03-2020 00:00	25-03-2020 00:00	17.42	7.58	0.09
25-03-2020 00:00	26-03-2020 00:00	16.71	7.61	0.08
26-03-2020 00:00	27-03-2020 00:00	23.64	7.9	0.14
27-03-2020 00:00	28-03-2020 00:00	25.47	8.21	0.09
28-03-2020 00:00	29-03-2020 00:00	24.92	7.88	0.08
29-03-2020 00:00	30-03-2020 00:00	26.79	7.94	0.13
30-03-2020 00:00	31-03-2020 00:00	29.86	7.95	0.09
31-03-2020 00:00	31-03-2020 12:33	24.18	8.47	0.06