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CIN : U40102TN2006PTC060009

(Under Corporate Insolvency Resolution Process vide order of Hon'ble NCLT dated 04.02.2022)

CEPL/ENV/2022 -23/01

July 29, 2022

The Director
Ministry of Environment, Forest& Climate Change,
Paryavaran Bhavan,
CGO Complex, Lodhi Road,
New Delhi - 110 003.

Dear Sir,

Sub: Submission of Environmental Clearance and Coastal Regulation Zone Clearance Compliance Reports - Reg.

Ref: 1.Environment Clearance No.J-13011/41/2008-IA.II(T) dated 05.05.2009

2.Coastal Regulation Zone Clearance No. 11/32/2009-IA.III dated 10.08.2009

3.MoEF office memorandum No.F.No.J-13012 /8/2009-IA.II(T) dated 11.11.2020

This has reference to the captioned subject and cited references; we enclose the Environmental Clearance and Coastal Regulation Zone Clearance Compliance Report for the period January 2022 to June 2022. Also the compliance status for the reference cited Sl. No.03 is attached as Annexure-08.

This is for your kind information and records.

Thanking You

For **COASTAL ENERGEN PRIVATE LIMITED**

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

MK Parameswaran

Station Director

மாவட்ட சுற்றுச்சூழல் பொறியாளர் அலுவலகம் தூத்துக்குடி
16 AUG 2022
தமிழ்நாடு மாசு கட்டுப்பாடு வாரியம்

Copy to: 1. Director (S), MoEF &CC, Regional Office (South Eastern Zone), Chennai - 600 003.
2. Central Pollution Control Board, Bangaluru - 560 079.
3. District Environmental Engineer, TNPCB, Tuticorin - 628 002.

SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL & CRZ CLEARANCES

2X600 MW COAL BASED THERMAL POWER PLANT

at

Melamarudur Village, Ottapidaram Taluk,
Tuticorin – 628 105
Tamil Nadu

Submitted to:

Ministry of Environment, Forest and Climate Change
Government of India
सत्यमेव जयते

Central Pollution Control Board
Ministry of Environment, Forest & Climate Change
(Govt of India)

TAMIL NADU POLLUTION CONTROL BOARD

Submitted By:

C&O GROUP

Coastal Energen Private Limited

PERIOD: JANUARY 2022 – JUNE 2022

Ministry of Environment Forest & Climate Change Clearance Compliance

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE ENVIRONMENTAL CLEARANCE No.J-13011/41/2008-IA.II(T) dated 10.12.2008

Period: January 2022 to June 2022

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
1	Environment clearance is subject to obtaining clearance under the wildlife (protection) Act, 1972 from the competent authority.	No Objection Certificate is obtained from principal Chief Conservator of Forests and chief wild life warden, Chennai vide Ref. No.WL5/74098/2007 dated 03.03.2009. As communicated by Principal Chief Conservator of Forest & Chief Wild Life Warden vide their Lr. No. Ref. No. WL5/7774/2013 dated 16.04.2016, we have applied online in the MOEF & CC web portal on 17th Oct 2017 for obtaining Wild Life Clearance from National Board for Wildlife and we are following. Screen Shot of the Web portal is enclosed as Annexure - 9.
2	Environment clearance is subject to final order of the hon'ble court of India in the matter of Goa foundation vs union of India in writ petition (civil) no.460 of 2004 as may be applicable to this project.	Noted for Compliance.
3	The total land acquired shall not be more than 875 acres for all the activities / facilities of the power project put together.	Complied. The total land acquired is 875 acre.
4	Prior CRZ clearance for the activities / facilities to be located in the CRZ area shall be obtained before start of the project.	Complied. CRZ clearance received from MoEF vide No.11-32/2009-IA-III dated 10.08.2009.
5	Ash and sulphur content in the imported coal to be used in the project shall not exceed 12% and 1.5 % respectively.	Complied. Ash and Sulphur content in the imported coal has not exceed 12% and 1.5 % respectively.
6	A multi-flue stack of 275m height shall be provided with continuous online monitoring equipments for Sox, NOx and particulate (heavy metals like Hg, Cr, As, Pb periodically). Exit velocity of atleast 22 m/s shall be maintained.	Complied. Continuous online monitoring analyzers provided for measuring SO_x, NO_X and SPM.
7	High efficiency Electro static precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50mg/Nm3.	Complied. High efficiency ESPs has been installed and ensuring that the particulate emission is not exceed 50mg/Nm3.
8	CFBC technology with lime injection having efficiency of SO2 removal atleast 90% shall be installed.	Not applicable MoEF clearance obtained for Sub Critical Pulverized fuel Boilers vide clearance No.J-13011/41/2008-IA.II(T) dated 05.05.2009
9	Space provision shall be made for flue gas de-sulphurisation (FGD) unit, if required ata later stage.	Complied. Necessary space provision made for FGD Unit.
10	Adequate dust extraction system such as cyclone /bag filters and water spray system in dusty area such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Complied. ▪ Automatic water sprinklers provided in the coal storage yard. ▪ Closed gallery conveyors provided for coal conveying ▪ Bag filters/ dust extraction system provided at all transfer points in the junction towers ▪ Ventilation system provided in all coal bunkers ▪ Bag filters provided in the ash silos

		▪ Closed conveyors provided for bottom ash conveying
11	Fly ash shall be collected in dry form and storage facility (silos) shall be provided 100% utilization of fly ash shall be achieved from day one. Unutilized fly ash in emergency and bottom ash shall be disposed off in the ash pond. Supernatant effluent from ash pond and leachates collected will be monitored for heavy metals (Hg, Cr, As, Pb etc.).	Complied. Fly Ash is collected in dry form and 100% utilization is being complied. There is no supernatant effluent generated from the ash pond as of now due to 100% ash utilization.
12	Ash pond shall be lined with HDPE lining. Adequate safety measure shall also be implemented to protect the ash dyke from getting breached.	Complied. Ash pond is lined with HDPE lining and Adequate safety measure are being taken to protect the ash dyke from getting breached.
13	Closed cycle cooling system with cooling towers as per the recommendations of chief wildlife warden shall be ensured.	Complied. Closed cycle cooling system with cooling towers is installed.
14	Continuous monitoring of coastal waters as per the recommendations of chief wildlife warden shall be ensured.	Complied.
15	Rain water harvesting shall be practiced. A detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with central ground water authority / state ground water and a copy of the same shall be submitted within three months to the ministry.	Storm water drains are already in place. Since, the existing ground water is more saline and not potable; recharging the storm water will not improve the existing ground water quality. Hence, the collected storm water is routed to nearby village pond for their domestic usage.
16	The treated effluents conforming to the prescribed standards only shall be discharged from cold water side in the sea. The temperature of the discharged effluents shall not exceed 5˚C over and above the ambient water temperature of sea and it will be reduced to 0.5˚C within 50m of the discharge point. The temperature of the discharge water shall be monitored continuously and records maintained.	▪ Cooling water blow down discharged from the cold water side of the induced draft cooling system. ▪ Dilution of discharge, using fresh sea water to reduce the temperature to 0.5^0 C within 50 m of the discharge point is being carried out. ▪ Temperature of the discharge water is being monitored continuously.
17	A sewage treatment plant shall be provided and the treated sewage conforming to the standards prescribed by SPCB shall be used for raising green belt/ plantation.	Complied. STP's are functional at site premises. Treated water from STP is being used for gardening and Green belt development only.
18	Regular monitoring of ground water in and around the ash pond area shall be carried out, records maintained and 6 monthly reports shall be submitted to the regional office of this ministry.	Complied. Regular monitoring of ground water in and around the ash bund area is being carried out regularly. Copy of the report is enclosed as Annexure – 3.
19	Greenbelt of adequate width shall be developed all around the plant area, other utilities and ash pond covering 270acres of area preferably with local species.	Complied. Greenbelt (Approximately 79,155 trees) of adequate width is developed all around the plant area, other utilities and ash bund covering 340 acres of land with local species. Latest Photos of the developed greenbelt is enclosed as Annexure – 4.
20	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied during construction phase.
21	Noise levels emanating from turbines, air compressors, steam leakage and other moving parts of the machine should be controlled in such a way that the ambient noise levels in the working environment do not exceed 75dBA. For people working in high noise area especially	Complied. • Turbine & air compressors are provided with acoustic enclosures. • Provided silencer in safety valve • Provided earplugs and ear muffs to workers

	during maintenance phase or due to leakage of steam etc., if it is not possible to control noise by adopting engineering methods including acoustical treatment, noise barriers etc., requisite personal protective equipment like ear plugs/ ear muffs etc., shall be provided. Workers engaged in noisy areas such turbines, air compressors etc shall be periodically examined and their audiometric records maintained and should be treated for any hearing loss including shifting to non noisy/less noisy areas.	• Workers engaged in noisy areas are being periodically examined and their audiometric records are being maintained and also shifted in rotational basis.
22	Regular monitoring of ground level concentration of SO2, NOx, SPM, RSPM and mercury shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. 6 monthly reports shall be submitted to the regional office of this ministry at Bangalore.	Complied. The monitored data for the period of January 2022 to June 2022 is enclosed as Annexure – 1. The Six months report on Environment monitoring are being submitted to Regional office of MoEF& CC on regular basis.
23	Adequate funds shall be ear marked for the activities under CSR and details of these activities shall also be submitted to the regional office of the ministry, SPCB and the ministry.	Complied. Separate funds earmarked for implementation of CSR activities. Details of CSR activities carried out during January 2022 to June 2022 are enclosed as Annexure – 5.
24	Storage facilities for this liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster management plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modification required, if any, shall be incorporated in the DMP.	Complied. HFO/LDO storage tanks are provided with dyke wall, automatic foam and water sprinkler system. Disaster Management plan is available and regular mock drills are being carried out.
25	Adequate safety measures shall be provided in the plant area to check/ minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the ministry as well as to the regional office of the ministry at bangalore.	Complied. Automatic water sprinkler system provided in the coal stock yard
26	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality/ municipal area /gram panchayat concerned and on the company's website within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the state pollution control board / committee and may also be seen at website of the ministry of environment and forest at http://envfor.nic.in.	Complied.
27	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied during construction phase.

28	A separate environment monitoring cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Complied. Environment Cell with qualified staffs are in place for the Environmental monitoring, Marine monitoring, Green belt development activities, etc.
29	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this ministry, its regional office at Bangalore, CPCB and SPCB.	Complied.
30	Regional office of the ministry of environment & forests located at Bangalore will monitor the implementation of the stipulated conditions. A complete set of documents plan along with the additional information submitted from time to time shall be forwarded to the regional office for their use during monitoring.	Complied.
31	Adequate funds shall be allocated for implementation of environmental protection measures along with item-wise breakup. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year – wise expenditure should be reported to the ministry.	Complied.
32	Full cooperation shall be extended to the scientists/officer from the ministry / regional office of ministry at Bangalore/ the CPCB the SPCB who would be monitoring the compliance of environmental status.	Complied. Full Co-operation is being extended to the scientists/officer from the ministry / regional office of ministry at Bangalore/ the CPCB the SPCB who visits the plant for monitoring.
33	The project authorities shall inform the regional as well as the ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Complied. UNIT-01 - Date of Commissioning - 02/12/2014 UNIT-02 - Date of Commissioning - 02/01/2016
34	Compliance status of the stipulated conditions shall be displayed in website of the industry/company.	The Compliance status of stipulated conditions is uploaded in the company website. Screen shot of company website is attached as Annexure – 2.

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE ENVIRONMENTAL CLEARANCE No.J-13011/41/2008-IA.II(T) dated 05.05.2009

Period: January 2022 to June 2022

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
1	Regular monitoring of ground water in and around the ash pond area including heavy metals (Hg,Cr,As,Pb) shall be carried out, records maintained and six monthly reports shall be furnished to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	Complied. Regular monitoring of ground water in and around the ash bund area is being carried out regularly. Analysis report for the period of January 2022 to June 2022 is attached as Annexure –3.
2	Regular monitoring of ground level concentration of SO2, NOx,Hg,SPM and RSPM shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data so monitored shall also be put on the website of the company.	Complied. The monitored data for the period January 2022 to June 2022 is enclosed as Annexure – 1 and the same is uploaded in the company website. Screen shot of company website is attached as Annexure – 2.
3	Space for FGD shall be provided at planning stage for the units.	Complied. Necessary space provision made for FGD Unit.
4	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local Body and the Local NGO, is any from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied.
5	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the man gate of the company in the public domain.	Complied. The Six months report on Ambient Air Quality monitoring are being submitted to Regional office of MoEF / TNPCB on regular basis and the same is uploaded in the company website. Print Screen of company website is attached as Annexure – 2. Online scrolling Display System provided at the main gate of the company.
6	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monited data (both in hard copies as well by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied. The Six monthly Compliance report are being submitted to Regional office of MoEF& CC /CPCB/ TNPCB on regular basis.

COMPLIANCE TO THE ADDITIONAL CONDITIONS LAID BY MoEF VIDE OFFICE MEMORANDUM No.J-11013/41/2006-IA.II(I) dated 06.04.2011

Period: January 2022 to June 2022

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
1	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Continuous Stack emission and ambient air quality monitoring are being carried out and records are being maintained. The monitored data for the period of January 2022 to June 2022 is enclosed as Annexure – 1. The results are well within the prescribed norms. The Six months report on Ambient Air Quality monitoring are being submitted to Regional office of MoEF& CC on regular basis and the same is uploaded in the company website. Screen Shot of company website is attached as Annexure – 2.
2	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board / UTPCCs and the Regional office of MoEF.	The Six months report on Ambient Air Quality monitoring are being submitted to Regional office of MoEF& CC / TNPCB on regular basis and the same is uploaded in the company website. Screen Shot of company website is attached as Annexure – 2.
3	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Complied. Online scrolling Display System provided at the main gate of the company.

Coastal Regulation Zone Clearance Compliance

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE CRZ CLEARANCE No.11/32/2009-IA.III dated 10.08.2009

Period : January 2022 to June 2022

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
Specific Conditions :		
1.	All the Conditions stipulated by Tamilnadu Coastal Zone Management Authority vide letter dated 03.04.2009 shall be strictly complied with.	Complied. Compliance Status enclosed as Annexure - 6
2.	Sufficient dilution shall be carried out to meet the ambient parameters within 50m distance.	Complied. Sufficient dilution is being carried out to meet the ambient parameters within 50m distance.
3.	Independent monitoring shall be undertaken through a authorized agency.	Complied. Comprehensive Marine Environmental Monitoring is being carried out through M/s.Suganthi Devadasan Marine Research Institute, Thoothukudi, one of the identified institutions for coastal baseline studies and monitoring by the Tamil Nadu State Coastal Zone Management Authority.
4.	Filters in the way of extruders shall be provided at the intake point to prevent fishes entering in to the system. Fish culture shall be developed at the outfall point.	Complied. Fish Cage culture installed and monitoring is in progress. Report on Fish Cage culture monitoring is covered in Annexure -7.
5.	Regular monitoring especially for temperature and salinity shall be carried out at disposal site and six monthly reports shall be submitted to the ministry.	Complied. Monitoring data for the period January 2022 to June 2022 is enclosed as Annexure – 7.
6.	All the recommendations of EIA and DMP shall be strictly complied with	All the recommendations of EIA and DMP is complied
7.	There shall be no reclamation in Coastal Regulation Zone area.	Complied. Reclamation not done at CRZ area.
8.	The pipeline shall be buried at least 2m depth in the onshore area and 4 mts in the offshore area. Necessary permission with regard to the pipeline burial and laying shall be obtained from concerned authorities to ensure that the pipeline route does not fall in the navigation channel.	Complied.
9.	The Project shall be implemented in such a manner that there is no damage whatsoever to the mangroves/other sensitive coastal ecosystems. If any damage to mangroves is anticipated / envisaged as a result of project activities then the clearance shall stand cancelled and the proponents shall seek fresh approval from the Ministry.	Not applicable. No mangroves are found in the project site.
10.	Consent shall be obtained from the Tamilnadu Pollution Control Board for the disposal of effluent into sea. The effluent shall meet the standards prescribed by Tamil Nadu Pollution Control Board before disposal.	Complied. Consents are obtained from TNPCB and being ensured that the effluent meet the standards prescribed by TNPCB before disposal.
11.	A continuous and comprehensive post – project marine quality monitoring programme shall be taken up. This shall include monitoring of water quality, sediment quality and biological characteristics and report submitted every 6 months to Ministry's Regional Office	Complied. Monitoring data for the period January 2022 to June 2022 is enclosed as Annexure – 7.

	at Bangalore.	
12.	It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.	Complied. No displacement of people, houses or fishing activity is involved.
13.	There shall be display boards at critical locations along the pipeline viz. road/rail/river crossings giving emergency instructions. This will ensure prompt information regarding location of accident during any emergency. Emergency information board shall contain emergency instructions in addition to contact details. Proper lighting shall be provided all along the road.	Complied.
14.	There shall be no withdrawal of ground water in CRZ, area, for this project.	Complied. No Withdrawal of Ground water is being done for the project.
15.	Necessary provisions shall also be made to develop a nursery for mangroves and the area should be demarcated specifically for the development of mangroves within the complex.	• There are no mangroves in the project site. • The project site is not suitable for the development of mangroves as mangroves requires special environmental factors including fresh water sources along with marine (i.e) Esturain conditions. • Hence, this condition is not applicable to us.
16.	Arrangement for treatment of liquid effluents shall be made so as to ensure that the untreated effluents are not allowed to be discharged into the sea/marine water.	Complied. Effluent Treatment Plant is provided in the Main plant and is in operation.
17.	Appropriate safety devices such as masks shall be provided for use by the workers at the site and their usage by them shall be ensured.	Complied and the same is being ensured continuously.
18.	Necessary provisions shall be made for emergency evacuation during natural and man-made disasters like floods, cyclone, tsunami and earthquake etc.	Complied. Adequate Provisions made for emergency evacuation during Natural and manmade disasters.
19.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health case, crèche etc. The house may be in the form of temporary structures to be removed after the completion of the project.	Complied.
20.	A First Aid Room will be provided in the project both during construction and operation of the project.	Complied. First Aid Center with ambulance facilities available at site on 24 x 7 basis.
21.	All the topsoil excavated during construction activities should be stored for use in horticulture / landscape development within the project site.	Complied.
22.	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.	Complied.
23.	Any Hazardous Waste Generated During Construction Phase, Should Be Disposed Off As Per Applicable Rules And Norms With Necessary Approvals Of The Andhara Pradesh Pollution Control Board.	No Hazardous waste being generated.
24.	The diesel generator sets to be used during construction phase should be low sulphur diesel type	Complied.

	and should conform to Environment (protection) Rules prescribed for air and noise emission standards.	
25.	The Diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.	The power plant is connected to the Grid and no DG sets are in operation. Emergency DG Sets are available as a backup power and hence minimum quantity of diesel is being kept at site.
26.	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.	Complied.
27.	Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/ TNPCB.	Complied during Construction Phase.
28.	Storm water control and its-re-use as per CGWB and BIS standards for various applications.	Not applicable.
29.	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 during Construction Phase.
General Conditions:		
1.	The construction of the structures should be undertaken as per the plans approved by the concerned local authorities/local administration, meticulously conforming to the existing local and central rules and regulations including the provisions of Coastal Regulation Zone Notification dated 19.02.1991 and the approved Coastal Zone Management Plan of Tamil Nadu.	Complied.
2.	In the event of any change in the project profile a fresh reference shall be made to the Ministry of Environment and Forests.	No Change in Project Profile
3.	This Ministry reserves the right to revoke this clearance, if any, of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Agreed for Compliance.
4.	This Ministry or any other competent authority may stipulate any additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.	Agreed.
5.	Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.	Complied. Noise Level is within the Permissible Limits
6.	The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise.	Complied. Landscape developed in front of Sea water Pump house.
7.	The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.	Not applicable.
8.	The sand dune, if any, on the site should not be disturbed in any way.	No sand dune exists.
9.	The mangroves, if any, on the site should not be disturbed in any way.	No mangroves exists.

10.	The environment safeguards contained in the EIA Report should be implemented in letter and spirit.	Complied.
11.	A separate Environment Management Cell with suitably qualified staff to carry out various environment related Executive who will report directly to the Chief Executive of the Company.	Complied. Environment Cell with qualified staffs are in place for the Environmental monitoring, Marine monitoring, Green belt development activities, etc.
12.	The funds earmarked for environment protection measures shall be maintained in a separate account and there shall be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards shall be reported to this Ministry's Regional Office to Bangalore.	Fund for environmental protection measures is being allotted and no diversification of funds being done.
13.	In case of deviation or alteration in the project including the implementing agency, a fresh reference shall be made to this Ministry for modification in the clearance conditions or imposition of new one for ensuring environmental projection. The project proponents shall be responsible for implementing the suggested safeguard measures.	No Deviation/Alteration in the Project.
14.	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Agreed.
15.	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the offices of the Central and State Pollution Control Board by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	Agreed and being Complied.
16.	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 Municipal Solid Wastes (Management and Handling) Rules, 2000 including the amendments and rules made thereafter.	Agreed.
17.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) act, 1972 etc, shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied. All other applicable statutory clearances has been Obtained.
18.	The project proponent should advertise in at least two local Newspapers widely circulated in the regions, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letter are available with the Tamil Nadu State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at Http://www.envfor.nic.in. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bangalore.	Complied.
19.	Any appeal against this Environmental Clearance shall lie with the national Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate	Noted

	Act, 1997.	
20.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZillaParisad / Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied.
21.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, So2, Nox (ambient levels as well as stack emissions) or critical sectoral parameters, indicated ror the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	The Compliance status of stipulated conditions is uploaded in the company website. Screen Shot of company website is attached as Annexure – 2.
22.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored date (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPEB and the SPCB.	Complied
23.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Complied.

ANNEXURE - 1

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.01.2022 to 31.01.2022

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3
1-Jan-22	9.0	12.0	17.0	8.0	0.6	8.0	11.0	27.0	16.0	0.3	9.0	2.0	25.0	13.0	0.5	8.0	9.0	16.0	4.0	1.1
2-Jan-22	8.0	13.0	18.0	11.0	0.6	8.0	11.0	27.0	17.0	0.3	9.0	2.0	27.0	14.0	0.5	9.0	9.0	21.0	2.0	1.0
3-Jan-22	8.0	11.0	41.0	26.0	0.6	8.0	11.0	52.0	20.0	0.3	9.0	2.0	51.0	32.0	0.5	9.0	9.0	46.0	8.0	1.1
4-Jan-22	9.0	8.0	58.0	43.0	0.6	8.0	11.0	37.0	25.0	0.3	9.0	2.0	69.0	50.0	0.5	9.0	9.0	66.0	13.0	1.2
5-Jan-22	9.0	6.0	54.0	42.0	0.6	8.0	11.0	13.0	25.0	0.3	9.0	2.0	65.0	41.0	0.5	9.0	9.0	55.0	20.0	1.2
6-Jan-22	8.0	12.0	36.0	24.0	0.6	8.0	11.0	18.0	24.0	0.3	9.0	2.0	43.0	23.0	0.5	10.0	9.0	14.0	19.0	1.1
7-Jan-22	8.0	14.0	27.0	17.0	0.6	8.0	11.0	38.0	19.0	0.3	9.0	2.0	35.0	37.0	0.5	10.0	9.0	35.0	20.0	1.1
8-Jan-22	8.0	13.0	22.0	14.0	0.6	8.0	11.0	31.0	19.0	0.3	9.0	1.0	34.0	23.0	0.5	9.0	9.0	39.0	19.0	1.1
9-Jan-22	8.0	13.0	26.0	16.0	0.6	8.0	11.0	40.0	19.0	0.3	10.0	1.0	31.0	26.0	0.5	9.0	9.0	30.0	20.0	1.2
10-Jan-22	8.0	16.0	21.0	13.0	0.6	8.0	11.0	32.0	18.0	0.3	9.0	2.0	35.0	16.0	0.3	9.0	9.0	24.0	19.0	1.2
11-Jan-22	9.0	13.0	15.0	8.0	0.6	8.0	11.0	23.0	17.0	0.3	9.0	2.0	28.0	40.0	0.2	10.0	9.0	19.0	20.0	1.2
12-Jan-22	9.0	11.0	13.0	6.0	0.6	8.0	11.0	26.0	18.0	0.3	10.0	1.0	28.0	54.0	0.3	9.0	9.0	15.0	20.0	1.2
13-Jan-22	9.0	12.0	16.0	9.0	0.6	8.0	11.0	27.0	17.0	0.3	10.0	2.0	36.0	9.0	0.4	9.0	9.0	20.0	20.0	1.2
14-Jan-22	9.0	14.0	13.0	7.0	0.6	8.0	11.0	27.0	17.0	0.3	#	#	#	#	#	8.0	9.0	16.0	19.0	1.2
15-Jan-22	9.0	13.0	14.0	6.0	0.6	8.0	11.0	26.0	16.0	0.3	*	*	*	*	1.1	7.0	9.0	16.0	20.0	1.2
16-Jan-22	9.0	11.0	15.0	7.0	0.6	8.0	11.0	24.0	16.0	0.3	*	*	*	*	0.4	7.0	9.0	16.0	19.0	1.1
17-Jan-22	9.0	8.0	19.0	10.0	0.7	8.0	11.0	29.0	17.0	0.3	10.0	6.0	34.0	9.0	*	6.0	9.0	22.0	19.0	1.1
18-Jan-22	9.0	4.0	34.0	19.0	0.7	8.0	11.0	43.0	19.0	0.4	10.0	5.0	40.0	17.0	0.2	7.0	10.0	39.0	19.0	1.2
19-Jan-22	9.0	5.0	41.0	27.0	0.7	8.0	11.0	57.0	22.0	0.4	10.0	5.0	48.0	22.0	0.4	7.0	11.0	50.0	20.0	1.2
20-Jan-22	9.0	10.0	44.0	30.0	0.9	8.0	11.0	81.0	23.0	0.4	11.0	6.0	64.0	30.0	0.4	7.0	11.0	48.0	21.0	1.2
21-Jan-22	9.0	18.0	68.0	44.0	1.0	8.0	12.0	87.0	26.0	0.5	11.0	6.0	84.0	44.0	0.3	7.0	11.0	55.0	20.0	1.2
22-Jan-22	9.0	15.0	68.0	44.0	1.0	8.0	81.0	67.0	26.0	0.5	11.0	6.0	89.0	51.0	0.4	8.0	11.0	49.0	20.0	1.3
23-Jan-22	8.0	16.0	71.0	44.0	1.0	8.0	10.0	26.0	29.0	0.5	11.0	6.0	76.0	46.0	0.5	9.0	11.0	45.0	20.0	1.3
24-Jan-22	8.0	19.0	65.0	37.0	1.0	8.0	10.0	21.0	27.0	0.5	11.0	8.0	66.0	24.0	0.4	7.0	10.0	31.0	41.0	1.1
25-Jan-22	8.0	17.0	74.0	35.0	1.0	8.0	10.0	50.0	21.0	0.5	11.0	8.0	83.0	21.0	0.2	7.0	8.0	63.0	86.0	0.9
26-Jan-22	8.0	19.0	51.0	24.0	1.0	8.0	10.0	45.0	21.0	0.5	11.0	8.0	71.0	25.0	0.1	7.0	8.0	36.0	58.0	0.8
27-Jan-22	8.0	18.0	26.0	15.0	0.9	8.0	10.0	13.0	18.0	0.5	10.0	7.0	38.0	13.0	0.1	7.0	8.0	17.0	18.0	0.8
28-Jan-22	8.0	12.0	27.0	15.0	1.0	8.0	10.0	18.0	18.0	0.5	10.0	7.0	38.0	9.0	0.4	7.0	6.0	11.0	25.0	0.8
29-Jan-22	9.0	3.0	58.0	20.0	1.0	8.0	10.0	40.0	21.0	0.6	10.0	7.0	44.0	22.0	0.7	8.0	4.0	56.0	10.0	0.9
30-Jan-22	9.0	2.0	52.0	21.0	1.1	8.0	10.0	33.0	25.0	0.7	10.0	7.0	24.0	32.0	0.8	9.0	3.0	63.0	26.0	1.0
31-Jan-22	8.0	5.0	33.0	12.0	1.1	8.0	10.0	17.0	25.0	0.7	10.0	7.0	26.0	28.0	0.8	9.0	4.0	41.0	46.0	0.9

Remarks: *** Internet Problem, # Analyser Problem**

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.02.2022 to 28.02.2022

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3
1-Feb-22	9.0	4.0	26.0	11.0	1.1	8.0	10.0	14.0	24.0	0.6	10.0	8.0	34.0	26.0	0.7	9.0	3.0	33.0	46.0	0.9
2-Feb-22	8.0	11.0	20.0	7.0	1.1	8.0	10.0	9.0	25.0	0.6	11.0	7.0	29.0	41.0	0.8	9.0	3.0	27.0	44.0	0.9
3-Feb-22	9.0	16.0	9.0	10.0	1.1	8.0	10.0	28.0	20.0	0.6	10.0	7.0	16.0	13.0	0.7	10.0	4.0	23.0	56.0	0.9
4-Feb-22	9.0	16.0	17.0	25.0	1.1	6.0	10.0	59.0	23.0	0.7	10.0	8.0	29.0	15.0	0.4	10.0	3.0	47.0	48.0	0.9
5-Feb-22	8.0	13.0	17.0	25.0	1.1	5.0	9.0	57.0	23.0	0.7	10.0	8.0	24.0	14.0	0.3	9.0	9.0	51.0	45.0	0.9
6-Feb-22	8.0	10.0	18.0	27.0	1.1	5.0	9.0	62.0	20.0	0.7	10.0	8.0	24.0	15.0	0.2	9.0	8.0	54.0	37.0	0.9
7-Feb-22	8.0	7.0	21.0	29.0	1.0	5.0	9.0	40.0	21.0	0.7	10.0	7.0	29.0	17.0	0.2	8.0	8.0	55.0	49.0	0.9
8-Feb-22	8.0	8.0	18.0	23.0	1.0	6.0	9.0	29.0	19.0	0.6	10.0	7.0	25.0	14.0	0.2	8.0	8.0	52.0	25.0	0.9
9-Feb-22	8.0	5.0	13.0	18.0	1.0	6.0	8.0	21.0	15.0	0.6	10.0	7.0	19.0	12.0	0.2	9.0	8.0	45.0	21.0	0.9
10-Feb-22	9.0	6.0	12.0	19.0	1.0	6.0	9.0	26.0	15.0	0.6	10.0	7.0	21.0	12.0	0.1	9.0	8.0	50.0	16.0	0.9
11-Feb-22	8.0	10.0	12.0	21.0	1.0	6.0	9.0	21.0	15.0	0.7	10.0	7.0	13.0	11.0	0.2	9.0	7.0	34.0	23.0	1.0
12-Feb-22	8.0	12.0	16.0	13.0	1.0	6.0	9.0	16.0	15.0	0.7	11.0	8.0	18.0	10.0	0.1	10.0	8.0	25.0	21.0	0.9
13-Feb-22	8.0	9.0	48.0	26.0	1.1	6.0	9.0	31.0	15.0	0.7	10.0	8.0	56.0	14.0	0.2	9.0	8.0	58.0	32.0	1.0
14-Feb-22	8.0	8.0	61.0	41.0	1.1	6.0	9.0	37.0	15.0	0.7	11.0	8.0	69.0	19.0	0.2	9.0	7.0	73.0	39.0	1.0
15-Feb-22	9.0	3.0	52.0	36.0	1.1	6.0	8.0	29.0	15.0	0.7	11.0	8.0	68.0	18.0	0.2	9.0	7.0	63.0	35.0	1.0
16-Feb-22	9.0	2.0	47.0	30.0	1.1	6.0	9.0	28.0	15.0	0.7	11.0	8.0	55.0	15.0	0.6	9.0	7.0	56.0	27.0	1.0
17-Feb-22	9.0	3.0	40.0	24.0	1.1	6.0	9.0	19.0	15.0	0.7	10.0	8.0	47.0	13.0	0.6	9.0	7.0	50.0	25.0	1.0
18-Feb-22	9.0	7.0	38.0	23.0	1.1	6.0	9.0	17.0	16.0	0.7	10.0	8.0	45.0	14.0	1.7	10.0	7.0	44.0	29.0	1.0
19-Feb-22	9.0	7.0	41.0	25.0	1.1	6.0	8.0	27.0	17.0	0.8	10.0	7.0	49.0	14.0	1.1	10.0	7.0	51.0	31.0	1.0
20-Feb-22	9.0	7.0	58.0	40.0	1.1	6.0	9.0	42.0	20.0	0.8	11.0	7.0	68.0	19.0	2.0	10.0	6.0	70.0	40.0	1.0
21-Feb-22	9.0	13.0	47.0	27.0	1.2	6.0	9.0	34.0	23.0	0.9	11.0	8.0	57.0	15.0	1.3	10.0	8.0	57.0	25.0	1.0
22-Feb-22	8.0	18.0	97.0	25.0	1.2	6.0	9.0	24.0	20.0	0.9	11.0	8.0	47.0	15.0	1.0	10.0	8.0	46.0	22.0	1.0
23-Feb-22	9.0	13.0	25.0	11.0	1.1	6.0	8.0	10.0	17.0	0.9	11.0	7.0	31.0	8.0	1.2	10.0	7.0	27.0	17.0	1.0
24-Feb-22	9.0	11.0	36.0	22.0	1.1	6.0	8.0	22.0	18.0	0.9	11.0	7.0	59.0	14.0	0.2	9.0	7.0	44.0	21.0	1.0
25-Feb-22	9.0	10.0	47.0	32.0	1.2	6.0	9.0	29.0	20.0	0.9	11.0	7.0	69.0	18.0	0.4	10.0	7.0	55.0	37.0	1.0
26-Feb-22	9.0	11.0	42.0	27.0	1.2	6.0	9.0	24.0	21.0	0.9	11.0	7.0	58.0	14.0	0.5	10.0	7.0	51.0	36.0	1.0
27-Feb-22	8.0	11.0	30.0	19.0	1.2	6.0	8.0	19.0	19.0	0.9	11.0	7.0	41.0	12.0	0.5	9.0	6.0	38.0	25.0	1.0
28-Feb-22	8.0	11.0	29.0	17.0	1.2	6.0	9.0	17.0	22.0	0.9	11.0	7.0	39.0	8.0	1.1	10.0	7.0	36.0	18.0	1.0
Remarks:	**Nil**																			

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.03.2022 to 31.03.2022

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3
1-Mar-22	8.0	11.0	36.0	20.0	1.0	6.0	9.0	22.0	22.0	0.5	11.0	7.0	43.0	12.0	1.0	11.0	7.0	43.0	12.0	1.1
2-Mar-22	9.0	10.0	40.0	22.0	1.0	6.0	8.0	27.0	18.0	0.5	11.0	7.0	48.0	19.0	1.0	11.0	7.0	48.0	19.0	1.1
3-Mar-22	9.0	9.0	54.0	31.0	1.0	6.0	8.0	42.0	21.0	0.5	11.0	7.0	63.0	27.0	0.9	11.0	7.0	63.0	27.0	1.1
4-Mar-22	9.0	9.0	59.0	39.0	1.0	6.0	9.0	38.0	19.0	0.5	11.0	7.0	68.0	29.0	0.9	11.0	7.0	68.0	29.0	1.1
5-Mar-22	9.0	11.0	34.0	17.0	1.0	6.0	9.0	19.0	18.0	0.5	10.0	7.0	43.0	21.0	0.9	10.0	7.0	43.0	21.0	1.1
6-Mar-22	9.0	10.0	38.0	21.0	1.0	6.0	9.0	25.0	17.0	0.5	11.0	7.0	47.0	23.0	0.9	11.0	7.0	47.0	23.0	1.1
7-Mar-22	9.0	10.0	24.0	15.0	1.0	6.0	9.0	12.0	16.0	0.5	11.0	7.0	34.0	19.0	0.8	11.0	7.0	34.0	19.0	1.2
8-Mar-22	8.0	11.0	49.0	30.0	1.0	6.0	9.0	29.0	19.0	0.5	11.0	8.0	56.0	25.0	0.4	11.0	8.0	56.0	25.0	1.2
9-Mar-22	8.0	9.0	75.0	50.0	1.0	6.0	9.0	58.0	24.0	0.6	11.0	8.0	71.0	33.0	0.4	11.0	8.0	71.0	33.0	1.3
10-Mar-22	8.0	12.0	60.0	41.0	0.8	6.0	9.0	39.0	21.0	0.6	11.0	8.0	35.0	30.0	0.4	11.0	8.0	35.0	30.0	1.2
11-Mar-22	8.0	12.0	51.0	34.0	0.7	3.0	7.0	32.0	15.0	0.6	11.0	8.0	30.0	25.0	0.4	11.0	8.0	30.0	25.0	1.2
12-Mar-22	8.0	10.0	45.0	30.0	0.8	6.0	9.0	31.0	23.0	0.6	11.0	7.0	25.0	25.0	0.4	11.0	7.0	25.0	25.0	1.3
13-Mar-22	8.0	4.0	50.0	34.0	0.6	6.0	9.0	4.0	19.0	0.6	11.0	7.0	28.0	26.0	0.3	11.0	7.0	28.0	26.0	1.3
14-Mar-22	8.0	3.0	59.0	38.0	0.8	6.0	9.0	40.0	20.0	0.6	11.0	7.0	37.0	29.0	0.3	11.0	7.0	37.0	29.0	1.3
15-Mar-22	9.0	8.0	69.0	37.0	0.9	6.0	9.0	42.0	22.0	0.6	11.0	8.0	45.0	29.0	0.3	11.0	8.0	45.0	29.0	1.3
16-Mar-22	9.0	11.0	80.0	42.0	1.0	6.0	9.0	63.0	25.0	0.6	11.0	8.0	51.0	32.0	0.3	11.0	8.0	51.0	32.0	1.4
17-Mar-22	8.0	17.0	87.0	52.0	1.1	6.0	8.0	58.0	19.0	0.6	11.0	8.0	50.0	32.0	0.3	11.0	8.0	50.0	32.0	1.4
18-Mar-22	9.0	20.0	81.0	51.0	0.9	6.0	7.0	64.0	33.0	0.4	11.0	8.0	54.0	34.0	0.3	11.0	8.0	54.0	34.0	1.4
19-Mar-22	9.0	21.0	57.0	31.0	0.8	6.0	7.0	64.0	12.0	0.4	11.0	8.0	53.0	19.0	0.3	11.0	8.0	53.0	19.0	1.4
20-Mar-22	8.0	18.0	40.0	13.0	1.1	6.0	6.0	57.0	5.0	0.4	12.0	8.0	46.0	7.0	0.2	12.0	8.0	46.0	7.0	1.3
21-Mar-22	9.0	19.0	42.0	14.0	1.0	6.0	7.0	55.0	4.0	0.5	12.0	8.0	45.0	7.0	0.2	12.0	8.0	45.0	7.0	1.4
22-Mar-22	9.0	19.0	47.0	11.0	1.0	6.0	7.0	64.0	8.0	0.5	12.0	8.0	46.0	7.0	0.2	12.0	8.0	46.0	7.0	1.4
23-Mar-22	8.0	29.0	42.0	8.0	1.0	6.0	7.0	53.0	3.0	0.5	11.0	7.0	11.0	7.0	0.3	11.0	7.0	11.0	7.0	1.3
24-Mar-22	9.0	25.0	37.0	7.0	0.7	6.0	7.0	36.0	4.0	0.5	12.0	8.0	10.0	3.0	0.3	12.0	8.0	10.0	3.0	1.3
25-Mar-22	12.0	24.0	63.0	9.0	0.8	6.0	7.0	70.0	5.0	0.5	12.0	8.0	10.0	4.0	0.3	12.0	8.0	10.0	4.0	1.2
26-Mar-22	12.0	26.0	59.0	8.0	0.9	6.0	8.0	76.0	5.0	0.6	12.0	9.0	10.0	8.0	0.3	*	*	*	*	*
27-Mar-22	10.0	25.0	41.0	4.0	0.9	6.0	7.0	54.0	5.0	0.6	12.0	8.0	10.0	5.0	0.3	*	*	*	*	*
28-Mar-22	11.0	26.0	39.0	4.0	1.0	6.0	7.0	58.0	4.0	0.6	12.0	8.0	10.0	5.0	0.3	12.0	8.0	10.0	5.0	0.5
29-Mar-22	10.0	25.0	42.0	2.0	1.0	6.0	7.0	67.0	5.0	0.7	12.0	8.0	10.0	5.0	0.3	12.0	8.0	10.0	5.0	0.4
30-Mar-22	11.0	26.0	37.0	5.0	1.1	6.0	7.0	48.0	3.0	0.7	12.0	9.0	10.0	18.0	0.3	12.0	9.0	10.0	18.0	0.3
31-Mar-22	11.0	25.0	26.0	4.0	1.0	6.0	7.0	35.0	5.0	0.7	12.0	8.0	10.0	16.0	0.8	12.0	8.0	10.0	16.0	0.9

Remarks: *** Analyser Problem**

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.04.2022 to 30.04.2022

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3
1-Apr-22	9.0	30.0	37.0	2.0	1.0	6.0	7.0	61.0	4.0	0.5	12.0	8.0	10.0	20.0	1.0	8.0	9.0	28.0	17.0	1.1
2-Apr-22	9.0	29.0	40.0	6.0	1.0	6.0	8.0	87.0	4.0	0.6	12.0	8.0	9.0	20.0	1.0	9.0	9.0	38.0	17.0	1.1
3-Apr-22	9.0	23.0	42.0	7.0	1.0	6.0	8.0	66.0	6.0	0.7	12.0	10.0	10.0	25.0	0.9	10.0	10.0	42.0	16.0	1.2
4-Apr-22	9.0	25.0	22.0	2.0	1.0	6.0	7.0	43.0	4.0	0.5	12.0	8.0	9.0	18.0	0.9	10.0	8.0	16.0	17.0	1.2
5-Apr-22	9.0	25.0	20.0	4.0	0.8	6.0	7.0	22.0	3.0	0.5	12.0	9.0	9.0	13.0	1.1	10.0	7.0	12.0	15.0	1.1
6-Apr-22	10.0	25.0	11.0	14.0	0.7	6.0	10.0	25.0	2.0	0.5	12.0	9.0	9.0	15.0	1.0	10.0	8.0	1.0	15.0	1.1
7-Apr-22	9.0	23.0	18.0	4.0	1.0	6.0	21.0	27.0	2.0	0.5	12.0	9.0	9.0	15.0	1.1	10.0	10.0	9.0	15.0	1.1
8-Apr-22	9.0	29.0	10.0	14.0	1.0	6.0	15.0	11.0	2.0	0.5	13.0	8.0	9.0	15.0	0.5	9.0	9.0	8.0	15.0	1.2
9-Apr-22	9.0	23.0	13.0	18.0	1.0	6.0	7.0	18.0	3.0	0.6	8.0	9.0	25.0	2.0	0.5	10.0	11.0	13.0	15.0	0.9
10-Apr-22	9.0	24.0	15.0	11.0	0.8	6.0	7.0	10.0	2.0	0.7	6.0	7.0	7.0	13.0	0.5	8.0	9.0	7.0	13.0	0.9
11-Apr-22	9.0	28.0	11.0	12.0	0.7	6.0	7.0	14.0	3.0	0.6	12.0	8.0	9.0	12.0	0.7	8.0	9.0	7.0	14.0	1.1
12-Apr-22	9.0	28.0	11.0	12.0	0.8	6.0	7.0	3.0	3.0	0.7	12.0	8.0	9.0	12.0	0.9	8.0	9.0	7.0	14.0	1.3
13-Apr-22	9.0	12.0	15.0	11.0	0.6	6.0	7.0	25.0	3.0	0.7	11.0	7.0	31.0	7.0	0.9	8.0	9.0	19.0	15.0	1.3
14-Apr-22	9.0	15.0	31.0	10.0	1.0	6.0	7.0	39.0	6.0	0.5	12.0	9.0	28.0	9.0	0.8	8.0	9.0	35.0	15.0	1.3
15-Apr-22	9.0	10.0	20.0	14.0	1.0	6.0	8.0	35.0	5.0	0.5	12.0	9.0	22.0	10.0	0.8	8.0	10.0	1.0	16.0	1.3
16-Apr-22	9.0	11.0	56.0	12.0	1.0	6.0	8.0	29.0	8.0	0.6	12.0	9.0	30.0	9.0	1.0	7.0	8.0	25.0	14.0	1.4
17-Apr-22	9.0	13.0	29.0	10.0	1.0	6.0	8.0	10.0	13.0	0.6	13.0	9.0	27.0	10.0	0.3	7.0	8.0	37.0	13.0	1.4
18-Apr-22	9.0	13.0	29.0	10.0	0.9	6.0	8.0	10.0	12.0	0.4	13.0	9.0	27.0	10.0	0.3	7.0	8.0	9.0	13.0	1.4
19-Apr-22	10.0	16.0	74.0	16.0	0.8	6.0	8.0	27.0	9.0	0.4	13.0	9.0	18.0	13.0	0.3	7.0	48.0	41.0	26.0	1.4
20-Apr-22	9.0	27.0	64.0	20.0	1.1	6.0	8.0	14.0	11.0	0.4	12.0	8.0	19.0	12.0	0.2	7.0	49.0	51.0	40.0	1.3
21-Apr-22	9.0	30.0	69.0	22.0	1.2	6.0	8.0	12.0	10.0	0.5	12.0	8.0	15.0	15.0	0.2	8.0	37.0	56.0	40.0	1.4
22-Apr-22	8.0	29.0	83.0	26.0	1.1	6.0	8.0	35.0	15.0	0.5	13.0	8.0	7.0	19.0	0.4	8.0	28.0	71.0	40.0	1.4
23-Apr-22	9.0	28.0	14.0	10.0	0.7	6.0	8.0	21.0	28.0	0.5	13.0	8.0	72.0	14.0	0.3	8.0	28.0	30.0	23.0	1.3
24-Apr-22	9.0	27.0	33.0	9.0	1.1	6.0	8.0	37.0	27.0	0.5	7.0	30.0	25.0	20.0	0.3	8.0	29.0	29.0	25.0	1.3
25-Apr-22	9.0	25.0	64.0	9.0	1.0	6.0	8.0	11.0	28.0	0.5	8.0	28.0	27.0	0.0	0.3	8.0	28.0	29.0	25.0	1.2
26-Apr-22	9.0	16.0	58.0	13.0	0.9	6.0	8.0	40.0	30.0	0.7	13.0	9.0	37.0	8.0	0.2	9.0	29.0	32.0	32.0	1.1
27-Apr-22	9.0	15.0	49.0	17.0	0.9	6.0	8.0	44.0	30.0	0.7	13.0	8.0	26.0	12.0	0.2	9.0	29.0	36.0	32.0	0.8
28-Apr-22	9.0	15.0	49.0	17.0	1.1	6.0	8.0	9.0	30.0	0.8	13.0	8.0	26.0	12.0	0.4	9.0	29.0	36.0	32.0	0.5
29-Apr-22	9.0	10.0	27.0	20.0	1.1	6.0	8.0	60.0	29.0	0.8	8.0	0.0	88.0	10.0	0.7	10.0	29.0	57.0	40.0	0.5
30-Apr-22	8.0	26.0	58.0	30.0	1.0	6.0	8.0	61.0	29.0	0.7	9.0	8.0	62.0	44.0	0.3	10.0	28.0	48.0	46.0	0.6

Remarks: **# Analyser Problem**

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.05.2022 to 31.05.2022

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3
1-May-22	9.0	26.0	58.0	30.0	1.0	6.0	8.0	58.0	29.0	0.8	10.0	10.0	34.0	45.0	1.0	10.0	28.0	48.0	46.0	0.9
2-May-22	9.0	30.0	21.0	24.0	1.0	6.0	9.0	29.0	30.0	0.6	10.0	28.0	39.0	27.0	1.0	9.0	28.0	43.0	41.0	1.0
3-May-22	9.0	30.0	85.0	30.0	1.0	6.0	8.0	20.0	32.0	0.7	7.0	8.0	57.0	12.0	0.9	10.0	28.0	55.0	46.0	1.0
4-May-22	9.0	36.0	59.0	44.0	1.0	6.0	8.0	12.0	31.0	0.7	7.0	9.0	41.0	8.0	0.9	9.0	29.0	57.0	47.0	1.0
5-May-22	9.0	32.0	56.0	6.0	0.8	6.0	8.0	5.0	31.0	0.8	13.0	8.0	15.0	16.0	1.1	9.0	28.0	35.0	37.0	1.1
6-May-22	10.0	39.0	23.0	14.0	0.7	6.0	8.0	22.0	30.0	0.8	13.0	9.0	13.0	17.0	1.0	10.0	34.0	23.0	41.0	0.9
7-May-22	9.0	38.0	20.0	14.0	1.0	6.0	8.0	40.0	32.0	0.8	13.0	9.0	17.0	16.0	1.1	9.0	29.0	45.0	44.0	0.9
8-May-22	9.0	31.0	81.0	17.0	1.0	6.0	9.0	54.0	29.0	0.6	13.0	9.0	9.0	19.0	0.5	10.0	29.0	60.0	42.0	1.1
9-May-22	9.0	30.0	102.0	20.0	1.0	6.0	8.0	68.0	30.0	0.6	13.0	8.0	5.0	21.0	0.5	9.0	29.0	82.0	43.0	0.8
10-May-22	9.0	28.0	80.0	12.0	0.8	6.0	9.0	54.0	27.0	0.6	13.0	8.0	12.0	19.0	0.5	9.0	27.0	58.0	37.0	0.9
11-May-22	9.0	29.0	66.0	3.0	0.7	6.0	36.0	47.0	27.0	0.6	16.0	8.0	17.0	13.0	0.7	9.0	26.0	42.0	31.0	1.1
12-May-22	9.0	32.0	56.0	2.0	0.8	6.0	17.0	34.0	26.0	0.7	20.0	8.0	23.0	13.0	0.9	9.0	25.0	26.0	31.0	1.1
13-May-22	9.0	33.0	45.0	0.0	0.6	6.0	8.0	25.0	27.0	0.7	19.0	8.0	28.0	11.0	0.9	9.0	26.0	38.0	29.0	1.1
14-May-22	9.0	32.0	43.0	37.0	1.0	6.0	8.0	19.0	27.0	0.6	18.0	8.0	29.0	10.0	0.8	10.0	30.0	31.0	28.0	1.0
15-May-22	9.0	36	29	31	1.0	6.0	8.0	11.0	27.0	0.5	15.0	8.0	30.0	7.0	0.8	9.0	25.0	91.0	20.0	1.2
16-May-22	9.0	34	48	38	1.0	11.0	8.0	49.0	7.0	0.5	14.0	8.0	27.0	11.0	1.0	9.0	25.0	32.0	27.0	1.2
17-May-22	10.0	36	15	43	1.0	13.0	8.0	29.0	14.0	0.5	14.0	9.0	27.0	13.0	0.3	9.0	26.0	63.0	30.0	1.2
18-May-22	9.0	32	12	34	0.9	9.0	8.0	13.0	14.0	0.6	16.0	8.0	13.0	8.0	0.3	9.0	27.0	13.0	24.0	1.3
19-May-22	9.0	30	27	42	0.8	19.0	8.0	38.0	34.0	0.6	16.0	8.0	38.0	12.0	0.3	9.0	27.0	22.0	31.0	1.0
20-May-22	9.0	34	28	43	0.9	15.0	8.0	33.0	14.0	0.4	14.0	8.0	33.0	12.0	0.2	10.0	26.0	24.0	37.0	1.1
21-May-22	9.0	35	34	40	1.0	*	*	*	*	*	14.0	8.0	45.0	11.0	0.2	10.0	27.0	54.0	28.0	1.4
22-May-22	9.0	34	27	38	1.0	*	*	*	*	*	14.0	8.0	47.0	11.0	0.4	10.0	27.0	15.0	28.0	1.4
23-May-22	9.0	34	10	32	1.1	*	*	*	*	*	14.0	8.0	5.0	7.0	0.3	9.0	27.0	6.0	19.0	1.3
24-May-22	9.0	34	60	36	1.1	*	*	*	*	*	14.0	8.0	10.0	36.0	0.3	9.0	26.0	31.0	25.0	1.2
25-May-22	12.0	35	36	40	1.0	*	*	*	*	*	14.0	9.0	16.0	24.0	0.3	9.0	27.0	33.0	27.0	1.2
26-May-22	11.0	35	50	45	0.9	*	*	*	*	*	14.0	9.0	34.0	61.0	0.2	9.0	27.0	47.0	33.0	1.1
27-May-22	9.0	32	103	37	0.9	*	*	*	*	*	14.0	9.0	49.0	45.0	0.2	10.0	27.0	24.0	29.0	0.9
28-May-22	9.0	34	59	33	1.1	*	*	*	*	*	14.0	8.0	50.0	34.0	0.4	9.0	27.0	15.0	24.0	1.0
29-May-22	10.0	34	77	35	1.1	*	*	*	*	*	14.0	9.0	53.0	33.0	0.7	9.0	27.0	19.0	25.0	0.8
30-May-22	10.0	34	66	37	1.0	*	*	*	*	*	14.0	9.0	56.0	32.0	0.3	9.0	27.0	13.0	24.0	0.9
31-May-22	10.0	34	66	37	1.0	*	*	*	*	*	14.0	9.0	56.0	32.0	0.3	9.0	27.0	13.0	24.0	0.9

Remarks: *** Due to Network Reciever problem, Data not transferred.**

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.06.2022 to 30.06.2022

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3	80 µg/m^3	80 µg/m^3	100 µg/m^3	60 µg/m^3	2 mg/m^3
1-Jun-22	8.0	35.0	26.0	38.0	0.8	*	*	*	*	*	14.0	8.0	53.0	34.0	1.0	10.0	30.0	23.0	23.0	1.1
2-Jun-22	10.0	31.0	17.0	30.0	0.8	*	*	*	*	*	14.0	8.0	57.0	33.0	1.0	10.0	29.0	39.0	21.0	1.0
3-Jun-22	9.0	32.0	58.0	35.0	0.9	*	*	*	*	*	14.0	8.0	56.0	34.0	1.0	10.0	27.0	56.0	21.0	1.0
4-Jun-22	10.0	31.0	73.0	39.0	0.9	*	*	*	*	*	14.0	8.0	50.0	35.0	1.0	9.0	26.0	29.0	28.0	1.0
5-Jun-22	11.0	32.0	56.0	44.0	1.0	*	*	*	*	*	10.0	8.0	51.0	39.0	0.9	10.0	27.0	43.0	27.0	1.0
6-Jun-22	9.0	32.0	40.0	37.0	1.0	*	*	*	*	*	14.0	8.0	46.0	37.0	0.8	10.0	27.0	24.0	27.0	1.0
7-Jun-22	9.0	34.0	39.0	39.0	1.0	*	*	*	*	*	14.0	8.0	49.0	35.0	0.7	10.0	27.0	31.0	25.0	1.0
8-Jun-22	9.0	32.0	31.0	32.0	0.9	*	*	*	*	*	15.0	8.0	57.0	34.0	0.7	10.0	32.0	51.0	21.0	1.2
9-Jun-22	10.0	32.0	38.0	37.0	1.0	*	*	*	*	*	15.0	8.0	51.0	34.0	0.8	10.0	31.0	11.0	22.0	1.2
10-Jun-22	9.0	33.0	36.0	34.0	0.8	*	*	*	*	*	14.0	8.0	54.0	36.0	0.8	10.0	28.0	17.0	25.0	1.1
11-Jun-22	9.0	33.0	35.0	35.0	0.7	*	*	*	*	*	14.0	8.0	56.0	33.0	1.0	10.0	27.0	18.0	25.0	1.1
12-Jun-22	9.0	34.0	26.0	29.0	0.8	*	*	*	*	*	14.0	8.0	61.0	28.0	0.9	10.0	27.0	24.0	19.0	1.0
13-Jun-22	11.0	33.0	34.0	34.0	0.6	*	*	*	*	*	15.0	8.0	42.0	35.0	0.9	10.0	27.0	42.0	20.0	0.9
14-Jun-22	10.0	33.0	31.0	34.0	0.8	*	*	*	*	*	15.0	8.0	46.0	34.0	0.8	10.0	27.0	34.0	23.0	0.9
15-Jun-22	10.0	31.0	35.0	36.0	0.9	*	*	*	*	*	15.0	8.0	44.0	36.0	0.9	15.0	27.0	44.0	36.0	1.2
16-Jun-22	6.0	44.0	57.0	38.0	1.0	*	*	*	*	*	15.0	9.0	46.0	34.0	0.8	11.0	27.0	29.0	24.0	1.2
17-Jun-22	6.0	44.0	57.0	38.0	1.1	*	*	*	*	*	15.0	9.0	46.0	34.0	1.0	11.0	27.0	33.0	24.0	1.1
18-Jun-22	5.0	45.0	55.0	36.0	0.9	*	*	*	*	*	15.0	9.0	49.0	29.0	0.9	11.0	27.0	10.0	25.0	1.1
19-Jun-22	7.0	45.0	61.0	40.0	0.8	*	*	*	*	*	16.0	9.0	41.0	37.0	1.0	10.0	27.0	11.0	26.0	1.1
20-Jun-22	5.0	45.0	57.0	40.0	1.1	*	*	*	*	*	12.0	8.0	46.0	36.0	1.0	11.0	26.0	16.0	27.0	1.0
21-Jun-22	4.0	45.0	48.0	33.0	1.1	*	*	*	*	*	8.0	8.0	51.0	33.0	0.8	12.0	30.0	13.0	21.0	1.0
22-Jun-22	4.0	42.0	53.0	37.0	1.0	*	*	*	*	*	8.0	8.0	53.0	34.0	0.8	11.0	28.0	11.0	23.0	1.0
23-Jun-22	4.0	37.0	55.0	37.0	1.0	*	*	*	*	*	8.0	8.0	55.0	33.0	0.8	10.0	32.0	24.0	17.0	1.2
24-Jun-22	3.0	40.0	49.0	36.0	0.7	6.0	7.0	14.0	26.0	28.0	11.0	8.0	48.0	35.0	0.8	11.0	31.0	24.0	19.0	1.3
25-Jun-22	5.0	37.0	47.0	24.0	0.8	6.0	10.0	16.0	25.0	28.0	9.0	8.0	35.0	35.0	0.9	11.0	27.0	14.0	21.0	1.3
26-Jun-22	10.0	37.0	78.0	37.0	0.8	6.0	10.0	40.0	26.0	29.0	11.0	8.0	56.0	37.0	0.9	10.0	30.0	43.0	25.0	1.1
27-Jun-22	11.0	37.0	66.0	37.0	0.8	6.0	10.0	33.0	25.0	28.0	8.0	8.0	27.0	35.0	0.9	10.0	28.0	24.0	25.0	1.1
28-Jun-22	10.0	37.0	48.0	33.0	0.7	6.0	7.0	33.0	25.0	28.0	8.0	8.0	56.0	32.0	0.9	11.0	26.0	28.0	20.0	1.0
29-Jun-22	10.0	36.0	42.0	32.0	1.0	6.0	10.0	8.0	26.0	28.0	7.0	8.0	26.0	29.0	1.0	12.0	30.0	14.0	22.0	1.0
30-Jun-22	11.0	38.0	60.0	30.0	1	6.0	10.0	24.0	25.0	28.0	9.0	8.0	45.0	15.0	1.0	9.0	27.0	19.0	16.0	0.9

Remarks: *** Due to Network Reciever problem, Data not transferred.**

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SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

ULR - TC611822000009917F
Report No : QEN-22060006-03

Report Date : 06 Jun 2022

Customer Name : **M/s. COASTAL ENERGEN PVT LTD**
Customer Address : 2 x 600 MW Mutiara Thermal Power Plant,
No: 4/36-D,Duraisamypuram Post Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.

Sample Name	: Air	Sampling Date & Time	: 30 to 31 May 2022 11.40 am to 11.40 am
Sample Description	: Ambient Air Quality	Sample Received on	: 01 Jun 2022
Reference	: Test Request Form Dated 31.05.2022	Test Started on	: 01 Jun 2022
Sample Drawn By	: Laboratory	Test Completed on	: 06 Jun 2022
Sample Location	: Near Main Office	Wind Direction	: (SE)
:Sample Procedure	: IS 5182	Ambient Condition	: Sunny
Relative Humidity	: 58%	Ambient Temperature	:36°C

TEST RESULTS

S.NO	Parameter	Test Method	Results	Unit	Limit as per NAAQS Specification
Chemical					
1	Carbon Monoxide as CO (8 hrs)	IS 5182 (Part 10)	BLQ(LOQ:1.14)	mg/m³	02 Max
2	Nitrogen dioxide as NO2	IS 5182 (Part 06)	24.5	µg/m³	80 Max
3	Particulate Matter (PM10)	IS 5182 (Part 23)	63.9	µg/m³	100 Max
4	Particulate Matter (PM2.5)	IS 5182 (Part 24)	31.4	µg/m³	60 Max
5	Sulphur Dioxide as SO2	IS 5182 (Part 02)	11.3	µg/m³	80 Max
Polycyclic Aromatic Hydrocarbons					
6	Benzo(a)Pyrene (Particulate Phase)	SMSLA/GS/SOP/06	BLQ (LOQ:0.05)	ng/m³	01 Max
Trace Metal Elements					
7	Mercury	Compendium Method IO-3.4	BLQ(LOQ:11.0)	ng/m³	--
Volatile Organic Compounds					
8	Benzene	SMSLA/GM/SOP/07	BLQ(LOQ:1.0)	µg/m³	05 Max

Note : BLQ: Below Limit of Quantification LOQ: Limit of Quantification
Conclusion : The above tested sample conforms the NAAQ standards for the above tested parameters.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

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SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

ULR - TC611822000009916F

Report No : QEN-22060006-02

Report Date : 06 Jun 2022

Customer Name : **M/s. COASTAL ENERGEN PVT LTD**

Customer Address : 2 x 600 MW Mutiara Thermal Power Plant,
No: 4/36-D,Duraisamypuram Post Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.

Sample Name	: Air	Sampling Date & Time	: 30 to 31 May 2022 11.20 am to 11.20 am
Sample Description	: Ambient Air Quality	Sample Received on	: 01 Jun 2022
Reference	: Test Request Form Dated 31.05.2022	Test Started on	: 01 Jun 2022
Sample Drawn By	: Laboratory	Test Completed on	: 06 Jun 2022
Sample Location	: Near Batching Plant Gate	Wind Direction	: (SE)
:Sample Procedure	: IS 5182	Ambient Condition	: Sunny
Relative Humidity	: 58%	Ambient Temperature	:37°C

TEST RESULTS

S.NO	Parameter	Test Method	Results	Unit	Limit as per NAAQS Specification
Chemical					
1	Carbon Monoxide as CO (8 hrs)	IS 5182 (Part 10)	BLQ(LOQ:1.14)	mg/m³	02 Max
2	Nitrogen dioxide as NO2	IS 5182 (Part 06)	20.6	µg/m³	80 Max
3	Particulate Matter (PM10)	IS 5182 (Part 23)	58.9	µg/m³	100 Max
4	Particulate Matter (PM2.5)	IS 5182 (Part 24)	25.4	µg/m³	60 Max
5	Sulphur Dioxide as SO2	IS 5182 (Part 02)	9.0	µg/m³	80 Max
Polycyclic Aromatic Hydrocarbons					
6	Benzo(a)Pyrene (Particulate Phase)	SMSLA/GS/SOP/06	BLQ (LOQ:0.05)	ng/m³	01 Max
Trace Metal Elements					
7	Mercury	Compendium Method IO-3.4	BLQ(LOQ:11.0)	ng/m³	--
Volatile Organic Compounds					
8	Benzene	SMSLA/GM/SOP/07	BLQ(LOQ:1.0)	µg/m³	05 Max

Note : BLQ: Below Limit of Quantification LOQ: Limit of Quantification

Conclusion : The above tested sample conforms the NAAQ standards for the above tested parameters.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

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TEST REPORT

TC-6118

ULR - TC611822000009915F

Page 1 of 1

Report No : QEN-22060006-01

Report Date : 06 Jun 2022

Customer Name : **M/s. COASTAL ENERGEN PVT LTD**

Customer Address : 2 x 600 MW Mutiara Thermal Power Plant,
No: 4/36-D,Duraisamypuram Post Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.

Sample Name	: Air	Sampling Date & Time	: 30 to 31 May 2022 11.00 am to 11.00 am
Sample Description	: Ambient Air Quality	Sample Received on	: 01 Jun 2022
Reference	: Test Request Form Dated 31.05.2022	Test Started on	: 01 Jun 2022
Sample Drawn By	: Laboratory	Test Completed on	: 06 Jun 2022
Sample Location	: Near Crusher House	Wind Direction	: (SE)
:Sample Procedure	: IS 5182	Ambient Condition	: Sunny
Relative Humidity	: 58%	Ambient Temperature	:37°C

TEST RESULTS

S.NO	Parameter	Test Method	Results	Unit	Limit as per NAAQS Specification
Chemical					
1	Carbon Monoxide as CO (8 hrs)	IS 5182 (Part 10)	BLQ(LOQ:1.14)	mg/m³	02 Max
2	Nitrogen dioxide as NO2	IS 5182 (Part 06)	21.5	µg/m³	80 Max
3	Particulate Matter (PM10)	IS 5182 (Part 23)	62.8	µg/m³	100 Max
4	Particulate Matter (PM2.5)	IS 5182 (Part 24)	28.4	µg/m³	60 Max
5	Sulphur Dioxide as SO2	IS 5182 (Part 02)	10.2	µg/m³	80 Max
Polycyclic Aromatic Hydrocarbons					
6	Benzo(a)Pyrene (Particulate Phase)	SMSLA/GS/SOP/06	BLQ (LOQ:0.05)	ng/m³	01 Max
Trace Metal Elements					
7	Mercury	Compendium Method IO-3.4	BLQ(LOQ:11.0)	ng/m³	--
Volatile Organic Compounds					
8	Benzene	SMSLA/GM/SOP/07	BLQ(LOQ:1.0)	µg/m³	05 Max

Note : BLQ: Below Limit of Quantification LOQ: Limit of Quantification

Conclusion : The above tested sample conforms the NAAQ standards for the above tested parameters.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

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TEST REPORT

TC-6118

ULR - TC611822000009918F
Report No : QEN-22060006-04

Report Date : 06 Jun 2022

Customer Name : **M/s. COASTAL ENERGEN PVT LTD**
Customer Address : 2 x 600 MW Mutiara Thermal Power Plant,
No: 4/36-D,Duraisamypuram Post Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.

Sample Name	: Air	Sampling Date & Time	: 30 to 31 May 2022 12.00 Pm to 12.00 Pm
Sample Description	: Ambient Air Quality	Sample Received on	: 01 Jun 2022
Reference	: Test Request Form Dated 31.05.2022	Test Started on	: 01 Jun 2022
Sample Drawn By	: Laboratory	Test Completed on	: 06 Jun 2022
Sample Location	: Near Salt Gate	Wind Direction	: (NS)
:Sample Procedure	: IS 5182	Ambient Condition	: Sunny
Relative Humidity	: 54	Ambient Temperature	:37°C

TEST RESULTS

S.NO	Parameter	Test Method	Results	Unit	Limit as per NAAQS Specification
Chemical					
1	Carbon Monoxide as CO (8 hrs)	IS 5182 (Part 10)	BLQ(LOQ:1.14)	mg/m³	02 Max
2	Nitrogen dioxide as NO2	IS 5182 (Part 06)	22.9	µg/m³	80 Max
3	Particulate Matter (PM10)	IS 5182 (Part 23)	61.7	µg/m³	100 Max
4	Particulate Matter (PM2.5)	IS 5182 (Part 24)	27.6	µg/m³	60 Max
5	Sulphur Dioxide as SO2	IS 5182 (Part 02)	9.9	µg/m³	80 Max
Polycyclic Aromatic Hydrocarbons					
6	Benzo(a)Pyrene (Particulate Phase)	SMSLA/GS/SOP/06	BLQ (LOQ:0.05)	ng/m³	01 Max
Trace Metal Elements					
7	Mercury	Compendium Method IO-3.4	BLQ(LOQ:11.0)	ng/m³	--
Volatile Organic Compounds					
8	Benzene	SMSLA/GM/SOP/07	BLQ(LOQ:1.0)	µg/m³	05 Max

Note : BLQ: Below Limit of Quantification LOQ: Limit of Quantification
Conclusion : The above tested sample conforms the NAAQ standards for the above tested parameters.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

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TEST REPORT

TC-6118

ULR - TC611822000009919F
Report No : QEN-22060006-05

Report Date : 06 Jun 2022

Customer Name : **M/s. COASTAL ENERGEN PVT LTD**
Customer Address : 2 x 600 MW Mutiara Thermal Power Plant,
No: 4/36-D,Duraisamypuram Post Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.

Sample Name	: Air	Sampling Date & Time	: 30 to 31 May 2022 12.30 Pm to 12.30 Pm
Sample Description	: Ambient Air Quality	Sample Received on	: 01 Jun 2022
Reference	: Test Request Form Dated 31.05.2022	Test Started on	: 01 Jun 2022
Sample Drawn By	: Laboratory	Test Completed on	: 06 Jun 2022
Sample Location	: Near Watch Tower - 8	Wind Direction	: (SE)
:Sample Procedure	: IS 5182	Ambient Condition	: Sunny
Relative Humidity	: 58%	Ambient Temperature	:37°C

TEST RESULTS

S.NO	Parameter	Test Method	Results	Unit	Limit as per NAAQS Specification
Chemical					
1	Carbon Monoxide as CO (8 hrs)	IS 5182 (Part 10)	BLQ(LOQ:1.14)	mg/m³	02 Max
2	Nitrogen dioxide as NO2	IS 5182 (Part 06)	19.7	µg/m³	80 Max
3	Particulate Matter (PM10)	IS 5182 (Part 23)	52.9	µg/m³	100 Max
4	Particulate Matter (PM2.5)	IS 5182 (Part 24)	25.8	µg/m³	60 Max
5	Sulphur Dioxide as SO2	IS 5182 (Part 02)	9.6	µg/m³	80 Max
Polycyclic Aromatic Hydrocarbons					
6	Benzo(a)Pyrene (Particulate Phase)	SMSLA/GS/SOP/06	BLQ (LOQ:0.05)	ng/m³	01 Max
Trace Metal Elements					
7	Mercury	Compendium Method IO-3.4	BLQ(LOQ:11.0)	ng/m³	--
Volatile Organic Compounds					
8	Benzene	SMSLA/GM/SOP/07	BLQ(LOQ:1.0)	µg/m³	05 Max

Note : BLQ: Below Limit of Quantification LOQ: Limit of Quantification
Conclusion : The above tested sample conforms the NAAQ standards for the above tested parameters.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS STACK EMISSION MONITORING REPORT

Daily Average from 01.01.2022 to 30.06.2022

UNIT-1

Jan-22				Feb-22				Mar-22				Apr-22				May-22				Jun-22			
Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3
1-Jan-22	Plant not in operation			1-Feb-22	Plant not in operation			1-Mar-22	Plant not in operation			1-Apr-22	Plant not in operation			1-May-22	Plant not in operation			1-Jun-22	Plant not in operation		
2-Jan-22				2-Feb-22				2-Mar-22				2-Apr-22				2-May-22				2-Jun-22			
3-Jan-22				3-Feb-22				3-Mar-22				3-Apr-22				3-May-22				3-Jun-22			
4-Jan-22				4-Feb-22				4-Mar-22				4-Apr-22				4-May-22				4-Jun-22			
5-Jan-22				5-Feb-22				5-Mar-22				5-Apr-22				5-May-22				5-Jun-22			
6-Jan-22				6-Feb-22				6-Mar-22				6-Apr-22				6-May-22				6-Jun-22			
7-Jan-22				7-Feb-22				7-Mar-22				7-Apr-22				7-May-22				7-Jun-22			
8-Jan-22				8-Feb-22				8-Mar-22				8-Apr-22				8-May-22				8-Jun-22			
9-Jan-22				9-Feb-22				9-Mar-22				9-Apr-22				9-May-22				9-Jun-22			
10-Jan-22				10-Feb-22				10-Mar-22				10-Apr-22				10-May-22				10-Jun-22			
11-Jan-22				11-Feb-22				11-Mar-22				11-Apr-22				11-May-22				11-Jun-22			
12-Jan-22				12-Feb-22				12-Mar-22				12-Apr-22				12-May-22				12-Jun-22			
13-Jan-22				13-Feb-22				13-Mar-22				13-Apr-22				13-May-22				13-Jun-22			
14-Jan-22				14-Feb-22				14-Mar-22				14-Apr-22				14-May-22				14-Jun-22			
15-Jan-22				15-Feb-22				15-Mar-22				15-Apr-22				15-May-22				15-Jun-22			
16-Jan-22				16-Feb-22				16-Mar-22				16-Apr-22				16-May-22				16-Jun-22			
17-Jan-22				17-Feb-22				17-Mar-22				17-Apr-22				17-May-22				17-Jun-22			
18-Jan-22				18-Feb-22				18-Mar-22				18-Apr-22				18-May-22				18-Jun-22			
19-Jan-22				19-Feb-22				19-Mar-22				19-Apr-22				19-May-22				19-Jun-22			
20-Jan-22				20-Feb-22				20-Mar-22				20-Apr-22				20-May-22				20-Jun-22			
21-Jan-22				21-Feb-22				21-Mar-22				21-Apr-22				21-May-22				21-Jun-22			
22-Jan-22				22-Feb-22				22-Mar-22				22-Apr-22				22-May-22				22-Jun-22			
23-Jan-22				23-Feb-22				23-Mar-22				23-Apr-22				23-May-22				23-Jun-22			
24-Jan-22				24-Feb-22				24-Mar-22				24-Apr-22				24-May-22				24-Jun-22			
25-Jan-22				25-Feb-22				25-Mar-22				25-Apr-22				25-May-22				25-Jun-22			
26-Jan-22				26-Feb-22				26-Mar-22				26-Apr-22				26-May-22				26-Jun-22			
27-Jan-22				27-Feb-22				27-Mar-22				27-Apr-22				27-May-22				27-Jun-22			
28-Jan-22				28-Feb-22				28-Mar-22				28-Apr-22				28-May-22				28-Jun-22			
29-Jan-22								29-Mar-22				29-Apr-22				29-May-22				29-Jun-22			
30-Jan-22								30-Mar-22				30-Apr-22				30-May-22				30-Jun-22			
31-Jan-22								31-Mar-22								31-May-22							
Remarks :	Nil			Remarks:	Nil			Remarks:	Nil			Remarks:	Nil			Remarks:	Nil			Remarks:	Nil		

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS STACK EMISSION MONITORING REPORT

Daily Average from 01.01.2022 to 30.06.2022

UNIT-2

Jan-22				Feb-22				Mar-22				Apr-22				May-22				Jun-22			
Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3	Date	SPM 50 mg/Nm^3	SO2 200 mg/Nm^3	NOx 450 mg/Nm^3
1-Jan-22	Plant not in operation			1-Feb-22	Plant not in operation			1-Mar-22	Plant not in operation			1-Apr-22	42	124	128	1-May-22	29	141	74	1-Jun-22	34	116	173
2-Jan-22				2-Feb-22				2-Mar-22				2-Apr-22	43	156	135	2-May-22	29	139	97	2-Jun-22	34	111	167
3-Jan-22				3-Feb-22				3-Mar-22				3-Apr-22	43	177	111	3-May-22	29	137	152	3-Jun-22	35	129	143
4-Jan-22				4-Feb-22				4-Mar-22				4-Apr-22	43	177	135	4-May-22	29	134	187	4-Jun-22	35	168	174
5-Jan-22				5-Feb-22				5-Mar-22				5-Apr-22	44	177	134	5-May-22	29	128	197	5-Jun-22	35	165	191
6-Jan-22				6-Feb-22				6-Mar-22				6-Apr-22	44	*	*	6-May-22	29	121	201	6-Jun-22	Plant not in operation		
7-Jan-22				7-Feb-22				7-Mar-22				7-Apr-22	43	*	*	7-May-22	29	120	203	7-Jun-22			
8-Jan-22				8-Feb-22				8-Mar-22				8-Apr-22	44	129	232	8-May-22	28	118	192	8-Jun-22			
9-Jan-22				9-Feb-22				9-Mar-22				9-Apr-22	42	143	218	9-May-22	29	112	148	9-Jun-22			
10-Jan-22				10-Feb-22				10-Mar-22				10-Apr-22	41	142	235	10-May-22	Plant not in operation			10-Jun-22			
11-Jan-22				11-Feb-22				11-Mar-22				11-Apr-22	26	128	278	11-May-22				11-Jun-22			
12-Jan-22				12-Feb-22				12-Mar-22				12-Apr-22	26	128	278	12-May-22				12-Jun-22			
13-Jan-22				13-Feb-22				13-Mar-22				13-Apr-22	26	134	259	13-May-22				13-Jun-22			
14-Jan-22				14-Feb-22				14-Mar-22				14-Apr-22	29	114	175	14-May-22				14-Jun-22	35	190	240
15-Jan-22				15-Feb-22				15-Mar-22				15-Apr-22	33	120	211	15-May-22				15-Jun-22	35	176	223
16-Jan-22				16-Feb-22				16-Mar-22				16-Apr-22	36	120	157	16-May-22				16-Jun-22	35	182	232
17-Jan-22				17-Feb-22				17-Mar-22				17-Apr-22	38	139	170	17-May-22				17-Jun-22	34	150	203
18-Jan-22				18-Feb-22				18-Mar-22				18-Apr-22	38	139	170	18-May-22				18-Jun-22	35	152	237
19-Jan-22				19-Feb-22				19-Mar-22				19-Apr-22	39	121	165	19-May-22				19-Jun-22	35	152	228
20-Jan-22				20-Feb-22				20-Mar-22				20-Apr-22	40	124	177	20-May-22				20-Jun-22	34	153	234
21-Jan-22				21-Feb-22				21-Mar-22				21-Apr-22	40	144	156	21-May-22				21-Jun-22	35	150	229
22-Jan-22				22-Feb-22				22-Mar-22				22-Apr-22	44	151	169	22-May-22				22-Jun-22	Plant not in operation		
23-Jan-22				23-Feb-22	12	163	123	23-Mar-22				23-Apr-22	41	143	153	23-May-22				23-Jun-22			
24-Jan-22				24-Feb-22	29	130	115	24-Mar-22				24-Apr-22	42	123	143	24-May-22	36	115	149	24-Jun-22	35	157	121
25-Jan-22				25-Feb-22	45	*	*	25-Mar-22				25-Apr-22	39	152	170	25-May-22	34	114	172	25-Jun-22	35	165	115
26-Jan-22				26-Feb-22	45	132	79	26-Mar-22				26-Apr-22	29	159	181	26-May-22	34	116	217	26-Jun-22	34	85	84
27-Jan-22				27-Feb-22	45	383	128	27-Mar-22				27-Apr-22	29	158	179	27-May-22	34	120	218	27-Jun-22	Plant not in operation		
28-Jan-22				28-Feb-22	Plant not in operation			28-Mar-22	15	158	130	28-Apr-22	29	158	179	28-May-22	34	146	231	28-Jun-22	39	168	130
29-Jan-22								29-Mar-22	15	145	146	29-Apr-22	29	159	184	29-May-22	34	134	229	29-Jun-22	44	167	146
30-Jan-22								30-Mar-22	29	138	124	30-Apr-22	29	141	74	30-May-22	Plant not in operation			30-Jun-22	44	164	124
31-Jan-22								31-Mar-22	43	119	119					31-May-22	29	125	195				
Remarks:	Nil			Remarks:	* Preventive Maintenance of Analyzers Taken			Remarks:	Nil			Remarks:	* Preventive Maintenance of Analyzers Taken			Remarks:	Nil			Remarks:	Nil		

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SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

Report No : QEN-22040006-08 **Report Date:** 08 Apr 2022

Customer Name : **M/s. COASTAL ENERGEN PVT LTD**
Customer Address : 2 x 600 MW Mutiara Thermal Power Plant,
No: 4/36-D,Duraisamypuram Post Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.
Sample Description : Stack Monitoring
Reference : Test Request Form Dated 29.03.2022
Sample Drawn By : Laboratory
Sample Location : Boiler Unit -II Chimney
Sample Procedure : IS 11255 &SMSLA/EN/SOP/046
Diameter of Stack (m) : 7.5 m
Sampling Date :28 Mar 2022
Sample Received on : 01 Apr 2022
Test Started on : 01 Apr 2022
Test Completed on : 08 Apr 2022
Ambient Temperature :37°C

TEST RESULTS

S.NO	Parameter	Test Method	Unit	Results	(*Values are corrected in 6% O2 level)	Limit as per CPCB
Chemical						
1	Carbon Dioxide as CO2	SMSLA/EN/SOP/046	%	10.6	--	--
2	Carbon Monoxide as CO	SMSLA/EN/SOP/046	mg/Nm3	80	--	--
3	Moisture Content	EPA 1-3	%	6.3	--	--
4	Nitrogen Oxides as Nox	SMSLA/EN/SOP/046	mg/Nm3	117	155	450 Max
5	Oxygen as O2	SMSLA/EN/SOP/046	%	9.7	--	--
6	Particulate Matter	IS 11255 (Part 01)	mg/Nm3	26.4	35.1	50 Max
7	Stack temperature	IS 11255 (Part 03)	°C	132	--	--
8	Sulphur Dioxide as SO2	IS 11255 (Part 02)	mg/Nm3	143	190	200 Max
9	Velocity	EPA 1-3	m/s	20.1	--	--
10	Volume of Gas Discharged	IS 11255 (Part 03)	Nm3/Hr	2334911	--	--
Trace Metal Elements						
11	Arsenic	EPA - 29	mg/m³	BLQ(LOQ:0.00002)	--	--
12	Chromium	EPA - 29	mg/m³	BLQ(LOQ:0.00002)	--	--
13	Lead	EPA - 29	mg/m³	BLQ(LOQ:0.00002)	--	--
14	Mercury	EPA - 29	mg/m³	BLQ(LOQ:0.00002)	--	0.03 Max

Note : BLQ: Below Limit of Quantification LOQ: Limit of Quantification
Conclusion: The above tested sample complies the CPCB standards for the above tested parameters.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METEOROLOGICAL STATION REPORT

Daily Average from 01.01.2022 to 31.01.2022

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Jan-22	23.5	30.9	25.6	1041	1044	1042	East & North East	3.6	23.7	10.2	61.0	92.8	81.8	0.5
2-Jan-22	23.1	28.3	25.0	1040	1043	1042	North East & East	1.7	22.9	9.1	73.0	94.0	85.5	1.5
3-Jan-22	23.2	30.8	26.1	1040	1043	1042	East & North East	1.9	24.9	10.4	54.5	91.6	78.1	0.0
4-Jan-22	22.0	30.7	25.6	1040	1043	1042	North East & East	1.7	26.8	9.3	52.0	92.6	76.8	0.0
5-Jan-22	21.1	32.2	25.9	1040	1044	1042	East & North East	1.2	19.7	8.0	44.1	91.1	75.0	0.0
6-Jan-22	22.2	30.5	26.0	1039	1043	1041	East & North East	1.2	18.7	7.7	65.8	94.8	82.0	0.0
7-Jan-22	23.1	31.7	26.7	1040	1043	1041	East & North East	1.2	19.0	7.6	61.1	95.6	80.1	0.0
8-Jan-22	23.4	31.6	26.5	1040	1043	1042	East & North East	1.2	19.8	7.9	54.6	92.3	79.4	0.0
9-Jan-22	22.3	31.6	26.2	1039	1042	1041	East & North East	1.2	18.0	6.7	55.6	95.7	79.8	0.0
10-Jan-22	22.1	32.0	26.4	1039	1042	1041	East & North West	1.2	20.3	6.3	58.0	97.4	80.6	0.0
11-Jan-22	22.7	33.0	26.8	1039	1042	1041	East & North East	1.2	17.8	6.5	55.7	95.8	80.5	0.0
12-Jan-22	22.2	31.7	26.5	1039	1042	1040	East & North West	1.2	21.1	5.4	60.0	96.5	82.2	0.0
13-Jan-22	22.9	32.5	26.8	1038	1042	1040	East & North West	1.2	18.8	5.3	58.0	96.3	81.4	0.0
14-Jan-22	23.2	31.8	26.6	1038	1042	1040	North West & East	1.2	18.1	5.0	63.3	95.6	83.4	0.0
15-Jan-22	22.6	31.8	26.8	1039	1042	1040	East & North West	1.2	21.1	6.3	61.0	95.8	80.8	0.0
16-Jan-22	24.1	32.4	27.2	1039	1043	1041	East & North East	1.5	22.4	8.0	55.8	93.6	77.5	0.0
17-Jan-22	23.1	32.0	26.8	1040	1044	1042	North East & East	1.2	21.1	8.8	54.5	92.6	75.2	0.0
18-Jan-22	22.1	31.9	26.3	1039	1044	1042	North East & East	2.2	21.6	9.7	48.9	89.0	71.8	0.0
19-Jan-22	21.6	31.7	26.2	1039	1043	1041	East & North East	2.2	24.1	8.7	48.1	90.0	74.3	0.0
20-Jan-22	21.5	31.8	25.9	1038	1042	1040	East & North West	1.2	18.6	6.2	54.1	94.4	76.1	0.0
21-Jan-22	21.0	31.4	25.8	1039	1042	1040	South East & North West	1.2	17.7	5.2	57.3	94.5	79.3	0.0
22-Jan-22	19.9	33.4	26.4	1037	1041	1039	South East & North West	1.2	19.3	5.9	48.8	98.4	77.6	0.0
23-Jan-22	20.8	32.9	26.6	1037	1040	1039	South East & North West	1.2	19.8	5.6	55.3	97.6	80.5	0.0
24-Jan-22	22.8	33.1	26.9	1037	1040	1038	South East & North West	1.2	17.1	4.7	61.8	95.8	83.4	2.0
25-Jan-22	22.2	31.9	26.8	1037	1040	1039	South East & North West	1.2	21.2	6.6	62.2	97.3	78.1	0.5
26-Jan-22	21.7	31.8	26.2	1038	1041	1039	East & North West	1.2	19.5	6.0	54.6	92.0	77.7	0.0
27-Jan-22	21.2	31.0	26.3	1037	1041	1039	East & North East	1.2	27.8	8.3	60.5	92.4	74.9	0.0
28-Jan-22	20.9	32.9	26.6	1038	1042	1040	East & North East	1.2	20.9	9.4	49.4	92.5	71.6	0.0
29-Jan-22	24.3	32.2	27.8	1039	1042	1041	East & North East	1.7	24.25	10.73	50.7	84.0	68.7	0.0
30-Jan-22	22.8	32.7	27.0	1038	1042	1040	East & North East	1.2	19.49	8.37	55.9	85.7	73.7	0.0
31-Jan-22	23.5	32.3	27.1	1038	1042	1040	East & North West	1.2	20.44	7.5	60.4	90.6	77.5	0.0

Remarks: Total Rainfall for the month 4.5 mm.

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.02.2022 to 28.02.2022

Date	Ambient Temperature (^{o}C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Feb-22	23.1	32.3	26.9	1038	1041	1040	East & South East	1.2	20.3	7.8	56.3	91.0	76.0	0.0
2-Feb-22	21.1	31.5	25.7	1039	1042	1040	East & North West	1.2	18.4	6.3	58.3	96.2	78.2	0.0
3-Feb-22	20.2	30.9	25.4	1038	1042	1040	North West & South East	1.2	19.9	6.3	53.6	95.2	77.7	0.0
4-Feb-22	19.9	32.0	26.3	1037	1041	1039	South East & North West	1.2	19.7	6.1	57.0	97.7	80.0	0.0
5-Feb-22	22.5	32.2	27.2	1037	1041	1039	East & North West	1.2	20.5	6.5	59.4	96.1	78.3	0.0
6-Feb-22	23.4	31.8	27.3	1039	1043	1041	East & South East	1.2	22.9	7.6	56.0	94.1	74.2	0.0
7-Feb-22	23.1	32.2	26.9	1040	1043	1041	East & North West	2.1	22.5	9.3	52.7	87.5	72.2	0.0
8-Feb-22	22.0	32.7	26.8	1038	1042	1041	East & North West	1.2	22.2	9.1	41.0	86.8	70.4	0.0
9-Feb-22	22.6	31.9	26.4	1039	1042	1040	East & North East	1.2	23.9	9.8	45.5	83.4	68.4	0.0
10-Feb-22	20.9	33.0	26.6	1038	1042	1040	East & North East	1.7	22.8	8.8	36.5	85.9	67.8	0.0
11-Feb-22	23.0	30.9	26.3	1038	1041	1040	East & North East	1.2	20.1	7.5	58.5	92.5	76.5	7.0
12-Feb-22	23.6	30.3	26.1	1038	1041	1040	North East & East	1.2	25.3	8.8	64.8	94.7	81.3	5.0
13-Feb-22	22.7	29.4	26.0	1038	1041	1039	North East & East	1.2	17.8	6.0	61.5	91.8	76.5	5.0
14-Feb-22	22.6	31.5	26.5	1037	1041	1039	East & North East	2.5	21.4	8.8	57.9	87.9	75.8	0.0
15-Feb-22	23.0	30.8	26.4	1037	1041	1039	East & North East	1.9	21.5	9.5	50.6	88.0	72.6	0.0
16-Feb-22	21.9	31.2	26.2	1036	1040	1038	East & North West	2.3	23.3	8.8	54.2	83.7	71.8	0.0
17-Feb-22	22.9	31.3	26.4	1035	1039	1037	East & North East	1.2	21.0	7.9	48.8	85.2	71.4	0.0
18-Feb-22	21.5	32.6	26.6	1037	1040	1038	East & North East	2.0	24.7	8.6	51.5	89.1	74.5	0.0
19-Feb-22	23.3	31.8	26.8	1038	1041	1040	East & North East	2.4	21.1	9.3	58.4	89.1	76.7	0.0
20-Feb-22	23.7	32.7	27.2	1038	1041	1040	East & South East	1.2	21.4	8.1	55.2	88.4	76.4	0.0
21-Feb-22	23.2	32.8	27.5	1037	1040	1039	South East & North West	1.2	21.4	6.8	60.0	93.5	80.0	0.0
22-Feb-22	23.3	32.9	27.6	1038	1041	1040	East & South East	1.2	20.1	5.8	57.2	97.1	78.5	0.0
23-Feb-22	22.0	32.7	27.2	1039	1043	1041	East & North West	1.2	25.2	9.0	55.3	93.8	74.2	0.0
24-Feb-22	23.5	32.1	27.4	1040	1044	1042	East & North East	1.5	22.8	8.6	54.1	88.9	72.4	0.0
25-Feb-22	23.5	32.1	27.2	1039	1043	1041	East & North East	1.2	25.0	9.8	52.4	85.8	71.6	0.0
26-Feb-22	22.2	33.4	27.5	1039	1043	1041	East & North West	1.8	19.9	8.2	52.4	88.6	72.3	0.0
27-Feb-22	24.5	32.0	27.9	1039	1043	1041	East & North East	1.2	26.7	10.9	58.0	88.4	73.7	0.0
28-Feb-22	22.6	32.6	27.5	1039	1043	1041	East & North West	1.2	21.2	8.5	48.2	90.2	73.7	0.0

Remarks: Total Rainfall for the month 17.0 mm.

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.03.2022 to 31.03.2022

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Mar-22	23.8	33.8	27.6	1041	1044	1042	East & North East	1.3	23.7	10.2	49.7	91.7	72.9	0.0
2-Mar-22	21.6	34.3	27.1	1040	1043	1042	East & North East	1.6	22.3	9.1	31.4	83.9	64	0.0
3-Mar-22	22.6	33.9	27.3	1040	1043	1042	East & North East	3.3	24.9	10.4	38.7	86.1	67.9	0.0
4-Mar-22	22.2	34.1	28	1040	1043	1042	East & North East	1.2	25.1	9.3	42	80.4	64.3	0.0
5-Mar-22	21.4	35.5	27.8	1040	1044	1042	East & West	1.2	24.2	8.0	30.9	89.8	67	0.0
6-Mar-22	22.4	34.8	28.2	1039	1043	1041	East & South East	1.2	26.3	7.7	37.2	80	66	0.0
7-Mar-22	22.5	32.2	27.2	1040	1043	1041	East & South East	1.2	25.2	7.6	50.6	82.3	69.6	0.0
8-Mar-22	23.6	32.3	27.5	1040	1043	1042	East & South East	1.2	19.7	7.9	59.7	96.5	77.2	27.5
9-Mar-22	23.1	32.5	27.3	1039	1042	1041	East & North West	1.2	20.0	6.7	57.4	90.5	76.9	0.0
10-Mar-22	22.6	32.9	27.1	1039	1042	1041	East & North West	1.2	20.2	6.3	53.2	95.1	76.5	0.0
11-Mar-22	22.7	32.8	27.2	1039	1042	1041	East & North West	1.2	22.0	6.5	57.1	93.2	76.8	0.0
12-Mar-22	22.3	33.1	27.4	1039	1042	1040	East & North West	1.2	21.1	5.4	51.4	94.6	75.2	0.0
13-Mar-22	23	32.6	27.4	1038	1042	1040	East & North East	1.2	23.4	5.3	52.2	92.8	73.6	0.0
14-Mar-22	22.6	33.0	27.2	1038	1042	1040	East & South East	1.2	22.3	5.0	43.9	91.8	70.8	0.0
15-Mar-22	21.8	33.2	27.3	1039	1042	1040	South East & North West	1.2	20.4	6.3	45.8	90.2	72.6	0.0
16-Mar-22	22.2	33.7	27.9	1039	1043	1041	South East & North West	1.2	27.1	8.0	42.3	95	75.6	0.0
17-Mar-22	24.5	33.6	28.8	1040	1044	1042	South East & North West	1.2	23.3	8.8	56.7	95.3	78.6	0.0
18-Mar-22	23	34.5	28.4	1039	1044	1042	South East & North West	1.2	22.5	9.7	58.3	94.4	79.9	0.0
19-Mar-22	24.1	36.3	29.9	1039	1043	1041	South East & West	1.2	25.8	8.7	50.9	88.4	69.5	0.0
20-Mar-22	26	34.9	30.6	1038	1042	1040	South East & West	1.2	29.4	6.2	35.7	77.7	62.9	0.0
21-Mar-22	23.6	36.8	30.2	1039	1042	1040	South East & North West	1.2	26.7	5.2	36.9	85.1	64	0.0
22-Mar-22	24.8	35.8	30.1	1037	1041	1039	South East & West	1.2	30.0	5.9	44.5	92.9	67.2	0.0
23-Mar-22	25.1	34.9	29.6	1037	1040	1039	North West & South East	1.2	26.4	5.6	56	94.3	75.9	0.0
24-Mar-22	23.3	35.0	29.3	1037	1040	1038	South East & south	1.2	30.0	4.7	55.8	84.6	69.6	0.0
25-Mar-22	24	35.9	29.5	1037	1040	1039	South & South East	1.2	32.2	6.6	43.5	90.9	70.3	0.0
26-Mar-22	24.4	35.1	29.1	1038	1041	1039	South East & West	1.2	25.4	6.0	45.6	91	71.7	0.0
27-Mar-22	24.8	34.8	29.8	1037	1041	1039	South East & North West	1.2	24.9	8.3	48.8	87.6	70.6	0.0
28-Mar-22	24.6	35.1	30	1038	1042	1040	East & North West	1.2	27.5	9.4	51.8	90	70.7	0.0
29-Mar-22	25.1	36.3	30	1039	1042	1041	South & South East	1.2	33.0	10.73	48	90	71.9	0.0
30-Mar-22	22.8	35.8	27.0	1038	1042	1040	South & South East	1.2	32.6	8.37	44.6	92.4	68.4	0.0
31-Mar-22	23.5	37.2	27.1	1038	1042	1040	South & South East	1.2	30.9	7.5	40.9	90.6	72.1	0.0

Remarks: Total Rainfall for the month 27.5 mm.

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.04.2022 to 30.04.2022

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Apr-22	25.6	36.1	30.1	1037	1040	1039	South East & South	1.22	36.1	30.1	47.7	93	74	0.0
2-Apr-22	25.9	35.9	30.5	1037	1041	1039	East & South East	1.22	35.9	30.5	46.8	84	69.5	0.0
3-Apr-22	24.2	35.2	29.6	1036	1040	1039	South East & East	1.22	35.2	29.6	48.8	86.7	70.1	0.0
4-Apr-22	24.9	34.1	29.1	1037	1041	1039	South East & East	1.22	34.1	29.1	60.1	91.2	75.9	3.0
5-Apr-22	23.1	33.9	28.8	1039	1042	1040	South East & East	1.22	33.9	28.8	54	93.7	75.9	0.0
6-Apr-22	24.8	35.1	29.4	1038	1042	1040	South East & North West	1.22	35.1	29.4	51.7	89.5	71.6	0.0
7-Apr-22	24.4	35.6	29.9	1038	1041	1039	South East & North West	1.22	35.6	29.9	44.4	88.4	69.5	0.0
8-Apr-22	20.6	34.5	28.5	1037	1041	1039	South East & North West	1.22	34.5	28.5	49.6	94.6	75.5	0.5
9-Apr-22	23.8	34.2	28.1	1036	1040	1038	South East & North West	1.22	34.2	28.1	55.9	94.2	75.1	0.0
10-Apr-22	23	35.3	27.1	1036	1039	1038	South East & East	1.22	35.3	27.1	50.9	96.5	78.8	2.0
11-Apr-22	22.9	34.7	27	1035	1039	1038	South East & West	1.22	34.7	27.0	56.4	96.7	83.8	1.5
12-Apr-22	23.9	34.1	27.6	1035	1038	1037	South East & West	1.22	34.1	27.6	57.8	97.1	82.9	0.0
13-Apr-22	23.1	33.9	27.7	1035	1039	1037	South East & south	1.22	33.9	27.7	55.7	96.5	80.2	0.0
14-Apr-22	24.8	34.6	28.4	1036	1039	1037	South & South East	1.22	34.6	28.4	50.2	95.3	79.5	0.0
15-Apr-22	25.2	35.7	30.3	1035	1039	1037	South & South East	1.22	35.7	30.3	48.1	93.0	71	0.0
16-Apr-22	26.8	35.9	30.9	1034	1038	1036	South & South East	1.22	35.9	30.9	42.2	93.4	72.2	0.0
17-Apr-22	23.8	36.2	29.1	1035	1039	1037	South & South East	1.22	36.2	29.1	51.9	93.3	76.0	0.0
18-Apr-22	23.8	36.4	29.3	1037	1039	1038	South East & West	1.22	36.4	29.3	45.2	93.9	72.9	0.0
19-Apr-22	24.8	35.9	30.4	1037	1040	1038	South East & East	1.22	35.9	30.4	49.2	89.9	71.0	0.0
20-Apr-22	25.7	35.1	30.4	1036	1039	1037	South East & East	1.22	35.1	30.4	59.9	92.4	76.3	0.0
21-Apr-22	25.6	36.2	30.1	1036	1039	1037	South East & south	1.22	36.2	30.1	55.8	94.9	76.8	0.0
22-Apr-22	25.4	35	29.8	1036	1039	1038	South East & south	1.22	35.0	29.8	53.7	92.8	76.8	0.0
23-Apr-22	24.6	34	28.7	1037	1040	1039	South East & south	1.22	34.0	28.7	59.3	96.3	80.9	0.0
24-Apr-22	25	35	29.7	1036	1039	1038	South East & south	1.22	35.0	29.7	50.5	95.3	76.4	0.0
25-Apr-22	25.9	36.2	30.5	1035	1039	1037	South East & south	1.22	36.2	30.5	47.3	95.4	74.2	0.0
26-Apr-22	25.9	36.5	30.7	1035	1039	1037	South East & south	1.22	36.5	30.7	47.3	95.2	73.4	0.0
27-Apr-22	25.8	35.6	30.1	1035	1039	1037	South East & south	1.22	35.6	30.1	55.6	95.4	77.3	0.0
28-Apr-22	25.7	36.1	30.5	1036	1039	1038	South East & south	1.22	36.1	30.5	45.1	95.3	74.3	0.0
29-Apr-22	25.5	36.3	31.2	1035	1039	1038	South East & south	1.22	36.3	31.2	48.6	95.1	70.8	0.0
30-Apr-22	22.8	35.8	27.0	1038	1042	1040	South East & South West	1.22	32.6	8.37	44.6	92.4	68.4	0.0

Remarks: Total Rainfall for the month 7.0 mm.

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.05.2022 to 31.05.2022

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-May-22	25.6	36.1	30.1	1037	1040	1039	South West & West	1.22	29.0	11.0	47.7	93	74	0.0
2-May-22	25.9	35.9	30.5	1037	1041	1039	South West & West	1.22	29.7	10.1	46.8	84	69.5	0.0
3-May-22	24.2	35.2	29.6	1036	1040	1039	South West & West	1.22	25.5	7.0	48.8	86.7	70.1	0.0
4-May-22	24.9	34.1	29.1	1037	1041	1039	East & South East	1.22	22.7	8.6	60.1	91.2	75.9	1.0
5-May-22	24.7	35.5	29.9	1035	1038	1037	South East & South West	1.22	18.4	7.7	54	93.7	75.9	0.0
6-May-22	26.5	39.4	31.7	1034	1038	1036	North West & West	1.22	27.7	6.8	51.7	89.5	71.6	0.0
7-May-22	25.1	36.4	30.5	1034	1038	1036	West & South West	1.22	23.0	5.5	44.4	88.4	69.5	2.0
8-May-22	25.2	37.6	31.4	1032	1036	1034	West & North West	1.22	19.6	5.7	49.6	94.6	75.5	0.0
9-May-22	28.2	36.2	31.3	1032	1035	1034	South East & North West	1.22	21.9	8.5	55.9	94.2	75.1	0.0
10-May-22	26.7	37	31.5	1032	1036	1034	West & South West	1.22	26.6	11.1	50.9	96.5	78.8	0.0
11-May-22	28.7	35.9	31	1033	1036	1035	South East & West	4.55	37.7	16.8	56.4	96.7	83.8	0.0
12-May-22	28.2	35.7	31.3	1034	1037	1036	West & South West	4.12	34.7	14.7	57.8	97.1	82.9	0.0
13-May-22	27.5	37.7	31.9	1033	1037	1035	West & South West	3.31	25.3	11.5	55.7	96.5	80.2	0.0
14-May-22	27.7	36.6	31.2	1034	1038	1036	South & South East	2.2	25.2	10.8	50.2	95.3	79.5	0.0
15-May-22	24.7	36.5	29.9	1034	1037	1036	West & North West	1.22	28.6	11.5	48.1	93.0	71	1.5
16-May-22	25.9	35.6	30.7	1034	1037	1036	South West & West	1.22	25.3	8.5	42.2	93.4	72.2	0.0
17-May-22	26.5	33.4	28.5	1034	1038	1036	South West & West	2.06	27.6	12.6	51.9	93.3	76.0	2.5
18-May-22	26.5	33.4	28.5	1034	1038	1036	South East & West	2.06	27.6	12.6	45.2	93.9	72.9	0.0
19-May-22	25.3	34.4	28.8	1036	1039	1037	West & South West	1.23	34.0	11.3	49.2	89.9	71.0	0.0
20-May-22	24.2	35.8	29.8	1036	1039	1038	South West & South	1.23	27.1	8.9	59.9	92.4	76.3	0.0
21-May-22	25.7	37.2	31.1	1035	1038	1037	South West & West	1.23	26.7	11.6	55.8	94.9	76.8	0.0
22-May-22	27.6	36.8	31.3	1034	1037	1036	South West & West	3.26	35.2	15.3	53.7	92.8	76.8	0.0
23-May-22	28	36.9	31.3	1033	1036	1035	South West & West	1.7	27.8	10.9	59.3	96.3	80.9	0.0
24-May-22	27.3	36	31.1	1035	1038	1036	South East & West	1.23	23.4	8.3	50.5	95.3	76.4	0.0
25-May-22	25.5	35.7	30.1	1035	1039	1037	South East & West	1.23	28.8	7.7	47.3	95.4	74.2	0.0
26-May-22	23.9	36.3	29.3	1036	1039	1038	South East & West	1.23	31.2	8.4	47.3	95.2	73.4	0.5
27-May-22	25.3	38.2	31	1035	1039	1037	South West & West	1.23	26.4	9.8	55.6	95.4	77.3	0.0
28-May-22	26	38.2	31.2	1035	1038	1037	South West & West	1.25	26.2	9.6	45.1	95.3	74.3	0.0
29-May-22	25.8	37	30.8	1035	1038	1037	South West & south	1.23	27.6	9.1	48.6	95.1	70.8	0.0
30-May-22	25.3	38.2	31.1	1034	1038	1036	South West & south	1.23	26.6	9.9	44.6	92.4	68.4	0.0
31-May-22	27.6	37.4	31	1034	1037	1036	South West & south	3.48	34.9	12.71	44.6	92.4	68.4	0.0

Remarks: Total Rainfall for the month 7.5 mm.

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.06.2022 to 30.06.2022

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Jun-22	27.7	38.2	31.9	1041	1044	1042	West & South West	2.5	27.6	12.7	31.9	68.6	52.7	0.0
2-Jun-22	27.7	38.6	31.9	1040	1043	1042	West & South West	1.7	25.5	10.7	33.6	70.2	55.0	0.0
3-Jun-22	26.5	37.7	31.5	1040	1043	1042	West & South West	1.2	30.6	10.1	38.3	74.7	60.3	0.0
4-Jun-22	26.1	35.4	31.1	1040	1043	1042	West & South West	1.2	26.2	9.0	46.0	78.9	64.6	0.0
5-Jun-22	28.3	36.6	32.0	1040	1044	1042	West & South West	1.2	28.2	11.6	46.6	73.3	61.7	0.0
6-Jun-22	27.8	36.1	31.5	1039	1043	1041	West & South West	1.2	27.0	9.4	45.3	74.5	62.8	0.0
7-Jun-22	26.8	35.9	30.8	1040	1043	1041	West & South West	1.2	26.4	9.6	42.0	79.3	60.1	0.0
8-Jun-22	26.5	38.5	32.1	1040	1043	1042	East & South East	3.2	24.3	11.0	35.7	76.5	54.9	0.0
9-Jun-22	27.7	38.8	32.2	1039	1042	1041	East & North West	1.5	31.4	10.5	34.0	66.0	54.8	0.0
10-Jun-22	27.5	38.9	32.0	1039	1042	1041	East & North West	1.6	35.5	10.7	33.1	68.3	55.5	0.0
11-Jun-22	27.1	37.6	31.4	1039	1042	1041	East & North West	1.2	25.5	10.3	38.2	72.5	57.3	0.0
12-Jun-22	27.6	37.9	31.9	1039	1042	1040	East & North West	1.9	24.7	10.3	34.8	70.3	54.1	0.0
13-Jun-22	26.7	36.8	30.8	1038	1042	1040	East & North East	1.2	29.0	9.4	38.4	85.3	62.1	0.0
14-Jun-22	26.1	35	30.8	1038	1042	1040	East & South East	1.2	30.2	10.0	45.6	79.1	61.9	0.0
15-Jun-22	25.9	35.4	30.3	1039	1042	1040	East & South West	1.2	27.4	8.2	50.2	78.3	64.6	0.0
16-Jun-22	25.2	34.6	28.9	1039	1043	1041	East & South West	1.2	36.7	8.4	51.3	82.1	69.3	0.0
17-Jun-22	24.2	33.9	29.2	1040	1044	1042	East & South West	1.2	25.3	7.1	52.7	87.1	69.5	0.0
18-Jun-22	25.4	35.1	29.8	1039	1044	1042	East & South West	1.2	31.7	8.2	48.1	81.8	66.5	0.0
19-Jun-22	25.6	35.7	30.1	1039	1043	1041	West & South West	1.2	29.6	9.0	49.0	80.4	65.3	0.0
20-Jun-22	24.2	35.8	30.4	1038	1042	1040	West & South West	1.2	26.4	9.4	42.1	79.5	62.7	0.0
21-Jun-22	27.6	38	31.7	1039	1042	1040	West & South West	3.7	23.0	11.2	37.4	69.1	54.3	0.0
22-Jun-22	27.1	38	31.2	1037	1041	1039	West & South West	1.6	24.4	8.9	33.3	67.1	53.8	0.0
23-Jun-22	26.9	37.8	31.8	1037	1040	1039	West & South West	1.2	25.0	10.4	35.5	70.6	54.8	0.0
24-Jun-22	27.7	37.5	31.8	1037	1040	1038	West & South West	1.9	30.0	13.1	32.9	68.9	54.0	0.0
25-Jun-22	28.2	35.1	30.6	1037	1040	1039	West & South West	3.9	24.0	12.2	40.7	66.7	57.2	0.0
26-Jun-22	28.3	37.5	32.0	1038	1041	1039	West & South West	5.0	35.4	14.1	33.1	65.8	51.9	0.0
27-Jun-22	27.2	37.1	31.6	1037	1041	1039	West & South West	3.3	26.3	12.3	37.1	71.5	53.6	0.0
28-Jun-22	27.8	36.3	31.0	1038	1042	1040	West & South West	3.6	29.0	12.9	38.5	67.2	56.0	0.0
29-Jun-22	26.8	37.2	32.1	1039	1042	1041	West & South West	2.8	32.6	9.6	36.5	70.8	55.8	0.0
30-Jun-22	25.8	36.8	30.8	1038	1042	1040	West & South West	1.2	28.8	10.8	41.8	69.2	53.9	0.0
Remarks:	Total Rainfall for the month			0.0 mm.										

ANNEXURE - 2

COASTAL ENERGEN PVT LTD

C&O GROUP






- Environment Clearance Compliance Status
- Monthly Environment Report
- Monthly Ash Report
- CIRP

Welcome to Coastal Energen Pvt. Ltd.

Coal and Oil Group is a Rs. 2400 crores (US$ 550 million) Integrated Energy Company involved in various aspects of Energy supplies including Coal trading, Mining, Shipping, Logistics and Power Generation.

Coastal Energen Pvt Ltd (ENERGEN), the Power Generating Flagship Company of the Coal and Oil Group, is setting up a 1200 MW coal fired thermal power plant in the district of Tuticorin in the State of Tamil Nadu , India.

Our maiden power project in Tuticorin, Tamil Nadu, South India is a logical extension of our multi disciplinary capabilities building on our diverse strengths and leveraging our varied experiences in "Fuel Management" which gives Coastal Energen a distinct advantage as a low cost Power Producer.

Approximately 60% of the cost of power comprises of fuel cost. Our group is one of the top suppliers of imported coal to some of the leading private and public power producers in India like Tata, Reliance, Torrent Power, Gujarat Electricity Board, Maharashtra State Electricity Board, Calcutta Electric and others. With such experience under our belt and a top notch management team guiding the project, we are in a comfortable position to effectively manage the cost of fuel and finally the cost of power generated.

Our Projects

Tuticorin has been identified by both the Central Government of India and State Government of Tamilnadu as a power generating centre for southern Tamilnadu lying as it does in the middle of the power corridor.

Situated only 13 kms from Tuticorin town, our project enjoys the following advantages:

- Close proximity to a major town (13 kms)
- Within 21 kms of a major port
- Excellent road, Rail & Air connectivity
- Excellent grid connectivity

The project has achieved fast progress since its inception.

- Land fully acquired
- PPA Agreement Signed
- MOEF Clearance issued
- Funding fully tied up and secured
- BTG order finalized
- Discussion with PGCIL for power evacuation

- Engineering Consultants appointed
- Manpower in place
- Site preparation completed
- Geo-technical investigations completed
- Construction water and power in place
- Water allocated by TWAD Board for process requirements

ANNEXURE - 3

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - January'22

Sample Collected on 06.01.2022

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH		7.65	8.09	7.36	7.32
2	Electrical conductivity	(µs/cm)	7460	2180	14740	9300
3	Total Suspended Solids	ppm	40	12	4	2
4	Total Dissolved Solids	ppm	4849	1417	9581	6045
5	Total Hardness	ppm	540	390	1240	700
6	Calcium Hardness	ppm	320	230	700	420
7	Magnesium Hardness	ppm	220	160	540	280
8	Total Chloride	ppm	992.6	680	3854	2056.1
9	Sodium	ppm	1120	1200	1280	1220
10	Potassium	ppm	56	80	88	75
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.12	0.16	0.19	0.18
13	BOD	mg/l	1.45	1.84	1.92	1.6
14	DO	mg/l	5.8	5.4	5.6	5.8
15	COD	mg/l	66	82	84	68
16	Sulphate	ppm	288	217	245	234
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remark -						

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

CFA HEO

SAMPLE COLLECTED BY

L. Vasanthrao

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

LAB CHEMIST

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - February'22

Sample Collected on 04.02.2022

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH		8.16	7.95	7.7	8.15
2	Electrical conductivity	(µs/cm)	3080	15980	14670	12660
3	Total Suspended Solids	ppm	21	12	4	2
4	Total Dissolved Solids	ppm	2002	10387	9535.5	8229
5	Total Hardness	ppm	420	1300	1900	2280
6	Calcium Hardness	ppm	180	680	900	1160
7	Magnesium Hardness	ppm	240	620	1000	1120
8	Total Chloride	ppm	694.84	4211	4537	3332
9	Sodium	ppm	860	1260	1750	1780
10	Potassium	ppm	45	70	92	80
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.11	0.15	0.1	0.16
13	BOD	mg/l	2.2	1.59	2.04	2.06
14	DO	mg/l	6.1	6.3	6.2	5.6
15	COD	mg/l	70	92	86	76
16	Sulphate	ppm	312	356	264	248
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remark -						

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

SAMPLE COLLECTED BY

LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - March'22

Sample Collected on 07.03.2022

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH		7.85	8.12	7.85	8.05
2	Electrical conductivity	(µs/cm)	5970	12260	15140	13210
3	Total Suspended Solids	ppm	47	18	23	16
4	Total Dissolved Solids	ppm	3880.5	7969	9841	8586.5
5	Total Hardness	ppm	830	1320	1010	1450
6	Calcium Hardness	ppm	450	640	740	132
7	Magnesium Hardness	ppm	380	560	1100	1200
8	Total Chloride	ppm	1042.23	3850	4120	4250
9	Sodium	ppm	980	1150	1650	1450
10	Potassium	ppm	62	70	90	80
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.12	0.16	0.11	0.14
13	BOD	mg/l	3.6	1.78	2.25	3.14
14	DO	mg/l	5.12	6.4	6.4	5.4
15	COD	mg/l	80	64	68	52
16	Sulphate	ppm	348	320	254	274
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remark -						

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

SAMPLE COLLECTED BY

LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - April'22

Sample Collected on 06.04.2022

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH		8.01	8.45	7.73	8.66
2	Electrical conductivity	(µs/cm)	9530	10080	15500	12450
3	Total Suspended Solids	ppm	37	15	9	22
4	Total Dissolved Solids	ppm	6194.5	6552	10075	8092.5
5	Total Hardness	ppm	620	1160	1320	1450
6	Calcium Hardness	ppm	340	650	740	750
7	Magnesium Hardness	ppm	280	510	580	700
8	Total Chloride	ppm	1134.4	3520	4254	4280
9	Sodium	ppm	1120	1050	1570	1040
10	Potassium	ppm	90	80	100	60
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.1	0.15	0.12	0.11
13	BOD	mg/l	2.14	3.45	3.17	2.75
14	DO	mg/l	5.8	5.4	6.7	5.3
15	COD	mg/l	80	76	58	48
16	Sulphate	ppm	426	356	276	216
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remark -						

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

SAMPLE COLLECTED BY

LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN Melamaruthur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - May'22

Sample Collected on 20.05.2022

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH		7.12	7.23	7.3	7.45
2	Electrical conductivity	(µs/cm)	17250	18900	15780	10150
3	Total Suspended Solids	ppm	80	135	44	66
4	Total Dissolved Solids	ppm	11212.5	12285	10257	9450
5	Total Hardness	ppm	1680	2040	1200	1340
6	Calcium Hardness	ppm	1040	1260	760	860
7	Magnesium Hardness	ppm	640	780	440	380
8	Total Chloride	ppm	5388.4	5849.25	4608.5	3378.5
9	Sodium	ppm	1540	1670	1550	980
10	Potassium	ppm	100	70	80	70
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.11	0.14	0.16	0.12
13	BOD	mg/l	3.45	4.25	2.78	3.11
14	DO	mg/l	5.67	5.24	5.11	5.37
15	COD	mg/l	90	88	64	52
16	Sulphate	ppm	528	610	548	456
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remark -						

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

SAMPLE COLLECTED BY

Coastal Energen TUTICORIN Melamarudur

LAB CHEMIST

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - June'22

Sample Collected on 11.06.2022

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH		7.09	7.34	7.04	7.39
2	Electrical conductivity	(µs/cm)	16210	19150	13480	10620
3	Total Suspended Solids	ppm	259	43	150	55
4	Total Dissolved Solids	ppm	10536.5	12447.5	8762	6903
5	Total Hardness	ppm	1210	2400	1400	890
6	Calcium Hardness	ppm	745	1510	862	594
7	Magnesium Hardness	ppm	465	890	538	296
8	Total Chloride	ppm	6039.4	6402.4	4254	3847
9	Sodium	ppm	1480	1590	1620	1140
10	Potassium	ppm	90	80	80	70
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.14	0.12	0.15	0.11
13	BOD	mg/l	5.27	4.11	3.78	2.87
14	DO	mg/l	5.47	5.55	5.24	5.15
15	COD	mg/l	78	84	76	68
16	Sulphate	ppm	610	590	640	580
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remark -						

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

SAMPLE COLLECTED BY

LAB CHEMIST

SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

ULR - TC611822000007913F
Report No : QEN-22040241-11

Report Date : 04 May 2022

Customer Name	:	**M/s. COASTAL ENERGEN PVT LTD**		
Customer Address	:	2 x 600 MW Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.		
Sample Name	:	Water	Sample Quantity	: 5 Ltr x 2 Nos
Sample Description	:	Ground Water (Borewell)	Sampling Date	: 26 Apr 2022
Reference	:	Test Request Form Dated 26.04.2022	Sample Received on	: 27 Apr 2022
Sample Drawn By	:	Laboratory	Test Started on	: 27 Apr 2022
Sample Location	:	North East of Ash Pond	Test Completed on	: 04 May 2022
Sample Procedure	:	SMSLA/EN/SOP/001		

TEST RESULTS

S.NO	Parameter	Test Method	Unit	Results
Clause 4, Table 1 Organoleptic And Physical parameters				
1	Colour	IS 3025 (Part 04)	Hazen	30
2	Odour	IS 3025 (Part 05)	--	Agreeable
3	pH Value	IS 3025 (Part 11)	--	7.28
4	Taste	IS 3025 (Part 08)	--	Dis Agreeable
5	Total Dissolved Solids	IS 3025 (Part 16)	mg/L	9890
6	Turbidity	IS 3025 (Part 10)	NTU	32.1
Clause 4, Table 2 General Parameters Concerning Substances Undesirable In Excessive Amounts				
7	Anoinic Detergents (as MBAS)	Annex K of IS 13428	mg/L	BLQ(LOQ:0.05)
8	Calcium (as Ca)	IS 3025 (Part 40)	mg/L	511
9	Chloride (as Cl)	IS 3025 (Part 32)	mg/L	2310
10	Fluoride (as F)	4500 F B,DAPHA 23rd Edition 2017	mg/L	9.1
11	Free Residual Chlorine	IS 3025 (Part 26)	mg/L	BLQ(LOQ:0.1)
12	Iron (as Fe)	IS 3025 (Part 53)	mg/L	0.72
13	Magnesium (as Mg)	IS 3025 (Part 46)	mg/L	191
14	Mineral Oil	IS 3025 (Part 39)	mg/L	BLQ(LOQ:0.50)
15	Nitrate (as NO3)	IS 3025 (part 34)	mg/L	92
16	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43)	mg/L	BLQ(LOQ:0.001)

R. PRABHU
Senior Chemist

ULR - TC611822000007913F
Report No : QEN-22040241-11

Report Date : 04 May 2022

S.NO	Parameter	Test Method	Unit	Results
17	Sulphate (as SO4)	IS 3025 (Part 24)	mg/L	2940
18	Total Hardness (as CaCO3)	IS 3025 (Part 21)	mg/L	2058
Clause 4, Table 3 Parameters Concerning Toxic Substances				
19	Cyanide (as CN)	IS 3025 (Part 27)	mg/L	BLQ(LOQ:0.01)
Others				
20	Total suspended solids (TSS)	IS 3025 (Part 17)	mg/L	62
21	BOD at 20°C for 5 days	APHA 23rd Edition:5210 B 2017	mg/L	20
22	Chemical Oxygen Demand	IS 3025 (Part 58)	mg/L	102
Polycyclic Aromatic Hydrocarbons				
23	PAHs	SMSLA/GS/SOP/01	mg/L	BLQ(LOQ:0.00001)each
Trace Metal Elements				
24	Aluminium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
25	Arsenic	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
26	Boron	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
27	Cadmium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
28	Chromium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
29	Copper	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
30	Lead	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
31	Manganese	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
32	Mercury	EPA 200.8	mg/L	BLQ (LOQ:0.0005)
33	Nickel	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
34	Selenium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
35	Zinc	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)

Note : BLQ: Below Limit of Quantification, LOQ: Limit of Quantification.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

ULR - TC611822000007914F
Report No : QEN-22040241-12

Report Date : 04 May 2022

Customer Name	:	**M/s. COASTAL ENERGEN PVT LTD**			
Customer Address	:	2 x 600 MW Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.			
Sample Name	:	Water	Sample Quantity	:	5 Ltr x 2 Nos
Sample Description	:	Ground Water (Borewell)	Sampling Date	:	26 Apr 2022
Reference	:	Test Request Form Dated 26.04.2022	Sample Received on	:	27 Apr 2022
Sample Drawn By	:	Laboratory	Test Started on	:	27 Apr 2022
Sample Location	:	South of Ash Pond	Test Completed on	:	04 May 2022
Sample Procedure	:	SMSLA/EN/SOP/001			

TEST RESULTS

S.NO	Parameter	Test Method	Unit	Results
Clause 4, Table 1 Organoleptic And Physical parameters				
1	Colour	IS 3025 (Part 4)	Hazen	40
2	Odour	IS 3025 (Part 05)	--	Agreeable
3	pH Value	IS 3025 (Part 11)	--	7.29
4	Taste	IS 3025 (Part 08)	--	Dis Agreeable
5	Total Dissolved Solids	IS 3025 (Part 16)	mg/L	11910
6	Turbidity	IS 3025 (Part 10)	NTU	42.4
Clause 4, Table 2 General Parameters Concerning Substances Undesirable In Excessive Amounts				
7	Anoinic Detergents (as MBAS)	Annex K of IS 13428	mg/L	BLQ(LOQ:0.05)
8	Calcium (as Ca)	IS 3025 (Part 40)	mg/L	668
9	Chloride (as Cl)	IS 3025 (Part 32)	mg/L	2830
10	Fluoride (as F)	4500 F B,D APHA 23rd Edition 2017	mg/L	10.2
11	Free Residual Chlorine	IS 3025 (Part 26)	mg/L	BLQ(LOQ:0.1)
12	Iron (as Fe)	IS 3025 (Part 53)	mg/L	0.96
13	Magnesium (as Mg)	IS 3025 (Part 46)	mg/L	286
14	Mineral Oil	IS 3025 (Part 39)	mg/L	BLQ(LOQ:0.50)
15	Nitrate (as NO3)	IS 3025 (Part 34)	mg/L	112
16	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43)	mg/L	BLQ(LOQ:0.001)

R. PRABHU
Senior Chemist

ULR - TC611822000007914F
Report No : QEN-22040241-12

Report Date : 04 May 2022

S.NO	Parameter	Test Method	Unit	Results
17	Sulphate (as SO4)	IS 3025 (Part 24)	mg/L	3390
18	Total Hardness (as CaCO3)	IS 3025 (Part 21)	mg/L	2842
Clause 4, Table 3 Parameters Concerning Toxic Substances				
19	Cyanide (as CN)	IS 3025 (Part 27)	mg/L	BLQ(LOQ:0.01)
Others				
20	Total suspended solids (TSS)	IS 3025 (Part 17)	mg/L	98
21	BOD at 20°C for 5 days	APHA 23rd Edition:5210 B 2017	mg/L	28
22	Chemical Oxygen Demand	IS 3025 (Part 58)	mg/L	162
Polycyclic Aromatic Hydrocarbons				
23	PAHs	SMSLA/GS/SOP/01	mg/L	BLQ(LOQ:0.00001)each
Trace Metal Elements				
24	Aluminium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
25	Arsenic	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
26	Boron	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
27	Cadmium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
28	Chromium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
29	Copper	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
30	Lead	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
31	Manganese	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
32	Mercury	EPA 200.8	mg/L	BLQ (LOQ:0.0005)
33	Nickel	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
34	Selenium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
35	Zinc	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)

Note : BLQ: Below Limit of Quantification, LOQ: Limit of Quantification.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

ULR - TC611822000007915F
Report No : QEN-22040241-13

Report Date : 04 May 2022

Customer Name	:	**M/s. COASTAL ENERGEN PVT LTD**			
Customer Address	:	2 x 600 MW Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.			
Sample Name	:	Water	Sample Quantity	:	5 Ltr x 2 Nos
Sample Description	:	Ground Water (Borewell)	Sampling Date	:	26 Apr 2022
Reference	:	Test Request Form Dated 26.04.2022	Sample Received on	:	27 Apr 2022
Sample Drawn By	:	Laboratory	Test Started on	:	27 Apr 2022
Sample Location	:	South East of Ash Pond	Test Completed on	:	04 May 2022
Sample Procedure	:	SMSLA/EN/SOP/001			

TEST RESULTS

S.NO	Parameter	Test Method	Unit	Results
Clause 4, Table 1 Organoleptic And Physical parameters				
1	Colour	IS 3025 (Part 04)	Hazen	20.0
2	Odour	IS 3025 (Part 05)	--	Agreeable
3	pH Value	IS 3025 (Part 11)	--	8.06
4	Taste	IS 3025 (Part 08)	--	Dis Agreeable
5	Total Dissolved Solids	IS 3025 (Part 16)	mg/L	7490
6	Turbidity	IS 3025 (Part 10)	NTU	2.8
Clause 4, Table 2 General Parameters Concerning Substances Undesirable In Excessive Amounts				
7	Anoinic Detergents (as MBAS)	Annex K of IS 13428	mg/L	BLQ(LOQ:0.05)
8	Calcium (as Ca)	IS 3025 (Part 40)	mg/L	393
9	Chloride (as Cl)	IS 3025 (Part 32)	mg/L	2780
10	Fluoride (as F)	4500 F B,D APHA 23rd Edition 2017	mg/L	4.8
11	Free Residual Chlorine	IS 3025 (Part 26)	mg/L	BLQ(LOQ:0.1)
12	Iron (as Fe)	IS 3025 (Part 53)	mg/L	0.28
13	Magnesium (as Mg)	IS 3025 (Part 46)	mg/L	191
14	Mineral Oil	IS 3025 (Part 39)	mg/L	BLQ(LOQ:0.50)
15	Nitrate (as NO3)	IS 3025 (Part 34)	mg/L	44
16	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43)	mg/L	BLQ(LOQ:0.001)

R. PRABHU
Senior Chemist

ULR - TC611822000007915F
Report No : QEN-22040241-13

Report Date : 04 May 2022

S.NO	Parameter	Test Method	Unit	Results
17	Sulphate (as SO4)	IS 3025 (Part 24)	mg/L	2326
18	Total Hardness (as CaCO3)	IS 3025 (Part 21)	mg/L	1764
Clause 4, Table 3 Parameters Concerning Toxic Substances				
19	Cyanide (as CN)	IS 3025 (Part 27)	mg/L	BLQ(LOQ:0.01)
Others				
20	Total suspended solids (TSS)	IS 3025 (Part 17)	mg/L	5.2
21	BOD at 20°C for 5 days	APHA 23rd Edition:5210 B 2017	mg/L	7.0
22	Chemical Oxygen Demand	IS 3025 (Part 58)	mg/L	38
Polycyclic Aromatic Hydrocarbons				
23	PAHs	SMSLA/GS/SOP/01	mg/L	BLQ(LOQ:0.00001)each
Trace Metal Elements				
24	Aluminium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
25	Arsenic	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
26	Boron	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
27	Cadmium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
28	Chromium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
29	Copper	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
30	Lead	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
31	Manganese	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
32	Mercury	EPA 200.8	mg/L	BLQ (LOQ:0.0005)
33	Nickel	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
34	Selenium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
35	Zinc	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)

Note : BLQ: Below Limit of Quantification, LOQ: Limit of Quantification

/********** End of the Report **********/

R. PRABHU
Senior Chemist

SMS LABS SERVICES PRIVATE LIMITED

TEST REPORT

TC-6118

ULR - TC611822000007916F
Report No : QEN-22040241-14

Report Date : 04 May 2022

Customer Name	:	**M/s. COASTAL ENERGEN PVT LTD**		
Customer Address	:	2 x 600 MW Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram Taluk, Tuticorin - 628105.		
Sample Name	:	Water	Sample Quantity	: 5 Ltr x 2 Nos
Sample Description	:	Ground Water (Borewell)	Sampling Date	: 26 Apr 2022
Reference	:	Test Request Form Dated 26.04.2022	Sample Received on	: 27 Apr 2022
Sample Drawn By	:	Laboratory	Test Started on	: 27 Apr 2022
Sample Location	:	South West of Ash Pond	Test Completed on	: 04 May 2022
Sample Procedure	:	SMSLA/EN/SOP/001		

TEST RESULTS

S.NO	Parameter	Test Method	Unit	Results
Clause 4, Table 1 Organoleptic And Physical parameters				
1	Colour	IS 3025 (Part 04)	Hazen	25
2	Odour	IS 3025 (Part 05)	--	Agreeable
3	pH Value	IS 3025 (Part 11)	--	8.21
4	Taste	IS 3025 (Part 08)	--	Dis Agreeable
5	Total Dissolved Solids	IS 3025 (Part 16)	mg/L	1824
6	Turbidity	IS 3025 (Part 10)	NTU	6.2
Clause 4, Table 2 General Parameters Concerning Substances Undesirable In Excessive Amounts				
7	Anoinic Detergents (as MBAS)	Annex K of IS 13428	mg/L	BLQ(LOQ:0.05)
8	Calcium (as Ca)	IS 3025 (Part 40)	mg/L	102
9	Chloride (as Cl)	IS 3025 (Part 32)	mg/L	490
10	Fluoride (as F)	4500 F B,D APHA 23rd Edition 2017	mg/L	2.1
11	Free Residual Chlorine	IS 3025 (Part 26)	mg/L	BLQ(LOQ:0.1)
12	Iron (as Fe)	IS 3025 (Part 53)	mg/L	0.21
13	Magnesium (as Mg)	IS 3025 (Part 46)	mg/L	38
14	Mineral Oil	IS 3025 (Part 39)	mg/L	BLQ(LOQ:0.50)
15	Nitrate (as NO3)	IS 3025 (Part 34)	mg/L	4.2
16	Phenolic Compound (as C6H5OH)	IS 3025 (Part 43)	mg/L	BLQ(LOQ:0.001)

R. PRABHU
Senior Chemist

ULR - TC611822000007916F
Report No : QEN-22040241-14

Report Date : 04 May 2022

S.NO	Parameter	Test Method	Unit	Results
17	Sulphate (as SO4)	IS 3025 (Part 24)	mg/L	529
18	Total Hardness (as CaCO3)	IS 3025 (Part 21)	mg/L	412
Clause 4, Table 3 Parameters Concerning Toxic Substances				
19	Cyanide (as CN)	IS 3025 (Part 27)	mg/L	BLQ(LOQ:0.01)
Others				
20	Total suspended solids (TSS)	IS 3025 (Part 17)	mg/L	17
21	BOD at 20°C for 5 days	APHA 23rd Edition:5210 B 2017	mg/L	9.0
22	Chemical Oxygen Demand	IS 3025 (Part 58)	mg/L	62
Polycyclic Aromatic Hydrocarbons				
23	PAHs	SMSLA/GS/SOP/01	mg/L	BLQ(LOQ:0.00001)each
Trace Metal Elements				
24	Aluminium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
25	Arsenic	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
26	Boron	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
27	Cadmium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
28	Chromium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
29	Copper	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
30	Lead	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
31	Manganese	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
32	Mercury	EPA 200.8	mg/L	BLQ (LOQ:0.0005)
33	Nickel	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
34	Selenium	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)
35	Zinc	IS 3025 (Part 65)	mg/L	BLQ (LOQ:0.001)

Note : BLQ: Below Limit of Quantification, LOQ: Limit of Quantification.

/********** End of the Report **********/

R. PRABHU
Senior Chemist

ANNEXURE - 4

Greenbelt Maintenance Photos (January 2022 to June 2022)

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

ANNEXURE - 5

CSR Activities
(January 2022 to June 2022)

Social Empowerment for Needy people - Supply of essential ingredients in Tuticorin for 1100 families

Social Empowerment for Needy people - Supply of essential ingredients in Tuticorin for 1100 families

Sports and Cultural Events – Rackla race conducted at Melamarudhur Village

ANNEXURE - 6

Annexure - 6

COMPLIANCE TO THE CONDITIONS STIPULATED BY TAMILNADU COASTAL ZONE MANAGEMENT AUTHORITY VIDE LETTER DATED 03.04.2009

Period : January 2022 to June 2022

Sl.No.	CONDITIONS STIPULATED BY TNCZM AUTHORITY	COMPLIENCE
a)	The unit should adhere to the norms prescribed by Ministry of Environment and Forests, Government of India and State Pollution Control Board in respect of discharging of cooling water / treated effluent in to sea.	Complied. In respect of discharging of cooling water / treated effluent in to sea, All the norms prescribed by MoEF & CC/ SPCB is being followed.
b)	The unit shall consider adopting the latest technologies such as providing cooling towers to reduce the temperature of the condenser cooling water, so as to safe guard the marine eco-system	Complied. Cooling towers to reduce the temperature of the condenser cooling water is Installed, commissioned and in operation.
c)	Marking the intake and outfall pipelines adequately such that fishing vessels and fishermen are made aware of its presence.	Complied.
d)	It may be ensured that mercury concentration is not present in the end product.	Ensured.
e)	The activities such as intake pipeline and outfall line and intake arrangement in sea and the pipeline should not cause hindrance to fishing activities and to boat movement.	Complied.
f)	The proposed activities should not cause coastal erosion and alter the beach configuration	Complied.
g)	No blasting activities in Coastal Regulation Zone is permissible	Complied.
h)	The proponent should not prevent public from easy access to the beach.	Complied.
i)	Untreated chemical waste generated due to membrane protection activity and the sewage generated should not be discharged into the sea.	Complied.
j)	The proponent should ensure that the saline water shall not gain access into ground while conveying or processing the sea water	Complied.
k)	The project activity should not affect the coastal ecosystem including marine flora and fauna.	Complied.
l)	There should not be any extraction of ground water in Coastal Regulation Zone.	Complied. Ground Water not extracted in the Coastal Regulation Zone.
m)	The proponent shall not undertake any activity, which is violative of the provisions of Coastal Regulation zone Notification 1991 and the subsequent amendments.	Complied.
n)	The Coastal Regulation Zone clearance will be revoked if any of the condition stipulated is not complied with	Agreed.

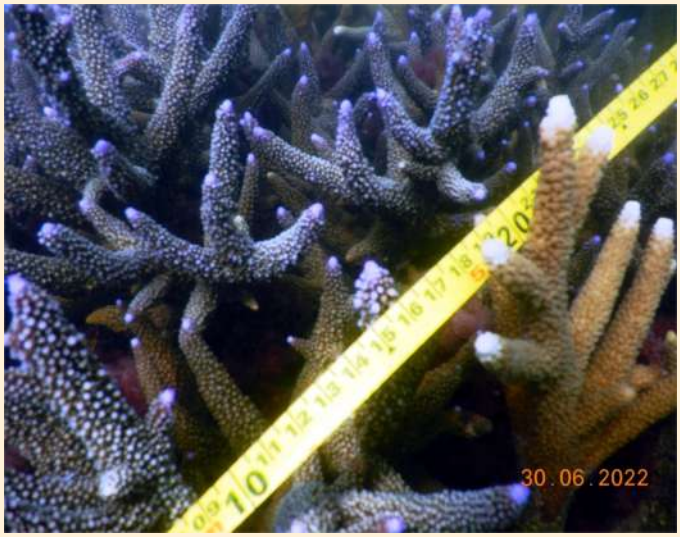
ANNEXURE - 7

Comprehensive Environmental Monitoring for 2 X 600 MW Mutiara Thermal Power Plant at Pattinamaruthoor, Tuticorin

Monitoring Report

(January 2022 - June 2022)

Executive Summary



Submitted to

Mutiara Thermal Power Plant
Melamaruthur Village, Ottapidaram Thaluk
Tuticorin District - 628 105

by

Suganthi Devadason Marine Research Institute (SDMRI)
(Recognized by Manonmaniam Sundaranar University and U.G.C. &
Recognized Scientific and Industrial Research Organization by the DSIR, GOI)
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07 July 2022

Comprehensive Environmental Monitoring for 2 X 600 MW Mutiara Thermal Power Plant at Pattinamaruthoor, Tuticorin

Monitoring Report

Executive Summary

(January 2022 - June 2022)

to

M/S. Mutiara Thermal Power Plant,
Melamaruthur Village, Ottapidaram Thaluk,
Tuticorin District - 628 105

by

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Contents

Comprehensive Coastal Environmental Monitoring for 2 X 600 MW Mutiara Thermal Power Plant at Pattinamaruthoor, Tuticorin

1. Background

M/S. Mutiara Thermal Power Plant has started production of its first unit of 2 x 600 MW coal based thermal power plant near Pattinamaruthur village of Tuticorin District, Tamilnadu and comprehensive coastal monitoring has been started from February 2015.

The comprehensive baseline data collection on physical, chemical and biological, covering all marine flora & fauna covering four seasons in each year was conducted for 3 years from 2010 to 2013 and comprehensive data on fish landings and catch details in was collected for one year from 10 coastal villages located within 10 km radius of the project site.

While granting No Objection Certificate to establish the Thermal Power Plant, the Tamil Nadu Forest Department made it compulsory to implement the following Coastal Environmental Management Plan and Monitoring Protocol.

1. Marine Water Quality
2. Marine Sediment Quality
3. Coral Reef Monitoring
4. Seagrass Monitoring
5. Fish Production Monitoring

The details of parameters, monitoring locations and monitoring frequency provided by the Tamil Nadu Forest Department are followed and the present half yearly report provides the results of the monitoring from January 2022 to June 2022.

2. Methodology

2.1. Fixing Permanent Monitoring Locations

Permanent monitoring locations were fixed to study the marine water and sediment quality and to monitor seagrasses and coral reefs. Totally 4 locations were fixed for the analysis of marine water and sediment quality at intake site. Location 1 is on the intake point and locations 2 and 3 are 100 m away in each side of the intake point while location 4 is 200 m away from the intake point into the sea. Totally 12 stations were fixed at discharge point. Locations 2 and 3 occur near the discharge point and locations 1 and 4 are 100 m away from locations 2 and 3 respectively. Locations 5 and 6 occur 25 m away from Location 2 and 3 and locations 7 and 8 fixed at 50m away from location 5 and 6 respectively. Locations 9 and 10 were fixed at 200m away from discharge point and Locations 11 and 12 were located 400m away from discharge point towards marine side. Parameters monitored in water samples were physical parameters such as pH, salinity, temperature, turbidity and total suspended solids; chemical parameters such as dissolved oxygen, nutrients, BOD and COD; heavy metals were Copper, Lead, Nickel, Cadmium, Chromium and Mercury; bacterial parameter coliform count; marine biological parameters such as phytoplankton and zooplankton. Parameters monitored in sediment samples were pH, organic matter and nutrients.

For coral monitoring, totally 13 sites were selected. Three locations were selected around each of the Tuticorin islands Vaan, Koswari, Kariyachalli and Vilanguchalli and one location at Vilanguchalli patch reef. Physical parameters such as temperature, turbidity, total suspended solids and sedimentation were analysed in these locations and biological parameters such as coral status, growth, recruitment, diseases and bleaching were monitored. Temperature loggers will be deployed in these locations also. For seagrass monitoring, totally 13 sites were selected randomly within 3 km radius from the discharge point. Physical parameters such as temperature, turbidity, total suspended solids and sedimentation were assessed. Biological properties such as seagrass status, growth, shoot density, diseases, productivity and biomass were monitored. Fish diversity and abundance were also monitored in all the seagrass monitoring locations.

The details of monitoring locations and GPS coordinates are given in Figs. 1 to 3 and Tables 1 to 3.

The fish landing data and catch details will be collected from 10 landing centres / villages (Thirespuram, Mottaigopuram, Siluvaipatti, Vellapatti, Tharuvaikulam, Pattinamaruthoor, Sippikulam, Vaipar, Periyasamipuram and Vembar) located in and around Pattinamaruthur coast, covering 10 km radius from the project site (Fig.4)

Fig.1: Monitoring Locations Marine Water and Sediment Quality Monitoring

Table 1: GPS Mark for locations for Marine water and sediment quality monitoring

Intake point	**GPS Mark**
Location- 1	N8 55.084 E78 11.229
Location- 2	N8 55.143 E78 11.252
Location- 3	N8 55.046 E78 11.357
Location- 4	N8 55.007 E78 11.198
Discharge point	
Location- 1	N8 55.125 E78 11.252
Location- 2	N8 55.189 E78 11.285
Location- 3	N8 55.266 E78 11.333
Location- 4	N8 55.336 E78 11.374
Location- 5	N8 55.086 E78 11.654
Location- 6	N8 55.067 E78 11.624
Location- 7	N8 55.070 E78 11.666
Location- 8	N8 55.059 E78 11.657
Location- 9	N8 55.112 E78 11.409
Location- 10	N8 55.186 E78 11.461
Location- 11	N8 55.071 E78 11.540
Location- 12	N8 55.168 E78 11.610

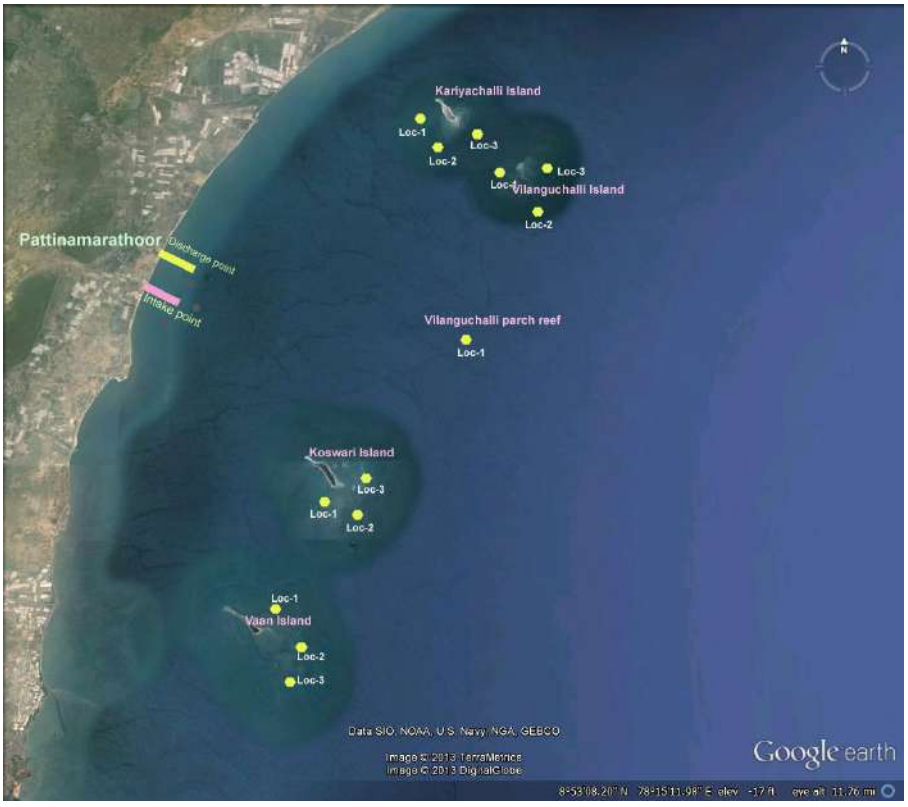

Fig.2: Locations for coral reef monitoring

Table 2: Coral reef monitoring locations

Location	GPS Mark
Vaan Island	
Location 1	N8 50.487 E78 12.759
Location 2	N8 50.099 E78 12.974
Location 3	N8 49.729 E78 12.881
Koswari Island	
Location 1	N8 51.829 E78 13.376
Location 2	N8 51.791 E78 13.793
Location 3	N8 52.193 E78 13.909
Vilanguchalli patch reef	
Location 1	N8 54.127 E78 15.391
Vilanguchalli Island	
Location 1	N8 56.606 E78 16.423
Location 2	N8 56.109 E78 16.245
Location 3	N8 56.369 E78 15.936
Kariyachalli Island	
Location 1	N8 57.185 E78 14.921
Location 2	N8 56.950 E78 15.202
Location 3	N8 57.198 E78 15.584

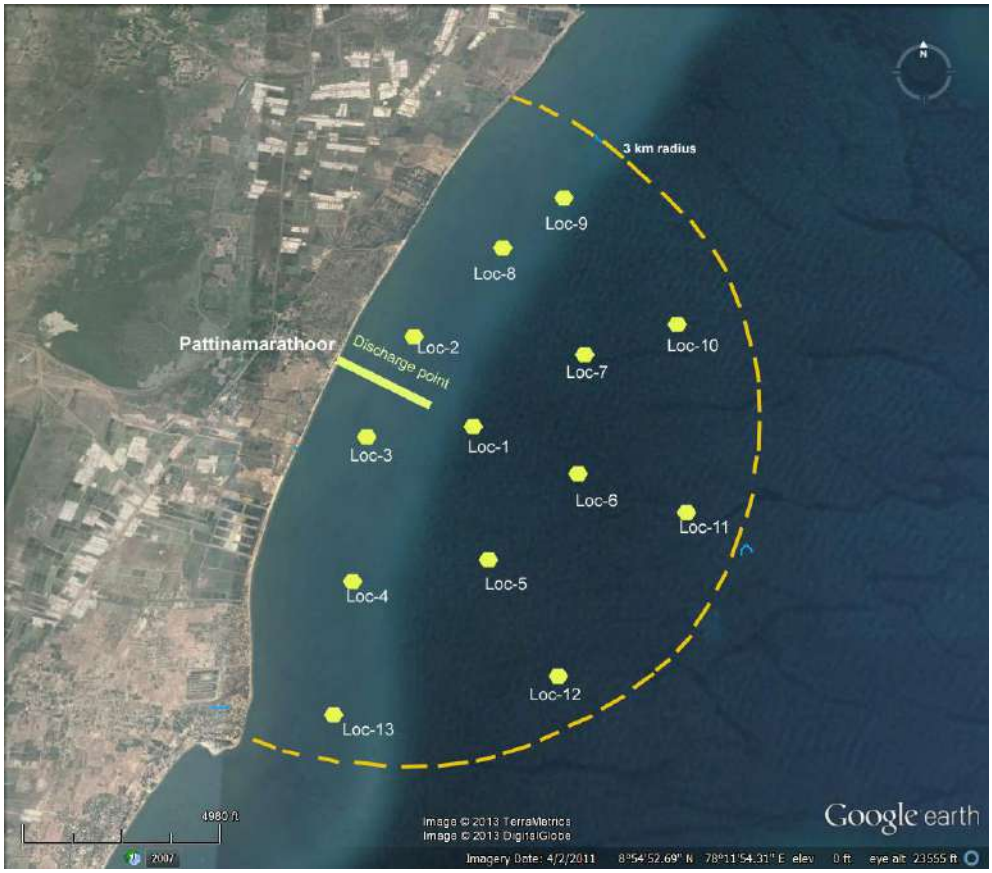

Fig.3: Seagrass and fish population monitoring locations

Table 3: GPS Mark for Seagrass and Fish Population monitoring locations

Location	GPS Mark
Location 1	N8 54.919 E78 11.338
Location 2	N8 55.043 E78 11.244
Location 3	N8 54.589 E78 11.177
Location 4	N8 54.128 E78 11.209
Location 5	N8 54.342 E78 11.921
Location 6	N8 54.652 E78 12.110
Location 7	N8 55.019 E78 11.971
Location 8	N8 55.351 E78 11.618
Location 9	N8 55.701 E78 11.940
Location 10	N8 55.224 E78 12.588
Location 11	N8 54.526 E78 12.508
Location 12	N8 53.885 E78 12.203
Location 13	N8 53.799 E78 11.357

Fig.4: Map showing the 10 coastal villages / fish landing centres for fish landing data and catch details monitoring

2.2. Parameters are being monitored

Marine Water Quality

Physical properties: pH, Salinity, Temperature, Turbidity, Total Suspended Solids
Chemical Properties: Dissolved Oxygen, Nutrients, BOD, COD
Heavy metals: Cu, Pb, Ni, Cd, Cr, Hg
Bacteriological parameters: Coliform Count
Marine Biology: Phytoplankton, Zooplankton
Monitoring frequency - Fortnight Sampling

Marine Sediment Quality

Physical & Chemical properties: pH, Organic Matter, Nutrients
Heavy metals: Cu, Pb, Ni, Cd, Cr, Hg
Bacteriological parameters: Coliform Count
Marine Biology: Macro and meio benthic fauna and Macro flora
Monitoring frequency - Fortnight Sampling

Coral Reef Monitoring

Physical properties: Temperature, Turbidity, Total Suspended Solids, Sedimentation
Biological properties: Status, Coral growth, recruits, disease, bleaching
Monitoring frequency - Fortnight Sampling

Seagrass Monitoring

Physical properties: Temperature, Turbidity, Total Suspended Solids, Sedimentation
Biological properties: Status, Growth, shoot density, disease, Productivity, Biomass
Monitoring frequency - Fortnight Sampling

Fish Population Monitoring

Diversity and Abundance
Monitoring frequency - Fortnight Sampling

Fish Landing and Catch Monitoring

Common fish landed
Seasonal landing pattern
Total fish landing - quantity, species wise, landing as per craft and gear
Monitoring frequency - Daily

2.3. Analysis and monitoring methods

Physico-chemical parameters

Seawater temperature was measured using a standard digital thermometer. Salinity was determined using refracto meter. Seawater pH was measured soon after collection by using pre-calibrated digital pH-meter. Turbidity was measured using Elico water quality analyzer. Total Suspended Solids (TSS) was measured by filtering a known volume of sample through a pre-weighed 0.45µ Whatman glass fibre filter paper (GF/C) using a Millipore filtering system. Dissolved oxygen (DO), Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) were analyzed by following Strickland and Parsons

method (1972). Analyses of calcium (Ca), magnesium (Mg) and chlorides will be done titrimetrically. Nitrates (NO_3) and nitrites (NO_2) were measured spectrophotometrically by following the method of Strickland and Parson (1972). Total coliform bacteria were measured using MPN method.

Sediment samples were collected from all the sites by using Van Veen Grab sampler. Sediment pH was measured using pH meter. Oil and grease in sediment was analysed using separating funnel method. Organic matter in sediment was estimated by the method described by El Wakeel and Riley (1957). Phytoplankton and zoo plankton samples were collected from the surface water at all the stations. For the quantitative estimation, a Sedgewick Rafter Counting Cell was used. The sediment samples pre stained with Rose Bengal was sieved through 1 mm and 63µ mesh sieves by adding copious amount of water for separating macro and meio benthic fauna respectively. The organisms retained in the sieves were preserved in 5% formalin and were identified using standard manuals. Heavy metals such as lead, nickel, cadmium, chromium and mercury in the water samples and heavy metals such as manganese, lead, nickel, cadmium, chromium and mercury in the sediment samples were analysed using Atomic Absorption Spectrophotometer (AAS). Sedimentation rate was measured by deploying sediment traps (English et al, 1997) under the water.

Coral monitoring

The percentage cover of corals and other sessile benthic categories were assessed by Line Intercept Transect (LIT) method following English *et al.,* (1997). The survey was started with mapping of Island reef areas, using manta tow technique (Done *et al.,* 1982). The assessment involved SCUBA diving. Depending on the size of the reefs, 15 to 25 transects were laid on each Island. The percentage cover of each life form category, percentage of bleaching and disease prevalence were calculated following the method of English *et al.,* (1997). Coral recruitment was recorded using haphazardly placed permanent 1 m^2 quadrats. The permanent quadrats, used for long term monitoring of recruits, were placed on substrates suitable for coral settlement, in particular dead reefs (Tamelander, 2002). Linear growth coral of coral colonies were measured by tagging the colony and measuring the distance from the baseline to the end of the branch with flexible plastic ruler (Gladfelter, *et al.,* 1978). Coral diseases were identified by following the coral disease handbook of Raymundo and Harvell, (2008). Disease prevalence in a study location were calculated by a simple formula; percentage of diseases is the proportion of diseased colonies to the total measured population of colonies.

$$\text{Disease prevalence} = \frac{\text{Number of diseased colonies per site}}{\text{Number of colonies examined per site}} \times 100$$

Life form Categories and codes

CATEGORIES		CODE	NOTES / REMARKS
Dead Coral		DC	recently dead, white to dirty white
Dead Coral with Algae		DCA	this coral is standing, skeletal structure can still be seen
Acropora	Branching	ACB	at least 2° branching, e.g. *Acropora palmate*, *A.formosa*
	Encrusting	ACE	usually the base-plate of immature *Acropora* forms, e.g. *A. palifera* and *A. cuneata*
	Sub massive	ACS	robust with knob or wedge-like form e.g. *A. palifera*
	Digitate	ACD	no least 2° branching, typically includes *A. humilis*, *A. digitifera* and *A. gemmifera*
	Tabular	ACT	horizontal flattened plates e.g. *A. hyacinthus*
Non – Acropora	Branching	CB	at least 2° branching e.g. *Seriatopora hystrix*
	Encrusting	CE	major portion attached to substratum as a laminar plate e.g. *Porites vaughani*, *Montipora undata*
	Foliose	CF	Coral attached at one or more points, leaf-like, or plate-like appearance e.g. *Merulina ampliata*, *Montipora aequituberculata*
	Massive	CM	Soild boulder or mound e.g. *Platygyra daedalea*
	Submassive	CS	tends to form small columns, knobs, or wedges e.g. Porites lichen, *Psammocora digitata*
	Mushroom	CMR	solitary, free-living corals of the *Fungia*
	Heliopora	CHL	blue coral
	Millepora	CME	fire coral
	Tubipora	CTU	organ-pipe coral, *Tubipora musica*
Other Fauna:			
Soft Coral		SC	soft bodied coral
Sponge		SP	
Zoanthids		ZO	examples are *Platythoa*, *Protopalythoa*
Others		OT	Ascidians, anemones, gorgonians, giant clams etc.
Algae	Algal Assemblage	AA	consists of more than one species
	Coralline Algae	CA	
	Halimeda	HA	
	Macroalgae	MA	weedy/fleshy browns, reds, etc.
	Turf Algae	TA	lush filamentous algae, often found inside damselfish territories
Abiotic	Sand	S	
	Rubble	R	unconsolidated coral fragments
	Silt	SI	
	Water	WA	fissures deeper than 50 cm
	Rock	RCK	
Other		DDD	Missing data

Seagrass monitoring

Quadrates (50 cm×50 cm) divided into 25 squares (10 cm × 10 cm) were used to study the percentage cover of seagrass species through visual estimation (Saito and Atobe,

1970). 100 m transects were made on the seagrass meadows and transects were separated from each other by a reasonable distance (50 -100 m) and were parallel to each other and perpendicular to the shore. Quadrates were laid at regular intervals (5 m) along each transect. Minimum 2-4 replicates of quadrates were laid depending on the abundance of the seagrass. Individual shoots were also counted randomly at every transect. Each seagrass species was collected and sorted by taxnomical order for further identification (English *et al*., 1997). Biomass was estimated using the method of Mellors (1991). The biomass or standing crop is expressed in dry weight m^2.

Fish population monitoring

Fish density and diversity was assessed by visual census applying Belt Transect method (English et al., 1997).

Fish Landing Data

Fish landing data was collected by following the method of Srinath *et al*., (2005). The following are the steps:

i. Enquiring of the total number of fishing days in the particular village (Sampling will be done normally for 16-18 days per month in each selected village).

ii. Enquiring of the total number of fishing crafts on the particular fishing day.

iii. 1: 6 boats will be surveyed in case of large numbers of boats (Random). A minimum total of 15 boats at least will be surveyed in which 100% of the catch has to be checked.

iv. The different fishing gears will be surveyed. Fish catch by different gears will be noted down if necessary.

v. Species composition of the fish landed will be checked out.

vi. Weight of a group (eg: carangids, groupers) / genus (*Scomberoides, Tylosurus* etc.) / species (*Sardinella longiceps, Rastrelliger kanagurta*) per the fishing crafts surveyed to be calculated. For this the weight of a standard basket will be enquired and the total number of standard baskets in that boat has to be enquired (Eg:- Weight of one standard basket of Grouper in Tuticorin landing center = 10 kg. Total number of standard baskets in the boat 'A' = 5. Groupers landed in boat 'A' = 10 x 5 = 50).

vii. Similarly the weight of groupers in all the boats surveyed is calculated. The resultant data gives the total groupers landed in the given day in the surveyed boats. This data is then made up to the total number of boats gone for fishing in the particular fishing day. The resultant data is further calculated up to one month by multiplying the total number of fishing days during that month.

3. Results - Executive Summary
(January 2022 to June 2022 - Half Yearly Report)

3.1. Marine water and sediment quality

The water temperature was recorded between 27.80 and 30.95^{o}C; Salinity value was recorded between 34 and 36.03 ppt; pH level was recorded between 7.73 and 8.20; turbidity level ranged from 5.65 to 7.3 NTU; the TSS level ranged from 91 to 137 mg/l; dissolved oxygen level was recorded between 4.79 and 5.44 mg/l; BOD level ranged from 1.55 to 2.65 mg/l; COD level ranged from 1.17 to 1.60 mg/l; calcium value was recorded between 420 and 630 mg/l; magnesium value ranged from 1263 to 1428 mg/l; nitrate level ranged from 1.24 to 1.55 µg at/l; nitrite level ranged from 0.13 to 0.55 µg at/l; chloride level ranged from 17.5 to 17.9 g/l; and oil and grease level ranges from 0.12 to 0.53 mg/l.

In sediment samples, the pH value was recorded between 8.01 and 8.18; oil and grease level ranged from 0.29 to 0.56 mg/kg; organic matter value ranged from 2.459 to 3.758%; and heavy metal level in water and sediment samples was within the acceptable limits.

No coliform bacteria were recorded in water and sediment samples. The phytoplankton density was recorded between 298.35 and 405.27 cells/l. The zooplankton density was recorded between 191768 and 325474 no/m^3. Among the benthic macro fauna, gastropods and bivalves were dominant.

In coral reef area, the water temperature ranged from 27.2 to 30.45°C; turbidity level varied from 4.85 to 7.67 NTU; TSS level ranged from 83 to 152.5 mg/l and sedimentation rate ranged from 59.58 to 87.41 mg/cm^2/day.

In sea grass area, the water temperature ranged from 28.6 to 30.3°C; turbidity level varied from 5.05 to 6.75 NTU; TSS level ranged from 87.5 to 149.5 mg/l and sedimentation rate was recorded between 63.91 and 85.8 mg/cm^2/day.

3.2. Coral monitoring

The live coral cover in Vaan Island was 22.51,32.04 and 34.72% respectively in sites 1, 2 and 3 during January 2022; it was 21.52, 32.07 and 34.7% respectively during February 2022; it was 21.50, 32.11 and 34.78% respectively during March 2022; it was 21.51, 32.11 and 34.79% respectively during April 2022; it was 22.53,32.13 and 34.81% respectively during May 2022; during June 2022it was 21.78, 31.54 and 34.43% respectively and during June 22.57, 32.11 and 34.83%. In January 2022, the soft coral cover was 7.53, 1.96 and 2.18 %respectively in sites 1, 2 and 3; it was 7.53, 1.97 and 2.19% respectively during February2022; it was 7.54, 1.97 and 2.21% respectively during March 2022; during April 2022, it was 7.54, 1.97 and 2.22% respectively; during May 2022, it was 7.56, 1.99 and 2.22% respectively and it was 7.56, 2.03 and 2.20% respectively during June2022. CM and ACB were the dominant coral life form categories during January to June 2022. Coral recruitment was highest for the genera *Acropora, Porites* and *Montipora* and most common coral species were *Acropora formosa, A.cytherea, A. intermedia, A. nobilis, Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. In Vaan Island, eight types of coral health issues were recorded which include bleaching, BBD, BSD, PSD, WBD, WPD, WSD and YBD. Among disease type, BBD was the most dominant category with 3.15%followed by

WBD with 2.53% respectively during January to June 2022 mainly in genus Montipora. Totally six coral genera were affected by them which are *Goniastrea, Favia, Favites, Porites, Turbinaria* and *Acropora*.

The live coral cover in Koswari Island was 21.33, 20.82 and 19.54% respectively in sites 1, 2 and 3 during January 2022; it was 21.35, 20.84 and 19.52% respectively during February2022; it was 21.38, 20.86 and 19.50% respectively during March 2022; during April 2022, it was 21.39, 20.89 and 19.48% respectively; during May 2022, it was 21.41, 20.91 and 19.46% respectively and during June 2022, it was 21.43, 20.94 and 19.48% respectively. In January 2022, the soft coral cover was 1.75, 3.42 and 2.48% respectively; it was 1.75, 3.44 and 2.51% respectively during February2022; it was, 1.76, 3.44 and 2.53% respectively during March 2022; during April 2022, it was 1.76, 3.46 and 2.53% respectively; during May 2022, it was 1.77, 3.44 and 2.55% respectively and it was 1.77, 3.45 and 2.53% respectively during June 2022. CM, CF and ACT were the dominant coral life form categories during Januaryto June 2022. Coral recruitment was highest for the genera *Turbinaria*, *Acropora* and *Porites* and most common coral species were *Acroporaformosa*, *A.cytherea*, *A. intermedia*, *A. nobilis, Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. In Koswari Island, ten types of coral health issues were recorded which are BBD, BSD, PSD,WBD, WPD, WSD, YBD, YSD, T and B. Among disease type, PSD was the most dominant category with 2.34% followed by BBD with 2.18% respectively during January to June 2022mainly in genus Acropora. Totally six coral genera were affected which are *Goniastrea, Favia,Favites, Porites, Turbinaria* and *Acropora*.

The live coral cover in Kariyachalli Island was 33.97, 33.38 and 33.99% respectively in sites 1, 2 and 3 during January 2022; it was 33.99, 33.41 and 33.97% respectively during February2022; it was 33.96, 33.43 and 33.99% respectively during March 2022; during April 2022, it was 33.98, 33.44 and 33.97% respectively; during May 2022, it was 33.96, 33.45 and 33.98% respectively and during June 2022it was 33.98, 33.47 and 33.96% respectively. The soft coral cover in January 2022 was 4.61, 4.27 and 7.30% respectively; it was 4.62, 4.28 and 7.32% respectively during February2022; it was 4.63, 4.28 and 7.34% respectively during March 2022; it was 4.65, 4.29 and 7.35% respectively during April 2022; it was 4.43, 4.18 and 7.15% respectively during May 2022; and it was 4.68, 4.31 and 7.36% respectively during June2022. The CM and CF were the dominant coral life form categories during January to June2022. Coral recruitment was highest for the genera *Acropora, Turbinaria*and *Porites* and most common coral species were *Acroporaformosa*, *A.cytherea*, *A. intermedia*, *A. nobilis*, *Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. Totally nine types of coral health issues were recorded which include bleaching, BBD, BSD, PSD, WBD, WPD, YBD and YSD. Among disease type, BBD was the most dominant category with 2.26% followed by BSD with 1.61% respectively during January to June 2022 mainly in genus *Acropora*. Totally seven coral genera were affected by them which are *Montipora, Goniastrea, Favia, Favites, Porites, Turbinaria* and *Acropora*.

The live coral cover in Vilanguchalli Island was 19.47, 19.92 and 25.51% respectively in sites 1, 2 and 3 during January 2022; it was 19.51, 19.93 and 26.52% respectively during February 2022; it was 19.3, 19.58 and 25.99% respectively during March 2022; it was 19.51, 19.94 and 26.53% respectively during April 2022; it was 19.53, 19.96 and 26.51% respectively during May 2022; and during June 2022it was 19.56, 19.98 and 26.54% respectively. In January 2022, the soft coral cover was 1.84, 1.69 and 1.68% respectively; it was 1.86, 1.68 and 1.71% during February2022; it was 1.87, 1.71 and 1.71% respectively during March 2022; it was 1.86, 1.72 and 1.71% respectively during April 2022; 1.87, 1.73

and 1.72% respectively during May 2022; and during June2022, it was 1.86, 1.75 and 1.73% respectively. The CF and CE were the dominant coral life form categories during the period January to June2022. Coral recruitment was highest for the genera *Acropora* and *Turbinaria* while most common coral species were *Acropora formosa*, *A. cytherea*, *A. intermedia*, *A. nobilis*, *Pocillopora damicornis* and *Porites* sp. In Vilanguchalli Island,eight types of coral health issues were recorded which are BBD,BSD, PSD, WBD, WPD, WSD, YBD and B. Among disease type, BBD was the most dominant category with 2.19% followed by PSD with 1.87% respectively during January to June 2022mainly in genus Acropora. Five coral genera were affected by them which are *Goniastrea, Porites*, *Montipora*, *Turbinaria* and *Acropora*.

The live coral cover in Villanguchalli Patch reef was 43.28, 43.31, 43.33, 43.35, 43.37 and 43.35% respectively during January, February, March, April, May and June 2022. Soft coral cover was 3.19, 3.20, 3.21, 3.22, 3.22 and 3.24% respectively. The ACB and CF were the dominant coral life form categories during the period between January to June 2022. Coral recruitment was highest for the genera *Acropora, Turbinaria, Porites* and *Favites* while most common coral species were *Acropora formosa*, *A.cytherea*, *A. intermedia*, *A. nobilis*, *Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. Totally seven types of coral health issues were recorded which are B, BBD, BSD, PSD, WBD, WPD, and WSD. Among disease type, BBD was the most dominant category with 1.25% respectively during January to June 2022 mainly in genus *Acropora*. Five coral genera were affected by them *Goniastrea, Porites, Montipora*, *Turbinaria* and *Acropora*.

3.3. Seagrass and fish population monitoring

The overall seagrass percentage cover was observed with 66.67% in May 2022 followed by June 2022 with 66.64%. No diseases were observed. In total, seven seagrass species were recorded and they are *Thalassia hemprichii*, *Halophila stipulacea*, *Halophila ovalis*, *Cymodocea serrulata*, *Halodule pinifolia*, *Halodule uninervis* and *Syringodium isoetifolium*. Among the seven seagrass species, dominant shoot density was recorded in *Cymodocea serrulata* as 169.47m^{-2} in February 2022 and the maximum productivity was recorded in *Cymodocea serrulata*as as 60.14 $cm^{-2}day^{-1}$ in February 2022 followed by *Halophila stipulacea*as as 54.32 $cm^{-2}day^{-1}$ in June 2022. Maximum seagrass biomass was recorded in *Cymodocea serrulata* as 150.68 g dry weight m^{-2} in February 2022 followed by *Thalassia hemprichii* as 93.67 g dry weight m^{-2} in March 2022.

A total of 19 fish species were recorded and among them, *Lutjanus* sp. was dominant followed by *Epinephelus* sp. Maximum number of fish density was observed during March 2022 with 2484 / 50 m^{-2} followed during May 2022 with 1837 / 50 m^{-2}.

3.4. Cage culture of fishes near outfall in Pattinamaruthoor coast

In Pattinamaruthoor fish cage, observations on fish revealed 11 species during January 2022 to June 2022. Among them, *Lujanus* sp. was the dominant followed by *Caranx* sp. Maximum number of fish density was observed during January 2022 with 230 Nos. followed during February 2022 with 223 nos.

During the assessment period, climate-induced impacts such as bleaching and algal bloom have not been observed in the coral reef and seagrass areas.

3.5. Fish Landing Data

Study area: Landing areas of ten fishing villages - Thirespuram, Mottaigopuram, Siluvaipatti, Vellapatti, Tharuvaikulam, Pattinamaruthoor, Sippikulam, Vaipar, Periyasamipuram, Vembar.

The major fishery resources of Tuticorin coast are Tuna, Seer fishes, Groupers, Ribbon fishes, Penaeid shrimps, Crabs, lobster and so on. The fish stocks from the coast tend to concentrate along the continental shelf and the biodiversity is substantially higher than in temperate waters. Tuticorin is one of the major fish landing center along the Gulf of Mannar coast by both mechanized as well as traditional crafts. Tuticorin coast has 21 fishing villages which include 2 major landing and 20 minor landing areas. Among the 22 fish landing areas of Tuticorin coast, 10 major and minor landing areas have been randomly surveyed for the fish species and weight of fishes landed from January 2022 to June 2022. Major fishing gears operated in Tuticorin fishing area is Trawl net, Long line fishing, Gill net, Drift net, Purse seine, Trammel net, Stake net, traps and Hand line nets. Fishing activity in Tuticorin region was carried out by Deep Sea, Traditional and mechanized fishing vessels like Trawlers, Kattumaram, Fiber boats and Vallams. Commercial fish species and total catch landed at each village during this period was recorded and illustrated as follows.

The survey recorded maximum landing in Tharuvaikulam with about 508684 kg. followed by Thirespuram with about 412591 kg during January 2022 to June 2022. The catch yield obtained in all ten landing areas has been illustrated in the table 4 and Fig. 5. During the study, 93 fish genus have been identified under the commercial fishery resource and are illustrated in the following table 5.

Table 4: Total catch in major landing centres during January 2022 to June 2022 in Tuticorin coast

Landing areas	Catch landed /6months
Thirespuram	**412591**
Mottaigopuram	**44183**
Siluvaipatti	**35481**
Vellapatti	**223637**
Tharuvaikulam	**508684**
Pattinamaruthoor	**113703**
Vaipar	**274801**
Sippikulam	**148857**
Periyasamipuram	**40379**
Vembar	**216442**
Total catch	**2018758**

Table 5: Species recorded in landing areas - Tuticorin coast					
1	*Ablennes hians*	32	*Epinephelus merra*	63	*Penaeus* sp.
2	*Acanthocybium solandri*	33	*Euthynnus afffinis*	64	*Plectrohinchus* sp.
3	*Acanthurus* sp.	34	*Gerres* sp.	65	*Portunus pelagicus*
4	*Aetoplatea* sp.	35	*Harpulina* sp.	66	*Portunus sannguineolatus*
5	*Alectis indicus*	36	*Hemiramphus far*	67	*Rastrelliger kanangurta*
6	*Alopias* sp.	37	*Hilsa keele*	68	*Rhizoprionodon* sp.
7	*Arius substratus*	38	*Himantura uarnak*	69	*Sardinella albella*
8	*Atule mate*	39	*Irundichthys* sp.	70	*Sardinella longiceps*
9	*Auxis thazard*	40	*Istiophorus* sp.	71	*Sargocentron rubrum*
10	*Carangoides armatus*	41	*Isurus oxyrinchus*	72	*Saurida tumbil*
11	*Carangoides* sp.	42	*Katsuwonas pelamis*	73	*Scarus ghibbus*
12	*Caranx* sp.	43	*Lates calcarifer*	74	*Scarus ghobban*
13	*Cardisoma canarium*	44	*Leiognathus equulus*	75	*Scolopsis vosmeri*
14	*Cephalopholis boenack*	45	*Lethrinus* sp.	76	*Scomberoides commersonianus*
15	*Cephalopholis formosa*	46	*Liza tade*	77	*Scomberoides lysan*
16	*Cephalopholis sonnerati*	47	*Lobotes surinamensis*	78	*Scomberomorous commerson*
17	*Charybdis cruciata*	48	*Loligo duvauceli*	79	*Scylla tranquebarica*
18	*Chichoreus ramosus*	49	*Lutjanus lutjanus*	80	*Sepia pharonis*
19	*Chirocentron* sp.	50	*Mene maculata*	81	*Sepioteuthis*
20	*Coryphaena hippurus*	51	*Metapenaeus* sp.	82	*Siganus javus*
21	*Cynoglossus* sp.	52	*Mobula japanica*	83	*Sphyraena barracuda*
22	*Dasyatis kuhlii*	53	*Mugil Cephalus*	84	*Stolephorus commersonnii*
23	*Dasyatis* sp.	54	*Nemapterus japonicus*	85	*Strongylurus leiura*
24	*Dasyatis uarnak*	55	*Nemapteryx caelata*	86	*Synatpura* sp.
25	*Destodus erumi*	56	*Octopus aegina*	87	*Thunnus albacares*
26	*Diagramma pictum*	57	*Octopus cyaneus*	88	*Thunnus thynnus*
27	*Dorytheuthis* sp.	58	*Octopus dolfusii*	89	*Trachurus japonicus*
28	*Drepane punctata*	59	*Pampus pampus*	90	*Trichurrus saavala*
29	*Epinepheleus undulosus*	60	*Paniluris homorus*	91	*Turbinella pyrum*
30	*Epinephelus areolatus*	61	*Panilurus ornatus*	92	*Tylosurus* sp.
31	*Epinephelus malabaricus*	62	*Paraupeneus indicus*	93	*Upeneus vittatus*

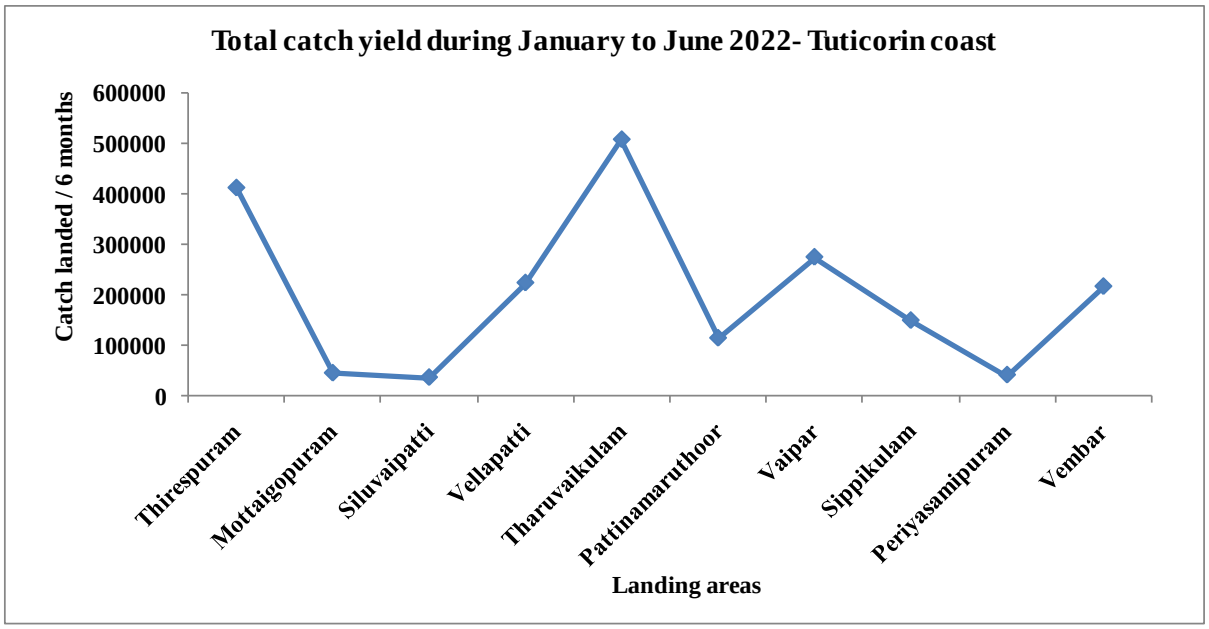

Fig.5: Total catch obtained during January 2022 to June 2022 in Tuticorin coast

Thirespuram

Total landing was recorded as 412591 Kg. Maximum landing was recorded in June 2022 to about 83999 kg and minimum in May 2022 to about 55667 kg. Species dominantly recorded varies according to the season – Emperors (*Lethrinus* sp.,) dominantly found during June 2022; Snappers (*Lutjanus* sp.,) dominantly landed during June 2022; Jacks (*Caranx* sp.,) dominantly found during the month of February 2022; and Seer fish (*Scomberomorous commerson*.,) has dominant occurrence in June 2022. Species commonly landed includes *Sphyraenae* sp., *Epinepheleus merra*, *E. malabaricus*, etc.

- Dominant species – *Lethrinus* sp., *Lujanus* sp., *Caranx* sp., *Scomberomorous commerson.*
- Maximum catch recorded - June 2022
- Minimum catch recorded - May 2022

Mottaigopuram

Total landing was recorded as 44183 Kg. Maximum landing was recorded in June 2022 to about 8523 kg and minimum in May 2022 to about 6711 kg. Species dominantly recorded varies according to the season – shrimp *(Penaeus* sp.,) dominantly found during the month of June 2022; Emperors *(Lethrinus* sp.,) found throughout the season and particularly in April 2022; and Shrimp (*Metapenaeus* sp.,) dominantly recorded in June 2022. Species commonly landed includes *Portunus* sp., *Penaeus* sp., *Sepiella* sp., etc.

- Dominant species - *Penaeus* sp., *Lethrinus* sp., *Metapenaeus* sp.,
- Maximum catch recorded - June 2022
- Minimum catch recorded - May 2022

Siluvaipatti

Total landing was recorded as 35481 Kg. Maximum landing was recorded in June 2022 to about 6337 kg and minimum in May 2022 to about 4983 kg. Species dominantly landed varies according to the season - Emperors (*Lethrinus* sp.,) dominantly recorded in April 2022; Crustaceans - crab (*Portunus* sp.,) dominantly found during June 2022; shrimp *(Penaeus* sp.,)

in June 2022, and Cephalopoda (*Sepiella* sp.,) dominantly recorded in February 2022. Species commonly recorded includes *Penaeus* sp., *Portunus* sp., *Sepiella* sp., etc.

- Dominant species – *Lethrinus sp*., *Portunus* sp., *Penaeus* sp., *Sepiella* sp.
- Maximum catch recorded - June 2022
- Minimum catch recorded - May 2022

Vellapatti

Total landing was recorded as 223637 Kg. Maximum landing was recorded in May 2022 to about 45926 kg and minimum in January 2022 to about 31131 kg. Species dominantly landed varies with season – Emperors (*Lethrinus* sp.,) dominantly found in May 2022 and Crustaceans - crab (*Portunus pelagicus,*) found dominant6ly during January 2022, and Rabbit fish (*Siganus* sp.,) – dominantly recorded during May 2022 Species commonly recorded includes *Portunus pelagicus, Portunus sanguineolatus, Lethrinus* sp.,. etc.

- Dominant species - *Lethrinus* sp., *Portunus pelagicus., Siganus sp.*
- Maximum catch recorded - May 2022
- Minimum catch recorded - January 2022

Tharuvaikulam

Total landing was recorded as 508684 Kg. Maximum landing was recorded in June 2022 to about 116703 kg and minimum in May 2022 to about 54140 kg. Species dominantly observed varies according to the season –Fin fishes includes Tunas (*Euthynnus affinis*) dominantly recorded in June 2022 and Needle fish (*Tylosurus* sp.,) too in June 2022. Species commonly observed includes *Strongylurus leiura, Scomberoides tol, Scomberoides lysan, Lethrinus* sp., etc.

- Dominant species –*Euthynnus affinis., Tylosurus* sp., *Coryphaenae* sp., *Scomberoides commersonianus.*etc..
- Maximum catch recorded - June 2022
- Minimum catch recorded - May 2022

Pattinamaruthoor

Total landing was recorded as 113703 Kg. Maximum landing was recorded in May 2022 to about 21265 kg and minimum in January 2022 to about 16171 kg. Species dominantly landed varies according to the season – Halfbeak (*Hemiramphus far*) in June 2022 and Crustaceans - crabs *(Portunus pelagicus*.,) in April 2022. Species commonly recorded includes *Portunus pelagicus, Portunus sanguineolatus, Sepiella* sp., *Lutjanus* sp., *Lethrinus* sp. etc.

- Dominant species – *Hemiramphus far*., *Portunus pelagicus., Carangoides* sp., *Paraupeneus indicus.*
- Maximum catch recorded - May 2022
- Minimum catch recorded - January 2022

Vaipar

Total landing was recorded as 274801 Kg. Maximum landing was recorded in f June 2022 to about 51599 kg and minimum in May 2022 to about 28303 kg. Species dominantly found varies according to the season –Sardines (*Sardinella* sp.,), Emperors (*Lethrinus* sp.,)

and Barracuda (*Sphyraena* sp.,) recorded dominantly in June 2022. Species commonly found includes *Sardinella* sp., *Strongylera* sp., *Lutjanus* sp., *Lethrinus* sp., *Sphyraena* sp., etc.

- Dominant species – *Sardinella* sp., *Lethrinus* sp., *Sphyraena* sp., *Rastrelliger kanangurta*, etc.
- Maximum catch recorded - June 2022
- Minimum catch recorded - May 2022

Sippikulam

Total landing was recorded as 148857 Kg. Maximum landing was recorded in January 2022 to about 29989 kg and minimum in June 2022 to about 17456 kg. Species dominantly landed varies according to the season –cludes Sardines (*Sardinella* sp.,) and Barracuda (*Sphyraena* sp.,) dominantly recorded in March 2022 and Jacks (*Carangoides* sp.,) in April 2022. Species commonly found includes *Sardinella* sp., *Sphyraena* sp., *Strongylera* sp., *Lutjanus* sp. etc.

- Dominant species – *Sardinella* sp., *Sphyraena* sp., *Carangoides* sp., *Strongylera* sp., etc.
- Maximum catch recorded - January 2022
- Minimum catch recorded - June 2022

Periyasamypuram

Total landing was recorded as 40379 Kg. Maximum landing was recorded in January 2022 to about 8509 kg and minimum landing was recorded in May 2022 to about 5364 kg. Species dominantly landed varies according to the season – Crab (*Portunus* sp.,) in April 2022 and Cephalopods (*Sepiella* sp., *Doryteuthis* sp., *Loligo* sp) in January 2022 Species commonly found includes *Portunus* sp., *Sepiella* sp., *Loligo* sp., *Doryteuthis* sp., etc.

- Dominant species -*Portunus* sp., *Sepiella* sp., *Doryteuthis* sp., *Loligo* sp., etc.
- Maximum catch recorded - January 2022
- Minimum catch recorded - May 2022

Vembar

Total landing was recorded as 216442 Kg. Maximum landing was recorded in June 2022 to about 55208 kg and minimum landing was recorded in May 2022 to about 20289 kg. Species dominantly landed varies according to the season –Emperors (*Lethrinus* sp., *Lutjanus* sp.,), Barracuda (*Sphyraenae* sp.,) and Sardines (*Sardinella* sp) dominantly recorded in June 2022. Species commonly found includes *Lethrinus* sp., *Lutjanus* sp., *Sphyraenae* sp., etc.

- Dominant species –*Lethrinus* sp., *Sphyraenae* sp., *Lutjanus* sp., *Sardinella* sp,. etc.
- Maximum catch recorded - June 2022
- Minimum catch recorded - May 2022

The major dominant fishery resources and the peak landing month in the 10 landing areas are given in Table 6.

. **Table 6: Dominant fishery resources and maximum catch month/s in the 10 landing areas of Tuticorin coast during January 2022 - June 2022**

Landing areas	Major dominant fishery resources	Peak season/month
Thirespuram	Emperors *(Lethrinus* sp.,)	Jun 2022
	Emperors (*Lutjanus* sp.,)	Jun 2022
	Jacks (*Caranx* sp.,)	Feb 2022
	Seer fish*(Scomberomorous commerson)*	Jun 2022
Mottaigopuram	Shrimp *(Penaeus* sp.,)	Jun 2022
	Emperors *(Lethrinus* sp., *)*	Apr 2022
	Shrimp (Metapenaeus sp.,)	Jun 2022
	Goat fish (*Paraupeneus* sp.,)	Jan 2022
Siluvaipatti	Emperors (*Lethrinus* sp.,)	Apr 2022
	Crustaceans - crab (*Portunus* sp.)	Jun 2022
	Shrimp *(Penaeus* sp.,)	Jun 2022
	Cephalopods *(Sepiella* sp.)	Feb 2022
Vellapatti	Emperors *(Lethrinus* sp.,)	May 2022
	Crustaceans - crab (*Portunus pelagicus.,)*	Jan 2022
	Rabbit fish (*Siganus* sp.,)	May 2022
	Emperors *(Lutjanus* sp.,)	Jun 2022
Tharuvaikulam	Tunas (*Euthynnus affinis.*,)	Jun 2022
	Needlefish *(Tylosurus sp.*,)	Jun 2022
	Dolphin fish (Coryphaenae sp.,)	Jan 2022
	Seer fish *(Scomberomorous commerson)*	Mar 2022
Pattinamaruthoor	Halfbeak (*Hemiramphus far.,*)	Jun 2022
	Crustaceans - crabs (*Portunus pelagicus.*,)	Apr 2022
	Jacks *(Carangoides* sp.,)	May 2022
	Goat fish (Paraupeneus indicus.,)	Jun 2022
Vaipar	Sardines (*Sardinella sp.*,)	Jun 2022
	Emperors *(Lethrinus* sp.,)	Jun 2022
	Barracuda (Sphyraenae sp.,)	Jun 2022
	Indian mackerel*(Rastrelliger kanangurta.,)*	Jan 2022
Sippikulam	Sardines (*Sardinella* sp.,)	Mar 2022
	Barracuda (*Sphyraenae* sp.,)	Mar 2022
	Jacks (*Carangoides* sp.,)	Apr 2022
	Needlefish *(Strongylera* sp.,)	Jan 2022
Periyasamypuram	Crustaceans – Crab (*Portunus* sp.,)	Apr 2022
	Cephalopods *(Sepiella* sp., *Doryteuthis sp., Loligo sp.*,)	Jun 2022
Vembar	Emperors *(Lutjanus* sp., *Lethrinus* sp.,)	Jun 2022
	Barracuda (*Sphyraenae* sp.,)	Jun 2022
	Sardines (Sardinella sp.,)	Jun 2022

4. Remarks

The marine environmental monitoring carried out during the period from January 2022 to June 2022 recorded no impact on the coastal ecology of Pattinamarudur coast including the coral reefs, seagrasses, associated fish population and other biological resources like macro- and meiobenthos and plankton. Also, there were no notable impacts except for the seasonal variations on the physical and chemical properties and heavy metal values in the marine water and sediment. The monitoring data on the fish population indicates slight deviations from the baseline data, which may be attributed to the seasonal changes and other factors like alterations in fishing patterns. There was no impact on coral and associated biodiversity due to bleaching caused by climate change. The monitoring of cage culture of fish shows good fish population within and outside the cages, which indicates that the environment is healthy and fit for marine organisms.

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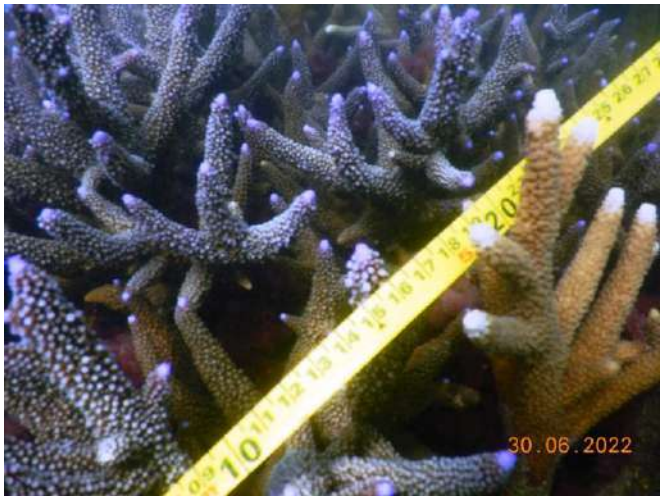
6. Photos

Status of seagrass, corals and fish population




31/01/2022


28/02/2022


31.03.2022


31.03.2022


29/04/2022


15.06.2022

Fishing Landing & Catch Monitoring

Therespuram

Mottaigopuram

Siluvaipatti

Vellapatti

Tharuvaikulam

Pattinamaruthoor

Sippikulam

Vaipar




Periyachamypuram

Vembar

28. 02. 2022

31 . 03 . 2022

ANNEXURE -8

Annexure - 8

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE OFFICE MEMORANDUM No.F.No.J-13012 /8/2009-IA.II(T) dated 11.11.2020

Period: January 2022 to June 2022

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIANCE
a)	Details regarding change in source (Location of the source, Proposed Quantity, Distance from the power plant and mode of transportation), Quality (Ash, Sulphur, Moisture Content and Calorific Value) shall be informed to the Ministry and its Concerned Regional Office .The Quantity of coal transported from each source along with the mode of transportation shall be submitted as part of EC Compliance Report.	Our Boiler is Designed with a blend of 5:50 imported and Indian Coal. We are using imported coal in our plant from Indonesia and we are transporting the coal from port/Melavittan Station to plant by using trucks. The quantity of coal transported for the period from January'22 to June'22 is as mentioned below; **Imported Coal (Indonesia) – 532724.24 MT** **Indian Coal – G12 – 3839.56 MT**
b)	The Applicable flue gas emissions standards for particulate matter, Sulphur Dioxide, Oxides of Nitrogen and Mercury Shall be complied in line with Ministry's Notification Vide S.O 3305 (E) dated 7.12.2015 and subsequent emissions. A Progress of implementation and its compliance shall be submitted as part of Compliance Report.	Continuous Stack emission and ambient air quality monitoring are being carried out and records are being maintained. The monitored data for the period of January 2022 to June 2022 is enclosed as Annexure – 1. The results are well within the prescribed norms. FGD Feasibility Study is in Progress.
c)	Ash Content in the coal and coal Transportation is governed by the Ministry's Notification Vide S.O 1561(E) dated 21.5.2020.As far as possible, Coal Transportation shall be done by rail/conveyor or other eco-friendly modes. However, road transportation is allowed with tarpaulin covered trucks till the railway / conveyor belt infrastructure is made available. A Progress (Physical and Financial) of rail connectivity from nearest railway siding or conveyor connectivity to the power plant shall be submitted in the EC Compliance Report.	At present Coal is being transported to our plant through trucks which are fully covered with tarpaulin. Railway line laying work is under Progress by Southern Railways close to our Plant. Engineering Scale Plan for "Takeoff line" to our Plant submitted to Southern Railways for Approval.
d)	Additional ash pond is not allowed due to increase in ash content in the raw coal as against the ash pond permitted in the Environment Clearance. The 100% Fly ash utilization is to be achieved within four years in line with fly ash notification dated 14.09.1999, 27.8.2003,03.11.2009 & 25.01.2016 and amended time to time or extant regulation on fly ash utilization.	100 % Fly Ash utilization is being achieved.
e)	In case of exceptional circumstances project proponents may approach the ministry for seeking permission to use an emergency ash pond with cogent reasons if any.	Noted.
f)	The Details Regarding monthly generation , utilization and disposal of fly ash (including bottom ash) shall be submitted to the ministry and its regional office	Agreed For Compliance.

ANNEXURE - 9

Annexure - 9

PARIVESH
परिवेश

"Pro Active and Responsive facilitation by Interactive, Virtuous and Environmental Singlewindow Hub"

Ministry of Environment, Forest and Climate Change
Government of India

My Account | My Proposals Environment Clearance | Only CRZ Clearance | My Proposals Forest Clearance | My Proposals Wildlife Clearance | Help

4:11:27 PM

Summary of the Proposals in which Essential Details (Sought by Forest Department) have to be submitted by User Agency

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In this section, User Agency can upload reply to Essential Details Sought by Forest Department

Click on the Proposal No. for submitting details in reply form.

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SEARCH

Sno.	Proposal No.	Proposal Name	Category	User Agency Name	Area (ha.)	Proposal Received on	Proposal Status
1	FP/TN/THE/1838/2017	2 X 600 MW Thermal Power Plant of Coastal Energen Pvt Ltd	Thermal	COASTAL ENERGEN PRIVATE LIMITED	0	17/10/2017	Draft