

Vijayasankar K

From: Sathish Kumar R
Sent: Monday, November 25, 2019 11:10 PM
To: eccompliance-tn@gov.in
Cc: monitoring-ec@nic.in; suresh.cpcb@nic.in; Member Secretary, TNPCB (tnpcbmembersecretary@gmail.com); DEE Gummidipoondi (deegummidipoondi@gmail.com); tndoe@nic.in; Shalin Shah; Shabdendu Pathak; Vijayasankar K
Subject: Half yearly Compliance report of Environment and CRZ Clearance for the development of proposed Port at Kattupalli, Tiruvallur District of Tamil Nadu by M/s Marine Infrastructure Developer Pvt. Limited for the period of April 2019 to September 2019 – Reg.
Attachments: MIDPL-HYCR- Apr'19 to Sep'19 - 25.11.2019.pdf
Importance: High

MIDPL/TNPCB/GMP/EC-HYC

Date: 25-11-2019

Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change, Regional Office (South Eastern Zone),
1st and 11nd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai – 600 034. Email : eccompliance-tn@gov.in

Dear Sir,

Sub : Half yearly Compliance report of Environment and CRZ Clearance for the development of proposed Port at Kattupalli, Tiruvallur District of Tamil Nadu by M/s Marine Infrastructure Developer Pvt. Limited for the period of April 2019 to September 2019 – Reg.
Ref : CRZ & Environmental Clearance for the development of proposed Port at Katupalli, Tiruvallur District of Tamilnadu by M/s Marine Infrastructure Developer Pvt. Limited – bifurcation of EC&CRZ Clearance vide F. No 10-130/2007 – IA.III dtd . 9th February 2018

With reference to the captioned subject and cited reference above; we herewith submitting the Half yearly compliance report for the compliance period **April 2019 to September 2019** to the conditions stipulated in the cited reference for your kind information.

Thanking you,

For, M/s. Marine Infrastructure Developer Ltd

Authorized Signatory.

Encl: As above

Copy to:

1. The Director (Monitoring –IA-III Division), Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003 (Email : monitoring-ec@nic.in)
2. Zonal Office, Central Pollution Control Board, A-Block, Nisarga Bhavan, 1st and 2nd Floors, 7th D Cross, Thimmaiah Road, Shivanagar, Bengaluru, Karnataka 5600879 (Email : suresh.cpcb@nic.in)
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032 (Email : tnpcbmembersecretary@gmail.com)

4. The District Environmental Engineer, Tamil Nadu Pollution Control Board, EPIB Building, A.O Block, Gummipoondi Industrial Complex, Gummipoondi – 601201. (Email : deegummidipoondi@gmail.com)
5. Member Secretary TNCZMA & Director – Dept of Environment, No.1, Jeenis Road, Panagal Building, Ground Floore, Saidapet, Chennai -600 015. (Email : tndoe@nic.in)

Thanks and Regards

Sathish Kumar R

Head - Environment

Marine Infrastructure Developer Private Limited | Adani Ennore Container Terminal Private Limited |
Adani Vizag Coal Terminal Private Limited | Adani Mormugao Port Terminal Private Limited |

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MIDPL/TNPCB/GMP/EC-HYC

Date: 25-11-2019

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3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032 (Email : tnpcbmembersecretary@gmail.com)
4. The District Environmental Engineer, Tamil Nadu Pollution Control Board, EPIB Building, A.O Block, Gummipoondi Industrial Complex, Gummipoondi – 601201. (Email : deegummidipoondi@gmail.com)
5. Member Secretary TNCZMA & Director – Dept of Environment, No.1, Jeenis Road, Panagal Building, Ground Floore, Saidapet, Chennai -600 015. (Email : tndoe@nic.in)


Marine Infrastructure Developer Pvt Ltd
(Kattupalli Port)
Kattupalli Village, Ponneri Taluk,
Tirivalluvar District 600 120,
Tamil Nadu, India


Tel +91 44 2824 3062


CIN: U74999TN2016PTC103769


	Marine Infrastructure Developer Pvt Ltd	From : April 2019 To : September 2019
Status of Conditions Stipulated in Environmental and CRZ Clearance File no: 10-130/2007- A.III dated: 09/02/2018		


Half yearly Compliance report on conditions stipulated in Environmental & CRZ Clearance		
S. No.	Conditions	Compliance Status
Specific Conditions		
(i)	The proponent shall comply all the conditions stipulated in the letter R.C.No. P1/2004/2008, dated 21.10.2008 of the Department of Environment, Chennai.	Complied. Compliance to letter R.C.No. P1/2004/2008, dated 21.10.2008, is enclosed as Annexure -I
(ii)	The proponent shall comply all the commitment made vide his letter No. D/Shipyard/00/07 dated 20.03.2009.	Complied This EC is just a bifurcation of original EC of LTSB in name of MIDPL & LTSB. All applicable commitments, w.r.t letter No. D/Shipyard/00/07 dated 20.03.2009 like provision of fire station, independent port connectivity, and no reclamation on areas outside port, non-usage of Tri Butyl Tin [TBT] and treatment of waste water in STP and recycling, disposal of hazardous waste to authorised recyclers are being complied.
(iii)	Provision shall be made for the housing of Construction labour within the site with all necessary infrastructure and facilities such as fuel or cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied. All the construction works were completed and the port is in operation phase.
(iv)	There shall be no withdrawal of groundwater in Coastal Regulation Zone area, for this project. In any case any ground water is proposed to be withdrawn from outside the CRZ area, specific prior permission from the concerned State /Central Groundwater board shall be obtained in this regard.	Complied. No groundwater is withdrawal from CRZ Area. Presently unit is procuring water from M/s. Chennai Metropolitan Water Supply and Sewerage Board, Chennai. In case of Groundwater withdrawal outside CRZ Area prior permission will be obtained for from State/Central Groundwater Board
(v)	No dumping of dredging materials in the sea shall be undertaken. In case of sea dumping required, an integrated Modelling study to be carried out to locate the dump site so that it does not cause any problem to Ennore port.	Complied. No dumping of dredging material was carried out during the compliance period April-19 to September -19. Dredge material dumping location has already been identified by LTSB through modelling studies.




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S. No.	Conditions	Compliance Status
(vi)	Shoreline changes due the project shall be monitored continuously nourishment of northern shoreline shall be carried out using the sediments from beach acceleration on the southern shoreline.	Being Complied MIDPL has engaged Institute of Ocean Management, Anna University, Chennai for shoreline Change study which is ongoing. Reports of the same will be submitted as part of compliance.
(vii)	Suitable Screens shall be installed between the construction area and the intakes so that operations of the intakes are not affected by the construction activity.	Complied All the construction works were completed and the port is in operation phase. No impact envisaged.
(viii)	At least a distance of 100 meter shall be provided between intake of Chennai Water Desalination Ltd. (CWDL) and north edge of the northern breakwater as agreed in the meeting between the proponent and CWDL	Complied Distance maintained as agreed.
(ix)	Independent port connectivity shall be developed.	Complied An independent port connectivity has been developed
(x)	Rehabilitation if any shall be carried out as per law / State Government.	Complied Rehabilitation was carried out completely as per law / State Government at the time of project implementation.
(xi)	Fire station shall be located within the project area	Complied MIDPL is having dedicated fire station with fire tender and fire crew. 
(xii)	The Hazardous waste generated shall be properly collected and handled as per the provisions of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.	Complied. Hazardous wastes generated are properly collected and handled inline to Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 as amended. Details of the same are submitted to TNPCB as a part of Hazardous waste annual return (Form 4) on regular basis. Annual return for FY 2018-19 is attached as Annexure – II .
(xiii)	The waste water generated from the activity shall be collected, treated and reused properly.	Complied Domestic waste water generated are being collected, treated in STP and the


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		treated water is reused for green belt.
(xiv)	Sewage Treatment Facility should be provided in accordance with the CRZ Notification.	Complied STP's are provided in accordance with the CRZ notification.
(xv)	No Solid Waste will be disposed of in the Coastal Regulatory Zone area. The Solid Waste shall be properly collected segregated and disposed as per the provision of Solid Waste Management Rules, 2016.	Complied No solid waste is being disposed of in the CRZ area. All the solid waste generated is properly collected, source segregation of all types of Solid Waste is practised and are disposed as per the provision of Solid Waste Management Rules 2016, as amended. Integrated waste Management system is in place and all wastes are being handled inline to 5R principle (Reduce, Reuse, Reprocess, Recycle & Recover). <div data-bbox="831 1055 1422 1267">  </div>
(xvi)	Installation and operation of DG set if any shall comply with the guidelines of CPCB.	Complied 02 no of DG set with 2000 kVA capacity is installed inline to CPCB guideline. Flue gas analysis report of the DG Set stack for the period Apr-2019 to Sep-2019 is attached as Annexure III
(xvii)	Air quality including the VOC shall be monitored regularly as per the guidelines of CPCB and reported.	Complied Ambient Air Quality Monitoring is being carried out through NABL accredited laboratory. Air Quality monitoring Reports for the period Apr-2019 to Sep-2019 is enclosed as Annexure-III . We have also installed Continuous Ambient Air Quality Monitoring Station (Including BTX analyser to monitor VOC). CAAQMS has been connected to TNPCB server and data is transferred on real-time basis. All the parameters are well with the prescribed standards.

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S. No.	Conditions	Compliance Status
(xviii)	The project proponent shall undertake green belt development all along the periphery of the project area and also alongside the road.	<p>Complied</p> <p>Greenbelt of adequate size has been developed along the periphery of the project area and also alongside the road and are being maintained by MIDPL. Till date, 6,050 Nos. of trees has been planted. During the compliance period 3,000 Nos of trees planted.</p>   

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S. No.	Conditions	Compliance Status
		
(xix)	All necessary clearances from the concerned agencies shall be obtained before initiating the project.	Complied All the necessary clearances from the concerned agencies have been obtained.
(xx)	Project proponent shall install necessary oil spill mitigation measures in the shipyard. The details of the facilities provided shall be informed to this Ministry within 3 months from the date of receipt of this letter.	Complied All necessary precaution has been taken to avoid any kind of spillages. Oil spill contingency plan along with list of available oil spill equipment submitted vide our Letter No. MIDPL/TNPCB/GMP/EC-HYC dated 14.05.2018.
(xxi)	No hazardous chemicals shall be stored in the Coastal Regulation Zone area.	Noted for Compliance. No hazardous chemical is stored in CRZ Area.
(xxii)	The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the PWD/ Electricity Department.	Complied Requisite permission for Water Supply and Electricity has been obtained from Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) and Tamil Nadu Electricity Board respectively before commissioning
(xxiii)	Specific arrangements for rainwater harvesting shall be made in the project design and the rain water so harvested shall be optimally utilized.	Being Complied Water table is observed to be high in and around the Port area Feasibility of rainwater harvesting will be explored.
(xxiv)	The facilities to be constructed in the CRZ area as part of this project shall be strictly in conformity with the provisions of the CRZ Notification, 2011 and its	Complied. All construction has been done inline to CRZ Notification, 2011 & EC&CRZ clearance obtained.

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S. No.	Conditions	Compliance Status
	amendment. The facilities such as office building and residential buildings which do not require water front and foreshore facilities shall not be constructed within the Coastal Regulation Zone area.	
General Conditions:		
(i)	Construction of the proposed structures shall be undertaken meticulously conforming to the existing Central/local rules and regulations including Coastal Regulation Zone Notification 1991 & its amendments. All the construction designs /drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments /Agencies.	Complied All construction has been done inline to CRZ Notification , 2011 & EC&CRZ clearance obtained
(ii)	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. shall be ensured for construction workers during the construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.	Complied Most of the construction labours are from nearby villages. Construction activities are being carried out in daytime and worker leave the site on daily basis.
(iii)	The project authorities shall make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise level etc. must conform to the standards laid down by the competent authorities including the Central/State Pollution Control Board and the Union Ministry of Environment and Forests under the Environment	Complied No solid waste is being disposed of in the CRZ area. Integrated waste Management system is in place. All the solid waste generated is properly collected, source segregation of all types of Solid Waste is practised and are disposed as per the provision of Solid Waste Management Rules 2016, as amended. Sewage Treatment Plants (STPs) are provided for treatment of wastewater in line to CRZ Notification 2011. Environment Monitoring is being carried

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	(Protection) Act, 1986, whichever are more stringent.	<p>out by NABL accredited agency, Reports for the period Apr-2019 to Sep-2019 are enclosed as Annexure –III</p> <p>All the monitoring results are well within the prescribed standard.</p>
(iv)	The proponent shall obtain the requisite consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 from the Tamil Nadu State Pollution Control Board before commissioning of the project and a copy of each of these shall be sent to this Ministry.	<p>Complied.</p> <p>Requisite Consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 were obtained before commissioning of the project and submitted to Ministry. Project is in operation phase and Consent To Operate has been obtained from the Tamil Nadu State Pollution Control Board vide Consent Order No. 1908121257901 & 1908221257901 dated 14/05/2019 valid till 31.03.2021.</p>
(v)	In order to carry out the environmental monitoring during the operational phase of the project, the project authorities shall establish an environmental laboratory well equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters.	<p>Complied</p> <p>MIDPL is having Environmental Management Cell, staffed with qualified personnel at site supported by team at Head Office in Ahmedabad.</p> <p>Environment monitoring is being carried out through NABL accredited Laboratory.</p>
(vi)	The proponents shall provide for a regular monitoring mechanism so as to ensure that the treated effluents conform to the prescribed standards. The records of analysis reports must be properly maintained and made available for inspection to the concerned State/Central officials during their visits.	<p>Complied.</p> <p>Domestic Waste water is being treated in STP and inlet and outlet characteristic of water is regularly analysed by NABL accredited laboratory, the monitoring results for the period Apr-2019 to Sep-2019 is enclosed as Annexure - III. All the results are found well within the prescribed standard.</p> <p>Records are made available at site for inspection of State / Central officials during their visit.</p>

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S. No.	Conditions	Compliance Status															
(vii)	The sand dunes and mangroves, if any, on the site shall not be disturbed in any way.	Complied No Sand dune and mangroves are present on the site.															
(viii)	A copy of the clearance letter will be marked to the concerned Panchayat / local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.	Complied This EC is just a bifurcation of original EC of LTSB.															
(ix)	The Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildars Office for 30 days.	Complied The condition does not pertain to project proponent															
(x)	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	Complied. Separate budget for the Environment Protection is earmarked every year. All the expenses are recorded in advanced accounting system of the organization. Proposed Budget for Environment Management FY 2019-20 is Rs. 74.75 Lakhs, excluding AMC for STP, Greenbelt and Housekeeping. Expenditure for Environment Management measures during Apr'19 to Sep'19 is Rs. 37.82 Lakhs. The breakup details are as follows; <table border="1" data-bbox="834 1585 1404 2022"> <thead> <tr> <th>S. No.</th><th>Description of Work</th><th>Cost (Rs.)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Comprehensive Environmental Monitoring</td><td>3.78</td></tr> <tr> <td>2</td><td>AAQ/NL/SM Survey & STP Treated Water Quality analysis</td><td>0.75</td></tr> <tr> <td>3</td><td>World Environment Day activities</td><td>0.95</td></tr> <tr> <td>4</td><td>Hazardous Waste Management</td><td>0.18</td></tr> </tbody> </table>	S. No.	Description of Work	Cost (Rs.)	1	Comprehensive Environmental Monitoring	3.78	2	AAQ/NL/SM Survey & STP Treated Water Quality analysis	0.75	3	World Environment Day activities	0.95	4	Hazardous Waste Management	0.18
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1	Comprehensive Environmental Monitoring	3.78															
2	AAQ/NL/SM Survey & STP Treated Water Quality analysis	0.75															
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4	Hazardous Waste Management	0.18															

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		5	Training and Awareness program	0.10
		6	Environment Studies (Shoreline Changes Study & Marine	30.5
		7	Integrated Waste Management	0.13
		8	No Plastic Awareness & Banners	1.43
		<p>In addition, Maintenance Cost for STP's is Rs.5.70 Lakhs, House Keeping is Rs.14.78 Lakhs & Green belt maintenance is Rs.11.97 Lakhs, total amounting to Rs. 31.85 Lakhs during the compliance period.</p>		
(xi)	Full support shall be extended to the officers (this Ministry's Regional Office at Chennai and the officers of the Central and State Pollution Control Boards 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.	Noted for Compliance. Full support will be extended to the officers of RO-MoEF&CC Chennai, CPCB & SPCB during their inspection and site visit. During the compliance period monthly visit was made by TNPCB Officials to monitor the compliance and all the necessary support were extended and the same shall be continued in future also.		
(xii)	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 ones for ensuring environmental protection.	Noted for Compliance There is no deviation or alteration in the project including implementing agency.		
(xiii)	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.	Noted for Compliance.		
(xiv)	This Ministry or any other competent authority may stipulate any other	Noted for Compliance.		

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S. No.		Conditions		Compliance Status						
		additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.								
(xv)		The Project proponents shall inform the Regional Office at Chennai as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of Land Development Work.		Complied The same has been Complied by LTSB before bifurcation itself.						
EC & CRZ Amendment letter No. 10-130/2007- A.III dated 12.05.2010:										
(i)		The details of combined effect on both the Ports (i.e. Ennore Port and Kattupalli Port) shall be carried out to monitor the impact of the post-dumping. This model study shall be carried out for a period of one year.		Complied M/s LTSB has already carried out detailed modelling study to understand impact of post dumping and report was submitted to Ministry. No dumping was being carried by MIDPL during the period Apr-2019 to Sep-2019. MIDPL engaged Institute of Ocean Management, Anna University to carry out shoreline studies of the concerned area which is ongoing. Reports of the same will be submitted as part of compliance.						
(ii)		A comparison between model study and actual dumping shall be carried out to examine the impacts both on North-East and South-West of the Ports and shall be submitted to the Ministry,		Complied Comparison between model study and actual dumping was made to examine the impacts and report was submitted to Ministry by LTSB. No dumping was being carried by MIDPL during the period Apr-2019 to Sep-2019. MIDPL engaged Institute of Ocean Management, Anna University for further studies which is ongoing. Reports of the same will be submitted as part of compliance.						
(iii)		No reclamation of the areas outside the Port limit and Buckingham Canal shall be carried out.		Being Complied No reclamation of the areas outside Port Limit and Buckingham Canal is being carried out.						
EC & CRZ Extension of validity letter No. 10-130/2007- XIII dated 17.12.2014:										
(i)		The cargo should only include		Being Complied.						
		<table><tr><td>S</td><td>Description</td><td>Quantity</td><td>Unit</td></tr><tr><td>N</td><td></td><td></td><td></td></tr></table>	S		Description	Quantity	Unit	N		
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S. No.	Conditions				Compliance Status
	1	Containers	1.8	Million TEU/Ann um (21.60 MTPA)	
	2	Ro-Ro (Nos) (Automobiles)	149899	Nos/Ann um (0.22 MTPA)	
	3	Project Cargo	440000	MT/Annu m (0.44 MTPA)	
	4	Breakbulk/General Cargo (Barytes/ Gypsum/ Limestones/ Granite/ Steel Cargo)	1820000	MT/Annu m/1.82 MTPA)	
(ii)	(All the conditions stipulated by the Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter no. 6064/EC.3/2014-1 dated 26.06.2014, shall be strictly complied with.				Complied All the conditions stipulated by the Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter no. 6064/EC.3/2014-1 dated 26.06.2014 are being complied. Compliance status of the same is enclosed as Annexure - IV
(iii)	No additional land should be utilized for the proposed development.				Complied
(iv)	As committed, the local traffic should not be disturbed.				Complied Separate road available for local traffic.
5	These stipulations would be enforced among other under the provisions of water (Prevention and Control of Pollution) Act, 1974 the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991, the Hazardous Chemical (Manufacture, storage and Import) Rules, 1989, Solid Waste Management Rules, 2016 and the Coastal Regulation Zone Notification, 2011 and its subsequent amendments made there under from time to time.				Noted for Compliance.
6	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation				Complied. All the statutory approvals as applicable have been obtained. Clearance from Chief Controller of Explosives, Fire

 Ports and Logistics	Marine Infrastructure Developer Pvt Ltd	From : April 2019 To : September 2019
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	Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act 1972, etc shall be Obtained, as applicable by project proponents from the respective competent authorities.	Department, Civil Aviation Department has been obtained.
7	The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Tamil Nadu Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at http://envfonnic.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 Chennai.	Complied. Copy of the same is already submitted along with the Compliance report for the period Oct'18 to Mar'19.
8	Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 day as prescribed under section 11 of the National Environment Appellate Act, 1997.	Noted.
9	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Being complied. Six monthly Compliance Report of CRZ & EC Clearance is uploaded on company website regularly (https://www.adaniports.com/ports-downloads)
10	This Environmental and CRZ Clearance is valid till 2 nd July, 2019.	Noted.
11	This issue with the approval of the Competent Authority.	Noted.



 adani Ports and Logistics	Marine Infrastructure Developer Pvt Ltd	From : April 2019 To : September 2019
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Enclosures:

Annexure Number	Details of Annexure
Annexure I:	Compliance to RC No. P1/2004/2008, dated 21.10.2008 of Department of Environment, Chennai
Annexure II:	Annual Hazardous Waste Returns – Form IV
Annexure III:	Environmental Monitoring reports for the period Apr'19 to Sep'19
Annexure IV:	Compliance to TNSCZMA conditions
Annexure V:	Mock Drills carried out during Apr'19 to Sep'19

Compliance to RC No. P1/2004/2008, dated 21.10.2008 of Department of Environment, Chennai

Sl. No	Conditions	Compliance
i	The unit shall carry out dumping/ land filling at dredged material only on land which is not covered under CRZ	Noted for Compliance
ii	The unit shall not carry out any ship breaking activity	Not applicable
iii	The unit should design that the waste water should be recycled 100% and to be used for developing greenery etc., and there should not be any waste water let out.	Complied Domestic waste water generated is being treated in STP. Treated water is being reused for Horticulture / green belt purpose
iv	The unit should tie - up with institutions like Centre for Environmental Studies or IIT for the periodical monitoring during construction phase so as to ensure the adoption of Safety measures as per the Environmental Management Plan [EMP].	Complied. LTSB carried out the studies during Construction Phase.
v	Before commencing construction activities, Proper resettlement for the local the unit should ensure the proper resettlement of local inhabitants residing at the project area to the satisfaction of District Collector and submit a report to the Department of Environment.	Not applicable. This EC is just a bifurcation of original EC of LTSB. Rehabilitation & resettlement was carried out completely as per law / State Government at the time of project implementation.
General Conditions		
a	There should not be any extraction of Ground Water in CRZ.	Noted for compliance. Presently unit is procuring desalinated water from M/s. Chennai Metropolitan Water Supply and Sewerage Board, Chennai.
b	The unit should obtain planning permission for their constructions from the CMDA/Department of Environment before commencing the constructions	Not applicable. This EC is bifurcation of original EC of LTSB. Required permission from concerned authorities was taken before commencing the constructions.
c	The proposed activities should not cause coastal erosion and alter the beach configuration	Complied. MIDPL is monitoring shoreline studies through Institute of Ocean Management, Anna University, Chennai.

d	No fencing or barricading along the pipeline alignment and parallel to the coast is permissible in CRZ.	Agreed for compliance. All activities permissible as per CRZ notification 2011 & EC&CRZ clearance will only be carried out.
e	No blasting or drilling activities in CRZ is permissible.	Agreed for compliance. All activities permissible as per CRZ notification 2011 & EC&CRZ clearance will only be carried out.
f	The proponent should not prevent public from easy access to the beach.	Being complied. MIDPL will not block the access point to beach for the public.
g	Chemical waste generated and the sewage generated, if any should not be discharged in to the sea.	Complied. No chemical waste generated. Sewage waste water generated is being treated in STP for further usage in horticulture / greenbelt
h	The proponent should implement the EMP including the Green Belt as envisaged in the EIA report.	Complied. Greenbelt of adequate size has been developed along the periphery of the project area and also alongside the road and are being maintained by MIDPL. Till date, 6,050 Nos. of trees has been planted. During the compliance period 3,000 Nos of trees planted.  
i	The project activity should not affect the coastal ecosystem including marine flora and fauna.	Complied Marine water & Sediment quality are being monitored by NABL accredited laboratory on monthly basis. There is no impact on water

		quality in the vicinity. The details of Marine Water quality monitoring report for the period April 2019 to September 2019 is enclosed as Annexure-3.
j	The proponent should not undertake any activity, which is violate of provisions of CRZ Notification 1991 and the subsequent amendments.	Being complied. All activities permissible as per CRZ notification 2011 & EC&CRZ clearance will only be carried out.
k	The CRZ Clearance will be revoked if any of the conditions stipulated in not complied with.	Noted for compliance



**KATTUPALLI PORT
CHENNAI's NEW GATEWAY**

MIDPL/TNPCB/GMP/ HWR-2019/04

Date: 28/06/2019

To,

The District Environmental Engineer,
Tamil Nadu Pollution Control Board,
EPIB Building, A.O Block,
Gummidipoondi Industrial Complex,
Gummidipoondi – 601201.

Dear Sir,

Sub: Submission of Annual Hazardous Waste Returns for the period April'2018 to March'2019.

With reference to captioned subject, **M/s. Marine Infrastructure Developer Private Ltd.** is submitting the Annual Hazardous Waste Returns for the period April'2018 to March'2019.

Submitted for your kind records

Kindly acknowledge us the receipt of the same,

For, **M/s. Marine Infrastructure Developer Pvt Ltd**

R. Sathish Kumar

Head - Environment



Encl: As above

Marine Infrastructure Developer Pvt Ltd
(Kattupalli Port)
Kattupalli Village, Ponneri Taluk,
Tirivalluvar District 600 120,
Tamil Nadu, India

Tel +91 44 2824 3062

CIN: U74999TN2016PTC103769

FORM 4

[See rules 6(5), 13(8), 16(6) and 20 (2)]

FORM FOR FILING ANNUAL RETURNS[To be submitted to State Pollution Control Board by 30th day of June of every year for the proceeding period April 2018 to March 2019]

1	Name and address of facility:	Marine Infrastructure Developer Pvt Ltd Kattupalli Village, Ponneri Taluk, Tiruvallur District - 600120
2	Authorisation No. and Date of issue:	
3	Name of the authorised person and full address with telephone, fax number and e-mail:	Ennarasu Karunesan Director Marine Infrastructure Developer Pvt Ltd Kattupalli Village, Ponneri Taluk, Tiruvallur District – 600120. Tel: +91 44 2824 3062. Mail: ennarasu.karunesan@adani.com
4	Production during the year (product wise), wherever applicable	Not Applicable.

Part A. To be filled by hazardous waste generators

1	Total quantity of waste generated category wise	Used oil	Waste containing oil	Oil contaminated filter element
	Category	5.1	5.2	3.3
	Quantity	19,600 Liters	NIL	2.23 MT
2	Quantity dispatched			
	(i) to disposal facility			
	(ii) to recycler or co-processors or pre-processor			
	(iii) others			
3	Quantity utilised in-house, if any -	Used oil: NIL Waste containing oil: NIL Oil contaminated filter element: NIL		
4	Quantity in storage at the end of the year –	Used oil: NIL Waste containing oil: NIL Oil contaminated filter element: NIL		

Part B. To be filled by Treatment, Storage and Disposal Facility operators

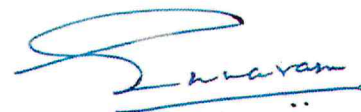
1	Total quantity received -	NA
2	Quantity in stock at the beginning of the year -	
3	Quantity treated -	
4	Quantity disposed in landfills as such and after treatment -	
5	Quantity incinerated (if applicable) -	
6	Quantity processed other than specified above -	
7	Quantity in storage at the end of the year -	

Part C. To be filled by recyclers or co-processors or other users

1	Quantity of waste received during the year – (i) domestic sources (ii) imported (if applicable)	NA
2	Quantity in stock at the beginning of the year -	
3	Quantity recycled or co-processed or used -	
4	Quantity of products dispatched (wherever applicable) -	
5	Quantity of waste generated -	
6	Quantity of waste disposed -	
7	Quantity re-exported (wherever applicable)-	
8	Quantity in storage at the end of the year -	

Date: 28.06.2019

Place: Chennai

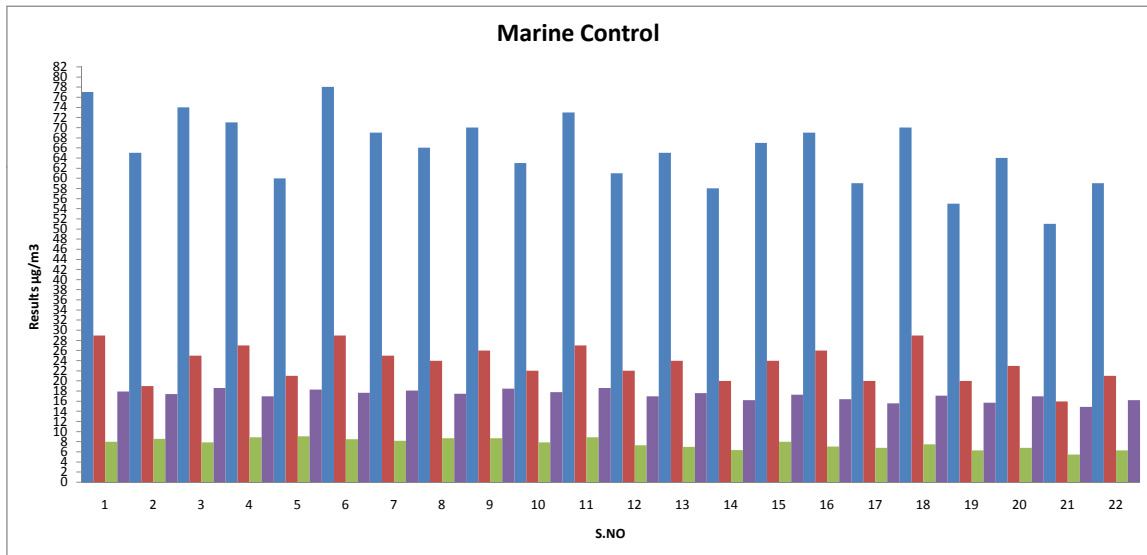


Signature of the Occupier

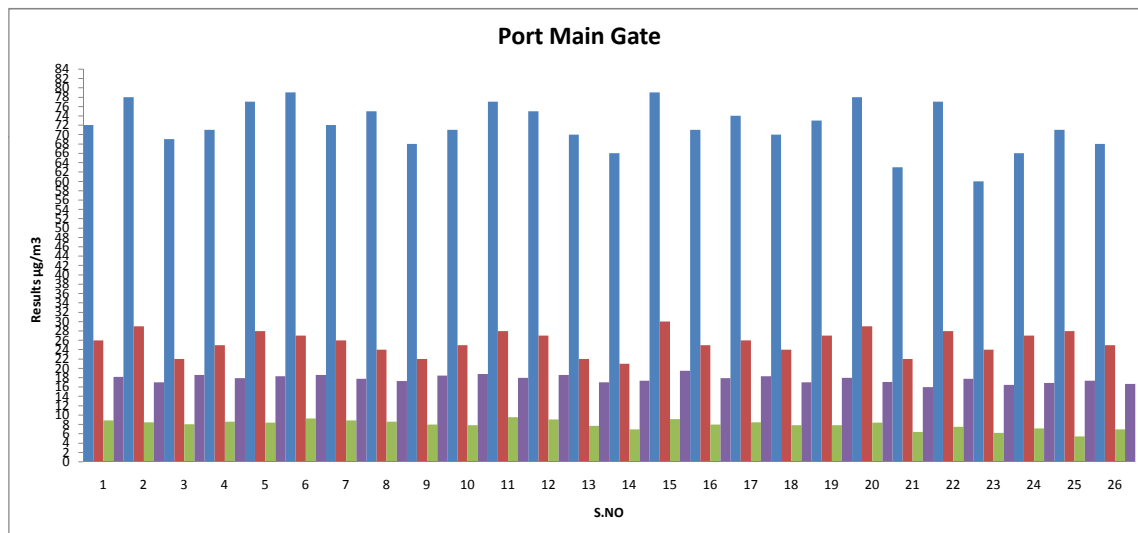
MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED (MIDPL)

Apr - 19 to Sep - 19

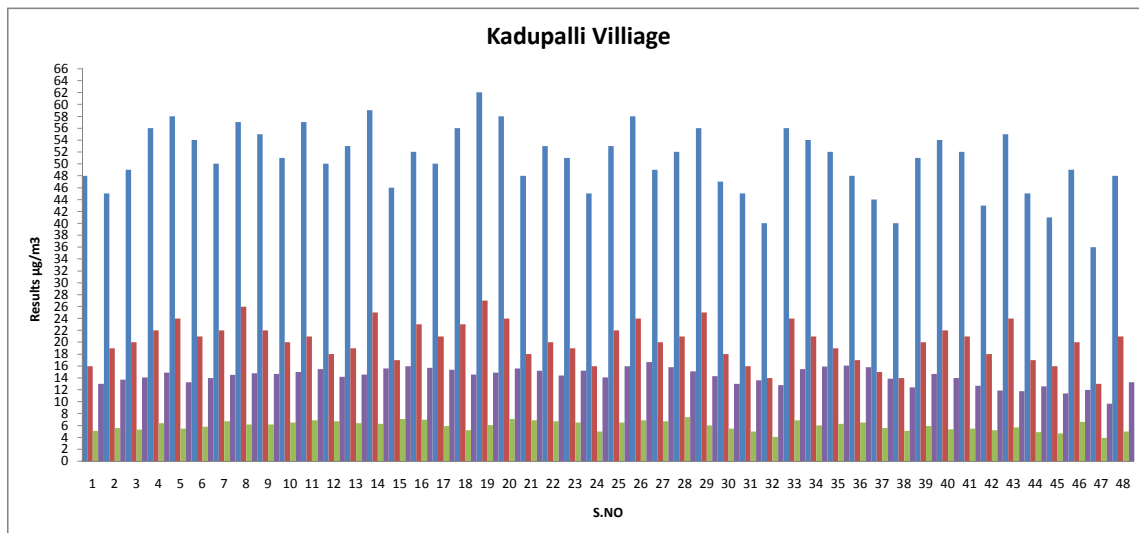
MARINE CONTROL (AAQ1)														
Parameters			Particular matter PM ₁₀	Particular matter PM _{2.5}	Sulphur dioxide as SO ₂	Nitrogen dioxide as NO ₂	Lead as Pb	Carbon monoxide as CO	Ozone as O ₃	Ammonia as NH ₃	Arsenic as As	Nickel as Ni	Benzene as C ₆ H ₆	Benzo (a) pyrene as BaP
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
National AAQM Standard			100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date	Report Number												
1	19.04.2019	GCS/LAB/S/1596/19-20	77	29	8.0	17.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
2	22.04.2019	GCS/LAB/S/1596/19-20	65	19	8.6	17.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
3	24.04.2019	GCS/LAB/S/1596/19-20	74	25	7.9	18.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
4	13.05.2019	GCS/LAB/S/1680/19-20	71	27	8.9	17.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
5	17.05.2019	GCS/LAB/S/1680/19-20	60	21	9.1	18.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
6	27.05.2019	GCS/LAB/S/1680/19-20	78	29	8.5	17.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
7	03.06.2019	GCS/LAB/S/1758/19-20	69	25	8.2	18.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
8	07.06.2019	GCS/LAB/S/1758/19-20	66	24	8.7	17.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
9	17.06.2019	GCS/LAB/S/1758/19-20	70	26	8.7	18.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
10	20.06.2019	GCS/LAB/S/1758/19-20	63	22	7.9	17.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
11	08.07.2019	GCS/LAB/S/1835/19-20	73	27	8.9	18.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
12	15.07.2019	GCS/LAB/S/1835/19-20	61	22	7.3	17.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
13	19.07.2019	GCS/LAB/S/1835/19-20	65	24	7.0	17.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
14	26.07.2019	GCS/LAB/S/1835/19-20	58	20	6.4	16.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
15	05.08.2019	GCS/LAB/S/1924/19-20	67	24	8.0	17.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
16	09.08.2019	GCS/LAB/S/1924/19-20	69	26	7.1	16.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
17	19.08.2019	GCS/LAB/S/1924/19-20	59	20	6.8	15.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
18	23.08.2019	GCS/LAB/S/1924/19-20	70	29	7.5	17.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
19	03.09.2019	GCS/LAB/S/19-20	55	20	6.3	15.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
20	06.09.2019	GCS/LAB/S/19-20	64	23	6.8	17.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
21	16.09.2019	GCS/LAB/S/19-20	51	16	5.5	14.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
22	20.09.2019	GCS/LAB/S/19-20	59	21	6.3	16.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1



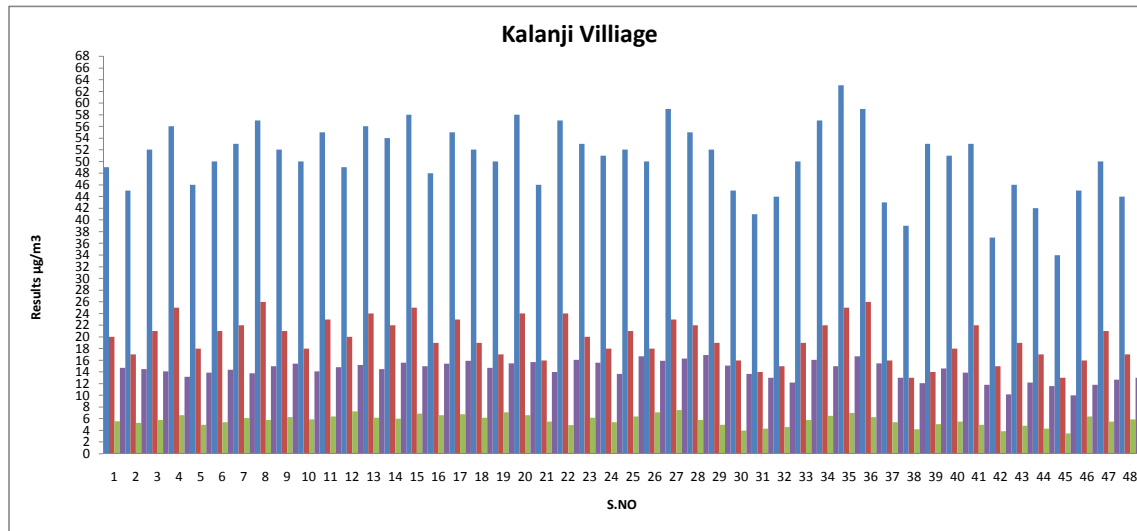
PORT MAIN GATE (AAQ2)														
Parameters			Particular matter PM ₁₀	Particular matter PM _{2.5}	Sulphur dioxide as SO ₂	Nitrogen dioxide as NO ₂	Lead as Pb	Carbon monoxide as CO	Ozone as O ₃	Ammonia as NH ₃	Arsenic as As	Nickel as Ni	Benzene as C ₆ H ₆	Benzo (a) pyrene as BaP
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
National AAQM Standard			100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date	Report Number												
1	01.04.2019	GCS/LAB/S/1596/19-20	72	26	8.9	18.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
2	05.04.2019	GCS/LAB/S/1596/19-20	78	29	8.5	17.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
3	08.04.2019	GCS/LAB/S/1596/19-20	69	22	8.1	18.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
4	12.04.2019	GCS/LAB/S/1596/19-20	71	25	8.6	17.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
5	15.04.2019	GCS/LAB/S/1596/19-20	77	28	8.4	18.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
6	03.05.2019	GCS/LAB/S/1680/19-20	79	27	9.3	18.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
7	06.05.2019	GCS/LAB/S/1680/19-20	72	26	8.9	17.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
8	10.05.2019	GCS/LAB/S/1680/19-20	75	24	8.6	17.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
9	20.05.2019	GCS/LAB/S/1680/19-20	68	22	8.0	18.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
10	24.05.2019	GCS/LAB/S/1680/19-20	71	25	7.9	18.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
11	10.06.2019	GCS/LAB/S/1758/19-20	77	28	9.6	18.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
12	14.06.2019	GCS/LAB/S/1758/19-20	75	27	9.1	18.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
13	24.06.2019	GCS/LAB/S/1758/19-20	70	22	7.7	17.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
14	28.06.2019	GCS/LAB/S/1758/19-20	66	21	7.0	17.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
15	01.07.2019	GCS/LAB/S/1835/19-20	79	30	9.2	19.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
16	05.07.2019	GCS/LAB/S/1835/19-20	71	25	8.0	17.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
17	12.07.2019	GCS/LAB/S/1835/19-20	74	26	8.5	18.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
18	22.07.2019	GCS/LAB/S/1835/19-20	70	24	7.9	17.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
19	02.08.2019	GCS/LAB/S/1924/19-20	73	27	7.9	18.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
20	12.08.2019	GCS/LAB/S/1924/19-20	78	29	8.4	17.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
21	16.08.2019	GCS/LAB/S/1924/19-20	63	22	6.4	16.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
22	26.08.2019	GCS/LAB/S/1924/19-20	77	28	7.5	17.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
23	09.09.2019	GCS/LAB/S//19-20	60	24	6.2	16.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
24	13.09.2019	GCS/LAB/S//19-20	66	27	7.2	16.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
25	23.09.2019	GCS/LAB/S//19-20	71	28	5.5	17.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
26	27.09.2019	GCS/LAB/S//19-20	68	25	7.0	16.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1



KATTUPALLI VILLAGE (AAQ3)														
Parameters			Particular matter PM ₁₀	Particular matter PM _{2.5}	Sulphur dioxide as SO ₂	Nitrogen dioxide as NO ₂	Lead as Pb	Carbon monoxide as CO	Ozone as O ₃	Ammonia as NH ₃	Arsenic as As	Nickel as Ni	Benzene as C ₆ H ₆	Benzo (a) pyrene as BaP
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
National AAQM Standard			100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date	Report Number												
1	01.04.2019	GCS/LAB/S/1596/19-20	48	16	5.1	13.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
2	05.04.2019	GCS/LAB/S/1596/19-20	45	19	5.6	13.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
3	08.04.2019	GCS/LAB/S/1596/19-20	49	20	5.3	14.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
4	12.04.2019	GCS/LAB/S/1596/19-20	56	22	6.4	14.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
5	15.04.2019	GCS/LAB/S/1596/19-20	58	24	5.5	13.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
6	19.04.2019	GCS/LAB/S/1596/19-20	54	21	5.8	14.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
7	22.04.2019	GCS/LAB/S/1596/19-20	50	22	6.7	14.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
8	24.04.2019	GCS/LAB/S/1596/19-20	57	26	6.2	14.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
9	03.05.2019	GCS/LAB/S/1680/19-20	55	22	6.2	14.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
10	06.05.2019	GCS/LAB/S/1680/19-20	51	20	6.5	15.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
11	10.05.2019	GCS/LAB/S/1680/19-20	57	21	6.9	15.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
12	13.05.2019	GCS/LAB/S/1680/19-20	50	18	6.7	14.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
13	17.05.2019	GCS/LAB/S/1680/19-20	53	19	6.4	14.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
14	20.05.2019	GCS/LAB/S/1680/19-20	59	25	6.3	15.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
15	24.05.2019	GCS/LAB/S/1680/19-20	46	17	7.1	16.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
16	27.05.2019	GCS/LAB/S/1680/19-20	52	23	7.0	15.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
17	03.06.2019	GCS/LAB/S/1758/19-20	50	21	5.9	15.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
18	07.06.2019	GCS/LAB/S/1758/19-20	56	23	5.2	14.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
19	10.06.2019	GCS/LAB/S/1758/19-20	62	27	6.1	14.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
20	14.06.2019	GCS/LAB/S/1758/19-20	58	24	7.1	15.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
21	17.06.2019	GCS/LAB/S/1758/19-20	48	18	6.9	15.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
22	20.06.2019	GCS/LAB/S/1758/19-20	53	20	6.7	14.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
23	24.06.2019	GCS/LAB/S/1758/19-20	51	19	6.5	15.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
24	28.06.2019	GCS/LAB/S/1758/19-20	45	16	5.0	14.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
25	01.07.2019	GCS/LAB/S/1835/19-20	53	22	6.5	16.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
26	05.07.2019	GCS/LAB/S/1835/19-20	58	24	6.9	16.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
27	08.07.2019	GCS/LAB/S/1835/19-20	49	20	6.7	15.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
28	12.07.2019	GCS/LAB/S/1835/19-20	52	21	7.4	15.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
29	15.07.2019	GCS/LAB/S/1835/19-20	56	25	6.0	14.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
30	19.07.2019	GCS/LAB/S/1835/19-20	47	18	5.5	13.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
31	22.07.2019	GCS/LAB/S/1835/19-20	45	16	5.0	13.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
32	26.07.2019	GCS/LAB/S/1835/19-20	40	14	4.1	12.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
33	02.08.2019	GCS/LAB/S/1924/19-20	56	24	6.9	15.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
34	05.08.2019	GCS/LAB/S/1924/19-20	54	21	6.0	15.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
35	09.08.2019	GCS/LAB/S/1924/19-20	52	19	6.3	16.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
36	12.08.2019	GCS/LAB/S/1924/19-20	48	17	6.5	15.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
37	16.08.2019	GCS/LAB/S/1924/19-20	44	15	5.6	13.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
38	19.08.2019	GCS/LAB/S/1924/19-20	40	14	5.1	12.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
39	23.08.2019	GCS/LAB/S/1924/19-20	51	20	5.9	14.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
40	26.08.2019	GCS/LAB/S/1924/19-20	54	22	5.4	14.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
41	03.09.2019	GCS/LAB/S//19-20	52	21	5.5	12.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
42	06.09.2019	GCS/LAB/S//19-20	43	18	5.2	11.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
43	09.09.2019	GCS/LAB/S//19-20	55	24	5.7	11.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
44	13.09.2019	GCS/LAB/S//19-20	45	17	4.9	12.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
45	16.09.2019	GCS/LAB/S//19-20	41	16	4.7	11.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
46	20.09.2019	GCS/LAB/S//19-20	49	20	6.6	12.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
47	23.09.2019	GCS/LAB/S//19-20	36	13	3.9	9.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
48	27.09.2019	GCS/LAB/S//19-20	48	21	5.0	13.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1

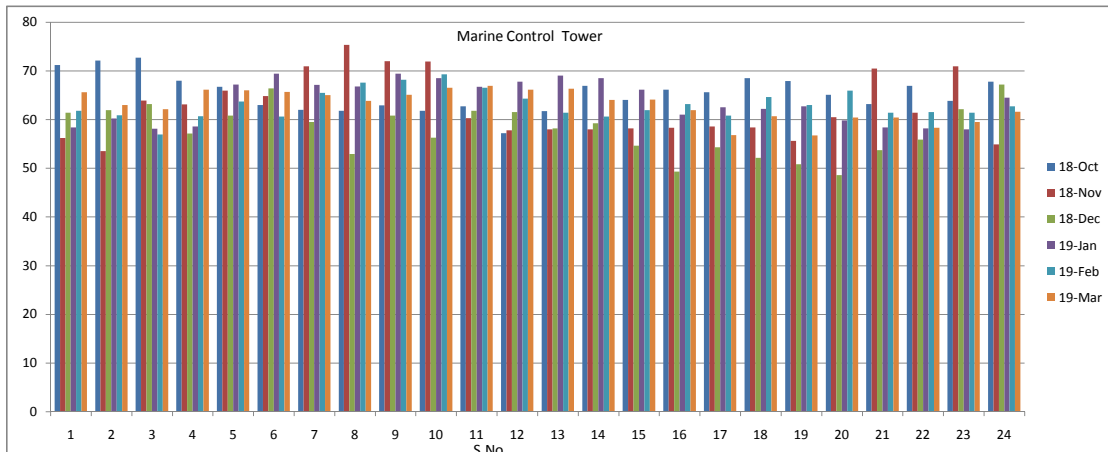
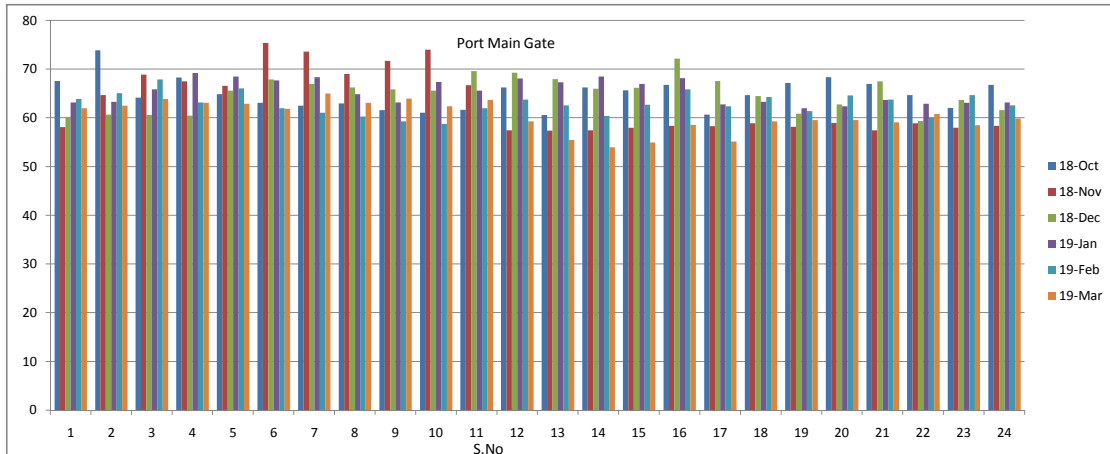


KALANJI VILLAGE (AAQ4)														
Parameters			Particular matter PM ₁₀	Particular matter PM _{2.5}	Sulphur dioxide as SO ₂	Nitrogen dioxide as NO ₂	Lead as Pb	Carbon monoxide as CO	Ozone as O ₃	Ammonia as NH ₃	Arsenic as As	Nickel as Ni	Benzene as C ₆ H ₆	Benzo (a) pyrene as BaP
Unit			µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
National AAQM Standard			100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date	Report Number												
1	01.04.2019	GCS/LAB/S/1596/19-20	49	20	5.6	14.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
2	05.04.2019	GCS/LAB/S/1596/19-20	45	17	5.3	14.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
3	08.04.2019	GCS/LAB/S/1596/19-20	52	21	5.8	14.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
4	12.04.2019	GCS/LAB/S/1596/19-20	56	25	6.6	13.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
5	15.04.2019	GCS/LAB/S/1596/19-20	46	18	5.0	13.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
6	19.04.2019	GCS/LAB/S/1596/19-20	50	21	5.4	14.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
7	22.04.2019	GCS/LAB/S/1596/19-20	53	22	6.1	13.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
8	24.04.2019	GCS/LAB/S/1596/19-20	57	26	5.8	15.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
9	03.05.2019	GCS/LAB/S/1680/19-20	52	21	6.3	15.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
10	06.05.2019	GCS/LAB/S/1680/19-20	50	18	5.9	14.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
11	10.05.2019	GCS/LAB/S/1680/19-20	55	23	6.4	14.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
12	13.05.2019	GCS/LAB/S/1680/19-20	49	20	7.3	15.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
13	17.05.2019	GCS/LAB/S/1680/19-20	56	24	6.2	14.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
14	20.05.2019	GCS/LAB/S/1680/19-20	54	22	6.0	15.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
15	24.05.2019	GCS/LAB/S/1680/19-20	58	25	6.9	15.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
16	27.05.2019	GCS/LAB/S/1680/19-20	48	19	6.6	15.4	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
17	03.06.2019	GCS/LAB/S/1758/19-20	55	23	6.8	15.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
18	07.06.2019	GCS/LAB/S/1758/19-20	52	19	6.2	14.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
19	10.06.2019	GCS/LAB/S/1758/19-20	50	17	7.1	15.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
20	14.06.2019	GCS/LAB/S/1758/19-20	58	24	6.6	15.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
21	17.06.2019	GCS/LAB/S/1758/19-20	46	16	5.5	14.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
22	20.06.2019	GCS/LAB/S/1758/19-20	57	24	4.9	16.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
23	24.06.2019	GCS/LAB/S/1758/19-20	53	20	6.2	15.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
24	28.06.2019	GCS/LAB/S/1758/19-20	51	18	5.4	13.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
25	01.07.2019	GCS/LAB/S/1835/19-20	52	21	6.4	16.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
26	05.07.2019	GCS/LAB/S/1835/19-20	50	18	7.1	15.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
27	08.07.2019	GCS/LAB/S/1835/19-20	59	23	7.5	16.3	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
28	12.07.2019	GCS/LAB/S/1835/19-20	55	22	5.8	16.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
29	15.07.2019	GCS/LAB/S/1835/19-20	52	19	5.0	15.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
30	19.07.2019	GCS/LAB/S/1835/19-20	45	16	4.0	13.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
31	22.07.2019	GCS/LAB/S/1835/19-20	41	14	4.3	13.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
32	26.07.2019	GCS/LAB/S/1835/19-20	44	15	4.6	12.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
33	02.08.2019	GCS/LAB/S/1924/19-20	50	19	5.8	16.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
34	05.08.2019	GCS/LAB/S/1924/19-20	57	22	6.5	15.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
35	09.08.2019	GCS/LAB/S/1924/19-20	63	25	7.0	16.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
36	12.08.2019	GCS/LAB/S/1924/19-20	59	26	6.3	15.5	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
37	16.08.2019	GCS/LAB/S/1924/19-20	43	16	5.4	13.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
38	19.08.2019	GCS/LAB/S/1924/19-20	39	13	4.2	12.1	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
39	23.08.2019	GCS/LAB/S/1924/19-20	53	14	5.1	14.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
40	26.08.2019	GCS/LAB/S/1924/19-20	51	18	5.5	13.9	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
41	03.09.2019	GCS/LAB/S//19-20	53	22	5.0	11.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
42	06.09.2019	GCS/LAB/S//19-20	37	15	3.9	10.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
43	09.09.2019	GCS/LAB/S//19-20	46	19	4.8	12.2	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
44	13.09.2019	GCS/LAB/S//19-20	42	17	4.3	11.6	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
45	16.09.2019	GCS/LAB/S//19-20	34	13	3.5	10.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
46	20.09.2019	GCS/LAB/S//19-20	45	16	6.4	11.8	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
47	23.09.2019	GCS/LAB/S//19-20	50	21	5.5	12.7	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1
48	27.09.2019	GCS/LAB/S//19-20	44	17	5.9	13.0	<0.1	<1.0	<10	<2	<2	<2	<1	<0.1

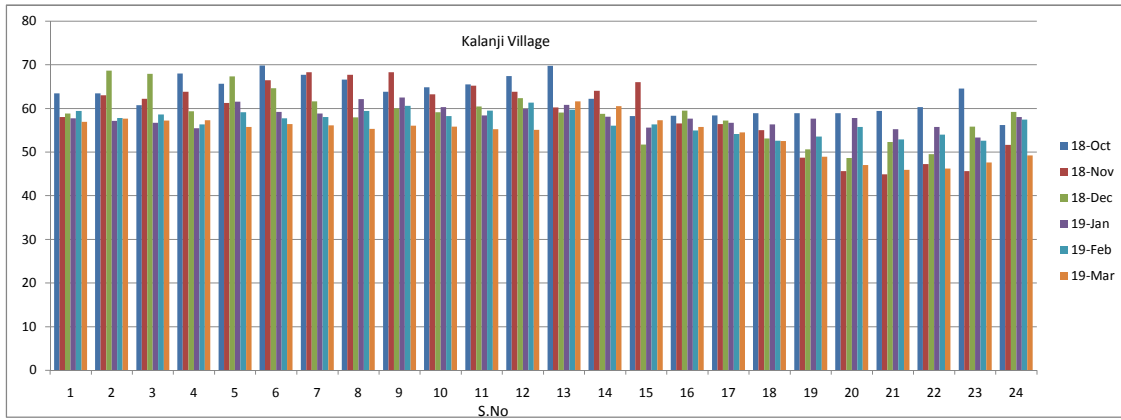
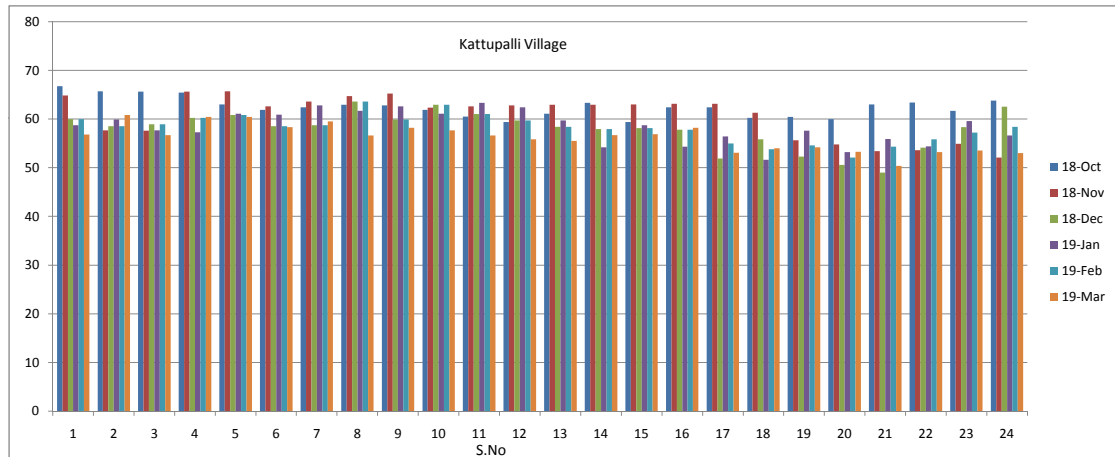


AMBIENT NOISE LEVEL MONITORING

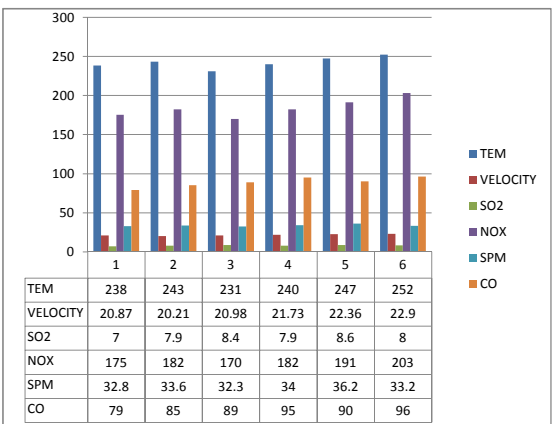
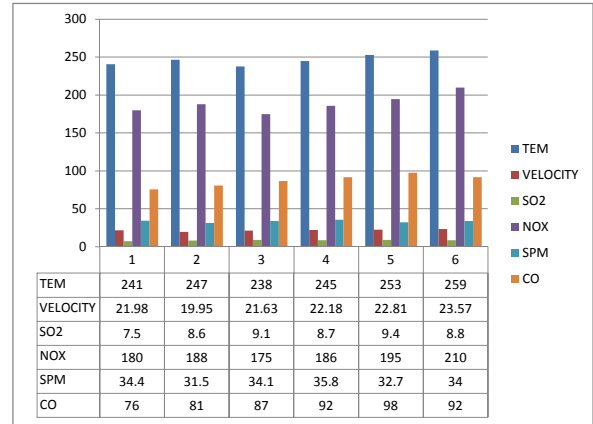
Location		PORT MAIN GATE						MARINE CONTROL					
Month & Year		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
Parameter & Unit		Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
S.No.	Time of Sampling												
1	06.00 – 07.00 (Day)	67.6	58.1	60.2	63.2	63.9	62	71.2	56.2	61.4	58.4	61.8	65.6
2	07.00 – 08.00	73.9	64.7	60.7	63.3	65.1	62.5	72.1	53.5	61.9	60.2	60.9	63
3	08.00 – 09.00	64.2	68.9	60.6	65.9	67.9	63.9	72.7	63.9	63.2	58.1	56.9	62.1
4	09.00 – 10.00	68.3	67.5	60.5	69.2	63.2	63.1	68	63.1	57.1	58.6	60.7	66.1
5	10.00 – 11.00	64.9	66.6	65.6	68.5	66.1	62.9	66.7	65.9	60.8	67.2	63.7	66
6	11.00 – 12.00	63.1	75.4	67.9	67.7	62	61.9	63	64.8	66.4	69.4	60.6	65.7
7	12.00 – 13.00	62.5	73.6	67	68.4	61.1	65	62	70.9	59.5	67.1	65.5	65
8	13.00 – 14.00	63	69	66.3	64.9	60.3	63.1	61.8	75.3	52.9	66.8	67.6	63.8
9	14.00 – 15.00	61.6	71.7	65.9	63.2	59.3	64	62.9	72	60.8	69.4	68.2	65.1
10	15.00 – 16.00	61.1	74	65.6	67.4	58.8	62.4	61.8	71.9	56.3	68.5	69.3	66.5
11	16.00 – 17.00	61.7	66.7	69.6	65.6	62	63.7	62.7	60.3	61.8	66.7	66.5	66.9
12	17.00 – 18.00	66.3	57.5	69.3	68.1	63.8	59.3	57.2	57.8	61.5	67.8	64.3	66.1
13	18.00 – 19.00	60.6	57.4	68	67.3	62.6	55.5	61.7	58	58.2	69	61.4	66.3
14	19.00 – 20.00	66.3	57.5	66	68.5	60.4	54	66.9	58	59.2	68.5	60.6	64
15	20.00 – 21.00	65.7	58	66.2	67	62.7	55	64	58.2	54.6	66.1	61.9	64.1
16	21.00 – 22.00	66.8	58.4	72.2	68.2	65.9	58.6	66.1	58.3	49.3	61	63.2	61.9
17	22.00 – 23.00 (Night)	60.7	58.3	67.6	62.8	62.4	55.2	65.6	58.6	54.3	62.5	60.8	56.8
18	23.00 – 00.00	64.7	58.9	64.5	63.3	64.3	59.3	68.5	58.4	52.1	62.2	64.6	60.7
19	00.00 – 01.00	67.2	58.2	60.9	62	61.4	59.6	67.9	55.6	50.8	62.7	63	56.7
20	01.00 – 02.00	68.4	59	62.8	62.4	64.6	59.6	65.1	60.5	48.6	59.8	65.9	60.4
21	02.00 – 03.00	67	57.5	67.5	63.7	63.8	59.1	63.2	70.5	53.7	58.4	61.4	60.4
22	03.00 – 04.00	64.7	58.9	59.4	62.9	60.1	60.8	66.9	61.4	55.9	58.2	61.5	58.3
23	04.00 – 05.00	62.1	58	63.7	63.1	64.7	58.5	63.8	70.9	62.1	58	61.4	59.5
24	05.00 – 06.00	66.8	58.4	61.6	63.2	62.6	59.9	67.8	54.9	67.2	64.5	62.7	61.6



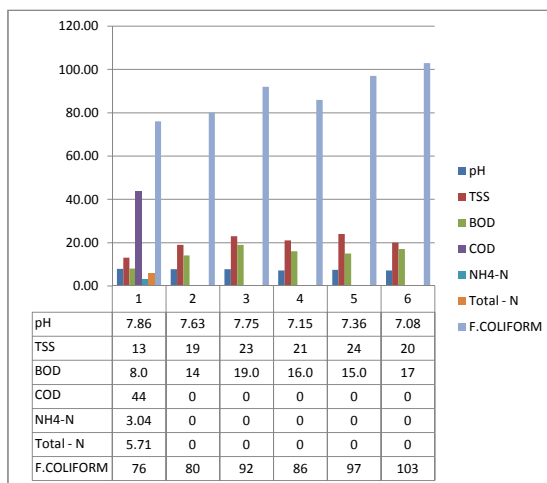
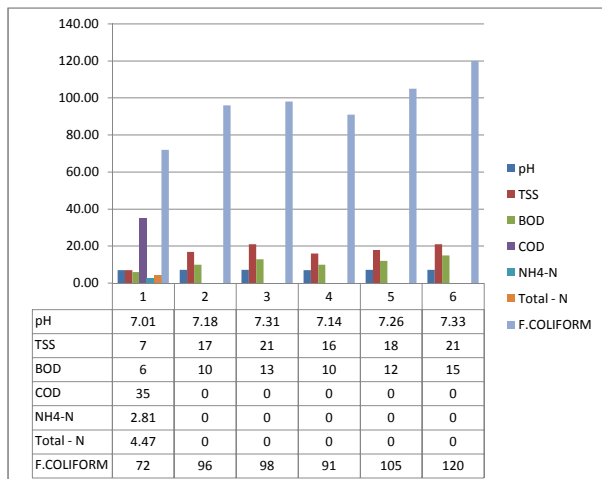
Location		KATTUPALLI VILLAGE						KALANJI VILLAGE					
Month & Year		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
Parameter & Unit		Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
S.No.	Time of Sampling												
1	06.00 – 07.00 (Day)	66.7	64.8	60	58.7	60	56.8	63.4	58	58.8	57.7	59.4	56.9
2	07.00 – 08.00	65.7	57.7	58.5	59.9	58.5	60.8	63.4	63	68.6	57.1	57.8	57.6
3	08.00 – 09.00	65.6	57.6	58.9	57.7	58.9	56.7	60.7	62.2	67.9	56.7	58.6	57.2
4	09.00 – 10.00	65.4	65.6	60.2	57.3	60.2	60.4	68	63.8	59.3	55.4	56.3	57.3
5	10.00 – 11.00	63	65.7	60.8	61.1	60.8	60.4	65.6	61.2	67.3	61.5	59.1	55.7
6	11.00 – 12.00	61.9	62.6	58.5	60.9	58.5	58.3	69.8	66.4	64.6	59.2	57.7	56.4
7	12.00 – 13.00	62.4	63.6	58.7	62.8	58.7	59.5	67.7	68.3	61.6	58.8	58	56.1
8	13.00 – 14.00	62.9	64.7	63.6	61.7	63.6	56.6	66.6	67.7	57.9	62.1	59.4	55.3
9	14.00 – 15.00	62.8	65.2	59.9	62.6	59.9	58.2	63.8	68.3	60	62.5	60.6	56
10	15.00 – 16.00	61.9	62.3	62.9	61.1	62.9	57.7	64.8	63.2	59.1	60.3	58.2	55.8
11	16.00 – 17.00	60.5	62.6	61	63.3	61	56.6	65.5	65.2	60.4	58.4	59.5	55.2
12	17.00 – 18.00	59.4	62.8	59.7	62.4	59.7	55.8	67.4	63.8	62.3	59.8	61.3	55.1
13	18.00 – 19.00	61.1	62.9	58.4	59.7	58.4	55.5	69.7	60.2	59	60.8	59.7	61.6
14	19.00 – 20.00	63.3	62.9	57.9	54.2	57.9	56.7	62.2	64	58.7	58.1	56	60.5
15	20.00 – 21.00	59.4	63	58.1	58.7	58.1	56.9	58.2	66	51.7	55.6	56.3	57.3
16	21.00 – 22.00	62.4	63.1	57.8	54.3	57.8	58.2	58.3	56.5	59.5	57.6	54.9	55.7
17	22.00 – 23.00 (Night)	62.4	63.1	51.9	56.4	55	53.1	58.4	56.4	57.2	56.7	54.1	54.5
18	23.00 – 00.00	60.2	61.3	55.8	51.6	53.8	54	58.9	55	53.1	56.3	52.6	52.5
19	00.00 – 01.00	60.4	55.6	52.3	57.6	54.6	54.2	58.9	48.7	50.6	57.6	53.5	48.9
20	01.00 – 02.00	60	54.8	50.6	53.2	52.1	53.3	58.9	45.6	48.6	57.8	55.7	47
21	02.00 – 03.00	63	53.4	49	55.9	54.3	50.4	59.4	44.9	52.3	55.2	52.9	45.9
22	03.00 – 04.00	63.4	53.6	54.1	54.4	55.8	53.2	60.3	47.2	49.5	55.7	54	46.2
23	04.00 – 05.00	61.7	54.9	58.3	59.6	57.2	53.5	64.5	45.6	55.8	53.3	52.6	47.6
24	05.00 – 06.00	63.8	52.1	62.5	56.6	58.4	53	56.2	51.6	59.2	58	57.4	49.2



STACK MONITORING													
Location		DG 2000KVA - 1						DG 2000KVA - 2					
Month & Year		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
S.No.	Parameters												
1	Stack Temperature, °C	241	247	238	245	253	259	238	243	231	240	247	252
2	Flue Gas Velocity, m/s	21.98	19.95	21.63	22.18	22.81	23.57	20.87	20.21	20.98	21.73	22.36	22.9
3	Sulphur Dioxide, mg/Nm3	7.5	8.6	9.1	8.7	9.4	8.8	7	7.9	8.4	7.9	8.6	8
4	NOX (as NO2) in ppmv	180	188	175	186	195	210	175	182	170	182	191	203
5	Particular matter, mg/Nm3	34.4	31.5	34.1	35.8	32.7	34	32.8	33.6	32.3	34	36.2	33.2
6	Carbon Monoxide, mg/Nm3	76	81	87	92	98	92	79	85	89	95	90	96
7	Gas Discharge, Nm3/hr	5728	5139	5670	5736	5809	5935	5471	5246	5576	5674	5760	5843



STP OUTLET WATER													
Location		STP 30KLD OUTLET						STP 5KLD OUTLET					
Month & Year		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
S.No.	Parameters												
1	pH @ 25°C	7.01	7.18	7.31	7.14	7.26	7.33	7.86	7.63	7.75	7.15	7.36	7.08
2	Total Suspended Solids, mg/L	7	17	21	16	18	21	13	19	23	21	24	20
3	BOD at 27°C for 3 days, mg/L	6	10	13	10	12	15	8.0	14	19.0	16.0	15.0	17
4	COD, mg/L	35	--	--	--	--	--	44	--	--	--	--	--
5	Ammonical Nitrogen as NH4-N, mg/L	2.81	--	--	--	--	--	3.04	--	--	--	--	--
6	Total Kjeldahl Nitrogen as N-Total, mg/L	4.47	--	--	--	--	--	5.71	--	--	--	--	--
7	Fecal Coliform, MPN/100ml	72	96	98	91	105	120	76	80	92	86	97	103



DRINKING WATER								
Month & Year		Unit	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
S.No.	Parameters							
1	pH @ 25°C	-	6.69	6.8	6.96	7.64	7.21	6.95
2	Total Hardness as CaCo3	mg/L	10.0	12	21.0	456	471	35
3	Chloride as Cl	mg/L	26	20	36	997	980	38
4	Total Dissolved Solids	mg/L	52	41	48	1740	1815	85
5	Calcium as Ca	mg/L	2.5	3	5	125	134	4.6
6	Sulphate as SO4	mg/L	BDL (DL:1.0)			148	160	BDL (DL:1.0)
7	Nitrate as No3	mg/L	BDL (DL:1.0)			8.6	7.3	BDL (DL:1.0)
8	Total Alkalinity as CaCo3	mg/L	17	22	27	181	199	35
9	Magnesium as Mg	mg/L	0.9	1.08	2.04	34	33	2.4
10	Color	Hazen	-					
11	Odour	-	Unobjectionable					
12	Taste	-	Agreeable					
13	Turbidity	NTU	<0.5					
14	Iron as Fe	mg/L	BDL(DL 0.05)			0.07	0.1	BDL (DL:0.05)
15	Total Residual Chlorine	mg/L	BDL(DL 0.1)					
16	Copper as Cu	mg/L	BDL(DL 0.05)					
17	Manganese as Mn	mg/L	BDL(DL 0.05)					
18	Fluoride as F	mg/L	BDL(DL 0.1)			0.81	0.69	BDL(DL 0.1)
19	Phenolic compounds as C6H5OH	mg/L	BDL(DL 0.001)					
20	Mercury as Hg	mg/L	BDL(DL 0.001)					
21	Cadmium as Cd	mg/L	BDL(DL 0.003)					
22	Selenium as Se	mg/L	BDL(DL 0.01)					
23	Arsenic as As	mg/L	BDL(DL 0.01)					
24	Lead as Pb	mg/L	BDL(DL 0.01)					
25	Zinc as Zn	mg/L	BDL(DL 0.05)					
26	Anionic Detergents as MBAS	mg/L	Nil					
27	Total Chromium as Cr	mg/L	BDL(DL 0.05)					
28	Phenolphthalein Alkalinity as CaCo3	mg/L	Nil					
29	Aluminium as Al	mg/L	BDL(DL 0.05)					
30	Boron as B	mg/L	BDL(DL 0.1)					
31	Mineral Oil	mg/L	Nil					
32	Polynuclear Aromatic Hydrocarbons as [PAH]	mg/L	Nil					
33	Pesticides	mg/L	Nil					
34	Cyanide as CN	mg/L	BDL (DL : 0.01)					
35	E. coli	MPN/100ml	Absence					
36	Total Coliform	MPN/100ml	Absence					

MARINE WATER														
Location		CB - 1 Surface Water							CB - 2 Surface Water					
Month & Year		Unit	Apr - 19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-16	Jul-19	Aug-19	Sep-19
S.No.	Parameters													
1	pH @ 25°C	-	7.4	7.52	7.61	7.56	7.65	7.24	7.81	7.93	8.06	7.98	7.74	7.36
2	Temperature	°C	29	29	29	29	29	29	29	29	29	29	29	29
3	Total Suspended Solids	mg/L	20	23	27	22	25	27	32	36	39	36	30	34
4	BOD at 27 °C for 3 days	mg/L	14	16	18	16	18	14	16	18	21	19	15	19
5	Dissolved oxygen	mg/L	3.2	2.8	2.5	3	3.4	2.9	2.7	2.1	1.9	2.1	3	2.7
6	Salinity at 25 °C	-	37.1	38.4	42	41	39.5	38.2	44.6	46.1	48.2	47	42.1	39.6
7	Oil & Grease	mg/L	BDL(DL 1.0)							BDL(DL 1.0)				
8	Nitrate as NO ₃	mg/L	6.97	7.35	9.53	8.05	6.98	8.01	6.89	7.12	8.25	7.5	7.74	7.18
9	Nitrite as NO ₂	mg/L	4.24	5.18	6.09	5.1	4.25	4.75	4.03	4.91	6.98	5.62	5.09	4.33
10	Ammonical Nitrogen as N	mg/L	BDL(DL 1.0)							BDL(DL 1.0)				
11	Ammonia as NH ₃	mg/L	BDL(DL 0.01)							BDL(DL 0.01)				
12	Kjeldahl Nitrogen as N	mg/L	BDL(DL 1.0)							BDL(DL 1.0)				
13	Total phosphates as PO ₄	mg/L	4.86	5.06	7.13	6.58	6.14	5.09	4.26	4.97	6.07	5.72	6.45	6.13
14	Total Nitrogen	mg/L	BDL(DL 1.0)							BDL(DL 1.0)				
15	Total Dissolved Solids	mg/L	35127	36079	36271	35968	35007	34125	38754	39124	39615	38716	36820	34869
16	COD	mg/L	131	145	156	141	155	129	143	162	183	172	140	118
17	Total bacterial count	cfu/ml	86	89	92	87	93	80	94	102	115	108	87	75
18	Coliforms	Per 100 ml	Absence							Absence				
19	Escherichia coli	Per 100 ml	Absence							Absence				
20	Salmonella	Per 100 ml	Absence							Absence				
21	Shigella	Per 100 ml	Absence							Absence				
22	Vibrio cholerae	Per 100 ml	Absence							Absence				
23	Vibrio parahaemolyticus	Per 100 ml	Absence							Absence				
24	Enterococci	Per 100 ml	Absence							Absence				
25	Octane	µg/L	114	121	132	124	181	169	140	153	174	169	160	174
26	Nonane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
27	Decane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
28	Undecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
29	Tridecane	µg/L	8	9.5	10.2	8.6	8.1	7.3	7.7	8.6	9.7	8.9	7.7	8.5
30	Tetradecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
31	Pentadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
32	Hexadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
33	Octadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
34	Nonadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
35	Elcosane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
36	Primary Productivity	mg C/m ³ /hr	7.95	8.56	8.72	8.61	7.42	8.24	8.77	9.45	9.51	9.42	7.73	9.06
37	Chlorophyll a	mg /m ³	3.18	3.98	4.56	4.32	2.83	3.39	3.92	4.39	5.12	5.03	3.01	3.7
38	Phaeophytin	mg /m ³	0.87	0.74	0.87	0.83	0.61	0.68	0.94	0.86	0.94	0.91	0.98	0.81
39	Oxidisable Paticular Organic	mg /L	4.24	4.83	5.01	4.94	3.15	4.03	3.86	4.04	5.18	5.06	3.9	4.12
PHYTOPLANKTON														
40	Bacteriastrium hyalinum	nos/ml	15	18	21	19	10	21	17	21	23	21	15	18
41	Bacteriastrium varians	nos/ml	8	10	13	11	8	10	6	8	10	9	11	14
42	Chaetoceros didymus	nos/ml	12	15	18	16	14	11	14	17	19	17	13	16
43	Chaetoceros decipiens	nos/ml	5	7	9	7	12	15	9	13	15	13	18	12
44	Biddulphia mobiliensis	nos/ml	7	10	14	12	15	12	13	17	21	20	10	8
45	Ditylum brightwellii	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
46	Gyrosigma sp	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
47	Cladophyxis sps	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
48	Coscinodiscus centralis	nos/ml	11	16	18	16	17	9	15	19	14	12	16	14
49	Coscinodiscus granii	nos/ml	9	12	15	13	11	8	7	10	23	21	19	17
50	Cylcotella sps	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
51	Hemidiscus hardmanianus	nos/ml	14	16	22	20	18	6	16	17	25	23	20	11
52	Laudaria annulata	nos/ml	10	13	16	14	9	4	8	10	12	10	14	7
53	Pyropacus horologicum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
54	Pleurosigma angulatum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
55	Leptocylindrus danicus	nos/ml	13	15	17	15	16	11	15	21	23	21	17	10
56	Guinardia flaccida	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
57	Rhizosolenia alata	nos/ml	17	21	25	21	20	13	12	15	17	16	18	9
58	Rhizosolenia impricata	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
59	Rhizosolenia semispina	nos/ml	12	15	19	17	14	12	11	16	12	11	14	18
60	Thalassionema nitzschioides	nos/ml	6	9	11	10	8	15	4	7	9	8	11	21
61	Triceratium reticulatum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
62	Ceratium trichoceros	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
63	Ceratium furca	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
64	Ceratium macroceros	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
65	Ceracium longipes	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
ZOOPLANKTONS														
66	Acrocalanus gracilis	nos/ml	13	15	17	15	10	13	10	12	15	13	16	15
67	Acrocalanus sp	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
68	Paracalanus parvus	nos/ml	11	14	16	14	12	10	13	15	18	16	13	12
69	Eutintinus sps	nos/ml	5	7	9	8	7	6	9	11	13	11	9	16
70	Centropages furcatus	nos/ml	7	9	11	10	13	17	4	6	9	8	5	10
71	Corycaeus dana	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
72	Oithona brevicornis	nos/ml	12	15	18	16	15	19	15	17	20	19	14	14
73	Euterpina acutifrons	nos/ml	6	9	11	10	11	8	14	16	19	18	10	18
74	Metacalanus aurivilli	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
75	Copepod nauplii	nos/ml	14	18	19	18	19	15	17	19	21	20	13	13
76	Cirripede nauplii	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
77	Bivalve veliger	nos/ml	10	13	15	13	17	11	8	10	15	14	11	16
78	Gastropod veliger	nos/ml	18	21	24	21	23	20	12	14	17	16	10	11

Location		CB - 1 Bottom Water							CB - 2 Bottom Water							
Month & Year		Unit	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19		
S.No.	Parameters															
1	pH @ 25°C	-	7.56	7.62	7.81	7.76	7.05	7.65	7.65	7.71	8.05	7.98	7.61	7.56		
2	Temperature	°C	29	29	29	29	29	29	29	29	29	29	29	29		
3	Total Suspended Solids	mg/L	32	38	42	38	33	37	37	42	48	45	40	32		
4	BOD at 27 °C for 3 days	mg/L	17	19	23	21	27	19	19	23	27	24	21	17		
5	Dissolved oxygen	mg/L	2.5	2.1	1.6	1.9	2.3	2.8	2.8	2.4	1.8	2.1	1.9	2.5		
6	Salinity at 25 °C	-	38	39.4	41.4	40	38.7	41.6	41.6	43.8	45.9	43	41.7	38		
7	Oil & Grease	mg/L	BDL(DL 1.0)							BDL(DL 1.0)						
8	Nitrate as NO ₃	mg/L	7.56	8.13	9.57	9.06	8.12	6.85	6.85	7.49	8.06	7.85	7.14	7.56		
9	Nitrite as NO ₂	mg/L	4.71	5.06	6.75	5.83	5.36	5.43	5.43	6.12	7.3	6.9	6.05	4.71		
10	Ammonical Nitrogen as N	mg/L	BDL(DL 1.0)							BDL(DL 1.0)						
11	Ammonia as NH3	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
12	Kjeldahl Nitrogen as N	mg/L	BDL(DL 1.0)							BDL(DL 1.0)						
13	Total phosphates as PO4	mg/L	6.25	7.14	8.09	7.96	7.05	5.91	4.91	5.16	7.12	6.96	7.47	6.25		
14	Total Nitrogen	mg/L	BDL(DL 1.0)							BDL(DL 1.0)						
15	Total Dissolved Solids	mg/L	36421	36921	37206	36915	37954	42005	42005	42473	42715	41804	40235	36421		
16	COD	mg/L	120	136	159	141	135	130	130	145	173	164	149	120		
17	Total bacterial count	cfu/ml	77	82	87	84	80	84	81	86	89	86	82	77		
18	Coliforms	Per 100 ml	Absence							Absence						
19	Escherichia coli	Per 100 ml	Absence							Absence						
20	Salmonella	Per 100 ml	Absence							Absence						
21	Shigella	Per 100 ml	Absence							Absence						
22	Vibrio cholerae	Per 100 ml	Absence							Absence						
23	Vibrio parahaemolyticus	Per 100 ml	Absence							Absence						
24	Enterococci	Per 100 ml	Absence							Absence						
25	Colour	Hazan	15	20	25	20	25	10	10	15	20	15	20	15		
26	Odour	-	Unobjectionable							Unobjectionable						
27	Taste	-	Disagreeable							Disagreeable						
28	Turbidity	NTU	40.8	46	51	48	41	24	24.2	28	35	30	37	30		
29	Calcium as Ca	mg/L	396	402	424	416	395	496	496	507	606	512	482	396		
30	Chloride as Cl	mg/L	21042	21564	21728	21507	21422	23004	23004	23661	23792	23516	23082	21042		
31	Cyanide as CN	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
32	Fluoride as F	mg/L	0.59	0.65	0.72	0.65	0.59	0.86	0.83	0.92	0.97	0.83	0.7	0.57		
33	Magnesium as Mg	mg/L	1209	1273	1326	1306	1248	1417	1417	1465	1486	1428	1376	1209		
34	Total Iron as Fe	mg/L	0.69	0.75	0.81	0.72	0.85	0.61	0.61	0.68	0.72	0.67	0.67	0.72		
35	Residual Free Chlorine	mg/L	BDL(DL 0.1)							BDL(DL 0.1)						
36	Phenolic Compounds as C6H5OH	mg/L	BDL(DL 1.0)							BDL(DL 1.0)						
37	Total Hardness as CaCO3	mg/L	6027	6251	6587	6482	6395	7144	7144	7356	7701	7230	6938	6027		
38	Total Alkalinity as CaCO3	mg/L	362	373	398	379	397	386	386	394	415	402	425	362		
39	Sulphide as H2S	mg/L	BDL(DL 0.5)							BDL(DL 0.5)						
40	Sulphate as SO4	mg/L	1984	2018	2126	2097	1964	1891	1891	1908	2003	1989	1817	1984		
41	Anionic surfactants as MBAS	mg/L	BDL(DL 1.0)							BDL(DL 1.0)						
42	Monocrotophos	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
43	Atrazine	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
44	Ethion	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
45	Chiorpyrifos	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
46	Phorate	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
47	Mehyle parathion	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
48	Malathion	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
49	DDT (o,p and p,p-Isomers of DDT,DDE and DDD	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
50	Gamma HCH (Lindane)	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
51	Alppha HCH	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
52	Beta HCH	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
53	Delta HCH	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
54	Endosulfan (Alpha,beta and sulphate)	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
55	Butachlor	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
56	Alachlor	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
57	Aldrin/Dieldrin	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
58	Isoproturon	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
59	2,4-D	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
60	Polychlorinated Biphenyls (PCB)	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
61	Polynuclear aromatic hydrocarbons (PAH)	µg/L	BDL(DL 0.01)							BDL(DL 0.01)						
62	Arsenic as As	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
63	Mercury as Hg	mg/L	BDL(DL 0.001)							BDL(DL 0.001)						
64	Cadmium as Cd	mg/L	BDL(DL 0.003)							BDL(DL 0.003)						
65	Total Chromium as Cr	mg/L	BDL(DL 0.05)							BDL(DL 0.05)						
66	Copper as Cu	mg/L	BDL(DL 0.05)							BDL(DL 0.05)						
67	Lead as Pb	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
68	Manganese as Mn	mg/L	BDL(DL 0.05)							BDL(DL 0.05)						
69	Nickel as Ni	mg/L	BDL(DL 0.05)							BDL(DL 0.05)						
70	Selenium as Se	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
71	Barium as Ba	mg/L	BDL(DL 0.1)							BDL(DL 0.1)						
72	Silver as Ag	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
73	Molybdenum as Mo	mg/L	BDL(DL 0.01)							BDL(DL 0.01)						
74	Octane	µg/L	164	172	178	172	189	178	180	191	202	196	180	164		
75	Nonane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)						
76	Decane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)						
77	Undecane	µg/L	7.5	9.3	10.5	9.8	9	8.1	8.4	10.4	11.2	10.3	9.5	7.2		
78	Tridecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)						
79	Tetradecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)						
80	Pentadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)						
81	Hexadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)						

Location		CB - 1 Bottom Water							CB - 2 Bottom Water					
Month & Year		Unit	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
S.No.	Parameters													
82	Heptadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
83	Octadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
84	Nonadecane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
85	Elcosane	µg/L	BDL(DL 0.1)							BDL(DL 0.1)				
86	Primary Productivity	mg C/m ³ /hr	8.24	9.01	9.23	9.18	9.68	7.95	9.06	9.83	10.1	9.93	8.96	8.77
87	Chlorophyll a	mg /m ³	3.39	4.25	5.12	4.97	3.86	3.18	3.7	4.51	6.36	6.15	3.78	3.92
88	Phaeophytin	mg /m ³	0.68	0.81	0.96	0.92	0.85	0.87	0.81	0.89	1.02	0.98	1.05	0.94
89	Oxidisable Paticular Organic	mg /L	4.03	4.67	4.98	4.83	3.6	4.24	4.12	5.02	6.75	6.56	4.2	3.86
PHYTOPLANKTON														
90	Bacteriastrium hyalinum	nos/ml	21	26	28	26	17	15	20	23	25	24	19	17
91	Bacteriastrium varians	nos/ml	10	12	15	13	12	8	16	21	24	22	16	12
92	Chaetoceros didymus	nos/ml	11	13	17	15	10	12	8	12	15	13	15	10
93	Chaetoceros decipiens	nos/ml	15	21	26	24	16	5	13	16	19	17	11	9
94	Biddulphia mobiliensis	nos/ml	12	15	19	18	14	7	14	19	22	21	13	11
95	Ditylum brightwellii	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
96	Gyrosigma sp	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
97	Cladophyxis sps	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
98	Coscinodiscus centralis	nos/ml	9	13	17	15	9	11	11	15	18	17	14	13
99	Coscinodiscus granii	nos/ml	8	11	18	16	13	9	7	12	16	15	10	7
100	Cylcotella sps	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
101	Hemidiscus hardmanianus	nos/ml	6	8	10	9	15	14	9	13	17	16	18	13
102	Laudaria annulata	nos/ml	4	6	9	8	7	10	8	10	14	13	9	14
103	Pyropacus horologicum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
104	Pleurosigma angulatum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
105	Leptocylindrus danicus	nos/ml	3	6	10	9	12	13	5	7	9	8	6	8
106	Guinardia flaccida	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
107	Rhizosolenia alata	nos/ml	17	23	27	24	21	17	13	16	18	17	13	15
108	Rhizosolenia impricata	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
109	Rhizosolenia semispina	nos/ml	13	17	21	20	22	16	10	11	15	13	11	19
110	Thalassionema nitzschioides	nos/ml	15	18	24	22	24	20	14	16	19	18	14	18
111	Triceratium reticulatum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
112	Ceratium trichoceros	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
113	Ceratium furca	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
114	Ceratium macroceros	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
115	Ceracium longipes	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
ZOOPLANKTONS														
116	Acrocalanus gracilis	nos/ml	8	11	13	11	14	16	15	17	20	19	12	15
117	Acrocalanus sp	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
118	Paracalanus parvus	nos/ml	10	13	14	13	17	13	10	12	15	14	10	12
119	Eutintinus sps	nos/ml	9	12	15	14	10	11	14	16	19	16	13	16
120	Centropages furcatus	nos/ml	7	9	12	11	12	15	16	17	20	19	17	10
121	Corycaeus dana	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
122	Oithona brevicornis	nos/ml	11	14	16	15	19	17	17	18	21	20	12	14
123	Euterpina acutifrons	nos/ml	5	7	10	9	13	10	11	13	17	16	14	18
124	Metacalanus aurivilli	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
125	Copipod nauplii	nos/ml	8	10	13	11	15	18	13	15	18	17	18	13
126	Cirripede nauplii	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
127	Bivalve veliger	nos/ml	12	14	17	16	9	12	9	11	16	15	10	16
128	Gastropod veliger	nos/ml	6	8	10	9	7	14	8	10	15	14	17	11

SEA SEDIMENT														
Location		CB - 1 Sea Sediment							CB - 2 Sea Sediment					
Month & Year		Unit	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
S.No.	Parameters													
1	Total organic matter	%	0.45	0.51	0.55	0.58	0.61	0.65	0.48	0.54	0.57	0.63	0.67	0.61
2	% Sand	%	26	28	24	27	22	24	21	22	25	28	24	25
3	%silt	%	24	23	20	23	20	22	24	26	22	21	22	18
4	%Clay	%	50	49	56	50	58	54	55	52	53	51	54	57
5	Iron (as Fe)	mg/kg	17.1	18.2	19.6	21.3	20.7	23.1	19.1	20.6	21.2	20.5	22.3	24.2
6	Aluminium (as Al)	mg/kg	11081	12125	11456	11012	10093	11123	10007	10105	12003	11647	11014	10981
7	Chromium (as cr)	mg/kg	45	47	35	38	46	40	52	53	47	40	37	44
8	Copper (as cu)	mg/kg	62	64	51	63	51	57	68	70	59	55	58	51
9	Manganese (as Mn)	mg/kg	318	321	309	254	237	256	343	356	321	303	274	203
10	Nickel (as Ni)	mg/kg	14.1	15.3	12.9	15.1	14	13.5	13.1	14.2	13.5	14.8	12.9	10.5
11	Lead (as Pb)	mg/kg	33	35	30	27	23	20	39	41	36	32	27	22
12	Zinc (as Zn)	mg/kg	207	212	286	250	236	251	228	236	269	281	250	274
13	Mercury(as Hg)	mg/kg	0.41	0.52	0.59	0.51	0.57	0.55	0.57	0.61	0.65	0.57	0.52	0.58
14	Total phosphorus as P	mg/kg	124	127	143	158	164	158	133	142	156	150	161	145
15	Octane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
16	Nonane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
17	Decane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
18	Undecane	mg/kg	0.59	0.63	0.55	0.6	0.69	0.63	0.52	0.57	0.5	0.65	0.67	0.71
19	Dodecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
20	Tridecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
21	Tetradecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
22	Phntadecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
23	Hexadecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
24	Heptadecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
25	Octadecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
26	Nonadecane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
27	Elcosane	mg/kg	BDL(DL 0.1)							BDL(DL 0.1)				
I. Nematoda														
28	Oncholaimussp	nos/m ²	17	19	23	20	17	19	15	17	20	18	17	24
29	Tricomasp	nos/m ²	13	14	18	22	25	22	10	12	16	19	25	20
II. Foraminifera														
30	Ammoniaebecarii	nos/m ²	15	16	12	8	11	14	17	19	15	12	14	16
31	Quinquilinasp	nos/m ²	19	23	25	21	19	13	12	13	19	24	20	15
32	Discorbinellasp.,	nos/m ²	11	12	15	10	14	18	9	11	17	13	16	19
33	Bolivinaspathulata	nos/m ²	14	15	17	16	16	20	7	8	11	17	11	14
34	Elphidiumsp	nos/m ²	9	11	14	11	12	15	14	16	10	14	15	17
35	Noniondepressula	nos/m ²	16	18	13	10	8	11	20	21	18	11	13	9
III. Molluscs-Bivalvia														
36	Meretrixveligers	nos/m ²	18	20	21	17	22	17	16	18	24	20	18	21
37	Anadoraveligers	nos/m ²	21	23	19	14	18	23	24	25	21	16	25	28
	Total No. of individuals	nos/m ²	153	171	177	152	162	172	144	160	171	164	176	183
	Shanon Weaver Diversity Index		2.28	2.27	2.28	2.25	2.26	2.28	2.24	2.26	2.27	2.28	2.27	2.26

Annexure – 4**Compliance to Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter no. 6064/EC.3/2014-1 dated 26.06.2014**

Sl. No	Conditions	Compliance
i	The unit shall compliance with all the conditions stipulated in Environment Clearance issued in No. 10-130/2007-IA-III, Ministry of Environment & Forest, Government of India, dated 3rd July 2009	Being complied
ii	The proposed activities should not cause coastal erosion and alter the beach configuration. The shoreline changes shall be monitored continuously	<p>Being Complied.</p> <p>This EC is just a bifurcation of original EC of LTSB. In past, LTSB has been continuously monitoring shoreline studies through Institute of Ocean Management, Anna University, Chennai.</p> <p>Further, MIDPL also engaged Institute of Ocean Management, Anna University, Chennai. for shoreline studies of the concerned area.</p>
iii	Chemical waste generated and the sewage generated, if any should not be discharged in to the sea and shall be properly handled	<p>Complied</p> <p>No chemical waste generated. Sewage waste water generated is being treated in STP for further usage in horticulture / greenbelt</p>
iv	The waste water generated shall be collected, treated and reused properly	<p>Complied.</p> <p>Domestic waste water generated is being treated in STP. Treated water is being reused for Horticulture / green belt purpose</p>
v	The proponent shall implement oil spill mitigation measures without fail	<p>Complied.</p> <p>Oil Spill contingency plan (OSCP) is being implemented at site. OSCP along with list of Oil spill control equipment already submitted.</p>
vi	Disaster management plan shall be implemented and mock drills shall be carried out properly and periodically.	<p>Complied</p> <p>MIDPL has already formulated detailed Disaster Preparedness & Management Plan to handle any Natural and industrial hazards at site.</p> <p>Regular Mock Drills are conducted as per the Crisis Management Plan. The details of drills conducted towards dock safety for the period Apr-2019 to Sep-2019 is enclosed as Annexure- 5.</p>

Mock Drills - Apr-2019 to Sep-2019

S.No.	Date	Time	Scenario	Participants
1	16.04.19	14:45	Fire at backside of CFS	51
2	17.04.19	15:35	Emergency Evacuation from Port Operation Building	62
3	09.05.19	23:05	Choke occurs in throat due foreign object lodges to an operator in rest room	18
4	07.06.19	12:38	Injury due to vehicle accident in Main Gate	20
5	16.07.19	10:15	Electrical Short Circuit in Main Panel of Port Operation Building	65
6	22.07.19	11:15	Emergency Evacuation from Scanner Building	8
7	23.08.19	16:02	Operator became suddenly unconscious in operator room.	22
8	24.08.19	12:21	Fire in Keller Jetty Expansion Project Area in CB3	23
9	21.09.19	12:10	Gardener got bitten by a snake at Gate House Complex (Garden area)	22

