

25th Nov, 2018

To,

Additional Principal Chief Conservator of Forests
Western Regional Office,
Ministry of Environment, Forest & Climate Change
E-5, Arera colony, Link Road-3,
Ravishankar Nagar, Bhopal-462016 (M.P.)
E-mail: rowz.bpl-mef@nic.in

Dear Sir,

Sub : Half yearly Compliance report of Environment and CRZ clearance for the project namely
"Construction of berthing & allied facilities off Tekra near Tuna, Gujarat"

Ref : 1) Environment and CRZ clearance issued to M/s Kandla Port Trust (KPT) vide letter no. 10-10/2008-IA-III dated 1st November, 2011 and transferred to M/s Adani Kandla bulk Terminal Private Limited (AKBTPL) vide letter no. 10-10/2008-IA-III dated 10th November, 2014
2) CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010.

Please find enclosed herewith point wise compliance reports (Hard copy as well as in a CD) of conditions stipulated in the above referred letters for the compliance period from April, 2018 to September, 2018.

Thank you,
Yours Faithfully,

For M/s Adani Kandla Bulk Terminal Pvt. Ltd.



Hiren Shah

Authorized Signatory

Handwritten signature and date: 30/11/18

पर्यावरण एवं वन मंत्रालय
Ministry of Environment & forest
क्षेत्रीय कार्यालय (पश्चिम क्षेत्र)
Regional Office (Western Regional)
"केन्द्रीय पर्यावरण भवन"
"Central Environmental Bhawan"
लिंक रोड नं. 3, रविशंकर नगर
Link Road No.3
Ravishankar Nagar
E-5, Ravishankar Nagar
Bhopal-462016

Copy to:

1. The Director (Monitoring -IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003
2. The Director, Forests & Environment Department, Block - 14, 8th floor, Sachivalaya, Gandhinagar, Gujarat - 382 010
3. The Zonal Officer, Central Pollution Control Board, Zonal Office Vadodra, Parivesh Bhawan, Opposite VMC Ward office No. 10, Subhanpura, Vadodra-390023
4. The Chairman, Gujarat Pollution Control Board, Parvayaran Bhawan, Sector 10A, Gandhinagar-382010(Guj.)
5. The Regional Officer, Regional Office, GPCB - Kutch East, Room No.215-216, KPT administrative Building, Gandhidham, 370201
6. The Chief Engineer, Administrative Building, Kandla Port Trust, Gandhidham 370201

Adani Kandla Bulk Terminal Pvt Ltd
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Gujarat, India
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Environmental and CRZ Clearance Compliance Report

Of



Construction of berthing & allied
facilities off Tekra near Tuna, Gujarat

Of

Adani Kandla Bulk Terminal Pvt. Ltd.

For Period:

April – 2018 to September– 2018



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Environmental and CRZ Clearance Letter issued by MoEF&CC



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Compliance to Environmental and CRZ Clearance Letter issued by MoEF&CC

Environmental and CRZ clearance was obtained by KPT vide MoEF&CC letter dated 01.11.2011. AKBTPL and KPT entered in to concession agreement for development of the dry bulk terminal at Tuna on BOOT basis. Said clearance was then transferred to AKBTPL vide MoEF&CC letter dated 10.11.2014

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status															
5.	Specific Condition																
(i)	<p>"Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at site.</p>	<p>Complied.</p> <ul style="list-style-type: none"> Consent to establishment (CtE) and Consent to Operate (CtO) is Obtained and renewed/amended from time to time as per the progress of the project activity. Construction activities are completed and the project is now in operation phase. The present in-force CtO are mentioned below <table border="1" data-bbox="815 882 1431 1093"> <thead> <tr> <th>Sr. No</th> <th>Permission</th> <th>Project</th> <th>Ref.No./Order No.</th> <th>Validity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CtO Obtained by AKBTPL</td> <td>AKBTPL</td> <td>AWH-68051</td> <td>02.12.2019</td> </tr> <tr> <td>2</td> <td>Correction in CtO</td> <td>AKBTPL</td> <td>PC/CCA-Kutch-1269/GPCB ID-46110/303738</td> <td>02.12.2019</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Copies of the stated permissions are already submitted as a part of half yearly compliance report (Oct-14 to March-15) to MoEF & CC vide letter dated 11.05.2015. 	Sr. No	Permission	Project	Ref.No./Order No.	Validity	1	CtO Obtained by AKBTPL	AKBTPL	AWH-68051	02.12.2019	2	Correction in CtO	AKBTPL	PC/CCA-Kutch-1269/GPCB ID-46110/303738	02.12.2019
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(ii)	<p>Scientific studies shall be carried out by some expert and reputed organization like BNHS focusing among other things the marine environment in general and preservation of mangroves in particular against any possible adverse impact due to creation of the proposed facilities.</p>	<p>Complied.</p> <ul style="list-style-type: none"> M/s. Gujarat Institute of Desert Ecology, Bhuj has conducted scientific studies for preservation and management of mangroves in May 2012. Details related to the same are already submitted as part of half yearly compliance report (Oct-14 to March-15) to MoEF & CC vide letter dated 11.05.2015 and there is no further change. Further, a study to ascertain tidal flushing in mangroves around the project area of the dry bulk terminal at Tuna was carried through M/s. GUIDE, Bhuj in April, 2014 when construction activities were ongoing. Details related to the same were already submitted as part of half yearly compliance report (Oct-2016 to March- 															

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
		2017). <ul style="list-style-type: none"> Further, in order to understand the impacts of the existing project activity on marine ecology, a study was carried out through M/s. GUIDE. Details related to the same were already submitted as part of half yearly compliance report (Oct-2016 to March-2017). It may be noted that GUIDE is one of the authorized agencies of Forest & Environment dept. Govt. of Gujrat.
(iii)	Proponent shall explore the possibilities of plantation of mangrove in the entire mud flat areas and submit the action plan to the Ministry prior to the commencement of the activity.	Complied. <ul style="list-style-type: none"> Based on the scientific studies for preservation and management of mangroves in May 2012 carried out by M/s. GUIDE it was suggested to KPT to carry out mangrove plantation in 500 ha. area. As agreed, AKBTPL has already completed Mangrove plantation in 250 ha area at Sat Saida bet. Balance 250 ha. Mangrove plantation shall be carried out by KPT. Monitoring report prepared by M/s. GUIDE for mangrove plantation in 250 ha carried out at Sat Saida bet is submitted as part of half yearly compliance report (Oct-14 to March-15) to MoEF & CC vide letter dated 11.05.2015.
(iv)	The dredged material shall be reused for low level rising whenever possible and excess shall be dumped into sea at the designated dumping areas identified based on mathematical model studies.	Complied. <ul style="list-style-type: none"> As per the study carried by IIT-Chennai the dredge material is not suitable for reclamation/low level rising. Capital dredging was completed by KPT during the construction phase and the dredge material was disposed by KPT at a location identified by M/s. CWPRS, Pune in their study report. Project is now in operation phase and no dredging activity is carried out during the

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
		period April'18 to September'18.
(v)	Though the project proponent has carried out EIA for individual components and it were examined by the committee before the issue of clearance, it is suggested that proponent shall update and submit a comprehensive EMP for the whole project and submit to the Ministry and Regional Office of the Ministry at Bhopal prior to commencement of the activity.	Complied. <ul style="list-style-type: none"> • EMP was updated by AKBTPL and submitted to KPT. KPT has submitted the same vide letter dated 03.12.2013 to MoEF&CC as part of compliance report. • Further, said EMP was also submitted by AKBTPL as part of half yearly compliance report (Oct-14 to March-15) to MoEF & CC vide letter dated 11.05.2015 and there is no further change.
(vi)	The project proponent shall set up environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied. <ul style="list-style-type: none"> • AKBTPL has environment management cell with qualified manpower for implementation of environmental safeguards and management. The site environment team directly reports to the site CEO. Further, the site environment cell continuously remains in loop with Corporate Environment Cell. Please refer Annexure - 1 for further details.
(vii)	The funds earmarked for environmental management plan shall be included in the budget and this shall not be diverted for any other purpose.	Complied. <ul style="list-style-type: none"> • Environmental Management Plan is in place and the funds earmarked (budgeted separately for the each financial year) are being utilized for effective implementation of environmental safeguards and environment monitoring. All the expenses related to environment management plan are recorded in advanced accounting system of the organization. • Expenditure on environmental safeguards is approx. INR 130.5 Lakh for FY 2018-19. Please refer Annexure - 2 for further details.
6	General Condition	

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
(i)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied. <ul style="list-style-type: none"> Construction activities of the project are completed in March, 2015. The project is now in operation phase and no digging activities are carried out during April'18 to September'18.
(ii)	Full support shall be extended to the officers of this Ministry/Regional Office at Bhopal by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Complied. <ul style="list-style-type: none"> AKBTPL is always extending full support to the regulatory authorities during their visit to the project site. Details related to the last visit of Scientist 'D', MoEF&CC, from Regional Office, Bhopal, were submitted as part of half yearly compliance report (Oct-2016 to March-2017).
(iii)	A six monthly monitoring report shall need to be submitted by the project proponent to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.	Complied. <ul style="list-style-type: none"> Six monthly compliance reports regarding the implementation of the stipulated conditions are regularly submitted to Regional Office of MoEF &CC, Bhopal and other concerned authorities. Last compliance report for Oct'17 to Mar'18 period was submitted by AKBTPL vide letter dated 16.05.2018 to the all concerned authorities.
(iv)	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Point Noted. <ul style="list-style-type: none"> All applicable conditions in the interest of environment will be complied.
(v)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Point Noted. <ul style="list-style-type: none"> During the last compliance verification visit as mentioned in the sr. no ii of General Conditions above, there was no non-compliance observed.
(vi)	In the event of a change in the project profile or change in the implementation	Complied. <ul style="list-style-type: none"> Details related to transfer of EC/CRZ

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
	agency, a fresh reference shall be made to the Ministry of Environment and Forests.	clearance in the name of AKBTPL are submitted as part of half yearly compliance report (Oct-14 to March-15) to MoEF & CC vide letter dated 11.05.2015. Please refer point no. I of specific conditions for further details.
(vii)	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and date of start of land development work.	Complied. • KPT has informed about the Financial closure vide their letter no. EG/WK /4604(EC)/562 dated 26 th December, 2012. There is no further change.
(viii)	A copy of the clearance letter shall be marked to concern Panchayat /local NGO, if any, from whom any suggestion /representation have been made, received while processing the proposal.	• Condition is not applicable to AKBTPL.
(ix)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/ Tehsildar's office for 30 days.	• Condition is not applicable to AKBTPL.
7	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 1994 including the amendments and rules made thereafter.	Complied. • Permissions under the applicable rules and acts mentioned are already obtained. Please refer point no. I of specific conditions for further details.
8	All other statutory clearances such as the approvals for the storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980, Wildlife (Protection) Act, 1972 etc shall be obtained as applicable by the project	Not Applicable. • The permissions from the authorities mentioned in the condition are not applicable to this project.

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
	proponents from the respective competent authorities.	
9	<p>The project proponent shall 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 Env. Clearance and copies of clearances letters are available with the 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.</p> <p>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 RO of this Ministry at Bhopal.</p>	<p>Complied.</p> <ul style="list-style-type: none"> • KPT has published advertisement regarding accordance of the Environmental and CRZ clearance within 10 days from the date of receipt of the Clearance letter in two local newspapers (Aaj Kal and Divya Bhaskar) and copy of the same is submitted to the Regional office, MoEF&CC Bhopal by KPT vide letter no. EG/WK/4604(EC)/1036 dated 25th November, 2011.
10	<p>Environmental Clearance is subject to final order of the Hon'ble Supreme 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.</p>	<ul style="list-style-type: none"> • Noted and same will be complied based on further directions given by concerned authorities in this regard.
11	<p>Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.</p>	<p>Complied.</p> <ul style="list-style-type: none"> • The documents are being uploaded regularly on our website: http://www.adaniports.com/ports-downloads
12	<p>A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/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.</p>	<p>Complied.</p> <ul style="list-style-type: none"> • Clearance letter is uploaded on our website: http://www.adaniports.com/ports-downloads

Half yearly Compliance report of Environment and CRZ Clearance issued by MoEF dated 1st November, 2011 bearing F. No. 10-10/2008-IA-III for Construction of berthing & allied facilities off Tekra near Tuna, Gujarat

Sr. No	Condition	Compliance status
13	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.	Complied. <ul style="list-style-type: none"> Compliance report for period (Oct'17 to Mar'18) was submitted to respective authorities mentioned in the condition vide our letter dated 16.05.2018. The said report is also uploaded on our website: http://www.adaniports.com/ports-downloads.
14	The environmental statement for each financial year ending 31 st 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 Environmental (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. <ul style="list-style-type: none"> Environment Statement for FY 2017 – 18 has already been submitted to GPCB vide letter No. AKBTPPL /ENVSTATEMENT /2017-18 dated 19.04.2018. Copy of the same is attached as Annexure - 3. The said Environment Statement is also uploaded on our website: http://www.adaniports.com/ports-downloads.



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Compliance to CRZ Recommendation Letter

**Issued by Forest and Environment
Department, Govt. of Gujarat**

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
1	The provisions of the CRZ notification of 1991 and subsequent amendments issued from time to time shall be strictly adhered to by the KPT. No activity in contradiction to the provisions of the CRZ Notification shall be carried out by the KPT.	Complied. <ul style="list-style-type: none"> All activities are in line with the CRZ Notification 1991 and its subsequent amendment.
2	No dredging reclamation or any other project related activities shall be carried out in the CRZ area categorized as CRZ I (i) and it shall have to be ensured that the mangroves habitats and other ecologically important and significant areas, if any, in the region are not affected due to any of the project activities.	Complied. <ul style="list-style-type: none"> Construction of the project is completed in March, 2015. All construction activities were carried out as per the environmental and CRZ clearance granted vide MoEF&CC letter dated 01.11.2011. All necessary precautions such as allowing free flow of water in the mangrove areas, waste management as per the applicable laws, treatment of sewage, dust suppression measures etc. are taken to ensure that the mangroves habitats and other ecologically important and significant areas in the region are not affected due to any of the project activities.
3	The KPT shall participate financially for installing and operating the Vessel Traffic Management System in the Gulf of Kutch and shall also take lead in preparing and operational sing the Regional Oil Spill Contingency plan in the Gulf of Kutch.	Complied. <ul style="list-style-type: none"> M/s Kandla Port Trust contributed an amount of INR 41.25 Cr for installing and operating VTMS in Gulf of Kutch. Information is submitted to MoEF&CC New Delhi (as part of half yearly compliance report (Apr – Sept, 2014) vide letter dated 13th November, 2014. Please refer condition No.15 regarding Oil spill contingency plan. There is no further change.
4	The KPT shall strictly ensure that no creeks or rivers are blocked due to any activity at Kandla.	Complied. <ul style="list-style-type: none"> No rivers are present at the project site. 3 Bridges and 8 culverts have been provided with total cost of 2.01 crores to allow free flow of water

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
		<p>through creeks.</p> <ul style="list-style-type: none"> Further, a study to ascertain tidal flushing in mangroves around the project area of the dry bulk terminal at Tuna was carried through M/s. GUIDE, Bhuj in April, 2014 when construction activities were ongoing. Details related to the same are already submitted as part of half yearly compliance report (Oct-2016 to March-2017). The conditions as mentioned in the report are maintained.
5	<p>Mangrove plantation in an area of 1000 ha. Shall be carried out by the KPT within 5 years in a time bound manner on Gujarat coastline either within or outside the Kandla Port Trust area and six monthly compliance reports along with the satellite images shall be submitted to Ministry of Environment and Forests as well as to this department without fail.</p>	<p>Complied.</p> <ul style="list-style-type: none"> AKBTPL being BOOT operator, KPT requested AKBTPL to carry out mangrove plantation in 250 ha area. As agreed, AKBTPL has completed Mangrove plantation in 250 ha area at Sat Saida bet. For further information regarding mangrove plantation activity, please refer reply to specific condition no ii and iii of the Environmental and CRZ clearance letter above.
6	<p>No activities other than those permitted by the competent authority under the CRZ Notification shall be carried out.</p>	<p>Complied.</p> <ul style="list-style-type: none"> All activities are being carried out as per the Environmental and CRZ clearance granted vide MoEF&CC letter dated 01.11.2011.
7	<p>No ground water shall be tapped for any purpose during the proposed expansion/modernization activities.</p>	<p>Complied.</p> <ul style="list-style-type: none"> AKBTPL does not draw any ground water for the water requirement. Present source of water for various project activities is Narmada water through Gujrat water infrastructure Limited (GWIL). Present water consumption is 420.04 KLD.
8	<p>All necessary permission from different Government Departments/ agencies shall</p>	<p>Not applicable at present</p> <ul style="list-style-type: none"> All construction activities are

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance																									
	be obtained by the KPT before commencing the expansion activities.	<p>completed in March, 2015. No expansion activities are carried out. All necessary permissions will be obtained in future before commencing the expansion activities.</p> <ul style="list-style-type: none"> • However, an application for carrying out additional capital dredging in the existing approach channel, berth pockets and turning circles (in order to handle capsized vessels, not to expand the approved project activity) to obtain Environment and CRZ clearance is in process with the MoEF&CC. the said activity will be carried out only after obtaining the requisite permissions. 																									
9	No effluent or sewage shall be discharged into the sea/creek or in the CRZ area and it shall be treated to conform to the norms prescribed by the Gujarat Pollution Control Board and would be reused/recycled within the plant premises.	<p>Complied.</p> <ul style="list-style-type: none"> • No effluent is generated at the project site. • Approx.10-12KLD of sewage generated is treated in 25 KLD capacities STP based on FAB technology and treated water is used for horticulture purpose within plant premise. • Third party analysis of the treated water is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd. Summary of the same for duration from Apr-18 to Sep-18 is mentioned below. <table border="1" data-bbox="852 1697 1433 2011"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Max</th> <th>Min</th> <th>Perm. Limit^s</th> </tr> </thead> <tbody> <tr> <td>TSS</td> <td>mg/L</td> <td>28</td> <td>20</td> <td>30</td> </tr> <tr> <td>Residual Chlorine</td> <td>PPM</td> <td>0.4</td> <td>0.3</td> <td>> 0.5</td> </tr> <tr> <td>BOD (3 Days @ 27 °C)</td> <td>mg/L</td> <td>18</td> <td>12</td> <td>20</td> </tr> <tr> <td>Fecal Coliform</td> <td>MPN/100 ml</td> <td>920</td> <td>280</td> <td></td> </tr> </tbody> </table> <p style="text-align: right;">^s as per CC&A granted by GPCB BDL – Below Detection Limit</p>	Parameter	Unit	Max	Min	Perm. Limit ^s	TSS	mg/L	28	20	30	Residual Chlorine	PPM	0.4	0.3	> 0.5	BOD (3 Days @ 27 °C)	mg/L	18	12	20	Fecal Coliform	MPN/100 ml	920	280	
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Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
		<ul style="list-style-type: none"> Please refer Annexure - 4 for detailed analysis reports. Total expenditures of the Environment monitoring for the period (Apr'18 to Sep'18) are INR 4.38 lakh.
10	All the recommendations and suggestions given by the NIOT in their Comprehensive Environment Impact Assessment report for conservation /protection and betterment of environment shall be implemented strictly by the KPT.	<p>Complied.</p> <ul style="list-style-type: none"> The EMP prepared by NIOT in the EIA report was updated by AKBTPL (based on the condition mentioned in the EC and CRZ clearance) and submitted to KPT. KPT has submitted the same vide letter dated 03.12.2013 to MoEF&CC as part of compliance report. All the measures mentioned in the updated EMP prepared by AKBTPL are implemented for environment protection.
11	The construction and operation activities shall be carried out in such a way that there is no negative impact on mangroves and other coastal/marine habitats. The construction activities and dredging shall be carried out only under the constant supervision and guidelines of the NIOT.	<p>Complied.</p> <ul style="list-style-type: none"> All construction and operation activities are carried out meticulously to ensure that there is no negative impact on mangroves and other coastal / marine habitats. Please refer to Sr. no. ii and iii of the specific conditions of the EC and CRZ clearance above for further details. Construction activities have been completed in March, 2015 based on the NIOT recommendations. During construction phase capital dredging was carried out by KPT and the dredge material was disposed at a location identified by M/s. CWPRS, Pune in their study report. No maintenance dredging activity is carried out from Apr-18 to Sep-18.
12	The KPT shall contribute financially for any common study or project that may be proposed by this Department for	<ul style="list-style-type: none"> Noted and same will be complied on receipt of such recommendations from concerned authorities

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
	environmental management/ conservation / improvement for the Gulf of Kutch.	
13	The construction debris and/or any other type of waste shall not be disposed-off into the sea, creek or in the CRZ areas. The debris shall be removed from the construction site immediately after construction is over.	Complied. <ul style="list-style-type: none"> Construction of the project is completed in March, 2015. All construction debris and other solid wastes are removed from the construction sites.
14	The construction camps shall be located outside the CRZ area and the construction labour shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labours.	Complied. <ul style="list-style-type: none"> Construction of the project is completed in March, 2015 and during construction of the project we have provided necessary amenities like sanitation, water supply and fuel to the construction labours. Also we have ensured that environmental conditions are not deteriorated by the construction labours during the construction activities.
15	The KPT shall regularly update its Local Oil Spill Contingency and Disaster Management Plan in consonance with the National Oil Spill and Disaster Contingency Plan and shall submit the same to the MoEF, GOI and this Department after having it vetted through the Indian Coast Guard.	Complied. <ul style="list-style-type: none"> KPT is already having updated Disaster Management Plan as well as Oil Spill Contingency Plan. KPT has also executed MoU with oil companies i.e. IOCL, HPCL, BPCL etc. for setting up of their Tier I facility for combating Oil Spill at Kandla. Necessary action will be taken by AKBTP in consultation with KPT to combat with emergency situations.
16	The KPT shall bear the cost of the external agency that may be appointed by this Department for supervision/ monitoring of proposed activities and the environmental impacts of proposed activities.	<ul style="list-style-type: none"> Noted and same will be complied on receipt of such recommendations from concerned authorities
17	The KPT shall take up massive greenbelt development activities in and around Kandla and also within the KPT limits.	Complied. <ul style="list-style-type: none"> Plantation activity is an on-going process. As part of the same, greenbelt

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
		<p>within and along the periphery of the back-up area is being developed on regular basis.</p> <ul style="list-style-type: none"> Approx. 14.10 hectare area is developed as greenbelt so far with various types of trees, plants and lawn. Please refer Annexure-5 for further details regarding greenbelt development. Total expenditures of the horticulture dept. for the period (Apr'18 to Sep'18) are INR 10.28 lakh.
18	<p>The KPT shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forest and Environment Department and the District Collector/District Development Officer.</p>	<p>Complied.</p> <ul style="list-style-type: none"> Adani Foundation is the CSR wing of Adani group. All CSR activities are planned out at Tuna by Adani Foundation. AF works in the following four main areas: <ol style="list-style-type: none"> 1 Education 2 Community Health 3 Sustainable livelihood 4 Rural Infrastructure Development Various activities related to above mentioned areas are being carried out on regular basis for socio-economic upliftment of surrounding villages by Adani Foundation. Details of the activities carried out are shared with FOKIA (Federation of Kutch Industries Association) chaired by District Collector quarterly. Total expenditures of the CSR activities are INR 62.68 lakh for the period Apr'18 to Sep'18. Please refer Annexure - 6 for further details.
19	<p>A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to this Department as well as the MoEF, Gol. The details with</p>	<p>Complied.</p> <ul style="list-style-type: none"> Main constituents of the environmental management plan are environmental monitoring; greenbelt development; mangrove plantation;

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance																														
	respect to the expenditure from this budget head shall also be furnished.	maintaining bridges/ culverts for protection of creeks; treatment and disposal of wastes; mechanization of operations etc. <ul style="list-style-type: none"> Approximately INR 130.5 Lakh is spent for various activities mentioned here. Please refer to Annexure - 2 for details related to environmental expenditures and Annexure - 6 for expenditures related to CSR activities. 																														
20	A separate environmental management cell with qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	Complied. <ul style="list-style-type: none"> AKBTPL has environment management cell with qualified manpower for implementation of environmental safeguards and management. The Environment Cell continuously remains in loop with Corporate Environment Cell. Please refer Annexure - 1 for further details. 																														
21	An Environmental report indicating the changes, if any, with respect to the baseline environment quality in the coastal and marine environment shall be submitted every year by the KPT to this Department as well as to the MoEF, Gol.	Complied. <ul style="list-style-type: none"> Ambient Air Quality (twice in a week), and Noise (once in a month) level monitoring at 4 Nos locations and marine water and sediment monitoring (once in a month) at 2 Nos locations are being carried out by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd. Summary of the same for duration from Apr-18 to Sep-18 is mentioned below. <p>AAQ and noise sampling locations: 4 Nos.</p> <table border="1" data-bbox="852 1749 1444 2020"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Max</th> <th>Min</th> <th>Perm. Limit^s</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>95.69</td> <td>44.52</td> <td>100</td> </tr> <tr> <td>PM_{2.5}</td> <td>µg/m³</td> <td>54.74</td> <td>15.6</td> <td>60</td> </tr> <tr> <td>SO₂</td> <td>µg/m³</td> <td>26.15</td> <td>5.29</td> <td>80</td> </tr> <tr> <td>NO₂</td> <td>µg/m³</td> <td>52.41</td> <td>14.59</td> <td>80</td> </tr> <tr> <th>Noise</th> <th>Unit</th> <th>Max</th> <th>Min</th> <th>Perm. Limit^s</th> </tr> </tbody> </table>	Parameter	Unit	Max	Min	Perm. Limit ^s	PM ₁₀	µg/m ³	95.69	44.52	100	PM _{2.5}	µg/m ³	54.74	15.6	60	SO ₂	µg/m ³	26.15	5.29	80	NO ₂	µg/m ³	52.41	14.59	80	Noise	Unit	Max	Min	Perm. Limit ^s
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Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance																																																									
		Day Time	dB(A)	74.2	40.2	75																																																					
		Night Time	dB(A)	68	37.7	70																																																					
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		<ul style="list-style-type: none"> Please refer Annexure - 4 for detailed analysis reports. Approx. INR 4.38 Lakh is spent for all environmental monitoring activities during the (Apr'18 to Sep'18) periods. 																																																									
22	The KPT shall have to contribute financially to support the National Green Corps Scheme being implemented in the Gujarat by GEER Foundation, Gandhinagar, in consultation with Forest and Environment Department.	<p>Complied.</p> <ul style="list-style-type: none"> National Green Corps Scheme is being implemented by GEER foundation. AKBTPL requested GEER foundation to provide details of the program and financial assistance required so that necessary support may be provided. Further to the communication from GEER foundation, various activities 																																																									

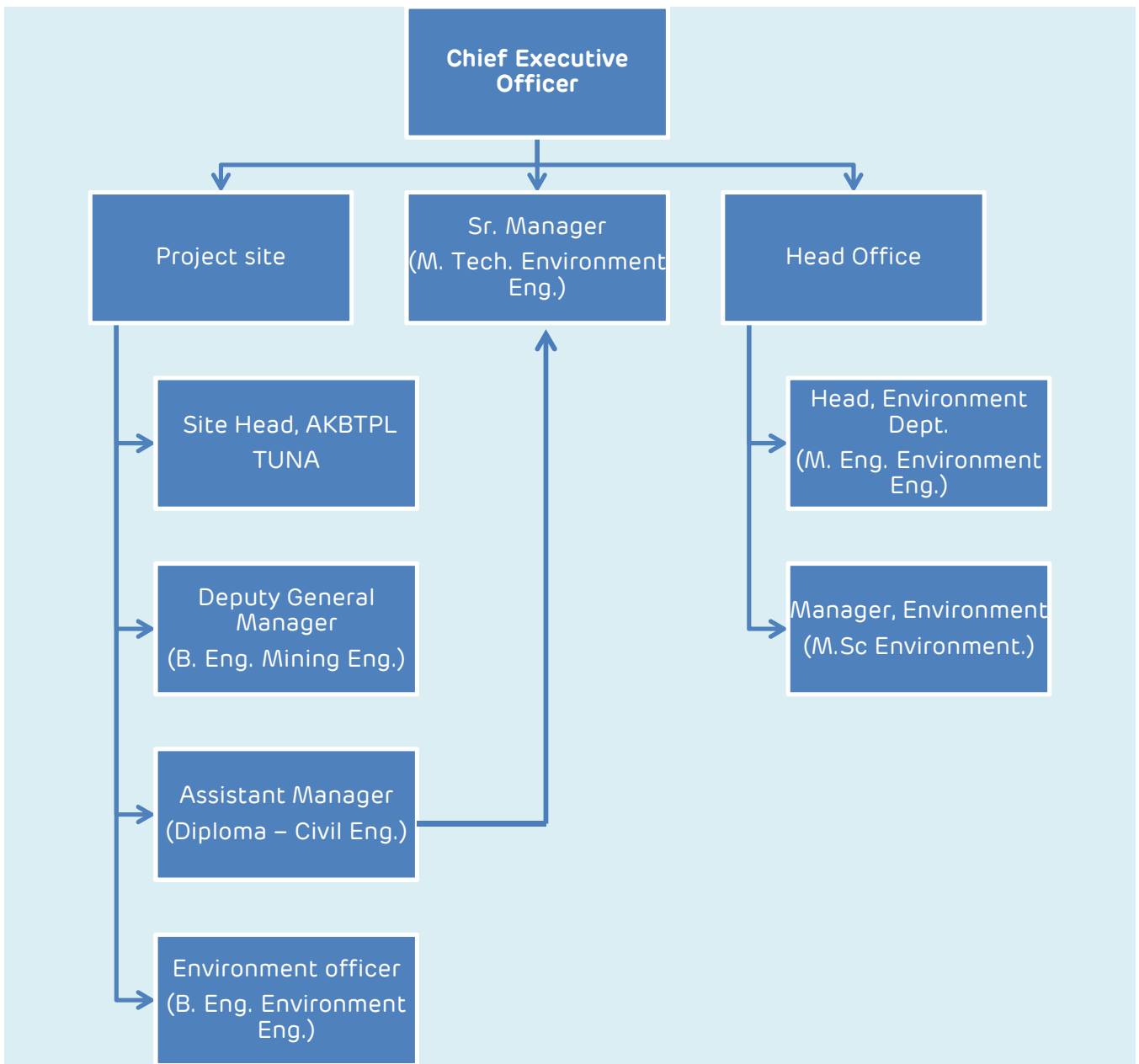
Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
		<p>were carried out on 21 March, international Day of Forests in 2014, at a school in Rampar, under National Green Corps. Details regarding the same were submitted as part of the compliance period Oct' 13 to Mar'14. Support will be extended to GEER foundation for any such activities in future</p>
23	<p>A six monthly report on compliance of the conditions mentioned in this letter shall have to be furnished by the KPT on a regular basis to this Department/MoEF, GOI.</p>	<p>Complied.</p> <ul style="list-style-type: none"> • Six monthly compliance reports regarding the implementation of the stipulated conditions are regularly submitted to all concerned authorities. • Last compliance report for Oct'17 to Mar'18 period was submitted by AKBTPPL vide letter dated 16.05.2018
24	<p>The KPT before commencing any activity, at the location under the consideration, shall have the latest CRZ map prepared through one of the authorized agencies and the map shall have land use features within the area of 5 km radius from the location along with the HTL and LTL and CRZ boundary and inland if any or mangroves area shall be used for the proposed development.</p>	<p>Complied.</p> <ul style="list-style-type: none"> • CRZ map including land features prepared by institute of Remote sensing, Anna University, Chennai is already submitted by KPT to MoEF&CC vide letter no. EG/WK/4604 (EC)/146 dated 14.02.2012.
25	<p>The entire jetty and approach shall be constructed on piles to ensure the free flow of water and that no creeks are blocked in any way.</p>	<p>Complied.</p> <ul style="list-style-type: none"> • As per the Environmental/ CRZ clearance obtained from MoEF&CC approach road of 2 km is constructed on rubble mound and 1.7 km approach road below low water line is constructed on piles. Entire jetty is constructed on piles. Bridges are constructed at three creeks and box/piped culverts are placed with total cost of 2.01 crores at various locations to allow free flow of water.

Half yearly Compliance report of CRZ Recommendation for creation of Berthing and Allied Facilities off Tekra near Tuna issued by Forest and Environment, Govt. of Gujarat vide letter bearing no. ENV-10-2009-1543-E dated 23rd June, 2010

Sr. No	Condition	Compliance
		<ul style="list-style-type: none"> Photographs of the same are already submitted as part of half yearly compliance report (Oct-14 to March-15) to MoEF & CC vide letter dated 11.05.2015 and there is no further change.
26	The KPT shall create a full-fledged and environmental cell for implementation of the Environment Management Programme and monitoring of the environmental parameters/post project monitoring.	Complied. <ul style="list-style-type: none"> AKBTPL has environment management cell with qualified manpower for implementation of environmental safeguards and management. The Environment Cell continuously remains in loop with Corporate Environment Cell. Please refer Annexure - 1 for further details.
27	The KPT shall have to take up in-situ biodiversity conservation project for mangroves at least in 5 ha. of area in addition to plantation of mangrove in 1000 ha.	Complied. <ul style="list-style-type: none"> 5 ha in-situ biodiversity conservation project for mangroves is carried out at sat saida bet (location identified by KPT). M/s GUIDE has prepared a final report of the same. Details related to the same are already submitted (as part of half yearly compliance report (Apr-2017 to Sep-2017).
	General conditions	
28	A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to this Department as well as the MoEF, Gol. The details with respect to the expenditure from this budget head shall also be furnished.	Complied. <ul style="list-style-type: none"> Please refer point no. 19 above for the reply to this condition.
29	Any other condition that may be stipulated by this Department from time to time for environment protection /management purpose shall also have to be complied with by the KPT.	<ul style="list-style-type: none"> Agreed.

Annexure – 1: Environmental Management Cell



Annexure- 2: Expenditure Details on Environmental Safeguards.

Sr. no.	Activity	Cost (INR in Lakh)	
		Cost incurred Apr'18 to Sep'18	2018-19 (Budgeted)
1	Environmental Monitoring	4.38	8.77
2	Greenbelt development	10.28	28.55
3	Disposal of wastes (including OWC & STP operation).	6.65	14.27
4	Firefighting Equipment.	80.75	152.60
5	Dust Suppression.		
6	Maintenance of conveyor belt.	28.5	65.91
Total		130.5	270.1



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Annexure – 3

(FORM-V)

Environmental Statement for 2017-18

Environment Statement for 2017-18 for M/s Adani Kandla Bulk Terminal Pvt Ltd

o/c

adani™

Ref No. AKBTP/ENVSTATEMENT/2017-18

Date: 19th April, 2018

To,
Member Secretary
Gujarat Pollution Control Board
Paryavaran Bhavan,
Sector-10-A, Gandhinagar-382010

Dear Sir,

Sub: Environmental Statement for the financial year ending 31st March, 2018 for M/s Adani Kandla Bulk Terminal Pvt Ltd (AKBTPL)

Ref: PCB ID: - 46110, Consent Order No. AWH - 68051

With reference to the above mentioned subject and reference, please find enclosed Environmental Statement in Form V prescribed under Rule 14 of the Environment (Protection) Rules 1986, for M/s Adani Kandla Bulk Terminal Pvt Ltd, Ta. Anjar for the financial year ending 31st March 2018.

Thank you,

Yours faithfully,
For Adani Kandla Bulk Terminal Pvt Ltd



Hiren Shah
(BU Head - AKBTP)

Encl: As above.

Copy to:

1. The Regional Officer, Gujarat Pollution Control Board, Gandhidham.

Received
Gujarat Pollution Control Board
Regional Office
Kutch (East)
02-05-18

Adani Kandla Bulk Terminal Pvt Ltd
Adani House
Nr Mithakhali Circle, Navrangpura
Ahmedabad 380 009
Gujarat, India
CIN: U63090GJ2012PTC069305

Tel +91 79 2656 5801
Fax +91 79 2555 6490
info@adani.com
www.adani.com

26/11/18
Gujarat Pollution Control Board
Sector No. 10 A,
Gandhinagar - 382 010

Registered Office: Adani House, Nr Mithakhali Circle, Navrangpura, Ahmedabad 380 009, Gujarat, India



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Annexure – 4

(Six Monthly Environment Monitoring Report)

(Apr'18 to Sep'18)



POLLUCON LABORATORIES PVT. LTD.

Environmental Auditors, Consultants & Analysts.
Cleaner Production / Waste Minimization Facilitator

Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986

“ENVIRONMENTAL MONITORING REPORT”

For

**ADANI KANDLA BULK TERMINAL PRIVATE
LIMITED.
KANDLA, KUTCH.**

APRIL 2018 TO SEPTEMBER 2018

H. T. Shah
Lab Manager



Dr. Arun Bajpai
Lab Manager (Q)




POLLUCON LABORATORIES PVT. LTD.

Environmental Auditors, Consultants & Analysts.
Cleaner Production / Waste Minimization Facilitator

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METHODS AND EQUIPMENTS USED FOR SAMPLING AND ANALYSIS

SR. NO.	Monitoring Details	Equipments Used	Sampling and Analysis Method
1	Ambient Air Quality Monitoring	RDS,FDS, Impinger	CPCB Guideline/IS:5182
2	Noise Monitoring	Noise Meter	IS:11702
3	Sea Water Monitoring	Depth Sampler	IS:3025/APHA/USEPA/ASTM
4	Sea Sediment Monitoring	Grab Sampler	CPCB Guideline/ IS/APHA/USEPA/ASTM
5	Drinking Water Analysis	Sealed & Sterile Bottle	IS:10500:2012
6	Sewage water Analysis	Sealed & Sterile Bottle	APHA/IS:3025
7	Stack Monitoring	Stack Kit	IS:11255


H. T. Shah
Lab Manager




Dr. Arun Bajpai
Lab Manager (Q)



POLLUCON LABORATORIES PVT. LTD.


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Cleaner Production / Waste Minimization Facilitator

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NATIONAL AMBIENT AIR QUALITY STANDARDS DATED 16TH NOV.2009, CPCB NEW DELHI.

SR. NO.	TEST PARAMETER	UNIT	Concentration in ambient air	Method Of Measurement
1	Particulate Matter (PM ₁₀)	µg/m ³	100	IS:5182(Part 23) SOP AAQM SPM -01
2	Particulate Matter (PM _{2.5})	µg/m ³	60	SOP AAQM PM2.5 - 06
3	Sulphur Dioxide (SO ₂)	µg/m ³	80	IS:5182(Part 2): Improved West and Gaeke
4	Oxides of Nitrogen (NO ₂)	µg/m ³	80	IS:5182(Part6)Modified Jacob & Hochheiser (Na-Arsenite)

NS#: Not Specified, ** National Ambient Air Quality Standards Dated: 18/11/2009 as per Central Pollution Control Board, New Delhi.


H. T. Shah
Lab Manager





Dr. Arun Bajpai
Lab Manager (Q)



Recognised by MoEF, New Delhi Under Sec. 12 of Environmental (Protection) Act-1986

TABLE NO. 1 RESULTS OF AAQM FOR LC GATE NO.2 [APRIL 2018 - SEPTEMBER 2018]

Sr No.	Date of Sampling	Particulate Matter (PM ₁₀) (µg/m ³)	Particulate Matter (PM _{2.5}) (µg/m ³)	Sulphur Dioxide (SO ₂)(µg/m ³)	Oxides of Nitrogen (NO ₂) (µg/m ³)
1	02/04/2018	69.28	39.20	18.84	29.56
2	05/04/2018	57.62	25.38	10.56	19.39
3	09/04/2018	82.58	47.10	25.55	32.77
4	12/04/2018	49.49	29.50	19.40	26.30
5	16/04/2018	86.79	38.44	21.43	35.60
6	19/04/2018	67.61	28.41	14.52	39.46
7	23/04/2018	76.31	48.74	22.71	31.24
8	26/04/2018	63.90	24.29	17.73	21.66
9	30/04/2018	72.79	30.09	24.73	27.17
10	03/05/2018	76.65	46.81	10.72	30.73
11	07/05/2018	69.59	34.88	18.29	39.34
12	10/05/2018	93.39	51.81	13.46	29.24
13	14/05/2018	72.59	30.42	16.58	36.21
14	17/05/2018	63.61	26.88	8.60	16.36
15	21/05/2018	84.41	33.74	19.68	32.87
16	24/05/2018	70.38	40.34	21.73	21.89
17	28/05/2018	82.40	37.52	12.56	27.49
18	31/05/2018	64.27	25.63	15.35	19.41
19	04/06/2018	62.13	29.27	21.41	41.36
20	07/06/2018	78.70	42.44	17.51	22.59
21	11/06/2018	55.48	25.68	9.70	17.26
22	14/06/2018	76.57	35.48	11.84	33.60
23	18/06/2018	69.30	31.28	14.51	29.40
24	21/06/2018	50.36	27.56	13.32	28.18
25	25/06/2018	64.20	32.39	16.78	37.83
26	28/06/2018	73.49	41.23	20.62	35.20
27	02/07/2018	57.91	32.27	13.70	33.64
28	05/07/2018	66.69	23.43	15.65	30.48
29	09/07/2018	53.35	20.64	7.45	21.57
30	12/07/2018	69.32	28.39	10.44	28.41
31	16/07/2018	48.36	21.52	6.58	18.52
32	19/07/2018	70.50	30.77	12.45	25.39
33	23/07/2018	62.99	37.23	9.74	32.49
34	26/07/2018	56.37	24.35	5.47	37.05
35	30/07/2018	72.44	29.68	14.37	22.66
36	02/08/2018	74.48	33.65	11.81	31.84
37	06/08/2018	52.24	27.52	7.59	23.46
38	09/08/2018	79.60	30.43	15.21	26.41
39	13/08/2018	62.70	26.35	13.63	37.23
40	16/08/2018	72.42	44.25	17.20	34.23
41	20/08/2018	48.25	25.35	6.23	41.23
42	23/08/2018	57.60	21.68	8.43	24.24
43	27/08/2018	68.33	29.39	10.22	36.24
44	30/08/2018	76.52	32.60	16.46	28.55
45	03/09/2018	64.56	30.39	18.95	23.41
46	06/09/2018	81.22	35.26	12.29	37.24
47	10/09/2018	54.31	21.22	6.21	28.37
48	13/09/2018	68.42	33.43	9.24	32.81
49	17/09/2018	83.21	43.58	15.29	36.31
50	20/09/2018	75.62	36.22	11.52	30.23
51	24/09/2018	65.69	39.18	19.46	25.32
52	27/09/2018	58.31	24.26	8.73	19.56



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TABLE NO. 2 RESULTS OF AAQM FOR STARTING OF PILE APPROACH [APRIL 2018 - SEPTEMBER 2018]

Sr No.	Date of Sampling	Particulate Matter (PM ₁₀) (µg/m ³)	Particulate Matter (PM _{2.5}) (µg/m ³)	Sulphur Dioxide (SO ₂) (µg/m ³)	Oxides of Nitrogen (NO ₂) (µg/m ³)
1	02/04/2018	88.22	48.39	24.70	35.45
2	05/04/2018	51.40	22.35	16.84	23.37
3	09/04/2018	77.81	32.39	12.43	38.41
4	12/04/2018	63.71	24.95	14.63	32.73
5	16/04/2018	73.23	30.41	20.69	24.30
6	19/04/2018	80.42	34.32	18.29	30.55
7	23/04/2018	83.19	51.21	26.11	42.29
8	26/04/2018	70.22	29.40	11.27	29.48
9	30/04/2018	86.29	45.41	19.31	22.57
10	03/05/2018	85.62	49.19	12.65	26.77
11	07/05/2018	76.32	39.40	6.67	35.54
12	10/05/2018	82.53	47.34	9.77	42.63
13	14/05/2018	92.59	43.65	11.55	31.55
14	17/05/2018	57.32	22.68	14.44	19.12
15	21/05/2018	90.31	38.60	23.43	24.19
16	24/05/2018	78.63	45.87	17.38	45.42
17	28/05/2018	89.32	48.48	10.66	34.37
18	31/05/2018	70.28	30.41	13.57	29.36
19	04/06/2018	78.48	36.55	18.64	27.47
20	07/06/2018	85.45	38.65	23.39	32.47
21	11/06/2018	72.60	46.21	15.36	20.85
22	14/06/2018	83.77	37.60	13.22	28.43
23	18/06/2018	79.45	40.21	10.26	23.50
24	21/06/2018	89.67	48.22	11.57	36.70
25	25/06/2018	94.22	50.61	21.27	41.67
26	28/06/2018	82.67	44.65	25.42	38.10
27	02/07/2018	83.43	45.41	23.43	37.54
28	05/07/2018	75.90	35.72	19.53	34.53
29	09/07/2018	90.31	49.36	14.58	26.33
30	12/07/2018	85.42	42.68	17.70	25.54
31	16/07/2018	66.75	27.66	11.22	20.32
32	19/07/2018	81.25	33.62	16.25	32.83
33	23/07/2018	72.97	40.54	18.31	39.23
34	26/07/2018	44.52	20.48	12.53	24.74
35	30/07/2018	78.27	32.44	19.30	30.50
36	02/08/2018	82.64	37.73	19.62	28.39
37	06/08/2018	70.69	41.26	12.38	30.47
38	09/08/2018	84.48	45.62	21.64	35.62
39	13/08/2018	72.61	32.69	17.52	41.62
40	16/08/2018	80.43	47.68	22.61	37.58
41	20/08/2018	48.41	19.52	10.40	27.60
42	23/08/2018	62.47	34.54	13.52	31.23
43	27/08/2018	78.64	31.52	20.39	44.34
44	30/08/2018	87.65	39.66	18.68	32.61
45	03/09/2018	76.57	33.29	20.46	31.63
46	06/09/2018	87.28	46.55	18.60	24.25
47	10/09/2018	59.69	24.82	10.26	25.46
48	13/09/2018	78.47	44.51	14.65	36.51
49	17/09/2018	89.38	38.54	19.20	42.35
50	20/09/2018	93.74	49.22	16.35	38.49
51	24/09/2018	77.51	45.22	17.26	28.48
52	27/09/2018	85.60	40.38	11.48	22.60



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TABLE NO. 3 RESULTS OF AAQM FOR SOUTH WEST CORNER AT PUMP HOUSE [APRIL 2018 - SEPTEMBER 2018]

Sr No.	Date of Sampling	Particulate Matter (PM ₁₀) (µg/m ³)	Particulate Matter (PM _{2.5}) (µg/m ³)	Sulphur Dioxide (SO ₂)(µg/m ³)	Oxides of Nitrogen (NO ₂) (µg/m ³)
1	02/04/2018	80.59	44.67	10.49	18.47
2	05/04/2018	44.81	16.62	5.29	15.66
3	09/04/2018	72.87	38.86	8.50	25.56
4	12/04/2018	51.54	15.60	12.16	21.63
5	16/04/2018	62.49	20.89	17.55	29.41
6	19/04/2018	75.21	31.19	15.48	27.05
7	23/04/2018	61.69	35.67	19.41	34.63
8	26/04/2018	55.43	23.86	7.61	16.23
9	30/04/2018	64.42	27.91	9.34	32.12
10	03/05/2018	65.72	48.80	7.65	21.47
11	07/05/2018	59.68	31.23	15.79	31.70
12	10/05/2018	68.43	36.63	11.58	27.90
13	14/05/2018	79.41	32.87	9.59	25.59
14	17/05/2018	49.27	19.21	5.54	14.59
15	21/05/2018	67.38	27.74	17.93	20.49
16	24/05/2018	57.58	33.62	13.80	33.44
17	28/05/2018	78.39	44.83	6.34	22.60
18	31/05/2018	54.20	22.70	10.38	18.35
19	04/06/2018	69.81	29.68	13.52	34.23
20	07/06/2018	73.55	34.18	10.54	19.51
21	11/06/2018	66.28	41.56	5.63	14.62
22	14/06/2018	70.36	30.72	8.68	22.61
23	18/06/2018	53.62	26.37	12.65	27.27
24	21/06/2018	60.31	35.64	7.53	31.97
25	25/06/2018	72.62	27.53	14.23	26.00
26	28/06/2018	65.60	39.52	18.59	33.35
27	02/07/2018	66.49	35.52	11.53	23.61
28	05/07/2018	55.66	28.45	17.51	27.31
29	09/07/2018	65.62	38.48	9.54	19.59
30	12/07/2018	74.38	33.57	12.71	15.31
31	16/07/2018	59.38	24.53	7.59	18.65
32	19/07/2018	76.23	29.60	10.30	29.31
33	23/07/2018	54.53	22.67	6.43	25.65
34	26/07/2018	49.60	26.32	13.49	30.74
35	30/07/2018	67.19	39.50	8.52	17.46
36	02/08/2018	79.53	31.61	14.56	17.53
37	06/08/2018	64.56	38.43	9.64	20.79
38	09/08/2018	71.84	42.65	12.69	31.43
39	13/08/2018	68.65	29.51	10.67	26.54
40	16/08/2018	59.86	34.58	19.53	30.20
41	20/08/2018	53.32	21.88	8.69	34.53
42	23/08/2018	70.31	37.26	11.54	21.69
43	27/08/2018	58.42	24.54	7.59	28.69
44	30/08/2018	63.44	30.50	13.45	23.62
45	03/09/2018	70.57	25.62	11.22	27.54
46	06/09/2018	66.58	39.57	14.27	33.50
47	10/09/2018	47.59	18.59	8.62	15.22
48	13/09/2018	72.68	40.24	12.58	23.62
49	17/09/2018	58.40	30.29	9.43	32.41
50	20/09/2018	65.24	26.48	13.62	24.53
51	24/09/2018	50.29	33.43	10.43	20.61
52	27/09/2018	63.30	29.51	15.65	17.63



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TABLE NO. 4 RESULTS OF AAQM FOR NORTH EAST CORNER OF BACK UP AREA [APRIL 2018 - SEPTEMBER 2018]

Sr No.	Date of Sampling	Particulate Matter (PM ₁₀) (µg/m ³)	Particulate Matter (PM _{2.5}) (µg/m ³)	Sulphur Dioxide (SO ₂)(µg/m ³)	Oxides of Nitrogen (NO ₂) (µg/m ³)
1	02/04/2018	93.37	52.67	22.62	32.37
2	05/04/2018	65.31	30.18	12.55	28.46
3	09/04/2018	88.23	44.45	18.83	19.18
4	12/04/2018	74.52	31.00	24.40	39.25
5	16/04/2018	69.07	25.40	14.59	36.21
6	19/04/2018	85.27	37.40	20.47	33.46
7	23/04/2018	67.21	43.18	15.32	38.58
8	26/04/2018	82.38	32.12	13.66	25.72
9	30/04/2018	79.60	49.18	26.15	44.22
10	03/05/2018	92.30	53.42	17.64	38.61
11	07/05/2018	83.20	41.80	20.67	27.53
12	10/05/2018	78.31	43.70	15.63	32.47
13	14/05/2018	88.51	39.47	19.47	29.78
14	17/05/2018	68.30	28.80	11.76	23.42
15	21/05/2018	79.61	33.54	13.84	30.57
16	24/05/2018	89.21	49.64	24.33	52.41
17	28/05/2018	95.19	54.74	16.60	40.34
18	31/05/2018	81.62	34.37	22.48	33.35
19	04/06/2018	85.67	41.25	25.39	37.78
20	07/06/2018	90.40	47.63	21.50	35.60
21	11/06/2018	82.64	51.26	11.60	28.87
22	14/06/2018	94.33	45.59	18.26	38.40
23	18/06/2018	60.65	34.58	16.27	33.56
24	21/06/2018	95.69	54.23	15.57	27.83
25	25/06/2018	88.88	39.25	19.57	32.15
26	28/06/2018	93.67	50.35	23.70	30.32
27	02/07/2018	89.39	50.72	16.53	28.32
28	05/07/2018	85.73	38.58	10.22	39.42
29	09/07/2018	71.57	33.41	12.22	30.26
30	12/07/2018	90.20	47.59	15.41	33.57
31	16/07/2018	76.77	32.87	13.60	25.47
32	19/07/2018	88.43	40.29	18.24	40.27
33	23/07/2018	78.65	45.66	11.40	36.39
34	26/07/2018	69.46	29.62	21.55	34.11
35	30/07/2018	83.66	49.51	17.48	32.39
36	02/08/2018	88.64	43.38	16.36	39.24
37	06/08/2018	93.63	53.66	14.31	26.20
38	09/08/2018	89.63	48.68	19.26	37.68
39	13/08/2018	79.33	35.66	21.28	32.43
40	16/08/2018	87.50	50.31	15.41	44.28
41	20/08/2018	67.67	28.57	12.60	38.60
42	23/08/2018	76.70	41.51	17.46	34.77
43	27/08/2018	84.36	36.79	13.27	41.45
44	30/08/2018	78.31	26.57	20.60	36.57
45	03/09/2018	82.48	39.84	13.53	34.54
46	06/09/2018	95.67	51.27	10.48	30.58
47	10/09/2018	76.89	27.24	12.39	21.51
48	13/09/2018	86.20	48.64	16.58	27.36
49	17/09/2018	93.44	49.35	22.48	45.57
50	20/09/2018	85.66	31.58	19.51	32.50
51	24/09/2018	90.21	50.27	15.49	36.86
52	27/09/2018	78.75	33.50	20.52	23.34



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AMBIENT AIR QUALITY ANALYSIS REPORT OBSERVATIONS

Ambient Air Quality Monitoring Sample Analysis									
Sr. No.	Month	Particulate Matter (PM ₁₀) (µg/m ³)		Particulate Matter (PM _{2.5}) (µg/m ³)		Sulphur Dioxide (SO ₂) (µg/m ³)		Oxides of Nitrogen (NO _x) (µg/m ³)	
		Max	Min	Max	Min	Max	Min	Max	Min
L.C. Gate No.2									
1	April-18	86.79	49.49	48.74	24.29	25.55	10.56	39.46	19.39
2	May-18	93.39	63.61	51.81	25.63	21.73	8.60	39.34	16.36
3	June-18	78.70	50.36	42.44	25.68	21.41	9.70	41.36	17.26
4	July-18	72.44	48.36	37.23	20.64	15.65	5.47	37.05	18.52
5	Aug-18	79.60	48.25	44.25	21.68	17.20	6.23	41.23	23.46
6	Sep-18	83.21	54.31	43.58	21.22	19.46	6.21	37.24	19.56
Starting Of Pile Approach (Near SS2 Building)									
1	April-18	88.22	51.40	51.21	22.35	26.11	11.27	42.29	22.57
2	May-18	92.59	57.32	49.19	22.68	23.43	6.67	45.42	19.12
3	June-18	94.22	72.60	50.61	36.55	25.42	10.26	41.67	20.85
4	July-18	90.31	44.52	49.36	20.48	23.43	11.22	39.23	20.32
5	Aug-18	87.65	48.41	47.68	19.52	22.61	10.40	44.34	27.60
6	Sep-18	93.74	59.69	49.22	24.82	20.46	10.26	42.35	22.60
South West Corner Of Back Up Area									
1	April-18	80.59	44.81	44.67	15.60	19.41	5.29	34.63	15.66
2	May-18	79.41	49.27	48.80	19.21	17.93	5.54	33.44	14.59
3	June-18	73.55	53.62	41.56	26.37	18.59	5.63	34.23	14.62
4	July-18	76.23	49.60	39.50	22.67	17.51	6.43	30.74	15.31
5	Aug-18	79.53	53.32	42.65	21.88	19.53	7.59	34.53	17.53
6	Sep-18	72.68	47.59	40.24	18.59	15.65	8.62	33.50	15.22
North East Corner Of Back Up Area									
1	April-18	93.37	65.31	52.67	25.40	26.15	12.55	44.22	19.18
2	May-18	95.19	68.30	54.74	28.80	24.33	11.76	52.41	23.42
3	June-18	95.69	60.65	54.23	34.58	25.39	11.60	38.40	27.83
4	July-18	90.20	69.46	50.72	29.62	21.55	10.22	40.27	25.47
5	Aug-18	93.63	67.67	53.66	26.57	21.28	12.60	44.28	26.20
6	Sep-18	95.67	76.89	51.27	27.24	22.48	10.48	45.57	21.51



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RESULTS OF NOISE LEVEL MONITORING

Sampling Date	: As Per Table
Test Method	: IS 11702
Sampling Location	: As Per Table
Sampling By	: Pollucon Laboratories Pvt. Ltd.
Protocol (purpose)	: Environmental Monitoring

TABLE NO. 5 RESULTS OF DAY TIME NOISE LEVEL MONITORING [APRIL 2018 TO SEPTEMBER 2018]

Noise Level Day Time dB(A) Leq*									
Sr. No.	Name of Location	LC Gate No.2		Starting Of Pile Approach		South West Corner at Pump House		North East Corner of Back up Area	
	Month	Max	Min	Max	Min	Max	Min	Max	Min
1.	April-18	69.4	46.0	71.0	54.6	73.7	47.0	72.0	52.4
2.	May-18	71.5	44.9	72.4	49.8	73.3	41.4	69.2	46.8
3.	June-18	73.8	47.3	71.2	51.9	74.2	43.6	70.4	53.6
4.	July-18	68.6	45.3	71.5	50.0	72.5	40.2	69.7	44.5
5.	Aug-18	71.3	54.2	69.6	56.4	70.8	48.9	72.9	60.5
6.	Sep-18	69.9	52.3	71.2	54.2	70.4	47.1	73.4	59.6

TABLE NO. 6 RESULTS OF NIGHT TIME NOISE LEVEL MONITORING [APRIL 2018 TO SEPTEMBER 2018]


Noise Level Night Time dB(A) Leq*									
Sr. No.	Name of Location	LC Gate No.2		Starting Of Pile Approach		South West Corner at Pump House		North East Corner of Back up Area	
	Month	Max	Min	Max	Min	Max	Min	Max	Min
1.	April-18	65.5	40.8	66.9	57.3	67.6	46.0	66.3	46.2
2.	May-18	62.1	41.9	67.6	53.1	65.5	40.2	64.0	44.7
3.	June-18	64.5	44.2	65.2	55.3	64.7	42.3	67.2	46.7
4.	July-18	59.0	40.2	65.7	53.4	68.0	37.7	63.9	46.3
5.	Aug-18	65.9	49.6	64.2	55.2	66.1	50.2	67.7	49.5
6.	Sep-18	64.8	51.9	63.7	52.2	67.4	45.7	65.3	52.0

AMBIENT AIR QUALITY STANDARDS FOR NOISE SPECIFIED BY CPCB

Area Code	Category of Area/Zone	Limits in dB(A) Leq [#]	
		Day time	Night time
A	Industrial area	75	70

Notes:

- Day time shall mean from 6.00 a.m. to 10.00 p.m.
- Night time shall mean from 10.00 p.m. to 06.00 a.m.

[#]dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing

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 Lab Manager


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 Lab Manager (Q)




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AMBIENT AIR QUALITY MONITORING & NOISE QUALITY MONITORING LOCATIONS

Sr. No	Name of Location	GPS Coordinate
1.	LC Gate No.2	N 22°58' 14.29' E 70°05 51.07'
2.	Starting Of Pile Approach	N 22°54' 27.47' E 70°06 15.63'
3.	South West Corner at Pump House	N 22°55' 22.98' E 70°06 7.37'
4.	North East Corner Of Back Up Area	N 22°55' 53.09 E 70°06 27.17'

FIGURE NO. 1 GOOGLE EARTH IMAGE OF AMBIENT AIR QUALITY MONITORING & NOISE QUALITY MONITORING LOCATION




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RESULTS OF SEA WATER MONITORING
TABLE NO. 7 RESULTS OF SEA WATER [APRIL 2018 TO SEPTEMBER 2018]

Description of Sample	: Sea Water (Surface & Bottom)	Quantity/No. of Samples	: 10 Lit/12
Sampling By	: Pollucon Laboratories Pvt. Ltd.	Sampling Procedure	: Grab
Packing/Seal	: Sealed	Protocol (purpose)	: Env. Monitoring
Test Method	: IS 3025 & APHA (22 nd Edi.) 2008	Test Parameters	: As per table

SR. NO	TEST PARAMETERS	UNIT	Near Mouth of Creek (M1)		Near Jetty (M2)		Near Mouth of Creek (M1)	
			April-18		May-18		June-18	
			10/04/2018		14/05/2018		28/06/2018	
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM
1	pH	--	8.15	7.9	7.95	7.82	8.03	7.98
2	Temperature	°C	29.4	29.2	31.4	30.8	30.8	30.1
3	Total Suspended Solids	mg/L	310	390	342	410	302	356
4	BOD (3 Days@27°C)	mg/L	4	3	5	4	4	3
5	Dissolved Oxygen	mg/L	5.8	5.4	6.2	5.8	5.8	5.6
6	Salinity	ppt	35.4	35.6	35.8	35.1	36	35.3
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
8	Nitrate as NO ₃	µmol/L	15.8	16	10.6	8.4	7.4	5.2
9	Nitrite as NO ₂	µmol/L	2.1	1.8	2.1	1.7	1.84	1.51
10	Ammonical Nitrogen as NH ₃	µmol/L	2.2	2.8	3.2	2.4	3.56	2.61
11	Phosphates as PO ₄	µmol/L	1.9	1.65	2.6	1.85	2.16	1.78
12	Total Nitrogen	µmol/L	10.8	11	14.4	11.2	12.8	9.32
13	Petroleum Hydrocarbon	µg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
14	Total Dissolved Solids	mg/L	36204	36318	35980	35332	34980	34485
15	COD	mg/L	15	10	18	14	14	10
A	Flora and Fauna							
16.1	Primary Productivity	mgC/L/day	2.1	1.2	2.4	1.6	2.99	1.15
B	Phytoplankton							
17.1	Chlorophyll	mg/m ³	1.52	0.75	2.8	1.4	2.57	1.52
17.2	Phaeophytin	mg/m ³	0.48	0.65	1.7	1.2	1.4	0.48
17.3	Cell Count	No. x 10 ³ /L	190	80	120	70	172	190
17.4	Name of Group Number and name of group species of each group	--	Navicula sp. Thalassiosira sp. Synedra sp.	Biddulphia sp. Nitzschia sp. Cheatoceros sp.	Rhizosoleniasp. Synedra sp. Thalassiothrix SP. Biddulphia SP. Skeletonema sp.	Navicula sp. Fragillaria sp. Nitzschia sp.	Rhizosolenia Amphiprora Nitzschia Navicula Coscinodiscus Thalassionema	Navicula sp. Thalassiosira sp. Synedra sp.
C	Zooplanktons							
18.1	Abundance (Population)	noX10 ³ /100 m ³	18		86		92	
18.2	Name of Group Number and name of group species of each group	--	Copepods Polychaetes Gastropods		polychaetes ostracods mysids		Mysids Ostracodes Foraminiterans Copepods Fish Larvae	
18.3	Total Biomass	mL/100 m ³	14		5.4		14.15	
D	Microbiological Parameters							
19.1	Total Bacterial Count	CFU/ml	2800		2920		2885	
19.2	Total Coliform	/ml	Absent		Absent		Absent	
19.3	E.coli	/ml	Absent		Absent		Absent	
19.4	Enterococcus species	/ml	Absent		Absent		Absent	
19.5	Salmonella species	/ml	Absent		Absent		Absent	
19.6	Shigella species	/ml	Absent		Absent		Absent	
19.7	Vibrio species	/ml	Absent		Absent		Absent	

Note: BDL*: Below Detection Limit, Minimum Detection Limit, BOD: 3.0 mg/L, Oil & Grease: 1.0 mg/L, Petroleum Hydrocarbon: 10 µg/L


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TABLE NO. 8 RESULTS OF SEA WATER [APRIL 2018 TO SEPTEMBER 2018]

SR. NO.	TEST PARAMETERS	UNIT	Near Jetty (M2)		Near Mouth of Creek (M1)		Near Jetty (M2)	
			July-18		August-18		Sep-18	
			24/07/2018		22/08/2018		13/09/2018	
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM
1	pH	--	8.01	7.97	8.12	8.06	8.15	8.08
2	Temperature	°C	30.8	30.6	30.6	30.2	31	30.8
3	Total Suspended Solids	mg/L	380	492	408	396	327	376
4	BOD (3 Days @27°C)	mg/L	4	3	3	BDL*	3	BDL*
5	Dissolved Oxygen	mg/L	6.4	6	6.6	6.2	6.6	5.8
6	Salinity	ppt	35.2	34.8	34.6	34.2	34.9	34.6
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
8	Nitrate as NO ₃	µmol/L	5.74	3.44	6.8	4.2	7.2	5.1
9	Nitrite as NO ₂	µmol/L	3.17	2.8	2.9	2.4	2.6	2.1
10	Ammonical Nitrogen as NH ₃	µmol/L	2.66	1.83	2.3	1.7	2.4	2.2
11	Phosphates as PO ₄	µmol/L	2.55	2.12	2.4	2.12	2.36	2.08
12	Total Nitrogen	µmol/L	11.56	8.07	12	8.3	12.2	9.4
13	Petroleum Hydrocarbon	µg/L	12.4	BDL*	10.1	BDL*	16	BDL*
14	Total Dissolved Solids	mg/L	35110	34776	34712	34460	35012	34916
15	COD	mg/L	18	14	16	10	10	BDL*
A	Flora and Fauna							
16.1	Primary Productivity	mgC/L/day	3.26	2.79	1.35	0.945	2.9	1.1
B	Phytoplankton							
17.1	Chlorophyll	mg/m ³	3.11	2.32	1.81	1.01	1.36	1.05
17.2	Phaeophytin	mg/m ³	2.49	1.33	1.51	0.881	0.71	0.48
17.3	Cell Count	No. x 10 ³ /L	172	124	144	96	116	84
17.4	Name of Group Number and name of group species of each group	--	Nitzschia Rhizosolenia Synedra Biddulphia	Navicula Nitzschia Rhizosolenia	Melosira Ankistrodesmus Nitzschia Rhizosolenia Synedra Spirulina	Navicula Nitzschia Frugillazia	Cosanodiscus Biddulriha Rhizosolenia Navicula Thalassioenema	Navicula Nitzschia Biddulriha
C	Zooplanktons							
18.1	Abundance (Population)	noX10 ³ / 100 m ³	70		99		132	
18.2	Name of Group Number and name of group species of each group	--	Gastropods Nauplius Copepods Foraminiferans Ostracods		Myside Copepods Isoponds Decaponds		Chaetognaths Cladocerans Copepods Polychaeta	
18.3	Total Biomass	mL/ 100 m ³	11.78		12.06		8.4	
D	Microbiological Parameters							
19.1	Total Bacterial Count	CFU/mL	2380		2250		2050	
19.2	Total Coliform	/mL	Absent		Absent		Absent	
19.3	E.coli	/mL	Absent		Absent		Absent	
19.4	Enterococcus species	/mL	Absent		Absent		Absent	
19.5	Salmonella species	/mL	Absent		Absent		Absent	
19.6	Shigella species	/mL	Absent		Absent		Absent	
19.7	Vibrio species	/mL	Absent		Absent		Absent	

Note: BDL*: Below Detection Limit, Minimum Detection Limit, BOD: 3.0 mg/L, Oil & Grease: 1.0 mg/L, Petroleum Hydrocarbon: 10 µg/L


H. T. Shah
 Lab Manager


Dr. Arun Bajpai
 Lab Manager (Q)

**SEA WATER REPORT OBSERVATION**

Sea Water Sample Analysis		Month : April-18 to Sep-18			
Test Parameter	Unit	Surface		Bottom	
		Max	Min	Max	Min
pH	--	8.15	7.95	8.08	7.82
Total Dissolved Solids	mg/L	36204	34712	36318	34460
Total Suspended Solids	mg/L	408	302	492	356
BOD (3 Days @ 27 °C)	mg/L	5.0	3.0	4.0	BDL*
Dissolved Oxygen	mg/L	6.6	5.8	6.2	5.4
Salinity	ppt	36	34.6	35.6	34.2
COD	mg/L	18	10	14	10

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RESULTS OF SEA SEDIMENT MONITORING**TABLE NO. 9 RESULTS OF SEA SEDIMENT [APRIL 2018 TO SEPTEMBER 2018]**

Description of Sample	: Sea Sediment	Quantity/No. of Samples	: 10 Kg/06
Sampling By	: Pollucon Laboratories Pvt. Ltd.	Sampling Procedure	: Grab
Packing/Seal	: Sealed	Protocol (purpose)	: Env. Monitoring
Test Method	: IS/ASTM/CPCB Guidelines	Test Parameters	: As per table

SR. NO.	TEST PARAMETERS	UNIT	Near Mouth of Creek (M1)	Near Jetty (M2)	Near Mouth of Creek (M1)	Near Jetty (M2)	Near Mouth of Creek (M1)	Near Jetty (M2)
			April-18	May-18	June-18	July-18	Aug-18	Sep-18
			10/04/2018	14/05/2018	28/06/2018	24/07/2018	22/08/2018	13/09/2018
1	Organic Matter	%	0.72	0.7	0.5	0.95	0.7	0.62
2	Phosphorus as P	µg/g	308	380	310	412	516	398
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
5	Heavy Metals							
5.1	Aluminum as Al	%	5.5	5.1	5.3	5.5	5.3	5.1
5.2	Total Chromium as Cr+3	µg/g	152	120	140	110	160	142
5.3	Manganese as Mn	µg/g	1240	1110	1260	1580	1310	1620
5.4	Iron as Fe	%	5.7	5.8	5.4	5.2	4.9	5.05
5.5	Nickel as Ni	µg/g	48	32	48	68	48	36
5.6	Copper as Cu	µg/g	42	36	55	44	44	70
5.7	Zinc as Zn	µg/g	140	140	210	312	301	284
5.8	Lead as Pb	µg/g	11.4	4.8	3.2	3.4	2.1	1.8
5.9	Mercury as Hg	µg/g	0.2	BDL*	BDL*	BDL*	BDL*	BDL*
6	Benthic Organisms							
6.1	Macrobenthos (No and name of groups present, No and name of species of each group present)	--	Polychaetes Decapods	Polychaete worms Bivalves	Polychaetes Bivalves	Polychaete Gastropods Amphipods	Polychaete Decapods	Polychaete Isopods
6.2	MeioBenthos (No and name of groups present, No and name of species of each group present)	--	Nematodes Gastrotriches	Nematodes Foraminiferans Ostracodes	Nematodes Hydrozoans	Hydrozoans	Hydrozoans Copepods Ostracods	Hydrozoans Copepods Ostracods
6.3	Population	no/m ²	110	240	441	471	529	441

Note: BDL*: Below Detection Limit, Minimum Detection Limit, Mercury as Hg: 0.00025 mg/L, Petroleum Hydrocarbon: 5 µg/g


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**SEA SEDIMENT REPORT OBSERVATION**

Sea Sediment Sample Analysis		Month : April-18 to Sep-18	
Test Parameter	Unit	Sediment	
		Max	Min
Organic Matter	%	0.95	0.5
Phosphorus as P	µg/g	516	308
Aluminum as Al	%	5.5	5.1
Total Chromium as Cr ⁺³	µg/g	160	110
Manganese as Mn	µg/g	1620	1110
Iron as Fe	%	5.8	4.9
Nickel as Ni	µg/g	68	32
Copper as Cu	µg/g	70	36
Zinc as Zn	µg/g	312	140
Lead as Pb	µg/g	11.4	1.8
Mercury as Hg	µg/g	0.2	BDL*

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SEA WATER & SEA SEDIMENT LOCATIONS

Sr. No	Name of Location	GPS Coordinate
1.	NEAR MOUTH OF CREEK (M1)	N 22°54'10.58" E 70° 8'34.86"
2.	NEAR JETTY (M2)	N 22°53.60" E 70° 6.47"

FIGURE NO. 2 GOOGLE EARTH IMAGE OF SEA WATER AND SEDIMENT LOCATION




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RESULTS OF DRINKING WATER ANALYSIS**STANDARD METHODS & PERMISSIBLE LIMIT FOR DRINKING WATER**

SR. NO.	PARAMETERS	UNIT	DESIRABLE LIMIT AS PER IS:10500:2012	TEST METHOD
Chemical Parameters				
1	Odour	--	Agreeable	IS3025(P-5)83Re.02
2	Colour	Hazen	Max 5	IS3025(P-4)83Re.02
3	Taste	--	Agreeable	IS3025(P-8)84Re.02
4	pH Value	--	6.5 to 8.5	IS3025(P-11)83Re.02
5	Turbidity	NTU	Max 1	APHA 2130-B
6	Total Dissolved Solids	mg/L	Max 500	IS3025(P16)84Re.02
7	Total Hardness as CaCO ₃	mg/L	Max 200	IS3025(P-21) 84EDTARe.02
8	Alkalinity	mg/L	Max 200	IS3025(P23)86Re.03
9	Residual Free Chlorine	mg/L	Min 0.2	APHA(22 nd Edi)4500 Cl
10	Chloride as Cl	mg/L	Max 250	IS3025(P-32) 88Re.99Argentometric method
11	Calcium as Ca	mg/L	Max 75	IS3025(P40)91Re.03EDTA
12	Magnesium as Mg	mg/L	Max 30	IS3025(P46)94Re.99EDTA
13	Mineral Oil	mg/L	Max 0.5	APHA(22 nd Edi)5520D
14	Phenolic compounds as C ₆ H ₅ OH	mg/L	Max 0.001	IS3025(P43)92Re.03
15	Hexavalent Chromium as Cr ⁺⁶	mg/L	Max 0.05	APHA(22 nd Edi)3500CrB
16	Cadmium as Cd	mg/L	Max 0.003	APHA(22 nd Edi)3500Cd
17	Copper as Cu	mg/L	Max 0.05	IS3025(P42)92Re.03
18	Zinc as Zn	mg/L	Max 5	APHA(22 nd Edi)3500 Zn
19	Iron as Fe	mg/L	Max 0.3	APHA(22 nd Edi)3500Fe B
20	Lead as Pb	mg/L	Max 0.01	APHA(22 nd Edi)3500PbD
21	Mercury as Hg	mg/L	Max 0.001	IS3025(P48)94
22	Selenium as Se	mg/L	Max 0.01	APHA(22 nd Edi)3500 Se
23	Aluminum as Al	mg/L	Max 0.03	APHA(22 nd Edi)3500 Al
24	Manganese as Mn	mg/L	Max 0.1	APHA(22 nd Edi)3500 Mn B
25	Arsenic as As	mg/L	Max 0.01	IS3025(P-37)88
26	Sulphate as SO ₄	mg/L	Max 200	APHA(22 nd Edi)4500 SO ₄ E
27	Cyanide as CN	mg/L	Max 0.05	APHA(22 nd Edi)4500CN E
28	Boron as B	mg/L	Max 0.5	APHA(22 nd Edi)4500 B
29	Fluoride as F	mg/L	Max 1.0	APHA(22 nd Edi) 4500 F D SPANDS
30	Nitrate Nitrogen as NO ₃	mg/L	Max 45	IS3025(P34)88
31	Anionic Detergents as MBAS	mg/L	Max 0.2	14542/Methylene Blue extraction method
32	Pesticides	mg/L	Absent	GC MS
33	Coliform	/100 ml	Absent	APHA (22 nd Edi. Method) 9221-D
34	E-Coli	/100 ml	Absent	IS: 1622:1981 Edi. 2.4 (2003-05)


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TABLE NO.10 RESULTS OF DRINKING WATER [APRIL 2018 TO SEPTEMBER 2018]**RESULTS OF DRINKING WATER [SEPTEMBER -2018]**

SR. NO.	TEST PARAMETERS	UNIT	Sep-18
			13/09/2018
			Staff Canteen
Chemical Parameters			
1	Odour	--	Agreeable
2	Colour	Hazen	< 1.0
3	Taste	--	Agreeable
4	pH Value	--	7.68
5	Turbidity	NTU	0.018
6	Total Dissolved Solids	mg/L	130
7	Total Hardness as CaCO ₃	mg/L	24
8	Alkalinity	mg/L	20
9	Residual Free Chlorine	mg/L	< 0.1
10	Chloride as Cl	mg/L	52
11	Calcium as Ca	mg/L	6.0
12	Magnesium as Mg	mg/L	2.16
13	Mineral Oil	mg/L	BDL*
14	Phenolic compounds as C ₆ H ₅ OH	mg/L	BDL*
15	Chromium as Cr ⁺⁶	mg/L	BDL*
16	Cadmium as Cd	mg/L	BDL*
17	Copper as Cu	mg/L	BDL*
18	Zinc as Zn	mg/L	BDL*
19	Iron as Fe	mg/L	BDL*
20	Lead as Pb	mg/L	BDL*
21	Mercury as Hg	mg/L	BDL*
22	Selenium as Se	mg/L	BDL*
23	Aluminum as Al	mg/L	BDL*
24	Manganese as Mn	mg/L	BDL*
25	Arsenic as As	mg/L	BDL*
26	Sulphate as SO ₄	mg/L	16.2
27	Cyanide as CN	mg/L	BDL*
28	Boron as B	mg/L	BDL*
29	Fluoride as F	mg/L	BDL*
30	Nitrate Nitrogen as NO ₃	mg/L	BDL*
31	Anionic Detergents as MBAS	mg/L	BDL*
32	Pesticides	mg/L	BDL*
Microbiological Parameters			
33	Coliform	/100 ml	Absent
34	E-Coli	/100 ml	Absent

BDL*: Below Detection Limit



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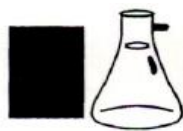


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RESULTS OF DRINKING WATER [ESSENTIAL PARAMETER IN APRIL 2018 TO SEPTEMBER 2018]

SR. NO.	TEST PARAMETERS	UNIT	May 2018	July 2018
			21/05/2018	24/07/2018
			Water Unit-1 at Coal Yard	Staff Canteen
1	Odour	--	Agreeable	Agreeable
2	Colour	Hazen	1.0	< 1.0
3	Taste	--	Agreeable	Agreeable
4	pH	--	8.34	8.32
5	Turbidity	NTU	0.09	0.09
6	Total Dissolved Solids	mg/L	410	112
7	Total Hardness as CaCO ₃	mg/L	194	12
8	Residual Free Chlorine	mg/L	0.4	< 0.1
9	Chloride as Cl	mg/L	96	51.8
10	Fluoride as F	mg/L	0.65	BDL*
11	Iron as Fe	mg/L	0.23	BDL*
12	Coliform	/100 ml	Absent	Absent
13	E-Coli	/100 ml	Absent	Absent


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TABLE NO.11 RESULTS OF SEWAGE WATER [APRIL 2018 TO SEPTEMBER 2018]

SR. NO.	PARAMETERS	UNIT	STP OUTLET PERMISSIBLE LIMIT [#]	TEST METHOD
1	pH	--	Not Specified	IS: 3025 (Part – 11) (Electrometric Method)
2	Total Suspended Solids	mg/L	30	IS3025(P17)
3	Residual Chlorine	mg/L	0.5 Max.	APHA(22 nd Edition 2012):4500 Cl G-DPD Colorimetric method
4	BOD (3 Days @ 27 oC)	mg/L	20	IS 3025 (Part – 44)
5	COD	mg/L	Not Specified	APHA(22 nd Edi) 5520-D Open Reflux
6	Oil & Grease	mg/L	Not Specified	APHA (22 nd Edition 2012) 5520 B
7	Fecal Coliform	MPN/100 ml	Not Specified	APHA(22 nd Edi)9221 C & E

RESULTS OF SEWAGE WATER ANALYSIS

DATE OF SAMPLING			10/04/2018	
SR. NO.	PARAMETERS	UNIT	STP Inlet	STP Outlet
1	pH	--	7.14	7.45
2	Total Suspended Solids	mg/L	240	26
3	Residual Chlorine	mg/L	< 0.1	0.3
4	BOD (3 Days @ 27 °C)	mg/L	40	18
5	COD	mg/L	260	54
6	Oil & Grease	mg/L	6.2	1.4
7	Fecal Coliform	MPN/100 ml	--	--

DATE OF SAMPLING			14/05/2018	
SR. NO.	PARAMETERS	UNIT	STP Inlet	STP Outlet
1	pH	--	7.02	7.15
2	Total Suspended Solids	mg/L	190	28
3	Residual Chlorine	mg/L	< 0.1	0.4
4	BOD (3 Days @ 27 °C)	mg/L	36	15
5	COD	mg/L	210	44
6	Oil & Grease	mg/L	10.2	9.8
7	Fecal Coliform	MPN/100 ml	>1600	920

DATE OF SAMPLING			28/06/2018	
SR. NO.	PARAMETERS	UNIT	STP Inlet	STP Outlet
1	pH	--	7.09	7.22
2	Total Suspended Solids	mg/L	184	24
3	Residual Chlorine	mg/L	< 0.1	0.3
4	BOD (3 Days @ 27 °C)	mg/L	45	12
5	COD	mg/L	218	38
6	Oil & Grease	mg/L	8.4	6.2
7	Fecal Coliform	MPN/100 ml	>1600	350


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DATE OF SAMPLING			24/07/2018	
Sr. No.	PARAMETERS	UNIT	STP Inlet	STP Outlet
1	pH	--	7.09	7.22
2	Total Suspended Solids	mg/L	184	24
3	Residual Chlorine	mg/L	< 0.1	0.3
4	BOD (3 Days @ 27 °C)	mg/L	45	12
5	COD	mg/L	218	38
6	Oil & Grease	mg/L	8.4	6.2
7	Fecal Coliform	MPN/100 ml	>1600	350

DATE OF SAMPLING			22/08/2018	
Sr. No.	PARAMETERS	UNIT	STP Inlet	STP Outlet
1	pH	--	7.18	7.26
2	Total Suspended Solids	mg/L	170	20
3	Residual Chlorine	mg/L	< 0.1	0.4
4	BOD (3 Days @ 27 °C)	mg/L	56	14
5	COD	mg/L	230	52
6	Oil & Grease	mg/L	7.2	5.6
7	Fecal Coliform	MPN/100 ml	920	280

DATE OF SAMPLING			13/09/2018	
Sr. No.	PARAMETERS	UNIT	STP Inlet	STP Outlet
1	pH	--	7.12	7.31
2	Total Suspended Solids	mg/L	182	24
3	Residual Chlorine	mg/L	< 0.1	0.3
4	BOD (3 Days @ 27 °C)	mg/L	50	18
5	COD	mg/L	242	40
6	Oil & Grease	mg/L	7.8	5.2
7	Fecal Coliform	MPN/100 ml	1600	350

Sr. No.	PARAMETERS	UNIT	STP Inlet		STP Outlet	
			Min.	Max.	Min.	Max.
1	pH	--	7.02	7.18	7.15	7.45
2	Total Suspended Solids	mg/L	170	240	20	28
3	Residual Chlorine	mg/L	--	--	0.3	0.4
4	BOD (3 Days @ 27 °C)	mg/L	36	56	12	18
5	COD	mg/L	210	260	38	54
6	Oil & Grease	mg/L	6.2	10.2	1.4	9.8
7	Fecal Coliform	MPN/100 ml	920	1600	280	920


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TABLE NO.12 RESULTS OF STACK MONITORING
PERMISSIBLE LIMIT FOR STACK MONITORING

SR. NO.	TEST PARAMETER	UNIT	GPCB LIMIT**	TEST/SAMPLING METHOD
1	Particulate Matter	mg/Nm ³	150	IS:11255 (Part-1) : 1985
2	Sulfur Dioxide as SO ₂	ppm	100	IS:11255 (Part-2) : 1985
3	Oxides of Nitrogen as NO _x	ppm	50	IS: 11255 (Part-7) : 2005

**Details provided by customer.

RESULTS OF STACK MONITORING

Date of Monitoring			28/06/2018		
Sampling Location			SS-1 DG Set -1 (125 KVA)	SS-2 DG Set -2 (125 KVA)	SS-3 DG Set -3 (125 KVA)
SR. NO.	TEST PARAMETER	UNIT	June-18		
1	Particulate Matter	mg/Nm ³	32.73	26.29	25.58
2	Sulfur Dioxide as SO ₂	ppm	8.53	7.51	5.76
3	Oxides of Nitrogen as NO _x	ppm	38.57	33.27	35.76


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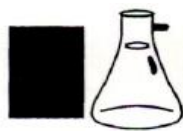


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TABLE NO. 13 RESULTS OF DUMP POND DISCHARGE

SR. NO.	PARAMETERS	UNIT	TEST METHOD
1	pH	--	IS3025(P11)83Re.02
2	Total Dissolved Solids	mg/L	IS3025(P16)84Re.02
3	Total Suspended Solids	mg/L	IS3025(P17)84Re.02
4	Turbidity	NTU	APHA 2130-B
5	BOD (3 Days @ 27 oC)	mg/L	IS 3025 (P44)1993 Re.03Edition2.1
6	Dissolved Oxygen	mg/L	IS3025(P38)89Re.99
7	COD	mg/L	APHA(22 nd Edi) 5520-D Open Reflux
8	Salinity	ppt	APHA 2550 B
9	Oil & Grease	mg/L	APHA(22 nd Edi)5520D
10	Total Hardness as CaCO ₃	mg/L	IS3025(P-21) 84EDTARe.02
11	Fluoride as F	mg/L	APHA(22 nd Edi) 4500 F D SPANDS
12	Chloride as Cl	mg/L	IS3025(P-32) 88Re.99Argentometric method
13	Zinc as Zn	mg/L	AAS- APHA (22 nd Edition) 3111 B
14	Cadmium as Cd	mg/L	AAS- APHA (22 nd Edition) 3111 B
15	Lead as Pb	mg/L	AAS- APHA (22 nd Edition) 3111 B
16	Mercury as Hg	mg/L	AAS-APHA (22 nd Edition) 3112 B

H. T. Shah
Lab Manager**Dr. Arun Bajpai**
Lab Manager (Q)



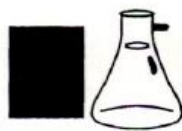
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RESULTS OF DUMP POND DISCHARGE

Location Name			Dump Pond Near TT4	
Date			12/04/2018	24/07/2018
SR. NO.	TEST PARAMETER	UNIT	April-18	July-18
1	pH	--	7.8	7.68
2	Total Dissolved Solids	mg/L	280	298
3	Total Suspended Solids	mg/L	19	14
4	Turbidity	NTU	14.2	10.8
5	BOD (3 Days @ 27 oC)	mg/L	75	68
6	Dissolved Oxygen	mg/L	5.0	5.4
7	COD	mg/L	310	280
8	Salinity	ppt	0.08	0.04
9	Oil & Grease	mg/L	BDL*	BDL*
10	Total Hardness as CaCO ₃	mg/L	124	116
11	Fluoride as F	mg/L	0.5	0.2
12	Chloride as Cl	mg/L	48	56
13	Zinc as Zn	mg/L	0.044	0.032
14	Cadmium as Cd	mg/L	BDL*	BDL*
15	Lead as Pb	mg/L	0.016	0.006
16	Mercury as Hg	mg/L	BDL*	BDL*

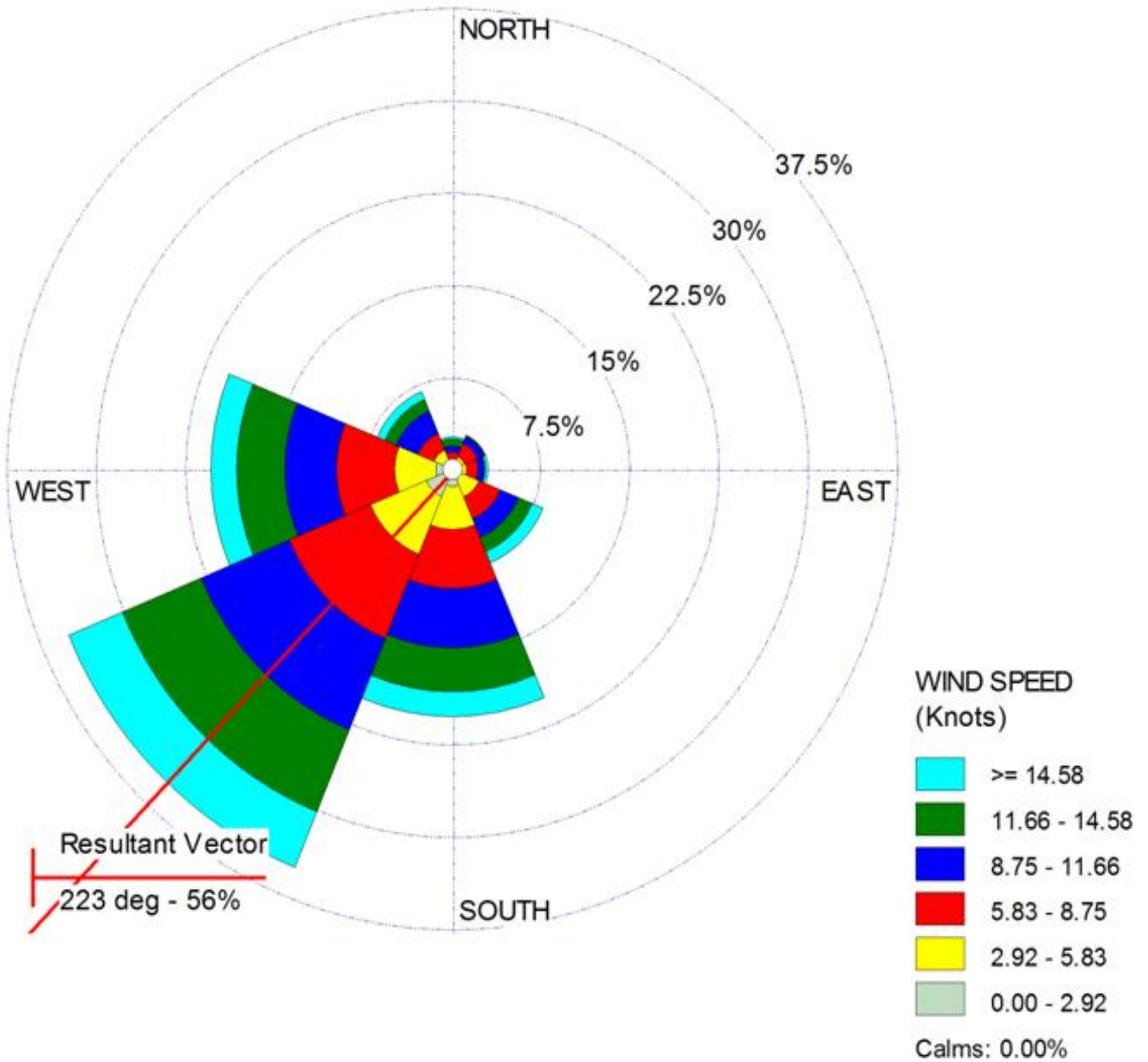
BDL*: Below Detection Limit, Minimum Detection Limit, Cadmium as Cd: 0.001 mg/L, Mercury as Hg: 0.00025 mg/L, Oil & Grease: 2.0 mg/L.


H. T. Shah
Lab Manager**Dr. Arun Bajpai**
Lab Manager (Q)



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FIGURE NO.3 WIND ROSE DIAGRAM [APRIL 2018 TO SEPTEMBER 2018]




H. T. Shah
Lab Manager




Dr. Arun Bajpai
Lab Manager (Q)



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Annexure – 5

(GREEN ZONE DETAILS OF TUNA PORT (AKBTPL) UP TO
Sep'2018.)

Annexure – 5 (GREEN ZONE DETAILS OF TUNA PORT (AKBTPL) UP TO Sep'2018.)

CURRENT GREEN ZONE DETAILS OF TUNA PORT (AKBTPL) UP TO Sep'2018.						
Sr. No.	Location	Area (Ha)	Tree (No.)	Shrubs (SQM)	Green Carpet (SQM)	Palm (No.)
1	Staff Canteen, POB & SS1 Building	2.17	4341	1403	8569	234
2	Green Belt area & Pump House	6.66	15294	198	0	0
3	Approach Road Zero Point to Main Gate	0.40	0	0	0	1006
4	SS2 Building & Jetty Road Area.	2.57	5776	875	0	0
5	Internal Road & Railway Building	2.30	10571	130	61	250
Total		14.10	35982	2606	8630	1490



Near Adani canteen



Around POB office



Near SS-01 Building



Approach Road- Zero Point to Main Gate



Near SS-02 Building



Near Railway Building



Adani Kandla Bulk Terminal Pvt. Ltd.

From : April 2018
To : September 2018

Annexure – 6

(Details of CSR activities carried out by Adani Foundation.)

Annexure – 6: Details of CSR activities carried out by Adani Foundation.

Sr. no.	Village	CSR activity done	Expenses (INR in Lakh)
1		Rural Infrastructure Development	
	Wandi	Drinking water pipeline work in progress	9.22
2		Health Projects	
	Rampar, Tuna, Wandi	Rural Clinic	0.18
	Rampar, Tuna, Wandi	Senior Citizen	0.35
	Rampar, Wandi	Medical Support	0.10
3		SLD (sustainable livelihood) Projects	
	Rampar	Fodder Support	13.00
	Tuna	Fodder Support	23.00
	Rampar	IG (Income Generation) & Handicap Support	0.53
	Tuna		0.37
4		Education Projects	
	Tuna	Various competition	0.25
5		Fisherman Projects	
	Virabandar	Potable Water	9.84
	Ghavarvaro Banadar	Potable Water	5.84
Total			62.68

Rural Infrastructure Development



Fodder shed in village-Rampar village



Study room- Rampar village

Rural Infrastructure Development



Village dispensary- Wandi village



Drinking water tank -Primary School Rampar

Health Projects

