APSEZ/EnvCell/2018-19/054 **Date:** 23.11.2018

To

Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (WZ), E-5, Kendriya
Paryavaran Bhawan, Arera Colony,
Link Road No. – 3, Bhopal – 462 016.
E-mail: rowz.bpl-mef@nic.in

Sub : Half yearly Compliance report of Environment Clearance for the project namely "Development of Multipurpose berth (Terminal- 2) at Mundra Port, Dist. Kutch"

Ref : Environment clearance under CRZ notification granted to M/s Adani Ports & SEZ Limited vide letter dated 5th February, 2007 bearing no. 11-84/2006- IA.III

Dear Sir,

Please refer to the above cited reference for the said subject matter. In connection to the same, it is to state that copy of the compliance report for the Environmental and CRZ Clearance for the period of April – 2018 to September – 2018 is enclosed here for your records. The stated information is also provided in form of a CD (soft copy).

Thank you,
Yours Faithfully,
For, **M/s Adani Ports and Special Economic Zone Limited**

Avinash Rai
Chief Executive Officer
Mundra & Tuna Port

Encl: As above
Copy to:

1) The Director (IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003
2) Zonal Officer, Regional Office, CPCB – Western Region, Parivesh Bhawan, Opp. VMC Ward Office No. 10, Subhanpura, Vadodara – 390 023
3) Member Secretary, GPCB – Head Office, Paryavaran Bhavan, Sector 10 A, Gandhi Nagar – 382 010
4) Deputy Secretary, Forests & Environment Department, Block – 14, 8th floor, Sachivalaya, Gandhi Nagar – 382 010
5) Regional Officer, Regional Office GPCB (Kutch-East), Gandhidham, 370201

Adani Ports and Special Economic Zone Ltd
Adani House,
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Mundra, Kutch 370 421
Gujarat, India

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info@adani.com
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Environmental Clearance Compliance Report

of

Multipurpose Berth (Terminal -2) at Mundra Port, Dist. Kutch, Gujarat

of

Adani Ports and SEZ Limited

Period:

April-2018 to September-2018

Index

Compliance Report of Environmental and CRZ Clearance

adani	Adani Ports and SEZ Limited	From : Apr'18 To : Sep'18
Status of the conditions stipulated in Environment Clearance		

Half yearly Compliance report of Environment and CRZ Clearance for the project namely "Development of Multipurpose berth (Terminal – 2) at Mundra Port, Dist. Kutch" issued vide MoEF letter no. 11-84/2006-IA.III dated 5th February 2007

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2018</th></tr>
<tr><td colspan="3">A. Specific Condition</td></tr>
<tr><td>(i)</td><td>All the conditions stipulated by Forests Environment Department, Government of Gujarat vide their letter no. ENV-10-2005-222-P dated 12/10/2006 should be strictly implemented.</td><td>Complied.
Point wise compliance report of CRZ recommendations issued vide letter No. ENV-10-2005-222-P dated 12/10/2006 is enclosed as Annexure – A.</td></tr>
<tr><td>(ii)</td><td>No Objection Certificate from Gujarat State Pollution Control Board should be obtained before initiating the project.</td><td>Complied.
APSEZL had obtained No Objection Certificate vide GPCB letter No. GPCB/Unit-1/FT-139/11944 dated 27th April 2005.

Consent to Establish (CtE) and Consent to Operate (CtO) is obtained and renewed/amended from time to time as per the progress of the project activity. The present in-force CTE & CtO summaries are as below.
<table>
<tr><th>Permission</th><th>Project</th><th>Ref. No. / Order No.</th><th>Valid till</th></tr>
<tr><td>CtO – Renewal</td><td>Mundra Port Terminal</td><td>AWH-83561</td><td>20.11.2021</td></tr>
<tr><td>CtO - Amendment</td><td>Mundra Port Terminal</td><td>WH-88317</td><td>20.11.2021</td></tr>
</table>
Copy of the updated/amended CC&A was submitted as part of compliance report for the duration of Apr'17 to Sep'17.</td></tr>
<tr><td>(iii)</td><td>The proposed project should not handle any hazardous goods and cargo.</td><td>Complied.
During the compliance period, no hazardous cargo / goods are handled at the Multi-Purpose Berth (Terminal – 2).</td></tr>
<tr><td>(iv)</td><td>Quarantine condition should be provided for keeping the hazardous containers if they are accidentally</td><td>Complied.
During the compliance period, no hazardous cargo / goods are handled at the Multi-Purpose Berth (Terminal – 2).</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	received.	
(v)	Green belt area should be developed along the project and budget earmarked.	Complied. During the course of development of the project, green belt was developed in 4.3 ha of land. Approx. 5988 trees were planted within the port premises. In addition to this, various green belt development and mangrove plantation activities are being carried out on regular basis by our horticulture department. Total expenditures of the horticulture dept. for Financial Year 2018-19 (Till Sep'18) was 2997 lakh. To enhance the marine biodiversity, till date APSEZ has carried out mangrove afforestation in more than 2800 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 782 lakh. So, far APSEZ has developed more than 450 ha. area as greenbelt with plantation of more than 8.0 Lacs saplings within the APSEZ area. Details on mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as **Annexure – 1**.
(vi)	A disaster management plan covering emergency evacuation mechanisms etc. to deal with natural disaster event should be prepared and furnished to the ministry.	Complied. Disaster Management plan is in place and implemented to deal with natural disasters such as cyclone, earthquake, flood/heavy rain and tsunami. Updated DMP was submitted to the MoEF & CC along with half yearly compliance report for the period from Apr – 2016 to Sep – 2016 and there is no further change in that.
(vii)	The company must take up and earmark adequate funds for the socio-economic development and for welfare measures in the area including drinking water supply, vocational training, fishery	Complied. Budget for CSR Activity for the FY 2018-19 is to the tune of INR 1666 lakh. Out of which, Approx. INR 651 lakh are spent during the year (Till Sep'18). RO Plants are provided at Samaghogha, Siracha village & Vallabh Vidyalaya at Mundra village. APSEZ is actively working with local community around the project area and provides required support for their livelihood and other concerns through the CSR arm Adani Foundation. Brief information about activities in the main five persuasions are mentioned below.

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2018</th></tr>
<tr><td></td><td>related development programmes (like cold storages)</td><td>
<table>
<tr><th>Area</th><th>Activity</th></tr>
<tr><td>Community Health</td><td>• The Adani Foundation runs two mobile health care units. Main objective of Mobile Van is to reduce travel time, hardships and expenses. Two mobile health care units cover 34 villages and 05 fishermen settlements. Around 113 types of general and lifesaving medicines are available in these units. Total patient was treated under this scheme during the year 2018-19 (Till Sep'18): 8972 Nos.
• During the year 2018-19 (Till Sep'18), total 5137 transactions were done by 8518 card holders of 66 villages of Mundra Taluka and they received cash less medical services under this project.
• Total 10485 OPDs were given medical treatment in various villages through rural dispensaries.
• During this year, anthropometry study done for 2020 children. Total 6 children became free of malnutrition due to efforts under "Suposhan" Project. Additionally, 6288 FGD were conducted during this year.
• Total 8770 haemoglobin screenings of RPA woman and adolescent girls was carried out, which helps in controlling anaemia in women and indirectly malnutrition.
• During the year 2018-19, 11 Specialty camps were organized and 1636 Patients were benefitted.</td></tr>
<tr><td>Sustainable Livelihood – Fisher folk</td><td>• Average 118 KL of water was supplied to 983 households from different settlements on a daily basis under Machhimar Shudhh Jal Yojana.
• Adani Foundation constructed four Balwadis for kids between the age group of 2.5 years to 5 years at different settlements under Vidya Deep Yojana.
• Participatory scholarship support for fisherman children studying in SMJ high school Luni and to above 12th standards Students. 80 percentage support given by Adani foundation and 20 percentage support by parents!
• RTG Crane Operator: 03 Fisherman Youth
• Dori Work Training: 39 Women
• Mangrove Plantation, moss cleaning, etc.: 5201 Man-days.
• In addition to this, employment worth of 34727 man-days has been provided till date. The Foundation has also supported Pagadiya fishermen as painting labours by providing them with employment and job in various fields.
• AF has initiated Programme for Awareness of Farmers in collaboration with KVK. The outreach is approximate 67 farmers of 5 villages.
• This year we have given 1,08,000 man fodder worth Rs. 205 Lacs approximately under fodder cultivation program.
• Project Swavlamban Launched with blessings of differently abled people of MUNDRA TALUKA and total 533 beneficiaries benefited with financial benefit of 15.0 Lacs under this scheme.</td></tr>
<tr><td>Education</td><td>• Total 174 Schools and 12350 students have</td></tr>
</table>
</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2018	
			visited Adani Port, Adani Power & Adani Willmar facilities to get an insight upon the large scale business activity carried out at each of them as a part of project **UDAAN**. • Navneet English books distribution and **Plastic free Environment awareness** event organized in all **17 schools** of Utthan by Adani foundation. • 111 Govt. primary schools in total 62 villages of Mundra Taluka, 3 villages of in Anjar taluka and two villages of Mandvi Taluka every year on an average 2550 to 2700 children gets enrolled in 1st std in Taluka For 2018-2019 total **2300** children got enrolled & Adani foundation provided the "Enrollment kit" to all new enrolee in Taluka.
		Rural Infrastructure	• Under Dignity of Drivers Project, Adani Foundation has constructed Resting Shed for Drivers entering in SEZ Premises. Total 50 beds are constructed, drinking water and sanitation plus recreational – TV Facilities. • A large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and ground recharge activities (pond deepening work for more than 15 ponds) were built leading to a significant increase in water table and higher returns to the farmers. • As a part of pre monsoon activities with ACT (Arid Communities and Technologies – NGO) under this program, we have carried out following work. But, due to negligible rainfall we are not able to find out outcome of this project. i. Borana – Artificial bore well recharge (work completed) ii. Mangara – Artificial bore well recharge (work completed) iii. Dhrub – Pond deepening work (work completed) iv. Mota Kapaya – abended bore well recharge (work completed) **Other works completed** • Civil and electrical works in HMV driver rest shed • River and pond cleaning by JCB Nanikhakhar, Zarpara and Baroi • 26 pond deepening work under SSJA in 19 villages of mundra taluka **Work in Progress** • Drainage maintenance and other misc works • Basic infra. Facility in Labour Colony • Drainage chamber and covers, wandh village • Development in common place, Navinal • Civil works in gadhvi samaj community hall, Navinal • Civil works in secondary school, Navinal • Repair of west weir work at zarpara • Construction of fisherman house, shekhadiya
		Skill Development	• Soft skill training – 284 Nos. • Technical Training – 478 Nos.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		Details of CSR activities carried out by Adani Foundation for Mundra and surrounding area is attached as **Annexure – 2**.
(viii)	The fishing activities by the fishermen living in the settlement along the creek should not be hindered and a mechanism may be evolved for the movement of fishing boats vis-a-vis shipping activities.	Complied. No commercial fisheries are prevailing in this area except Pagadia and fishermen with small boats. Unhindered access is provided to the fishing boats. During project proposal, APSEZ proposed to provide four (4) dedicated accesses at Juna Bandar, Luni, Bavdi Bandar and Zarpara for the fishermen to approach the sea for fishing activity. However, during construction as well as operation, through fishermen consultative process, APSEZ has provided seven (7) access roads. Total length of all the approach roads is approx. 23 Kms and expenditure involved is Rs. 637 Lacs. There is no hindrance to the movement of fisherman boats. Photographs showing the fisherman approach are attached as **Annexure – 3**. Communication mechanisms have been developed for the smooth movement of fishing boats vis-à-vis shipping activities. Please refer point no. vii above for further details regarding CSR activities being carried out by Adani Foundation.
(ix)	The relocation of the fishermen and local community if any, in the area should be done strictly in accordance with the norms prescribed by the State Government. The relocated communities should be provided with all facilities including health care, education, sanitation and livelihood.	Complied. The project was conceptualized in such a way that there are no fishermen or local community settlements in the project proposal. APSEZ performs a large scale socio-economic upliftment program in consultation with FOKIA (Federation of Kutch Industries Association) chaired by District Collector quarterly. APSEZL have provided necessary facilities including health care, education, sanitation, livelihood, drinking water & other infrastructural support to fisher folk community in the region. Please refer point no. vii above for further details regarding CSR activities being carried out by Adani Foundation.
(x)	The project proponent should not undertake any destruction of	Complied. Construction phase is already completed and the project is in operation phase. All developments are carried out as per

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	mangroves during construction and operation of the project.	permissions granted. Conservation of mangroves: • In and around APSEZ, approx. 1800 ha. mangrove area was identified by NIO in an EIA report prepared the year 1998. • Out of this 1800 ha area, 1254 ha area was further demarcated as potential mangrove conservation by NIO in the year 2008 (as part of the EIA report of WFDP). • It may be noted that the entire area of 1254 ha is not covered with mangroves. • Entire area is being conserved and there is no disturbance to the mangroves in this area. Measures such as restricted entry and regular surveillance have resulted in overall growth of mangroves within this area. • As per MoEF&CC directive, APSEZ entrusted NCSCM to demarcate mangroves in and around APSEZ area. As per their study, presently, mangrove cover in and around APSEZ is over 2340 ha. The analysis of the comparison between 2011 and 2016-17 has shown an overall growth of 246 ha. NCSCM final report on comprehensive and integrated plan for preservation and conservation of mangroves and associated creeks in and around has been submitted to the concerned authorities i.e. MoEF&CC, New Delhi and GCZMA, Gandhinagar vide our letter dated 04.06.2018 and acknowledge copy of the same is attached here as **Annexure – 4**.
(xi)	Sewage arising in the port area should be disposed off through septic tank – soak pit system or should be treated along with the industrial effluent to conform to the standards stipulated by Gujarat Pollution Control Board and should be utilized / recycled for gardening, plantation and irrigation.	Complied. Sewage generated from port premises is being treated in designated treatment plants and treated sewage is used for horticulture purpose. **Location** / **Capacity** / **Quantity of Wastewater** / **Type of ETP / STP** Liquid Terminal / 265 KLD / 75 KLD / Activated Sludge Third party analysis of the treated water is being carried out twice 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. **Parameter** / **Unit** / **Max** / **Min** / **Perm. Limit$** pH / -- / 7.58 / 6.64 / 6.5 to 8.5 TSS / mg/L / 65 / 34 / 100 TDS / mg/L / 1502 / 1060 / 2100

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		<table><tr><td>COD</td><td>mg/L</td><td>92</td><td>77</td><td>100</td></tr><tr><td>BOD (3 Days @ 27°C)</td><td>mg/L</td><td>28</td><td>20</td><td>30</td></tr></table> $ as per CC&A granted by GPCB Please refer **Annexure – 2** for detailed analysis reports. Approx. INR 12.5 Lakh is spent for all environmental monitoring activities during the FY 2018-19 (Till Sep'18).
(xii)	Project proponent should prepare and regularly update the disaster management plan from time to time.	Complied. Disaster Management plan to deal with natural disasters such as cyclone, earthquake, flood/heavy rain and tsunami is in place and implemented.. Copy of the same was submitted to MoEF & CC along with half yearly compliance report for the period from Apr – 2016 to Sep – 2016.
(xiii)	There should be no withdrawal of ground water in CRZ area, for this project. The proponent should ensure that as a result of the proposed constructions, ingress of saline water into ground water does not take place. Piezometers should be installed for regular monitoring for this purpose at appropriate locations on the project site.	Complied. There is no withdrawal of ground water in CRZ area, for this project. Entire water requirement is sourced from Narmada water and desalination plant of APSEZ. To monitor the ground water quality, bore wells are provided at various location in the port and SEZ areas. Third party analysis of the ground water is being carried out twice a year 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. Monitoring Reports are attached as **Annexure – 5**. **No of sampling locations: 5** <table><tr><th>Parameter</th><th>Unit</th><th>Minimum</th><th>Maximum</th></tr><tr><td>pH</td><td>-</td><td>7.46</td><td>7.94</td></tr><tr><td>Salinity</td><td>ppt</td><td>0.69</td><td>11</td></tr><tr><td>Oil & Grease</td><td>mg/L</td><td>0.8</td><td>3.1</td></tr><tr><td>Hydrocarbon</td><td>mg/L</td><td>0</td><td>0</td></tr><tr><td>Lead as Pb</td><td>mg/L</td><td>0.018</td><td>0.24</td></tr><tr><td>Arsenic as As</td><td>mg/L</td><td>0</td><td>0</td></tr><tr><td>Nickel as Ni</td><td>mg/L</td><td>0.12</td><td>0.12</td></tr><tr><td>Total Cromium as Cr</td><td>mg/L</td><td>0.008</td><td>0.08</td></tr><tr><td>Cadmium as Cd</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr><tr><td>Mercury as Hg</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr><tr><td>Zinc as Zn</td><td>mg/L</td><td>0.018</td><td>0.46</td></tr><tr><td>Copper as Cu</td><td>mg/L</td><td>BDL*</td><td>0.07</td></tr><tr><td>Iron as Fe</td><td>mg/L</td><td>0.098</td><td>0.95</td></tr><tr><td>Insecticides/Pesticides</td><td>--</td><td>Absent</td><td>Absent</td></tr></table>

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		<table><tr><td>Depth of Water Level from GL</td><td>meter</td><td>2</td><td>3</td></tr></table> *BDL = Below Detectable Limit
(xiv)	The project should not be commissioned till the requisite water supply and electricity to the project are provided by PWD/ Electricity Department.	Complied. Construction activity is already completed and the project is in operation phase. Necessary agreement for supply of Electricity is done through MPSEZ Utilities Pvt. Ltd. (MUPL). Copies of agreements were submitted to MoEF&CC along with half yearly compliance report for the period from Apr – 2016 to Sep – 2016.
(xv)	Specific arrangements for rainwater harvesting should be made in the project design and the rain water so harvested should be optimally utilized. Details in this regard should be furnished to this Ministry's Regional Office at Bhopal within 3 months.	Complied. Groundwater recharge cannot be done at the project site since the entire project is in the intertidal / sub tidal areas. Rain water within project area is managed through storm water drainage. During current year approx. 24 KL of rain water from storm water collected and utilized on land for gardening / plantation purpose. We have also connected roof top rain water duct of operational buildings with u/g water tank for utilization of collected rain water for gardening / horticulture purpose. However, APSEZ has carried out rainwater harvesting activities in the nearby villages for benefit of the locals. Following measures are taken for the same during the year 2011 – 13 and the same have benefited to the local farmers. 1. Pond deepening activities at villages 2. 18 check dams were constructed under the 'Sardar Patel Sahbhagi Jalsanchay Yojna' Total cost of these efforts was approx. INR 320 lakh. Under Sujlam Suflam project Adani Foundation has successfully completed pond deepening work in Mundra & Abdasa Taluka in record time. 26 pond deepening in Mundra and 7 pond deepening in Abdasa accomplished with all parameters calculated. In Mundra taluka 51723 cum excavation work has been done which increase storage capacity of 51 ML. In Naliya taluka 14550 cum excavation work has been done which increase storage capacity of 15 ML. Total 66 ML storage capacity will be increased. **Participatory Ground Water Management:** Adani foundation has started participatory ground water

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		management project. The objective of the project was to reduce the salinity ingress in and around the coastal regions of Mundra, Kutchh and mitigate the ill-effects of this manmade problem to improve the livelihoods of the rural people. The Project will help to get water table high, also it will help in agricultural activities. As a part of pre monsoon activities with ACT (Arid Communities and Technologies – NGO) under this program, we have carried out following work. But, due to negligible rainfall we are not able to find out outcome of this project. i. Borana – Artificial bore well recharge (work completed) ii. Mangara – Artificial bore well recharge (work completed) iii. Dhrub – Pond deepening work (work completed) iv. Mota Kapaya – abended bore well recharge (work completed) Please refer **Annexure – 2** of detailed CSR activity report for more details upon participatory ground water management initiatives and ground water recharging activities in surrounding villages.
(xvi)	The facilities to be constructed in the CRZ area as part of this project should be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently.	Complied. Construction activities are completed in accordance with the prevailing laws.
(xvii)	No product other than those permissible in the coastal Regulation Zone Notification, 1991 should be stored in the Coastal Regulation Zone area.	Complied. APSEZ store only those product / cargo within CRZ area, which are permissible as per Coastal Regulation Zone Notification, 1991.
B. General Condition		
(i)	Construction of the proposed structures should be undertaken	Complied. All construction activities are carried out confirming to the existing rules and regulation and as per the CRZ notification.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	meticulously confirming to the existing Central / local rules and regulations including Coastal Regulation Zone Notification 1991 and its amendments. All the construction designs / drawings relating to the proposed construction activities must have approvals of the concerned State Government Department / Agencies.	Required details on No Objection Certificate from Gujarat State Pollution Control Board and applicable consent are as provided in Specific Condition No. 2 above.
(ii)	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation, etc. should 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. Construction activity is completed and the project is in operation phase. No construction camps were located in CRZ area. Most workers came from nearby villages however, for others; construction camps were located outside CRZ area. All necessary infrastructure and facilities like mobile toilets, safe drinking water, medical health care etc. were provided.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
(iii)	The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper waste water treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise levels 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 Forest under The Environment Protection Act, 1986, whichever are more stringent.	Complied. <u>Liquid Effluent & Sewage</u> - It is being treated at ETP/STP plants outside the CRZ area, treated water from ETP/STP is being used for horticultural purposes. Please refer point no xi of the specific conditions above for further details. All attributes of environment viz. air; water; soil and noise are being regularly analyzed by NABL and MoEF&CC accredited agency M/s Pollucon Laboratory Pvt. Ltd. Please refer **Annexure – 5** for detailed analysis report. **Waste Management** – APSEZ has adopted 5R concept for environmentally sound management of different types of solid & liquid wastes. Please refer below details about management of each type of waste. <u>Municipal Solid Waste</u>: A well-established system for segregation of dry & wet waste is in place. All wet waste (Organic waste) is being segregated & utilized for compost manufacturing. The compost is further used by in house horticulture team for greenbelt development. Whereas dry recyclable waste is being sorted in various categories. Presently manual sorting is being done for sorting of different types of solid waste. Segregated recyclable materials such as Paper, Plastic, Cardboard, PET Bottles, Glass etc. are then sent to respective recycling units, whereas remaining non-recyclable waste is bailed and sent to cement plant (M/s. Sanghi Industries Ltd.) for Co-processing as RDF (Refused Derived Fuel). <u>Hazardous Waste</u>: • E – Waste & Used Batteries are being sold to GPCB registered recyclers namely M/s. e-Processing House. • Solid Hazardous Waste is being disposed through common facility i.e. M/s. Recycling Solutions Pvt. Ltd., Panoli and/or co-processing at Sanghi Industries Ltd., Kutch. Used/Waste Oil is being sold to GPCB authorized recyclers / re-processors namely M/s. Western India Petrochem Industry, Bhavnagar. • Downgrade chemicals generated from cleaning of storage tanks / pipelines are being sold to authorized solvent recovery facilities namely M/s. Acquire Chemicals, Ankleshwar however during the compliance period, there was no disposal of downgrade chemicals. • Slop Oil received from vessels is treated to separate water
(iv)	The proponents should 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	

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2018</th></tr>
<tr><td></td><td>properly maintained and made available for inspection to the concerned state /central officials during their visits.</td><td>and oil particles in Oil Water Separator system. Separated oil from the same is being sold to authorized recycler / reprocessor namely M/s. Western India Petrochem Industry, Bhavnagar and water is sent to ETP for further treatment. However during the compliance period, there was no disposal of Slope Oil.

Dates of validity of all the vendors and copy of agreement are attached as Annexure – 6 Necessary approvals from GPCB for disposal of hazardous wastes are obtained.

The following table summarizes the waste management practice (for Apr'18 to Sep'18) for different types of wastes at APSEZ:
<table>
<tr><th>Waste</th><th>Quantity in MT</th><th>Disposal method</th></tr>
<tr><td colspan="3">Hazardous Waste</td></tr>
<tr><td>Pig Waste</td><td>3.66</td><td>Co-processing at cement industries</td></tr>
<tr><td>Tank Bottom Sludge</td><td>9.38</td><td>Co-processing at cement industries</td></tr>
<tr><td>Oily Cotton waste</td><td>72.22</td><td>Co-processing at Cement Industries</td></tr>
<tr><td>Used / Spent Oil</td><td>83.03</td><td>Sell to registered recycler</td></tr>
<tr><td>Downgrade chemicals</td><td>4.7</td><td>Sell to registered recycler</td></tr>
<tr><td>Discarded Drums & Containers</td><td>11.07</td><td>Sell to registered recycler</td></tr>
<tr><td>Oil contaminated filter</td><td>0.7</td><td>Sell to registered recycler</td></tr>
<tr><td colspan="3">Municipal Solid Waste</td></tr>
<tr><td>Recyclables</td><td>82.42</td><td>After recovery sent for recycling</td></tr>
<tr><td>Refuse Derived Fuel</td><td>108</td><td>Co-processing at Cement Industries</td></tr>
<tr><td>Wet Waste (food waste+ Organic waste)</td><td>490.56</td><td>Converted to Manure for Horticulture use</td></tr>
</table></td></tr>
<tr><td>(v)</td><td>In order to carry out the environmental monitoring during the operational phase of the project, the project authorities should provide an environmental laboratory well</td><td>Complied.
Ambient Air Quality (twice in a week) and Noise (once in a month) monitoring 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.
Total Sampling Locations: 04 Nos.
<table>
<tr><th>Parameter</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit$</th></tr>
<tr><td>PM_{10}</td><td>$\mu g/m^3$</td><td>95.31</td><td>42.70</td><td>100</td></tr>
</table></td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters.	<table><tr><td>$PM_{2.5}$</td><td>µg/m^3</td><td>55.67</td><td>16.35</td><td>60</td></tr><tr><td>SO_2</td><td>µg/m^3</td><td>26.58</td><td>5.2</td><td>80</td></tr><tr><td>NO_2</td><td>µg/m^3</td><td>44.64</td><td>16.27</td><td>80</td></tr><tr><td>**Noise**</td><td>**Unit**</td><td>**Max**</td><td>**Min**</td><td>**Perm. Limit**</td></tr><tr><td>Day Time</td><td>dB(A)</td><td>74.1</td><td>56.1</td><td>75</td></tr><tr><td>Night Time</td><td>dB(A)</td><td>69.6</td><td>57.7</td><td>70</td></tr></table> $ as per NAAQ standards, 2009 Please refer **Annexure – 5** for detailed analysis reports. M/s. Pollucon Laboratories Pvt. Ltd. has an environmental laboratory well equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters. Approx. INR 12.5 Lakh is spent for all environmental monitoring activities during the F.Y. 2018-19 (Till Sep'18).
(vi)	The sand dunes and mangroves, if any, on the site should not be disturbed in any way.	Complied. There are no sand dunes within the project site. Nearby conservation area of mangroves is protected & its regular monitoring is being done through Gujarat Institute of Desert Ecology (GUIDE). Please refer Condition No. x of specific conditions for further details.
(vii)	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.	Not applicable at present
(viii)	The Gujarat Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industries center and Collector's	Not Applicable This condition does not belong to project proponent.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	Office / Tehsildar's Office for 30 days.	
(ix)	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this Ministry's Regional Office at Bhopal and the State Pollution Control Board.	Complied. Separate budget for the Environment protection measures is earmarked every year. All environment and horticulture activities are considered at corporate level and budget allocation is done accordingly. No separate bank account is maintained for the same however, all the expenses are recorded in advanced accounting system of the organization. Budget for environmental management measures (including horticulture) for the FY 2018-19 is to the tune of INR 1080 lakh. Out of which, Approx. INR 516 lakh are spent during the FY 2018-19 (Till Sep'18). Detailed breakup of the expenditures for the past 3 years as well as a summary of expenditures for the past 5 years is attached as **Annexure – 7**.
(x)	Full support should be extended to the officers of this Ministry's Regional Office at Bhopal and the officers of the Central and State Pollution Control Board by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other	Complied. APSEZL is always extending full support to the regulatory authorities during their visit to the project site. Last visit of Regional Office, GPCB was done on 03.07.2018 for Main port. APSEZL has submitted the reply to the site visit report vide letter dated 04.07.2018 incorporating details of action taken in respect of the observations of the GPCB representative. The details of the same are attached as **Annexure – 8**.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	environmental protection activities.	
(xi)	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new one for ensuring environmental protection.	Complied. Construction phase is completed and the project is in operation phase. There is no deviation or alteration in project including implementing agency.
(xii)	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.	Point noted.
(xiii)	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which should be complied with.	Point noted.
(xiv)	The project proponent should advertise in at least in two local newspapers widely	Complied

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	circulated in the region around the project, one of which should be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board and may also be seen at the website of the Ministry of Environment & Forests at http://www.envfor.nic.in. The advertisement should be made within seven days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhopal.	
(xv)	The projects proponents should inform regional Office at Bhopal as well as the Ministry, the date of financial closure	Complied. The construction phase is complete and the project is in operation phase.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	and final approval of the project by the concerned authorities and the date of start of land development work.	

ANNEXURE – A

CRZ Recommendation Compliance Report

Half yearly Compliance report of CRZ recommendation for the project namely "Development of Multipurpose berth (Terminal – 2) at Mundra Port, Dist. Kutch" issued by DoEF, GOG vide letter no. ENV-10-2005-222-P dated 12th October, 2006

Sr. No.	Conditions	Compliance Status as on 30-09-2018
Specific Condition		
1	The provision of the CRZ notification of 1991 and subsequent amendments issued from time to time shall be strictly adhered to by the GAPL. No activity in contradiction to the provision of the CRZ Notification shall be carried out by the GAPL.	Complied. Construction activities are completed and the project is in operation phase. All stipulations with respect to the CRZ notification and its subsequent amendments are complied with.
2	All permissions from different Government Departments / agencies shall be obtained by the GAPL before commencing the expansion activities.	Complied. Please refer to specific condition no. 2 of the EC and CRZ clearance above for details upon NOC & CC&A obtained from GPCB. Construction activity is already completed and the project is in operation phase. APSEZ had obtained No Objection Certificate vide GPCB letter No. GPCB/Unit-1/FT-139/11944 dated 27th April 2005.
3	No Dredging and /or reclamation activity shall be carried out in the CRZ area categorized as CRZ (i) and it shall have to be ensured that the mangrove habitats and other ecologically important and significant areas are not affected due to any of the project activities.	Complied. No dredging or reclamation is carried out in CRZ -1 (A) area. Capital dredging is completed and only maintenance dredging is being carried out, A study for conservation and monitoring for natural mangrove stands at mundra is carried out by M/s. Gujarat Institute of Desert Ecology (GUIDE). The report of the same was submitted as part of compliance report for the duration of Apr'17 to Sep'17.
4	The dredge material shall be disposed of into pre-designated areas duly identified and got approved through the Gujarat Coastal Zone Management Authority for which the company shall have to make separate	Complied. Construction and capital dredging activities are completed and the project is in operation phase. Impact assessment was done for the same and EIA report was submitted to GCZMA and MoEF&CC based on which the final Environmental and CRZ clearance was granted. Detail on study for conservation and monitoring for

Sr. No.	Conditions	Compliance Status as on 30-09-2018
	application along with proper EIA indicating the exact location of the dredge material disposal area on the CRZ map of the region prepared by the Space Application Center, Ahmedabad, as there exists best mangrove area in and around Bocha and Navinal islands, which requires to be protected.	natural mangrove stands at mundra is as provided in condition no. 3 above. Apr'16 to Sep'16.
5	Massive mangrove plantation activity in at least 1200 ha. Area shall be carried out within a time frame of 5 years commencing from July, 2006 without any delay whatsoever.	Complied. It may be noted that to enhance the marine biodiversity, till date APSEZ has carried out mangrove afforestation in more than 2800 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 782 lakh. Details on mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as **Annexure – 1**. Please refer condition no. v of specific conditions (EC & CRZ Clearance) for further details.
6	No effluent or sewage shall be discharged into the sea / creek or in the CRZ area and shall be treated to conform the norms prescribed by the Gujarat Pollution Control Board and would be reused/ recycled within the plant premises.	Complied. Entire quantity of sewage generated is being treated in designated STPs and treated sewage is used for gardening. Please refer to specific condition no. xi of the EC and CRZ clearance above for more details.
7	All the recommendation and suggestions given by the NIO in its Comprehensive Environment Impact Assessment report for conservation / protection and betterment of environment shall be implemented strictly by the GAPL.	Complied. All the recommendation and suggestions for conservation / protection and betterment of environment given by the NIO in its comprehensive EIA have been implemented. Few examples are provided below. Few Marine EIA recommendations: Operational protocols | The company has written the

Sr. No.	Conditions	Compliance Status as on 30-09-2018	
		and safety procedure should be printed and freely available to concerned staff. The employees must be adequately trained to inculcate a high level of competence not only in day to day operations but also during emergency situations. Periodic refresher courses must also be organized to maintain the level of their competence.	operational protocols and safety procedures as a part of ISO 14001:2008, OHSAS 18001:2008 and ISO 9001:2008 certifications. APSEZ has established training department to impart training to its employees. IMO module course organized by Maritime Training Institute is conducted & 36 personnel have achieved IMO level 1 & 4 personnel have achieved IMO Level 2. Different training modules as Oil Spill, Oil Spill Equipment, Notification exercise, Incident are conducted at different frequency.
		Temporary colonies of workforce should be located sufficiently away from the HTL with proper sanitation. Adequate arrangement of fuel supply to the workers should be made to discourage them from using mangroves for firewood.	Construction activity is already completed. Most of the construction labours were residing in the nearby villages where all basic facilities are easily available. However, for those residing near the construction site, infrastructure facilities such as water supply, fuel, sanitation, first aid, ambulance etc. were provided by APSEZ.
		Adequate vigilance is required to adherence of ships to Marpol protocol and related regulations.	During the vessel declaration compliances with respect to Air Pollution and Oil are monitored by the Port Authority. The ships are certified with international certification bodies only after complying with the Marpol protocol.
		Manual Listing Procedure for conducting ship movement operations in the port area must be available to the concerned staff.	Berthing Policy & Tariff Structure is made available for conducting ship movement to the concerned staff and made available on web link www.adaniports.com/pdfs/PIB_06122013.pdf Port Information Booklet is also

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		made available on web link www.adaniports.com/Port_Operations_Port_Tariffs.aspx
8	The construction and operational activities shall be carried out in such a way that there is no negative impact on mangroves and other coastal / marine habitat. The construction activities and dredging shall be carried out only under the constant supervision of the NIO.	Complied. Construction and capital dredging activity is already completed. All operational activities are being carried out in such a way that there are no impacts on the nearby mangroves. Details on mangrove conservation and afforestation are provided against Specific Condition No. 5 above.
9	The GAPL shall strictly ensure that no creeks are blocked due to any activity at Mundra Port and the mangrove habitats are neither disturbed nor destroyed due to any activity.	Complied. As per Marine EIA carried out by NIO in 2008, prominent creek system (main creeks and small branches of creeks) in the study region are: (1) Kotdi (2) Baradimata (3) Navinal (4) Bocha (5) Mundra (Oldest port (Juna Bandar) leading to Bhukhi river). All above creeks are in existence allowing free flow of water and there is no filling or reclamation of any creek area. APSEZL has so far constructed 19 culverts having total length of approx. 1100 m with total cost of INR 20 Crores. Three RCC Bridges have been constructed over Kotdi creek with total length of 230 m and cost of INR 10 Crores. Photographs of the same have already been submitted as part of the compliance for the period of Apr'17 to Sep'17.
10	The GAPL shall contribute financially for any common study or project proposed that may be proposed by this Department for environmental management / conservation / improvement for the Gulf of Kutch.	Complied As part of the directions given by MoEF&CC vide order dated 18th Sep, 2015, following studies were proposed. • Bathymetry & Topography study, preparation of plan for protection of creeks/ mangrove area including buffer zone, mapping of co-ordinates, running length, HTL, CRZ boundary. Cost of the study as per the NCSCM proposal is 315.5 Lakh. 90% of the payment against the proposal value is already paid to NCSCM. • A Regional Impact Assessment study to identify impacts of all the existing as well as proposed

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		project activities in Mundra region. Total cost of the study is approx. INR 1.3 cr. which is financed by APSEZ. Both the studies are completed and final reports submitted to the concerned authorities i.e. GCZMA and MoEF&CC. Acknowledge copy of the same are attached as **Annexure – 4 & 9**.
11	The construction debris and/or any other type of waste shall not be disposed of into the sea, creek or in the CRZ areas. The debris shall be removed from the construction site immediately after the construction is over.	Complied. Construction activity is already completed. Project is in operation phase.
12	The construction camp shall be located outside the CRZ area and the construction labour shall be provided the necessary amenities, including sanitation, water supply & fuel and it shall be ensured that the environmental conditions are not deterioted by the construction labours.	Complied. The construction activity of said project is already completed. Project is in operation phase. No construction camps were located in CRZ area. Most workers came from nearby villages however, for others; construction camps were located outside CRZ area. All necessary infrastructure and facilities like mobile toilets, safe drinking water, medical health care etc. were provided.
13	The GAPL shall prepare and regularly update their local Oil Spill Contingency and Disaster Management Plan in for their all activities in Mundra Port consonance with the National Oil Spill and Disaster Contingency Plan and shall submit the same to this department after having it vetted through Indian Coast Guard.	Complied. Oil spill contingency response plan updated on 29.08.2017 is in place and implemented. An acknowledgement letter on updates in OSCRP by coast guard along with a copy of the updated plan was submitted as a part of compliance report for the duration of Apr'17 to Sep'17. A Joint Inspection of Port Oil Spill Response (OSR) capability by Indian Coast Guard (ICG), Gujarat Maritime Board (GMB) & Oil Industry Safety Directorate (OISD) was held on 13 Feb 2018 at APSEZ. The final assessment rating was given as "Very Satisfactory." Details were submitted along with last compliance report for the period Oct'17 to Mar'18.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
		Disaster Management Plan is updated regularly and the updated DMP was submitted to the MoEF & CC along with half yearly compliance report Apr – 2016 to Sep – 2016. For responding to oil spill, the Indian Coast Guard has developed the National Oil Spill Disaster Contingency Plan NOSDCP which has the approval of the Committee of Secretaries and has been in operation since 1996. Oil Spill Contingency Response Plan (OSCRP) prepared by APSEZ is in accordance with the NOSDCP.
14	The Gujarat Maritime Board shall expedite for the Vessel Traffic Management System for the Gulf of Kutch and would work out the modus operandi for cost sharing by the different players in the Gulf indicating the GAPL. The GAPL shall contribute for the same as may be decided by the Gujarat Marine Board or any other competent authority for this purpose.	Point noted. APSEZ is practicing well defined traffic control procedure. A VTS service for Gulf of Kutch is operated by Directorate General of Lighthouses and Lightships (DGLL), Govt. of India. Marine Control of APSEZ provides traffic update to vessels in Mundra Port Limit on VHF Channel- 77. Arrival and departure information before arrival and departure respectively in Gulf of Kutch is provided to VTS information cell through agent or by directly sending mail to vtsmanagergulfofkutch@yahoo.com and vtsgok@yahoo.com
15	The GAPL 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 the proposed activities.	Complied Please refer to condition no. 10 of the CRZ recommendations above for details upon cost incurred for various proposed studies and activities..
General Condition		
16	The ground water shall not be tapped by the GAPL to meet with the water requirement in any case.	Complied. APSEZ does not draw any ground water for the water requirement. Present source of water for various project activities is desalination plant of APSEZ and/or Narmada water through Gujarat Water Infrastructure Limited. Average water consumption for entire APSEZ area is 4.7 MLD during this compliance period.

Sr. No.	Conditions	Compliance Status as on 30-09-2018
17	The GAPL shall take up massive greenbelt development activities in consultation with Forest and Environment Department.	Complied. APSEZ has consulted Gujarat Institute of Desert Ecology (GUIDE) as they are one of the authorized agencies of Dept. of Forest & Env., Govt. of Gujarat for carrying out mangrove afforestation. Total 5988 trees are planted at the density of 1370 trees per ha. covering 4.37 hectare of land at Terminal – 2 till date. So, far more than 450 ha. area is developed as greenbelt with plantation of more than 8.0 Lacs trees within the entire APSEZ area. Please refer **Annexure – 1** for further details regarding greenbelt development, mangrove afforestation and updated green belt development plan. Total expenditures of the horticulture dept. during the FY 2018-19 (Till Sep'18) are INR 299 lakh.
18	The GAPL shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forests and Environment Department and the District Collector / District Development officer.	Complied. APSEZ performs a large scale socio-economic upliftment program and shares with FOKIA (Federation of Kutch Industries Association) chaired by District Collector quarterly. APSEZL have provided necessary facilities including health care, education, sanitation, livelihood, drinking water & other infrastructural support to Local community in the region. For further information related to the CRS activities being carried out by Adani Foundation in mundra region, please refer to specific condition no. 7 of the EC and CRZ clearance above.
19	A separate budget shall be earmarked for the purpose of socio-economic upliftment activities and details thereof shall be furnished to this department as well as the MoEF&CC, GOI from time to time. The details with respect to the expenditure from this budget head shall also be furnished on annual basis.	
20	A separate environment management cell with qualified personnel shall be created for environmental monitoring and management during construction and	Complied. M/s APSEZL has a well structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan. The Environment Management Cell is headed by Sr.

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2018</th></tr>
<tr><td></td><td>operational phases of the project.</td><td>Manager who directly reports to the top management. The organogram of Environment Cell was submitted along with last half yearly compliance report for the period Oct'17 to Mar'18.</td></tr>
<tr><td>21</td><td>Environmental Post Project Monitoring report indicating the changes, if any, with respect to the baseline environmental quality in the coastal and marine environment shall be submitted every year by the GAPL to this department as well as to the MoEF&CC, GOI.</td><td>Complied.

The quality of treated effluent, emission and noise level is being monitored regularly by a MoEF&CC/NABL accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd. Monitoring results are confirming to the applicable norms.

Marine monitoring is being carried out once in a month. Summary of the same for duration from Apr'18 to Sep'18 is mentioned below.

Total Sampling Locations: 09 Nos.
<table>
<tr><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th colspan="2">Surface</th><th colspan="2">Bottom</th></tr>
<tr><th>Max</th><th>Min</th><th>Max</th><th>Min</th></tr>
<tr><td>pH</td><td>--</td><td>8.26</td><td>8.01</td><td>8.27</td><td>7.95</td></tr>
<tr><td>TSS</td><td>mg/L</td><td>348</td><td>190</td><td>390</td><td>130</td></tr>
<tr><td>BOD (3 Days @ 27 °C)</td><td>mg/L</td><td>5</td><td>2</td><td>5.2</td><td>1</td></tr>
<tr><td>DO</td><td>mg/L</td><td>8</td><td>5.6</td><td>6.6</td><td>5.2</td></tr>
<tr><td>Salinity</td><td>ppt</td><td>36</td><td>33.8</td><td>36</td><td>33.4</td></tr>
<tr><td>TDS</td><td>mg/L</td><td>37940</td><td>34210</td><td>37110</td><td>34096</td></tr>
</table>

The results depict that there is no damage to the marine ecology.

Please refer Annexure – 5 for detailed analysis reports and accreditation certificate. Approx. INR 12.5 Lakh is spent for all environmental monitoring activities during the FY 2018-19 (Till Sep'18).</td></tr>
<tr><td>22</td><td>The GAPL shall have to contribute financially to support the National Green Corps Scheme being implemented in Gujarat by the GEER foundation, Gandhinagar in consultation with Forests and Environment Department.</td><td>Complied.
Necessary support will be provided on hearing from GEER foundation to support NGC scheme.</td></tr>
<tr><td>23</td><td>A six monthly report of</td><td>Complied.</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2018</th></tr>
<tr><td></td><td>compliance of the conditions mentioned in this letter shall have to be furnished by the GAPL on a regular basis to this department without fail.</td><td>Six Monthly environment clearance compliance report is being submitted regularly to the concerned authorities.

Compliance report of EC conditions is uploaded regularly. Last compliance report including results of monitoring data for the period of Oct'17 to Mar'18 was submitted to Regional Office of MoEF&CC @ Bhopal, Zonal Office of CPCB @ Baroda, GPCB @ Gandhinagar & Gandhidham and Dept. of Forests & Env., Gandhinagar vide our letter dated 01.05.2018. Copy of the same is also available on our web site https://www.adaniports.com/ports-downloads. A soft copy of the same was also submitted through e-mail on 12.06.2018 to all the authorities. Please refer below for the details regarding past six compliance submissions.

<table>
<tr><th>Sr. no.</th><th>Compliance period</th><th>Date of submission</th></tr>
<tr><td>1</td><td>Apr'15 to Sep'15</td><td>30.11.2015</td></tr>
<tr><td>2</td><td>Oct'15 to Mar''16</td><td>30.05.2016</td></tr>
<tr><td>3</td><td>Apr'16 to Sep'16</td><td>01.12.2016</td></tr>
<tr><td>4</td><td>Oct'16 to Mar'17</td><td>30.05.2017</td></tr>
<tr><td>5</td><td>Apr'17 to Sep'17</td><td>01.12.2017</td></tr>
<tr><td>6</td><td>Oct'17 to Mar'18</td><td>29.05.2018</td></tr>
</table>
</td></tr>
<tr><td>24</td><td>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 GAPL.</td><td>Complied.
Any other condition stipulated for environment protection / management purpose will be complied by APSEZ.</td></tr>
</table>

Annexure – 1

Details of Greenbelt development at APSEZ, Mundra

	Total Green Zone Detail Till Up to Sep - 2018				
	Area (In Ha.)	**Trees (Nos.)**	**Palm (Nos.)**	**Shrubs (SQM)**	**Lawn (SQM)**
SV COLONY	69.43	32480.00	7298.00	68327.00	95019.00
PORT & NON SEZ	78.98	137642.00	18395.00	76666.78	58905.18
SEZ	114.70	227835.00	17302.00	220449.60	27462.03
MITAP	3.47	8622.00	66.00	3340.00	8072.00
WEST PORT	86.04	186827.00	51342.00	24112.00	22854.15
AGRI PARK	8.94	17244.00	1332.00	5400.00	2121.44
SOUTH PORT	14.25	25530.00	3470.00	3882.00	3327.26
Samudra Township	53.39	44872.00	11818.00	19978.07	35071.67
Productive Farming (Vadala Farm)	23.79	27976.00	0.00	0.00	0.00
TOTAL (APSEZL)	**452.98**	**709028**	**111023**	**422155.45**	**252832.73**
		820051			

Details of Mangrove Afforstation done by APSEZ

Sl. no.	Location	Area (ha)	Duration	Species	Implementation agency
1	Mundra Port	24.0	-	Avicennia marina	Dr. Maity, Mangrove consultant of India
2	Mundra Port	25.0	-	Avicennia marina	Dr. Maity, Mangrove consultant of India
3	Luni/Hamirmora (Mundra, Kutch)	160.8	2007 - 2015	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GUIDE, Bhuj
4	Kukadsar (Mundra, Kutch)	66.5	2012 - 2014	Avicennia marina	GUIDE, Bhuj
5	Forest Area (Mundra)	298.0	2011 - 2013	Avicennia marina	-
6	Jangi Village (Bhachau, Kutch)	50.0	2012 - 2014	Avicennia marina	GUIDE, Bhuj
7	Jakhau Village (Abdasa, Kutch)	310.6	2007-08 & 2011-13	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GUIDE, Bhuj
8	Sat Saida Bet (Kutch)	255.0	2014-15 & 2016-17	Avicennia marina & Bio diversity	GUIDE, Bhuj
9	Dandi Village (Navsari)	800.0	2006 - 2011	Avicennia marina, Rhizophora mucronata, Ceriops tagal	SAVE, Ahmedabad
10	Talaza Village (Bhavnagar)	50.0	2011-12	Avicennia marina	SAVE, Ahmedabad
11	Narmada Village (Bhavnagar)	250.0	2014 - 2015	Avicennia marina	SAVE, Ahmedabad
12	Malpur Village (Bharuch)	200.0	2012-14	Avicennia marina	SAVE, Ahmedabad
13	Kantiyajal Village (Bharuch)	50.0	2014-15	Avicennia marina	SAVE, Ahmedabad
14	Devla Village (Bharuch)	150.0	210-16	Avicennia marina	SAVE, Ahmedabad
15	Village Tala Talav (Khambhat, Anand)	100.0	2015 - 2016	Avicennia marina	SAVE, Ahmedabad
16	Village Tala Talav (Khambhat, Anand)	38.0	2015 - 2016	Avicennia marina	GEC, Gandhinagar
	Total Mangrove Plantation:	**2827.90 Ha**			

Annexure – 2

Adani Foundation, Mundra

adani
Foundation

SIX MONTHLY
REPORT
2018-19

Adani Foundation
Adani House, Port Road, Mundra – Kutch 370 421
[info@adanifoundation.com] [www.adanifoundation.com]

Community Health

Adani Foundation has pioneered several innovations under its Health Programme in Mundra, Kutch. These innovations comprise of new methodologies to address the different aspects of health needs among the most marginalized communities, especially Malnourished Children, Women and Senior Citizens.

Committed to "Health for All" the Foundation runs Mobile Health Care Units, Rural Clinics, Special Innovative Projects i.e. Health Card to Senior Citizens, Fighting to Malnourishment Suposhan" Project, Dialysis Project and Variety of Health Related Camps.

Mobile Dispensaries & Rural Clinics

The population of Mundra block is spread over various villages. Due to inadequate transportation facilities, the villagers have to face many hardships even for reaching to the doctor in case of common diseases. The medical expenses and zero earning per day add surplus to their hardships.

To help them in the above mentioned health related problems, the service of mobile medical van has been started by the Adani Foundation in Mundra block. In big villages, rural dispensaries have been started considering their population and area.

The Adani Foundation runs two mobile health care units. Main objective of Mobile Van is to reduce travel time, hardships and expenses. Two mobile health care units cover 34 villages and 05 fishermen settlements. Around 113 types of general and life saving medicines are available in these units. It has turned out to be a boon for women and children as the service is availed at their door - step.

MHCU Month wise Data-2018/19		
1	April	1508
2	May	1397
3	June	1236
4	July	1523
5	Aug.	1512
6	Sep.	1796
	Total	**8972**

Village wise OPD Data-2018/19		
1	Tunda wandh	699
2	Siracha	1928
3	Navinal	896
4	Luni	3283
5	Vadala	503
6	Bhadreshwar	716
7	Labour colony	53
8	Tunda	394
9	Tuna anjar	135
10	Wandi	780
11	Rampar	292
12	Tragadi Bandar	428
13	Rangoli	378
	Total	**10485**

The Adani Foundation operates Rural Dispensaries in 08 villages of Mundra block, 03 villages of Anjar block and 01 village of Mandvi block along with one at Rangoli gate. At these dispensaries, health services are provided free of charge for two hours daily by a doctor and a volunteer.

Details of transaction		
1	April	828
2	May	840
3	June	809
4	July	962
5	Aug.	836
6	Sep.	862
	Total	5137

Health Cards to Senior Citizens

The major junctures of human life are - childhood, adulthood and old age. The first phase is well looked after by the parents and second phase is of self-reliant but the last phase is a dependent one. The needs of old people are less looked after. When people become old, they start living a life of aloofness and solitude. Therefore, the Adani Foundation has started the Adani Health Programme for the aged to look after their health. To address the health care issues related to ageing, AF launched a 3 year long pilot project – 'Adani Vadil Swasthya Yojna' on 20th February 2011 at Mundra and further extended the same for the next three years i.e. up to 2017. Under this Programme, the individuals aged 60 years and above are benefitted. Health Cards are issued to them with the purpose of providing adequate and timely treatment. The families consisting of aged ones with a yearly income of Rs. 2 lacs or more get a Blue Card. The Blue Card holders can avail diagnosis facility and treatment at a subsidized rate in the Adani hospitals, Mundra. The families with a yearly income of less than Rs. 2 lacs are issued a Green Card. Green Card holder aged people get treatment for illness in Adani hospitals, Mundra with an aid up to the limit of Rs. 50,000/- within a period of 3 years.

During the six months 2018-19, total 5137 transactions were done by 8518 card holders of 66 villages of Mundra Taluka. They received cash less medical services under this project. In Green Card category, 6139 aged people got treated for various illness & diseases at Adani hospitals, Mundra with an aid up to a limit of Rs. 50,000/- within the period of 3 years.

The 763 Blue Card Holders can avail diagnosis facility and treatment at a subsidized rate in the Adani hospitals, Mundra. Scheme is continue since seven years The third phase of this scheme was started in last year. The limit for the beneficiary was set to 30000/- within a period of 3 years. the senior citizens get emergency medical care at Adani Hospital, Mundra and they are referred to GAIMS

Suposhan

Malnutrition amongst Children, Adolescent girls and Women in India is an alarming phenomenon. (In India: 48 % or 54 million children under-five years were stunted. India accounted for 33 %of stunted children in the world. As per Global Nutrition Report released recently, Children below five years- 38.7 % Stunted and 15.1%are wasted. 69.5% children6-59 months old, 55.8% adolescent girls aged 15-18 years, 55.3% women aged 15-49 years have Anemia. Moreover anemia prevalence in pregnant women is as high as 58.7%) Curbing Malnutrition was part of Millennium Development Goals and again focused through second and third Sustainable Development Goals on Zero hunger and Good Health & Wellbeing respectively.

During this half year, anthropometry study done for 2020 children. Total 6 children became free of malnutrition due to efforts under "Suposhan" Project. Additionally, 6288 FGD were conducted during this year.

Total 8770 hemoglobin screenings of RPA woman and adolescent girls was carried out. Which helps in controlling anemia in women and indirectly malnutrition.

Implementation Strategy

Base line data was provided for Mundra Taluka in initial phase of Project.

Total Number Anganwadi in the selected area

- Information on Sub-centers/ Primary Health Centers/ Community Health centers/ Referral Hospitals
- •Availability of Healthy worker- male & female both, ANMs, LHVs, Doctors, specialists such as Gynecologist, Pediatricians, Pharmacist, Dietician Lab. Technician, Nursing Staff etc. at above centers (Number & names with contact details)
- Selected areas' Birth rate, Death rate, Infant Mortality Rate, Mother Mortality Rate, Sex ratio, Child Sex ratio against district, state and national average
- Total number of beneficiaries and against that enrolled beneficiaries at Anganwadi/ICDS: 0-6 year children, Adolescent girls, pregnant women and lactating mothers
- Identified malnourished and anemia children/ adolescent girls and women (numbers & name as well as current level of malnutrition & anemia with dates- Base Line data)
- Current Inputs provided through the Government machineries
- Other services available through CBOs, NGOs etc.- Details of inputs and contact details of those organizations
- Understanding & Listing of area specific cultural and behavioral barriers

Role and Responsibility of Adani Foundation

Health Checkup camp

- Awareness activity : Focused Group Discussion
- Capacity Building of Sangini
- Home visit
- Health related sessions
- Financial support provide for better treatment
- Doctor services provided (Pediatric, Gynec, Dietitian)
- AF provides Nutritional Food Support

Suposhan Saptah

The birth of a healthy newborn child is determined by the health of the mother. Mother's health, in turn, has its basis on her health status during adolescence. The health of a society, as a whole, thus depends on the health of the women, in all stages of their lives. Adani Foundation acknowledges this field of health and aims to address women's health, through their entire life cycle. These efforts have culminated in Project Suposhan, Adani Foundation Health initiative. Project aims to generate awareness in communities and facilitate the strengthening of the health systems and healthcare delivery platforms, with a specific focus on the mother and child. Project focuses on increasing health literacy in communities for mothers, child and adolescent health services through trained community health workers (Sangini), creating effective referral linkages to higher services. SuPoshan "Food Guidance Week" celebration systematized in all 61 villages in Mundra Taluka from 13th Nov – 20th Nov. Suposhan Food competition was organized in coordination with ICDS block and Supervisors, Sarpanch, ASHA workers and women leaders. The reason behind celebrating "Suposhan Food Guidance Week" is to make people aware about the importance of nourishment so that everyone is able to live healthy life. It involves community by · The importance of Nutrition and Balanced Diet · Importance of locally available food. · Preparing own variety nutritious dishes, · Folk songs on nutritious, · Slogans with actions, · Spreading awareness on different schemes, · Vaccination · Kitchen garden and · Exclusive Beast Feeding

Support for Medical Aid to Deprived

The scope of the organization extended up to providing best health care facilities to the needy, poor, challenged and not so well-to-do families for the treatment of illness and diseases. It is not always possible to predict the medical expenses. Moreover, those who are economically not so sound, become indebted for lifetime in case of certain illnesses. Therefore, Adani Foundation provides primary health care and financial assistance for ailments such as kidney related problems, paralysis, cancerous and tumor surgeries, neurological and heart problems, blood pressure, diabetes etc.

During six months, month we organized two medical examination camps in which Medical Support was given to 485 People from Mundra, Bhadreshwar, Zarpara, Shekhadia Nana Mota Kapaya, Bhujpur, Vadala, Wandi and other villages under our work area.

Medical Supports		
1	April	103
2	May	65
3	June	54
4	July	65
5	Aug.	97
6	Sep.	101
	Total	**485**

Gujarat Adani Institute of Medical Sciences

Gujarat Adani Institute of Medical Science is the first Medical College of Kutch region. It started in partnership with Adani Group and Government of Gujrat in the year 2009. This college was affiliated by the Medical council of India in the year 2014 for the MBBS with 150 seats per year. Gujarat Adani Institute of Medical Science is affiliate with the first digital university "Krantiguru Shyamji Krishna Verma Kutch University". In GAIMS, currently 750 students are studying, The GAIMS Medical College is situated in heart of Bhuj city on a large plot of 27 acres.

A teaching hospital (G K General Hospital) with 700 beds is established with GAIMS in which patients of Kutch are getting subsidized medical facilities. The Hostel facility is also available for the students in the campus only. The accommodation facility is given to the staff of GAIMS.

Health Camps

Various health camps are organized at regular intervals to meet the specific requirements of the community. Screening camps are organized regularly as per the route map planned in coordination with Adani Hospitals. During the year 2018-19, 11 Specialty camps were organized and 1636 Patients were benefitted.

General Health Camp & Surgical Camp					
Sr.no.	Month	Date	Place	Villages Name	Total Patinets
1	Apr-18	28.04 to 29.04.2018	Jat Malek Muslim & Maheshari Samuha Sadi At Mundra	Mundra	178
2	Jun-18	26.06.2018	Malaria Camp Sukhpar Mundra	Mundra	36
3	Jul-18	17.07.2018	Karva E Mustfa Hospital Health Camp	Mundra	50
4	Jul-18	21.07.2018	Mahesh Nagar Primary School	Mundra	190
5	Jul-18	30.06.2018	Muslim Jamat Samuh Sadi, Luni	Luni	40
6	Aug-18	11.08.2018	Rotary Hall, Mundra Surgical Mega Camp	Mundra	185
7	Aug-18	28.08.2018	Mithani Labour colony Health camp	Dhrub	80
8	Sep-18	22.09.2018	Shri Swaminarayan Mandir-Baroi Boad	Baroi	191
9	Sep-18	24.09.2018	Mithani Labour colony Health camp	Dhrub	105
10	Sep-18	26.09.2018	Jain Derasar, Oshwal Seri	Mundra	56
11	Oct-18	02.10.2018	Bava Gor Pir Uras Luni	Luni	525
			Total...		1636

Urinary stone – Dialysis Treatment

Drinking water of Mundra contains high Fluoride (amount of salt). Hence, the proportion of patients with urinary stone and kidney failure is more . A project for patients who need dialysis is thus initiated so that the poor patients can receive the treatment at subsidized rates in the nearby, well-equipped hospitals. The main objective of providing dialysis treatment is to help the extremely needy patients to live a healthy life. Total 3 Patients were being supported for regular dialysis (twice in a week) by participatory approach.

Mpw's Village Meeting			
Sr. No	Month	C.M. Meeting	MPW Meeting
1	April	0	0
2	May	7	18
3	June	6	13
4	July	5	12
5	August	4	16
6	September	3	11
	Total	**25**	**70**

Death Body Van Data		
Sr. No	Month	No. of Death Body
1	April	34
2	May	55
3	June	42
4	July	46
5	August	30
6	September	50
	Total	**257**

- Adani Foundation Team has initiated coordination with GKGH hospital since 2014 and established a reception area for the smooth patient coordination and preparation for the social networking program.
- Adani Foundation organized General Health Camps and Speciality Camps in various interior villages of Kutch in coordination with GKGH which created magical impact and benefitted 3335 patients. Adani Foundation Bhuj Health team has also organized more than ten awareness camps and village level meetings at 293 villages of Kutch regarding services of GKGH.
- Dead body medical van – Dignity to death is one of the noble initiatives taken up by the Adani Foundation. If any death occurs in GKGH, dead bodies are shifted to the native village of the concerned in the Kutch District free of cost. Total 257 dead bodies privileged till now to different locations in Kutch.

Shakti Raksha – Preventive and Curative Breast and Survical Cancer

Adani hospital Mundra, Taluka health office, Indian Red Cross society and Adani foundation has initiated Shakti Raksha Project in which special gynecologist camp for detection of breast n survival camp and thalassemia testing for pregnant women at CHC MUNDRA. In first phase we have covered all PHC and susceptible cases has been referred for pep test and mammogram at GKGH, Bhuj.
In this project we have covered 103 villages of Mundra and Bhuj this year with curative measures. Most medicine will provided by Taluka health office.
We have covered total 569 patients and 106 cases were referred to GKGH Bhuj. In which one case diagnosed with breast lump (not malignant).

Brest & Cervical Cancer screening and Thalassemia testing camp

Sr. No	Date	Place	Gynec	Thalassemia testing	Total Beneficiary	Referred Patients
1	09-06-2018	Mundra CHC	62	34	118	25
2	12-06-2018	Zarpara PHC	26	6	32	5
3	14-06-2018	Moti Bhujpur PHC	54	15	86	18
4	21-06-2018	Mota Kandagara PHC	42	11	53	10
5	25-06-2018	Nani Tumbadi PHC	55	14	69	12
6	28-06-2018	Vanki PHC	48	7	55	8
7	03-07-2018	Ratadiya PHC	79	11	90	17
8	05-07-2018	Bhadreshwar PHC	52	14	66	11
Total			**418**	**112**	**569**	**106**

Glimpse of Arogya Saptah






Arogya Saptah (8th – 14th August 2018)

Adani foundation, Adani Hospital and GAIMS have Jointly Celebrated "Arogya Saptah" 8th to 14th August-2018 in Respect of 72th Independence of our country. Celebration included multi specialty camps, Workshops, truckers health check up, surgical camp on foundation day and adolescent fair at different part of district. Collector, DDO, Minister, MLA and other dignitaries from NGOs had remained present. Objective of the program was to avail health benefits at GKGH and also at Adani Hospital Mundra and Approximately 4500 people will be direct beneficiaries of the program.

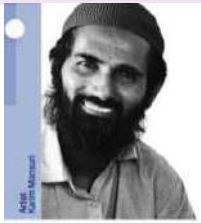
Day	Date	Event Name	Detail about Event	Beneficiaries
1	8th August 2018	Specialty Mega Camp	Specialist doctors i.e. Gynaecologist, Paediatrician, Nephrologists and general surgeon from GKGH had extended their services.	218
2	9th August 2018	Cervical/Brest cancer Screening & Awareness camp	In SOS gada village screening camp organize with preventive awareness session. 17 women critically suggested for further check up at GKGH.	113
3	10th August 2018	Haemoglobin Testing camp	Haemoglobin testing and awareness for de warming of 917 adolescent girls at Rapar village.	917
4	11th August 2018	1. Surgical Mega Camp, Mundra 2. Roa accident Awareness programme, Nakhtrana	1. Specialist Doctors from Adani hospital Mundra and Medical officers of Adani foundation had extended their services. 2. On occasion of Adani foundation ay session for Road accident awareness and safety including primary health check up camp was organized at Nakhatrana.	223 172
5	12th August 2018	Class-4 Staff CPR and first aid training	Class-4 Staff CPR and first aid training was organize in campus of G K general hospital for capacity building of staff and their motivation.	181
6	13th August 2018	Adolescent fair, Gadhashisha	Adolescent fair was organized at Gadhashisha high school in which lady gynaecologist had cleared doubts of the adolescent girls and given information.	170
7	14th August 2018	Asha Worker workshop	Capacity building workshop was organized for ASHA workers of urban and rural bhuj.	150

Empowering lives and broadening their scope for economic opportunities, Adani Foundation's initiatives introduced under **'Sustainable Livelihood Development Program',** have been founded on community based approaches.

Under this programme, we associated our self with Fisherman community, Farmers and Women groups.

Adani Ports and SEZ Limited started its business in 1996. When APSEZ started port operations, fishing community was found deprived and in a perpetual state of poverty. They were living a scattered life. Unavailability of roads, pure drinking water and unhygienic living conditions had made their lives tragic and miserable. We thought we could not achieve our goal of development unless and until we support them to uplift the living standard of the people of this community. After inception of CSR arm of the Adani Group – Adani Foundation in 1996, a strategy based on priorities and continuous and comprehensive socio-economic development and reforms for the fishing community was planned.

With the Foremost objective to improve living standards of Fisher-folk, Adani Foundation protracted support in Education, Health, Sustainable Livelihood and Rural Infrastructure Development Sectors.



Namda
is a sheep wool felting craft which is one of the oldest crafts of India.

There is only one artisan currently practicing this craft in Mundra, Gujarat.

SUSTAINABLE LIVELIHOOD DEVELOPMENT PROGRAM

Education

Education is one of the most important stepping stones to bring about a unified development in any community. The Adani Foundation, through its rigorous surveys and assessments, could understand that it was education which should be taken up to bring about a real change in the status of the fisher folk communities. Following are some of the major education initiatives taken up by the foundation:

Balvadi		
Sr.	Village & Bandar	Children
1	Juna bandar	55
2	Luni	25
3	Zapara-Chhacha	28
4	Bavadi bandar	30
	Total	138

Vidya Deep Yojana

A great amount of efforts were put in developing school preparedness programmes by empowering 'Balwadis' at Fisher folk settlements. Under the Machhimar Vidya Deep Yojana, Adani Foundation constructed four Balwadis for kids between the age group of 2.5 years to 5 years at different settlements. The programme is inclusive of nutritious food, awareness on health, hygiene, cleanliness, discipline, regularity and development of basic age appropriate concepts.

Machhimar Arogya Yojana

A healthy person can work well and earn for his family. Hence it is necessary to provide medical facilities to cure and prevent them and to provide then the treatment of diseases prevailing among the people specially women; children and elderly person, especially due the lack of balanced nutritious diet.

Mobile Health Care Unit - the mobile dispensaries have been run by the Adani Foundation since 2009. The mobile dispensary is available not only in the Vasahats/Settlements but also near the coast where the fishermen, can avail the facilities as and when needed. **Total average 247 fishermen were benefitted by Mobile Dispensary during last half year**.

1. Apart from this, a number of subsidiary initiatives such as health awareness camps, medical check-ups, etc. are conducted by the Adani Foundation at frequent intervals, to provide the fisher folk community with the much needed and required information and assistance.

2. Medical Financial Support –Adani Foundation has extended financial assistance to more than **73 financially challenged patients** from the Fisher Folk Community in case of medical urgency during this year.

3. Health Card for Senior Citizen Project – This is one of the major and prominent and the most innovative project of the Adani Foundation. Under this scheme Health Cards were given to the to Senior Poverty Stricken Citizens to provide them financial support to combat with their health related needs. The project for the senior citizens is popularly known as **Vadil Swasthya Yojana and till date 165 senior citizens** from fisher folk community are enrolled in the scheme. Most of them keep these cards in their wallets with other important documents and cards.

Vidya Sahay Yojana- Scholarship Support

Participatory scholarship support for fisherman children studying in SMJ high school Luni and to above 12th standards Students . 80 percentage support given by Adani foundation and 20 percentage support by parents! They willingly agree for the same.. We also encourage them for technical education for good job opportunities.. Total 66 students has been benefitted, among them 51 students from 9 to 12 standard and 15 students from BA,B.ed,LLB. On this occasion more than 300 students & parents were present.

Machhimar Shudhh Jal Yojana

This scheme of providing potable water has helped in reducing the drudgery of women and contributed largely towards general wellbeing.
Water tank platforms have been constructed and tanks have been set up in order to provide clean potable drinking water to the community. Daily 1,18,000 Litres of water is supplied at different settlements.

Potable Water		
Sr.	Vasahat	Total liters/ day
1	Juna Bandar	30,000
2	Luni Bandar	15,000
3	Randh Bandar	25,000
4	Bavadi Bandar	15,000
5	Veera Bandar	10,000
6	Ghavarvaro Bandar	8,000
7	Kutdi Bandar	15,000
	Total	1,18,000

Linkages with various Departments

Coordination with coast guard, Marine Department and Fisher folk for smooth Port operations Regular Meetings with fisherman for various innovate technology for fishing

Machhimar Kaushalya Vardhan Yojana

Apart from providing formal education, special programmes were conducted to enhance youth employability. Based on the need of assessment, a number of trades were introduced by the Adani Skill Development Centre in Mundra, where the fisher folk youth could join and get vocational training for a number of technical and non-technical skills. 20 women took part in Dori work training at Navinal and 19 women took part in Dori work at Juna Bandar.

Sr. No	Course Name	No of Students
1	Dori work ,Juna Bandar	19
2	Dori work, Navinal	20
3	Checker Cum RTG Crane Operator	03
	Total	**42**

Machhimar Ajivika Uparjan Yojana

The 'Ajivika Uparjan Yojana' was implemented to promote and support alternative livelihoods among the Fisher folk communities during the non-fishing months. The Foundation introduced 'Mangrove Nursery Development and Plantation' in the area as an alternate income generating activity for the people of the region. Both men and women received training on Mangrove plantation, moss cleaning, etc. as per requirements. The Foundation provided them with employment equivalent to 5201 man–days. In addition to this, employment worth of 34727 man-days has been provided till date. The Foundation has also supported Pagadiya fishermen as painting laborers by providing them with employment and job in various field.

Innovative Project : Solar Tent Dryer

CIFT (Central Institute of Fisheries Technology) has been conducting a prototype study on Solar tent dryers with improved technology at their head quarters in Kochi, which is expected to be completed within a span of another three months. They may be able to upscale or replicate the technology once the study is completed. In all probability, they will provide the designs for the solar tent dryer for drying Bombay duck and / or Acetus Indicus with financial estimate by the first quarter of next year. Meanwhile the team from the HQ and Veravel centre can visit Mundra region for initial site visit and feasibility studies. CIFT requested our team to visit CIFT HQ at Kochi during coming months to assess the prototype model and understand more on other CIFT developed hybrid dryers

Fisherman Cricket league

Adani foundation, MUNDRA organized Cricket Tournament " Sixth Adani Premiere League among Fishermen community to promote healthy Sportsmanship and harmonically transparent relationship. The Tournament had been played for 13 days at SVC (Shanti Vihar Cricket Ground) by 6 matches per Days with full of Audience, Total 65 Teams with 780 Fishermen youth were participated with 550Rs. Contribution per teams from Mundra, Anjar and Mandvi Block. The Final Match was played on 9.07.2018 and Pir Saheb (Religious Mentor), Rakshit sir (Executive Director- APSEZ), Dr.A.k Vatsani (Deputy collector ,Bhuj) Mr. Mahesh Dafda (Assistant Director of Fisheries, Bhuj), Mrs. Pankti Shah(Unit CSR Head) ,AF staff and Fishermen Leaders remained present. The Final Match was so interesting and Salaya team becomes winner over Luni Team and more than 1200 Audience from various villages were present. The winner's trophy, Runners-up Trophy, Man of the Series, Man of the Match, Best Baller, and Best Bats-Man Trophy has been given to the Respective Teams and players. The 25000Rs, 15000Rs, 2100Rs, 1100Rs, and 500Rs, 500Rs Prize given to the above Respective Teams and Players from the Teams contribution.

Adani Foundation puts efforts in Mundra block for consistent betterment in livelihood sector. The organization has carried out remarkable activities in the agricultural and animal husbandry sectors.

Drive for Technology to use in agriculture

- We have initiated Programme for Awareness of Farmers in collaboration with KVK. The outreach is approximate 67 farmers of 5 villages
- The purpose of this project is to initiate village wise integrated agricultural & allied development for sustaining agriculture and socio economic situation of farming community of Mundra block.

Agriculture Programme

Sr.no	Village Name	Member
1	Zarapara	21
2	Zarapara	15
3	Siracha-	16
4	Navinal	15
		67

Fodder Cultivation

The organization provides fodder during the time of scarcity and the last 3 months of summer every year. During this period, fodder is regularly sent to every village with the help of the local people. This has given stability to the families who earn their livelihood through animal husbandry.
In order to meet the demand of fodder, the Adani Foundation purchases it from the regional farmers. This gives them fair rates in return.
This year we have given 1,08,000 man fodder worth Rs. 205.00 Lacs approximately.

We have to find out Sustainable Solution for Fodder Cultivation

Fodder is the main issue as rainfall is very less in this region. Adani Foundation is working intensively in direction of fodder sustainability in three ways
1.Individual Fodder Cultivation Support – NB21 demonstration – Supported 140 Farmers of Dhrub and Zarpara
2.Drip Irrigation support Linkages with Fodder – First phase we will support drip irrigation in 22 villages and this linkages will help to convince them for NB21 at least in one acre land
3.Village Level Fodder Cultivation : Participatory Approach
(a) Winter crop Cultivation – Support to Individual (Supported for seeds of Makai for 200 acre land)
(b) Winter Crop Cultivation – Support to Group of Farmers

Project Swavlamban

Project Swavlamban Launched with blessings of differently abled people of MUNDRA TALUKA.

Our objective is

- To increase awareness about Government schemes for Divyang people, widows and senior citizens and coordinate them with Social Welfare Department, GoG
- After getting income generation equipment support - Proper training provision to make them self-reliant in true sense!! In launching ceremony, Dy. Collector Kutch, Jilla social welfare officer and TDO MUNDRA will remain present.
- Adani Foundation is playing the role of facilitator in case of tie up with Government Scheme for Widows, Senior Citizens and Handicapped people. The identity cards are issued for the handicapped in coordination with Bhuj Samaj Suraksha Khata which is beneficial for them to get specific kit for their disability type.
- The financial benefit of the senior citizen Yojana is Rs. 500per month and the widow scheme is of Rs. 1000 per month. Jilla Samaj Suraksha Officer and team remain present every time.

No	Type	Beneficiaries	Financial benefit
1	Disabled	409	10,00,000
2	Widow	92	3,25,000
3	Senior Citizen	32	1,75,000
	Total	533	15,00,000.00

Women Empowerment Projects

- In Kutch, the situation of women is miserable. Women are totally dependent on male members of family for their needs. Consumption of liquor is one of the main culprits in Kutch. Due to this evil prevalent among men many women are suffering.
- Considering this situation, We have started our training program with two major women's group of Villages near Adani Power and Adani Ports. Both the groups of women (**120 women in total)** successfully completed their training for preparing washing powder, phenyl, liquid for cleaning utensils and hand wash etc.
- We have selected 12 women groups having 10 members each, as per their ability for different work i.e. accounting, banking, leadership, marketing, administration etc.
- As a further step to bring sustainability, we thought to start a shop "Saheli Mahila Gruh Udyog" at Shantivan Colony after discussion with the Administrative Department of Ports and Power regarding the supply of the material, rate etc.

Women Empowerment Projects

Women Empowerment Projects
Step towards socio economic development

No	Village	Group	Members	Saving Amount	Work
1	Mota Kandagra	Jay Mekran	18	100	Stitching
2	Mota Kandagra	Jay Momai	10	200	Stitching
3	Navinal	Vishwas	14	100	Stitching/Dori
4	Navinal	Chamunda	10	100	Phynayle making
5	Baroi	Adhar	12	100	Perishable items
6	Sadau	Vishwasi	16	100	Dhadki, Frames
7	Shekhadia	Sonal	12	200	Washing Powder
8	Mota Kapaya	Tejasvi	10	100	Eco friendly bags
9	Mundra	Meghdhanushya	18	100	Mud work
			112	1100	

Glimpse of Women Empowerment Projects

SHG Meetings in various Villages regarding record check , Loan , Interest detail also collect information for their hidden Skill.

Education

Education Initiative of Adani Foundation signed an MoU with Maa Foundation, Vapi and adopted four major projects from them. The list of the projects upto October 2014-15 was:

Project Uthhan : Adani foundation has been promoting various educational and human initiatives in education, community health, sustainable livelihood and Rural Infrastructure.

In this context with an aim to enhance the quality of primary education in Kutch district, Adani foundation adopted 17 government school located at Mundra Taluka under the project 'UTTHAN' a drive of quality education.

Adani foundation is expected to achieve visible and measurable important in scholastic area.

Adani foundation will be focusing to bring the positive evidences of change in the personal, behavior and academic development of the students.

Objective of "Utthan"

- To improve basic knowledge of Math, Languages, English and Computer among students of Govt. schools.
- To Raise Minimum Level of weak students

Output of "Utthan"

- Increase enrolment ratio of students to 100%
- 100% regular present of students in school
- To improve their arithmetic, reading capacity in various languages, English etc.
- To increase confidence level of students
- Involvement of local community, village leaders and local Govt. through various activities

Outcome of "Utthan"

- Students of class 1th to 7th in government schools will take interest in activity based learning.
- Community and teachers will be positive and satisfy from this education project.
- Increase interest of students in school, they develop knowledge and understand importance of library.
- Education friendly environment development in school as well as in community.

Expected impact of "Utthan"

- Vachan, Ganan and Lekhan strengthening in Priya students
- Education department of Gujarat government will include activity based learning in regular course curriculum.

Beneficiaries of "Utthan"

- Children of class 1st to 7th standard in 17 government schools will be the beneficiaries of this project

Implementation Partners of "Utthan"

DPEO/TEPO/BRC will provide guidance for implementation and experts will visit on an interval of 6 months to evaluate the project.

Proposed Activities "Utthan"

- Training of Government School Staff
- Reading, Writing and Maths improvement as per Gunotsav Data
- Development of Teaching Learning Material
- English Language
- Role Model Activity in assembly
- Reading Corner Activities
- Monitoring and Evaluation

Implementation Strategy "Utthan"

At school level Uthhan Preraks will be the core implementer of the project. Project Officer visits regularly to selected schools to guide and manage the project and report to management. TPEO/BRC will involve in the project evaluation process at the interval of twice in year.

Kick Start of "Utthan"

- Participated in 'Teachers day' celebration. Introduced six female members of Utthan sahayak to schools. As a symbol of respect towards teachers Utthan team had given sapling to all 17 schools.
- Out of 1178 students 944 students participated in test, 413 students got more than 50% marks whereas 516 students got less than 50% marks means 44% students got more than 50% marks whereas 55% students got less than 50% marks. 232 students out of 1178 students were absent during the test. Base line for English subject is zero since first time we introduced English as a subject in 1 to 4 grade. Within 15 days of intervention we got remarkable and measurable change in English alphabet writing capability of Utthan students (Grade 1 to 4).
- Navneet English books distribution ' and Plastic free Environment awareness event organized in all 17 schools of Utthan by Adani foundation. One more positive step take by Adani foundation in order to achieve quality education for all " UTTHAN " Schools.

Project "Utthan" : Guru Vandana

- Guruvandana' Program celebration of teacher's day was organized on 12 November 2018 attended by government dignitaries and our beloved teachers of 106 government primary schools with great enthusiasm.
- Objective of the program conveyed to audience by CSR head Ms.Panktiben.
- It has been said that a healthy mind resides in a healthy body which is why a health checkup is scheduled for all the gurudevs (teachers) which included BMI, BP, RBS, HB and vision test done by adani hospital Mundra.
- Followed by a motivational speech by Dr.Darshana Dhodakiya who is the Director of Bhasha Bhavan of Gujarati Subject, Throwing light on the principle that teachers cannot be trained in to be coming a teacher, but they are teachers because they actually are born teachers.
- Soft skill training by Ms.Ridhi Trivedi who is a highly skilled trainer from ASDC and would explain us the importance and need of soft skills. A highly thought provoking drama by students of 'Shekhadiya' school. And last but not the least short and sweet session taken by Mr. Jatin Upadhyay. Throughout the program anchoring is done by Ms. Darshana Shastri and Ms. Jgruti Joshi.
- Achieved one of the objective teachers' capacity building

Celebration of World Environment Day at High School, Moti Khakhar

- Plantation of 1111 trees in Moti Khakhar high school ground in coordination with forest department : Moti Khakhar is a Village in Mundra Taluka .It is located 19 KM from Mundra. School is constructed in year 2008 and it is with large ground. Principal requested Adani Foundation to support for tree plantation in area. As per size of ground we can plant more than 1000 plants. In addition, Soil condition is also appropriate. Adani Foundation contacted Forest Department for Tree plantation before monsoon and Forest Department supported for 4000 plants. After getting support from Forest Department – Adani Foundation supported for Drip and Fence for protection of plantation. On 5th June 2018, Adani Foundation Mundra planted 1111 trees at Moti Khakhar. Function was scheduled by Gram Panchayat. Mr. Vyas (District Education Officer),Mr. Anjan (DCF, Mundra), Mr. Saxena (COO, APSEZ),AF Team, students of the school and Village leaders remained present

Shala Praveshotsav

To motivate children for schooling by providing the welcome kit / education kit and to create conducive children for " joyful learning" Environment for children for Learning during shala Praveshotsav Govt. has wide spread network of 111 Govt. primary schools in total 62 villages of Mundra Taluka, 3 villages of in Anjar taluka and two villages of Mandvi Taluka every year on an average 2550 to 2700 children gets enrolled in 1st std in Taluka For 2018-2019 total 2300 children got enrolled & Adani foundation provided the "Enrollment kit" to all new enrollee in Taluka

Mother's Meet

To motivate parents to maintain regularity of school, health hygiene and cleanliness we scheduled 3 mothers meet per week, which is really beneficial for student's overall growth. We arrange quiz completion for mother's to update their general knowledge.

Project UDAAN

Mundra has created a position for itself by creating capacities in Port Handling, Edible Oil Refining and Power Generation. With a vision to familiarize, educate and inspire the future generation to become successful business leader, engineers, managers and other professionals, the Adani Foundation organizes Education Exposure visits to Mundra for High schools and educational institutes in Various parts of Gujrat.
Total 2987 educational institutes has visited and 219410 beneficiaries of the project.

Summary of Six Months for Project "UDAAN"
APRIL -2018 TO SEPTEMBER - 2018

NO.	MONTH	SCHOOL/ COLLEGE	BOYS	GIRLS	TEACHERS	TOTAL
1	Apr -18	27	1381	515	108	2004
2	May -18	31	1107	827	105	2039
3	June - 18	30	1333	579	107	2019
4	July - 18	29	1280	727	116	2123
5	Aug -18	29	1256	770	109	2135
6	Sep - 18	28	1317	606	107	2030
	TOTAL	174	7674	4024	652	12350

Adani Vidya Mandir, Bhadreshwar

Adani Vidya Mandir, a unique Gujarati medium school was started in June 2012 at Bhadreshwar village of Mundra Taluka. The objective behind setting up this school is to provide free education to children of fishermen and economically challenged families. The foundation provides nutritious food to the pupils including breakfast, lunch and snacks every day. Special care is taken to provide high quality education and overall development of children. The children are groomed to go back to their families and communities and be the agents to change.

Class	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1st	53	40	45	41	38	40	40
2nd	26	68	46	41	39	37	37
3rd	27	40	73	45	37	39	39
4th		39	48	70	44	36	36
5th			37	46	58	39	39
6th			37	36	46	58	58
7th			34	37	35	44	44
8th			39	34	36	34	34
9th				38	38	30	30
10th					23	27	30
Total	106	187	359	387	394	384	387

SUJLAM SUFLAM JAL ABHIYAN

The state government has announced its 31-day water conservation drive called 'Sujalam Sufalam Jal Abhiyan'. The campaign will be launched on "Gujarat Gaurav Din" on May 1, which is the foundation day of Gujarat state. Moreover, the government aims to revive 32 rivers in the state

Adani Foundation is willingly taking part in this drive and supporting 26 pond deepening at 19 villages of Mundra Taluka.

Inauguration of the Event was held at Nilkanth Mahadev Pond in Gundala Village. Chief Guest of the Event was Mr. Vasanbhai Ahir (Minister of State, Welfare of socially and educationally backward classes) Distinguish guest was Mr. Virendrasinh Jadeja (MLA Mandvi-Mundra) and Mrs. Remya Mohan (Collector, Kutchh) were remained present and motivated for this noble cause

Adani Foundation is working for water conservation with salinity department in construction of 18 check dams as well as more than 20 pond deepening work since 2007.

Adani Foundation got chance to become a part of Sujlam Suflam Jal Abhiyan. Adani Foundation will make the project successful and support this noble cause.

ENVIRONMENT SUSTANABILITY

The Environment Impact Assessment (EIA) Notification, 2006, issued under the Environment (Protection) Act, 1986, as amended from time to time, prescribes the process for granting prior environment clearance (EC) in respect of cevoain development projects/activities listed out in the Schedule to the Notification.

Sustainable development has many important facets/components like social, economic, environmental, etc. these components are closely interrelated and mutually re-enforcing. Under Corporate Environmental responsibility 10 km radious villages from SEZ Boundaries.

To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, today we launch project "Sanrakshan" in coordination with GUIDE. Today MOU has been signed with Dr. Thivakaran – GUIDE for conservation of mangroves spices on coastal belt.

Under Sujlam Suflam project Adani Foundation has successfully completed pond deepening work in Mundra & Abdasa Taluka in record time. 26 pond deepening in Mundra and 7 pond deepening in Abdasa accomplished with all parameters calculated. In Mundra taluka 51723 cum excavation work has been done which increase storage capacity of 51 ML.

In Naliya taluka 14550 cum excavation work has been done which increase storage capacity of 15 ML. Total 66 ML storage capacity will increased.

PARTICIPATORY GROUND WATER MANAGEMENT

At the turn of millennium, the state watched with growing alarm the steady depletion of its ground water and launched massive drive to achieve water security in Mundra region. As a part of pre monsoon activities with ACT (Arid Communities and Technologies – NGO) we have carried out following work. But, due to negligible rainfall we are not able to find out outcome of this project.

Borana- Artificial bore well recharge –work completed

Mangara- Artificial bore well recharge – work completed

Dhrub- pond deepening work – work completed

Mota kapaya-abanded bore well recharge – work completed

PROJECT "SANRAKSHAN" - BIODIVERSITY

The mangrove biodiversity enrichment project in and around Adani ports special economic zone limited (APSEZL) aims to introduce select true mangrove species on a pilot scale in suitable coastal belts and assess their survival. Because this project is the first of its kind, the expected survival rate is between 20-30%.

The project is currently in its initial stages of establishing nurseries and sowing seeds of several different species brought in from multiple locations in and outside of Gujarat state. These nurseries have been developed in tidal flats near the village of Luni, Kutchh, Gujarat.

The mangrove seeds/propagules) for the establishment of the nursery were brought in from various locations in India, namely, Machilipatnam (Andhra Pradesh), Pondicherry (Tamil Nadu), Parangipettai (Pichavaram Mangroves, Tamil Nadu), Kandla (Gujarat) and Jamnagar (Gujarat).

In most of these locations, there is adequate fresh water supply available due to high/substantial rainfall and/or presence of major rivers (also important river confluences and deltas that give rise to a thriving estuarine environment). Consequently, the mangrove species that successfully grow in those regions are adapted to a low-salinity environment (where salinity is approximately 20 ppt) against that of 37-44 ppt prevailing in Kachchh coastal waters. Furthermore, the species selected to establish the biodiversity enrichment project also belong to this group of mangrove species. This subsequently creates a challenge for the team heading this project because the Kachchh region does not provide adequate salinity ranges for survival of most of these species. In fact, it provides an extremely harsh saline environment (salinity can range up to as high as 44 ppt during summer).

Considering the above-mentioned scenario, the site selection criteria, need for species of high salinity tolerance and studying their natural occurrence in Kachchh becomes critical in ensuring a substantial survival rate of the mangrove species selected to potentially successfully establish a diverse and resilient mangrove community in the Kachchh region.

Furthermore, a highly diverse set of mangrove species will ensure resilience in the face of changing climate and could probably provide as a thriving gene pool and seed bank in the future for the Kachchh region.

Table 1: NURSERY STATUS AS OF SEPTEMBER 2018

Sr. No.	SPECIES	LOCATION (FROM)	SITE	DATE OF ARRIVAL IN BHUJ	DATE OF SOWING	NO. OF SEED-BAGS ESTABLISHED	NO. OF SEEDS IN EACH BAG	TOTAL NO. OF SEEDS SOWN	APPROX. SURVIVAL RATE TILL DATE
1	*Aegiceros corniculatum*	Parangipettai		Sept 21	Sept 25	2000	2	4000	
		Kandla							
2	*Excoecaria agallocha*	Pondicherry		Sept 22	Sept 26	4000	10	40000	
3	*Rhizophora apiculata*	Machilipatnam		Sept 22	Sept 26	4000	1	4000	
4	*Ceriops decantra*	Parangipettai		Sept 21	Sept 25				
		Machilipatnam		Sept 22	Sept 26				
5	*Bruguiera gymnorhiza*								
6	*Xylocarpus moluccensis*	Machilipatnam		Sept 22	Sept 26	1360	1	1360	
7	*Bruguiera cylindrica*	Machilipatnam		Sept 22	Sept 26	1500	1	1500	
8	*Ceriops tagal*	Jamnagar		Sept 15					

PROJECT "DRIP IRRIGATION"

- **Basis of Requirements of Drip Irrigation**

The main source of livelihood being agriculture, the cultivators tend to use more and more underground water for irrigation. Underground waters have gone very highly saline. The use of such water for irrigation has made the soil also saline and the crop yields have dwindled.

- **Process of Drip Support**

Farmer have to applied in the prescribed form of Adani foundation with photograph.
Inspection and verification will be by AF representative.
Ration card, work order of G.G.R.C, 7/12 certificate and all bills must be attached.
Farmer will be informed by telephonic to have form query.
Primary information about farmer land will be received by telephone.
Farm visit within 10 days of after received of application and verified the installation of system as per map and material as per bill will be checked and get farmer feed back.
Verification report submitted to account office.
Payment within 20 days if all document is complete through net banking.
Farmer economic study after our support.

- **Villages of Drip Support**

Keeping in view the situation and request comes from community, once again Drip irrigation support is planned in three phase. As a part of first phase, we are considering 22 potential villages. We have put condition that we will support only if they become agree for fodder cultivation atl east in one acre

RURAL INFRASTRUCTURE DEVELOPMENT

Building a strong community relationship is the key to progress of Adani Foundation. The programs such as Education, Health and Sustainable livelihood development play a very important role in building this strong relationship with the community. These three programs are incomplete without the inclusion of the Rural Infrastructure Development program.

This year on path of sustainability, we have taken some steps as follows...

Under Dignity of Drivers Project, Adani Foundation has constructed Resting Shed for Drivers entering in SEZ Premises. Total 50 beds are constructed, drinking water and sanitation plus recreational – TV Facilities and will be charged minimum. Adani Foundation has handed over the project to ASSET Department – SEZ as a revenue generation model.
In this ceremony Mr. Avinash Rai (CEO- APSEZ), Mr. Rakshit Shah(Executive Director – APSEZ), Mr. Pritpal Sinh (Head – SEZ Operation) and other transporters remained present.

Work in progress

- Drainage maintenance and other misc works
- Basic infra. Facility in Labour Colony
- Drainage chamber and covers ,wandh village
- Development in common place, Navinal
- Civil works in gadhvi samaj community hall, Navinal
- Civil works in secondary school, Navinal
- Repair of west weir work at zarpara
- Construction of fisherman house, shekhadiya

Completed works

- Civil and electrical works in HMV driver rest shed
- River and pond cleaning by JCB- Nani khakhar, Zarpara and Baroi
- 26 pond deepening work under SSJA in 19 villages of mundra taluka

Labour colony- sanitation work

Driver Rest Shed at North Gate

Cricket pavilion shed, Nani Khakhar

Zarpara- west weir repairing work

Adani Skill Development Centre

Adani Skill Development Centre (ASDC) is playing a pivotal role in implementing sustainable development in the state.
Several miscellaneous industries exist in Kutch district. Adani Skill Development Centre has started a center in Mundra block so that the needs of these industries are fulfilled, the local youth is enrolled in various training / skill courses and the distance between the both is minimized.
The objective of this center is to impart different kinds of training to the students of 10th, 12th, college or ITI from surrounding areas. Thus, various employment-oriented trainings are organized to optimize the skills, art and knowledge through proper guidance and direction.
During this six months Total 762 people is given various trainings to enhance socio economic development.
Out of which 227 people are getting employment and average income up to Rs. 6500 per month.

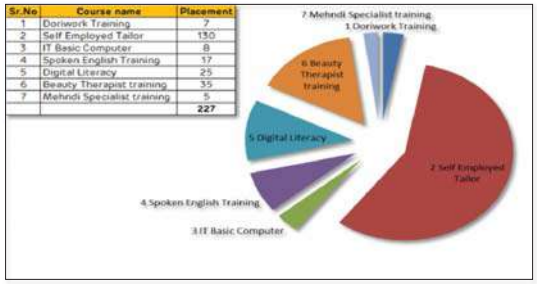
DETAILS OF VARIOUS TRAINING UNDERTAKEN

Sr.No	Course name	No.of canditates	Male	Female	Place	Start date	End date
1	Doriwork Training	19	0	19	Juna Bandar	01-04-2018	31-05-2018
2	Doriwork Training	20	0	20	Navinal	01-04-2018	31-05-2018
3	Self Employed Tailor	34	0	34	Tunda	01-04-2018	31-05-2018
4	Self Employed Tailor	15	0	15	Pragpar	10-04-2018	10-06-2018
5	IT Basic Computer	18	14	4	ASDc collage centre	01-05-2018	30-06-2018
6	Spoken English Training	15	8	7	ASDC Collage centre	01-05-2018	30-06-2018
7	Self Employed Tailor	11	0	11	Pragpar	03-05-2018	03-07-2018
8	Self Employed Tailor	33	0	33	Tunda	18-05-2018	20-07-2018
9	Digital Literacy	40	17	23	ASDC Collage centre	04-06-2018	03-07-2018
10	Beauty Therapist training	93	0	93	ASDC Baroi Centre	18-06-2018	17-08-2018
11	Digital Literacy	35	16	19	Tunda	02-07-2018	01-08-2018
12	Digital Literacy	107	53	54	Dhrub	04-07-2018	03-08-2018
13	Self Employed Tailor	33	0	33	Toda	19-07-2018	18-09-2018
14	Self Employed Tailor	16	0	16	Tunda	25-07-2018	24-09-2018
15	Spoken English Training	31	18	13	ASDC collage centre	01-08-2018	30-10-2018
16	Digital Literacy	38	27	11	ASDC Collage centre	08-08-2018	07-09-2018
17	Self Employed Tailor	73	0	73	Rampar	16-08-2018	15-10-2018
18	IT Basic Computer	12	12	0	Adani House	27-08-2018	28-08-2018
19	Beauty Therapist training	97	0	97	ASDC Baroi Centre	04-09-2018	05-11-2018
20	Mehndi Specialist training	22	0	22	ASDC Baroi Centre	04-09-2018	05-11-2018
		762	165	597			

Total fee Collected = 2,42,500/-

DETAILS OF VARIOUS TRAINING UNDERTAKEN

Sr.No	Course name	Placement
1	Doriwork Training	7
2	Self Employed Tailor	130
3	IT Basic Computer	8
4	Spoken English Training	17
5	Digital Literacy	25
6	Beauty Therapist training	35
7	Mehndi Specialist training	5
		227



Adani skill development centre Mundra Placement figures of ASDC.

Adani skill development centre Mundra is qualified in NSDC with 5 star rating for job role junior crane operator and unarmed security guard.

SWACHHAGRAHA

Mundra site- Adani Foundation launched Swachhagraha in 4 Blocks of Kutch District (Mundra, Anjar, Gandhidham, Bhuj). The Swachhagraha programme was launched in Bhuj District, Gujarat State with participation of over 450 Schools in Swachhagraha Prerak's Training Workshop with support of District Education Department, Kutch District. The programme was launched by Mrs. Shilin R. Adani, Trustee, Adani Foundation; Mr. Prabhav Joshi – DDO, Kutch Dist; Mr. V.S.Gadhavi, Director, Adani Foundation; Mrs. Sushama Oza, Director, Adani Foundation; Mrs. Ami Rakshit Shah, Adani Public School; Mr. Rakesh Vyas – DEO, Kutch; Mr. Sanjay Parmar - DPEO, Kutch; Dr. Gyaneshwar Rao, Medical Director, GAIMS; Dr. Gurudas Khilani, Dean, GAIMS; Ms Pankti Shah, Unit CSR Head, Mundra on 1st October 2018 at 10.30 AM at GAIMS Auditorium, Bhuj with full day Swachhagraha Training Workshop of Teachers.

LAUNCHED "SAKSHAM" CENTER AT BAROI GUEST HOUSE

ASDC-Baroi (Mundra):- Adani skill development Center (ASDC) launched 'SAKSHAM' center at Baroi guest house in Mundra on 16th June 2018 to provide skill development training to youth in the Mundra. An initiative of Adani foundation, the center in the Mundra city will benefit about more than 500 candidates every year in Beauty &Wellness course. The center will provide skill development training to the youths in the age group of 14-40years initially in Beauty & Wellness course. Total enrolled for this training were 90 students.

LAUNCHED "DIGITAL LITERACY" AT UTHHAN VILLAGES

Adani Skill Development center, Mundra has started digital literacy class in local village. 40 girls and boy are participated in first session. All village people are happy for this training in phase. We have also arrange evening batches to cover all people of various village.
Digital literacy training done through laptops and Tablets:-
1). The course duration is 26 days and number of hours is 52.
2). Per day training delivery hour is 2.
3). This is completely based on demonstrative and practical training methodologies.
4). The delivery is intended to be done through Desktops and Tablets
5). Attaching Also cover for payment banking topics .

SWACHHAGRAHA : At Gujrat Adani Institute of Medical Sciences

"Swachhagraha " – Project launched at Adani G K General Hospital to embed values of cleanliness in minds of the staff and community as well. Separate staff member is also appointed by HO team for the same. Mr. Gadhavi had launched swachhagraha by presenting insignia to Dr. Bhadraka (Head, Adani GKGH).

SAMVEDANA : Series of Motivational Sessions

To motivate and felicitate paramedical and nursing staff motivational session was organized with help of Ms. Hiral Pandya which is critical requirement of GKGH. She talked about behavior aspect as well as compassionate approach to patients.

Swachhagraha Marathon : Run Against Depression

Gujarat Adani Institute of Medical Sciences G K General Hospital and Student Counsel Organized the Bhuj Marathon. Theme of the marathon was Run against Depression and Swachhagraha.

Total more than 800 participants took part in this marathon with enthusiasm and zeal.



International Coastal Clean up Day

Mundra Adani foundation MUNDRA has celebrated swachhagraha related International Coastal Clean up Day celebrated with Coast Guard" with theme swachhagraha.. School students, Coast Guard staff and Adani foundation staff had cleaned Mandvi beach and give a message of swachhagraha.. At the end information given about swachhagraha project

NAMDA : ON REVIVAL PATH

Even as a breakthrough is waiting to happen, five trainees were enrolled on Tuesday 5th Dec 17 by Adani Skill Development Centre (ASDC) for the age-old Namda craft, a dying art form of Kutchh district in Gujarat. First initiative of its kind, the skill development training on Namda is aimed at preparing a future generation of artisans for the historic art form.

Adani Foundation, the CSR wing of Adani Group had vowed to save Namda from extinction and bring back its past glory. Originally innovated by an artisan of Mughal Era in the 11th Century India, Namda craft was primarily practiced by the Pinjara and Mansuri communities and Sama Muslims native to Kutchh. Sans proper encouragement, marketing avenues and promotion, the art suffered a major setback with artisans gradually switching over to other professions for livelihood earning.

Till recently, when the Adani Foundation, Mundra team members approached Mansuri Karimbhai Umarbhai, perhaps the sole survivor of the craft in Kutchh, Namda was dying a natural death. As a good corporate citizen, the Adani Group initiated a move to protect the art form, as well to make it popular and sustainable.

The first step towards the enormous goal of reviving Namda, the training programme kicked started with lots of positivity and enthusiasm among the trainees, who are committed to put best efforts for bringing back the past glory for this craft. And the best part of the initiative is that, the Namda survivor himself would train the future-artisans.

GREAT ACHIEVEMENT IS....

KARIM MANSOORI ONCE AN ORDINARY NAMDA ARTISAN IS NOW AN ENTERPRENUAR. THE ADANI FOUNDATION FEELS CONTENTIN REVIVING THE DYING NAMDA ART FORM AND SUPPORTING MANSURI IN STARTING HIS OWN BUSINESS.

HIS JOURNEY IS OFF TO TO A FLYING START AND WE WISH HIM ALL THE BEST.

New Journey of My Life !!

As if destiny had turned cruel to her, one after another shocks shattered the family life of Shyama Ben. Otherwise a jolly woman with lots of positive energy and great dreams of in her bright eyes, the unexpected miseries compelled her to enter into a state of solitude and high-depression. This villager of Sadau in Mundra locality had 7 times miscarriages, each time giving her an serious emotional blow and ceasing the hope of being a mother. This was not the end; luck had kept something even worst for her. For no fault of this poor lady in the mishaps and destiny doings, her husband left her in the midst of life at a time when she required maximum support from a person who knows her so well and can best understand her pains.

All these pushed Shyama Ben into darkness of life and she became totally cut-off from the social mainstream. This also adversely resulted into her health and mental status. But its well said, "What God Will....." , there was something big which she was destined to achieve in life to define her self-identity and shape the life in a constructive way. With help of neighbor lady she joined SHG Group and capacity building trainings by Adani Foundation. Within six months she took 5 training i.e. capacity building, leadership, banking, federation making and record keeping.

In June 2018 Adani Foundation planned an exposure to SEWA group. After exposure programme of SHG members and could notice certain potentials in her, which led to a new beginning. With required training and skill upgradation, she appeared for an interview in Britannia Industries within the APSEZ, Mundra and got selected for the position of supervisor. Today she is a self-sufficient woman with a earning of Rs 9000/- per month with other allowance for lunch and transportation. The new journey has again given her an opportunity to lead life normal way and start dreaming again to achieve greater things in life.

Ways to Bright Future !!

Mamad Sakil Osman Ghani Adani Vidya Mandir – Bhadreshwar 'A High Leap by a Poor Child from the Fisher folk Community.....Towards Engineering Studies.....Through Adani Vidya Mandir' 2017-18 Name: Mamad Sakil Osman Ghani Father's Name: Osman Ghani Mother's Name: Halimaben Family: Brother (1) + Sisters (4) & Parents; total 8 members Occupation: Fishing Village: Luni; Taluka: Mundra; District: Kutchh In modern times along with its importance, education has also made changes in our lifestyle.

Adani Vidya Mandir, Bhadreshwar, is like a lighthouse giving a ray of hope in remote areas. It was established to provide education to children from socio-economically backward communities. The school provides high-quality education, nutritious food as well other kinds of facilities so that children's self-respect increases through the education. Speaking of students, Mamad Sakil was enrolled in the Std. 7, in 2014-15 in the Adani Vidya Mandir, Bhadreshwar. His father, Osman Ghani, is a fisherman. His family of eight members consists of his mother, his father, a brother and four sisters. They live in Luni Bandar.

From the beginning it was seen that he was a quiet, straightforward, humble and cultured boy. He also exhibits behavior with moral values. Everyone helped the family socio-economically. In the Adani Foundation with the help of Vijayhai and Ishwarbhai noted details of the family and found that nobody was educated. In such times of rising prices and inflation it is difficult to raise so many children. So the school management decided to take over and fulfil his basic necessities. Efforts for this child's educational success were made including counselling and guidance.

During his first year in the school, he participated in the running competition in the Khel Mahakumbh and came first in the district. In this way, he began to progress in not just education but also other areas. He started getting promoted to the next standard every year and eventually he reached Std. 10. With the help of the school in various ways and his own hard work, he successfully cleared Std. 10 with 77%. He stood second in the school. Now, the journey of his life has really started. He has started to see new and inconceivable dreams for his future career. Now, the Adani Foundation will be holding his hand to fulfil his dreams.

After completing studies of the Std. 10, he was gifted an android phone by the school principal, Smt. Lali madam, as he needed new technology to get admission for further studies. In this way all the obstacles have been removed from his career path. He has now taken admission in mechanical engineering in Bhuj Polytechnic, and the Adani Foundation has paid his entire fee. A new innings has started in his life. With his hard work he is making progress step-by-step. He has set a good example for other students. And we all hope that he will eventually become a strong financial support to his family.

Enhance Employability!!

Vimleshkumar, an RTG crane operator at MICT, Mundra is a classic case study of skill development training ensuing employability. Just couple of month back a much stressed Vimleshkumar had approached Adani Skill Development Centre (ASDC) Mundra to undertake checker-cum- RTG crane operator training with a hope of getting some employment somewhere to support his economically poor family. After passing 12th qualification, Vimlesh was rendered unemployed like hundreds and thousands of youths of his age and locality.

While undergoing the ASDC training he would have never imagined that this additional knowledge and skill up gradation would bring him a bright future and good days for his family. Soon after completion of his 3 months duration course, Vimlesh Kumar got a job in MICT, Mundra doing cargo handling operations at MICT, Mundra. His current earning per month is Rs 12,000/- .

Vimleshkumar for employability through knowledge and skill development...

Divine feeling towards Mata no Madh!!

Mata no Madh is a village in Lakhpat Taluka of Kutch district, Gujarat, India. The village lies surrounded by hills on both banks of a small stream and has a temple dedicated to Ashapura Mata, the household deity of former Jadeja rulers of Cutch State. She is also considered patron deity of Kutch. Many people are used to reach this Ashapura temple by feet from different parts of India. G K General hospital has organized health facility through at 10 locations on way of Mata Na Madh during Navaratri 5th to 11th oct.. In addition to medical facility, This health shibir will provide awareness of swachhagraha, swine flu and Beti bachavo as well The concept given by Shri Gadhvi Sir and implementation will be taken care by Dr. Chintan and Adani foundation health team.

ADANI FOUNDATION ALL PROJECT ACHIVIEMENT APRIL – SEP 2018-19

AF- COMMUNITY HEALTH - MUNDRA 2018-19					
Sr. No.	**Description**	**No. of Direct Beneficiaries**	**No of Indirect Beneficiaries**	**No of Access Beneficiaries**	**Remarks**
1	Mobile health care unit	8972	26916	61500	29 Village
2	Medicines for rural clinics - 9	10485	31455	37500	11 Village
3	Support to Needy people	485	2425	73700	15 Village
4	Dialysis Support	3	32	119	No.of Dialysis-119 (03 Village)
5	Health Card Service to Senior Citizen	5137	25685	169279	68 Village
6	Suposhan	21502	64506	153219	Child,Adolescent girls,RPA Women (61 Village)
7	Shakti Raksha Project	457	2285	153219	61 Village
Total		47041	153304	648536	
AF- COMMUNITY HEALTH - GAIMS BHUJ					
1	Health Camp	4120	16780	7031	-
2	School Health Check up	527	1671	589	-
3	School Awareness	150	603	0	-
4	Ortho Implant	24	120	576	-
5	Death Body	259	1092	0	-
6	Patient Care & Coordination	2628	10872	162000	-
7	Mata no Madh - Health Camp	21000	84000	250000	
		28708	115138	420196	

RID					
1	Pond deepening work	31551	0	0	Total 19 Village.
2	Drainage maintenance and JCB hiring	13059	0	0	Total 06 Village.
3	Tuna Port Related CSR Projects	1215			Wandi Village.
4	Basic infra. Facility in Labour Colony	1380	0	0	Total Labour Colony = 5.
5	Development work in Zarpara & Mundra	2735	18338		(1) Zarpara = 735 (2) Mundra = 2000
6	Fisherman Amenities : Infrastructure Support at different Bandar	2472	0	0	(1) Old Abndar = 1056. (2) Bavdi Bandar = 576. (3) Kutadi Bandar = 840.
7	Participatory Ground Water Management	4927	0	0	Total 04 Village.
	Total	57339	18338	0	
	SLD (AGRI, Women Empowerment and Govt linkages)				
1	I.G Support	50	200	400	-
2	Sadhan sahay- tricycle and wheelchair	45	180	600	-
3	Gujrat govt sadhan sahay- Handicaps	41	164	600	-
4	Central govat sahay Handicaps	142	568	600	-
5	Medical certi Handicaps	182	728	980	-
6	Pension Yojana Linkages	124	496	400	-
7	Bus pass Linkages	170	680	980	-
9	fodder N.B 21	140	1250	1560	-
10	Biogas	21	130	270	-
11	Organic farming	21	140	290	-
12	Fodder support				-
13	Women Empowerment	94	570	768	-
14	Namada craft	6	36	0	-
	Total	1036	5142	7448	

EDUCATION					
1	Material Support	8	1600	20	-
2	Mothers Meet	36	1800	3600	-
3	Project Uthhan	17	2598	0	-
4	Shala Praveshotshav	3000	9000	0	-
5	Swachhagraha	450	36000	0	
6	Teachears Training	4	1000	10000	
7	Support to 10th Pass Students from AVMB	44	132	0	-
Total		3559	52130	13620	
	Education Initiative for Fisher folk				
1	Education Initiative for children at vasahat	250	1500	265	
2	Balvadi	138	690	149	
3	Vehical support	98	490	0	
4	Exposure tour, Fee & Other Edu. Support to poor students and cycle support to Fishermen Students.	142	852	0	
Total		628	3532	414	
	Sustainable livelihood for Fisher folk				
1	Community Engagement Activities	780	0	780	
2	Livelihood promotion - Income Generation to individual	13	78	0	
3	Awareness generation and capacity building	70	350	176	
4	Potable Water to Fisher Folk at vasahat	921	5526	1200	
5	Mangroves plantation and maintenance	158	948	0	
Total		1942	6902	2156	
	Total beneficaries	140253	354486	1092370	

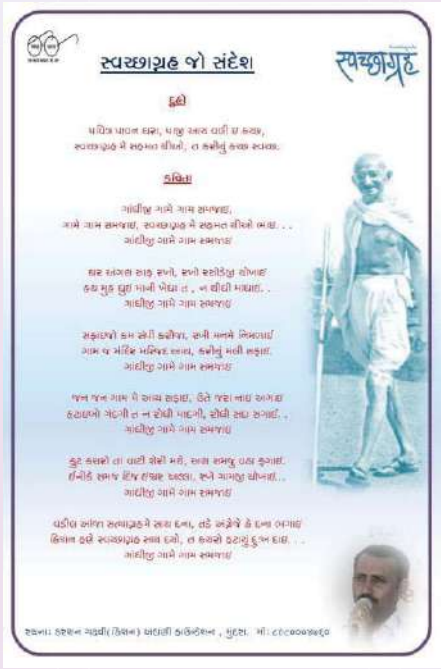
Adani Foundation, CSR Budget - Mundra
Budget Utilization April to September-2018

F.Y. 2018-19

Rs. In lacs

Sr. No.	Program	Budget 2018-19 Rs.	Budget Utilization Rs.
A.	Admin Expense	67.55	24.05
B.	Education		
(i)	Education Initiative	67.85	30.66
(ii)	Adani Vidya Mandir-Bhadreshwar	143.15	48.96
(iii)	Shanti Vihar (Project Udaan)	342.82	108.96
	Sub Total	553.82	188.58
C.	Community Health	243.21	84.00
D.	Sustainable Livelihood Development	475.22	282.10
E.	Rural Infrastructure Development	326.34	72.38
	GRAND TOTAL	**1666.14**	**651.11**


ભદ્રેશ્વર ગામે અદાણી ગ્રુપના ચેરમેનના
જન્મદિનની અનોખી ઉજવણ
તાલુકા હેલ્થ ઓફિસ મુન્દ્રા દ્વારા ઓરી
અંગે શાળાના આચાર્યઓનો વર્કશ
જીકે હોસ્પિ.માં કાલે માહિતી
સેતુ કેન્દ્ર ખુલ્લું મુકાશે
સરકારી યોજનાઓ વિશે વિનામૂલ્યે
માહિતી અને ફોર્મ આપવામાં આવશે
મુન્દ્રા તાલુકામાં પ્રા. શિક્ષણના
ઉર્ધ્વીકરણ અર્થે કરાર કરાયા
આયુષ્માન ભારત યોજના તળે
ભુજોડીમાં મેડિકલ કેમ્પ યોજાયો
માંડવીમાં ગણિત-વિજ્ઞાન પ્રદર્શનમાં ૬૫
શાળાના છાત્રો દ્વારા એકસો વિવિધ કૃતિ પેશ કરાઈ


સ્વચ્છાગ્રહ જો સંદેશ
સ્વચ્છાગ્રહ
દુહો
કવિતા
ગાંધીજી ગામે ગામ સમજાણ,


શેખડીયા ગામને ગ્રીન વીલેજ
બનાવવાના કાર્યનો પ્રારંભ
શિક્ષક બનતા નથી પરંતુ જન્મે છે
'ગુરુવંદના' કાર્યક્રમમાં પ્રાથમિક
શાળાના ૧૦૬ શિક્ષકો જોડાયા
તાલુકાના તમામ શિક્ષકોની આરોગ્ય ચકાસણી કરાઈ
લુણીમાં માછીમાર સમુદાયના તેજસ્વી
તારલાને રૂા.૫.૧૩ લાખની સ્કોલરશીપ
અદાણી ફાઉ. દ્વારા ભુજના સ્લમ વિસ્તારની
શાળાઓમાં શૈક્ષણિક કીટનું કરાયું વિતરણ
ધો. ૧માં પ્રવેશ પામનાર બાળકોને પ્રોત્સાહિત કરાયા
ભુજની અદાણી મેડિકલ કોલેજની
સામાજિક જવાબદારી સરાહનીય
મુન્દ્રા તાલુકામાં ગુરૂવંદના કાર્યક્રમ

Annexure – 3

Fisherman Approach in SEZ

During Development of SEZ area, Special and dedicated approach for fisherman has been constructed at necessary places.

The approaches are regularly being used by fisherman for travelling to the respective Bandars.

We have issued special Entry Passes to go for their routine activities without any interference.

Total length of the same is 23.00 Kms and expenditure involved is Rs.637 Lacs.

Sr.	Corridor name	Total Length in Mtr.	Total cost in Lacs.
1	Shekhadia fishermen way	1527	24.00
2	Dhrub fishermen way	1613	94.00
3	Zarpara fishermen way	3751	157.00
4	Zarpara Baradimata creek	5400	261.00
5	Navinal- fishermen way	6391	90.00
6	Kotadi b/h CGPL fishermen way	2348	7.00
7	Old port fishermen way	1987	4.00
	Total	**23017**	**637.00**

On the Way to Shekhadia

On the Way to Zarpara Fisherman Vasahat

On the Way to Navinal Village

On the Way to Navinal Village

On the Way to Luni Fisherman Vasahat

On the Way to Kutadi Fisherman Vasahat

Annexure – 4

adani

04.06.2018

To,
Director (Environment) & Member Secretary,
Gujarat Coastal Zone Management Authority,
Sachivalaya,
Gandhi Nagar

Subject: Submission of final report on comprehensive and integrated plan for preservation and conservation of mangroves and associated creeks in and around APSEZ, Mundra, Gujarat.

Reference:

(1) EC and CRZ clearance of Multi-product SEZ at Mundra vide MoEF&CC letter F. No. 10-138/2008-IA-III dated 15.07.2014
(2) MoEF&CC order vide F. No. 10-47/2008-IA-III dated 18.09.2015
(3) Submission of NCSCM's proposal and scope of work vide our letter dated 25.04.2016

Dear Sir,

In view of compliance with the directions issued by MoEF&CC, the scope of work of NCSCM was discussed during 28th meeting of GCZMA held on 22.04.2016. The discussed scope of work was submitted to GCZMA vide our letter dated 25.04.2016.

In view of the above, NCSCM commenced the studies covering the following directions mentioned in references above.

- *Bocha island, ecologically sensitive geomorphological features and areas in the island and creeks around the island will be declared as conservation zone action plan for its conservation must be prepared. M/s. APSEZ should provide necessary financial assistance for this purpose.*
- *A Comprehensive and integrated conservation plan including detailed bathymetry study and protection of creeks/mangrove area including buffer zone, mapping of co-ordinates, running length, HTL, CRZ boundary will be put in place. The plan will take note of all the conditions of approvals granted to all the project proponents in this area, e.g., the reported case of disappearance of mangroves near Navinal creek. The preservation of entire area to maintain the fragile ecological condition will be a part of the plan in relation to the creeks, mangrove conservation and conservation of Bocha Island up to Baradimata and others.*

4/6/18
સક્ષમ નિકાસ અધિકારી
રજીસ્ટ્રી શાખા
વન અને પર્યાવરણ વિભાગ
સચિવાલય,ગાંધીનગર.

Adani Ports and Special Economic Zone Ltd
Adani House
Nr Mithakhali Circle, Navrangpura
Ahmedabad 380 009
Gujarat, India
CIN: L63090GJ1998PLC034182

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Fax +91 79 2555 5500
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Registered Office: Adani House, Nr Mithakhali Circle, Navrangpura, Ahmedabad 380 009, Gujarat, India

adani™

- *NCSCM will prepare the plan in consultation with NIOT, PP and GCZMA. In recognition of the fact that the existing legal provisions under the E(P) Act 1986 do not provide for any authority to impose ERF by the Government, the plan will be financed by the PP. The implementation will be carried out by GCZMA. The monitoring of the implementation will be carried by NCSCM.*

During the course of the study, APSEZ has submitted two reports regarding progress of the study to all concerned authorities as part of the six monthly compliance reports. MoEF&CC vide their letter dated 23.08.2016 requested to submit an updated status of the directions (reference – 2). In reply, APSEZ submitted the requisite information with the progress report of the ongoing studies vide letter dated 10.09.2016. In continuation to the same, following site visits were carried out for verification of compliance status. During the said visits, the progress reports submitted were discussed with the concerned authorities present.

- A joint site visit (MoEF&CC, RO, Bhopal, GCZMA and GPCB, RO, Gandhidham) was carried out during 21 – 22.12.2016.
- Site visit of Regional Officer, MoEF&CC, Bhopal was carried out during 02 – 03.05.2018.

In continuation to our earlier submissions, we would like to inform you that the stated study is now completed (including preparation of the conservation plan) and the report prepared by NCSCM is enclosed for your consideration.

It may be noted that demarcation of HTL and CRZ areas of the entire coast of Gujarat (including the APSEZ area) is being carried out by NCSCM. NCSCM has already prepared the draft maps. Once the maps are finalized, they will be submitted to GCZMA and MoEF&CC as part of the requirements.

Thank you
Yours sincerely,

Shalin Shah
Head – Environment

Copy to: Director (Infra II committee), MoEF&CC (IA.III section), Indira Paryavaran Bhavan, Jor bagh road, Aliganj, NewDelhi

प्राप्त किया
Section
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Environment, Forests & Climate Change
Govt. of India
इंदिरा पर्यावरण भवन/Indira Paryavaran Bhawan
जोर बाग रोड/Jorbagh Road, Aliganj
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Annexure – 5

"HALF YEARLY ENVIRONMENTAL MONITORING REPORT"

FOR

ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED
TAL: MUNDRA, KUTCH, MUNDRA – 370 421

MONITORING PERIOD:
APRIL 2018 TO SEPTEMBER 2018

PREPARED BY:

POLLUCON LABORATORIES PVT.LTD.

**PLOT NO.5/6 "POLLUCON HOUSE", OPP. BALAJI INDUSTRIAL SOCIETY,
OLD SHANTINATH SILK MILL LANE, NEAR GAYTRI FARSAN MART,
NAVJIVAN CIRCLE, UDHANA MAGDALLA ROAD, SURAT-395007.
PHONE/FAX – (+91 261) 2455 751, 2601 106, 2601 224.
E-mail: pollucon@gmail.com web: www.polluconlab.com**

TC - 5945 ISO 9001:2015 ISO 14001:2015 OHSAS 18001:2007

MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.05	8.02	8.12	8.09	8.17	8.09	8.12	7.98	8.25	8.18	8.17	8.14	IS3025(P11)83Re.02
2	Temperature	oC	30.7	30.1	31.1	30.8	30.6	30.3	31.4	30.8	30.5	30.2	30.8	30.6	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	210	246	292	218	281	240	302	274	344	290	312	289	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	3	2	4	3	4	2	3	2	4	3	3.0	2.0	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	8	6	6.8	6	6	5.4	6.2	5.4	6.6	6.4	6.2	6	IS3025(P38)89Re.99
6	Salinity	ppt	34.6	34.4	35.1	34.8	36	35.8	34	33.8	33.8	33.5	34.1	33.7	APHA (22ndEdi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22ndEdi)5520 D
8	Nitrate as NO_3	µmol/L	10.8	8.2	13.8	9.6	14	11.4	6	3	9.8	7.5	7.5	6.8	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.1	0.9	1.7	0.8	1.63	1.12	1.8	1.3	1.5	1.1	1.1	0.8	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	6.24	5.54	5.2	4.8	3.8	3.12	4	3.4	3.4	2.8	2.8	2.2	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.6	1.3	2.1	1.5	2.14	1.93	2.08	1.8	2.25	1.6	2.3	1.8	APHA(22ndEdi) 4500 C
12	Total Nitrogen	µmol/L	8.5	8.2	8.4	7.8	5.30	4.40	11.80	7.70	14.7	11.4	11.4	9.8	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	18	4	19	8	16	4	6.8	3.2	7.2	4.4	10	3	PLPL-TPH
14	Total Dissolved Solids	mg/L	36210	36090	37940	35210	36208	35756	34912	34118	34210	34108	34510	34392	IS3025(P16)84Re.02
15	COD	mg/L	10	8	11	10	15	6	10	8	12	9	9	8.0	APHA(22ndEdi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	2.13	0.76	2.4	2.1	2.03	1.17	2.6	0.8	1.75	1.3	1.21	1.1	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	1.11	0.929	1.6	1.2	2.68	1.12	1.9	1.2	2.26	2.03	1.811	1.63	APHA (22ndEdi) 10200-H

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

17.2	Phaeophytin	mg/m^3	3.2	2.9	3.9	2.8	1.74	0.87	3.4	2.6	1.72	1.40	1.37	1.21	APHA (22ndEdi) 10200-H
17.3	Cell Count	No. x 10^3/L	228	76	298	90	264	112	240	130	184	156	123	104	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Biddulphia sp.** *Melosira sp. Navicula sp. Nitzschia sp. Skeletonema sp.* --	**Melosira sp.** *Navicula sp. Nitzschia sp. Fragillaria sp.* -- --	**Nitzschia sp.** *Rhizosolenia sp. Navicula sp. Asterionella sp. pediastrum sp Synedra sp.*	**Navicula sp.** *Fragillaria sp. Biddulphia sp.* -- -- --	Rhizosolenia sp. Navicula sp. Chaetognathes Nitzschia sp. Thallasiosira sp. Surirella Ceratium	Nitzschia sp. Navicula sp. Melosira sp. -- -- -- --	**Rhizosolenia** *Nitzschia Navicula Biddulphia Coscinodiscus Cheatoceros*	**Synedra** *Navicula Thallasiosira* -- -- --	*Melosira Thallasionema Navicula Nitzschia Rhizosolenia* --	*Navicula Nitzschia* -- -- -- --	*Nitzschia Peridiniium Navicula Biddulphia* --	*Thallassionema Nitzschia Navicula* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	20		18		70		68		54		43		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Copepods Decapods Foraminiferans Ostracodes		Crustaceans Fish egg Mysids Molluscans --		Polychaete Mollusan Crustaceans Ostracods Foraminiferans		Decapods Copepods Polychaete Gastropods --		Copepods Foraminiferans Polychaete Mysids Lamellibranches		Chaetognaths Copepods Gastropods --		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	4.58		9.4		10.7		8.4		7.6		6.08		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1750		1950		1850		1900		1700		2050		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4 (2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018	MAY 2018	JUNE 2018	JULY 2018	AUGUST 2018	SEPTEMBER 2018	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.84	0.72	0.75	0.66	0.54	0.68	FCO:2007
2	Phosphorus as P	µg/g	180	205	210	240	224	218	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.8	5.4	5.2	5.5	5.15	5.4	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	212	260	118	146	120	230	AAS 3111B
5.3	Manganese as Mn	µg/g	1680	1780	1760	1880	1750	1650	AAS APHA 3111 B
5.4	Iron as Fe	%	5.2	5.8	4.7	5.1	4.9	5.3	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	80.6	42.8	66.4	56.8	41.6	64	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	70.8	80.6	72	67.9	43.8	56	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	240	180	278	312	290	242	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	8.2	7.2	9.9	6.5	3.2	7.5	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	0.12	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Decapods Amphipods --	Crabs Anthozoans Isopodes Decapodes	Polychaete Anthozoans Decapods	Gastropods Polychaete Decapods	Bivalves Decapods Polychaete	Polychaete Echinoderms --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Copepods Hydrozoa	Copepodes Foraminiferans --	Nematodes Hydroza	Bryozoans Hydrozoa	Hydrozoa --	Copepods Ostracodes --	APHA (22nd Edi) 10500-C
6.3	Population	no/m2	372	260	382	441	353	614	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.15	8.11	8.17	8.15	8.23	8.16	8.2	8.15	8.24	8.09	8.26	8.15	IS3025(P11)83 Re.02
2	Temperature	oC	30.5	30.2	31.3	30.8	30.7	30.3	30.8	30.2	30.7	30.4	31	30.6	IS3025(P9)84R e.02
3	Total Suspended Solids	mg/L	258	278	310	262	282	246	296	272	308	290	284	252	IS3025(P17)84 Re.02
4	BOD (3 Days @ 27 °C)	mg/L	4	3	3	2	3	2	2	BDL*	3.0	BDL*	3.0	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	6.6	6	6	5.8	5.8	5.6	6.6	6	6.4	6.2	6.6	6.1	IS3025(P38)89 Re.99
6	Salinity	ppt	34.9	34.6	35.4	35.1	35.2	35	33.8	33.4	34.2	33.5	34.3	34	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5 520D
8	Nitrate as NO_3	µmol/L	13.6	10.2	26.2	23.8	10.4	8.2	3.3	3	10.4	5	6.2	4.4	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.5	1.1	2.2	1.7	1.12	0.66	2.2	1.6	1.8	1.2	0.95	0.6	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	5.87	5.53	3.2	2.4	3.23	2.4	3.4	2.9	4.0	3.0	2.8	2.1	IS3025(P34)88 Cla.2.3
11	Phosphates as PO_4	µmol/L	1.5	1.3	1.8	1.1	1.77	1.42	1.95	1.74	2.4	2.1	2.56	2.2	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.5	7.2	5.1	4	4.50	3.20	8.90	7.50	16.2	9.2	9.95	7.1	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	17	7	12	4	18	8	16	4	10	4.0	8	3.0	PLPL-TPH
14	Total Dissolved Solids	mg/L	37128	36720	37610	37108	35992	35872	34712	34218	34312	34116	34416	34319	IS3025(P16)84 Re.02
15	COD	mg/L	12	10	6	5	11	8	8	6	11.0	6.0	8.0	5.0	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/ L/day	1.35	0.67	1.8	1.12	1.62	1.01	2.2	1.6	1.23	0.72	1.32	1.05	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/ m^3	2.2	0.97	2.6	1.23	2.42	1.32	3.58	2.3	1.69	0.94	1.35	0.753	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/ m^3	3.5	4.4	2.4	1.5	1.6	0.86	2	1.9	1.0	0.47	0.8	0.379	APHA (22nd Edi) 10200-H

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Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	285	140	270	80	380	124	310	190	210	148	140	99	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Biddulphia sp.** *Cyclotella sp. Nitzschia sp. Peridinium Coscinodiscus sp.*	**Thallasionema sp.** *Skeletonema sp. Navicula sp.* -- --	**Navicula sp.** *Synedra sp. Coscinodiscus sp. Asterionella sp.* --	**Navicula sp.** *Fragillaria sp. Biddulphia sp* -- --	**Rhizosolenia sp.** Navicula sp. Nitzschia sp. Biddulphia sp. Melosira sp.	Navicula sp. Biddulphia sp. Nitzschia sp. -- --	**Navicula** *Nitzschia rhizosoleria Biddulphia* -- --	**Biddulphia** *Fragillaria sp. Navicula sp.* -- -- --	*Navicula Nitzschia Coscinodiscus Thallasiosira Frugillaria Cyclotella*	*Melosira Nitzschia* -- -- -- --	*Thallassionema Nitzschia Biddulphia Gyrosigma Rhizosolenia*	*Peridinium Biddulphia Navicula* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10 ^{3}/ 100 m^3	32		22		31		48		40		38		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Gastrotriches Copepods Polychaete worms Bivalves		Gastropods Copepods Decapods Ostracods Krill		Gastroponds Mollusan Bivalves Polychaete --		Polychaete Bivalves Ctenophores Mysids		Gastropods Chaetognaths Siphonophores Lamellibranches		Decapods Gastropods Polychaetes Copepods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	4.2		7.8		3.8		6.4		4.94		3.95		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1650		1995		1750		1650		1950		1850		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22nd Edi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK – N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018	MAY 2018	JUNE 2018	JULY 2018	AUGUST 2018	SEPTEMBER 2018	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.75	0.9	0.9	0.8	0.64	0.74	FCO:2007
2	Phosphorus as P	µg/g	202	222	160	198	210	188	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.45	5.3	5.1	5.35	5.3	5.2	AAS APHA 3111 B
5.2	Total Chromium as Cr+3	µg/g	124	142	148	112	102	132	AAS 3111B
5.3	Manganese as Mn	µg/g	1940	1620	1650	1580	1440	1350	AAS APHA 3111 B
5.4	Iron as Fe	%	5.1	5.5	4.9	5.1	4.9	4.85	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	94.6	72.8	82	65	58	48	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	62.8	48.6	43	82	64	52	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	256	290	310	360	290	210	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	10.7	8.1	7.4	5.5	3.4	2.6	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaete worms Amphipods Gastropods	Echinoderms Polychaete worms Isopods	Echinoderms Decapods Isopods	Polychaete Gastropods Bivalves	Gastropods Polychaete Crustaceans	Polychaete Isopods Decapods	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Hydrozoa --	Foraminiferans Nematodes Copepods	Nematodes Copepods	Nematodes Foraminiferans --	Copepods -- --	Foraminiferans Copepods --	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	298	240	353	471	324	471	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLAND - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.19	8.13	8.12	8.09	8.13	8.05	8.25	8.15	8.17	8.11	8.21	8.14	IS3025(P11)83Re.02
2	Temperature	oC	30.2	30.3	31.1	30.8	31	30.5	30.6	30.2	30.9	30.6	30.7	30.5	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	252	220	268	208	296	244	318	284	332	298	348	272	IS3025(P17)84Re.02
4	BOD (3 Days @ 27°C)	mg/L	4	3	5	4	3	2	3	BDL*	4.0	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.2	5.8	6.2	6	6.2	6	6.2	5.6	6.4	5.8	6.6	6.2	IS3025(P38)89Re.99
6	Salinity	ppt	35	34.6	35.2	34.8	35.6	35.2	34.2	33.8	34.4	33.8	34.1	34	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	13.8	8	17.8	10.2	15.8	11.3	9	5	7.5	4.0	5.6	3.2	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.2	0.6	1.8	1.1	2.4	1.63	2.8	1.9	2.1	1.8	2.1	1.6	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	2.7	2.2	3.4	2.8	1.7	1.2	2	1.6	3.0	2.0	1.7	1.1	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.6	1.4	2.6	2.1	2.25	1.87	2.4	1.7	2.04	1.80	2.31	2.10	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	3.8	2.7	4.8	4.2	3.10	2.40	13.80	8.50	12.6	7.8	9.4	5.9	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	18	12	10	4	12	4	10	6	16	10	18	8	PLPL-TPH
14	Total Dissolved Solids	mg/L	36208	35712	36940	35910	36117	35756	34972	34318	34408	34096	34312	34106	IS3025(P16)84Re.02
15	COD	mg/L	10	8	12.6	10.2	11	8	6	BDL*	10	BDL*	7	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	1.71	0.47	1.78	1.14	2.21	1.49	3.1	2.18	1.55	0.81	1.3	0.945	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m³	2.5	0.65	2.8	1.8	2.11	1.45	2.6	1.8	1.72	1.11	1.38	0.88	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m³	2.4	1.8	3.4	2.9	1.78	1.16	3.4	3	0.894	0.4	0.806	0.3	APHA (22nd Edi) 10200-H

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Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

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Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	264	96	280	110	348	100	316	220	198	92	132	61	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Nitzschia sp.** *Navicula sp. Coscinodiscus sp. Rhizosolenia sp. Biddulphia sp.* **--**	**Fragillaria sp.** *Navicula sp. Melosira sp.* -- -- **--**	**Amphipora sp.** *Asterionella sp. Biddulphia sp. Cocconeis sp. Pleurosigma sp. Nitzschia sp.*	**Navicula sp.** *Nitzschia sp. Pleurosigma sp.* -- -- --	Rhizosolenia sp. Coscinodiscus sp. Thallasiosira sp. Nitzschia sp. Pleurosiqma --	Nitzschia Navicula Melosira -- -- --	**Cosmarium** *Rhizosolenia Thallasiosira Biddulphia Coscinodiscus Melosira*	**Melosira** *Biddulphia Rhizosolenia* -- -- --	*Frugillaria Melosira Nitzschia Thallasiosira Gylnardia* --	*Melosira Nitzschia Navicula* -- -- --	*Rhizosolenia Thallasionema Nitzschia Coscinodiscus Fragillaria*	*Navicula Synedra Nitzschia* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	20		16		62		72		55		44		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Copepods Nematodes Polychaete worms --		Copepods Cyclops Decapods Krill Polychaete worms		Crustaceans Gastroponds Bivalves Hydrozoans --		Polychaete Bivalves Ostracodes Echinoderms Decapods		Copepods Decapods Foraminiferans Mysids Gastropods		Amphipods Copepods Mysids Polychaetes		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	5.28		7.8		11.6		10.4		5.1		7.92		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1680		1910		1650		1800		2010		1850		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M3 RIGHT SIDE OF BOCHA CREEK - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018	MAY 2018	JUNE 2018	JULY 2018	AUGUST 2018	SEPTEMBER 2018	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.65	0.62	0.75	0.82	0.6	0.64	FCO:2007
2	Phosphorus as P	µg/g	140	198	242	266	272	240	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.2	5.5	5.4	5.1	4.9	5.14	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	140	182	139	178	160	144	AAS 3111B
5.3	Manganese as Mn	µg/g	1570	1440	1680	1710	1580	1450	AAS APHA 3111 B
5.4	Iron as Fe	%	5.12	5.75	5.1	4.8	4.6	4.75	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	50.2	34.2	79.2	52.8	60.6	68.2	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	40.6	60.4	50.4	58.6	41.6	53.2	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	218	256	262	298	272	308	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	11.6	5.4	11.2	8.8	4.6	2.8	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaete worms Isopods Decapods	Polychaete worms Bivalves Anthozoans	Polychaete Isopods Decapods	Polychaete Bivalves Sponges	Polychaete Amphipods Echinoderms	Isopods Polychaetes Decapods	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Nematodes --	Foraminiferans Copepodes	Hydroza --	Nematodes Bryozoans *Foraminiferans*	Copepods Foraminiferans --	Bryozoans Hydrozoa --	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	343	310	338	529	559	440	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.18	8.1	8.07	8.02	8.11	8.06	8.09	8.01	8.17	8.06	8.19	8.15	IS3025(P11)83Re.02
2	Temperature	oC	30.2	30	31.1	30.8	30.5	30.2	30.8	30.2	30.1	29.8	30.6	30.5	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	288	223	262	210	308	267	390	296	342	270	317	284	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	2.5	1.8	3.4	3	2	1	3	BDL*	BDL*	BDL*	BDL*	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.8	5.2	6.2	5.9	5.6	5.4	6.6	6.2	6.4	6.0	6.5	6.2	IS3025(P38)89Re.99
6	Salinity	ppt	35	34.2	35.4	34.8	35.4	35	34.4	34	34.3	34.1	33.9	33.8	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	3	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	20.6	17.4	12.4	8.2	17.2	14.4	8.5	5.3	12.4	6.2	7.4	3.4	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.2	0.8	0.9	0.6	1.38	0.61	1.40	0.8	1.8	1.2	2.1	1.1	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	2.2	1.8	3.2	2.4	2.53	2	3.00	2	4.0	3.0	2.8	2.4	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.7	1.4	2.2	1.6	2.09	1.87	2.3	1.96	2.18	2.1	2.21	2.04	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7	6	5.2	3.1	3.50	2.90	12.90	8.10	18.2	10.4	12.3	6.9	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	14	8	20	6	16	5	16	4	10	6.0	8	3.0	PLPL-TPH
14	Total Dissolved Solids	mg/L	36840	36320	37110	36242	36118	35914	34812	34610	34756	34612	34216	34104	IS3025(P16)84Re.02
15	COD	mg/L	8	6	11.4	9.2	8	5	8	6	6.0	BDL*	6.0	5.0	APHA(22nd Edi) 5520-D Open Reflux
A	Flora and Fauna														
16	Primary productivity	mgC/L/day	2.56	0.67	2.4	1.6	2.7	1.03	2.78	1.4	3.1	1.6	2.2	1.46	APHA (22nd Edi) 10200-J
B	Phytoplankton														
17.1	Chlorophyll	mg/m^3	3.1	0.7	2.52	2.1	3.93	1.21	2.9	1.8	1.32	1.09	1.06	0.874	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.4	1.7	3.1	2.8	2.85	1.69	2.4	1.6	1.13	0.86	0.908	0.694	APHA (22nd Edi) 10200-H

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17.3	Cell Count	No. x 10^3/L	310	80	280	60	344	104	380	130	134	122	136	21	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Fragillaria sp.** *Melosira sp.* *Pinnularia sp.* *Rhizosolenia sp.* *Skeletonema sp.* **--**	**Nitzschia sp.** *Amphora sp.* *Biddulphia sp.* -- -- --	**Asterionella sp.** *Coscinodiscus sp.* *Navicula sp.* *Nitzschia sp.* *Fragillaria sp.* *Surirella sp.*	**Navicula sp.** *Gyrosigma sp.* *Coscinodiscus sp.* *Asterionella sp.* -- --	Navicula sp. Nitzschia sp. Coscinodiscus sp. Cheatoceros sp. Skeletonema sp. --	Navicula sp. Bacteriastrum Nitzschia sp. -- -- --	**Navicula** *Nitzschia* *Rhizosolenia* *Coscinodiscus* *Cyclotella*	**Biddulphia** *Nitzschia* *Surirella* -- --	*Coscinodiscus* *Navicula* *Biddulphia* *Thallasionema* *Frugillaria*	*Nitzschia* *Melosira* -- -- --	*Biddulphia* *Nitzschia* *Cyclotella* *Peridinium* *Thallassionema*	*Peridinium* *Cyclotella* *Fragillaria* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	17		22		38		58		64		51		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Copepods Ostracodes Molluscans Ostracods		Copepods Krill Decapods Crustaceans Ostracodes		Hydrozoans Polychaete Bivalves Gastropods --		Molluscans Polychaete Bivalves Decapods		Copepods Foraminiferans Ostracodes Fish Larve		Foraminiferans Polychaetes Gastropods Copepods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	10.2		13.2		9.5		11.8		5.84		4.67		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1550		1760		1600		1850		2070		1890		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

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Lab Manager

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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018	MAY 2018	JUNE 2018	JULY 2018	AUGUST 2018	SEPTEMBER 2018	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.98	0.88	0.8	0.75	0.7	0.55	FCO:2007
2	Phosphorus as P	µg/g	187	158	190	202	184	210	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.44	4.9	5.4	5.22	5.1	5.35	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	178	144	136	158	142	165	AAS 3111B
5.3	Manganese as Mn	µg/g	1940	1770	1910	1845	1760	1680	AAS APHA 3111 B
5.4	Iron as Fe	%	5.35	5.4	5.3	5.1	4.9	5.1	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	38.6	44.6	84.4	72.8	63	52	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	72.2	66.2	70.2	56.1	48	64	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	222	210	276	298	240	272	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	10.2	7.1	11.2	9.2	6.2	5.9	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaete worms Isopods Decapods	Polychaete worms Echinoderms Anthozoans	Amphipods Polychates --	Polychaete Bivalves	Polychaete Bivalves	Decapods Polychaetes --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Bryozoans --	Nemotodes Foraminiferans *Hydrozoa*	Hydroza Branchyurans	Copepods Ostracodes *Hydrozoans*	Foraminiferans Copepods --	Hydrozoa Foraminiferans Ostracodes	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	294	270	324	441	412	559	APHA (22nd Edi) 10500-C

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RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.07	8.03	8.18	8.12	8.15	8.1	8.24	8.09	8.27	8.2	8.25	8.19	IS3025(P11)83Re.02
2	Temperature	oC	30.6	30.2	31.4	30.8	30.4	30.1	30.8	30.6	30.5	30.2	30.7	30.4	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	212	175	308	282	312	260	298	244	318	284	352	306	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	4	3	3	2	3	2	3	2	4.0	BDL*	3.0	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.2	5.8	6.4	5.8	6.2	6	6.6	5.8	6.4	6.2	6.2	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	34.8	34.5	35.1	34.6	35.6	35	34.8	34.2	34.6	34.4	34.2	34.1	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	14.2	12.4	15.2	10.8	14	10.2	7.4	3.2	9.8	4.6	6.1	3.2	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.3	1.1	1.7	0.9	1.53	0.87	0.85	0.6	0.75	0.4	1.1	0.45	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.9	1.5	2.1	1.4	5.1	3.61	2.4	2.1	3.4	2	2.6	1.8	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.7	1.4	1.95	1.72	1.82	1.55	2.18	1.45	2.3	2.1	2.15	1.9	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	2.8	2.4	2.8	1.5	8.10	7.00	10.65	5.90	13.95	7.0	9.8	5.45	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	18	7	10	4	18	3	10	4	12	6	14	6	PLPL-TPH
14	Total Dissolved Solids	mg/L	35720	35230	35642	35108	36208	35814	35218	34948	34942	34618	34572	34328	IS3025(P16)84Re.02
15	COD	mg/L	12	10	8	6.4	12	8	8	6	12.0	6.0	10.0	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	1.84	0.83	3.2	1.5	2.14	0.99	3.9	2.8	2.13	1.68	1.91	1.01	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	1.16	0.97	2.4	2.2	2.85	1.71	3.4	1.6	2.04	1.92	1.63	1.53	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.2	1.6	3.6	3	2.76	1.25	2.8	1.3	1.26	1.6	1.01	0.646	APHA (22nd Edi)

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															10200-H
17.3	Cell Count	No. x 10^3/L	340	90	290	70	292	152	380	268	210	148	140	99	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Amphora sp.** *Fragillaria sp.* *Melosira sp.* *Rhizosolenia sp.* *Coscinodiscus sp.* **--**	**Fragillaria sp.** *Melosira sp.* *Nitzschia sp.* -- **--** --	**Rhizosolenia sp.** *Synedra sp.* *Navicula sp.* *Coscinodiscus sp.* *Skeletonema sp.* --	**Nitzschia sp.** *Melosira sp.* *Fragillaria sp.* -- -- --	Navicula sp. Nitzschia sp. Skeletonema sp. Coscinodiscus sp. Pleurosigma sp. Biddulphia sp.	Navicula sp. Nitzschia sp. Melosira sp. -- -- --	**Rhizosolenia** *Navicula* *Nitzschia* *Coscinodiscus* *Skeletonema* *Surirella*	**Melosira** *Thallasiosira* *Nitzschia* -- -- --	*Coscinodiscus* *Nitzschia* *Navicula* *Thallasiosira* -- --	*Frugillaria* *Guinardi* *Synedra* -- -- --	*Thallasionema* *Cyclotella* *Nitzschia* *Biddulphia* *Rhizosolenia*	*Cyclotella* *Nitzschia* *Melosira* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	15		25		26		30		48		41		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaete worms Amphipods Gastrotriches Copepods		Nematodes Copepods Copepods --		Gastropods Bivalves Nematodes Crustaceans		Hydrozoa Polychaete Bivalves Foraminiferans		Polychaete Decapods Bivalves Gastropods		Polychaete Decapods Copepods Fish egg		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	5.69		8.4		6.6		9.8		9.9		7.68		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1840		1720		1680		1850		2100		2070		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018	MAY 2018	JUNE 2018	JULY 2018	AUGUST 2018	SEPTEMBER 2018	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.88	0.58	0.62	0.98	0.69	0.58	FCO:2007
2	Phosphorus as P	µg/g	260	310	243	298	202	196	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.25	5.15	5.26	5.36	5.1	4.8	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	162	186	176	144	118	132	AAS 3111B
5.3	Manganese as Mn	µg/g	1380	1560	1428	1480	1610	1540	AAS APHA 3111 B
5.4	Iron as Fe	%	5.4	5.5	5.3	5.12	4.96	478	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	21.8	33.2	22.8	44.8	30.8	51.4	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	60.6	78.4	65.2	72.9	60	49	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	172	210	184	218	590	410	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	17.2	5.9	12.2	14.6	9.6	3.4	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	0.18	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaete worms Isopods Mysids	Crabs Mysids Decapods Bivalves	Echinoderms Decapods --	Polychaete Mysids Isopods	Polychaete Amphipods Mysids	Bivalves Ostracodes Chaetognaths	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Hydrozoa --	Gastrotriches Ostracodes	Copepods Hydroza	*Nematodes* -- --	-- Hydrozoa --	Copepods Bryozoans --	APHA (22nd Edi) 10500-C
6.3	Population	no/m2	362	340	265	382	471	643	APHA (22nd Edi) 10500-C

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POLLUCON LABORATORIES PVT. LTD. SURAT-7.

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RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.2	8.12	8.25	8.15	8.19	8.08	8.13	8.07	8.19	8.11	8.16	8.15	IS3025(P11)83Re.02
2	Temperature	oC	30.1	29.6	31.4	30.9	30.2	30.4	30.6	30.1	30.7	30.5	30.6	30.5	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	190	152	248	130	310	256	317	272	368	311	384	304	IS3025(P17)84Re.02
4	BOD (3 Days @ 27°C)	mg/L	2.2	1.6	5	4	5	2	4	2	3.0	2.0	4.0	2.0	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.2	5.8	6.6	6.2	6.3	5.8	6.2	5.6	6.6	6.2	6.4	6	IS3025(P38)89Re.99
6	Salinity	ppt	34.8	34.5	35.2	34.8	35.6	35	35	34.8	34.6	34.2	34.4	34.3	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	7.8	5.2	4.4	2.9	10.2	7.4	5.9	4.7	9.6	5.4	4	2.5	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.1	0.8	0.8	0.5	1.33	1.02	1.48	0.75	1.3	0.8	1.1	0.75	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	3.1	1.9	2.1	1.4	2.19	1.78	2.45	1.9	2.1	1.6	2.6	1.9	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.43	2.24	1.72	1.58	2.46	2.09	1.8	1.6	2.06	1.8	2.14	1.7	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	4.3	2.8	4.8	3.9	2.60	1.90	9.83	7.35	13	7.8	7.7	5.15	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	15	10	6	2	14	4	18	6	14	8.0	16	10.0	PLPL-TPH
14	Total Dissolved Solids	mg/L	35602	35112	35972	35212	36512	36214	35208	34984	34996	34810	34872	34564	IS3025(P16)84Re.02
15	COD	mg/L	7	6	16	12	18	10	12	8	14	8	12	10	APHA(22ndEdi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	1.6	1.3	2.4	1.8	6.98	4.95	3.6	3.1	1.57	0.94	1.55	1.26	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	1.15	0.97	2.6	2.4	4.54	2.78	3.9	2.4	1.59	1.32	1.27	1.06	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.4	1.9	3.4	3.2	2.14	1.33	2.6	2.1	1.2	0.97	0.961	0.774	APHA (22nd Edi) 10200-H

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POLLUCON LABORATORIES PVT. LTD. SURAT-7.

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17.3	Cell Count	No. x 10^3/L	270	65	320	90	304	196	340	240	212	136	141	91	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Amphora sp.** *Cyclotella sp.* *Rhizosolenia sp.* *Navicula sp.* ***Thallasionema sp.*** *Coscinodiscus sp.*	**Biddulphia sp.** *Melosira sp.* *Rhizosolenia sp.* -- -- --	**Nitzschia sp.** *Synedra sp.* *Coscinodiscus sp.* *Pleurosigma sp.* *Thallasiosira sp.* *Pinnularia sp.*	**Navicula sp.** *Fragillaria sp.* *Thalassionema sp.* -- -- --	Navicula sp. Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp. Melosira sp. Thallasiosira sp.	Nitzschia sp. Melosira sp. Pleuzesima -- -- --	**Rhizosolenia** *Pleurosigma* *Nitzschia* *Navicula* *Biddulphia* *Thallasiosira*	**Melosira** *Nitzschia* *Biddulphia* -- -- --	*Biddulphia* *Rhizosolenia* *Nitzschia sp.* *Navicula sp.* *Thallasiosira* --	*Melosira* *Nitzschia sp.* *Fragillaria* -- -- --	*Rhizosolenia* *Nitzschia* *Coscinodiscus* *Navicula* *Thallasiosira*	*Navicula* *Thallasiosira* *Nitzschia* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	18		24		39		42		47		37		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaete worms Amphipods Gastrotriches Ostracods		Copepodes Gastropodes Crustaceans Cyclops Polychaetes		Bivalves Gastropods Nematodes Copepods --		Bivalues Hydrozoans Polychaete Nematodes Decapods		Gastropods Nematodes Decapods Polychaete --		Polychaete Copepods Lamellibranches --		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	8.2		7.4		7.1		11.2		8.9		6.24		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1960		2050		1750		1950		2040		2080		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.28	8.18	8.21	8.13	8.2	8.14	8.21	8.16	8.17	8.12	8.19	8.11	IS3025(P11)83Re.02
2	Temperature	oC	29.8	29.5	31.4	30.9	30.7	30.3	30.6	30.4	30.9	30.5	30.8	30.7	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	212	172	318	282	272	236	301	254	337	296	313	297	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	3.4	2.8	5.2	3.8	3	2	3	2	4.0	3.0	3.0	2.0	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6	5.6	6.4	6	6.4	5.8	6.1	5.5	6.4	6	6.5	6.1	IS3025(P38)89Re.99
6	Salinity	ppt	35.1	34.8	35.4	34.9	35.6	35.1	35.2	34.8	34.8	34.2	34.6	34.3	APHA (22ndEdi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22ndEdi)5520D
8	Nitrate as NO_3	µmol/L	9.6	7.4	7.9	5.2	14.3	10.6	4.7	3.1	7.4	5	3.9	2.8	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.5	0.7	2.3	1.1	0.92	0.51	0.62	0.48	0.84	0.6	1.6	1.1	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	3.8	3.2	4.2	2.8	1.8	1.46	1.5	1.3	2.4	1.6	1.9	1.5	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	2.1	0.612	2.4	1.3	1.87	1.71	1.99	1.82	2.16	2.04	2.36	2.18	APHA(22ndEdi) 4500 C
12	Total Nitrogen	µmol/L	4.9	3.7	5.8	4.4	2.60	2.00	6.82	4.88	10.64	7.2	7.4	5.4	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	16	11	10	8	20	6	18	10	14	8.0	18	10.0	PLPL-TPH
14	Total Dissolved Solids	mg/L	35710	35470	35918	35423	36218	35877	35810	35320	35410	34910	34972	34578	IS3025(P16)84Re.02
15	COD	mg/L	14	10	18	13	10	6	12	10	14	10	12	10	APHA(22ndEdi) 5520-D Open Reflux
A	Flora and Fauna														
16	Primary productivity	mgC/L /day	2.43	0.74	3.15	2.6	2.39	0.88	3.1	2.6	1.48	0.83	1.35	0.923	APHA (22nd Edi) 10200-J
B	Phytoplankton														
17.1	Chlorophyll	mg/m^3	1.2	0.93	2.2	1.8	3.06	1.67	3.98	2.1	1.89	1.03	1.51	0.83	APHA (22ndEdi) 10200-H
17.2	Phaeophytin	mg/m^3	1.5	0.4	1.7	1.4	2.76	0.36	2.6	1.8	1.73	0.73	1.38	0.58	APHA (22ndEdi) 10200-H

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Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	290	90	260	40	368	88	340	270	222	116	144	83	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Synedra sp.** *Skeletonema sp.* *Biddulphia sp.* *Navicula sp.* **Nitzschia sp.**	**Fragillaria sp.** *Nitzschia sp.* *Thallasiosira sp.* -- --	**Fragillaria sp.** *Navicula sp.* *Synedra sp.* *Coscinodiscus sp.* *Oscillatoria sp.*	**Navicula sp.** *Nitzschia sp.* *Gyrosigma sp.* *Oscillatoria sp.* --	Rhizosolenia sp. Chaetognathes Coscinodiscus sp. Nitzschia sp. Navicula sp.	Chaetognathes Thallasiosira sp. Rhizosolenia sp. -- --	**Coscinodiscus** *Rhizosolenia* *Thallasiosira* *Biddulphia* *Melosira* *Cyclotella* --	**Nitzschia** *Biddulphia* -- -- -- -- --	*Frugillaria* *Thallasiosira* *Nitzschia* *Coscinodiscus* *Navicula* *Guinardia* *Rhizosolenia*	*Melosira* *Nitzschia sp.* *Synedra* -- -- -- --	*Thallasiosira* *Cyclotella* *Coscinodiscus* *Navicula* --	*Biddulphia* *Gyrosigma* *Navicula* -- --	APHA (22nd Edi) 10200-H
C							Zooplanktons								
18.1	Abundance (Population)	noX10^3/ 100 m^3	21		16		48		46		44		35		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Gastropods Polychaetes worms Bivalves Copepods		Mysids Polychaete worms Gastrotriches Nauplius larvae Decapods		Hydrozoans Bivalues Gastropods Molluscans Ostracodes		Hydrozoans Polychaete Bivalues Foraminiferans Decapods		Copepods Ostracodes Decapods Foraminiferans Fish Larvae		Polychaete Copepods Gastropods Decapods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	7.5		10.2		8.25		9.4		6.8		5.44		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1660		1880		1850		1750		2050		2250		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK – N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018	MAY 2018	JUNE 2018	JULY 2018	AUGUST 2018	SEPTEMBER 2018	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.75	0.8	0.76	0.85	0.68	0.6	FCO:2007
2	Phosphorus as P	µg/g	402	380	370	340	392	340	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.5	5.6	5.2	5.4	5.25	5.45	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	240	212	238	268	210	236	AAS 3111B
5.3	Manganese as Mn	µg/g	1890	1760	1685	1744	1650	1560	AAS APHA 3111 B
5.4	Iron as Fe	%	5.3	5.6	5.3	5.15	5.05	5.02	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	56.1	44.2	42	34	26	40	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	78.8	68.3	58	44.8	38	58	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	282	310	262	296	240	322	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	14.8	8.1	12.2	7.5	8.1	6.4	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Bivalves Mysids	Polychaete worms Isopods Decapods Prawns	Polychaete Decapods Mysides	Polychaete Bivalves Isopods	Polychaete Bivalves Gastropods	Polychaetes -- -	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Nematodes Copepods	Nematodes Foraminiferans	Nematodes Foraminiferans	Gastropods Ostracodes --	-- Ostracods *Copepods*	Copepods Hydrozoa --	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	290	270	279	250	353	382	APHA (22nd Edi) 10500-C

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.08	8.09	7.95	8.12	8.03	8.17	8.03	8.09	8.05	8.16	8.05	IS3025(P11)83Re .02
2	Temperature	oC	30.1	29.5	31.6	30.9	30.5	29.8	30.3	30	30.8	30.2	30.6	30.4	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	308	242	332	192	272	228	296	264	328	298	302	285	IS3025(P17)84Re .02
4	BOD (3 Days @ 27 °C)	mg/L	3.4	3	2.8	2.4	4	3	3	2	3.0	BDL*	4.0	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	6.2	5.8	6.6	6.4	6	5.2	6.6	6	6.4	6.1	6.2	6	IS3025(P38)89Re .99
6	Salinity	ppt	35.7	35.2	35.4	35.1	35.8	35.2	34.8	34.2	34.6	34.2	34.1	34	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)552 0D
8	Nitrate as NO_3	µmol/L	15.7	10.2	10.8	7.4	35.2	34.85	7.4	5.1	11.6	6.2	9.8	5.4	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	2.2	1.6	1.1	0.8	13.17	8.27	3.8	1.4	2.1	1.6	1.6	1.1	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.7	1.4	2.1	1.8	1.59	1.09	2.4	0.9	1.8	1.4	1.4	0.5	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.2	0.9	1.75	1.24	2.14	1.82	2.56	1.9	2.36	2.1	2.18	2.08	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	2.38	2.25	3.4	2.8	1.96	1.88	13.60	7.40	15.5	9.2	12.8	7	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	20	8	16	6	14	8	18	10	20	8.0	15	5.0	PLPL-TPH
14	Total Dissolved Solids	mg/L	36792	36160	35672	35312	36140	35812	35712	35194	34940	34224	34518	34272	IS3025(P16)84Re .02
15	COD	mg/L	11	8	10	6	14	11	14	8	10	< 5.0	14	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	1.93	1.01	2.42	2.3	2.12	1.71	2.88	2	1.31	0.518	1.46	0.968	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	2.1	0.5	3.4	1.8	2.96	1.46	3.69	2.17	1.97	1.73	1.58	1.38	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.5	2.1	2.1	1.6	1.87	1.78	2.05	1.78	1.6	0.73	1.28	0.58	APHA (22nd Edi) 10200-H

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17.3	Cell Count	No. x 10^3/L	290	86	240	80	308	92	330	110	220	152	147	91	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Navicula sp.** *Rhizosolenia sp.* *Thallasiosira sp.* *Coscinodiscus sp.* *Skeletonema sp.*	**Navicula sp.** *Thallasiosira sp.* *Biddulphia sp.* -- --	**Skeletonema sp.** *Synedra sp.* *Navicula sp.* *Rhizosolenia sp.* *Coscinodiscus sp.*	**Biddulphia sp.** *Pinnularia sp.* *Pleurosigma sp.* -- --	**Synedra sp.** Rhizosolenia sp. Nitzschia sp. Biddulphia sp. Navicula sp.	**Navicula sp.** Nitzschia sp. Skeletonema sp. -- --	**Peridiriz um** *Gyrosiama* *Thalassiosira* *Thalassi0thrix* *Biddulphia*	**Thallasiossira** *Nitzschia* *Cyclotella* -- --	*Coscinodiscus* *Navicula* *Nitzschia sp.* *Thallasiosira* *Frugillaria*	*Navicula* *Nitzschia sp.* *Thallasiosira* -- --	*Gyrosigma* *Thallasiosira* *Navicula* *Biddulphia* *Peridiniu m*	*Nitzschia* *Navicula* *Cyclotella* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	22		16		24		42		43		34		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Copepods Foraminiferans Ostracods Gastropods		Crustaceans Copepods Foraminiferans Nematodes Polychaete worms		Polychaete Bivalves Ostracodes Decapods --		Hydrozoans Bivalues Gastropods Crustaceans Echinoderms		Polychaete Nematodes Decapods Mysids --		Decapods Gastropods Polychaete Copepods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	8.8		5.4		6.25		9.4		5.6		4.48		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1780		1510		1950		2050		2150		2000		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

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RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2018		MAY 2018		JUNE 2018		JULY 2018		AUGUST 2018		SEPTEMBER 2018		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.01	7.95	8.07	8.03	8.07	8.02	8.13	8.09	8.21	8.17	8.24	8.19	IS3025(P11)83Re .02
2	Temperature	oC	29.8	29.6	31.4	31	30.9	30.6	30.8	30.2	30.6	30.5	30.8	30.5	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	286	252	312	290	242	210	272	251	306	271	218	190	IS3025(P17)84Re .02
4	BOD (3 Days @ 27°C)	mg/L	4	3	5	2	5	4	4	3	3.0	2.0	2.0	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	5.8	5.4	6	5.5	6	5.6	6.4	5.8	6.6	6.4	6.4	6	IS3025(P38)89Re .99
6	Salinity	ppt	36.1	35.7	35.9	35.4	36	35.8	35	34.6	34.8	34.5	34.3	34	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)552 0D
8	Nitrate as NO_3	µmol/L	21.8	14.6	14.2	10.8	18.4	12.2	7.4	4.7	13.8	6.4	10.4	5.2	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.7	1.2	2.1	1.7	2.14	1.43	2.4	1.6	1.8	1.1	2	1.5	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	3.4	2.8	4.8	3.1	3.1	2.3	2.9	2	1.6	1.4	3	2.2	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.5	1.4	2.3	1.8	2.14	1.87	2.35	1.99	2.16	2.1	2.4	2	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	5.1	3.8	5.8	4.4	3.10	2.30	12.70	8.30	17.2	8.9	15.4	8.9	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	12	7	18	10	18	10	14	6	25	10	20	14	PLPL-TPH
14	Total Dissolved Solids	mg/L	36772	35980	36240	35912	36912	36080	35918	35216	35072	34764	34852	34316	IS3025(P16)84Re .02
15	COD	mg/L	12	10	16	12	18	14	14	10	14	10	16	12	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	2.47	0.74	3.1	2.8	11.7	7.42	5.8	3.4	1.82	1.46	1.59	1.12	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	2.2	1.02	2.1	1.8	3.78	2.4	3.84	2.9	2.3	1.6	1.84	1.28	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.6	1.2	2.2	1.4	2.94	2.31	3.6	2.1	1.4	1.28	1.12	1.02	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	224	75	290	65	364	128	340	110	242	126	161	84	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	**Fragillaria sp.** *Peridinium Melosira sp. Thallasiosira sp. Skeletonema sp.*	**Melosira sp.** *Navicula sp. Nitzschia sp.* -- --	**Navicula sp.** *Synedra sp. Skeletonema sp. Biddulphia sp. Rhizosolenia sp.*	**Synedra sp.** *Nitzschia sp. Coscinodiscus sp.* -- --	**Navicula sp.** Nitzschia sp. Coscinodiscus sp. Thallasiosira sp. Melosira sp.	**Nitzschia sp.** Thallasiosira sp. Rhizosolenia sp. -- --	**Thalassi 0thrix** *Navicula Nitzschia Surirella Peridinium*	**Plerosima** *Navicula Cyclotella* -- --	*Navicula Thallasiosira Nitzschia sp. Coscinodiscus Rhizosolenia*	*Synedra Navicula Melosira* -- --	*Biddulphia Nitzschia Coscinodiscus Thallasiosira Gyrosigma*	*Peridinium Navicula Thallasiosira* -- --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	12		16		28		32		39		31		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Foraminiferans Ctenophores Polychaetes Copepods		Copepods Crustaceans Gastropods Ostracods Nematodes		Gastropods Polychaete Bivalves Mysids --		Polychaetes amphineurans Decapods Foraminiferans --		Decapods Nematodes Polychaete Copepods Mysids		Polychaete Chaetognathes Foraminiferans Copepods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	10		8.4		5.6		7.8		5.0		4.1		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1450		1590		1550		1750		1950		1850		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF ETP WATER OUTLET

SR. NO.	PARAMETERS	UNIT	RESULTS OF ETP WATER OUTLET						GPCB Limit	TEST METHOD
			04/04/2018	02/05/2018	05/06/2018	11/07/2018	04/08/2018	05/09/2018		
1	Colour	Co-pt	50	50	60	60	70	50	**100**	IS3025(P4)83Re.02
2	pH	--	6.64	7.12	7.2	7.58	7.4	7.5	**6.5 TO 8.5**	IS3025(P11)83Re.02
3	Temperature	°C	33	33	31.6	33	31.2	31	**40**	IS3025(P9)84Re.02
4	Total Suspended Solids	mg/L	34	42	52	48	65	48	**100**	IS3025(P17)84Re.02
5	Total Dissolved Solids	mg/L	1146	1060	1146	1078	1502	1104	**2100**	IS3025(P16)84Re.02
6	COD	mg/L	92	80	77	86	90	84	**100**	APHA(22nd Edi) 5520-D Open Reflux
7	BOD (3 Days @ 27 °C)	mg/L	28	24	20	28	26	28	**30**	IS 3025 (P44)1993Re.03Edition2.1
8	Chloride as Cl	mg/L	419	499	429	418	490	440	**600**	IS3025(P32)88Re.99
9	Oil & Grease	mg/L	3.2	2.4	4.1	2.4	1.4	2.2	**10**	APHA(22nd Edi)5520D
10	Sulphate as SO_4	mg/L	110	96	84	72	82	60	**1000**	APHA(22nd Edi)4500 SO_4 E
11	Ammonical Nitrogen as NH_3	mg/L	3.2	2.4	0.5	0.8	1.2	1.8	**50**	IS3025(P34)88Cla.2.3
12	Phenolic Compound	mg/L	0.014	0.021	BDL*	BDL*	BDL*	BDL*	**1**	IS3025(P43)92Re.03
13	Copper as Cu	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**3**	AAS APHA(22nd Edi)3111 B
14	Lead as Pb	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**0.1**	AAS APHA(22nd Edi)3111 B
15	Sulphide as S	mg/L	BDL*	0.8	1.2	0.8	1.0	1.6	**2**	APHA(22nd Edi) 4500-S
16	Cadmium as Cd	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**2**	AAS APHA(22nd Edi)3111 B
17	Fluoride as F	mg/L	1.6	1.2	1.5	1.2	0.8	0.6	**2**	APHA(22nd Edi) 4500 F D SPANDS

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI PORT – T1 TERMINAL NR.MARINE BUILDING								
Sr. No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	03/04/2018	87.60	48.34	13.58	30.56	0.37	BDL*	BDL*
2	06/04/2018	70.75	32.58	19.36	41.04	0.39	BDL*	BDL*
3	10/04/2018	90.62	50.17	17.58	33.96	0.53	BDL*	BDL*
4	13/04/2018	71.49	29.62	20.28	38.32	0.50	BDL*	BDL*
5	17/04/2018	65.68	26.21	22.27	29.59	0.27	BDL*	BDL*
6	20/04/2018	79.42	44.54	15.15	33.41	0.62	BDL*	BDL*
7	24/04/2018	89.33	49.30	14.98	36.38	0.64	BDL*	BDL*
8	27/04/2018	94.27	39.40	12.43	32.75	0.40	BDL*	BDL*
9	01/05/2018	71.36	30.20	20.09	38.25	0.26	BDL*	BDL*
10	04/05/2018	65.87	27.25	12.84	32.76	0.74	BDL*	BDL*
11	08/05/2018	82.66	38.69	10.61	29.39	0.42	BDL*	BDL*
12	11/05/2018	74.33	48.76	15.51	36.56	0.61	BDL*	BDL*
13	15/05/2018	69.45	31.49	18.52	34.25	0.46	BDL*	BDL*
14	18/05/2018	88.53	37.61	21.28	44.59	0.73	BDL*	BDL*
15	22/05/2018	73.65	43.68	13.42	37.38	0.82	BDL*	BDL*
16	25/05/2018	62.41	28.46	14.27	27.54	0.36	BDL*	BDL*
17	29/05/2018	77.66	40.40	17.57	40.41	0.39	BDL*	BDL*
18	01/06/2018	88.59	38.44	23.46	42.66	0.86	BDL*	BDL*
19	05/06/2018	93.46	55.67	11.47	33.25	0.56	BDL*	BDL*
20	08/06/2018	81.24	45.43	17.40	39.21	0.78	BDL*	BDL*
21	12/06/2018	90.25	49.59	18.65	44.28	0.52	BDL*	BDL*
22	15/06/2018	75.87	30.37	22.42	41.87	0.38	BDL*	BDL*
23	19/06/2018	86.86	46.85	15.24	30.45	0.82	BDL*	BDL*
24	22/06/2018	70.50	32.78	19.55	38.55	0.61	BDL*	BDL*
25	26/06/2018	65.44	37.53	13.58	36.78	0.97	BDL*	BDL*
26	29/06/2018	78.34	29.54	16.28	28.55	0.53	BDL*	BDL*
27	03/07/2018	83.40	43.31	16.52	37.84	0.37	BDL*	BDL*
28	06/07/2018	67.60	30.62	19.57	34.52	0.27	BDL*	BDL*
29	10/07/2018	90.56	52.34	15.57	32.48	0.60	BDL*	BDL*
30	13/07/2018	85.62	36.49	21.55	28.34	0.38	BDL*	BDL*

Continue …

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI PORT – T1 TERMINAL NR. (MARINE BUILDING)								
Sr.No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2018	54.45	22.84	10.29	26.56	0.24	BDL*	BDL*
32	20/07/2018	70.56	40.44	14.56	33.47	0.34	BDL*	BDL*
33	24/07/2018	69.30	29.53	13.86	30.85	0.71	BDL*	BDL*
34	27/07/2018	87.66	48.39	17.40	35.29	0.41	BDL*	BDL*
35	31/07/2018	73.52	44.56	9.60	25.23	0.70	BDL*	BDL*
36	03/08/2018	65.68	37.53	19.58	36.55	0.29	BDL*	BDL*
37	07/08/2018	81.86	34.24	12.61	39.20	0.37	BDL*	BDL*
38	10/08/2018	69.20	42.35	10.38	28.66	0.62	BDL*	BDL*
39	14/08/2018	77.54	40.19	14.58	37.64	0.45	BDL*	BDL*
40	17/08/2018	62.41	25.46	11.21	22.64	0.16	BDL*	BDL*
41	21/08/2018	86.18	35.41	17.21	32.43	0.53	BDL*	BDL*
42	24/08/2018	76.67	46.22	23.55	26.23	0.34	BDL*	BDL*
43	28/08/2018	89.70	50.72	13.68	38.52	0.63	BDL*	BDL*
44	31/08/2018	52.78	22.34	21.54	35.63	0.31	BDL*	BDL*
45	04/09/2018	86.36	34.53	25.64	44.64	0.48	BDL*	BDL*
46	07/09/2018	90.44	50.38	15.79	40.21	0.89	BDL*	BDL*
47	11/09/2018	58.65	24.67	13.63	26.75	0.44	BDL*	BDL*
48	14/09/2018	92.35	52.38	19.57	38.37	0.52	BDL*	BDL*
49	18/09/2018	83.59	36.24	16.33	41.20	0.63	BDL*	BDL*
50	21/09/2018	77.54	32.58	12.51	19.30	0.86	BDL*	BDL*
51	25/09/2018	84.20	48.30	14.54	36.84	0.42	BDL*	BDL*
52	28/09/2018	74.51	39.44	22.39	39.21	0.40	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

NEAR FIRE STATION								
Sr. No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	03/04/2018	93.48	52.41	9.76	36.68	0.63	BDL*	BDL*
2	06/04/2018	78.62	36.39	21.23	39.57	0.48	BDL*	BDL*
3	10/04/2018	81.61	46.33	19.09	31.53	0.44	BDL*	BDL*
4	13/04/2018	76.49	32.48	15.02	35.47	0.30	BDL*	BDL*
5	17/04/2018	60.41	28.57	24.51	25.47	0.38	BDL*	BDL*
6	20/04/2018	56.78	24.57	22.21	29.36	0.82	BDL*	BDL*
7	24/04/2018	94.52	54.69	12.46	26.20	0.46	BDL*	BDL*
8	27/04/2018	86.11	35.48	18.45	30.02	0.58	BDL*	BDL*
9	01/05/2018	66.87	20.46	23.71	22.79	0.37	BDL*	BDL*
10	04/05/2018	86.54	44.67	10.90	40.29	0.65	BDL*	BDL*
11	08/05/2018	76.49	33.36	16.62	25.41	0.56	BDL*	BDL*
12	11/05/2018	95.31	54.61	21.65	33.45	0.38	BDL*	BDL*
13	15/05/2018	82.58	34.56	13.25	30.27	0.29	BDL*	BDL*
14	18/05/2018	93.48	50.45	18.39	38.79	0.55	BDL*	BDL*
15	22/05/2018	79.66	46.75	20.73	23.56	0.79	BDL*	BDL*
16	25/05/2018	88.37	38.76	8.89	29.23	0.66	BDL*	BDL*
17	29/05/2018	70.46	35.44	19.29	34.54	0.47	BDL*	BDL*
18	01/06/2018	93.73	42.26	20.89	38.63	0.74	BDL*	BDL*
19	05/06/2018	82.40	45.71	18.23	28.44	0.34	BDL*	BDL*
20	08/06/2018	66.56	30.28	24.29	42.77	0.48	BDL*	BDL*
21	12/06/2018	86.78	46.71	22.90	40.27	0.60	BDL*	BDL*
22	15/06/2018	70.22	27.62	26.58	25.43	0.47	BDL*	BDL*
23	19/06/2018	92.51	51.20	19.85	35.34	1.00	BDL*	BDL*
24	22/06/2018	80.39	36.48	14.51	30.14	0.37	BDL*	BDL*
25	26/06/2018	75.46	44.25	11.25	39.47	0.85	BDL*	BDL*
26	29/06/2018	84.29	38.56	9.60	32.52	0.84	BDL*	BDL*
27	03/07/2018	77.65	40.64	19.61	35.63	0.42	BDL*	BDL*
28	06/07/2018	63.58	27.45	22.90	22.28	0.61	BDL*	BDL*
29	10/07/2018	83.56	49.83	10.56	36.75	0.50	BDL*	BDL*
30	13/07/2018	79.41	34.60	15.41	25.61	0.23	BDL*	BDL*

Continue …

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

NEAR FIRE STATION								
Sr.No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2018	59.50	24.62	12.86	23.52	0.22	BDL*	BDL*
32	20/07/2018	85.02	47.62	8.72	30.30	0.56	BDL*	BDL*
33	24/07/2018	76.80	32.65	17.59	26.83	0.92	BDL*	BDL*
34	27/07/2018	82.89	42.59	20.26	32.54	0.25	BDL*	BDL*
35	31/07/2018	68.51	37.39	18.28	29.31	0.73	BDL*	BDL*
36	03/08/2018	80.94	46.83	14.31	33.27	0.50	BDL*	BDL*
37	07/08/2018	73.57	30.53	19.46	36.45	0.22	BDL*	BDL*
38	10/08/2018	90.50	50.41	22.56	31.86	0.71	BDL*	BDL*
39	14/08/2018	69.37	36.73	16.41	41.80	0.39	BDL*	BDL*
40	17/08/2018	67.36	28.53	13.31	26.59	0.32	BDL*	BDL*
41	21/08/2018	92.45	53.45	11.38	40.27	0.46	BDL*	BDL*
42	24/08/2018	71.56	41.55	15.29	29.21	0.21	BDL*	BDL*
43	28/08/2018	81.24	46.37	18.52	42.62	0.79	BDL*	BDL*
44	31/08/2018	59.32	25.66	24.81	32.78	0.54	BDL*	BDL*
45	04/09/2018	79.48	31.73	17.59	38.65	0.29	BDL*	BDL*
46	07/09/2018	84.59	45.58	21.23	34.25	1.13	BDL*	BDL*
47	11/09/2018	66.44	28.62	11.25	33.26	0.31	BDL*	BDL*
48	14/09/2018	87.64	48.62	13.32	30.27	0.79	BDL*	BDL*
49	18/09/2018	77.65	33.40	18.40	29.32	0.55	BDL*	BDL*
50	21/09/2018	91.29	38.72	23.40	37.20	1.00	BDL*	BDL*
51	25/09/2018	72.65	35.48	12.69	27.48	0.66	BDL*	BDL*
52	28/09/2018	89.28	50.24	16.45	35.74	0.45	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI HOUSE								
Sr. No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	03/04/2018	80.60	43.76	15.82	39.57	0.42	BDL*	BDL*
2	06/04/2018	65.41	29.34	18.46	30.56	0.60	BDL*	BDL*
3	10/04/2018	79.39	36.72	11.31	26.63	0.80	BDL*	BDL*
4	13/04/2018	64.20	27.63	9.40	22.70	0.61	BDL*	BDL*
5	17/04/2018	52.58	19.42	19.46	35.47	0.18	BDL*	BDL*
6	20/04/2018	72.47	41.56	10.42	34.71	0.73	BDL*	BDL*
7	24/04/2018	82.72	46.72	16.70	31.53	0.29	BDL*	BDL*
8	27/04/2018	62.51	26.38	14.73	25.24	0.36	BDL*	BDL*
9	01/05/2018	56.76	23.84	18.45	31.83	0.17	BDL*	BDL*
10	04/05/2018	80.78	37.72	15.64	27.63	0.27	BDL*	BDL*
11	08/05/2018	50.47	21.30	12.49	22.69	0.34	BDL*	BDL*
12	11/05/2018	79.33	44.55	7.34	25.74	0.77	BDL*	BDL*
13	15/05/2018	60.45	25.63	9.78	19.63	0.58	BDL*	BDL*
14	18/05/2018	76.37	30.71	16.79	33.65	0.53	BDL*	BDL*
15	22/05/2018	55.37	33.42	11.85	30.58	0.70	BDL*	BDL*
16	25/05/2018	82.78	35.63	5.64	35.63	0.40	BDL*	BDL*
17	29/05/2018	65.47	29.76	8.67	26.70	0.57	BDL*	BDL*
18	01/06/2018	72.43	32.55	16.37	35.61	0.65	BDL*	BDL*
19	05/06/2018	53.61	23.21	13.92	25.30	0.44	BDL*	BDL*
20	08/06/2018	60.81	39.22	8.69	21.57	0.96	BDL*	BDL*
21	12/06/2018	75.64	42.55	11.53	31.21	0.41	BDL*	BDL*
22	15/06/2018	64.26	24.55	17.23	36.57	0.23	BDL*	BDL*
23	19/06/2018	81.63	46.26	9.53	19.63	0.87	BDL*	BDL*
24	22/06/2018	66.86	29.26	10.92	22.59	0.54	BDL*	BDL*
25	26/06/2018	58.39	34.26	18.58	29.53	0.39	BDL*	BDL*
26	29/06/2018	70.50	26.26	6.58	39.55	0.46	BDL*	BDL*
27	03/07/2018	69.53	38.67	10.33	27.75	0.26	BDL*	BDL*
28	06/07/2018	56.76	24.84	14.50	31.54	0.15	BDL*	BDL*
29	10/07/2018	77.58	43.63	6.50	25.33	0.44	BDL*	BDL*
30	13/07/2018	62.69	31.34	12.64	21.57	0.29	BDL*	BDL*

Continue …

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI HOUSE								
Sr. No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2018	48.83	19.71	5.37	18.35	0.18	BDL*	BDL*
32	20/07/2018	65.84	37.30	11.58	28.55	0.31	BDL*	BDL*
33	24/07/2018	54.60	23.42	7.55	30.64	0.48	BDL*	BDL*
34	27/07/2018	76.79	45.76	9.63	38.46	0.58	BDL*	BDL*
35	31/07/2018	59.60	33.67	7.53	16.46	0.32	BDL*	BDL*
36	03/08/2018	59.72	33.21	12.68	29.51	0.33	BDL*	BDL*
37	07/08/2018	67.23	27.51	10.53	25.50	0.52	BDL*	BDL*
38	10/08/2018	76.85	45.43	8.40	18.80	0.27	BDL*	BDL*
39	14/08/2018	61.48	30.46	11.53	28.51	0.47	BDL*	BDL*
40	17/08/2018	55.67	22.46	6.86	16.27	0.30	BDL*	BDL*
41	21/08/2018	74.55	29.92	9.69	36.75	0.40	BDL*	BDL*
42	24/08/2018	65.84	37.67	13.51	27.59	0.26	BDL*	BDL*
43	28/08/2018	72.55	42.84	17.56	32.78	0.44	BDL*	BDL*
44	31/08/2018	48.35	18.55	16.57	21.58	0.13	BDL*	BDL*
45	04/09/2018	72.55	26.88	15.67	30.76	0.25	BDL*	BDL*
46	07/09/2018	65.72	39.34	12.61	22.39	0.62	BDL*	BDL*
47	11/09/2018	53.25	22.59	9.38	26.26	0.18	BDL*	BDL*
48	14/09/2018	76.43	43.47	10.54	29.63	0.74	BDL*	BDL*
49	18/09/2018	68.26	28.38	13.18	33.58	0.67	BDL*	BDL*
50	21/09/2018	88.29	35.72	16.54	20.52	0.52	BDL*	BDL*
51	25/09/2018	56.82	31.63	8.70	25.60	0.58	BDL*	BDL*
52	28/09/2018	63.29	36.55	14.69	23.63	0.34	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

CT-3 DG HOUSE								
Sr. No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	03/04/2018	73.62	38.56	18.87	42.57	0.33	BDL*	BDL*
2	06/04/2018	55.63	26.31	10.48	26.20	0.65	BDL*	BDL*
3	10/04/2018	70.39	40.61	12.86	37.52	0.22	BDL*	BDL*
4	13/04/2018	59.41	24.43	15.72	29.11	0.21	BDL*	BDL*
5	17/04/2018	45.63	18.65	17.64	30.02	0.24	BDL*	BDL*
6	20/04/2018	62.57	27.55	11.30	25.53	0.55	BDL*	BDL*
7	24/04/2018	67.59	43.46	9.77	22.74	0.41	BDL*	BDL*
8	27/04/2018	75.58	32.41	7.99	18.80	0.31	BDL*	BDL*
9	01/05/2018	50.63	17.61	15.42	26.61	0.23	BDL*	BDL*
10	04/05/2018	74.91	36.35	9.54	23.39	0.44	BDL*	BDL*
11	08/05/2018	56.36	25.76	6.85	16.60	0.50	BDL*	BDL*
12	11/05/2018	65.76	29.57	11.38	33.33	0.33	BDL*	BDL*
13	15/05/2018	59.35	20.33	14.13	24.76	0.19	BDL*	BDL*
14	18/05/2018	71.49	34.34	12.69	29.49	0.48	BDL*	BDL*
15	22/05/2018	69.35	40.24	10.68	20.63	0.64	BDL*	BDL*
16	25/05/2018	52.58	22.75	16.21	38.23	0.25	BDL*	BDL*
17	29/05/2018	60.08	33.67	5.20	19.78	0.63	BDL*	BDL*
18	01/06/2018	80.58	35.84	14.25	30.28	0.57	BDL*	BDL*
19	05/06/2018	63.44	27.56	7.67	18.68	0.76	BDL*	BDL*
20	08/06/2018	71.67	31.75	12.75	36.44	0.42	BDL*	BDL*
21	12/06/2018	67.34	37.85	15.48	22.64	0.81	BDL*	BDL*
22	15/06/2018	56.30	18.53	19.22	29.67	0.30	BDL*	BDL*
23	19/06/2018	75.76	42.62	11.66	26.49	0.94	BDL*	BDL*
24	22/06/2018	60.20	25.47	16.57	33.47	0.25	BDL*	BDL*
25	26/06/2018	50.32	29.45	10.74	25.81	0.55	BDL*	BDL*
26	29/06/2018	65.33	26.56	18.44	42.94	0.32	BDL*	BDL*
27	03/07/2018	62.71	34.38	13.68	32.68	0.47	BDL*	BDL*
28	06/07/2018	51.42	23.46	17.57	25.48	0.19	BDL*	BDL*
29	10/07/2018	73.69	40.40	19.24	29.53	0.39	BDL*	BDL*
30	13/07/2018	68.44	28.65	10.61	18.65	0.55	BDL*	BDL*

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

CT-3 DG HOUSE								
Sr. No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2018	42.70	16.48	8.32	21.33	0.14	BDL*	BDL*
32	20/07/2018	76.31	44.88	16.44	37.55	0.21	BDL*	BDL*
33	24/07/2018	59.60	20.82	9.41	22.42	0.64	BDL*	BDL*
34	27/07/2018	61.30	35.51	14.24	28.66	0.16	BDL*	BDL*
35	31/07/2018	55.45	29.36	11.46	20.20	0.63	BDL*	BDL*
36	03/08/2018	71.67	42.41	18.39	20.81	0.18	BDL*	BDL*
37	07/08/2018	56.42	24.55	16.45	34.48	0.25	BDL*	BDL*
38	10/08/2018	60.81	38.40	12.58	23.28	0.55	BDL*	BDL*
39	14/08/2018	53.68	26.81	7.66	31.69	0.41	BDL*	BDL*
40	17/08/2018	48.25	19.20	9.14	19.33	0.23	BDL*	BDL*
41	21/08/2018	68.44	29.40	13.37	28.74	0.36	BDL*	BDL*
42	24/08/2018	58.25	32.62	11.70	21.86	0.48	BDL*	BDL*
43	28/08/2018	70.27	37.81	15.72	25.86	0.56	BDL*	BDL*
44	31/08/2018	42.70	16.35	19.23	29.51	0.17	BDL*	BDL*
45	04/09/2018	66.67	23.42	19.39	24.75	0.68	BDL*	BDL*
46	07/09/2018	80.27	41.62	13.53	28.35	0.82	BDL*	BDL*
47	11/09/2018	48.74	19.24	6.81	32.82	0.25	BDL*	BDL*
48	14/09/2018	63.44	35.64	17.31	35.61	0.36	BDL*	BDL*
49	18/09/2018	58.31	25.60	10.39	38.19	0.60	BDL*	BDL*
50	21/09/2018	67.22	28.44	14.35	26.44	0.81	BDL*	BDL*
51	25/09/2018	77.47	45.63	7.34	20.35	0.52	BDL*	BDL*
52	28/09/2018	52.46	30.66	12.30	19.49	0.27	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	T1 TERMINAL NR.MARINE BUILDING					
		Result [Leq dB(A)]					
	Sampling Date & Time	03/04/2018	25/05/2018	19/06/2018	06/07/2018	07/08/2018	07/09/2018
1	6:00-7:00	68.4	65.4	66.1	65.8	64.2	68.3
2	7:00-8:00	65.2	60.1	62.1	69.4	62.3	64.4
3	8:00-9:00	66.8	73.1	60.7	61.4	66.8	62.4
4	9:00-10:00	70.2	70.4	69.1	62.5	69.4	68.4
5	10:00-11:00	62.8	69.4	73.4	68.4	71.5	64.4
6	11:00-12:00	68.3	68.1	74.1	65.2	63.1	64.2
7	12:00-13:00	63.7	70.1	69.1	60.4	62.5	68.5
8	13:00-14:00	62.9	68.4	70.2	67.4	65.8	68.4
9	14:00-15:00	68.5	66.2	68.1	63.4	68.4	68.9
10	15:00-16:00	65.1	65.2	65.1	62.4	61.2	72.5
11	16:00-17:00	70.3	61.8	60.4	68.1	63.4	65.3
12	17:00-18:00	71.8	69.4	69.2	61.4	64.1	63.9
13	18:00-19:00	69.4	72.1	70.1	60.8	68.1	66.8
14	19:00-20:00	62.8	71.4	63.1	69.4	60.2	65.4
15	20:00-21:00	65.1	69.8	62.5	70.6	62.9	68.3
16	21:00-22:00	62.5	66.1	61.4	72.4	65.3	67.3
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	T1 TERMINAL NR.MARINE BUILDING					
		Result [Leq dB(A)]					
1	Sampling Date & Time	03/04/2018	25/05/2018	19/06/2018	06/07/2018	07/08/2018	07/09/2018
2	22:00-23:00	67.2	62.4	68.4	63.2	65.1	68.4
3	23:00-00:00	65.1	65.1	65.1	65.4	62.7	65.5
4	00:00-01:00	63.4	61.4	62.4	67.8	66.4	62.4
5	01:00-02:00	61.7	68.4	66.8	62.1	66.9	63.1
6	02:00-03:00	66.2	63.4	62.5	64.2	60.1	61.4
7	03:00-04:00	62.8	60.4	65.4	64.2	62.4	68.4
8	04:00-05:00	66.2	62.7	63.4	68.3	62.8	64.2
9	05:00-06:00	68.4	60.2	60.4	65.2	63.7	63.1
Night Time Limit*		70 Leq dB(A)					

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	NEAR FIRE STATION					
		Result [Leq dB(A)]					
1	Sampling Date & Time	06/04/2018	11/05/2018	22/06/2018	13/07/2018	17/08/2018	14/09/2018
2	6:00-7:00	65.1	68.4	68.4	68.4	62.5	65.4
3	7:00-8:00	62.8	64.1	65.1	62.1	68.4	66.3
4	8:00-9:00	63.1	60.1	62.1	65.4	72.4	66.9
5	9:00-10:00	70.4	62.8	63.4	73.1	74.1	67.4
6	10:00-11:00	72.1	70.4	68.4	64.1	70.4	63.2
7	11:00-12:00	69.9	73.4	65.1	68.1	69.9	62.4
8	12:00-13:00	68.1	65.1	63.1	62.4	63.4	67.4
9	13:00-14:00	62.4	69.4	60.4	68.4	60.4	65.3
10	14:00-15:00	63.4	65.4	60.9	62.4	62.4	62.5
11	15:00-16:00	61.8	66.1	68.4	69.4	64.5	68.4
12	16:00-17:00	60.4	66.8	62.1	61.4	65.1	68.3
13	17:00-18:00	62.4	63.1	63.4	60.4	63.4	68.7
14	18:00-19:00	68.1	61.4	68.1	62.7	62.5	64.3
15	19:00-20:00	68.4	65.1	67.1	68.4	63.4	62.7
16	20:00-21:00	65.2	62.8	62.1	64.3	65.2	65.8
	21:00-22:00	62.8	65.2	60.5	61.5	66.8	63.5
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	NEAR FIRE STATION					
		Result [Leq dB(A)]					
1	Sampling Date & Time	06/04/2018	11/05/2018	22/06/2018	13/07/2018	17/08/2018	14/09/2018
2	22:00-23:00	68.4	68.4	62.4	67.4	64.1	65.1
3	23:00-00:00	63.1	65.3	60.7	69.3	63.4	62.4
4	00:00-01:00	60.4	61.5	61.4	66.3	62.1	67.2
5	01:00-02:00	65.4	62.9	59.4	62.1	60.4	63.4
6	02:00-03:00	62.4	68.7	54.7	66.2	68.4	60.5
7	03:00-04:00	67.1	63.1	62.1	63.2	63.4	68.4
8	04:00-05:00	66.1	62.8	63.1	67.3	65.4	65.2
9	05:00-06:00	62.4	63.8	62.8	69.6	67.1	62.1
Night Time Limit*		70 Leq dB(A)					

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	ADANI HOUSE					
		Result [Leq dB(A)]					
	Sampling Date & Time	10/04/2018	01/05/2018	15/06/2018	17/07/2018	21/08/2018	04/09/2018
1	6:00-7:00	63.1	60.1	66.1	62.4	58.4	64.3
2	7:00-8:00	60.4	63.4	65.7	56.1	63.1	68.8
3	8:00-9:00	69.1	68.4	68.1	63.1	61.5	65.7
4	9:00-10:00	72.4	62.1	62.1	61.8	62.5	70.1
5	10:00-11:00	70.1	68.7	63.4	68.4	69.4	72.4
6	11:00-12:00	65.1	70.5	65.1	70.4	72.1	63.4
7	12:00-13:00	68	63.4	68.1	71.8	70.1	60.4
8	13:00-14:00	67.2	68.1	70.1	68.8	68.4	67.9
9	14:00-15:00	62.4	68.5	70.6	66.1	65.4	67.5
10	15:00-16:00	62.4	66.4	69.4	69.4	60.4	62.4
11	16:00-17:00	65.3	62.1	65.1	62.5	68.5	70.3
12	17:00-18:00	68.1	69.4	62.1	63.4	65.2	71.9
13	18:00-19:00	63.4	64.2	60.4	60.4	64.8	68.8
14	19:00-20:00	65.1	62.9	64.1	65.4	63.1	62.1
15	20:00-21:00	62.5	63.4	70.1	68.1	61.4	60.1
16	21:00-22:00	63.1	61.8	68.1	66.8	62.8	64.1
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	ADANI HOUSE					
		Result [Leq dB(A)]					
1	Sampling Date & Time	10/04/2018	01/05/2018	15/06/2018	17/07/2018	21/08/2018	04/09/2018
2	22:00-23:00	65.1	62.4	68.4	67.3	60.4	68.4
3	23:00-00:00	68.4	66.2	65.1	59.5	65.1	64.2
4	00:00-01:00	68.2	66.8	60.4	63.1	65.4	62.1
5	01:00-02:00	65.4	63.4	62.4	61.0	61.8	62.1
6	02:00-03:00	62.4	61.5	58.1	61.3	63.4	60.4
7	03:00-04:00	66.1	65.9	60.8	63.4	62.4	64.8
8	04:00-05:00	60.4	67.1	60.7	68.3	65.7	63.1
9	05:00-06:00	63.1	65.6	61.8	66.2	67.1	61.7
Night Time Limit*		70 Leq dB(A)					

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	CT-3 DG HOUSE					
		Result [Leq dB(A)]					
	Sampling Date & Time	17/04/2018	15/05/2018	05/06/2018	24/07/2018	24/08/2018	04/09/2018
1	6:00-7:00	62.7	62.4	59.4	65.3	60.1	56.3
2	7:00-8:00	65.2	65.4	62.1	67.2	63.5	60.4
3	8:00-9:00	61.4	61.4	60.4	70.2	69.5	59.4
4	9:00-10:00	60.8	68.4	65.8	66.4	62.4	62.6
5	10:00-11:00	65.2	62.4	63.4	62.6	62.8	65.4
6	11:00-12:00	63.1	61.7	69.5	60.3	68.1	68.4
7	12:00-13:00	61.8	68.4	62.4	65.2	61.4	68.9
8	13:00-14:00	65.9	64.1	65.7	68.3	64.3	67.3
9	14:00-15:00	68.2	62.4	63.1	66.4	63.5	65.5
10	15:00-16:00	67.4	69.4	60.1	61.4	60.8	62.3
11	16:00-17:00	64.3	65.1	62.4	65.2	65.5	65.3
12	17:00-18:00	63.5	61.8	68.4	68.3	69.2	64.2
13	18:00-19:00	65.5	66.1	63.4	66.2	62.1	62.3
14	19:00-20:00	66.1	62.4	67.1	72.6	61.4	65.4
15	20:00-21:00	61.4	69.1	62.8	70.2	65.6	61.3
16	21:00-22:00	65.2	65.2	63.4	69.3	63.8	66.2
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	CT-3 DG HOUSE					
		Result [Leq dB(A)]					
1	Sampling Date & Time	17/04/2018	15/05/2018	05/06/2018	24/07/2018	24/08/2018	04/09/2018
2	22:00-23:00	63.4	65.4	65.1	64.2	61.4	60.4
3	23:00-00:00	59.4	62.4	60.4	69.3	62.8	62.4
4	00:00-01:00	60.4	68.4	62.1	67.3	65.1	60.4
5	01:00-02:00	62.1	62.7	58.7	65.3	63.4	65.2
6	02:00-03:00	60.4	59.1	55.1	69.2	59.4	63.1
7	03:00-04:00	60.7	59.7	62.4	64.3	60.4	64.5
8	04:00-05:00	62.5	63.1	60.4	60.3	60.8	68.4
9	05:00-06:00	64.7	60.4	59.4	63.1	62.4	62.1
Night Time Limit*		70 Leq dB(A)					

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF STACK MONITORING

SR. NO.	TEST PARAMETERS	UNIT	STD. LIMIT	THERMIC FLUID HEATER (BITUMEN-01)	THERMIC FLUID HEATER (BITUMEN-02)	HOT WATER SYSTEM-1	HOT WATER SYSTEM-2	TEST METHOD
				APRIL 2018				
1	Particulate Matter	mg/Nm^3	**150**	14.83	12.75	24.61	19.57	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	3.55	2.92	6.61	5.36	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	24.31	21.82	34.07	32.29	IS:11255 (Part-VII):2005
				MAY 2018				
1	Particulate Matter	mg/Nm^3	**150**	21.72	19.54	32.65	26.36	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	4.84	3.61	8.48	6.56	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	29.41	25.72	39.38	35.47	IS:11255 (Part-VII):2005
				JUNE 2018				
1	Particulate Matter	mg/Nm^3	**150**	23.82	--	27.52	16.57	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	3.46	--	6.76	4.39	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	26.71	--	33.81	30.32	IS:11255 (Part-VII):2005
				JULY 2018				
1	Particulate Matter	mg/Nm^3	**150**	--	13.80	23.54	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	2.84	4.76	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	29.37	36.71	--	IS:11255 (Part-VII):2005
				AUGUST 2018				
1	Particulate Matter	mg/Nm^3	**150**	18.75	22.39	28.40	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	2.84	3.43	6.44	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	21.86	24.62	39.61	--	IS:11255 (Part-VII):2005
				SEPTEMBER 2018				
1	Particulate Matter	mg/Nm^3	**150**	14.45	--	17.51	12.63	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	3.78	--	4.71	6.69	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	26.86	--	35.64	37.49	IS:11255 (Part-VII):2005

*Below detection limit
Results on 11 % O_2 Correction when Oxygen is greater than 11 %. And 12% CO_2 correction when CO_2 is less thsn 12%

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF D.G. STACK MONITORING

			14/06/2018			
SR. NO.	TEST PARAMETERS	Unit	South Basin CT-3 DG STACK			Test Method
			D.G. Set-1* (1500 KVA)	D.G. Set-2* (1500 KVA)	D.G. Set-3* (1500 KVA)	
1	Particulate Matter	mg/Nm^3	25.71	18.35	14.83	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	5.72	6.60	3.52	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	29.66	33.40	38.57	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	11.45	BDL*	BDL*	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	BDL*	BDL*	Gas Chromatography

*DG sets are used as standby, so stack monitoring is done on quarterly basis. Results on 15 % O2 Correction when Oxygen is greater than 15 %

			05/07/2018		14/06/2018	
SR. NO.	TEST PARAMETERS	Unit	South Basin		Adani Port CT-4 DG STACK	Test Method
			D.G. Set-2* (1500 KVA)	D.G. Set-1* (1500 KVA)	D.G. Set-1* (1500 KVA)	
1	Particulate Matter	mg/Nm^3	25.72	23.71	23.71	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	5.65	5.38	5.38	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	39.56	30.71	30.71	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	BDL*	BDL*	BDL*	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	BDL*	BDL*	Gas Chromatography

*DG sets are used as standby, so stack monitoring is done on quarterly basis. Results on 15 % O2 Correction when Oxygen is greater than 15 %

H. T. Shah
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Lab Manager (Q)

16/08/2018						
SR. NO.	TEST PARAMETERS	Unit	Adani Port CT-2 DG STACK			Test Method
			D.G. Set-3* (500 KVA)	D.G. Set-4* (500 KVA)	D.G. Set-5* (500 KVA)	
1	Particulate Matter	mg/Nm^3	14.56	12.34	10.43	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	5.65	6.83	4.16	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	32.76	33.62	36.85	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	5.2	8.4	3.7	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	BDL*	BDL*	Gas Chromatography

*DG sets are used as standby, so stack monitoring is done on quarterly basis. Results on 15 % O2 Correction when Oxygen is greater than 15 %

16/08/2018					
SR. NO.	TEST PARAMETERS	Unit	Adani Mundra Port		Test Method
			D.G. Set-1* (500 KVA)	D.G. Set-2* (500 KVA)	
1	Particulate Matter	mg/Nm^3	12.83	16.76	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	3.91	4.63	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	28.43	36.56	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	6.4	4.1	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	BDL*	Gas Chromatography

*DG sets are used as standby, so stack monitoring is done on quarterly basis. Results on 15 % O2 Correction when Oxygen is greater than 15 %

H. T. Shah
Lab Manager

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16/08/2018				
SR. NO.	**TEST PARAMETERS**	**Unit**	**Adani Port**	**Test Method**
			D.G. Set-6, 7 & 8 (1250 KVA, each)	
1	Particulate Matter	mg/Nm^3	19.61	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	4.46	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	30.74	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	2.5	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	Gas Chromatography

*DG sets are used as standby, so stack monitoring is done on quarterly basis. Results on 15 % O2 Correction when Oxygen is greater than 15 %

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Minimum Detection Limit [MDL]

Ambient Air Parameters		
Sr. No.	**Test Parameter**	**MDL**
1	Particulate Matter (PM10) (µg/m^3)	10
2	Particulate Matter (PM 2.5) (µg/m^3)	10
3	Sulphur Dioxide (SO_2) (µg/m^3)	5
4	Oxides of Nitrogen (µg/m^3)	5
5	Hydrogen Sulphide as H_2S (µg/m^3)	6

Stack Parameters		
Sr.No.	**Test Parameter**	**MDL**
1	Particulate Matter (mg/Nm^3)	10
2	Sulphur Dioxide (ppm)	1.52
3	Oxides of Nitrogen (ppm)	2.65
4	Carbon Monoxide (mg/Nm^3)	0.1
5	Haydro Carbon NMHC (ppm)	1.0

Sea Water Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	pH	--	2
2	Temperature	°C	2
3	Total Suspended Solids	mg/L	2
4	BOD (3 Days @ 27 °C)	mg/L	1
5	Dissolved Oxygen	mg/L	0.1
6	Salinity	ppt	1
7	Oil & Grease	mg/L	2
8	Nitrate as NO_3	µmol/L	0.5
9	Nitrite as NO_2	µmol/L	0.01
10	Ammonical Nitrogen as NH_3	µmol/L	0.2
11	Phosphates as PO_4	µmol/L	0.5
12	Petroleum Hydrocarbon	µg/L	1
13	Total Dissolved Solids	mg/L	10
14	COD	mg/L	3
15	Primary productivity	mgC/L/day	0.1
16	Chlorophyll	mg/m^3	0.1
17	Phaeophytin	mg/m^3	0.1
18	Cell Count	No. x 10^3/L	1

Sea Sediment Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	Organic Matter	%	0.1
2	Phosphorus as P	µg/g	1
3	Petroleum Hydrocarbon	µg/g	1
4	Aluminum as Al	%	0.1
5	Manganese as Mn	µg/g	1
6	Mercury as Hg	µg/g	0.1

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

STP Water parameter(mg/L)		
Sr. No.	**Test parameter**	**MDL**
1	pH	2
2	Total Suspended Solids (mg/L)	2
3	BOD (3 days @ 270 C) (mg/L)	1
4	Residual Chlorine (mg/L)	0.2
5	Fecal Coliform (MPN INDEX/100 mL)	1.8

ETP Water Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	Colour	Co-pt	2
2	pH	--	2
3	Temperature	^{o}C	2
4	Total Suspended Solids	mg/L	2
5	Total Dissolved Solids	mg/L	10
6	COD	mg/L	3
7	BOD (3 Days @ 27 ^{o}C)	mg/L	1
8	Chloride as Cl	mg/L	1
9	Oil & Grease	mg/L	2
10	Sulphate as SO_4	mg/L	1
11	Ammonical Nitrogen as NH_3	mg/L	0.2
12	Phenolic Compound	mg/L	0.005
13	Copper as Cu	mg/L	0.01
14	Lead as Pb	mg/L	0.01
15	Sulphide as S	mg/L	0.1
16	Cadmium as Cd	mg/L	0.002
17	Fluoride as F	mg/L	0.05

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

"HALF YEARLY ENVIRONMENTAL MONITORING REPORT"

FOR

ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED
TAL: MUNDRA, KUTCH, MUNDRA – 370 421
BORE HOLE WATER

MONITORING PERIOD:
APRIL 2018 TO SEPTEMBER 2018

PREPARED BY:

POLLUCON LABORATORIES PVT.LTD.

**PLOT NO.5/6 "POLLUCON HOUSE", OPP. BALAJI INDUSTRIAL SOCIETY,
OLD SHANTINATH SILK MILL LANE, NEAR GAYTRI FARSAN MART,
NAVJIVAN CIRCLE, UDHANA MAGDALLA ROAD, SURAT-395007.
PHONE/FAX – (+91 261) 2455 751, 2601 106, 2601 224.
E-mail: pollucon@gmail.com Web: www.polluconlab.com**

TC - 5945 ISO 9001:2015 ISO 14001:2015 OHSAS 18001:2007

SR. NO	TEST PARAMETERS	UNIT	RESULTS						TEST METHOD
			PUMP HOUSE-2		PUMP HOUSE-1		PUMP HOUSE-3		
	GPS Location		N 22° 44.554' E 069° 41.453'		N 22° 44.554' E 069° 41.453'		N 22° 44.554' E 069° 41.453'		
	Sampling Date		20/04/2018	16/08/2018	20/04/2018	16/08/2018	20/04/2018	16/08/2018	
	Sampling Time		12:00	11:30	12:20	11:50	12:45	12:20	
1	pH	--	7.74	7.64	7.46	7.56	7.72	7.58	IS3025(P11)83Re.02
2	Salinity	ppt	1.26	7.2	9.92	11	7.7	6.4	APHA 2520B
3	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22ndEdi)5520D
4	Hydrocarbon	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	GC/GC-MS
5	Lead as Pb	mg/L	BDL*	0.018	0.049	0.03	0.24	0.16	AAS APHA(22ndEdi)3111 B
6	Arsenic as As	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA 3114 B
7	Nickel as Ni	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
8	Total Chromium as Cr	mg/L	BDL*	BDL*	BDL*	BDL*	0.041	BDL*	AAS 3111B
9	Cadmium as Cd	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
10	Mercury as Hg	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
11	Zinc as Zn	mg/L	BDL*	BDL*	0.46	0.4	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
12	Copper as Cu	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
13	Iron as Fe	mg/L	0.95	0.7	0.75	0.45	0.82	0.59	AAS APHA(22ndEdi)3111 B
14	Insecticides/Pesticides	mg/L	Absent	Absent	Absent	Absent	Absent	Absent	GC/GC-MS
15	Depth of Water Level from Ground Level	meter	2.4	2	2.5	2.2	2.6	2.4	--

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

SR. NO	TEST PARAMETERS	UNIT	RESULTS			TEST METHOD
			Tank No. 40	NEAR ETP OFFICE		
	GPS Location			N 22° 44.549' E 069° 41.464'		
	Sampling Date		16/08/2018	20/04/2018	16/08/2018	
	Sampling Time		12:45	11:30	11:05	
1	pH	--	7.94	7.83	7.49	IS3025(P11)83Re.02
2	Salinity	ppt	0.69	8.48	11	APHA 2520B
3	Oil & Grease	mg/L	BDL*	2.1	3.1	APHA(22ndEdi)5520D
4	Hydrocarbon	mg/L	BDL*	BDL*	BDL*	GC/GC-MS
5	Lead as Pb	mg/L	BDL*	0.042	0.03	AAS APHA(22ndEdi)3111 B
6	Arsenic as As	mg/L	BDL*	BDL*	BDL*	AAS APHA 3114 B
7	Nickel as Ni	mg/L	BDL*	0.12	BDL*	AAS APHA(22ndEdi)3111 B
8	Total Chromium as Cr	mg/L	0.08	BDL*	BDL*	AAS 3111B
9	Cadmium as Cd	mg/L	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
10	Mercury as Hg	mg/L	BDL*	BDL*	BDL*	AAS APHA- 3112 B
11	Zinc as Zn	mg/L	BDL*	0.072	BDL*	AAS APHA(22ndEdi)3111 B
12	Copper as Cu	mg/L	BDL*	0.07	BDL*	AAS APHA(22ndEdi)3111 B
13	Iron as Fe	mg/L	BDL*	0.28	0.42	AAS APHA(22ndEdi)3111 B
14	Insecticides/Pesticides	mg/L	Absent	Absent	Absent	GC/GC-MS
15	Depth of Water Level from Ground Level	meter	3	2.8	2.6	--

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

Borehole Water Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	pH	--	2
2	Salinity	mg/L	0.5
3	Oil & Grease	mg/L	2
4	Hydrocarbon	mg/L	0.01
5	Lead as Pb	mg/L	0.01
6	Arsenic as As	mg/L	0.001
7	Nickel as Ni	mg/L	0.02
8	Total Chromium as Cr	mg/L	0.025
9	Cadmium as Cd	mg/L	0.002
10	Mercury as Hg	mg/L	0.005
11	Zinc as Zn	mg/L	0.06
12	Copper as Cu	mg/L	0.01
13	Iron as Fe	mg/L	0.1
14	Insecticides/Pesticides	mg/L	0.1

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)

CERTIFICATE OF ACCREDITATION

POLLUCON LABORATORIES PVT. LTD.

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

5/6 "Pollucon House", Old Shantinath Mill Lane, Navjivan Circle, Udhana Magdalla Road, Surat, Gujarat

in the field of

TESTING

Certificate Number TC-5945 *(In lieu of T-0821 & T-0820)*

Issue Date 28/05/2017 **Valid Until** 27/05/2019

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

N. Venkateswaran
Program Director

Anil Relia
Chief Executive Officer

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 1357] नई दिल्ली, शुक्रवार, जून 3, 2016/ज्येष्ठ 13, 1938
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पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 2 जून, 2016

का.आ. 1953(अ).—केन्द्रीय सरकार के साथ पठित पर्यावरण (संरक्षण) नियम, 1986 के नियम 10 पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 12 की उपधारा (1) के खंड (ख) और धारा 13 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए और भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना सं. का.आ. 1174(अ), तारीख 18 जुलाई, 2007 में निम्नलिखित संशोधन और करती है, अर्थात् :—

उक्त अधिसूचना सं संलंन तालिका में,–

(क) क्रम संख्यांक 5, 9,13 से 15, 20, 79, 80 और 83 से 85 तथा उससे संबंधित प्रविष्टयों के स्थान पर निम्नलिखित क्रमशः क्रम संख्यांक और प्रविष्टियां रखी जाएंगी, अर्थात् :—

(1)	(2)	(3)	(4)
"5	मैसर्स विमता लैबस लिमिटेड 142 आई डी ए, फेस – 2, चेरालापलई, हैदराबाद, आध्रांप्रदेश-500051	(1) डा. सुब्बा रेड्डी मालामपति, (2) श्री एस वी श्रीनिवास रेड्डी, (3) श्री अरनूरी चन्ना रमेश कुमार	02.06.2016 से 01.06.2021
14	मैसर्स अश्वमेध इंजीनियर्स एंड कंसलटैंट, सर्वे न. 102, प्लाट सं. 26, वडाला पार्थार्डी रोड, इंदिरा नगर, नासिक, महाराष्ट्र – 422009	(1) सुश्री अर्पणा सुनील फारंडे, (2) सुश्री शाह शुभांगी प्रकाश कांबले (3) श्री निनांद अरविंद साउदानकर	02.06.2016 से 01.06.2021
20	मैसर्स पोलूकोन लेबोरटरीस प्रा. लि., 544, बेलिजयम टावर्स, रिंग रोड, लिनियर बस स्टैंड के पीछे, सूरत, गुजरात-395006	(1) डा. अरुण कुमार बाजपेई (2) श्री देवांग मधुकर गांधी (3) श्री हर्शल मधुकर गांधी	02.06.2016 से 01.06.2021
84	मैसर्स डेटाक्स कोरपोरेशन प्रा. लि., 3 तल, के जी चैंबरस, गुजरात समाचार प्रेस के पीछे, रिंग रोड, सूरत, गुजरात - 395002	(1) श्री अमीत बल कृष्णा रिनोस (2) श्री खासाकिया जितेंद्र कुमार दाहयाभाई (3) सुश्री दिव्यालक्ष्मी आर पटेल	02.06.2016 से 01.06.2021

Annexure – 6

GPCB

GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN
Sector 10-A, **Gandhinagar** 382 010
Phone : (079) 23226295
Fax : (079) 23232156
Website : www.gpcb.gov.in

BY R.P.A.D

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 6(2) of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules 2016 & as amended from time to time framed under the Environment (Protection) Act-1986.

And whereas Board has received consolidated consent application Inward **I.D.NO. 115518 dated 28/11/2016** for the Consolidated Consent and Authorization (CC & A) of this Board and under the provisions/rules of the aforesaid acts. Consents & Authorization are hereby granted as under

CONSENTS AND AUTHORISATION:
(Under the provisions /rules of the aforesaid environmental acts)

To,
M/s Recycling Solution Pvt Ltd.
Plot no.-223, GIDC Estate, Panoli
Ankleshwar-394116
Dist-Ankleshwar

1. **Consent Order No: AWH – 83687, Date of Issue-16/01/2017**
The consents under Water Act-1974, Air Act-1981 and Hazardous and Other Wastes (M&TM) Rules - 2016 shall be valid up to **31/12/2021** for the following activities at Plot No. 223, GIDC Estate, Panoli, and Dist. Ankleshwar – 394116.

Sr No.	Facility	Capacity
1.	(Solid ,Semi Solid & Liquid) Waste Mix Pre-Processing Facility	240MT/Day

2. **SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS**

2.1 Applicant shall have to obtain trial/regular permission from SPCB / CPCB prior to send the prepare fuel to Cement industry.

2.2 **Pre-processing of hazardous and other wastes shall be carried out only after making the entry into the passbook issued by the SPCB.**

2.3 **Unit shall maintain and submit monthly records of waste received and pre processed to the Board.**

2.4 Applicant shall operate the processing facility in such a way so that stored volume of Hazardous waste/prepared fuel shall not exceed the storage time of 90 days from date of receipt and in case of exceeding the time limit, applicant shall stop immediately receiving hazardous waste from member units until prepared fuel from such stored hazardous waste is sent to cement industries for co-processing.

2.5 Applicant shall operate the processing facility in such a way so that stored volume of Hazardous waste/prepared fuel shall not exceed the storage capacity at any point of time, Once the stored volume reaches to the storage capacity, facility shall stop immediately receiving hazardous waste from member units.

2.6 Applicant shall have to strictly comply and adhered to the MOU signed and legal undertaking submitted to the board in letter and spirit.

2.7 Applicant shall have to obtain the membership of Common Hazardous Waste TSDF and Incineration facility.

2.8 Applicant shall carry out only Collection, Storage and transportation of Hazardous waste from Member Units to their processing facility and processing (blending) for the preparation of fuel for co-processing (Co-Incineration).

2.9 Applicant shall not send prepared fuel for co-processing (Co-Incineration) without obtaining prior CCA - amendment of the Board.

2.10 Applicant shall have to comply with all the recommendations, suggestions and Environmental stipulations given by Hon. Supreme Court of INDIA, Ministry of Environment & Forests New Delhi, Central Pollution Control Board Delhi and Gujarat Pollution Control Board from time to time.

2.11 In case of deviation or alteration in the project including the implementing agency, a fresh reference shall be made to GPCB and MoEF, New Delhi for modification in the Clearance conditions or imposition of new one for ensuring environmental protection. The applicant shall be responsible for implementing the suggested safe guards.

2.12 Applicant shall follow the Guidelines of CPCB for labeling, transportation, storage and disposal of hazardous wastes in an environmental sound manner.

2.13 Applicant shall have to take all the precautions to control fugitive emission and Odour control from the different operations of your site as per the Guideline of CPCB.

2.14 The Project proponent shall make necessary arrangement for online monitoring of below shown parameters and display it online on XGN of Common Hazardous waste Incineration facility.

2.15 The project proponent shall use Hazardous waste tracking system of X tended Green Node (XGN) for on line real time data updationon Transportation of Hazardous waste by them. The compilation of real time data for preparing online manifest by the generator, Transporter and receptor shall have to be maintained on daily basis & submitted by the generator and receptor of the facility to the concerned Regional Office, and Head Office, GPCB.

2.16 The project proponent shall have to transport Hazardous waste through dedicated Vehicles with GPS (Global Positioning System) enabled system and in line with Hazardous and other wastes (Management and Transboundary Movement) Rules-2016.

2.17 Applicant shall carry out TCLP test in and around the processing facility and submit the report at regular interval.

2.18 Applicant shall furnish the copy of insurance policy as per Public Liability Insurance act 1991 to the Board.

2.19 Applicant shall prepare on site emergency plan and Disaster management plan as per the various guidelines published by competent authority and also conduct mock drill in co-ordination with local district co-ordination and Regional office GPCB.

2.20 Applicant shall submit the plan in accordance with the Chemical Accidents (Emergency Planning, preparedness and response) Rules, 1996 published by MOEF New Delhi.

2.21 It shall be the responsibility/duty of the applicant to take adequate steps while handling hazardous wastes to contain contaminants and prevent accidents and their consequences on human and environment, and prevent person working on the site with information, training and equipment necessary to ensure their safety.

2.22 Applicant shall be liable for all damage caused to the environment or third party due to improper handling and storage of the hazardous wastes or disposal of the hazardous wastes.

2.23 Applicant shall be liable to pay financial penalties as levied for any violation of the provisions under Hazardous Wastes (Management, Handling and Trans Boundary Movement) Rules, 2008 by the State Pollution Control Board with the prior approval of the Central Pollution Control Board.

2.24 In case of transportation of hazardous wastes through a State other than the State of origin or destination the occupier shall intimate the concerned State Pollution Control Boards before, he hands over the hazardous wastes to the transporter (if applicable).

GPCB

GUJARAT POLLUTION CONTROL BOARD
PARYAVARAN BHAVAN
Sector 10-A, **Gandhinagar** 382 010
Phone : (079) 23226295
Fax : (079) 23232156
Website : www.gpcb.gov.in

3. **CONDITIONS UNDER WATER ACT :**

3.1 The Discharge of industrial effluent from the common facilities and other related operations of the site shall be **"ZERO" KLD.**

3.2 The quantity of the domestic waste water (Sewage) shall not exceed **2.9KLD.**

3.3 Sewage shall be disposed of through septic tank and soak pit system.

4. **CONDITION UNDER AIR ACT:**

4.1 There is no Flue Gas and process gas emission from the process and other ancillary operation.

4.2 The Stack of 14 meter height is attached to the AFRF Plant for air replenishment system,

4.3 The Applicant shall take all necessary measure to curb the foul odour and shall submit the monthly report of ODC - 50consumption.

4.4 There shall be wheel washing facility at the site to avoid dusting while transportation of hazardous waste.

4.5 Ambient air quality within the premises of the facility shall conform to the following Standards:-

PARAMETER	Concentration in Ambient Air		Method of Measurement
	Annual	24 hrs. Average	
Particulate matter-10 (PM 10)	60 µg/m3	100 µg/m3	Gravimetric, TOEM Beta attenuation
Particulate matter-2.5 (PM 2.5)	40 µg/m3	60 µg/m3	Gravimetric, TOEM Beta attenuation
Sulphur Dioxide(SO_2)	50 µg/m3	80 µg/m3	Improved West and Gacke Ultraviolet fluorescene
Nitrogen Dioxide (NO_2)	40 µg/m3	80 µg/m3	Modified Jacob & Hoechheiser (Na-Arsenite) Chemiluminescence
Benzene	5 µg/m3	--------	Gas chromatography based continuous analyzer Adsorption and Desorption followed by GC analysis
Benzo (a) pyrene (BaP)-Particulate Phase only	01 ng/m3	--------	Solvent extraction followed by HPLC/GC analysis
Arsenic(As)	06 ng/m3	--------	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
Nickel (Ni)	20 ng/m3	--------	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
Lead (Pb)	0.50µg/m3	1.0 µg/m3	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper ED-XRF using Teflon filter
Ammonia	100 µg/m3	400 µg/m3	Chemiluminescence Indophenol blue method

Ozone	100 µg/m3 8 hours	180 µg/m3 1 hour	UV photometric Chemiluminescence Chemical Method
Carbon Monoxide (CO)	02 µg/m3 8 hours	04 µg/m3 1 hour	Non dispersive Infra Red (NDIR) spectroscopy

5. CONDITIONS UNDER HAZARDOUS WASTE MANAGEMENT RULES:

A. General condition:

1. Number of authorization: **AWH - 83687 Date of issue: 16/01/2017**
2. M/s. RECYCLING SOLUTION PRIVATE LIMITED is hereby granted an authorization to operate facility for following hazardous waste on the premises situated at Plot No. 223, GIDC Estate, Panoli, Dis!. - Ankleshwar - 394116.

Sr. No.	Waste	Quantity	Schedule	Facility
1	Incinerable Hazardous waste(Solid/Liquid/ Semi Solid)	240 MTPA		Reception from member units through dedicated vehicle, storage, and blending within premises.
2	Distillation Residues from contaminated organic solvents	24 MT/Day	37.3	Collection, Storage, Transportation, disposal at CHWIF.
3.	Empty Drums/container /Barrels/Carboy contaminated with Hazardous chemicals/ waste	1080MTA	33.1	Receiving drums from member unit, Collection, Storage, Decontamination within premises and selling to authorized Recycler
4.	ETP Sludge from waste water treatment	60MTA	35.3	Collection ,Storage, Transportation, Disposal to TSDF

3. The authorization is granted to operate processing facility to prepare fuel for co-incineration (Co-processing) by reception of Hazardous waste from member units.
4. The authorization shall be force for a period up to Five years valid up to **31/12/2021**
5. The applicant shall have to regularly monitor ground water, ambient air quality and shall submit reports to GPCB and CPCB regularly.
6. The applicant shall submit monthly report with details of Hazardous waste received, treatment given, stock lying and disposal of at landfill site.
7. The Authorized person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
8. The Authorization or its renewal shall be produced for inspection at the request of an officer Authorized by the State Pollution Control Board.
9. The person Authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorization.
10. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.
11. The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages,

leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;

12. The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
13. It is the duty of the authorized person to take prior permission of the State Pollution Control Board to close down the facility.
14. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
15. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
16. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
17. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
18. An application for the renewal of an authorisation shall be made as laid down under these Rules.
19. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
20. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B. Specific Conditions:

1. In case of renewal of authorisation, a self-certified compliance report in respect of effluent, emission standards and the conditions specified in the authorization for hazardous and other wastes shall be submitted to SPCB.
2. The occupier of the facility shall comply Standard operating procedure/ guidelines published by MoEF&CC or CPCB or GPCB form time to time.
3. Unit shall comply provisions of E-Waste Management Rules-2016.
4. The disposal of Hazardous Waste shall be carried out as per the waste Management hierarchy.

6. <u>GENERAL CONDITION:</u>

6.1 Adequate plantation shall be carried out all along the periphery of the TSDF premises in such a way that the density of plantation is at least 1000 trees per acre of land and a green belt of 5meters width is developed.

6.2 The applicant shall have to submit the returns in prescribed form regarding water consumption and shall have to make payment of water cess to the Board under the Water Cess Act- 1977.

6.3 Applicant shall have to comply with Risk Assessment and Disaster management Plan.

6.4 Applicant shall have to carry out mock drill both on site and off site for all the possible eventualities at a regular interval of time. For any of the disastrous situation escape route shall have to be predefined properly marked and shall be brought to the knowledge of all the concerned.

6.5 Applicant shall have to comply with the Environmental Audit Scheme introduced by Hon'ble High Court and shall submit the Environment Audit Report every year in accordance with directions given in the High Court Order dated 16/09/1999 in Environmental Audit Scheme.

6.6 The concentration of Noise in ambient air within the premises of industrial unit shall not exceed following levels:

Between 6 A.M. and 10 P.M.: 75 dB (A)
Between 10 P.M. and 6 A.M.: 70 dB (A)

6.7 You shall comply with the manufacturing, Storage and Import of Hazardous Chemicals Rules-1989 framed under the Environment (Protection) Act-1986.

6.8 The owner/facility operator is fully responsible for compliance of all the directions issued by the Apex Court and High court from time to time.

6.9 Full support shall be extended to the officers of MoEF, CPCB, GPCB and all other relevant authorities 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 initiative measures and other environmental protection activities.

6.10 GPCB reserves the right to stipulate additional condition if found necessary. The company shall implement these conditions in a time bound manner.

FOR AND ON BEHALF OF
GUJARAT POLLUTION CONTROL BOARD

(K.C.MISTRY)
Dy. Chief Environment Scientist
Unit head, Hazardous waste cell

Issued to:

No. GPCB/HAZ-CCA-Ank-1375(5)/ID-13376/ Date:

M/s Recycling Solution Pvt Ltd.
Plot no.-223, GIDC Estate, Panoli
Ankleshwar-394116
Dist-Ankleshwar

REGIONAL OFFICE
GUJARAT POLLUTION CONTROL BOARD
PLOT NO: 1616-1617, 1st FLOOR, SWASTIC COMPLEX,
NEAR VEER MOKHADAJI CIRCLE, GHOGHA ROAD
BHAVNAGAR-364 001 PHONE: 2566108

In exercise of the power conferred under section-25 of The Water (Prevention and Control of pollution) Act-1974, Section-21 of The Air (Prevention and Control of Pollution) Act-1981, and authorization under Rule 3(3)&6(2) of The Hazardous and other solid Wastes (Management & Transboundary Movement) Rules, 2016 and as amended from time to time, framed under The Environmental (Protection)Act-1986.

And, whereas Board has received consolidated consent and authorization application vide Inward ID-**131457,** Inward Date-**18/12/2017**, under the provisions/rules of the aforesaid acts/rules, Consents & Authorization are hereby granted as under:

CONSENTS & AUTHORISATION
(Under the provisions/rules of aforesaid environmental Acts/Rules)

To,
M/S Western India Petrochem Ind (16250),
Plot No -62, 63,
GIDC- Vartej,
Bhavnagar-364002
Tal: Bhavnagar, Dist: Bhavnagar.

1 Consolidated Consent and Authorization Order No: AWH- 27313, Date of Issue: 31/01/2018.
2 The validity period of the order shall be up to **31/12/2022.**
3 The list of the products to be manufacture is as below**:**

Sr. No.	PRODUCT	QUANTITY
1.	Re refined of used oil	2745 KL/Annum
2.	Recycling of waste oil	8325 KL/Annum

- **Specific Condition:**
  Unit shall comply the Conditions given in the Minutes of Meeting under Rule-9 of HoWR-2016 Dt :- 03/01/2018 regarding production capacity.

4 CONDITIONS UNDER THE WATER ACT:

4.1 The quantity of discharge of trade effluent from the factory shall be **NIL.**

4.2 Generated wastewater will be reuse after adequate treatment hence there shall be "Zero Liquid Discharge" from the industry.

4.3 The applicant shall provide adequate effluent treatment system in order to achieve the quality of the treated effluent as per GPCB norms mentioned below:-

Parameter	Permissible Limit
pH	6.5-8.5
Temperature	40 ^{0}C
Color (Pt.Co Scale)	100 units
Suspended Solids	100 mg/l
Oil & Grease	10 mg/L
Ammonical Nitrogen	50 mg/L
BOD (5 days at 20 deg C)	30 mg/L
COD	100 mg/L
Chlorides	600 mg/L
Sulphates	1000 mg/L
TDS	2100 mg/L
Sulphides	2 mg/L
% Na	60%
Sodium Absorption Ratio	26

(All efforts to be made to remove Color and Unpleasant Odour as far as Practicable.)

4.4 The quantity of sewage effluent from the factory shall not exceed **0.16 kL/Day**.

4.5 Domestic effluent shall be disposed off through septic tank/soak pit system.

5 CONDITIONS UNDER THE AIR ACT:

5.1 The following shall use as fuel:

Sr No	Fuel	Quantity
1.	Light Diesel Oil/LC	30 Ltr/hr
2.	Wood	500 kg/day

5.2 The applicant shall install & operate air pollution control system in order to achieve norms prescribed below.

Sr No	Stack attached to	Common stack Height in Meters	APCM	Parameters	Permissible Limits
1.	Boiler	30	-	Particulate Matters SO_2 NO_X	150 mg/NM^3 100 ppm 50 ppm
2.	Thermic Fluid Heater	30	-		
3.	Furnace	30	Scrubber		
4.	Incinerator				

5.3 There shall be no any process emission from the manufacturing process and other ancillary industrial operations.

5.4 Stack monitoring facilities as porthole, platform/ladder etc shall provide with stack/vents chimney in order to facilitate sampling of gases being emitted in to the atmosphere.

5.5 The concentration of the following substances in the ambient air within the premises of the industry and at a distance of 10 meters from the source (other than the stack/vent) with the height of more than 9 meter from the ground level) shall not exceed the following levels:

Sr. No.	Pollution Parameters	Time weighted Average	Concentration Ambient Air
1.	Sulphur dioxide (SO2), µg/M³	Annual 24 Hours	50 80
2.	Nitrogen dioxide (NO2), µg/M³	Annual 24 Hours	40 80
3.	Particulate Matter (Size less than 10µm)OR PM 10 µg/M³	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5m) OR PM2.5 µg/M³	Annual 24 Hours	40 60

5.6 The applicant shall provide proper ventilation and exhaust facilities to maintain healthy working atmosphere within the factory premises.

6 CONDITIONS UNDER HAZARDOUS WASTE:

6.1 Number of Authorization: **AWH- 27313**, Date of issue: **31/01/2018**

M/S Western India Petrochem Ind is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at **Plot No- 62, 63, GIDC- Vartej, Bhavnagar.**

Sr. No.	Waste	Category	Quantity after expansion	Facility
1.	Chemical sludge from waste water treatment	I-35.3	6 MT/yr	Collection, Storage, Transportation, Disposal
2.	Used or Spent Oil	I-5.1	3600 Kl/yr	Collection, Recycling, Reception, Storage, Transportation & Refining
3.	Waste or Residue containing Oil	I-5.2	11100.00 KL/yr	Collection, Reception, Storage, Transportation & Refining.
4.	Empty barrels/ containers/liners contaminated with hazardous chemicals /wastes	I-33.1	90 MT/yr	Storage, Collection, Transportation, Decontamination & selling to Authorised Recycler.
5.	Any process or distillation residue	I-36.1	476 KL/yr	Collection, Storage, Transportation Incineration at Common Hazardous Waste Incineration Facility
6.	Filters & Filters Medium	I-35.1	3 Mt/Yr	Collection, Storage, Disposal, Incineration at Common Hazardous Waste Incineration Facility
7.	Spent clay Containing Oil	I-4.5	94 MT/yr	Collection, Storage, Transportation & Incineration at Common Hazardous Waste Incineration Facility
8.	Ash From incinerator and flue gas cleaning residue	I-37.2	NIL	Collection, Incineration, Storage, Treatment

6.2 The applicant shall provide temporary storage facilities for each type of Hazardous Waste as per Hazardous and other solid waste (Management & Transboundary Movement) Rules-2016 as amended from time to time.

7 GENARAL CONDITION:

7.1 Unit shall develop green belt within premise as per the CPCB guidelines. However, if the adequate land is not available within premises, the unit shall tie up with local agencies like gram panchayat, school, and social forestry office etc. for the plantation at suitable open land in nearby locality and submit an action plan of plantation for next three years to GPCB.

7.2 Plantations should be started along with constitution activity. For plantation within the premises, a spacing of at Least 4 m x 4 m shall be kept i.e. to say 250 plants per acre shall be plantation. For plantation outside the premises a spacing of 2mx 2m will be kept i.e. to say 1000 plants per acre.

7.3 Adequate plantation shall be carried out all along the periphery of premises in such a way that the density of plantation is at least 1000 tree per acre of land and a green belt of 10 meters width is developed.

7.4 In case of change of ownership/management the name and address of the new Owners/partners/directors/proprietor should immediately be intimated to the board.

7.5 The applicant shall however, not without the prior consent of the board bring into use any new or altered outlet for the discharge of effluent or gaseous emission or swage waste from the proposed industrial plant. The applicant is required to make application to this board for this purpose in the prescribed forms under the provisions of the Water Act-1974, the Air Act-1981 and the Environment (Protection) Act-1986.

7.6 The overall noise level in and around the plant area shall be kept well within the standard by providing noise control measure including engineering control like acoustic insulation hood, silencers, enclosures etc on all source of noise generation. The ambient noise level shall conform to the standards prescribed under the Environment (Protection) Act-1986 & Rules.

7.7 The concentration of noise in ambient air within the premises of industrial unit shall not exceed following levels:

Between 6A.M. and 10P.M.: 75dB (A)
Between 10P.M. and 6A.M.: 70dB (A)

7.8 If it has established by any competent authority that the damage has caused due to their industrial activities to any Person or his property, in that case they are obliged to pay the compensation as determined by the competent authority.

7.9 Applicant shall have to comply with the guidelines/directive issued/being issued by MoEF & CC/CPCB/DoEF from Time to time.

7.10 Monitoring in respect to Air, Water, and Noise level shall carry out regularly and results shall submit to this Board.

FOR AND BEHALF OF
GUJARAT POLLUTION CONTROL BOARD

(F. M. Modi)
Regional Officer, Bhavnagar

No. GPCB/RO/BHV-548/ID-16250/

M/s Western India Petrochem Ind (16250),
Plot No - 62, 63,
GIDC- Vartej,
Bhavnagar-364002
Tal: Bhavnagar, Dist: Bhavnagar
Copy To:

1) Member Secretary
GPCB, Gandhinagar……For your information & necessary action please.

GPCB

GUJARAT POLLUTION CONTROL BOARD
PARYAVARAN BHAVAN
Sector 10-A, **Gandhinagar** 382 010
Phone : (079) 23226295
Fax : (079) 23232156
Website : www.gpcb.gov.in

By, R.P.AD

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules'2008 & as amended from time to time framed under the Environment (Protection) Act-1986.

And whereas Board has received consolidated consent application Inward **I.D.NO. 56132 dated 20/04/2012** for the amendment in Consolidated Consent and Authorization (CC & A) of this Board and under the provisions/rules of the aforesaid acts. Consents & Authorization are hereby granted as under

CONSENTS AND AUTHORISATION:
(Under the provisions /rules of the aforesaid environmental acts)
To,
M/S SAURASHTRA ENVIRO PROJECTS PVT LTD,
PLOT NO/SURVEY NO. 415, 417 & 418,
VILLAGE: JUNA KATARIYA/LAKADIYA,
TALUKA: BHACHAU,
DIST: KUTCH-370 150

1. **Consent Order No: AWH – 60703, Date of Issue 18/11/2013.**
The consents shall be valid up to **05/11/2018** for use of outlet for the discharge of trade effluent and emission due to operation of industrial plant for following activities at **PLOT NO/SURVEY NO. 415, 417 & 418, VILLAGE: JUNA KATARIYA/LAKADIYA, TALUKA: BHACHAU, DIST: KUTCH-370150.**

SR. NO.	PRODUCTS	Capacity
1.	Secured Landfill Site	**3,95,000 MT** (Cell no.1 - 1,20,000 MT(Capacity Exhausted and Closed) (Cell no.2 - 2,75,000 MT(Operational)
2.	Incineration Facility	**7.50 Million Kcal/Hour**
3.	Forced Evaporation System	**500.00 KL**
4.	Blender Operation	**6.00 T/Hour**

Speed Post

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
(पर्यावरण एवं वन मंत्रालय, भारत सरकार)
(MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

2014/AT-CP/RP/PCI-II/ 100 Date: 31.03.2015

To
M/s Sanghi Industries Ltd.,
P.O. Sanghipuram - 370 511
Taluka: Abadasa,
Dist. Kutch, Gujarat.

Subject: -Permission for regular co-processing of oily rags/cotton waste (Adani Port & Special Economic Zone Ltd, Mundra, Kutch, Gujarat), in cement kiln of M/s Sanghi industries Ltd., Gujarat – Reg.

Ref: -Gujarat Pollution Control Board letter no. GPCB/HAZ-GEN-379(1)/220586 dated 01.08.2014
-Adani Ports & special Economic Zone Ltd. letter dated 03.02.2015

Sir,

In reference to above cited letter, permission is hereby accorded for co-processing of oily rags/cotton waste of Adani Port & Special Economic Zone Ltd., Mundra, Kutch, Gujarat, in Cement kiln of M/s Sanghi Industries Ltd., Sanghipuram, Kutch, Gujarat, under the Rule 11 of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, subject to compliance of various provisions of the Environment (Protection) Act, 1986 including the following:

1. The permission is valid only for co-processing of above specified waste. The waste characteristics should be similar to that for which trial run has been conducted by CPCB/SPCB. The details are enclosed in **Annexure**. Prior permission has to be obtained for co-processing of any other hazardous waste.
2. The cement plant shall obtain the authorization from the concerned State Pollution Control Boards as required under Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 for storage, handling, transportation and co-processing of hazardous waste.
3. For transportation of proposed hazardous wastes for co-processing in cement kiln, manifest system as per Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 and guidelines of CPCB shall be followed.
4. The generator of hazardous waste shall obtain authorization from the State Pollution Control Board as required under Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008 for storage, handling, transportation and co-processing of hazardous waste in cement plant.

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली–110032
'Parivesh Bhawan', East Arjun Nagar, Delhi - 110032
दूरभाष / Tel. : 43102030, फैक्स / Fax : 22305793, 22307078, 22307079, 22301932, 22304948
ई–मेल / e-mail :cpcb@nic.in वेबसाईट / Website : www.cpcb.nic.in

5. The cement plant shall estimate the quantity of hazardous waste required to be co-processed. Cement industry shall provide adequate covered storage space for the hazardous waste in accordance with Hazardous Waste Rules and guidelines for storage of hazardous waste. The occupier shall also ensure that there is no leaching of any pollutant. The actual quantity of hazardous waste co-processed in each calendar year shall be reported to CPCB and SPCB.
6. The cement plant shall ensure the compliance of the conditions stipulated in the consents issued under the Air Act, 1981 and Water Act, 1974 during the co-processing of hazardous waste.
7. The emission standards for particulate matter prescribed for cement kiln by the concerned State Pollution Control Board shall be applicable during co-processing in cement kiln also. For other pollutants i.e.; CO, TOC, NOx, HCl, SO_2, HF, total dioxins and furans, Cd + Tl + their compounds, Hg and its compounds, Sb + As + Pb + Co + Cr + Cu + Mn + Ni + V + their compounds, the emission values during co-processing shall not exceed the base line emissions i.e. during pre co-processing phase of trial run. Continuous measurement of particulate matter emission shall be carried out at co-processing plant and the emission data shall be submitted to CPCB and the concerned SPCB/PCC. As per direction of CPCB monitoring of dioxins and furans including other parameters will be done by the cement plant.
8. The cement plant shall take the hazardous waste only from the authorized generator.
9. A log book of the waste co-processed shall be maintained including emission monitoring result during co-processing.
10. During co-processing of hazardous waste in cement kiln, the cement plant shall comply with all the requirements in accordance with the Public Liability Insurance Act, 1991 as amended.
11. Cement plant shall install continuous emission monitoring system with the SPCB monitoring the emission level.
12. Cement plant shall have to explore the possibilities for transportation of Hazardous Waste for the co-processing purpose through dedicated tankers with GPS enabled system in line with Hazardous Waste Rules – 2008.
13. The occupier/generator shall use Hazardous Waste tracking system of Xtended Green Node (XGN) for online real time data for preparing online manifest system for regular updation retrieval and maintain record thereof by generator as well as receptor. The compiled data shall be submitted at the end of the year after due verification by facility operator/receptor to the concerned GPCB, Regional Office & Head Office, Gandhinagar.
14. In case of any violation in the conditions stipulated, the permission can be withdrawn at any time.
15. CPCB reserves the right to review / impose additional conditions or revoke, change or alter any of the terms and conditions.

Yours faithfully

S.S Bala

(Dr. S. S. Bala)
Director & I/c PCI-II Div

Encl.: As above

Characteristics of Oily rags /Cotton waste

The Characteristics of oily rags/cotton waste of M/s Adani Port & Special Economic Zone Ltd., Mundra, Kutch, is given below which is permitted for use @ 0.27 % (maximum) for co-processing in cement kiln.

Analysis of the Oily rags/cotton waste

PARAMETER	RESULT
Antimony (mg/kg)	<5
Arsenic (mg/kg)	<0.5
Cadmium (mg/kg)	<1
Chromium (mg/kg)	<1
Cobalt (mg/kg)	<1
Copper (mg/kg)	10.34
Lead (mg/kg)	<1
Manganese (mg/kg)	147.32
Nickel (mg/Kg)	7.37
Mercury (mg/Kg)	<0.5
Thallium (mg/kg)	<1
Vanadium (mg/kg)	2.17
Zinc (mg/kg)	405.59
TPH (%)	19.89
Tin ((mg/kg))	<5
Selenium ((mg/kg))	<5
Iron (%)	0.12
PCB ((mg/kg))	<0.1
PCP (mg/Kg)	<0.5
Calorific Value (Kcal/kg)	7960
Moisture (%)	1.8
Ash (%)	22.13
Volatile Matter (%)	74
Fixed Carbon (%)	0.2
Carbon (%)	47.37
Sulphur (%)	0.29
Nitrogen (%)	1.08
Oxygen (O_2) (%)	24.02
Hydrogen (%)	5.11
TOC (%)	44.7
SVOC	ND(DL 0.1 mg/kg)
VOC	ND(DL 0.1 mg/kg)
PAH	ND(DL 0.1 mg/kg)

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GUJARAT POLLUTION CONTROL BOARD
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Sector 10-A, Gandhinagar 382010
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Fax : (079) 23232156
website : www.gpcb.gov.in

In exercise to power conferred under section 25 of the Water (Prevention & Control of Pollution) Act-1974, under section 21 of the Air (Prevention & Control of Pollution) Act-1981 and Authorization under the rule 5(4) of the Hazardous Waste (Management, Handling & Transboundary Movement) Rules 2008 framed under the Environmental Protection Act – 1986

And whereas Board has granted Consolidated Consent & Authorization (CC&A) order No. AWH-31117 dated 24.10.2008 issued vide letter no. PC/CCA-JNG-24/20760 Which was valid up to 01.07.2009 & said consent was extended up to 01.07.2010, vide GPCB letter no. PC/CCA (NG)-24(6)/22413 dated 07.10.2009. Further the said consent order extended up to 19.06.2013, vide GPCB letter no. GPCB/CCA-JNG-24(8)/ID17221/76029 dated 28.03.2011 Also the said consent order was amended vide GPCB letter no. PC/CCA-JNG-24(6)/236776 dated 27.10.2009 & GPCB letter no. GPCB/CCA/JNG-24(10)/ID-17221/137103 dated 11.02.2013 respectively.

And whereas Board has received consolidated consent application No. 68965 dated 13.06.2013, application No 67838 dated 14.05.2013 & application No 66802 dated 12.04.2013 for the renewal & amendment of Consolidated Consent & Authorization (CC&A) of this board under the provisions/rules of the aforesaid Acts, Consents & Authorization are here by granted as under:

CONSENT AND AUTHORISATION:
(Under the provision/rules of the aforesaid environmental acts)

To:
M/S. AMBUJA CEMENTS LTD.
SURVEY NO. 315 TO 320, 351 TO 352, 395 TO 410
PO :AMBUJANAGAR-362715
TALUKA- KODINAR
DISTRICT :JUNAGADH

1. **Consent Order No. AWH – 57342 date of issue 26/09/2013**
2. The consent shall be valid up to **12.06.2018** for the use of outlet for the discharge of trade effluents emission due to operation of industrial plant for manufacture of the following items/products :

Sr.No.	Product	Quantity
1	Cement	1.5 Million Tonnes/Annum

3. **CONDITIONS UNDER THE WATER ACT :**

3.1 The quantity of the trade effluent from the factory shall be nil

3.2 The quantity of sewage from the factory and from township shall not exceed 1400 KL/day

3.3 Sewage shall be treated at Sewage Treatment Plant to confirm to the following standards

BOD [3 days at 27OC]	Less than 20 mg/l
Suspended solids	Less than 30 mg/l
Residual chlorine	Minimum 0.5 mg/l

3.4 Treated water from Sewage Treatment Plant shall be utilized for following purpose :

- Plant cooling for Ambuja & Gajambuja plant
- Dust suppression on haul roads
- Horticulture and green belt development
- On land for irrigation
- Fire fighting purpose

4. **CONDITIONS UNDER THE AIR ACT :**

4.1 The following shall be used as main fuel for cement plant.

Sr.No.	Fuel	Quantity
1	Coal/lignite/petcoke	55 Tons/ Hour

4.2 HSD shall be used as a secondary fuel for start up of kiln.

4.3 Any other non- hazardous & high calorific value material shall be used as alternative fuel of co-processing in cement kiln.

4.4 The applicants shall install and operate following air pollution control system in order to achieve norms prescribed below.

Sr NO	Stack attached to	Stack height in Metre	Air Pollution Control Equipment Installed	Parameter	Permissible limit
1	Raw mill Kiln exit	95	Glass Bag House	Particulate matters	50 mg/Nm^3
2	Clinker Cooler	53	ESP	Particulate matters	150 mg/Nm^3
3	Coal Mill	30	Bag Filter		
4	Cement mill - I	34	ESP		
5	Cement mill - II	34	Bag Filter		
6	Packing Plant – I	30	Bag Filter		
7	Packing Plant – II	30	Bag Filter		
8	Crusher	20	Bag Filter		

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4.5 Ambient Air quality with the premises of the industry shall conform to the following standards.

PARAMETERS	PERMISSIBLE LIMIT	
	Annual	24 Hrs Average
Particulate Matter-10 (PM_{10})	60 Microgram/M^3	100 Microgram/M^3
Particulate Matter- 2.5 ($PM_{2.5}$)	40 Microgram/M^3	60 Microgram/M^3
SO_2	50 Microgram/M^3	80 Microgram/M^3
NO_x	40 Microgram/M^3	80 Microgram/M^3

4.6 The applicant shall provide portholes, ladders, plateform etc. at chimney(s) for monitoring the air emissions and the same shall be open for inspection by/and for use of Board's staff. The chimney(s) vent attached to various sources of emission shall be designed by numbers such as S-1, S-2 etc. and these shall be painted/displayed to facilitate identification.

4.7 The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75dB(a) during day time and 70dB(a) during night time. Day time is reckoned in between 6 a.m and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.

5. **AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTE**

Form-2 (See rule 5(4)

5.1 **Form for grant of authorization for occupier or operator handling hazardous waste)**

5.2 M/s. Ambuja Cement Ltd., is hereby granted an authorization to operate facility for following hazardous waste on the premises situated at S. No.315to320, 351 to 352 & 395 to 410, P.O. Ambujanagar, Tal: Kodinar, Dist: Junagadh.

Sr. No.	Hazardous Waste	Quantity Metric Tons/Annum	Schedule	Mode of Disposal
1	Used/Spent oil	93.50	5.1 Sch-I	Collection, Storage, Transportation Disposal by selling to Registered Refiners units.
2	Wastes/residues containing oil/Oil soaked cotton	1.0	5.2 Sch-I	Collection, Storage, Transportation Disposal by selling to Registered Refiners unit OR Co - processing in own cement Kiln.

3	Discarded containers / barrels/liners contaminated with hazardous wastes/ chemicals	15.0	33.3 Sch-I	Collection, Storage, Transportation, Disposal by selling to Registered Recycler.
4	Process waste sludge/residue containing acid or other toxic metals or organic complexes (i.e. Chemical Gypsum)	237250	26.1 Sch-I	Reception, Collection, Storage, Transportation, Disposal by use in cement manufacturing
5	Tarry Residue (i.e.TDI Tar)	3650	1.2 Sch-I	Reception, Collection, Storage, Transportation, Disposal By Co-Processing in Cement kiln
6	Spent Catalyst/Spent Carbon	3428.27	28.2	Reception, Collection, Storage, Transportation, Disposal By Co-Processing in Cement kiln (List of **Industries as per Annex-A)**
7	Process waste, residues & sludges (i.e. Plastic Waste)	79200	21.1 Sch-I	Reception, Collection, Storage, Transportation, Disposal By Co-Processing in Cement kiln.
8	Tyre chips (Shredded Tyres)	5000	—	Reception, Collection, Storage, Transportation, Disposal By Co-Processing in Cement kiln
9	CFL lamps & tube lights , other mercury containing compounds	0.5	A 6 Sch II	Collection, Storage, Transportation, Disposal through registered E Waste recycler/ TSDF site.
10	Asbestos	15	2.16 Sch 2	Collection, Storage, Transportation, Disposal at TSDF site.
11	Glass wool	15	2.22 Sch 2	Collection, Storage, Transportation, Disposal at TSDF site.

5.3 The validity of authorization for above mentioned waste is up to **12.06.2018.**

5.4 Unit shall strictly follow the guideline for co-processing published by CPCB.

5.5 Unit shall strictly follow the guideline particularly with respect to:

- The transportation of Hazardous waste.
- Adequate storage facility.
- Feeding in kiln as per Haz. Waste characteristic.

- Characteristic of Haz. Waste as per acceptance criteria
- Emission Norms & NAAQS
- Haz. Waste Analysis & Safety Audit.

5.6 Unit shall carry out Haz.Waste analysis prior to co-processing to ensure that the characteristic of Haz.Waste as per acceptance criteria and submit the analysis report to the Board.

5.7 Unit shall have to submit the time bound programme for implementation of adequate measures as per guideline.

5.8 Unit shall comply all the conditions mentioned in CPCB letter dated **29.07.2009 & 04.10.2012.**

5.9 The industry should give top priority for waste minimization and cleaner production practices.

5.10 The industry should not store hazardous waste for more than 90 days as per the Hazardous Waste (Management and Transboundry Movement) Rules, 2008 and amendments thereof.

5.11 The industry should carry out co-processing of incinerable hazardous/high CV waste in rotary kilns as per Liquid/Solid/Sludge AFR feeding and on site storage facility.

5.12 The industry should take necessary steps for prevention of any spillage/leaching etc. in respect of hazardous waste from the premises.

5.13 Cement plant shall have to explore the possibilities for transportation of Hazardous Waste for the co-processing purpose through dedicated tankers with GPS enabled system in line with Hazardous Waste Rules-2008.

5.14 The industry shall use Hazardous Waste tracking (HWT) system of Xtended Green Node (XGN) for online real time data for preparing online manifest system for regular updation retrieval and maintain record thereof and to furnish details to the concerned GPCB, Regional Office & Head Office, Gandhinagar at regular interval.

5.15 The industry should maintain good housekeeping & maintain proper records for Hazardous Wastes mentioned in Authorization.

5.16 The industry should maintain proper records for Hazardous Wastes mentioned in Authorization in FORM-3 [Rule 22(1)] , i.e. quantity of incinerable waste , land disposal waste, recyclable waste etc. and file annual returns in FORM-4 as per Rule 22(2) of the Hazardous Waste (Management, handling & Transboundary Movement)Rules,2008 and amendments thereof.

5.17 The industry should obtain prior regular permission of CPCB for co-processing of hazardous wastes in cement kiln (if applicable).

5.18 The industry should take all precautionary measures to prevent odor nuisance and spillage during handling of hazardous wastes.

5.19 The guideline published by CPCB in February-2010 on co-processing in cement plants should be strictly followed.

5.20 The industry should obtain prior permission of trial run for co-processing of wastes for which regular permission is not issued to any cement plant.

5.21 The industry should follow the guideline of CPCB for labeling, transportation, storage and disposal of hazardous wastes in a environmental sound manner.

5.22 The industry should adhere with stipulation/conditions mentioned by CPCB while granting regular permission for co-processing of waste as per order no. B-33014/H-18/2009/PCI-II/5050 dated 29.07.2009 & order no. B-33014/H-17/2009/PCI-II/2686 dated 04.10.2012 under the Rules-11 of Hazardous Waste (M, H&TM) Rules-2008 read with various provision of EPA,1986.

5.23 The industry should dispose the E-waste/Used Oil Waste Oil/Lead acid Batteries to authorized recyclers/re-processors only and also implement the fly ash rules and relevant notification thereof.

B. SPECIFIC CONDITIONS [Whichever is applicable]

5.24 It shall be the responsibility /duty of the occupier or operator of a facility to take adequate steps while handling hazardous waste to contain contaminants and prevent accidents and their consequences on human and environment, and prevent person working on the site with information, training and equipment necessary to ensure their safety.

5.25 The occupier, importer, transporter and operator of the facility shall be liable for all damage caused to the environment or third party due to improper handling of the hazardous waste or disposal of the hazardous wastes.

5.26 The occupier and the operator of the facility shall be liable to pay financial penalties as levied for any violation of the provisions under Hazardous Waste (Management, Handling and Transboundary Movement) Rules 2008 by the state pollution control board with the prior approval of the central pollution control board.

5.27 In case of transportation of hazardous waste through a state other than the state of origin or destination the occupier shall intimate the concerned state pollution control board before he hands over the hazardous wastes to transporter.

5.28 In case of Transport of Haz. Wastes for final disposal to a facility for treatment, storage and disposal existing in a state other than the state where he Hazardous waste is generated, the occupier shall obtain "No Objection Certificate" from the State Pollution Control Board of both the states.

5.29 **GENERAL CONDITIONS:**

5.30 Adequate plantation shall be carried out all along the periphery of the industrial premises.

5.31 The applicant shall have to submit the returns in prescribed form regarding water consumption and shall have to make payment of water cess to the Board under the Water Cess Act, 1977.

5.32 In case of change of ownership/management, the name and address of the new owners/partners/directors/proprietor should immediately be intimated to the Board.

5.33 The applicant shall however, not without the prior consent of the Board bring into use any new or altered outlet for the discharge of effluent or gaseous emission or

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sewage waste from the proposed industrial plant. The applicant is required to make applications to this Board for this purpose in the prescribed forms under the provisions of the Water Act, 1974 the Air Act, 1981 and the Environment (Protection) Act, 1986.

5.34 The concentration of Noise in Ambient Air within the premises of industrial unit shall not exceed following levels:
Between 6 AM and 10 PM: 75 dB (A)
Between 10 PM and 6 AM: 70 dB (A)

5.35 Applicant is required to comply with the manufacturing, Storage and Import of Hazardous Chemicals Rules-1989 framed under the Environment (Protection) Act-1986.

5.36 If it is established by any competent authority that the damage is caused due to their industrial activities to any person or his property, in that case they are obliged to pay the compensation as determined by the competent authority.

5.37 The applicant shall not carry out any activities or projects listed in schedule of the new EIA Notification dated 14/09/06 requiring prior Environment Clearance.

5.38 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous waste generated within the factory premises.

5.39 Unit shall comply the Environmentally Sound Mercury Management in respect of compact fluorescent Tube lights with stringent measures should be followed by the units at the time of disposal of Haz Waste containing mercury in consonance with the standards and guidelines.

For & On behalf of
GUJARAT POLLUTION CONTROL BOARD

(CHIRAG BHIMANI)
DY . ENVIRONMENTAL ENGINEER & UNIT HEAD

G.PCB/CCA/JNG-24(10)/ID 17221/ [illegible] **Dt** [illegible]

Issued to:
M/S. AMBUJA CEMENTS LTD.
SURVEY NO. 315 TO 320, 351 TO 352, 395 TO 410
PO :AMBUJANAGAR-362715
TALUKA- KODINAR, DISTRICT JUNAGADH

Copy to : The Regional Officer, G.P.C.Board, Junagadh -With a request to carry out monitoring sampling and inspection under the provisions of the Water Act 1974, Air Act, 1981 & EP Act 1986.

ANNEXURE A

List of Pharma Industry from which Spent Carbon/Spent Catalyst will be received by Ambuja Cements Ltd. for Co-Processing in Cement Kiln

Sr.No.	Source of Generation	Generation Quanity of Spent Carbon Tons/Annum	Haz. Waste Category
1	Vital Health Care Plot No. 1416-21, GIDC Phase-II, Vapi	180	28.2
2	Mangalam Drus & Organics Unit-1 Plot No. 187, 2nd Phase, GIDC, Vapi	156.6	28.2
3	Amul Chem Pyt. Ltd. A 1/401-402-403, GIDC Ankleshwar	48	28.2
4	Alembic Limited Alembic Road, Baroda	12	28.2
5	Wockhardt Ltd. Plot No. 138, GIDC Ankleshwar	24	28.2
6	Lupin Ltd., 124,GIDC Estate, Ankleshwar	1200	28.2
7	Glenmark Generics Ltd. Plot No. 3109, GIDC Estate, Ankleshwar,	8	28.2
8	Bakul Pharma Private Limited, 6202, GIDC Estate, Ankleshwar 393002	36.0	28.2
9	Unimark Remedies Ltd. 41/42 GIDC, 1st Phase, Vapi 396195, Dist.- Valsad, Gujarat	22.0	28.2
10	Amoli Organics Pvt. Ltd. Plot No. 322/4,40 Shed Area, GIDC, Vapi-396195	48.0	28.2
11	M/s Aden Pharmaceuticals Block 563 A, ECPL Road, Village –Dudhwala, Tal-Padra, Dist.-Baroda	5.0	28.2
12	Vital Laboratories Pvt. Ltd., Plot No. 1710, Phase-III,GIDC Estate, Vapi- 396195, Dist.- Valsad, Gujarat	98.4	28.2
13	M/s Cadila Healthcare Ltd.,Plot No 31, Dhabhasa Umraya Road ,Village-Dhabasa 391440,Tal. Padra , Dist.- Vadodara	5.4	28.2
14	M/s Alembic Pharmaceutical Ltd., Plot No. S.No. 119,121,132,133 Village - Panelav, PO- Tajpura, Tal.- Halol, Dist.-Panchmahal - 389350	48.0	28.2
15	M/s Atul Ltd. At & Post - Atul, Dist.- Valsad, 396020	480.0	28.2
16	M/s Cadila Healthhcare Ltd Plot No. 291, Unit- I , GIDC Estate, Ankleshwar, Dist.- Bharuch	55.2	28.2
17	M/s Cadila Healthcare Ltd. Plot No. 5/1/B, Unit-II, GIDC Estate Ankleshwar, Dist.- Bharuch	12.0	28.2
18	CTX Life Science Colourtex Industries Ltd. Block No. 272/P, GIDC, Sachin, Surat	985.67	28.2
	Total	3428.27	28.2

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By R.P.A.D.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management, Handling & Transboundry Movement) Rules-2008, framed under the Environmental (Protection) Act-1986.

And whereas Board has received CC& A application inward no:**105110** dated: **19/03/2016** for the Consolidated Consent and Authorization (CC & A) of this Board under the provisions / rules of the aforesaid Acts. Consents & Authorization are hereby granted as under:

CONSENTS AND AUTHORISATION:
(Under the provisions /rules of the aforesaid environmental acts)

To,
M/S. E-PROCESS HOUSE,
PLOT NO. 136/P-1, PHASE-II,
GIDC ESTATE, VAPI-396 195,
DIST: VALSAD.

1. **Consent Order No.: WH-78936, Date of issue: 16/05/2016.**

2. The consents shall be valid up to **31/12/2020** for use of outlet for the discharge of trade effluent & emission due to operation of industrial plant for manufacture of the following items/products:

Sr. No.	Product	Quantity
1	Recycling & Refurbishing of E-Waste comprising of CPU, Monitor, Keyboard, Mouse, UPS, Power Chord etc.	350 MT/Year

3. **CONDITIONS UNDER THE WATER ACT:**

3.1 The quantity of trade effluent from the industry shall be Nil.

3.2.1 The quantity of Sewage effluent from the industry shall not exceed **400 lits/day.**

3.3 Domestic effluent shall be disposed off through septic tank/soak pit system.

3.3 **Unit shall be zero discharge.** There shall be no GIDC drainage connection.

4 **CONDITIONS UNDER THE AIR ACT:**

4.1 There shall be no any flue gas emission.

4.2 There shall be no any process emission & any other ancillary from industrial process.

4.3 The concentration of the following substances in the ambient air within the premises of the industry and at a distance of 10 meters from the source (other than the stack / vent with height of more than 9 meters from the ground level) shall not exceed the following levels:

Sr. No.	Pollutant	Time Weighted Average	Concentration in Ambient air in Microgram/m3
1.	Sulphur Dioxide (SO2)	Annual 24 Hours	50 80
2.	Nitrogen Dioxide (NO2)	Annual 24 Hours	40 80
3.	Particulate Matter (Size less then 10 mg) OR PM10	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5 mg) OR PM2.5	Annual 24 Hours	40 60

4.4 The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75dB(a) during day time and70 dB (A)during night time. Daytime is reckoned in between 6a.m. and10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.

5 **GENERAL CONDITIONS:-**

5.1. Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.

6. AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTES Form-2 (See rule 5 (4))

6.1 Number of authorization: **WH-78936, Date of issue: 16/05/2016.**

6.2 **M/S. E-PROCESS HOUSE** is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at **Plot No. 136/P-1, PHASE-II, GIDC Estate, Vapi-396 195, DIST: VALSAD.**

Sr. No.	Waste	Quantity	Schedule-I Process No.	Facility for disposal
1	Mercury	1.45 MT/Month	II-A6	Collection, storage, transportation, disposal at Common TSDF Facility.
2	Halogenated Compounds of Aromatic Rings, E.G. Polychlorinated Biphenyls		II-A16	
3	Halogenated Aliphatic Compounds(Plastic mixture-PVC)		II-B11	

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4	Lead and Lead Compounds		II-B4	Separation, Collection, Storage, Sell to Authorized smelters.
5	Ferrous Metals Scrap (Steel & Iron)	4.90 MT/Month		Separation, Collection, Storage, Sell to Authorized registered recyclers.
6	Non-Ferrous Metals Scrap (Copper & Aluminium)	4.60 MT/Month		Separation, Collection, Storage, Sell to Authorized smelters.
7	Plastic Waste	4.35 MT/Month	21.1	Separation, Collection, Storage, Sell to Authorized registered recyclers/Co-processing in Cement Industry.

6.2 The authorization is granted to operate a facility for collection, storage within factory premises transportation and ultimate disposal of Hazardous wastes as mentioned in column 5 of above mentioned table.

6.3 The authorization shall be in force for a period up to **31/12/2020**.

6.4 (a) The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

(b) Industry shall obtain registration for recycling/reprocessing.

6.5 TERMS AND CONDITIONS OF AUTHORISATION:

a). The applicant shall comply with the provisions of the Environment (Protection) Act – 1986 and the rules made there under..
b). The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
c). The persons authorized shall not rent, lend, sell, transfer of otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
d). Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
e). It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
f). An application for the renewal of an authorization shall be made as laid down in rule 7.
g). Industry shall submit annual report within 15 days and subsequent by 31st January every year.

6.6 Industry shall have to manage waste oil, discarded containers etc as per Amended Rules-2008 and shall apply Authorization for all applicable Waste as per Amended Rules-2008.

6.7 In addition to above terms and conditions Industry shall also comply following directives issued by the Supreme Court of India dated.14.10.2003.

a) Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court's order in W.P. No.657 of 1995 dated 14th October 2003.

b) Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous wastes generated within the factory premises.

For and on behalf of
Gujarat Pollution Control Board

DPShah

(Smt.D.P.Shah)
Environmental Engineer

NO: GPCB/NOC-VSD-1658/ID:26984/358237 Date: 06/06/2016

Issued to:
M/S. E-PROCESS HOUSE,
PLOT NO. 136/P-1, PHASE-II,
GIDC ESTATE, VAPI-396 195,
DIST: VALSAD.

SEPPL
FUTURE IS IN YOUR HAND

SAURASHTRA ENVIRO PROJECTS PVT. LTD.

Integrated Common Hazardous Waste Management Facility

-Site : R. S. No. 415,417 & 418, Village : Juna Katariya. B/h. Gail Pump Station,
Samakhiyali-Randhanpur Highway, Taluka : Bhachau, Dist - Kutch.
Ph.: +91-261-2351248, 2346181, 6452205 Fax : +91-261-2354068 E-mail : info@sepplindia.com Website : www.sepplindia.com

KUTCH

Certificate

Certificate No: CSA140

To Whomsoever it may concern

This is to certify that

ADANI PORTS & SPECIAL ECONOMIC ZONE LTD

PORT,
AT.MUNDRA

KUTCH

is a valid member of

SAURASHTRA ENVIRO PROJECTS PVT. LTD.

for Integrated Common Hazardous Waste Management Facility.

This membership is valid for a period of

5 Years

Date of issue : *06/02/2014*

Date of expiration : *05/02/2019*

Place of issue : *Surat*

For,Saurashtra Enviro Projects Pvt. Ltd.

Director/Authorised signatory

SUBJECT TO SURAT JURISDICTION

RSPL
Recycling Solutions Pvt. Ltd.

Certificate

Certificate No: CPAW1A0048

To Whomsoever it may concern

This is to certify that

ADANI PORTS AND SEZ LIMITED

3RD FLOOR ADANI HOUSE,
P.O.BOX NO.1,
MUNDRA,

is a valid member of

Recycling Solutions Private Limited

for Alternate Fuel Resource Facility.

This membership is valid for a period of

10 Years

Date of issue *14/04/2016*
Date of expiration *13/04/2026*
Place of issue : *Panoli*

For, Recycling Solutions Private Limited

Director/Authorised signatory

Waste Information :

SrNo	Type Of Waste	Sign Qty (TPA)	SrNo	Type Of Waste	Sign Qty (TPA)
1	OILY SLUDGE	200.000	2	PIG WASTE	24.000
				Total Sign Qty (TPA) :	**224.000**

SUBJECT TO BHARUCH JURISDICTION

Annexure – 7

Cost of Environmental Protection Measures

Sr. No.	Activity	Cost incurred (INR in Lacs)			Budgeted Cost (INR in Lacs)
		2016 – 17	2017 – 18	2018 – 19 (Till Sep'18)	2018 – 19
1.	Environmental Study / Audit and Consultancy	36.78	9.0	4.6	30.5
2.	Legal & Statutory Expenses	4.76	5.07	0.12	5.7
3.	Environmental Monitoring Services	27.95	27.02	12.5	36.0
4.	Hazardous / Non Hazardous Waste Management & Disposal	12.52	65.62	50.5	84.8
5.	Environment Days Celebration	6.71	2.85	2.21	10.0
6.	Treatment and Disposal of Bio-Medical Waste	1.27	1.13	0.75	1.56
7.	Mangrove Plantation, Monitoring & Conservation	72.38	60.0	Nil	50.0
8.	Other Horticulture Expenses	555.00	547.0	299.0	636.0
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	61.50	70.02	81.67	108.05
10.	Expenditure of Environment Dept. (Apart from above head)	131.83	102.15	64.49	117.29
	Total	**910.70**	**889.86**	**515.84**	**1079.9**

Further year wise breakup of the cost is mentioned in table below:

Year	Environment	Horticulture	Total
2014-15	462.87	380.27	843.14
2015-16	346.23	434.72	780.95
2016-17	355.70	555.00	910.7
2017-18	342.86	547.00	889.86
2018-19 (Till Sep'18)	216.84	299.00	515.84
Total	**1724.5**	**2215.99**	**3940.49**

Annexure – 8

o/c

adani™

PCB ID: 17739

APSEZ/EnvCell/2018-19/035 **Date:** 04.07.2018

To,
Regional Officer
Regional Office,
Gujarat Pollution Control Board (East – Kutch),
Sector No. 8, Gandhidham,
Kutch – 370201.

Subject: Submission of compliance to observation/suggestion/instruction made by GPCB officials during inspection.

Reference: GPCB Inspection letter dated 03.07.2018, PCB ID: 17739 (**Annexure – 1**)

Dear Sir,

With reference to the above mentioned subject, APSEZL is submitting the compliance details of your observations as below:

- ✓ **Our Reply against your Observation**: Details of Greenbelt, Mangrove afforestation & conservation, Dredging, CSR activities, etc. are enclosed as **Annexure – 2**.

Moreover, recently Dr. H.V.C. Chary (Scientist – D) from Regional Office, MoEF&CC – Bhopal has visited APSEZ on 3rd of May, 2018 for EC compliance verification of Water Front Development Project and Multi Product SEZ and its monitoring report is enclosed here as **Annexure – 3**. Half yearly EC & CRZ Compliance report including all the relevant details as mentioned above is being submitted regularly to the concern govt. authorities.

APSEZL is submitting the compliances regularly and hope the above mentioned submission is in line with requirement.

Thanking you,
For, **Adani Ports and Special Economic Zone Ltd.**

Authorised Signatory

16-7-18
Received
Gujarat Pollution Control Board
Regional Office
Kutch (East)

Copy to:

Unit Head (Kutch unit)
Gujarat Pollution Control Board,
Gandhinagar – 382010.

24/7/18
Gujarat Pollution Control Board
Head Office
Sector No. 10-A,
Gandhinagar-382010.

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

Annexure – 9

adani

30.04.2018

To,
Director (Environment) & Member Secretary,
Gujarat Coastal Zone Management Authority,
Sachivalaya,
Gandhi Nagar

Subject: Submission of final report for Cumulative Impact Assessment at Mundra

Reference:

(1) Your office letter no. ENV-10-2013-118-E dated 19.12.2014
(2) MoEF&CC order vide F. No. 10-47/2008-IA-III dated 18.09.2015
(3) Our submission of 1st progress report vide letter dated 10.09.2016
(4) Our submission of 2nd progress report vide letter dated 27.07.2017

Dear Sir,

In view of compliance with the directions issued by MoEF&CC, GCZMA in its 21st meeting held on 07.02.2014 has directed APSEZ to submit Terms of Reference (ToR) to undertake a "*Cumulative Impact Assessment study for the projects already granted Environmental Clearance (EC) and CRZ clearance in the region so that future developments can be assessed for providing necessary approvals at a later stage*".

Further to the submission of ToR and subsequent discussions, GCZMA has approved ToR for undertaking Cumulative Impact Assessment (CIA) study vide letter no: ENV-10-2013-118-E dated 19.12.2014.

In view of the above, APSEZ appointed M/s. Cholamandalam MS Risk Services Limited (CMSRSL) for carrying out CIA Study.

Further, an order was issued by MoEF&CC vide F. No. 10-47/2008-IA-III dated 18.09.2015, with specific directions to APSEZ. Below mentioned directions relate to the need of CIA study.

xi) A regional strategic impact assessment report with a special focus on Mundra region will also be prepared. The cost towards these studies will also be borne by PP.

x) In the subject matter of thermal power plant, the proposed regional strategic impact assessment analysis will take in to account salinity aspect along with its potential environmental impact to suggest future corrective actions as well as the guiding tool on extension and additional of the capacities.

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During the course of the study, APSEZ has submitted two progress reports to GCZMA. Also, APSEZ has been submitting the updated status regarding the progress of the CIA study to all concerned authorities as part of the six monthly compliance reports. A joint site visit (MoEF&CC, RO, Bhopal, GCZMA and GPCB, RO, Gandhidham) was carried out during 21 – 22.12.2016 for compliance report verification.

In continuation to our earlier submissions, we would like to inform you that the CIA study is now completed (including baseline data collection, completion of all the technical studies to identify possible impacts on various environmental attributes and drafting a suitable macro level environment management plan) and the final report is enclosed for your consideration.

Thank you
Yours sincerely,

Shalin Shah
Head – Environment

Copy to: Sh. Kushal Vashist, Director, MoEF&CC, Indira Paryavaran Bhavan, Jor bagh road, Aliganj, NewDelhi

प्राप्त किया
Ministry of Environment, Forests & Climate Change
Govt. of India
Indira Paryavaran Bhawan
Jorbagh Road, Aliganj
New Delhi-110003

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