O/C

adani
Ports and
Logistics

APSEZL/EnvCell/2019-20/045 Date: 26.11.2019

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 under CRZ notification for "Port expansion project including dry/break bulk cargo container terminal, railway link and related ancillary and back-up facilities at Mundra Port, Dist. Kutch in Gujarat by M/s. Adani Ports & SEZ Limited."

Ref : Environment clearance under CRZ notification granted to M/s Adani Ports & SEZ Limited vide letter dated 20th September, 2000 bearing no. J-16011/40/99-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 – 2019 to September – 2019 has been submitted through mail communication dated 26.11.2019 and acknowledge of the same with CD (Soft Copy of Compliance Report) is attached here for your records.

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

Recieved
28/11/19

Avinash Rai
Chief Executive Officer
Mundra & Tuna Port

कार्यालय/OFFICE
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forests & Climate Change,
क्षेत्रीय कार्यालय(पश्चिम क्षेत्र)/Regional Office(Western Zone)
भोपाल (म.प्र.)/BHOPAL-462016

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,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

Environmental Clearance Compliance Report

Port Expansion Project including Dry/Break Bulk Cargo Container Terminal, Railway Link and related Ancillary and Back-up facilities at Mundra Port, Dist. Kutch, Gujarat

Adani Ports and SEZ Limited

For the Period of:

April – 2019 to September – 2019

Index

EC Compliance Report

Half yearly Compliance report of Environment Clearance under CRZ notification for "Port expansion project including dry/break bulk cargo container terminal, railway link and related ancillary and back-up facilities at Mundra Port, Dist. Kutch in Gujarat vide letter no. J-16011/40/99-IA.III dated 20th September, 2000'

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td colspan="3">A. Specific Condition</td></tr>
<tr><td>i</td><td>All the conditions stipulated by the Gujarat Pollution Control Board vide their NOC No. PC/NOC/Kutch/391/18424 dated 10.6.99 and No. PC/NOC/Kutch/222(2)16880 dated 1.5.99 shall be strictly implemented.</td><td>Complied.

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>
<tr><td>CtO - Amendment</td><td>Mundra Port Terminal</td><td>GPCB/CCA-Kutch-39(5)/ ID-17739/473575</td><td>20.11.2021</td></tr>
<tr><td>CtO - Amendment</td><td>Mundra Port Terminal</td><td>H-98086</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 Oct'18 to Mar'19 and there is no further change.</td></tr>
<tr><td>ii</td><td>The conditions stipulated in the letter No ENV-1098-6477-PI dated October 28, 1999 and No. ENV-1099-2702-PI dated 27.12.99 of shall be strictly implemented.</td><td>Complied.

Point wise compliance report of CRZ recommendations issued vide letter No ENV-1098-6477-PI dated October 28, 1999 and No. ENV-1099-2702-PI dated 27.12.99 is enclosed as Annexure- A.</td></tr>
<tr><td>iii</td><td>The turning circle should be increased from 550 m to 600 m.</td><td>Complied.
Construction activities are completed and project is in operation phase.</td></tr>
<tr><td>iv</td><td>A girdle canal with settlement tanks shall be provided around the coal storage area.</td><td>Not applicable at present.
Coal handling is not practiced at project site.</td></tr>
<tr><td>v</td><td>All efforts shall be made for water conservation</td><td>Complied.</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
	and rain water harvesting. Arrangements shall be made for roof top rain water harvesting from various structures.	Under the Water Conservation and Optimization Drive at APSEZ, various initiatives were taken for conservation of water such as, 100% utilization of treated water for horticultural purpose. 1. Total 128 Water-free urinals are installed and in operation within APSEZ. 2. Recirculation of water from fixed firefighting system to reservoir through flexible pipe during testing of firefighting system. 3. Conservation of Condensate from Air Conditioner and use for gardening. 4. Water flow reducers (total 8740 nos.) are provided in taps of Adani House, Tug Berth, CT2, CT3 & CT4 buildings to reduce the water consumption and are in use. 5. Water Maker machine is installed near Tug Berth jetty which generates drinking water from atmospheric moisture. The capacity of this machine is 250 liters per day. 6. Attending leakages and damages of water lines at various locations of APSEZ. 7. Process optimization Above initiative have saved substantial amount of water consumption. 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. We have installed Rain water recharge bore well (4 Nos.) within our township to recharge ground water. Details of the same is attached as **Annexure – 1**. Due to the same approx. 5.6 ML of rain water has been harvested during last monsoon. We have also connected roof top rain water duct of operational building (Tug berth building within MPT) with u/g water tank for utilization of collected rain water for gardening / horticulture purpose. Details of the same were submitted along with last EC Compliance report for

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		the period Oct'18 to Mar'19. 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 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)

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>With the objective of to preserve the rain water to reduce the impact of salinity and recharge the ground water (the main source of water) to facilitate the Agricultural activities as well as for drinking water.

Under UTHHAN MODEL VILLAGE PROJECT, Salinity ingress issue is well taken with pond deepening, recharge bore well technique and roof top rain water harvesting. Total ground water recharged due to this project 1878 ML.

Please refer Annexure – 2 for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2019-20 is to the tune of INR 2043 lakh. Out of which, Approx. INR 745 lakh are spent during this compliance period Apr'19 to Sep'19.</td></tr>
<tr><td>vi</td><td>To obviate the problem of coastal erosion due to dredging, the setback distance of at least 50 m from the Chart Datum line of Bocha island would be maintained.</td><td>Complied.

During Maintenance dredging in this area, it is ensured that at least 50 m distance is maintained.</td></tr>
<tr><td>vii</td><td rowspan="2">The dredged material shall be disposed of only in the identified locations outside the CRZ area. While dumping the dredged material, sufficient distance should be ensured from the existing mangroves so that there is no damage to the ecology. During dumping of dredged material the mitigative measures as suggested by NIO shall be implemented. It shall be ensured that there is no dumping of dredged material in the CRZ.</td><td>Complied.

Capital dredging is completed and only maintenance dredging is being carried out, if required.

Dredged material generated by maintenance dredging is used for level rising. The measures recommended by NIO are implemented.

In order to ensure no damage to marine ecology Marine water & sediment monitoring is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd. Summary of the same for duration from Apr'19 to Sep'19 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>
</table>
</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>pH</td><td>--</td><td>8.37</td><td>8.07</td><td>8.24</td><td>8.03</td></tr>
<tr><td>TSS</td><td>mg/L</td><td>382</td><td>182</td><td>364</td><td>218</td></tr>
<tr><td>BOD (3 Days @ 27 °C)</td><td>mg/L</td><td>12.8</td><td>3.0</td><td>5.0</td><td>2.0</td></tr>
<tr><td>DO</td><td>mg/L</td><td>6.8</td><td>6.0</td><td>6.8</td><td>5.6</td></tr>
<tr><td>Salinity</td><td>ppt</td><td>35.7</td><td>33.9</td><td>36.0</td><td>3.0</td></tr>
<tr><td>TDS</td><td>mg/L</td><td>36734</td><td>34327</td><td>37434</td><td>34218</td></tr>
</table>

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

Please refer Annexure – 3 for detailed analysis reports. Approx. INR 11.23 Lakh is spent for all environmental monitoring activities during the FY 2019-20 (Till Sep'19).</td></tr>
<tr><td>viii</td><td>The mangrove afforestation shall be undertaken at the identified sites and the progress report in this regard shall be submitted to this Ministry regularly. All the recommendations suggested in the NIO report for restoration of the coastal habitat by mangrove afforestation at Navinal island shall be strictly implemented.</td><td>Complied.

All construction activities are completed and project is in operation phase since long time. 24 hectare of mangrove afforestation was carried out at identified sites in consultation with Dr Maity, (Mangrove Consultant of India).

Green belt was developed 81.37 ha. Total 165912 trees were planted with the density of 2039 trees per hectare within the port area.

To enhance the marine biodiversity, till date APSEZ has carried out mangrove afforestation in more than 2850 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 832 lakh. So, far APSEZ has developed more than 467 ha. area as greenbelt with plantation of more than 8.7 Lacs saplings within the APSEZ area. Details on mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as Annexure – 4.</td></tr>
<tr><td>ix</td><td>No ground water shall be withdrawn for this project.</td><td>Complied.
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 4.6 MLD during compliance period i.e. Apr'19 to Sep'19.</td></tr>
<tr><td>x</td><td>The project proponent shall ensure that the construction workers do</td><td>Complied.

All construction activities are completed and project is in</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>not cut the Mangroves for fuel wood etc.</td><td>operation phase since long time.</td></tr>
<tr><td>xi</td><td>The project proponent shall ensure that no creeks are blocked and the natural drainage of the area is not affected due to project activities.</td><td>Complied.
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. APSEZ has so far constructed 19 culverts having total length of approx. 1100 m with total cost of INR 20 Crores. Apart from that three RCC Bridges have been constructed over Kotdi creek with total length of 230 m at the cost of INR 10 Crores. Photographs of the same were attached as part of compliance report for the duration of Apr'17 to Sep'17.</td></tr>
<tr><td>xii</td><td>The project proponent shall ensure that there will be no disposal of sludge and sewage generated from construction camps, surface run-off from construction sites, and oil and grease spillage from the construction equipment's in the creeks.</td><td>Complied.
Project is in operation phase.

Sewage generated from port is being treated in designated STP and treated sewage is used for horticulture purposes.

<table>
<tr><th>Location</th><th>Capacity</th><th>Quantity of Wastewater (Avg. from Apr'19 to Sep'19)</th><th>Type of ETP / STP</th></tr>
<tr><td>LT</td><td>265 KLD</td><td>82 KLD</td><td>Activated Sludge</td></tr>
</table>

Third party analysis of the treated water is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratory Pvt. Ltd. Summary of the same for duration from Apr'19 to Sep'19 is mentioned below.
<table>
<tr><th>Parameter</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit[$]</th></tr>
<tr><td>pH</td><td>--</td><td>7.9</td><td>6.76</td><td>6.5 to 8.5</td></tr>
<tr><td>TSS</td><td>mg/L</td><td>84</td><td>42</td><td>100</td></tr>
<tr><td>TDS</td><td>mg/L</td><td>2096</td><td>1903</td><td>2100</td></tr>
<tr><td>COD</td><td>mg/L</td><td>98</td><td>78</td><td>100</td></tr>
<tr><td>BOD (3 Days @ 27°C)</td><td>mg/L</td><td>30</td><td>18</td><td>30</td></tr>
</table>
[$] as per CC&A granted by GPCB
Please refer Annexure – 4 for detailed analysis reports.</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		Approx. INR 11.23 Lakh is spent for all environmental monitoring activities during the FY 2019-20 (Till Sep'19).
xiii	The project proponent shall stick to the time bound program submitted to the Department of Environment, Government of Gujarat for the proposed activities including installation of desalination plant for meeting the entire water requirement. They shall coordinate their construction/operations schedule with the installation schedule of desalination plant.	Complied. Desalination plant has already been installed as per time bound program and is in use. Details regarding water consumption are mentioned in Sr. no. ix above.
xiv	The project proponent shall ensure that the commercial fisheries are not hampered due to presence of barges, vessels and other activities in the region. Necessary plan in this regard shall be prepared in consultation with the NIO and submitted within 3 months.	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 was Rs. 637 Lacs. There is no hindrance to the movement of fisherman boats. Details of the same were submitted along with last EC Compliance report for the period Apr'18 to Sep'18.
xv	The project proponent shall bear the cost of the external agency that may be appointed by the Department of Environment, Government of Gujarat	Complied. Construction activities are completed and project is in operation phase. As part of the directions given by MoEF&CC vides order dated 18th Sep, 2015, following studies were proposed.

Sr. No.	Conditions	Compliance Status as on 30-09-2019
	for carrying out the supervision and/or the monitoring of the construction activities.	• 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 details of the same were submitted along with last EC Compliance report for the period Apr'18 to Sep'18. • A Regional Impact Assessment study to identify impacts of all the existing as well as proposed project activities in Mundra region. Total cost of the study is approx. INR 1.3 cr. which is financed by APSEZ. The study is recently concluded and the final report is submitted vide our letter dated 30.04.2018 to GCZMA and MoEF&CC for their consideration. Details of the same were submitted along with last EC Compliance report for the period Apr'18 to Sep'18.
xvi	The project proponent shall carry out the post-project monitoring of various environmental parameters in consultation with the Department of Environment, Government of Gujarat and Gujarat Pollution Control Board.	Complied. Monitoring of various environmental parameters for Ambient Air, Noise, Wastewater, ground water, marine water and sediments along with the parameters mentioned in the consent order issued by GPCB is being carried out by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratory Pvt. Ltd. Monitoring reports for the period from Apr'19 to Sep'19 are enclosed as **Annexure – 3**.
xvii	The project proponent shall prepare the detailed traffic control management plan for the port and shall participate in the VTMS to be developed for the Gulf of Kachchh.	Complied. 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. APSEZ is practicing well defined traffic control procedure. Marine Control of APSEZ provides traffic update to vessels in Mundra Port Limit on VHF Channel-77. Arrival and departure information in Gulf of Kutch is provided to VTS information cell through an agent or directly by sending an e-mail to vtsmanagergulfofkutch @ yahoo.com and vtsgok@yahoo.com.

Sr. No.	Conditions	Compliance Status as on 30-09-2019
xviii	Action plan shall be prepared by the project proponents to prevent damage to marine life and also to the coastline in case of any oil spillage and the same shall be strictly implemented. Regular mock drills shall be carried out to ensure fitness of the equipment in place.	Complied. Oil spill contingency response plan updated on 01.10.2018 is in place and implemented. Copy of updated plan was submitted along with last half yearly EC Compliance report for the period Oct'18 to Mar'19 and there is no further change. 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." Mock drills are conducted regularly. Latest mock drill was conducted on 22.02.2019 for white oil spillage. Mock drill report is attached as **Annexure – 5**.
xix	The project proponents shall work out the maximum quantity of spilled material, which can find its way into the coastal waters, under different accident scenarios, and their impact on aquatic life shall be studied after clearly demarcating the impact zones. On the basis of such studies, the necessary action plan to mitigate the likely impacts shall be prepared before commencement of the operations. Action taken report in this regard shall be submitted to the Ministry.	Complied. Oil spill contingency plan is in place to handle Tier 1 level oil spills considering different accident scenarios, and the vulnerable areas are identified and mitigation plan is prepared. Based on the oil spill modeling study, it has been observed that crude oil spill of 700 tons (Tier-I) will spread over an area having radius of around 400 m within 4hr. APSEZ already has facilities for combating a Tier-1 spill. Recommendations of Marine EIA by NIO with respect to pollution emergency contingency plan for Multipurpose Terminal, Container, Dry & Break Bulk Terminal as well as associated facilities are addressed in Oil Spill Response Plan. This action plan prepared by APSEZ to combat the oil spill (LOS-DCP) is in accordance with the NOS DCP, International Petroleum Industry Environmental Conservation Association (IPIECA). 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."

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		Please refer Point No. xviii.
B. General Condition		
i	Construction of the proposed structures should be undertaken meticulously conforming to the existing Central / local rules and regulations. All the construction designs / drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments / Agencies.	Already complied. Not applicable at present. All construction activities are carried out confirming to the existing rules and regulation and as per the CRZ notification. Approval under the preview of GMB, PESO and Factories act were taken prior to start of construction.
ii	The proponent shall ensure that as a result of the proposed constructions ingress of the saline water into the ground water does not take place. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.	Complied. 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'19 to Sep'19 is mentioned below. Monitoring Reports are attached as **Annexure – 3** for the same. **Number of Sampling Locations: 5**

Parameter	Unit	Minimum	Maximum
pH	-	7.7	8.1
Salinity	ppt	4.6	19.4
Oil & Grease	mg/L	2	3.1
Hydrocarbon	mg/L	BDL*	BDL*
Lead as Pb	mg/L	0.044	0.075
Arsenic as As	mg/L	BDL*	BDL*
Nickel as Ni	mg/L	BDL*	BDL*
Total Chromium as Cr	mg/L	BDL*	BDL*
Cadmium as Cd	mg/L	0.011	0.036
Mercury as Hg	mg/L	BDL*	BDL*
Zinc as Zn	mg/L	0.092	3.8
Copper as Cu	mg/L	BDL*	BDL*
Iron as Fe	mg/L	0.35	7.2
Insecticides/Pesticides	--	Absent	Absent
Depth of Water Level from	meter	1	1.25

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		GL | | | | *BDL = Below Detectable Limit Approx. INR 11.23 Lakh is spent for all environmental monitoring activities during the FY 2019-20 (Till Sep'19).
iii	A comprehensive contingency plan in collaboration with the concerned authorities must be formulated to contain in case of any oil spills. Appropriate devices such as oil skimmer, oil monitor, oil water separator must be acquired for strengthening the contingency plan. All the service vessels that required for oil spill operations must be equipped with booms and dispersants. The personal onboard of these vessels must be properly trained in operation of these booms and dispersants.	Complied. Oil spill contingency plan is in place to handle Tier 1 level oil spills considering different accident scenarios, and the vulnerable areas are identified and mitigation plan is prepared. Updated Oil Spill Contingency Response Plan was submitted during last EC Compliance report for the period Oct'18 to Mar'19 and there is no further change. Shoreline Resources available with APSEZ, for deployment during shoreline cleanup/ emergent situation: **Item** | **Quantity** Oil Spill Dispersants | 40250 ltr. Absorbent pads | 1000 Portable dispersant storage tank: 1000 ltr. capacity | 1 no. Portable pumps | 2 nos. Oil discharge hose, 3", 2 x 10 m | 1 set Rachet belt (Eco make) | 10 nos. Tool box (Eco) | 6 nos. Tanker Trucks | 04 nos. Mini Vacuum Pump (30 m3 / hr) | 02 nos. Slurry Pump (60 m3 / hr) | 01 no. 11 Dolphin tugs are fitted with Oil Spill Dispersant boom and proportionate pump to mix OSD and Sea water as required; out of them 10 Dolphin Tugs are fitted with a fire curtain and remote controlled fire monitors. 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. Detail of resource available at APSEZL is provided in annexure 3 of Oil Spill Contingency Plan.
iv	The operation plan for	Complied.

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>responding to an oil spill must include clear procedures for notification of a spill, response decision, cleanup operations, communications, and termination of cleanup operations, cleanup cost, oil pollution, damage control and disaster management plan.</td><td>Oil spill contingency plan is in place to handle Tier 1 level oil spills considering different accident scenarios, and the vulnerable areas are identified and mitigation plan is prepared. Updated Oil Spill Contingency Response Plan was submitted during last EC Compliance report for the period Oct'18 to Mar'19 and there is no further change.

Oil Spill Contingency Plan includes procedures for notification of a spill as point no 7.1, response strategy as Point no. 3.0, cleanup operations, Cleanup cost and termination of cleanup in point no. 3.5, communications in point no. 6.0.</td></tr>
<tr><td>v</td><td>A well-equipped laboratory with suitable instruments to monitor the quality of air and water shall be set up so as to ensure that the quality of ambient air and water conforms to the prescribed standards. The laboratory will also be equipped with qualified manpower including a marine biologist so that the marine water quality is regularly monitored in order to ensure that the marine life is not adversely affected as a result of implementation of the said project. The quality of ambient air and water shall be monitored periodically in all the seasons and the results should be properly maintained for inspection of the concerned pollution Control agencies.
The periodic monitoring reports at least once in 6</td><td>Being complied

Site is provided with environment monitoring equipment with sufficient & competent staff of Third Party laboratory accredited by NABL & MoEF&CC.

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'19 to Sep'19 is mentioned below.

Total Ambient Air & Noise Sampling Locations: 4 Nos.
<table>
<tr><th>Parameter</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit$</th></tr>
<tr><td>PM_{10}</td><td>µg/m^3</td><td>98.3</td><td>44.03</td><td>100</td></tr>
<tr><td>$PM_{2.5}$</td><td>µg/m^3</td><td>56.36</td><td>16.54</td><td>60</td></tr>
<tr><td>SO_2</td><td>µg/m^3</td><td>26.5</td><td>5.69</td><td>80</td></tr>
<tr><td>NO_2</td><td>µg/m^3</td><td>45.36</td><td>14.59</td><td>80</td></tr>
<tr><th>Noise</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit</th></tr>
<tr><td>Day Time</td><td>dB(A)</td><td>74.2</td><td>47.7</td><td>75</td></tr>
<tr><td>Night Time</td><td>dB(A)</td><td>69.8</td><td>46.6</td><td>70</td></tr>
</table>
$ as per NAAQ standards, 2009
Values recorded confirms to the stipulated standards
Sewage generated from port is being treated in designated STPs and treated sewage is used for horticulture purposes.
Third party analysis of the treated water is being carried out once in a month by NABL and MoEF&CC accredited</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>months must be sent to this Ministry as well as its Regional Office at Bhopal.</td><td>agency namely M/s. Pollucon Laboratories Pvt. Ltd. Summary of the same for duration from Apr'19 to Sep'19 is provided above in point No. xii (specific conditions).

<u>Marine Monitoring:</u>
Summary of the marine water monitoring for duration from Apr'19 to Sep'19 is provided above in point No. vii (specific conditions)

Adani group has appointed a marine biologist Mr. Shivanagouda Sanagoudra to monitor marine water quality. Also the third party monitoring of the Marine water is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd. who has marine biologist to ensure that the marine water quality do not adversely affects the marine life. Monitoring Reports are attached as Annexure – 3 for the same. Approx. INR 11.23 Lakh is spent for all environmental monitoring activities during the FY 2019-20 (Till Sep'19).

Compliance report of EC conditions is uploaded regularly. Last compliance report including results of monitoring data for the period of Oct'18 to Mar'19 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 20.05.2019. 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 27.05.2019 to all the concern 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'16 to Sep'16</td><td>01.12.2016</td></tr>
<tr><td>2</td><td>Oct'16 to Mar'17</td><td>30.05.2017</td></tr>
<tr><td>3</td><td>Apr'17 to Sep'17</td><td>01.12.2017</td></tr>
<tr><td>4</td><td>Oct'17 to Mar'18</td><td>29.05.2018</td></tr>
<tr><td>5</td><td>Apr'18 to Sep'18</td><td>30.11.2018</td></tr>
<tr><td>6</td><td>Oct'18 to Apr'19</td><td>31.05.2019</td></tr>
</table></td></tr>
<tr><td>vi</td><td>Adequate provision for infrastructure facilities such as water supply, fuel</td><td>Already complied. Not Applicable at present.

Construction Activity is already completed. Adequate</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
	for cooking, sanitation etc. must be provided for the laborers during the construction period in order to avoid damage to the environment. Colonies for the laborers should not be located in the CRZ area. It should also be ensured that the construction workers do not cut trees including mangroves for fuel wood purpose.	infrastructure facilities as mentioned in the condition were provided during construction phase. The facility for drinking water, toilet and rest shelter are provided for the dignity of operation labours. Photographs of the same were provided along with the compliance submission for the duration of Oct'16 to Mar'17.
vii	To prevent discharge of sewage and other liquid wastes in to the water bodies, adequate system for collection and treatment of the wastes must be provided. No sewage and other liquid wastes without treatment should be allowed to enter into the water bodies. The quality of treated effluents, emissions, solid wastes and noise levels must confirm to the standards laid down by the competent authority including the Central/State Pollution Control Board.	Complied. Adequate pipelines are provided to ensure the collection and treatment of effluent. Raw sewage is collected from 30 different collection pits at APSEZ locations through browsers and is transferred to ETP/STPs for treatment. Sewage generated from port is being treated in designated ETP/STPs and treated sewage is used for horticulture purposes. No treated water is discharged into the water bodies. Summary of treated effluent for the duration from Apr'19 to Sep'19 is provided in Specific Condition No. xii above. Third party analysis of the treated water, Flue Gas, Ambient Air and Noise is being carried out regularly by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd. Summary of six monthly monitoring of Flue gas emission is provided below. **Total Nos. of Stacks: 16 Nos.** **Parameter** / **Unit** / **GPCB Limit** / **Min** / **Max** PM / mg/Nm^3 / 150 / 12.33 / 23.74 SO_2 / ppm / 100 / 3.62 / 6.98 NO_x / ppm / 50 / 23.61 / 36.56 Six monthly reports of flue gas emissions for duration from Apr'19 to Sep'19 are attached as **Annexure – 4.**

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		Summary of Ambient Air and Noise for duration from Apr'19 to Sep'19 is provided in general condition No. v above. **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. **Municipal Solid Waste**: 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 and/or biogas generation for cooking purpose. 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., Kutch and/or M/s. Ambuja Cement Ltd., Kodinar) for Co-processing as RDF (Refused Derived Fuel). **Hazardous Waste:** • E – Waste & Used Batteries are being sold to GPCB registered recyclers namely M/s. e-Processing House. • Solid Hazardous Waste is being disposed through co-processing through common facility i.e. M/s. Saurshtra Enviro Projects Pvt. Ltd., Bhachau and/or cement industries of Sanghi Industries Ltd., Kutch and/or Ambuja Cement Ltd., Kodinar. 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 and oil particles in Oil Water Separator system. Separated oil from the same is being sold to authorized

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>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.

Details of permissions / agreements of hazardous waste authorized vendors were submitted along with last EC Compliance Report for the period Apr'18 to Sep'18.

The following table summarizes the waste management practice (for Apr'19 to Sep'19) for different types of wastes at APSEZ:
<table>
<tr><th>Type of 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>6.88</td><td rowspan="4">Co-processing at cement industries</td></tr>
<tr><td>Tank Bottom Sludge</td><td>46.26</td></tr>
<tr><td>Oily Cotton waste</td><td>62.11</td></tr>
<tr><td>ETP Sludge</td><td>4.41</td></tr>
<tr><td>Used / Spent Oil</td><td>35.41</td><td rowspan="3">Sell to registered recycler</td></tr>
<tr><td>Discarded Containers</td><td>3.57</td></tr>
<tr><td>E-Waste</td><td>2.07</td></tr>
<tr><td>Bio Medical Waste</td><td>1.38</td><td>To approved CBWTF Site</td></tr>
<tr><td colspan="3">Municipal Solid Waste</td></tr>
<tr><td>Recyclables</td><td>67.82</td><td>After recovery sent for recycling</td></tr>
<tr><td>Refuse Derived Fuel</td><td>174.72</td><td>Co-processing at Cement Industries</td></tr>
<tr><td>Wet Waste (Food waste + Organic waste)</td><td>441.59</td><td>Converted to Manure for Horticulture use / Biogas for cooking purpose</td></tr>
</table></td></tr>
<tr><td>viii</td><td>Appropriate facility should be created for the collection of solid and liquid wastes generated by the barges/vessels and their safe treatment and disposal should be ensured to avoid possible contamination of the water bodies.</td><td>Complied.
Ships berthing at Mundra Port comply with MARPOL regulations.
Waste reception facility provided at port collects Solid waste (i.e. Garbage) from vessels and collected waste is being sorted at Material Recovery Facility & it is sent for recycling.
No discharge such as bilge wastes, sewage or any other liquid wastewater is allowed into marine environment inside port limits and APSEZ does not receive sewage/liquid waste from ship.
Oily sludge (a mixture of oil, water and dirt) is disposed through authorized recycler / re-processor.
As a general practice APSEZ provide facility for receiving slop oil from vessels through hose</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		connection with oil tankers. These tankers divert slop oil to Oil water separator system where water and oil particles are separated. Separated oil is being sold to authorized recycler /re-processor. However, no slope oil was received during the compliance period.
ix	Necessary navigational aids such as channel markers should be provided to prevent accidents. Internationally recognized safety standards shall be applied in case of barge /vessel movements.	Complied. Navigational aids such as buoys and leading lights have been provided. The rules and regulation of the port contributes to the safe, efficient and environmentally responsible handling of shipping traffic. The international rules of IMO, such as SOLAS convention and its amendments and national regulations are in force at APSEZ, Mundra. **APPLICABLE REGULATION** ➢ Port Security Law (ISPS) ➢ Indian Port Act ➢ Gujrat Maritime Board Act 1981 ➢ Navigational Safety Port Committee (NSPC) ➢ All relevant international rules and regulations on MARPOL, Load lines etc.
x	During operation phase proper precautions should be taken to avoid any oil spills and no oily wastes shall be discharged into the water bodies.	Complied. Proper precautions are taken to avoid any oil spills during operation such as pressure checks of oil transfer lines and manual watch during oil cargo transfer. Available mechanisms to avoid oil spills are identified as below <u>At liquid terminal:</u> • Immediate shut off valve from vessel and shore. • Periodical testing of lines • Immediate suction of material by pump. • Emergency operation shut down. <u>At Marine Operations:</u> • Scupper plug, dip tray, absorbent pad, saw dust is provided to address confined spillage/leakage. <u>At Container Terminals:</u> • Leak cart is available for collect spilled chemical. • Spill control materials in place. • Oil drums are stored in covered shed where pellets

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>are used. Tray provided to collection of spillage/leakage if occurred.

No oily waste is discharged to water bodies. Oily waste or oil contaminated waste is being disposed as mentioned in General Condition no. vii above.</td></tr>
<tr><td>xi</td><td>The project authorities should take appropriate community development and welfare measures for the villagers in the vicinity of the project site, including drinking water facilities. A separate fund should be allocated for this purpose.</td><td>Complied.

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 is mentioned below.

<table>
<tr><th>Area</th><th>Activity</th></tr>
<tr><td>Community Health</td><td>• 11 Rural Clinic-8 from Mundra & 3 from Anjar block treated; 10889 patients.
• 31 villages covered through Mobile healthcare unit 7902 patients benefited during six month.
• 19 General Health Camp conducted - 12 General & 7 under Utthan project; 2873 patients treated.
• 498 Needy patient benefited through Medical support Total amount of support is Rs.4,02,201/-.
• Sr. Citizen Project 8672 Card holders of 68 villages get benefit under this project. 4713 sr. citizen patients benefited during six month 30000 limit for three year per patients.
• First Medical College of Kutch district based on PPP model. It started from 2009. Affiliate with “Krantiguru Shyamji Krishna Verma Kutch University”
• 750 bed– Largest Multi Specialty Hospital in kutch.
• Adani foundation, Adani Hospital and GAIMS have Jointly Celebrated "Arogya Saptah "8th to 14th August 2019 in Respect of 73th Independence of our country. – Approximately 4500 people will be direct beneficiaries of the program.
<table>
<tr><th>Day</th><th>Date</th><th>Event Name</th><th>Beneficiaries</th></tr>
<tr><td>1</td><td>07/08/2019</td><td>Health check up at Orphan age, Bhuj</td><td>101</td></tr>
<tr><td>2</td><td>08/08/2019</td><td>Blood Donation Camp, Nakhatrana</td><td>55</td></tr>
<tr><td>3</td><td>09/08/2019</td><td>Pregnant Women health check up, Madhapar</td><td>50</td></tr>
<tr><td>4</td><td>10/08/2019</td><td>Surgical Mega Camp, Khavda</td><td>223</td></tr>
<tr><td>5</td><td>11/08/2019</td><td>General Health Camp, Palara Jail</td><td>139</td></tr>
<tr><td>6</td><td>12/08/2019</td><td>Ayushman Health Card Enrolment, Gorevali</td><td>52</td></tr>
<tr><td>7</td><td>13/08/2019</td><td>Awareness on women health, mukt jivan college, Bhuj</td><td>250</td></tr>
<tr><td>8</td><td>14/08/2019</td><td>Blood Donor Appreciation</td><td>36</td></tr>
</table></td></tr>
<tr><td>Sustainable Livelihood – Fisher folk</td><td>• Average 70 KL of water was supplied to 983 households at 4 fisherman vasahat 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</td></tr>
</table></td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019	
			settlements under Vidya Deep Yojana. **125** children are benefiting from this scheme. • **115** students are getting benefit of vehicle transportation support from different Bandar. • 100% girls & 80% boys providing scholarship support to motivate and encourage fishermen boys and girls for higher education. Book support **49 Fisherman Students** of Higher Secondary Standard (9to12) has been benefitted. • Mangrove Plantation, moss cleaning, etc.: **4300 Man-days.** • **Biodiversity Project**:-Project started with two spices of mangroves which has good survival rate & Plantation at site–**70% Survival Total 4Hector Plantation**. • **Sea Weed Culture:** Sea Weed Culture is going on. Seed bank preparation is going on under guidance of VRTI.
		Education	• Adani foundation adopted **17 government school** located at Mundra Taluka under the project **'UTTHAN'** a drive of quality education. • One teacher–One school + Sports teacher + IT teacher • 'IT on Wheel 'Van with **35 laptops and computer** instructor make students more tech savvy and spreading the digital and technology knowledge amongst the younger generation. • With the intervene of our Sports teacher in all Utthan Schools successfully enrolled **500+ students** in Khel Mahakumbh. • Utthan Sahayak **+1222 students** from High school & Higher secondary of 6 villages celebrate Fifth International Yoga Day. • Adani Vidya Mandir: provide "cost-free" education to meritorious students coming from challenging economic background, who have priceless treasures but have been under achievers due to situation. In year 2019-20 **450 students** are studying. • **250 institutes** and **15,329 beneficiaries** have made inspirational visit of Adani Port, Power abd Wilmar during this six months under Project UDAAN.
		Rural Infrastructure	**WORK COMPLETED** • Water Conservation Works: ✓ Pond deepening work in Baroi, Luni & Zarpara villages ✓ Mota Bhadiya Check Dam desilting work ✓ Lakhpat Godhatal dam desilting work ✓ Mota Bhadiya artificial bore well recharge -2 no's • Protection Compound wall at Navinal Village • Garden development – Hanuman Temple Baroi • Fixing of Street Light ✓ 30 LED Street light Bhopawandh ✓ 20 LED Street light Mundra ✓ 50 LED Street Light at Bhorara • Construction of Prayer Shed at AVMB • Garden Development work at-Bhujpur Village. • Construction of R.O. Plant Room at Primary School sadau Village • Drainage maintenance. • Renovation of ITI at Mundra work in Progress. **WORK INPROGRESS**

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>• Renovation of Bavadi at Bavadi Bandar
• DevelopmentofCommunityTrainingHallatMundra&Goyarsama
• Fisherman Room at Navinal & Zarpara Vasahat</td></tr>
<tr><td>Skill Development</td><td>• Soft skill training – 437 Nos.
• Technical Training – 206 Nos.
<table>
<tr><th></th><th>Digital Literacy</th><th>Self Employed Tailor</th><th>Beauty Therapist</th><th>Spoken English</th><th>Junior Operator Crane</th><th>Excel Training</th><th>RTG Crain Operator</th></tr>
<tr><td>Male</td><td>189</td><td>0</td><td>0</td><td>45</td><td>60</td><td>11</td><td>24</td></tr>
<tr><td>Female</td><td>156</td><td>22</td><td>100</td><td>36</td><td>0</td><td>0</td><td>0</td></tr>
</table></td></tr>
</table>

Please refer Annexure – 2 for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2019-20 is to the tune of INR 2043 lakh. Out of which, Approx. INR 745 lakh are spent during this compliance period Apr'19 to Sep'19.</td></tr>
<tr><td>xii</td><td>The quarrying material required for the construction purpose shall be obtained only from the approved quarries / borrow areas. Adequate safeguard measures shall be taken to ensure that the overburden and rocks at the quarry site does not find their way into water bodies.</td><td>Not applicable at present.

Construction activities are completed.
No such activity is carried out during the compliance period of Apr'19 to Sep'19.</td></tr>
<tr><td>xiii</td><td>The dredging operations, if any, to be undertaken with the prior approval of this Ministry, shall be executed with appropriate safeguard measures to prevent turbidity conditions in consultation with the expert agencies such as CWPRS / NIO.</td><td>Complied

Capital dredging is completed and only maintenance dredging is being carried out, if required.

Dredged material generated by maintenance dredging is used for level rising. The measures recommended by NIO are implemented.</td></tr>
<tr><td>xiv</td><td>For employing unskilled, semi-skilled and skilled workers for the project, preference shall be given to local people.</td><td>Complied

• Adani Skill Development Center (ASDC), Mundra is providing skill development training to the locals for Soft Skill, Technical Training and Carrier Guidance & knowledge based training.</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		• 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. During this compliance period i.e. Apr'19 to Sep'19 total 643 training given to the local villagers in different different areas. Out of which 314 were female candidates and 328 were male candidates. • Recognition of Prior Learning (RPL) recognizes the value of learning acquired a formal setting and provides a government certificate for an individuals skill. Candidates received an accidental insurance coverage for three years at free of cost. Certified 27 assessor, 19 Trainer and 08 Assessor. Started first loader-Unloader job role in Port. Total Candidates registration 550. • Skill Development Training Program for Schedule Cast Beneficiaries 1440 SC beneficiaries from Eight Taluka of Kutchh. 460 Training Completed at Centre & 441 Training completed outreach. • Preference is given to local people for employment based on their qualification and experience. • All Mangrove plantations are done in consultation with GUIDE and Local forest dept. • 24 hectare of mangrove afforestation at Mundra was done through active participation of local fishermen at the cost of INR 25.0 Lac. • During this compliance period, the foundation provided employment to the fishermen equivalent to 4300 man–days for mangrove plantation, moss cleaning, etc. The Foundation has also supported Pagadiya fishermen as painting labors by providing them with employment and job in various fields. Details on skill development training imparted during financial year of 2019-20 (Till Sep'19) by Adani Foundation are enclosed as **Annexure – 2**.
xv	To meet any emergency situation, appropriate firefighting system and water pipelines should be installed. Appropriate arrangements for uninterrupted power	Complied. Tug (Dolphin-11) has firefighting system of 1200 m^3/hr. along with 20 ton lifting "A" frame and diving support facility for support at offshore. With respect to onshore facilities valve station, pumping

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>supply to the environment protection equipment and continuous water supply for the firefighting system should be made.</td><td>station and transportation pipeline, foam base fire tender, fire water network is available. Fire-fighting system has been installed and maintained to meet emergency situations. Additionally for emergency, DG Set is provided for fire water pumps to ensure continuous water supply for firefighting purpose. Detail information on firefighting facility available at APSEZ was submitted as a part of compliance report for the duration of Apr'17 to Sep'17.</td></tr>
<tr><td>xvi</td><td>Regular drills should be conducted to check the effectiveness of the on-site Disaster Management Plan.</td><td>Complied.

Regular drills are being conducted for effectiveness of the system. There were four drills conducted for various scenarios during compliance period (Apr'19 to Sep'19) as mentioned below.

<table>
<tr><th>Location</th><th>Date</th><th>Scenario</th></tr>
<tr><td>ACMTPL (CT4)</td><td>19.04.2019</td><td>RTGC no 510 operator was not responding and found unconscious</td></tr>
<tr><td>Terminal -03, B - 10 (Liebherr crane no .08)</td><td>28.06.2019</td><td>Technician (dummy) got electric shock and unconscious while maintenance of electrical PLC Room in Liebherr crane no .08</td></tr>
<tr><td>West Basin</td><td>29.06.2019</td><td>A housekeeping worker got multiple injuries due to falling from height while doing housekeeping at Slew area of Reclaimer 01</td></tr>
<tr><td>Liquid Terminal – Enclosure - 06 & 07 (Pump House)</td><td>22.07.2019</td><td>Alcohol leakage from pump (pump no 51) gland and catch fire</td></tr>
<tr><td>AICTPL (CT3)</td><td>13.08.2019</td><td>AICTPL Supervisor reported 01 suspected person was entered in AICTPL from out gate whose behavior was suspicious</td></tr>
</table>

Typical report of mock drill conducted during the compliance period is enclosed as Annexure – 6.</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td>xvii</td><td>The recommendations made in the Environmental Plan and Disaster Management Plan, as contained in the EIA and Risk Analysis Reports of the project, shall be effectively implemented.</td><td>Complied
All the recommendations are being implemented.

Few Marine EIA recommendations:
<table>
<tr><td>Operational protocols 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.</td><td>The company has written the operational protocols and safety procedures as a part of ISO 14001:2015, ISO 45001:2018 and ISO 9001:2015 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.</td></tr>
<tr><td>Periodic monitoring should be undertaken at the designated sites after the terminals become operational and the results of each monitoring should be carefully evaluated to identify changes if any and to take corrective measures, if warranted.</td><td>Monitoring of various environmental parameters for Ambient Air, Noise, Wastewater, ground water, marine water and sediments is being carried out by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratories Pvt. Ltd.

Monitoring reports for the period from Apr'19 to Sep'19 are enclosed as Annexure – 3.</td></tr>
<tr><td>Adequate vigilance is required to adherence of ships to Marpol protocol and related regulations.</td><td>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.</td></tr>
<tr><td>Manual Listing Procedure for conducting ship movement operations in the port area must be available to the concerned staff.</td><td>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 made available on web link www.adaniports.com/Port_Operations_Port_Tariffs.aspx</td></tr>
</table>
Few Risk Assessment Recommendations of EIA of</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		Multipurpose Terminal carried out in 1995: There should be a provision for activating a fire alarm at the fire control room from various strategic/hazard prone areas in the factory. In areas where there is high level of Noise, It may be necessary to install more than one audible alarm transmitter or flashing lights. — Provision of activating a fire alarm is available at Control Room. Employees are provided with communication system with which they can communicate about any emergency to Control Room. Emergency alarm systems are installed which is audible from any port location. Alarm testing is carried out at a frequency of once in a month. Wind sleeves with adequate lightings around them should be provided at various places to guide personnel to escape in a direction perpendicular to the prevailing wind direction. — Wind sleeves with adequate various lighting system around them are available at various places of Port locations to guide personnel to escape in a direction perpendicular to the prevailing wind direction. Succession or second line Coordinators should be named for assuming responsibilities in case disaster occurs in the absence of principal coordinators. — Disaster Management Plan for APSEZ is in place and that includes second line coordinators to assume responsibilities in absence of principal coordinators.
xviii	A separate Environment Management Cell with suitably qualified staff to carry out various environment related functions should be set up under the charge of a Senior Executive who will report directly to the Chief Executive of the company.	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. Manager who directly reports to the top management. The organogram of Environment Cell is enclosed as **Annexure – 7**.
xix	The project affected people, if any, should be properly compensated and rehabilitated.	Not applicable. The project was conceptualized in such a way that there are no impacts on the local settlements due to the project proposal. However, the project is already implemented and is in operation phase.
xx	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these	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

Sr. No.	Conditions	Compliance Status as on 30-09-2019
	funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this Ministry.	expenses are recorded in advanced accounting system of the organization. Budget for environmental management measures (including horticulture) for the FY 2019-20 is to the tune of INR 1042 lakh. Out of which, Approx. INR 727 lakh are spent during this compliance period i.e. Apr'19 to Sep'19. Detailed breakup of the expenditures for the past 3 years is attached as **Annexure – 8**.
xxi	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 Boards by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	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 27.08.2019 for Main port. APSEZL has submitted the reply to the site visit report vide letter dated 30.08.2019 incorporating details of action taken in respect of the observations of the GPCB representative. The details of the same are attached as **Annexure – 9.**
xxii	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 ones for ensuring environmental protection. The project proponents should be responsible for implementing the suggested safeguard measures.	Point Noted.

Sr. No.	Conditions	Compliance Status as on 30-09-2019
xxiii	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.
xxiv	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.	Point Noted.
xxv	A copy of the clearance letter will be marked to concerned Panchayat / local NGO. If any, from whom any suggestion / representation has been received while processing the proposal.	Not applicable at present
xxvi	State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industries centre and Collector's Office/Tehsildar's Office for 30 days	Applicable for State Pollution Control Board.
xxvii	The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of	Already Complied.

Sr. No.	Conditions	Compliance Status as on 30-09-2019
	clearance letters are available with the State Pollution Control Board and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in/.	
xxviii	The Project Proponents should inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of Land Development Work.	Already Complied.
xxix	The Project Proponent should make specific arrangements for rainwater harvesting in the project design and the rainwater so harvested should be optimally utilized.	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. Please refer specific condition no. v for further details upon ground water recharging and rain water harvesting is being done by Adani Foundation as a part of CSR activity.

Annexure - A

Half yearly Compliance report of CRZ recommendation for "Port expansion project including dry/break bulk cargo container terminal, railway link and related ancillary and back-up facilities at Mundra Port, Dist. Kutch in Gujarat vide DoEF, GOG letter no. ENV-1098-6477-p1 dated 28th October 1999.

Sr. No.	Conditions	CRZ Compliance Status as on 30-09-2019
A. Specific Condition		
1	The company shall submit comprehensive Environmental Impact Assessment Report and Risk Assessment Report containing worst case scenario and detailed oil spill control management plan before carrying out the construction activities and shall implement all the mitigative measures/suggestions/recommendations given in the report of NIO and Tata AIG Risk Management Services.	Already Complied. Not applicable at present Environmental Clearance was granted based on the submission of said documents. Rapid EIA was submitted on Feb 29, 2000 & Risk Assessment Report containing worst case scenario and detailed oil spill control management plan was submitted on Dec 28, 1999. For more details, please refer to general condition no xvii of the compliance of EC and CRZ clearance.
2	The company in no case tap ground water.	Complied. Please refer to Specific Condition no. ix of the compliance of EC and CRZ clearance above for details.
3	The company shall not cut mangroves for the project activities except for stray mangrove seeding required for the railway line only after detailed assessment through NIO and 25 acre of land shall be planted with mangroves in consultation with NIO.	Already Complied. Not applicable at present The company has not cut any mangroves. APSEZ has carried out 24 hectare of mangrove plantation near Navinal creek. To enhance the marine biodiversity, till date APSEZ has carried out mangrove afforestation in more than 2850 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 832 lakh. So, far APSEZ has developed more than 467 ha. area as greenbelt with plantation of more than 8.7 Lacs saplings within the APSEZ area. Details on mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as **Annexure – 4**. EIA report was prepared by NIO in which all impacts on
4	The company shall carry out the mangroves plantation programme in addition to 25-acre	

Sr. No.	Conditions	CRZ Compliance Status as on 30-09-2019
	mangrove plantation to be done with the help of the NIO, in consultation with the forest department.	mangroves and coastal ecology of the region for the proposed design were studied in detail. Please refer to Specific Condition no. viii of the compliance of EC and CRZ clearance above for details.
5	The company shall ensure that the construction labors do not cut mangroves for fuel, etc.	Already Complied. Not applicable at present 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.
6	The company shall ensure that no creek are blocked due to the project activities,	Complied. Please refer to Specific Condition no. xi of the compliance of EC and CRZ clearance above for details.
7	The company shall ensure that there will be no disposal of sullage and sewage generated from construction camps, surface run-off from construction sites, and oil and grease spillage from construction equipment in the creeks.	Already complied. Not applicable at present. Summary of the sewage sample results for duration from Apr'19 to Sep'19 is mentioned in the condition no. xii of EC Compliance report. Project is in operation phase. Sewage and effluent generated from port is being treated in designated ETP and treated water is used for horticulture purposes. 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 Laboratory Pvt. Ltd. The results of the same are attached as **Annexure – 3.**
8	The company shall stick to the time bound programme submitted to this department for the proposed activities including installation of desalination plant for meeting the entire water requirement.	Already complied. Not applicable at present. Construction work was completed on time and project is in operation phase. Desalination plant with the capacity of 47 MLD is installed to meet the water requirement. For detail on present source of water and quantity of water consumption, Please refer to Specific Condition no. ix of the compliance of EC and CRZ clearance above.
9	The company shall ensure that the	Complied. Communication mechanisms have been developed for the

Sr. No.	Conditions	CRZ Compliance Status as on 30-09-2019
	commercial fisheries are not hampered due to the presence of barges, vessels and other activities in the region. Necessary plan in this regards shall be prepared in consultation with the NIO.	smooth movement of fishing boats vis-à-vis shipping activities. Please refer to Specific Condition no. xiv of the compliance of EC and CRZ clearance above for details.
10	The company shall bear the cost of the external agency that may appointed by this department for carrying out the supervision and/or the monitoring of the construction activities.	Complied. Construction activities are completed and project is in operation phase. If at all any study is suggested by Govt. of Gujarat, we will give full co-operation. Please refer to Specific Condition no. xv of the compliance of EC and CRZ clearance above for details.
11	The company shall carry out the post project monitoring of various environmental parameters in consultation with this department and Gujarat Pollution Control Board.	Being complied. Post project monitoring of various environmental parameters is being carried out regularly. Please refer to Specific Condition no. xvi of the compliance of EC and CRZ clearance above for details.
12	The company shall prepare the detailed traffic control management plan for the port and shall participate in the VTMS to be developed for the Gulf of Kachchh.	Complied. APSEZ has participated in VTMS. Please refer to Specific Condition no. xvii of the compliance of EC and CRZ clearance above for details.
13	In order the eliminate adverse impact on the mangroves of Bocha Island and coastal ecology of the region, the company shall carry out construction activities only after the construction design and methodology is	Already complied. Not applicable at present. Construction activity is already completed. EIA report was prepared by NIO in which all impacts on mangroves and coastal ecology of the region for the proposed design were studied in detail.

Sr. No.	Conditions	CRZ Compliance Status as on 30-09-2019
	approved by NIO.	
14	Any other conditions may be stipulated by this department from time to time.	Point noted.

Annexure – 1

Rain Water Recharging System

Annexure – 2

adani Foundation

SIX MONTHLY REPORT 2019-20

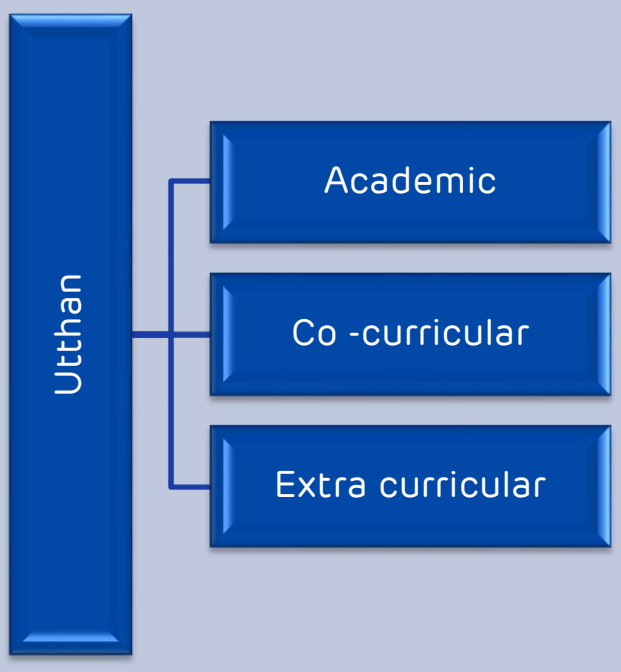
Education
Community Infrastructure Development
Kutch
Community Health
CSR
Sustainable Livelihood Development

Sustainable Growth With Goodness

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

INDEX

Project: Utthan



Majority of Indians are the products of Government schools. These schools are a linchpin of the Indian educational system, accounting for 70% of Pre-Primary and Primary Schools and Secondary Schools. They have a great penetration into the very interiors of our country. We find them in hilly areas, unreachable islands, tribal areas and everywhere.

For the academic year 2018-19, Adani Foundation leveraging their experience, to intervene in Government Schools. These interventions will aim to enhance the quality of primary education in Government schools and result in around 3000 of children benefiting from a meaningful education. 17 Primary Government schools of Mundra taluka of Kutch district have been adopted to take up various initiatives aimed at improving quality in these schools. The project titled is 'UTTHAN'. In this holistic educational project we are focusing on:

Project: Utthan

Academic

- One teacher – One school + Sports teacher + IT teacher
- 'IT on Wheel' Van with 35 laptops and computer instructor make students more tech savvy and spreading the digital and technology knowledge amongst the younger generation
- To achieve academic excellence of Priya Vidyarthi, Utthan Shikshak implies various alternative method to make their classroom more friendly and interesting.
- English is to be taught to the students from the early classes so that they will be equipped with ample resources during their further studies.
- Training cum Induction Program on various topic like teaching methodology of progressive learner, assessment pattern of slow learnr, multiple intelligence etc.

Co - Curricular

- Every Saturday Library activity with the Book issue were planned and executed in a meaningful manner
- Sports are a crucial part of a student's growth and development. Through participation in sports and games, a student gains various skills, experience and confidence. With the intervene of our Sports teacher in all Utthan Schools successfully enrolled 500+ students in Khel Mahakumbh

Project: Utthan

Extra - Curricular

- Utthan Sahayak + 1222 students from High school & Higher secondary of 6 villages celebrate Fifth International Yoga Day
- On International Plastic Bag Free Day, Awareness were spread through Effective speech, Soft board decoration, Video and Newspaper clipping in all Utthan school.
- Celebration of Gurupurnima in all Utthan Schools during morning special.
- 363 students from 17 schools got an opportunity to visit Adani West port. Main port , Willmar, power & power through project Udaan.
- Tree plantation in all the Utthan School. Adani Foundation align with the circular passed by the Government of Gujarat "Ek baal Ek Jhhad" distributed 100 trees in each school. Students not only planted the trees in fact they adopt each tree with giving their own names.

Adani Vidya Mandir Bhadreshwar

provide "cost-free" education to meritorious students coming from challenging economic background, who have priceless treasures but have been under achievers due to situation. In year 2019-20 450 students are studying.

Activities Covered

- Science Fair – Block level
- Drawing Competition under the P.C.R.A. National level competition
- Assembly on every Saturday.
- International Yoga Day Celebration
- Guru Purnima celebration
- Independence Day Celebration
- Teacher's day Celebration
- Children's Day Celebration
- Educational Tour for each standard
- Festival Celebration
- Awareness Street Play organized at various villages

Adani Vidya Mandir Bhadreshwar

92% - Result SSC Board Exam

Shala Pravestosav of Std.-1 Students

Parents Teachers Meeting

Healthy Food

Festival Celebration

Various Competitions

Project Udaan

With a vision to familiarize, educate and inspire the future generations, Adani Foundation organizes Education Exposure visits to Mundra for High schools and educational institutes in Various parts of Gujrat.

250 institutes and 15,329 beneficiaries have made inspirational visit during this six months

Community Health

Health is the basic need for development of community. Adani Foundation focuses on ensuring good health for batter contribution to growth and progress and improving access to quality healthcare service in remote area.

Rural Clinic & Mobile healthcare unit

11 Rural Clinic

8 from mundra 3 from Anjar block treated ; **10889 patients**.

31 villages covered througfh Mobile healthcare unit

7902 patients benefited during six month

Community Health

19 General Health Camp conducted -

12 General & 7 under Utthan project ;

2873 patients treated

Community Health

206 Dialysis patients

498 Needy patient benefited through Medical support Total amount of support is **Rs.4,02,201/-**

Sr. Citizen project 8672 Card holders of 68 villages get benefit under this project .

4713 sr. citizen patients benefited during six month

30000 limit for three year per patients

Gujarat Adani Institute of Medical Science (GAIMS) - Bhuj

First Medical College of Kutch district based on PPP model. It started from 2009.
Affiliate with "Krantiguru Shyamji Krishna Verma Kutch University"

750 bed – Largest Multi Specialty Hospital in kutch

Adani Foundation Team has initiated coordination with GKGH hospital and established a reception area for the smooth patient coordination and preparation for the social networking Programme.

Community Health

Health - Bhuj

3075 Beneficiaries of 27 General Health camps.

2629 Golden card enrolled in 18 Health camps in Interior villages & Mahiti Setu as well.

322 death bodies Reached at various locations of Kutchh with dignity and respect.

258 Poor patient supported in GKGH(Rs.2,84,321/-)

4242 People helped through Mahiti Setu for various government schemes

37450 Patinets benefitted though 11 camps towards Mata Madh

Celebration of various days like - World No tobacco day, Kargil Vijay divas, Health week on independence day, 5 years completion ceremony of GKGH, Teachers day,

Awareness
for Health & hygiene

Mahiti
setu

Support
Poor patient

General
Health camps

Arogya Saptah (7th – 14th August 2019)

Adani foundation, Adani Hospital and GAIMS have Jointly Celebrated "Arogya Saptah" 8th to 14th August-2019 in Respect of 73th 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	Beneficiaries
1	07/08/2019	Health check up at Orphan age, Bhuj	101
2	08/08/2019	Blood Donation Camp, Nakhatrana	55
3	09/08/2019	Pregnant Women health check up, Madhapar	50
4	10/08/2019	Surgical Mega Camp, Khavda	223
5	11/08/2019	General Health Camp, Palara Jail	139
6	12/08/2019	Ayushman Health Card Enrolment, Gorevali	52
7	13/08/2019	Awareness on women health, mukt jivan college, Bhuj	250
8	14/08/2019	Blood Donor Appreciation	36

Fisherman Education

To strengthen the standard of pri-primary education, Adani Foundation has constructed 4 BALWADI at different fishermen helmet
Which focuses on the development of basic age-appropriate learning concepts, discipline, regularity, awareness of health & hygiene, cleanliness and also provides nutritious food.

125 children are benefiting from this scheme

115 students are getting benefit of vehicle transportation support from different Bandar.

100% girls 80% boys

providing **scholarship support** to motivate and encourage fishermen boys and girls for higher education

Book support : 49 Fisherman Students of Higher Secondary Standard
(9 to 12) has been benefitted

Vidya Sahay Yojana

SLD Fishermnan

65 Teams

13 villages

750 Fisherman youth`

“Adani Premiere League”

Cricket Tournament organized among fishermen community to promote healthy sportsmanship ,and harmonically transparent community relationship

Awareness Program

Facilitation of Government Fishermen Welfare

Vessel Approach Related Message Intimation to Fishermen.

4 Fishermen VAsahat

983 Families

70000 ltr water per day`

potable water provided to the fishermen communities at different vasaht through water tanker

Sea Weed Culture

Sea Weed Culture is going on. Seed bank preparation is going on under guidance of VRTI.

4300 Man-days

Mangrove plantation at Hamira mora site .

Bio diversity Project:-

Project started with two spices of mangroves which has good survival rate & Plantation at site – 70 % Survival
Total 4 Hector Plantation.

Sustainable Livelihood Development

- The organization has carried out remarkable activities in the agricultural and animal husbandry sectors. We have initiated Programme for Awareness of Farmers in collaboration with KVK. The outreach is approximate 200 farmers of 7 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.

Sustainable Livelihood Development

After periodic discussions with Village Development Committee, Gram Panchayat and Gau Seva Samiti of Siracha – Adani Foundation had coordinated for Village Gauchar Development. Total 85 Acre Gauchar Land was approved by GP for Development by decision taken in Gram sabha . Among them 22 Acre land Has been Sowed with Sorghum and Remaining land would be Grow with Wild Grass

Siracha

22 Acre – 88000Kg Sorghum

63 Acre- 63000Kg Wild Grass

Total 85 Acre= 151000KG

Bhadreshwar @ 7 Acre= 28000Kg

Kukadsar @ 15 Acre= 60000Kg

UTTHAN MODEL VILLAGE DEVELOPMENT PROJECT

Implementation Process includes

- Meeting with Village Development Committee
- Meeting with SDM for Gauchar Land Details

Sustainable Livlihood Development

With the Objective of to Preserve the rain Water to reduce the Impact of salinity and Recharge the Ground Water (the Main Source of water) to facilitate the Agricultural activities as well as For Drinking water.

Under **UTHHAN MODEL VILLAGE PROJECT.** Salinity ingress issue is well taken with Pond Deepening, Recharge Borewell technique and Roof Top Rain Water Harvesting.

RRWHS: 54

Bore Recharge - 75

Well Recharge- 31

Pond Deepning- 2

Total Ground Water Recharge

- 1878140 cum

Tissue Culture

UTTHAN MODEL VILLAGE DEVELOPMENT PROJECT

Date is the Amrut Fal of Kutchh and Mainly best quality available in some villages in Mundra Taluka. To maintain quality uniformity Adani Foundation is planning for cultivate 4000 tissue cultured plants of elite varieties to the farmers of project area.

Registration is in progress for Farmer's Producer Company with NABARD – 220 Farmers had registered for the same.

WOMEN EMPOWERNMENT

An initiative under the Sustainable Livelihoods Development Program to encourage women, take control of their own lives and increase their confidence whether they are single, married or widowed.

Aaarambh SHG "Suf" Handicraft Cluster Seven Women from Pragpar village are doing embroidery and one women from Mundra is looking after design part.

Total Sale more than Rs.3.50 Lacs and women are getting approximately Rs.8500 per month.

Women Empowerment

Tejashvi Saheli

3100 School bags for the Students 300 wall hanging for the project of Swachhagraha and 170 Uniform Pair to the Students of Balwadi.

24 Nos of Women got employment

6 women got Job in Britannia Company (Rs.7500/- per month), 9 women got bank sakhi Yojana, 9 women working in various field in SEZ and other companies

Community Infrastructure Development

Water Conservation Works

- Pond deepening work in Baroi, Luni & Zarpara villages
- Mota Bhadiya Check Dam desilting work
- Lakhpat Godhatal dam desilting work
- Mota Bhadiya artificial bore well recharge - 2 no's

Community Infrastructure Development

Protection Compound wall
at Navinal Village

Garden Development
Hanuman Temple - Baroi

Fixing of street light
30 LED Street light Bhopawandh
20 LED Street light Mundra
50 LED Street Light at Bhorara

Community Infrastructure Development

- Construction of Prayer Shed at AVMB
- Garden Development work at- Bhujpur Village.
- Construction of R.O. Plant Room at Primary School sadau Village
- Drainage maintenance.
- Renovation of ITI at Mundra work in Progress.

Work In progress

- Renovation of Bavadi at Bavadi Bandar
- Development of Community Training Hall at Mundra & Goyarsama
- Fisherman Room at Navinal & Zarpara Vasahat

Adani Skill Development Centre

Adani Skill Development Centre is providing various employment-oriented trainings to the young for become self-reliant, responsible and active citizen.

ASDC is tied up with Pradhan Mantri Kaushalya Vardhan Yojana and Deen Dayal Upadhyaya Grameen Kaushalya Yojana.

Total No of trainee 643

Total No of batch. 33

Digital Literacy 345

Beauty Therapist 100

Self Employed Tailor 22

Junior Operator Crane 60

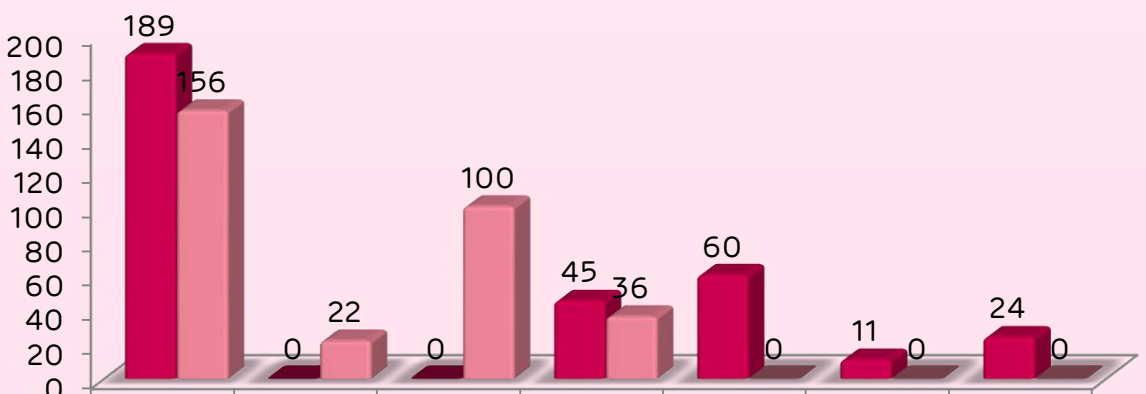
Excel training 11

RTG Crane Operator 24

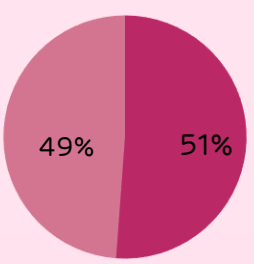
Adani Skill Development Centre

- 42 candidates passed out of 43 people of PMKVY Junior Operator Crane training.
- 21 candidates working in various company with 8000-15000 PM.
- 26 students got job in various company
- 48 women self employed.
- Spoken English class.
- Mobilization activities for SC batch in various village and collage

Completed & Running batch (April to September 2019)



	Digital Literacy	Self Employed Tailor	Beauty Therapist	Spoken English	Junior Operator Crane	Excel Training	RTG Crain Operator
Male	189	0	0	45	60	11	24
Female	156	22	100	36	0	0	0



Adani Skill Development Centre

Recognition of Prior Learning (RPL)

RPL recognizes the value of learning acquired a formal setting and provides a government certificate for an individuals skill.
Candidates received an accidental insurance coverage for three years at free of cost.
Certified 27 assessor, 19 Trainer and 08 Assessor.
Started first loader-Unloader job role in Port.
Total Candidates registration 550

ASDC Mundra team received award for Best Center - Unique Initiatives

Another milestone reached on 12th Sep 2019, ASDC launched its program for schedule caste in the state of Gujarat. This program will train candidates in various vocational training educational course like Self employed tailor and Beauty & Wellness. Total 135 women/Girls participated in this training. This course is sponsored by Department of Social justice and Empowerment .

Adani Skill Development Centre

Skill Development Training Program for Schedule Cast Beneficiaries

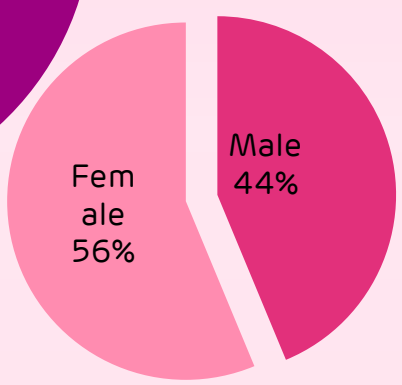
1440 SC beneficiaries from Eight Taluka of Kutchh.

Inauguration in presence of Mr Vinod Chavda (MP, Kutchh and Morabi) Mrs Lata Solanki (Pramukh, Nagar Palika,Bhuj) Mr Rohit (District Social Justice and Empowerment), Mr Jatin Trivedi (Head, ASDC)and Mr solanki (Chairman, social justice commitee Kutchh) we're present

- Hand embroidery
- Self employed stitching
- Mobile Repairing
- Beauty parlor
- Crane operator

460 Training Completed at Centre

441 Training completed outreach



Sr No	Job Role (Write Full Name of Job Role)	Female	Male	Total
1	General Duty Assistant	86	38	124
2	Digital Literacy	239	313	552
3	Spoken English	113	40	153
4	Beauty Therapist	38	0	38
5	Tally erp.9	31	3	34
	Total	507	394	901

Suposhan

The objective of the Project is to reduce occurrence of malnutrition and anemia.

create awareness about malnutrition and anaemia and related factors amongst all stakeholders and role they may play in curbing the issue.

To successful implementation of the project, “Sangini – Village Health Volunteer” plays major role in the Project.

Community Engagement and other Activities

1	No of Sangini	25
2	Total Village Cover	45
3	Total Anganwadi Cover	76
4	SAM to MAM Monitoring Progress	9
5	MAM to Normal Monitoring Progress	20
6	Focus Group Discussion	1111
7	Family Based Counselling	310
8	Village level Events	57
9	Formation of women's groups	15
10	Formation of adolescent's Groups	14
11	No of SAM children referred to CMTC	15
12	No of SAM children provided with EDF	10
13	Total HB screening - RPA	1086
14	Total HB screening - Adolescent girls	1161
15	Total Anthropometric screening	6268
16	Total Family Cover	9038
17	“NATIONAL NUTRITION month Celebration”	1551
18	“WORLD BREASTFEEDING WEEK”celebration	500
19	SuPoshan Melawa	140
20	World menstrual Hygiene Day celebration	220

Swachhagraha

Adani Foundation has launched project "Swachhagraha" Swachhata ka Satyagraha in the year 2015, to support the 'Swachh Bharat Abhiyan'. Falling in line with our Honorable Prime Minister's call for a Clean India, we launched this mass movement towards making our Nation litter free.

Swachhagraha at Kutchh

4 City / town

266 Schools

266 Prerak trained

5000+ Dal members

Swachhagraha

Swachhagraha
Wall

Toilet
Etiquettes

Safai
Ke Sitare

Personal
Hygiene

Large Scale
community events

Swachhagraha
Oath

Activities of Swachhagraha

CSR
Tuna

Adani Kandla Bulk Terminal Port Limited is joint venture of Adani Ports and SEZ Limited as well as Kandla Port. We are going to implement drainage pipeline for Tuna and Wandi with participation of Kandla Port in current year. Survey is done and work will be started soon..

- In Rampar and Tuna Village We are providing Fodder in summer season. Also guiding farmers for modern farming techniques for Organic Farming and sustainable Agriculture
- Praveshotsav Kit is distributed in 8 schools covering 180 Students in Tuna and Surrounding seven villages.. Our efforts were appreciated by community.
- Adani Foundation is bridging the gap between Government Schemes and Beneficiaries. In this Six Months we could able to support 5 widows and 4 differently abled to avail benefits of Government. Tree Plantation and 4 health camp was organized in Tuna and Rampar Village.

CSR
Nakhatrana

As a Part of Integrated Development of any Rural area – Education is the most powerful weapon. Keeping in mind, Utthan Education Project will be start after November at 8 Schools of Nakhatrana.

During Primary Information collection, we received warm welcome from Principals and Government Officials. .

Adani Foundation has initiated UTTHAN programme in Government schools. The programme converges the four pillars of education seamlessly: Students, Teachers, Guardians and Infrastructure.

The Project Relates to Adani Green energy Limited – Mainly Windmills project. First phase is completed.

Adani Foundation is also planning to implement Uthhan Model Village Concept and Bio Diversity – Peacock Conservation will be planned in next Budget.

From Current year We are implementing UTHHAN EDUCATION PROJECT in Eight Schools of Nakhatrana

CSR
Lakhpat

Successfully completion of Public Hearting without any hindrances

Most of the population of Lakhpat Depends upon Livestock for their livelihood. Fodder is the prime requirement of them. Adani Foundation had distributed Jovar seeds after considerable rain to 260 Farmers to motivate them for sustainable Livestock development.

SLD Projects

Total 260 Acre = 200000Kg

Kapurashi @ 130 Acre= 520000Kg

Koriyavi @ 105Acre=480000Kg

Maundhvaiy @25 Acre= 100000Kg

Education Support

Music Kit – 4

Sports Kit - 4

Carpet – 4

Provided to Govt. Schools of Kapurashi, Koriyani and Mundhvay

Linkages with Govt. Scheme

Wheelchair support – 2

Tri cycle support - 3

Divyang Form – 2

Health

Every Friday Specialist Doctor from GKGH are regularly serving at CHC Dayapar. More than 250 beneficiaries per month

CSR
Bitta

Under Adani Solar Limited – 40 MW Solar Panel Power Unit is Situated at Bitta Village in Abdasa Taluka. We are providing Fodder Support and Health Camp Facilities at Bitta. Our Suposhan Project is running successfully at Bitta.. .

Adani Foundation has taken Eco Friendly initiative for whole village. Village street lights, School and GP is provided Solar Panel to save electricity. The unit was conceptualized and implemented by Solar Team.

Under "Sujlam Suflam Jal Abhiyan" Two Pond Deepening was carried out and got appreciation letter from District Magistrate.

As Abdasa is water scared region and very less rain in past years , as per humble request of villagers Adani Foundation has provided 1,13,750 Kg Fodder to Bitta, Dhrufi and Moti Dhrufi village.

Praveshotsav Kit is distributed in 8 schools covering 47 Students in Bitta and Surrounding seven villages.. Our efforts were appreciated by community.

Employee volunteering

- Medical Camp – **23**
- Senior Citizen Home – **17**
- Blood Donation Camp – **1174**
- Plastic Free campaign – **251**
- Bio Diversity – **4**
- Joy of Giving – **13**
- Yoga Day - **538**
- Total – **2020**

Adani Group is deeply involved in all round social and economic development of the areas in and around Mundra. Adani EVP is context driven and employees have taken part in teaching, Medical Camps, giving impetus to national Swachhata Mission and blood donation. The journey continues

Suf Handicraft : Conserving "VIRASAT" of Decades

Parvati Ben's earliest memory of stitching delicate handicrafts is from when she was as little as 5-years-old. Since then, she has followed this art with an immense dedication that shows through her intricate and precise handiwork.

Parvati is a resident of Pragpar-2 village. She lives in a house with 5 other people and is the sole breadwinner. Even so, Parvati is a humble, loving and welcoming individual.

Parvati Ben had been practising her intricate Suf handicraft all along, making scarves, table cloths, garments and more for her fellow villagers and the occasional visitors. Her artwork had consistently been worth more than what she sold it for- her only desire being that her art finds an expression, a space in the world, however small it may be.

One day, Adani Foundation discovered this diligent, rigorous woman. Parvati Ben now works on projects brought to her by Adani Foundation and is hence able to sustain her entire family on her own. She has risen to be an aspirational figure, looked upon as a role model by her fellow village women. Parvati Ben is playing a major role in now setting up a federation for the village women across Mundra district to practise their handicraft work and earn a livelihood.

But more than all the titles and positions, what Parvati Ben deems sacred is the sheer recognition of her art. All she ever wanted was to be known as an artist and now she is the voice of this very own art, inspiring dozens of women like her to become independent.

Healthy children become happy children

Under the initiative of Balwadi at Vasahat (doorstep Early age Education for less Fisher folk), special awareness camps are organized for kids in school in order to imbibe health seeking behavior in the next generation. Various awareness activities based on healthy living are taught to them such as hand-washing steps and healthy eating habits so that they actively participate in adopting methods for personal hygiene in their daily routine.

Yamina is one of the student of Balwadi. She is five years old. Earlier she used to come to Balwadi without taking bath or hair combing. But after regular awareness camps for mother and students now she is coming well dressed and clean – due to maintaining personnel hygiene she remains healthy too..

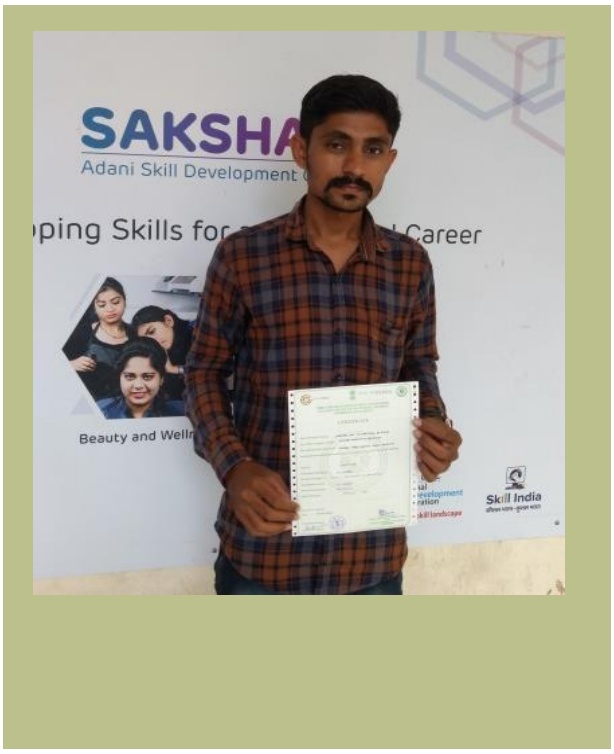
Every Dark Cloud has Silver Lining

Ms. Ramila Maheswari belongs to village Dhrub. Her father's occupation is farming. She has completed graduation and was searching job but lacking in computer operation skill.

Ramila says one of my friends suggested me to join digital literacy training at Adani Skill Development Centre, Mundra. I visited the center with my friend and joined class. I sincerely attended all classes of the course and learnt basics of computer operation viz; Typing, Paint, MS Office (word, Excel, power point), shortcut Keys and using internet for web browsing like; Gmail, Paytm, amazon, net banking etc.

She is saying with smiling on face that

"Today, I am working with firm "YASH ENTERPRISE" in Nana Kapaya, Mundra as a customer care executive and earning Rs. 7000 per month. I am really thankful to Adani Skill development Center to make 'SAKSHAM'.



Pathways towards bright future !!

Kripalsinh Jadeja comes from Hatadi, Mundra with a family of 5 people, four elder brothers and parents. His father is a farmer and mother help him in farming. The brother is working as truck driver. The economic condition of the family was very poor.

Kripalsinh has completed 12th and was searching job. The team of ASDC Mundra had mobilized in the area where he stays and through which he got to know that Adani Skill Development Centre (ASDC) is providing training for checker-cum-RTG crane operator and this was his dream job.

He performed well during the training and understood how this training would help him to grow in future in the field he desires. He was regular to the classes and always eager to know the process well and he performed well during all the activities.

Kripalsinh says he gained back his confidence after starting the training and was motivated by the trainer to participate in all activities and grab any opportunity where he can showcase his skills.

He says that he got more support by getting additional training of soft skills, public speaking, professional manners and facing interviews with confidence.

While undergoing the ASDC training Kripalsinh never imagined that this additional knowledge and skill up gradation would bring him a bright future.

My Emotional Support

Adani Foundations' Senior Citizen Health Card is like a cure to our emotional, physical and psychological problem; in the times when we are completely lonely and handicap at age."....Says both of them while weeping.

Every human being has specific periods of the life wherein the childhood is for fun and the adulthood is spent for the family; remains old age to take care of health

Adani Foundation is holded hands of the senior citizens of Mundra

Rajendrasinh and his wife stay alone. Their son and daughters stay separately. They earn their living by grazing cattle. he is having severe arthritis and respiratory disorder. The source of income is very meager and that to dependent on rain. He had to borrow money from family friends or at times take on interest for taking basic treatment. His wife Shantaba also has blood sugar and hence she also requires medical assistance at times. The couple took Adani Foundations' Senior Citizen Health Card in 2015 by which they are able to save good amount, which was their medical expense every month

Can any other relationship be as beautiful?"

When you grow old, loneliness is sometimes more painful than physical sickness. During routine visits of Dr Mukesh Parmar – Medical Officer of Medical Mobile Unit in the community as a health volunteer, he met Rahomat Ba (grandmother in Gujrati) who initially appeared as an introvert. She lives in Gundala Village. According to her neighbors, she confined herself within the four walls after her husband's demise. Despite living with her children, she is often seen sitting alone in the corridor of her house, as the family members are apparently busy with their own lives. Financially strained, she refrained from visiting a doctor due to fear of their exorbitant fee.

Mukesh bhai was determined to not only get her to our mobile hospital, but also cultivate a health seeking behavior in her. He would keep on standing outside her house till the time she didn't agree to listen to my request. Do you know something? Ba is his best friend today. They not only share our secrets with each other, but also counsel each other as a mother and a son. Can any other relationship be as beautiful?"

Good Human Beings are Gods Incarnate

While many people talk about water crisis and drought in Kutchh, Rambhai Gadhavi of Zarpara has practically found and tried a solution to it and that is water conservation. Born into a poor farmer's family, he faced water problems in childhood and used to wake up at wee hours to fetch water, which inspired him to find ways of water conservation. Under Guidance and Support of Adani Foundation He practiced non-irrigation agricultural methods as solutions to water crisis which causes drought, thereby leading to Indian farmer suicides every year.

He did Bore well recharge and Farm Bunding to increase capacity of ground water though rain and to prevent run off. Not only that, he gave guidance to other farmers to accept water conservation practices.

Rambhai and his wife Veerbai's enthusiasm is remarkable in micro irrigation, fodder cultivation and Recharge activities. They are real change makers of "Sustainable Agriculture Projects" of Adani Foundation

Every drop that matters!

Kutchh district is a dry temperate zone and rainfall is negligible. Water requirement is met through the reservoirs in which the water decreases during summer months when crop is standing in the field. Whatever irrigation was provided resulted in soil erosion leading to loss of huge quantity of soil every year thereby increasing the farmer's problem in producing good quality crop. Therefore, usage of water and land is to be done sensibly by the farmer. Muljibhai The farmer of Navinal Village attended awareness programme of micro irrigation and organic farming organized by the Adani Foundation and showed interest in adopting the same. He was given every suitable help in subsidy and was persuaded into adopting drip irrigation for field crops.

Not only this, with support of DRDA and Adani Foundation he had adopted Bio gas which is utilized for cooking and organic fertilizer as well.

With the help of drip system, the Muljibhai was able to diversify towards different Horticulture crops like Pomegranate, Jamfal, chikoo etc. in addition to traditionally grown crops like Cotton and Caster.

As a result, he is able to get 40-45% higher yield as compared to flood irrigated crops. Diversification has helped in improving returns from the same area.

Giving Back to the Society

Sharad Sharma is Plant head of Adani Wilmar Limited since six years. During Review meetings he came to know about activities of Adani Foundation. He asked Adani Foundation to start health camps near Wilmar Workforce settlements.

Before three years, when Adani Foundation organized first health camp under dignity of workforce – he came during inauguration. He discussed various issues of workforce during camp and being generous and sensitive – he took a decision to do some concrete work for the workforce.

He started visit of labour vasahat once in a month for interacting with them regarding various issues i.e. deaddiction, sanitation, health issues and education of children. Due to his support, We could able to start "Joy of Giving Week" twice in a year.

Not only this, his wife has also extended great support for Education and Joy of giving Week. In spite of being always occupied Sharad ji is volunteering as a proud adanian.

Adani Foundation is feeling proud to have employee volunteer like Shard Sharma – one of the HEROS AT WORK.

જીવન જીવવાના દરવાજા ખૂલે

ભુજના એક ૨૨ વર્ષના યુવાનની કથા બેકારીના રોદણા રોનારા યુવાનોને પ્રેરણા આપે છે. બાળપણમાં જ, લગભગ બે વર્ષની વયે જ જેને થેલિસિમિયા મેજર હોવાની ખબર પડી હતી, તેવા નખત્રાણા તાલુકાના નાનકડા ગામ દેશલપર(ગુંતલી)ના રાજુ કરસન ચાવડાની સારવાર તો તેનાં માતાપિતા પોતાના ક્ષમતા મુજબ કરાવતાં હતાં પરંતુ દસ વર્ષના રાજુને લઈને માતાપિતા ચોટીલા દર્શન કરવા ગયાં તો ત્યાં ગમખ્વાર અકસ્માતનો ભોગ બન્યાં ને

માતાપિતાને કાળે છીનવી લીધાં અને રાજુને પગમાં કાયમી ખોડ આવી. અનાથ બનેલા રાજુનો સહારો તેના માસી બન્યાં. બે વર્ષ તેમની સાથે રહ્યા બાદ રાજુ એક ચાની રેંકડી પર નોકરી કરીને પેટિયું રળવા લાગ્યો, પરંતુ આશરાનો સવાલ તો ઊભો જ હતો. ત્યાંના શેઠે તેને જાહેર શૌચાલયમાં નોકરીએ રખાવ્યો. આશરો મળતો હોવાથી રાજુ ત્યાં કામ કરવા તૈયાર થઈ ગયો. રાજુ કહે છે, 'મારો પોતાનો કંઈ વિશેષ ખર્ચ નથી. મને રોજ ટિફિન મળે છે, એટલે જમવાનો ખર્ચ થતો નથી. રોટરી ક્લબની સહાયથી જી.કે. જનરલ હોસ્પિટલમાં દર મહિને મારું લોહી બદલાવાય છે. દવા પણ મને નિ:શુલ્ક મળે છે. આમ મારું જીવન ચાલ્યા કરે છે. કોઈ સામે હાથ લાંબો કર્યા વગર જીવાય તેને ભગવાનના આશીર્વાદ ગણું છું.' કામ નથી મળતું કહીને નિરાશ થનારા યુવાનો માટે રાજુ ખરેખર પ્રેરણાસ્ત્રોત સમો છે. ■

True Warrior : We Salute

This is the story of Raju residing at Desalpar village of Nakhatrana Taluka. He is lesser blessed child of the almighty as he got Thalassemia Major and needs blood transfusion regularly.

Not only this - he lost his parents at the age of 10 in accident. He stared work at tea stall for bread n butter for two ends meet. Then he started work at public toilet with the help of Village leaders.

In all this miseries - he says with smile that due to GKGH Hospital he could elongate his life span.

Every Month blood transfusion and free medicine n guidance by thalassemia ward by Rotary saved his life...

We salute this warrior and wish him best wishes.

World Environment Day

World Environment Day was celebrated in Five Talukas by different activities related to conservation of Environment. These Events were organized in coordination with DDO, TDO, SDM and Village Leaders of all Five Talukas. The activities Tree Plantation, Check dam Augmentation work, Inauguration work of Godhatal Dam Deepening work.

555+ Tree plantation in Bhuj, Mundra & Nakhtrana Taluka

9000+ cum Augmentation and deepening work of check dam in Mandvi & Lakhpat Taluka

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

Teacher's Day : Guru Vandana

Teachers day celebration in coordination with District Education Office and District Development Office with Adani Foundation - District Level Best teacher Award on this auspicious day.

13 teachers is selected after screening by DEO Office and tofay award will be given in presence of DEO, DPEO and Vasan bhai Ahir Minister Gujarat .

Divine Feelings 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. She is considered patron deity of Kutch. The village is located about 105 km from Bhuj, the headquarters of Kutch district.

People used to go by foot to Mata no madh in Navaratri. Total 8 camps at different locations is inaugurated today in way towards Mata no Madh by Adani Foundation Bhuj and GKGH Hospital.

Total 34537 Patients were benefitted in this Camp

“Ayushman Bharat – Celebrating First Birthday !! “

On the first birth anniversary of “AYUSHMAN ENROLMENT CARD” Adani Foundation Bhuj and Mundra had successfully completed 11 Ayushman card enrollment camps in a single Day.

Skill Development Training Program for Schedule Cast Beneficiaries

we could able to fulfil target of training 1440 SC beneficiaries from Eight Talukas from Kutchh for different courses.

Mr Vinod Chavda (MP, Kutchh and Morabi) Mrs Lata Solanki (Pramukh, Nagar Palika,Bhuj) Mr Rohit (District Social Justice and Empowerment), Mr Jatin Trivedi (Head, ASDC)and Mr solanki (Chairman, social justice commitee Kutchh) we're present.

courses

1. Hand embroidery
2. Self employed stitching
3. Mobile Repairing
4. Beauty parlor
5. Crane operator

Apex India CSR Innovation Award 2019

Adani Foundation Mundra received **"Gold Award"** under Apex India CSR Innovation Award 2019 Today at Goa.

Cheif Guest of the event was Shri Prasad (Union Minister Goa,GOI) and Guest of Honour Mr Suri (Former Governer Goa).

From Adani Foundation Mundra - Mr Vijay Gosai (Coordinator SLD Projects) and Mr. Karsan Gadhvi (Sr PO SLD Projects) received the Award.

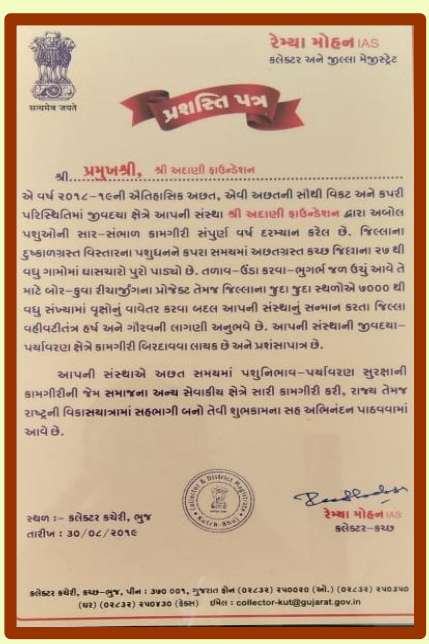
Awards and Accolades

Sharing with Proud that Adani Foundation got felicitation from Mr Vijay Rupani Honrable Cheif Minister Gujarat for

1. Water Conservation works
2. More than 7000 Tree Plantation in Mundra, Anjar, Lakhpat and Mandvi Taluka

Felicitation of 3 CSR from Kutchh district for remarkable scarcity related work.

From Adani Foundation - Mr Karsanbhai Gadhvi received Award.



રેમ્યા મોહન IAS
કલેક્ટર અને જીલ્લા મેજીસ્ટ્રેટ

સત્યમેવ જયતે

પ્રશસ્તિ પત્ર

શ્રી પ્રમુખશ્રી, શ્રી અદાણી ફાઉન્ડેશન

એ વર્ષ ૨૦૧૮-૧૯ની ઐતિહાસિક અછત, એવી અછતની સૌથી વિકટ અને કપરી પરિસ્થિતિમાં જીવદયા ક્ષેત્રે આપની સંસ્થા શ્રી અદાણી ફાઉન્ડેશન દ્વારા અબોલ પશુઓની સાર-સંભાળ કામગીરી સંપુર્ણ વર્ષ દરમ્યાન કરેલ છે. જિલ્લાના દુષ્કાળગ્રસ્ત વિસ્તારના પશુધનને કપરા સમયમાં અછતગ્રસ્ત કચ્છ જિલ્લાના ૨૭ થી વધુ ગામોમાં ઘાસચારો પુરો પાડ્યો છે. તળાવ-ઉંડા કરવા-ભુગર્ભ જળ ઉંચું આવે તે માટે બોર-કુવા રીચાર્જીંગના પ્રોજેક્ટ તેમજ જિલ્લાના જુદા જુદા સ્થળોએ ૭૦૦૦ થી વધુ સંખ્યામાં વૃક્ષોનું વાવેતર કરવા બદલ આપની સંસ્થાનું સન્માન કરતા જિલ્લા વહીવટીતંત્ર હર્ષ અને ગૌરવની લાગણી અનુભવે છે. આપની સંસ્થાની જીવદયા-પર્યાવરણ ક્ષેત્રે કામગીરી બિરદાવવા લાયક છે અને પ્રશંસાપાત્ર છે.

આપની સંસ્થાએ અછત સમયમાં પશુનિભાવ-પર્યાવરણ સુરક્ષાની કામગીરીની જેમ સમાજના અન્ય સેવાકીય ક્ષેત્રે સારી કામગીરી કરી, રાજ્ય તેમજ રાષ્ટ્રની વિકાસયાત્રામાં સહભાગી બનો તેવી શુભકામના સહ અભિનંદન પાઠવવામાં આવે છે.

સ્થળ :- કલેક્ટર કચેરી, ભુજ
તારીખ : ૩૦/૦૮/૨૦૧૯

રેમ્યા મોહન IAS
કલેક્ટર-કચ્છ

કલેક્ટર કચેરી, કચ્છ-ભુજ, પીન : ૩૭૦ ૦૦૧, ગુજરાત ફોન (૦૨૮૩૨) ૨૫૦૦૪૦ (ઓ.) (૦૨૮૩૨) ૨૫૦૩૫૦ (૪૨) (૦૨૮૩૨) ૨૫૦૪૩૦ (રેસ.) ઈમેલ : collector-kut@gujarat.gov.in

Awards and Accolades

Ms. Pankti Shah was invited as a guest of honour for Mission Eco Next "Eco Eureka Training" by ministry of science and technology - Government of India at KSKV Bhuj.

Initiatives of Adani Foundation for Biodiversity and water conservation was shared on this platform.

Ms. Mavajibhai Baraiya was invited as a guest of honor for “Creating Sustainable Farming Villages” by Krushi Research and Development Association by Vagad Visa Oswal Samaj.

Initiatives of Adani Foundation for Fodder Sustainability and water conservation was shared by him.

Beneficiaries

No	Core Area	Beneficiaries	Remarks
1	Utthan (Education)	3000	Uthhan, Labour School, School Enrollment
2	Adani Vidya Mandir	450	School Students
3	UDAAN	15329	250 Institute Visited
4	Adani Skill Dev. Center	1544	Mundra and Bhuj
5	Health Mundra	30336	MHCU, Medical Camps, Senior Citizen
6	Health Bhuj	47526	Health Camps, Mahiti Setu,care
7	SLD Fisherman	5572	Water, Education, Mangroves etc.
8	SLD Agriculture	1232	Drip Irrigation, Bio gas, tissue
9	SLD Women Empowerment	132	Saheli mahila gruh udyog – 12 SHG
10	CID Work	12345	Pond deepening, AKBTPL,
11	Swachhagraha	5266	Mundra, Bhuj, Anjar and Gandhidham
12	Suposhan Mundra	21439	Adolescent, Children and RPA
13	CSR Tuna	745	Health Camp, Cattle feed,
14	CSR NaKhtrana	-	
15	CSR Bitta	2450	Pond Deepening, Fodder, School Praveshotsav
16	CSR Lakhpat	1890	Fodder, School Support, Dam Desilting

TOTAL 1,21,956

Adani Foundation -Mundra

Executive Summary-Budget Utilization up to September 2019

F.Y. 2019-20 (Rs. In Lacs)

Sr. No.	Budget Line Item	CAPEX	OPEX	Budget 2019-20	Expenditure up to Sept.19	% of utilization against FY 2019-20 budget
A	Admin Expense	1.30	70.20	71.50	28.56	39.94%
B.	Education	0.00	57.75	57.75	26.70	46.23%
C.	Community Health	0.60	220.06	220.66	78.91	35.76%
D.	Sustainable Livelihood Development	30.00	387.30	487.80	325.04	66.63%
E	Rural Infrastructure Development	358.93	33.10	321.53	28.53	8.87%
Total AF CSR Budget :		**390.83**	**768.41**	**1159.24**	**487.73**	**42.07%**
F.	Utthan - Education	49.97	58.96	108.93	31.86	29.25%
G.	Model Village	132.93	64.33	197.26	61.52	31.19%
Total Project Utthan Budget		**182.90**	**123.29**	**306.19**	**93.38**	**30.50%**
H.	Adani Vidya Mandir - Bhadreshwar	33.36	170.99	204.35	71.34	34.91%
Total AVMB Budget		**33.36**	**170.99**	**204.35**	**71.34**	**34.91%**
I.	Project Udaan_Mundra	5.00	368.14	373.14	92.41	24.77%
Total Project Udaan Budget		**5.00**	**368.14**	**373.14**	**92.41**	**24.77%**
GRAND TOTAL		**612.09**	**1430.83**	**2042.92**	**744.86**	**36.46%**

Annexure – 3

"HALF YEARLY ENVIRONMENTAL MONITORING REPORT"

FOR

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

MONITORING PERIOD:

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.comweb: 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 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.16	8.12	8.07	8.13	8.12	8.07	8.18	8.14	8.03	8.11	8.13	8.1	IS3025(P11)83Re.02
2	Temperature	oC	30.9	30.5	31.8	31.6	30.0	29.9	30.4	30	29.8	29.1	29.7	29.3	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	224	246	194	213	328	302	336	350	369	374	304	318	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	4	BDL*	4.3	BDL*	4.2	BDL*	2.9	BDL*	BDL*	BDL*	3.5	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.2	5.5	5.6	5.4	6.2	5.3	6	5.5	6.1	5.8	5.8	5.9	IS3025(P38)89Re.99
6	Salinity	ppt	36.2	36.5	37	37.5	36.4	36.9	36.8	37.5	34.8	35.2	34.5	34.6	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)5520 D
8	Nitrate as NO_3	µmol/L	4.53	3.27	3.14	2.9	3.56	3.1	2.56	2.3	2.16	1.94	2	2.13	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.7	0.62	0.54	0.45	0.87	0.64	0.45	0.32	0.32	0.26	0.25	0.28	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.54	1.46	1.60	1.52	1.98	1.60	1.7	1.4	1.56	1.27	1.76	1.89	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.56	1.39	1.24	1.1	2.1	2.04	1.83	1.63	1.71	1.42	1.34	1.4	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	6.78	5.35	5.28	4.87	6.41	5.34	4.71	4.02	4.04	3.47	4.01	4.3	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	9.3	6.4	5.9	3.6	5.1	3	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37780	37993.0	38452	38894	37941	38310	37216	37312	35940	36213	35040	36102	IS3025(P16)84Re.02
15	COD	mg/L	15.7	7.3	11.9	6.4	15.2	7.5	9.4	BDL*	8.6	BDL*	13	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	5.73	4.72	5.62	4.61	9.67	5.4	9.9	6.3	8.32	7.42	7.65	6.61	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	1.97	1.49	2.88	2	2.83	2.29	2.93	2.61	2.83	2.56	1.97	1.49	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

17.2	Phaeophytin	mg/m^3	2.7	3.0	1.2	2.0	2.0	1.9	2.11	1.83	0.95	1.29	2.7	3.0	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x 10^3/L	172	58	156	70	172	56	148	50	134	42	172	58	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Cyclotella sp. Biddulphia sp. Coscinodiscus sp. Thallassiosira sp.*	*Melosira sp. Rhizosolenia sp. Navicula sp.* --	*Navicula sp. Melosira sp. Thallassiosira sp. Cyclotella sp.* ---	*Nitzschia sp. Thallasionema sp. Navicula sp.* --- ---	*Thallassiosira sp. Rhizosolenia sp. Coscinodiscus sp. Nitzschia sp.* --	*Nitzschia sp. Coscinodiscus sp. Navicula sp.* -- --	Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp. Skeletonema sp. --	Navicula sp. Rhizosolenia sp. Fragillaria sp. -- --	*Coscinodiscus sp. Thallassiosira sp. Rhizosolenia sp. pediastrum sp.*	*Ceratium Fragillaria sp. Synedra sp.* --	*Navicula sp. Rhizosolenia sp. Coscinodiscus sp. Amphipora sp.*	*Ceratium sp. Cyclotella sp. Biddulphia sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	32		36		40		46		42		51		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Foraminiferans Chaetognathes Polychaetes		Polychaetes Crustaceans Decapods		Polychaetes Gastropods --		Gastropods Ostracods Polychaetes		Amphipods Decapods Polychaetes		Copepods Mysids Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.8		2.9		2.6		2.7		2.1		3.2		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1750		1800		1840		1900		1850		1780		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 [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.52	0.7	0.63	0.57	0.5	0.62	FCO:2007
2	Phosphorus as P	µg/g	234	284	343	490	436	412	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	%	5.15	5.2	5.1	4.8	5.1	5.32	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	192	170	124	102	170	210	AAS 3111B
5.3	Manganese as Mn	µg/g	1320	1390	1168	1048	1031	1068	AAS APHA 3111 B
5.4	Iron as Fe	%	4.95	4.9	4.9	4.64	4.8	5.1	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	22.6	19.6	34	18.2	20.3	27	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	28.4	20.4	19.8	15.9	25.1	29	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	216	312	224	183	203	231	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	1.83	1.27	3.6	2.8	1.74	1.64	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	--	Polychaetes Decapods --	Crustaceans Polychaetes --	Crustaceans Polychaetes --	Polychaetes Gastropods --	Polychaetes Bivalves Crustaceans	Polychaetes Crustacean Brachyurans	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Gastropods --	Gastropods Bryozoans --	Nematodes Foraminiferans --	Foraminiferans -- --	Nematodes --	Nematods --	APHA (22nd Edi) 10500-C
6.3	Population	no/m2	618	733	704	765	617	735	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 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.19	8.16	8.10	8.15	8.19	8.14	8.20	8.15	8.02	7.97	8.16	8.13	IS3025(P11)83 Re.02
2	Temperature	oC	30.8	30.5	31.7	31.5	30.4	30.0	30.3	30.1	29.7	29.3	29.8	29.5	IS3025(P9)84R e.02
3	Total Suspended Solids	mg/L	193	210	218	236	315	368	329	350	356	382	394	410	IS3025(P17)84 Re.02
4	BOD (3 Days @ 27 °C)	mg/L	5.1	BDL*	4.6	BDL*	3.4	BDL*	3.0	BDL*	BDL*	BDL*	3.4	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.9	5.6	6.0	5.9	5.9	5.6	5.9	5.7	6.1	5.9	5.9	5.8	IS3025(P38)89 Re.99
6	Salinity	ppt	36.3	36.5	37.1	37.4	36.4	36.8	36.1	36.5	34.7	35	34.6	35.1	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)5 520D
8	Nitrate as NO_3	µmol/L	5.61	5.04	3.0	2.84	3.3	3	2.5	2.76	2.11	1.92	2.5	2.42	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.71	0.63	0.55	0.51	0.6	0.51	0.38	0.47	0.26	0.18	1.7	1.83	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.60	1.43	1.70	1.66	1.87	1.62	1.27	1.41	0.9	0.8	2.2	2.2	IS3025(P34)88 Cla.2.3
11	Phosphates as PO_4	µmol/L	1.47	1.2	1.3	1.14	2.28	2	1.83	1.99	1.57	1.28	1.7	1.83	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.93	7.10	5.25	5.01	5.73	5.13	4.15	4.64	3.29	2.86	5.07	5.22	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	11.2	BDL*	6.8	3.2	7.7	4.9	10.4	BDL*	BDL*	BDL*	13.6	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37824	37989	38550	38894	37143	37790	37118	37284	36812	37126	35524	35376	IS3025(P16)84 Re.02
15	COD	mg/L	14.2	6.3	17.8	7.4	10.4	7.0	14.6	6.3	9.6	BDL*	15.2	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/ L/day	5.85	4.05	7.76	5.28	9.22	6.3	9	6.52	7.87	6.3	7.42	6	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/ m^3	3.2	2.67	2.83	2.56	2.94	2.34	2.77	2.24	2.45	2.13	2.72	1.65	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/ m^3	1.1	1.1	1.7	1.3	1.5	1.6	1.8	1.87	1.4	1.64	1.3	1.22	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x 10^3/L	159	50	141	56	173	60	146	50	123	37	114	41	APHA (22nd Edi) 10200-H

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H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

17.4	Name of Group Number and name of group species of each group	--	*Thallasiosira sp. Fragillaria sp. Biddulphia sp. Rhizosolenia sp.*	*Nitzschia sp. Pleurosigma sp. Ceratium* --	*Navicula sp. Biddulphia sp. Thallasionema sp. Melosira sp.* --	*Nitzschia sp. Coscinodiscus sp. Biddulphia sp.* -- --	*Nitzschia sp. Coscinodiscus sp. Synedra sp. Biddulphia sp. Thallasiosira sp.*	*Navicula sp. Rhizosolenia sp. Nitzschia sp.* -- --	*Navicula sp. Synedra sp. Pleurosigma sp. pediastrums sp.* --	*Nitzschia sp. Fragillaria sp. Biddulphia sp.* -- --	*Ceratium Thallasionema sp. Nitzschia sp. Melosira sp.*	*Melosira sp. Fragillaria sp. Navicula sp.* --	*Ceratium sp. Skeletonema sp. Navicula sp. Rhizosolenia sp.*	*Melosira sp. Nitzschia sp. Pleurosigma sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**													
18.1	Abundance (Population)	noX10^3/ 100 m^3	48		42		55		39		32		39	APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Chaetognathes Polychaetes Gastropods		Polychaetes Crustaceans --		Polychaetes Bivalves Crustaceans		Ostracods Nematodes Chaetognathes		Polychaetes Ostracods Bivalves		Foraminiferans Ostracods Decapods	APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.71		1.63		1.8		1.5		1.25		1.95	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**													
19.1	Total Bacterial Count	CFU/ml	1550		1620		1660		1700		1760		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 [M2 MOUTH OF BOCHA & NAVINAL CREEK – N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.65	--	--	0.44	0.48	0.5	FCO:2007
2	Phosphorus as P	µg/g	231	--	--	384	403	412	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	--	--	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	--	--	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.96	--	--	4.84	4.7	4.93	AAS APHA 3111 B
5.2	Total Chromium as Cr+3	µg/g	236	--	--	102	168	208	AAS 3111B
5.3	Manganese as Mn	µg/g	1245	--	--	978	993	1014	AAS APHA 3111 B
5.4	Iron as Fe	%	5.2	--	--	4.96	4.83	5.16	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	22.6	--	--	44	30	26	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	40.2	--	--	25	22.8	30.2	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	193	--	--	177	169	198	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	1.83	--	--	1.5	1.24	1.35	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	--	--	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaetes Crustaceans --	--	--	Amphipods Isopods --	amphipods Polychaetes --	Polychaetes Gastropods --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans --	--	--	Copepods Brozoans	Forminiterans --	Nematods Ostracodes	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	557	--	--	170	440	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 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.14	8.10	8.13	8.09	8.17	8.11	8.24	8.16	8.05	7.99	8.11	8.09	IS3025(P11)83Re.02
2	Temperature	oC	30.4	30.1	31.8	31.9	30.1	30.0	30.9	30.3	29.9	29.3	29.8	29.5	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	198	223	240	278	310	291	330	304	368	390	302	315	IS3025(P17)84Re.02
4	BOD (3 Days @ 27°C)	mg/L	4.9	BDL*	4.0	BDL*	5.2	BDL*	3.2	BDL*	BDL*	BDL*	4.2	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.0	5.8	5.9	5.7	6.0	5.8	6	5.7	6.1	5.9	5.8	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	36.4	36.6	37.2	37.5	36	36.5	36.3	36.4	34.8	35.2	34.3	34.8	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	5.29	4.03	3.26	2.9	2.98	2.68	2.64	2.4	2.2	2.0	2.3	2.5	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.75	0.62	0.54	0.46	0.24	0.2	0.21	0.18	0.33	0.21	0.25	0.29	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.48	1.29	1.60	1.54	1.83	1.66	1.46	1.1	1.6	1.3	1.6	1.7	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.81	1.58	1.26	1.18	1.58	1.32	1.29	1.12	1.83	1.46	1.39	1.52	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.52	5.9	5.40	4.9	5.05	4.5	4.31	3.68	4.12	3.51	4.16	4.43	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	10.4	BDL*	11.6	BDL*	8.3	BDL*	BDL*	BDL*	BDL*	BDL*	10.9	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37958	38057	38598	37924	37310	37864	36781	36894	36718	38017	35843	35210	IS3025(P16)84Re.02
15	COD	mg/L	13.4	BDL*	15.6	BDL*	19.2	BDL*	13.6	BDL*	10	BDL*	14	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	7.65	5.28	6.52	5.4	10.35	8.32	8.88	7.31	7.87	6.75	7.31	5.96	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	3.25	2.18	2.83	2.4	3.25	2.72	2.88	2.34	2.93	2.72	2.61	2.13	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.4	2.7	1.7	2.4	1.4	1.8	2.05	2.6	2.78	1.8	2.32	2.1	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	162	70	150	60	170	62	148	56	116	50	130	56	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Navicula sp. Thallasiosira sp. Biddulphia sp. cymbella sp*	*Fragillaria sp. Nitzschia sp. Melosira sp.* --	*Thallasionema sp. Biddulphia sp. Cyclotella sp. Melosira sp.* --	*Rhizosolenia sp. Thallasiosira sp. Nitzschia sp.* -- --	*Rhizosolenia sp. Thallasiosira sp. Cyclotella sp. Biddulphia sp. Navicula sp.*	*Navicula sp. Nitzschia sp. Coscinodiscus sp.* -- --	*Melosira sp.* Thallasiosira sp. Rhizosolenia sp. *Peridinium* --	*Nitzschia sp. Navicula sp. Cheatoceros sp.* -- --	*Melosira sp. Closterium sp. Fragillaria sp. Coscinodiscus sp.*	*Navicula sp. Thallasiosira sp. Synedra sp.* --	*Melosira sp. Biddulphia sp. Coscinodiscus sp. Cheatoceros sp.*	*Navicula sp. Biddulphia sp. Amphipora sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	41		51		56		50		39		31		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Foraminiferans Mysids Gastropods		Polychaetes Crustaceans --		Polychaetes Bivalves Crustaceans		Hydrozoa Echinoderms Ostracods		Polychaetes Decapods Ctenophores		Ctenophores Ostracods Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.05		2.6		3.1		2.9		1.2		1.8		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1720		1800		1780		1870		1740		1800		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 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.6	0.48	0.64	0.57	0.6	0.59	FCO:2007
2	Phosphorus as P	µg/g	201	258	350	430	457	376	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	%	4.8	5.15	4.88	4.78	4.58	4.86	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	172	206	139	104	157	213	AAS 3111B
5.3	Manganese as Mn	µg/g	1260	1174	1206	1068	1076	1106	AAS APHA 3111 B
5.4	Iron as Fe	%	4.91	5.05	4.75	4.84	4.65	4.98	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	27.3	23.9	27	47.93	25.4	31	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	22.4	30.9	20.2	25.52	23.6	26	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	203	256	218	203	249	227	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	1.52	1.65	3.2	3.7	1.63	2.14	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 Chaetognaths --	Crustaceans Polychaetes --	Polychaetes Gastropods --	Crustaceans Decapods --	Polychaetes Bivalves --	Crustaceans Bivalves --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Nematodes Foraminiferans --	Hydrozoans -- --	Nematodes Branchyurans --	Foraminiferans Hydrozoans --	Nematodes Gastropods	Foraminiferans --	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	735	618	765	733	674	557	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 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.13	8.20	8.11	8.16	8.10	8.21	8.17	8.07	8.1	8.13	8.07	IS3025(P11)83Re.02
2	Temperature	oC	30.9	30.7	31.9	31.5	30.2	30.0	30.8	30.1	29.8	30	29.8	29.6	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	183	210	236	259	330	354	349	326	394	413	316	334	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	6.2	BDL*	4.4	BDL*	3.5	BDL*	3.8	BDL*	3.0	BDL*	4.0	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.9	5.7	6.4	6.0	6.1	5.8	6	5.7	5.9	5.6	5.9	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	36.4	36.7	37.2	37.5	36.3	36.4	35.9	36.9	34.7	35.2	34.2	34.5	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	4.63	3.57	6.1	5.85	3.85	3.64	3.14	2.96	2.26	1.98	2.13	2.28	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.9	0.75	0.6	0.8	0.74	0.61	0.52	0.36	0.42	0.29	0.3	0.34	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.86	1.79	2.80	3.40	1.94	1.80	1.7	1.47	1.5	1.3	1.5	1.6	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.56	1.26	1.82	1.44	2	1.91	1.83	1.52	1.36	1.18	1.64	1.76	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.39	6.12	9.50	10.10	6.53	6.05	5.36	4.79	4.17	3.58	3.95	4.21	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	15	BDL*	12	BDL*	8	4.0	BDL*	BDL*	BDL*	BDL*	12.8	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37934	38194	38144	38602	37684	38142	36312	36814	36517	36984	35703	35206	IS3025(P16)84Re.02
15	COD	mg/L	21.3	7.6	16	BDL*	12	6.4	10.3	BDL*	11.2	BDL*	13.8	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	Flora and Fauna														
16	Primary productivity	mgC/L/day	5.28	3.78	6.97	4.72	9.9	7.2	8.77	7.4	7.65	6	7.44	5.7	APHA (22nd Edi) 10200-J
B	Phytoplankton														
17.1	Chlorophyll	mg/m^3	3.15	2.56	3.25	2.99	3.2	2.5	2.83	2.67	2.5	2.08	2.72	2.29	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.6	2.1	1.4	1.9	1.3	1.8	2.48	2.26	2.13	1.73	1.91	1.52	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	146	50	173	41	158	72	142	64	120	48	132	48	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Nitzschia sp. Rhizosolenia sp. Cheatoceros sp. Coscinodiscus sp.*	*Navicula sp. Rhizosolenia sp. Biddulphia sp.* --	*Nitzschia sp. Thallasiosira sp. Cheatoceros sp. Fragillaria sp.*	*Gyrosigma sp. Navicula sp. Coscinodiscus sp.* --	*Navicula sp. Thallasiosira sp. Biddulphia sp. Coscinodiscus sp.*	*Nitzschia sp. Synedra sp. Rhizosolenia sp.* --	*Melosira sp.* Rhizosolenia sp. Thallasiosira sp. Fragillaria sp.	*Navicula sp. Biddulphia sp.* Synedra sp. --	*Melosira sp. Fragillaria sp. Rhizosolenia sp. Coscinodiscus sp.*	*Navicula sp. Synedra sp. Pleurosigma sp.* --	*Thallasiosira sp. Nitzschia sp. Biddulphia sp. Melosira sp.*	*Navicula sp. Ceratium sp. Pleurosigma sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	56		61		65		59		39		30		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Foraminiferans Gastropods		Polychaetes Foraminiferans Decapods		Hydrozoans Polychaetes Gastropods		Crustaceans Bivalves --		Polychaetes Copepods Decapods		Ostracods Gastropods Polychaetes		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	3.1		3.2		3.5		3.2		1.55		1.7		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1780		1840		1800		1920		1860		1740		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22nd Edi)9 221-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 [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.48	0.66	0.62	0.4	0.62	0.59	FCO:2007
2	Phosphorus as P	µg/g	198	230	336	484	456	373	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	%	4.83	5.17	5.14	4.72	4.85	4.92	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	131	183	132	166	142	157	AAS 3111B
5.3	Manganese as Mn	µg/g	1214	1420	1218	1041	1118	1068	AAS APHA 3111 B
5.4	Iron as Fe	%	4.9	5.1	4.88	4.8	5.18	4.97	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	53	39.4	34.1	20.48	17.6	29	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	29	37.4	24.6	32.4	37.4	43	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	246	344	220	276	212	284	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	2.24	1.1	2.14	2.46	1.8	2.1	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	--	Gastropods Decapods --	Polychaetes Bivalves --	Gastropods Crustaceans Bivalves	Gastropods Polychaetes --	Polychaetes Crustaceans --	Crustaceans Polychaetes --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Bryozoans --	Foraminiferans Nematodes --	Foraminiferans -- --	Hydrozoans Nematodes --	Nematodes --	Nematods Harpacticoids	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	706	796	733	676	588	647	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 [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.13	8.09	8.11	8.03	8.18	8.15	8.22	8.14	8.1	8.14	8.14	8.11	IS3025(P11)83Re.02
2	Temperature	oC	30.3	30.0	31.8	31.6	30.1	30.0	30.7	30.2	29.8	30	29.8	29.6	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	210	234	256	271	319	346	338	359	386	403	316	335	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	3.8	BDL*	3.0	BDL*	3.4	BDL*	BDL*	BDL*	BDL*	BDL*	4.1	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.0	5.8	6.1	5.6	6.0	5.9	6.1	5.7	6.1	5.9	5.9	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	36.5	36.8	36.9	36.4	36.3	36.6	36.4	36.7	35.2	35.5	34.2	34.4	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	4.41	3.57	5.6	3.9	3.57	3.34	2.7	2.28	2.37	2.18	2.31	2.39	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.85	1.7	5.1	4.5	0.68	0.42	0.54	0.42	0.41	0.35	0.35	0.5	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.43	1.24	1.70	1.30	2.11	1.98	1.66	1.52	1.32	1.1	2.1	2.26	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.17	1.1	1.96	1.32	2.98	2.79	1.98	1.74	1.5	1.32	1.64	1.78	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.68	6.55	12.40	9.70	6.36	5.74	4.9	4.22	4.1	3.6	4.76	5.09	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	8.2	BDL*	22.0	BDL*	15.0	BDL*	BDL*	BDL*	BDL*	BDL*	13.2	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	38090	38280	38184	37920	37912	38198	36974	37011	36118	36827	35640	35818	IS3025(P16)84Re.02
15	COD	mg/L	17.3	6.4	15.4	BDL*	10.8	BDL*	10.6	BDL*	9.4	BDL*	14.8	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	6.3	5.62	6	5.4	9.67	6.75	9.78	7.2	7.87	6.52	7.31	5.94	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	2.5	2.18	2.24	2.08	3.2	2.34	2.4	2.08	2.18	2.02	2.61	2.13	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.3	2.0	1.8	1.9	1.0	1.7	1.78	2.14	1.7	1.82	1.64	2.16	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	178	58	150	44	168	58	162	50	1.4	36	118	42	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Nitzschia sp. Rhizosolenia sp. Biddulphia sp. Thallasiosira sp.*	*Navicula sp. Thallasiosira sp. Fragillaria sp.* --	*Navicula sp. Thallasionema sp. Nitzschia sp. Coscinodiscus sp. Biddulphia sp.*	*Nitzschia sp. Coscinodiscus sp. Navicula sp.* -- --	*Thallasionema sp. Coscinodiscus sp. Cheatoceros sp. Fragillaria sp. Rhizosolenia sp.*	*Navicula sp. Thallasiosira sp. Pleurosigma sp.* -- --	*Navicula sp.* Coscinodiscus sp. Thallasionema sp. Biddulphia sp. --	*Biddulphia sp.* Navicula sp. Nitzschia sp. -- --	*Rhizosolenia sp. Thallasiosira sp. Pleurosigma sp. ceratium sp*	*Navicula sp. Fragillaria sp. Biddulphia sp.* --	*Nitzschia sp. Rhizosolenia sp. Cyclotella sp. Biddulphia sp.*	*Navicula sp. Nitzschia sp. Cheatoceros sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	42		48		51		57		49		41		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Gastropods Nematodes		Polychaetes Gastropods Mysids		Hydrozoans Crustaceans Foraminiferans		Crustaceans Foraminiferans Gastropods		Polychaetes Copepods Decapods		Chaetognathes Mysids Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	1.35		1.6		1.8		1.7		1.3		2		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1800		1760		1720		1840		1800		1740		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 [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.71	0.48	0.56	--	0.65	0.62	FCO:2007
2	Phosphorus as P	µg/g	225	284	324	--	433	370	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	--	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	--	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.92	5.14	4.82	--	4.96	5.1	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	138	216	142	--	162	246	AAS 3111B
5.3	Manganese as Mn	µg/g	1172	1498	1210	--	1120	1093	AAS APHA 3111 B
5.4	Iron as Fe	%	5.14	4.96	5.2	--	4.8	5.18	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	18.2	25.6	21.6	--	19.36	31.2	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	29.4	30.4	25.4	--	33.4	27.4	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	218	218	230	--	244	208	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	2.4	1.85	2.12	--	1.6	2.17	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	--	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Gastropods Echinoderms	Gastropods Polychaetes	Gastropods Echinoderms	--	Polychaetes amphipods	Brachyurans Polychaetes	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans --	Nematodes Foraminiferans	Nematodes Turbellaria	--	Nematodes --	Nematods Hydroza	APHA (22nd Edi) 10500-C
6.3	Population	no/m2	676	740	674	--	618	706	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 [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.15	8.25	8.15	8.18	8.12	8.24	8.17	8.07	8.14	8.19	8.15	IS3025(P11)83Re.02
2	Temperature	oC	31.0	30.8	31.7	37.6	30.2	30.0	30.4	30	29.8	30.2	30	30.2	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	244	268	258	296	340	379	350	369	369	405	347	356	IS3025(P17)84Re.02
4	BOD (3 Days @ 27°C)	mg/L	4	BDL*	5.0	BDL*	3.9	BDL*	3.1	BDL*	4.3	BDL*	3.8	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.4	6.0	6.6	5.8	6.4	5.8	6.1	5.7	5.9	5.7	5.8	5.9	IS3025(P38)89Re.99
6	Salinity	ppt	36	36.3	35.9	36.2	36.2	36.7	36.5	37	35	35.3	34.3	34.8	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	6.4	4.2	4.9	3.1	3.12	2.84	2.7	2.49	2.41	2.32	2.33	2.38	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.35	1.56	1.5	1.65	0.83	0.68	0.63	0.38	0.26	0.14	0.39	0.46	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	2.10	1.98	1.80	1.44	2.14	2.00	1.74	1.43	1.37	1.18	2.2	2.31	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.64	1.4	1.75	1.5	1.99	1.81	1.52	1.36	1.64	1.4	1.57	1.68	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	9.85	7.74	8.20	6.20	6.09	5.52	5.07	4.3	4.04	3.64	4.92	5.15	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	11.0	BDL*	16.0	BDL*	14.3	BDL*	BDL*	BDL*	BDL*	BDL*	12.9	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37103	37814	36812	37610	37214	37984	36972	37321	36816	37058	35728	35824	IS3025(P16)84Re.02
15	COD	mg/L	12.0	BDL*	24	BDL*	16	BDL*	13.2	BDL*	15.6	8.4	12.6	BDL*	APHA(22ndEdi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	6.63	4.95	6.75	4.16	8.77	6.3	9.33	7.2	8.1	6.52	7	5.71	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	3.31	2.13	2.99	2.29	2.61	2.39	2.93	2.5	2.67	2.34	2.5	2.08	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.3	2.1	1.9	1.9	2.6	1.4	1.7	2.01	1.55	1.91	1.6	1.84	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x	184	62	168	72	150	60	136	54	104	50	114	46	APHA (22nd Edi)

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Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

		10^3/L												10200-H
17.4	Name of Group Number and name of group species of each group	--	*Coscinodiscus sp. Rhizosolenia sp. Navicula sp. Biddulphia sp.*	*Synedra sp. Navicula sp. Rhizosolenia sp.* --	*Thallasionema sp. Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp.* --	*Navicula sp. Thallasionema sp.* -- -- --	*Pleurosigma sp. Nitzschia sp. Rhizosolenia sp. Thallasionema sp. Coscinodiscus sp.*	*Navicula sp. Synedra sp. Rhizosolenia sp.* -- --	*Nitzschia sp. Coscinodiscus sp. Rhizosolenia sp. Skeletonema sp.* --	*Navicula sp.* Nitzschia sp. *Thallasionema sp.* -- --	*Synedra sp. Pleurosigma sp. Nitzschia sp. Rhizosolenia sp.*	*Thallasiosira sp. Nitzschia sp.* -- --	*Ceratium sp. Biddulphia sp. Skeletonema sp. Coscinodiscus sp.*	*Cyclotella sp. Fragillaria sp. Navicula sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**													
18.1	Abundance (Population)	noX10^3/ 100 m^3	42		49		53		48		43		46	APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Copepods Ostracods Polychaetes		Polychaetes Gastropods --		Polychaetes Ctenophores Chaetognathes		Polychaetes Crustaceans Bivalves		Polychaetes Decapods Isopods		Ostracods Gastropods Mysids	APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.6		2.75		2.9		2.1		1.9		2.1	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**													
19.1	Total Bacterial Count	CFU/ml	1850		1840		1780		1800		1750		1820	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 MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.11	8.09	8.22	8.15	8.19	8.12	8.25	8.19	8.04	7.99	8.17	8.2	IS3025(P11)83Re .02
2	Temperature	oC	30.9	30.6	31.7	31.4	30.1	30.0	30.5	30.1	29.8	30	29.9	29.5	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	196	214	252	226	302	324	326	341	370	402	317	326	IS3025(P17)84Re .02
4	BOD (3 Days @ 27 °C)	mg/L	4.9	BDL*	3.6	BDL*	4.6	BDL*	3.7	BDL*	2.8	BDL*	3.9	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	5.9	5.7	6.4	6.2	6.0	5.9	6	5.7	6	5.8	5.9	6.1	IS3025(P38)89Re .99
6	Salinity	ppt	36.5	36.8	36.9	37.2	36.2	36.6	36.6	37.3	34.8	35.2	34.1	34.4	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	4.28	3.52	5.6	3.9	3.36	3.1	2.84	2.57	2.13	1.9	2.1	2.17	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.8	0.74	1.4	1.1	0.92	0.79	0.81	0.64	0.48	0.62	0.29	0.35	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.97	1.65	2.16	1.50	1.76	1.48	1.52	1.31	1.27	1.1	1.53	1.61	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.76	1.57	1.98	1.75	1.86	1.55	1.7	1.49	1.4	1.31	1.28	1.34	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.05	4.40	9.16	6.50	6.04	5.37	5.17	4.52	3.88	3.62	3.92	4.13	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	12.6	BDL*	16.0	BDL*	13.2	BDL*	BDL*	BDL*	BDL*	BDL*	7.4	3.6	PLPL-TPH
14	Total Dissolved Solids	mg/L	38019	38349	37410	37676	37514	37912	36844	37542	36358	36756	35698	35718	IS3025(P16)84Re .02
15	COD	mg/L	14.3	9.6	15.0	BDL*	13.2	BDL*	10.3	BDL*	8.7	BDL*	12.4	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	Flora and Fauna														
16	Primary productivity	mgC/L /day	6.52	5.0	6	5.0	18.55	7.4	8.66	7.8	7.65	6.9	7.29	6.16	APHA (22nd Edi) 10200-J
B	Phytoplankton														
17.1	Chlorophyll	mg/m^3	2.62	2.56	2.72	2.24	3.15	2.83	2.67	2.24	3.04	2.56	2.77	2.5	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.0	1.9	1.9	2.3	1.5	1.7	2.26	2.69	1.29	1.47	1.78	1.42	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	202	82	176	60	188	50	172	58	124	46	136	54	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Rhizosolenia sp. Thallasiosira sp. Coscinodiscus sp. Synedra sp.*	*Synedra sp. Cyclotella sp. Biddulphia sp.* --	*Navicula sp. Cyclotella sp. Coscinodiscus sp. Rhizosolenia sp.*	*Nitzschia sp. Biddulphia sp. Coscinodiscus sp.* --	*Nitzschia sp. Cyclotella sp. Thallasionema sp. Rhizosolenia sp.*	*Navicula sp. Biddulphia sp. Cyclotella sp.* --	Navicula sp. *Thallasionema sp.* Coscinodiscus sp. *Amphipora sp.*	Nitzschia sp. *Pleurosigma sp.* Synedra sp. --	*Cyclotella sp. Skeletonema sp. Nitzschia sp. Rhizosolenia sp.*	*Nitzschia sp. Fragillaria sp. Synedra sp.* --	*Thallasiosira sp. Amphipora sp. Pleurosigma sp. Cheatoceros sp.*	*Pleurosigma sp. Nitzschia sp. Biddulphia sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	36		50		53		62		45		55		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Ostracods Decapods		Crustaceans Polychaetes Foraminiferans		Polychaetes Crustaceans Bivalves		Polychaetes Bivalves Decapods		Polychaetes Isopods Amphipods		Gastropods Mysids Ostracods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.4		2.55		2.7		2.65		2.1		3.4		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1900		1880		1820		1760		1700		1810		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 [M8 RIGHT SIDE OF BOCHA CREEK – N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.68	0.8	0.72	0.6	0.68	0.61	FCO:2007
2	Phosphorus as P	µg/g	278	312	412	483	432	376	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	%	5.12	4.86	5.14	4.7	4.75	4.95	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	203	244	138	164	142	213	AAS 3111B
5.3	Manganese as Mn	µg/g	1180	1350	1203	1036	1025	1054	AAS APHA 3111 B
5.4	Iron as Fe	%	5.15	5.26	5.1	4.88	5.15	5.2	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	36.8	42.6	29	17.83	21.8	26	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	31.4	41.6	26.4	25.4	16.4	37	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	226	239	240	210	254	210	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	2.4	1.62	2.29	1.97	1.5	1.93	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	--	Polychaetes Crustaceans --	Polychaetes Echinoderms --	Bivalves Gastropods Polychaetes	Bivalves Gastropods ---	Bivalues Polychaetes --	Polychaetes Decapods --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Nematodes	Foraminiferans Hydrozoans	Gastropods Nematodes	Nematodes Hydrozoans	Nematodes --	Ostracodes Ciliates	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	618	540	706	765	674	616	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 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.13	8.09	8.17	8.09	8.19	8.13	8.24	8.17	8.1	8.03	8.12	8.07	IS3025(P11)83Re .02
2	Temperature	oC	30.5	30.3	31.6	31.4	30.1	29.9	30.2	30	30	30.2	29.9	29.7	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	203	226	272	251	239	258	308	313	384	419	416	432	IS3025(P17)84Re .02
4	BOD (3 Days @ 27 °C)	mg/L	5.2	BDL*	4.0	BDL*	3.7	BDL*	3.2	BDL*	BDL*	BDL*	3.2	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	6.0	5.9	6.2	6.0	6.0	5.8	6.0	5.7	6.0	5.8	5.8	5.9	IS3025(P38)89Re .99
6	Salinity	ppt	36.4	36.7	36.9	37	36.3	36.7	36.7	37	35.4	35.9	34.2	34.6	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	4.71	3.57	4.95	4.1	2.84	2.69	2.46	2.24	1.7	1.56	1.92	2.12	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.89	0.75	1.18	1.25	0.72	0.56	0.51	0.36	0.48	0.29	0.3	0.46	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.88	1.26	1.90	1.60	1.84	1.71	1.68	1.43	1.33	1.12	1.28	1.36	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.6	1.39	1.75	1.56	2.36	2.14	1.97	1.7	1.64	1.36	1.58	1.65	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.48	5.59	8.00	7.00	5.40	4.96	4.65	4.03	3.51	2.97	3.5	3.94	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	10.3	BDL*	BDL*	BDL*	6.2	BDL*	10.41	BDL*	BDL*	BDL*	10.6	5.2	PLPL-TPH
14	Total Dissolved Solids	mg/L	37918	38910	37916	37514	37580	38287	36902	37124	36252	36817	35314	35284	IS3025(P16)84Re .02
15	COD	mg/L	17.3	6.3	18	BDL*	11	BDL*	9.2	BDL*	8.1	BDL*	15	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	3.52	5.17	5.85	5.28	9.9	8.32	8.78	7.53	8.1	7.42	7.65	5.96	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	3.52	2.93	3.31	2.61	3.52	2.77	2.8	2.50	3.31	2.40	2.83	2.56	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.2	2.4	2.5	2.9	2.0	2.6	1.75	2.42	1.03	2.01	1.84	1.92	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x	153	64	141	57	154	41	136	50	123	44	117	50	APHA (22nd Edi)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

		10^3/L													10200-H
17.4	Name of Group Number and name of group species of each group	--	*Rhizosolenia sp. Coscinodiscus sp. Biddulphia sp. Navicula sp.*	*Nitzschia sp. Biddulphia sp. Synedra sp.* --	*Rhizosolenia sp. Biddulphia sp. Thallasionema sp. Navicula sp.*	*Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp.* --	*Navicula sp. Rhizosolenia sp. Coscinodiscus sp. Cyclotella sp.*	*Nitzschia sp. Coscinodiscus sp. Rhizosolenia sp.* --	*Nitzschia sp. Navicula sp. Thallasionema sp. Coscinodiscus sp.*	*Navicula sp. Synedra sp. Rhizosolenia sp.* --	*peridinium sp Melosira sp. Nitzschia sp. Cheatoceros sp.*	*Nitzschia sp. Pleurosigma sp. Fragillaria sp.* --	*Melosira sp. Rhizosolenia sp. Skeletonema sp. Fragillaria sp.*	*Cheatoceros sp. Nitzschia sp. Biddulphia sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	no$X10^3$/ 100 m^3	46		52		49		53		48		56		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Gastropods Mysids		Crustaceans Gastropods Decapods		Polychaetes Crustaceans --		Polychaetes Gastropods Decapods		Ostracodes Hydrozoans Polychaetes		Polychaetes Mysids Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.1		2.55		2.10		1.9		1.6		2.1		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1780		1750		1790		1850		1750		1880		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 [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.12	8.30	8.21	8.19	8.14	8.24	8.18	8.12	8.07	8.15	8.11	IS3025(P11)83Re .02
2	Temperature	oC	30.6	30.3	31.9	31.5	30.2	30.0	30.3	30	30	30.3	29.9	29.6	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	202	231	227	248	317	351	328	349	392	424	370	384	IS3025(P17)84Re .02
4	BOD (3 Days @ 27°C)	mg/L	5.1	BDL*	6.0	BDL*	3.9	BDL*	3.3	BDL*	BDL*	BDL*	3.5	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	5.9	5.7	6.2	5.9	5.8	6.0	6.0	5.7	6.1	5.8	6.0	5.9	IS3025(P38)89Re .99
6	Salinity	ppt	36.2	36.5	36.9	37.1	37.1	37.6	37	37.7	35.5	36	34.6	35.1	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)552 0D
8	Nitrate as NO_3	µmol/L	2.9	2.32	2.5	2.1	3.14	3	2.98	2.7	1.64	1.32	1.9	2.03	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.95	0.82	1.1	0.9	0.83	0.69	0.74	0.59	0.51	0.29	0.34	0.42	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.90	1.72	1.70	1.60	2.10	1.97	1.83	1.64	1.32	1.1	1.56	1.62	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.28	1.01	1.58	1.34	2.16	2.1	2	1.83	1.56	1.19	1.48	1.57	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	5.74	4.86	5.40	3.90	6.07	5.66	5.55	4.93	3.47	2.71	3.8	4.07	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	10.4	BDL*	13.0	BDL*	8.2	BDL*	10.3	BDL*	BDL*	BDL*	12.9	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37610	37913	37847	38013	38103	38914	36902	37124	35917	36318	35390	36298	IS3025(P16)84Re .02
15	COD	mg/L	17.2	9.8	23	BDL*	16	6.2	10.4	BDL*	9.2	BDL*	15	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	4.95	3.15	4.72	3.6	8.55	7.42	9.2	6.97	8.3	6.75	7.69	7	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	2.64	2.40	2.48	2.29	2.69	2.24	3.09	2.61	2.77	2.34	2.83	2.4	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.0	2.1	2.3	2.3	1.9	2.7	1.8	2.06	2.53	2.29	2.48	2.23	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x	146	73	134	69	188	76	204	68	196	54	182	68	APHA (22nd Edi)

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

		10^3/L												10200-H
17.4	Name of Group Number and name of group species of each group	--	*Coscinodiscus sp. Fragillaria sp. Biddulphia sp. Thallasiosira sp.*	*Nitzschia sp. Coscinodiscus sp. Synedra sp.* --	*Coscinodiscus sp. Nitzschia sp. Thallasionema sp.* -- --	*Navicula sp. Synedra sp. Thallasionema sp.* -- --	*Nitzschia sp. Coscinodiscus sp. Thallasionema sp. Pleurosigma sp. Navicula sp.*	*Navicula sp. Thallasionema sp. Synedra sp.* -- --	*Nitzschia sp. Thallasionema sp. Coscinodiscus sp. Rhizosolenia sp. Synedra sp.*	*Navicula sp. Nitzschia sp. Coscinodiscus sp.* -- --	*Biddulphia sp. Pleurosigma sp. Skeletonema sp. Synedra sp.*	*Nitzschia sp. Fragillaria sp. Biddulphia sp.* --	*Thallasiosira sp. Skeletonema sp. Coscinodiscus sp. Biddulphia sp.*	*Nitzschia sp. Rhizosolenia sp. Pleurosigma sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**													
18.1	Abundance (Population)	noX10^3/ 100 m^3	39	43	50	56	46	51	APHA (22nd Edi) 10200-G					
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Crustaceans Mysids	Polychaetes Gastropods Foraminiferans	Gastropods Crustaceans Mysids	Polychaetes Crustaceans Bivalves	Polychaetes Decapods Ostracodes	Ostracods Mysids Ctenophores	APHA (22nd Edi) 10200-G					
18.3	Total Biomass	ml/100 m^3	1.6	1.8	1.95	2.0	1.6	2.0	APHA (22nd Edi) 10200-G					
D	**Microbiological Parameters**													
19.1	Total Bacterial Count	CFU/ml	1750	1860	1810	1790	1700	1780	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
			05/04/2019	05/07/2019	04/06/2019	03/07/2019	06/08/2019	06/09/2019		
1	Colour	Co-pt	70	50	40	50	40	50	**100**	IS3025(P4)83Re.02
2	pH	--	7.32	7.90	7.01	7.65	7.08	6.76	**6.5 TO 8.5**	IS3025(P11)83Re.02
3	Temperature	°C	31.9	32	31.9	31.5	31.3	32	**40**	IS3025(P9)84Re.02
4	Total Suspended Solids	mg/L	52	84	70	56	42	64	**100**	IS3025(P17)84Re.02
5	Total Dissolved Solids	mg/L	1903	2041	2096	2084	2060	1976	**2100**	IS3025(P16)84Re.02
6	COD	mg/L	80	84	98	88	78	92	**100**	APHA(22nd Edi) 5520-D Open Reflux
7	BOD (3 Days @ 27 °C)	mg/L	24	28	30	24	18	24	**30**	IS 3025 (P44)1993Re.03Edition2.1
8	Chloride as Cl	mg/L	572	559	598	584	539	589	**600**	IS3025(P32)88Re.99
9	Oil & Grease	mg/L	3.8	2.4	2.9	3.4	5.2	3.2	**10**	APHA(22nd Edi)5520D
10	Sulphate as SO_4	mg/L	156	480	502	455	392	412	**1000**	APHA(22nd Edi)4500 SO_4 E
11	Ammonical Nitrogen as NH_3	mg/L	10.2	6.8	11.1	14.8	10.6	7.4	**50**	IS3025(P34)88Cla.2.3
12	Phenolic Compound	mg/L	BDL*	BDL*	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	1.6	2.4	1.6	1.2	1.4	1.2	**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	0.6	0.55	0.70	0.55	0.6	0.75	**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) $\mu g/m^3$	Particulate Matter (PM 2.5) $\mu g/m^3$	Sulphur Dioxide (SO2) $\mu g/m^3$	Oxides of Nitrogen (NO2) $\mu g/m^3$	Carbon Monoxide as CO mg/m^3	Hydrocarbon as CH_4 mg/m^3	Benzene as C_6H_6 $\mu g/m^3$
1	02/04/2019	81.68	41.24	15.65	35.64	0.50	BDL*	BDL*
2	03/04/2019	94.36	52.77	11.69	21.35	0.81	BDL*	BDL*
3	08/04/2019	77.51	49.27	8.46	18.67	0.47	BDL*	BDL*
4	10/04/2019	80.33	35.64	10.36	37.63	0.62	BDL*	BDL*
5	15/04/2019	96.24	56.36	13.72	31.58	0.68	BDL*	BDL*
6	17/04/2019	75.67	42.68	20.36	41.30	0.79	BDL*	BDL*
7	22/04/2019	86.36	36.50	24.29	39.47	0.30	BDL*	BDL*
8	24/04/2019	78.45	45.36	21.39	34.57	0.63	BDL*	BDL*
9	29/04/2019	92.42	39.26	18.36	30.45	0.98	BDL*	BDL*
10	01/05/2019	78.32	46.35	20.33	31.50	0.66	BDL*	BDL*
11	06/05/2019	83.50	38.31	17.52	39.30	0.55	BDL*	BDL*
12	09/05/2019	94.36	54.38	22.51	45.36	0.71	BDL*	BDL*
13	13/05/2019	98.30	44.53	13.43	22.59	0.89	BDL*	BDL*
14	15/05/2019	84.32	47.87	11.26	40.24	0.34	BDL*	BDL*
15	20/05/2019	79.58	37.53	24.43	36.41	0.65	BDL*	BDL*
16	22/05/2019	87.58	43.59	21.19	32.42	0.72	BDL*	BDL*
17	27/05/2019	95.43	52.73	16.53	38.61	0.54	BDL*	BDL*
18	29/05/2019	80.65	40.25	19.62	43.56	0.82	BDL*	BDL*
19	03/06/2019	74.31	42.60	11.60	34.34	0.26	BDL*	BDL*
20	05/06/2019	88.69	37.53	20.33	40.25	0.72	BDL*	BDL*
21	10/06/2019	71.63	40.29	17.44	27.64	0.56	BDL*	BDL*
22	17/06/2019	92.48	36.29	21.53	30.24	0.50	BDL*	BDL*
23	19/06/2019	76.31	39.55	18.25	28.58	0.58	BDL*	BDL*
24	24/06/2019	96.38	45.36	23.49	39.46	0.55	BDL*	BDL*
25	26/06/2019	82.56	50.55	19.54	37.56	0.64	BDL*	BDL*
26	01/07/2019	94.38	55.53	20.31	44.29	0.85	BDL*	BDL*
27	03/07/2019	85.38	45.36	23.69	37.59	0.48	BDL*	BDL*
28	08/07/2019	68.71	38.48	16.32	33.66	0.65	BDL*	BDL*
29	10/07/2019	77.55	47.34	21.25	39.27	0.73	BDL*	BDL*
30	15/07/2019	69.62	35.47	12.72	36.05	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 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	17/07/2019	90.42	52.48	25.68	41.27	0.62	BDL*	BDL*
32	22/07/2019	88.65	34.28	22.67	31.84	0.31	BDL*	BDL*
33	24/07/2019	79.80	42.35	17.64	40.68	0.79	BDL*	BDL*
34	29/07/2019	66.54	39.22	19.55	29.47	0.63	BDL*	BDL*
35	31/07/2019	81.29	44.25	15.59	34.27	0.87	BDL*	BDL*
36	05/08/2019	83.63	44.37	14.15	30.40	0.74	BDL*	BDL*
37	07/08/2019	92.92	50.30	10.53	33.50	0.68	BDL*	BDL*
38	12/08/2019	88.67	35.68	18.65	38.23	0.76	BDL*	BDL*
39	14/08/2019	69.86	31.85	20.24	35.31	0.87	BDL*	BDL*
40	19/08/2019	81.34	40.83	15.41	39.51	0.64	BDL*	BDL*
41	21/08/2019	78.65	43.38	22.26	43.58	0.39	BDL*	BDL*
42	26/08/2019	67.56	36.34	17.53	37.55	0.52	BDL*	BDL*
43	28/08/2019	80.34	39.38	23.56	36.26	0.50	BDL*	BDL*
44	03/09/2019	80.33	42.60	12.68	27.64	0.50	BDL*	BDL*
45	05/09/2019	70.36	29.25	18.57	31.61	0.58	BDL*	BDL*
46	09/09/2019	62.70	36.58	14.57	34.25	0.46	BDL*	BDL*
47	11/09/2019	75.67	32.67	24.66	39.31	0.26	BDL*	BDL*
48	16/09/2019	64.39	38.27	17.64	42.67	0.40	BDL*	BDL*
49	18/09/2019	87.70	47.29	9.68	29.68	0.47	BDL*	BDL*
50	23/09/2019	77.68	37.61	21.54	32.52	0.34	BDL*	BDL*
51	25/09/2019	89.33	43.55	16.65	37.56	0.62	BDL*	BDL*
52	30/09/2019	79.39	39.67	19.68	35.67	0.49	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	02/04/2019	52.74	22.65	22.70	32.44	0.44	BDL*	BDL*
2	03/04/2019	60.32	32.60	18.64	16.29	0.60	BDL*	BDL*
3	08/04/2019	70.67	40.62	14.37	26.33	0.73	BDL*	BDL*
4	10/04/2019	58.43	26.82	21.65	30.57	0.82	BDL*	BDL*
5	15/04/2019	74.56	44.51	7.61	23.42	0.57	BDL*	BDL*
6	17/04/2019	67.81	39.42	15.61	34.36	0.66	BDL*	BDL*
7	22/04/2019	55.44	23.64	19.67	31.59	1.00	BDL*	BDL*
8	24/04/2019	72.66	41.56	13.57	27.52	0.69	BDL*	BDL*
9	29/04/2019	82.60	34.26	10.54	36.35	0.93	BDL*	BDL*
10	01/05/2019	74.38	42.69	11.66	38.36	0.95	BDL*	BDL*
11	06/05/2019	65.34	29.34	24.36	35.53	0.50	BDL*	BDL*
12	09/05/2019	81.24	47.27	17.56	40.21	0.68	BDL*	BDL*
13	13/05/2019	79.68	39.30	20.27	17.49	0.74	BDL*	BDL*
14	15/05/2019	58.83	28.68	13.48	32.54	0.47	BDL*	BDL*
15	20/05/2019	82.32	45.25	6.61	29.27	0.87	BDL*	BDL*
16	22/05/2019	66.34	36.36	15.37	25.36	0.78	BDL*	BDL*
17	27/05/2019	86.80	48.64	8.36	19.54	0.85	BDL*	BDL*
18	29/05/2019	61.35	27.36	16.26	34.59	0.69	BDL*	BDL*
19	03/06/2019	49.32	27.60	15.57	27.51	0.37	BDL*	BDL*
20	05/06/2019	70.29	34.30	18.62	23.42	0.65	BDL*	BDL*
21	10/06/2019	65.31	39.34	11.51	19.32	0.78	BDL*	BDL*
22	17/06/2019	85.33	40.21	5.69	25.61	0.66	BDL*	BDL*
23	19/06/2019	56.53	32.56	13.58	22.69	0.36	BDL*	BDL*
24	24/06/2019	80.34	41.86	14.99	34.22	0.46	BDL*	BDL*
25	26/06/2019	74.38	21.61	9.65	28.45	0.57	BDL*	BDL*
26	01/07/2019	70.54	32.65	18.64	36.50	0.60	BDL*	BDL*
27	03/07/2019	65.41	28.43	8.09	25.50	0.55	BDL*	BDL*
28	08/07/2019	50.64	25.50	14.49	23.43	0.37	BDL*	BDL*
29	10/07/2019	67.68	33.27	10.40	30.29	0.64	BDL*	BDL*
30	15/07/2019	54.25	21.20	17.55	29.42	0.40	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) $\mu g/m^3$	Particulate Matter (PM 2.5) $\mu g/m^3$	Sulphur Dioxide (SO2) $\mu g/m^3$	Oxides of Nitrogen (NO2) $\mu g/m^3$	Carbon Monoxide as CO mg/m^3	Hydrocarbon as CH_4 mg/m^3	Benzene as C_6H_6 $\mu g/m^3$
31	17/07/2019	74.59	35.37	15.60	37.50	0.50	BDL*	BDL*
32	22/07/2019	82.48	37.10	12.38	26.76	0.72	BDL*	BDL*
33	24/07/2019	63.96	31.24	19.56	24.43	0.71	BDL*	BDL*
34	29/07/2019	58.35	36.45	21.30	34.37	0.86	BDL*	BDL*
35	31/07/2019	76.29	41.24	11.54	22.67	0.58	BDL*	BDL*
36	05/08/2019	67.55	40.25	10.50	20.52	0.23	BDL*	BDL*
37	07/08/2019	72.65	45.66	15.20	26.30	0.30	BDL*	BDL*
38	12/08/2019	68.26	31.53	22.37	35.65	0.48	BDL*	BDL*
39	14/08/2019	60.51	27.52	9.26	27.63	0.73	BDL*	BDL*
40	19/08/2019	75.28	38.39	11.51	23.44	0.57	BDL*	BDL*
41	21/08/2019	58.35	26.12	7.22	30.56	0.45	BDL*	BDL*
42	26/08/2019	79.39	42.36	16.23	39.57	0.29	BDL*	BDL*
43	28/08/2019	69.48	32.44	21.59	34.53	0.41	BDL*	BDL*
44	03/09/2019	64.58	36.65	9.15	18.40	0.60	BDL*	BDL*
45	05/09/2019	54.36	25.37	6.71	15.37	0.52	BDL*	BDL*
46	09/09/2019	71.36	33.64	11.72	20.58	0.39	BDL*	BDL*
47	11/09/2019	52.68	20.41	7.70	26.24	0.31	BDL*	BDL*
48	16/09/2019	76.24	42.73	12.61	35.73	0.30	BDL*	BDL*
49	18/09/2019	67.58	41.20	15.73	22.64	0.55	BDL*	BDL*
50	23/09/2019	65.42	29.67	18.63	30.69	0.37	BDL*	BDL*
51	25/09/2019	73.52	31.57	22.48	32.79	0.32	BDL*	BDL*
52	30/09/2019	68.35	35.58	16.59	29.45	0.36	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	02/04/2019	68.30	31.55	11.54	21.67	0.86	BDL*	BDL*
2	03/04/2019	52.32	26.20	19.64	28.62	0.70	BDL*	BDL*
3	08/04/2019	60.49	37.52	18.55	33.67	0.61	BDL*	BDL*
4	10/04/2019	76.33	22.29	9.67	17.51	0.96	BDL*	BDL*
5	15/04/2019	54.33	29.70	10.28	29.34	0.84	BDL*	BDL*
6	17/04/2019	62.35	35.63	13.63	26.65	0.94	BDL*	BDL*
7	22/04/2019	73.65	32.47	7.70	23.42	0.48	BDL*	BDL*
8	24/04/2019	64.53	36.55	16.42	22.23	0.40	BDL*	BDL*
9	29/04/2019	75.64	30.54	21.64	24.32	0.64	BDL*	BDL*
10	01/05/2019	67.33	39.50	24.38	26.71	0.77	BDL*	BDL*
11	06/05/2019	87.33	25.78	13.27	23.55	1.00	BDL*	BDL*
12	09/05/2019	75.76	40.30	15.65	35.43	0.81	BDL*	BDL*
13	13/05/2019	85.67	46.27	23.43	30.24	0.27	BDL*	BDL*
14	15/05/2019	78.55	35.63	9.71	18.69	0.56	BDL*	BDL*
15	20/05/2019	68.40	42.52	18.57	24.50	0.73	BDL*	BDL*
16	22/05/2019	72.66	29.40	16.37	37.57	0.37	BDL*	BDL*
17	27/05/2019	62.84	31.55	11.78	31.39	0.64	BDL*	BDL*
18	29/05/2019	86.34	36.72	14.57	25.36	0.79	BDL*	BDL*
19	03/06/2019	66.52	31.55	8.56	15.65	0.49	BDL*	BDL*
20	05/06/2019	76.36	39.50	15.25	28.48	0.22	BDL*	BDL*
21	10/06/2019	60.52	36.26	19.42	23.43	0.63	BDL*	BDL*
22	17/06/2019	69.26	30.50	13.57	22.65	0.74	BDL*	BDL*
23	19/06/2019	50.20	25.66	16.25	32.62	0.29	BDL*	BDL*
24	24/06/2019	66.62	34.58	11.30	26.52	0.68	BDL*	BDL*
25	26/06/2019	79.86	32.39	7.59	21.64	0.34	BDL*	BDL*
26	01/07/2019	82.42	41.89	7.60	27.51	0.53	BDL*	BDL*
27	03/07/2019	73.63	26.37	10.68	30.23	0.61	BDL*	BDL*
28	08/07/2019	55.21	29.40	6.54	20.49	0.32	BDL*	BDL*
29	10/07/2019	71.23	37.27	8.63	23.44	0.39	BDL*	BDL*
30	15/07/2019	59.32	27.51	22.43	33.53	0.47	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	17/07/2019	62.47	32.22	18.23	28.51	0.74	BDL*	BDL*
32	22/07/2019	74.38	28.46	13.52	22.41	0.84	BDL*	BDL*
33	24/07/2019	69.45	38.23	20.23	32.47	0.24	BDL*	BDL*
34	29/07/2019	52.42	30.24	17.53	26.67	0.69	BDL*	BDL*
35	31/07/2019	70.66	36.26	21.20	31.41	0.52	BDL*	BDL*
36	05/08/2019	62.51	35.58	19.22	24.51	0.42	BDL*	BDL*
37	07/08/2019	77.50	38.82	21.53	29.53	0.37	BDL*	BDL*
38	12/08/2019	65.35	41.56	11.25	26.59	0.40	BDL*	BDL*
39	14/08/2019	56.20	20.57	13.62	19.34	0.60	BDL*	BDL*
40	19/08/2019	70.69	34.28	18.29	28.55	0.18	BDL*	BDL*
41	21/08/2019	64.23	23.64	9.76	22.60	0.46	BDL*	BDL*
42	26/08/2019	72.41	29.44	7.56	31.53	0.25	BDL*	BDL*
43	28/08/2019	57.31	30.45	16.90	30.22	0.58	BDL*	BDL*
44	03/09/2019	56.22	29.70	17.59	23.41	0.36	BDL*	BDL*
45	05/09/2019	62.39	34.62	14.57	24.43	0.44	BDL*	BDL*
46	09/09/2019	50.42	26.42	16.51	30.35	0.13	BDL*	BDL*
47	11/09/2019	60.54	23.77	12.70	20.26	0.48	BDL*	BDL*
48	16/09/2019	69.35	27.68	7.59	27.57	0.21	BDL*	BDL*
49	18/09/2019	74.62	36.68	20.50	37.64	0.25	BDL*	BDL*
50	23/09/2019	53.69	25.41	15.66	25.44	0.41	BDL*	BDL*
51	25/09/2019	78.32	39.16	10.40	21.61	0.29	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	02/04/2019	64.36	25.41	20.33	29.64	0.78	BDL*	BDL*
2	03/04/2019	77.69	40.31	23.39	33.50	0.92	BDL*	BDL*
3	08/04/2019	80.42	46.18	11.68	37.41	0.37	BDL*	BDL*
4	10/04/2019	71.65	32.48	6.56	20.55	0.89	BDL*	BDL*
5	15/04/2019	60.47	35.30	15.66	34.38	0.41	BDL*	BDL*
6	17/04/2019	81.26	47.22	9.40	23.43	0.72	BDL*	BDL*
7	22/04/2019	65.34	27.52	14.56	26.62	0.65	BDL*	BDL*
8	24/04/2019	87.54	54.37	17.35	30.47	0.49	BDL*	BDL*
9	29/04/2019	68.67	26.57	13.49	19.66	0.87	BDL*	BDL*
10	01/05/2019	88.67	50.24	15.48	21.67	1.01	BDL*	BDL*
11	06/05/2019	70.33	35.67	21.52	30.48	0.88	BDL*	BDL*
12	09/05/2019	86.37	45.31	10.51	25.33	0.48	BDL*	BDL*
13	13/05/2019	74.33	29.42	26.29	37.21	0.63	BDL*	BDL*
14	15/05/2019	63.47	25.66	7.55	22.62	0.76	BDL*	BDL*
15	20/05/2019	87.35	51.23	19.58	32.49	1.02	BDL*	BDL*
16	22/05/2019	78.39	40.18	13.56	40.27	0.58	BDL*	BDL*
17	27/05/2019	67.86	39.44	18.41	36.70	0.36	BDL*	BDL*
18	29/05/2019	75.32	30.33	12.20	29.38	0.94	BDL*	BDL*
19	03/06/2019	55.17	20.32	6.49	19.21	0.61	BDL*	BDL*
20	05/06/2019	63.28	25.37	23.52	32.76	0.52	BDL*	BDL*
21	10/06/2019	78.37	44.32	13.80	17.56	0.80	BDL*	BDL*
22	17/06/2019	74.27	45.40	18.39	27.51	0.84	BDL*	BDL*
23	19/06/2019	68.42	35.79	11.55	35.63	0.48	BDL*	BDL*
24	24/06/2019	72.56	43.53	9.36	22.67	0.38	BDL*	BDL*
25	26/06/2019	90.56	54.37	12.52	25.64	0.77	BDL*	BDL*
26	01/07/2019	88.62	46.35	14.51	30.64	0.78	BDL*	BDL*
27	03/07/2019	78.48	42.33	16.61	33.48	0.30	BDL*	BDL*
28	08/07/2019	62.53	34.26	12.28	38.44	0.54	BDL*	BDL*
29	10/07/2019	81.63	49.41	17.53	26.46	0.82	BDL*	BDL*
30	15/07/2019	70.46	38.28	20.33	20.27	0.66	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	17/07/2019	80.36	43.45	26.50	36.51	0.89	BDL*	BDL*
32	22/07/2019	69.61	30.42	18.63	29.25	0.94	BDL*	BDL*
33	24/07/2019	58.43	24.21	22.39	34.54	0.57	BDL*	BDL*
34	29/07/2019	72.43	45.64	15.64	18.90	0.90	BDL*	BDL*
35	31/07/2019	90.47	52.35	19.65	28.64	0.41	BDL*	BDL*
36	05/08/2019	74.32	37.49	16.24	23.42	0.33	BDL*	BDL*
37	07/08/2019	86.34	55.66	19.51	35.64	0.54	BDL*	BDL*
38	12/08/2019	90.22	45.35	13.55	27.60	0.61	BDL*	BDL*
39	14/08/2019	72.34	41.59	15.36	24.54	0.71	BDL*	BDL*
40	19/08/2019	61.84	46.35	21.46	31.22	0.47	BDL*	BDL*
41	21/08/2019	70.36	39.73	24.53	39.21	0.24	BDL*	BDL*
42	26/08/2019	62.34	31.28	11.46	33.42	0.44	BDL*	BDL*
43	28/08/2019	76.35	34.68	25.33	38.23	0.72	BDL*	BDL*
44	03/09/2019	72.63	33.77	14.71	20.72	0.23	BDL*	BDL*
45	05/09/2019	65.41	37.62	12.72	22.62	0.63	BDL*	BDL*
46	09/09/2019	56.43	41.26	18.74	28.46	0.33	BDL*	BDL*
47	11/09/2019	66.72	29.50	22.62	33.62	0.18	BDL*	BDL*
48	16/09/2019	58.29	32.53	10.52	29.48	0.56	BDL*	BDL*
49	18/09/2019	80.31	50.40	17.54	31.33	0.38	BDL*	BDL*
50	23/09/2019	70.57	34.64	23.51	34.63	0.53	BDL*	BDL*
51	25/09/2019	84.37	47.34	15.46	24.40	0.45	BDL*	BDL*
52	30/09/2019	75.40	40.26	20.55	26.45	0.37	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	19/04/2019	06/05/2019	14/06/2019	19/07/2019	16/08/2019	23/09/2019
1	6:00-7:00	64.2	65.2	64.1	68.3	56.3	68.1
2	7:00-8:00	67.1	62.7	68.8	64.4	60.4	62.8
3	8:00-9:00	67.8	73.4	65.1	62.4	59.4	63.4
4	9:00-10:00	66.3	73.1	72.1	68.4	62.6	69.9
5	10:00-11:00	70.3	70.6	71.4	64.4	65.4	72.4
6	11:00-12:00	68.3	71.4	68.9	64.2	68.4	74.1
7	12:00-13:00	63.5	68.4	72.4	68.5	68.9	70.1
8	13:00-14:00	67.3	62.8	68.8	68.4	67.3	66.4
9	14:00-15:00	63.6	63.2	68.2	68.9	65.5	68.4
10	15:00-16:00	65.2	66.4	72.6	72.5	62.3	62.8
11	16:00-17:00	68.4	66.9	70.2	65.3	65.3	65.6
12	17:00-18:00	64.2	69.4	69.2	63.9	64.2	68.8
13	18:00-19:00	67.3	65.8	71.8	66.8	62.3	64.1
14	19:00-20:00	70.2	66.4	74.2	65.4	65.4	63.4
15	20:00-21:00	65.2	63.8	68.1	68.3	61.3	68.9
16	21:00-22:00	64.5	67.6	62.5	64.4	64.4	66.8
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	19/04/2019	06/05/2019	14/06/2019	19/07/2019	16/08/2019	23/09/2019
2	22:00-23:00	68.7	63.8	60.4	63.1	63.4	68.4
3	23:00-00:00	65.1	65.7	58.1	60.4	60.1	65.5
4	00:00-01:00	62.8	64.1	55.1	59.1	62.4	62.4
5	01:00-02:00	68.4	62.8	59.5	65.4	60.4	63.1
6	02:00-03:00	64.9	63.7	60.4	63.1	60.8	61.4
7	03:00-04:00	69.1	63.9	62.1	64.4	59.4	68.4
8	04:00-05:00	65.5	69.8	60.8	64.9	60.3	64.2
9	05:00-06:00	68.2	62.7	62.7	62.8	62.1	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)]					
	Sampling Date & Time	24/04/2019	17/05/2019	17/06/2019	10/07/2019	14/08/2019	09/09/2019
1	6:00-7:00	68.4	63.7	62.4	68.4	68.3	65.7
2	7:00-8:00	65.0	61.8	64.2	65.1	64.4	68.3
3	8:00-9:00	67.3	65.4	62.8	63.4	62.4	65.2
4	9:00-10:00	63.5	69.4	68.2	65.1	68.4	65.1
5	10:00-11:00	74.2	74.1	65.1	72.1	64.4	73.3
6	11:00-12:00	71.3	72.5	66.1	68.8	64.2	70.3
7	12:00-13:00	69.3	68.4	72.1	65.1	68.5	65.3
8	13:00-14:00	67.1	65.4	70.1	69.8	68.4	70.2
9	14:00-15:00	70.3	61.5	69.1	67.2	68.9	69.3
10	15:00-16:00	65.2	60.4	65.1	65.3	72.5	64.3
11	16:00-17:00	61.3	69.1	68.1	62.1	65.3	67.2
12	17:00-18:00	63.2	62.4	62.4	63.4	63.9	64.0
13	18:00-19:00	65.3	62.9	66.3	65.8	66.8	67.1
14	19:00-20:00	68.2	67.1	63.4	66.9	65.4	62.1
15	20:00-21:00	60.1	62.8	61.4	71.4	68.3	65.2
16	21:00-22:00	65.2	65.1	62.8	72.8	64.4	61.9
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	24/04/2019	17/05/2019	17/06/2019	10/07/2019	14/08/2019	09/09/2019
2	22:00-23:00	63.2	64.1	63.4	68.4	65.1	67.4
3	23:00-00:00	59.4	63.4	68.4	65.5	62.4	64.3
4	00:00-01:00	60.3	62.1	65.2	62.4	59.4	58.4
5	01:00-02:00	60.3	60.4	62.7	63.1	61.7	66.3
6	02:00-03:00	65.3	68.4	69.4	60.4	62.1	64.3
7	03:00-04:00	62.3	63.4	65.1	61.8	65.4	62.1
8	04:00-05:00	60.2	65.4	62.8	63.7	66.1	57.2
9	05:00-06:00	62.4	67.1	66.6	62.8	60.4	62.2
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	ADANI HOUSE					
		Result [Leq dB(A)]					
	Sampling Date & Time	15/04/2019	03/05/2019	04/06/2019	03/07/2019	05/08/2019	04/09/2019
1	6:00-7:00	60.3	67.2	61.7	65.4	65.4	64.3
2	7:00-8:00	63.4	65.9	67.3	68.1	66.3	68.8
3	8:00-9:00	62.3	68.1	65.2	62.5	66.9	65.7
4	9:00-10:00	67.4	62.4	70.3	73.1	67.4	70.1
5	10:00-11:00	65.6	62.8	73.2	70.5	63.2	72.4
6	11:00-12:00	68.4	61.8	68.3	69.9	62.4	63.4
7	12:00-13:00	70.4	68.4	68.1	66.4	67.4	60.4
8	13:00-14:00	65.3	68.7	62.4	62.1	65.3	67.9
9	14:00-15:00	69.4	68.2	69.3	68.4	62.5	67.5
10	15:00-16:00	69.7	64.1	66.9	63.4	68.4	62.4
11	16:00-17:00	67.3	69.1	70.2	68.1	68.3	70.3
12	17:00-18:00	65.3	73.1	63.2	66.8	68.7	71.9
13	18:00-19:00	63.8	70.4	64.0	63.1	64.3	68.8
14	19:00-20:00	64.3	64.1	61.0	62.9	62.7	62.1
15	20:00-21:00	67.4	62.8	68.0	65.4	65.8	60.1
16	21:00-22:00	63.8	60.8	65.5	66.7	63.6	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	15/04/2019	03/05/2019	04/06/2019	03/07/2019	05/08/2019	04/09/2019
2	22:00-23:00	60.4	65.7	67.3	65.5	60.4	62.4
3	23:00-00:00	65.1	67.1	59.5	62.1	62.4	67.3
4	00:00-01:00	65.4	61.5	63.1	63.4	68.7	64.3
5	01:00-02:00	61.8	60.4	61.0	68.1	60.1	67.4
6	02:00-03:00	63.4	60.3	61.3	62.7	63.1	60.3
7	03:00-04:00	62.4	62.8	63.4	60.1	60.8	62.3
8	04:00-05:00	65.7	64.1	68.3	60.9	61.4	65.3
9	05:00-06:00	67.1	62.9	66.2	63.1	64.1	68.4
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	CT-3 DG HOUSE					
		Result [Leq dB(A)]					
	Sampling Date & Time	29/04/2019	13/05/2019	24/06/2019	26/07/2019	28/08/2019	18/09/2019
1	6:00-7:00	68.9	61.5	65.3	56.3	62.4	61.2
2	7:00-8:00	70.3	59.4	67.2	60.4	64.5	68.7
3	8:00-9:00	65.3	63.4	70.2	59.4	67.3	65.2
4	9:00-10:00	64.3	65.5	66.4	62.6	66.0	64.3
5	10:00-11:00	64.2	62.3	62.6	65.4	69.9	63.8
6	11:00-12:00	62.1	63.8	60.3	68.4	72.4	69.9
7	12:00-13:00	68.3	64.1	65.2	68.9	67.3	62.7
8	13:00-14:00	73.7	62.8	68.3	67.3	70.3	62.3
9	14:00-15:00	69.9	69.2	66.4	65.5	72.3	65.1
10	15:00-16:00	67.3	67.2	61.4	62.3	67.3	65.4
11	16:00-17:00	68.3	66.1	65.2	65.3	63.2	65.3
12	17:00-18:00	65.7	68.4	68.3	64.2	65.7	68.1
13	18:00-19:00	63.8	68.3	66.2	62.3	69.2	64.2
14	19:00-20:00	63.8	62.4	72.6	65.4	64.1	62.8
15	20:00-21:00	64.9	64.3	70.2	61.3	64.2	65.1
16	21:00-22:00	65.8	63.8	69.3	64.4	67.3	63.4
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	29/04/2019	13/05/2019	24/06/2019	26/07/2019	28/08/2019	18/09/2019
2	22:00-23:00	62.1	68.7	61.1	67.5	62.4	60.4
3	23:00-00:00	65.0	65.1	65.1	65.2	61.8	62.4
4	00:00-01:00	58.3	62.8	62.8	63.1	60.4	60.4
5	01:00-02:00	59.4	68.4	63.6	60.4	57.1	65.2
6	02:00-03:00	63.4	64.9	63.9	65.1	59.8	63.1
7	03:00-04:00	67.8	69.1	65.1	62.8	60.4	64.5
8	04:00-05:00	60.4	61.4	60.4	61.2	60.8	68.4
9	05:00-06:00	62.4	68.2	61.8	62.8	62.1	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)

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 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	19.83	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	6.74	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	39.32	--	IS:11255 (Part-VII):2005
				MAY 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	21.81	14.37	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	6.68	5.53	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	34.27	28.75	IS:11255 (Part-VII):2005
				JUNE 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	23.74	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	5.45	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	36.56	--	IS:11255 (Part-VII):2005
				JULY 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	--	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	--	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	--	--	IS:11255 (Part-VII):2005
				AUGUST 2019				
1	Particulate Matter	mg/Nm^3	**150**	12.33	--	20.41	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	3.62	--	6.98	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	23.61	--	32.61	--	IS:11255 (Part-VII):2005
				SEPTEMBER 2019				
1	Particulate Matter	mg/Nm^3	**150**	18.75	--	--	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	4.24	--	--	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	28.47	--	--	--	IS:11255 (Part-VII):2005

*Below detection limit
Results on 11 % O_2 Correction when Oxygen is greater than 11 %. And 12% CO_2correction 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

16/05/2019					
SR. NO.	**TEST PARAMETERS**	**Unit**	**Adani Port**	**GPCB Limit**	**Test Method**
			D.G. Set – 6, 7 & 8* (1250 KVA, each)		
1	Particulate Matter	mg/Nm^3	17.36	150	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	5.26	100	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	32.39	50	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	4.9	Not Specified	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	Not Specified	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

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

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Lab Manager (Q)

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

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

MONITORING PERIOD:
APRIL 2019 TO SEPTEMBER 2019

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

RESULTS OF BORE HOLE WATER

SR. NO	TEST PARAMETERS	UNIT	RESULTS			TEST METHOD
			PUMP HOUSE-1	PUMP HOUSE-2	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		20/06/2019	20/06/2019	20/06/2019	
1	pH	--	7.70	8.10	8.06	IS3025(P11)83Re.02
2	Salinity	ppt	13.2	4.6	7.1	APHA 2520B
3	Oil & Grease	mg/L	BDL*	BDL*	2.0	APHA(22ndEdi)5520D
4	Hydrocarbon	mg/L	BDL*	BDL*	BDL*	GC/GC-MS
5	Lead as Pb	mg/L	0.048	0.056	0.075	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*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
8	Total Chromium as Cr	mg/L	BDL*	BDL*	BDL*	AAS 3111B
9	Cadmium as Cd	mg/L	0.011	0.036	0.025	AAS APHA(22ndEdi)3111 B
10	Mercury as Hg	mg/L	BDL*	BDL*	BDL*	AAS APHA- 3112 B
11	Zinc as Zn	mg/L	3.80	2.1	0.48	AAS APHA(22ndEdi)3111 B
12	Copper as Cu	mg/L	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
13	Iron as Fe	mg/L	7.2	6.2	3.10	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	1.1	1.05	1.0	--

*BDL: Below Detection Limit

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
			NEAR ETP OFFICE	NEAR PUMP HOUSE -1	
	GPS Location		N 22° 44.549' E 069° 41.464'	N 22° 44.50' E 069° 41.42'	
	Sampling Date		20/06/2019	20/06/2019	
1	pH	--	7.95	7.95	IS3025(P11)83Re.02
2	Salinity	ppt	19.4	8.60	APHA 2520B
3	Oil & Grease	mg/L	3.1	BDL*	APHA(22ndEdi)5520D
4	Hydrocarbon	mg/L	BDL*	BDL*	GC/GC-MS
5	Lead as Pb	mg/L	0.044	0.062	AAS APHA(22ndEdi)3111 B
6	Arsenic as As	mg/L	BDL*	BDL*	AAS APHA 3114 B
7	Nickel as Ni	mg/L	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
8	Total Chromium as Cr	mg/L	BDL*	BDL*	AAS 3111B
9	Cadmium as Cd	mg/L	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
10	Mercury as Hg	mg/L	BDL*	BDL*	AAS APHA- 3112 B
11	Zinc as Zn	mg/L	0.092	BDL*	AAS APHA(22ndEdi)3111 B
12	Copper as Cu	mg/L	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
13	Iron as Fe	mg/L	0.35	5.1	AAS APHA(22ndEdi)3111 B
14	Insecticides/Pesticides	mg/L	Absent	Absent	GC/GC-MS
15	Depth of Water Level from Ground Level	meter	1.0	1.25	--

*BDL: Below Detection Limit

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)

Annexure – 4

Details of Greenbelt development at APSEZ, Mundra

LOCATION	Total Green Zone Detail Till Up to Sept - 2019				
	Area (In Ha.)	Trees (Nos.)	Palm (Nos.)	Shrubs (SQM)	Lawn (SQM)
SV COLONY	69.53	32480.00	7298.00	68327.00	95019.00
PORT & NON SEZ	81.37	146692.00	19220.00	75061.78	61937.38
SEZ	116.60	227120.00	20489.00	220583.60	28162.03
MITAP	2.48	8168.00	33.00	3340.00	4036.00
WEST PORT	94.33	206587.00	63331.00	24112.00	22854.15
AGRI PARK	8.94	17244.00	1332.00	5400.00	2121.44
SOUTH PORT	14.45	27530.00	3470.00	3882.00	3327.26
Samudra Township	55.93	53672.00	11834.00	20908.89	47520.07
Productive Farming (Vadala Farm)	23.79	27976.00	0.00	0.00	0.00
TOTAL (APSEZL)	**467.40**	**747469.00**	**127007.00**	**421615.27**	**264977.33**
		874476.00			

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
17	Aliya Bet, Village Katpor (Hansot, Bharuch)	62.0	2017-18	Avicennia marina & Rhizophora spp.	GEC, Gandhinagar
Total Mangrove Plantation:		**2889.90 Ha**			

Annexure – 5

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

Date	:	29.06.2019
Time	:	11:38Hrs
Location	:	BWR 01 (E Yard Mid-point)
Type/Text of the Scenario	:	A housekeeping worker got multiple injuries due to falling from height while doing housekeeping at Slew area of Reclaimer 01

INTRODUCTION:

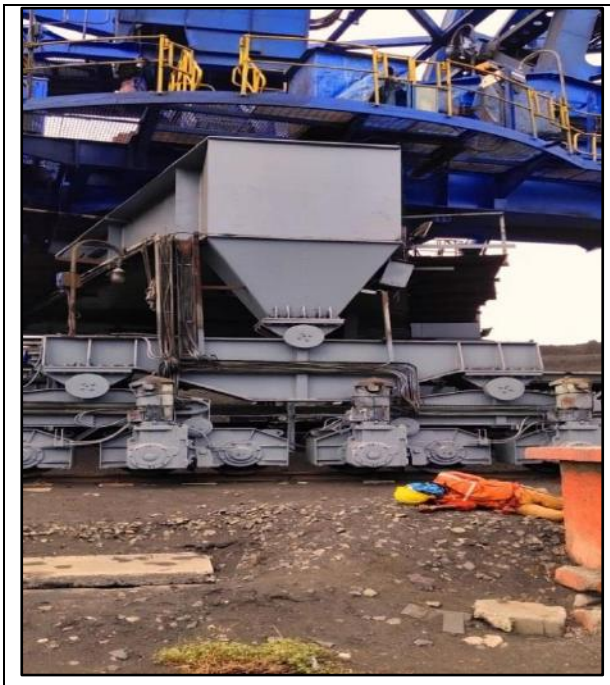
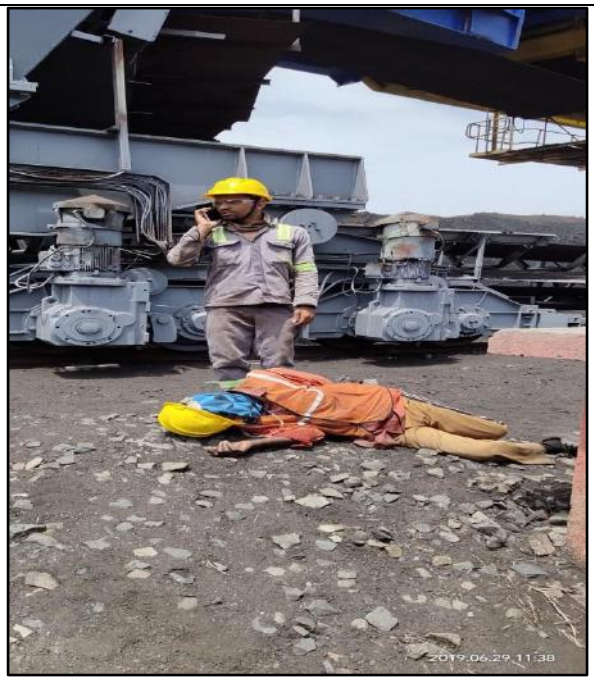
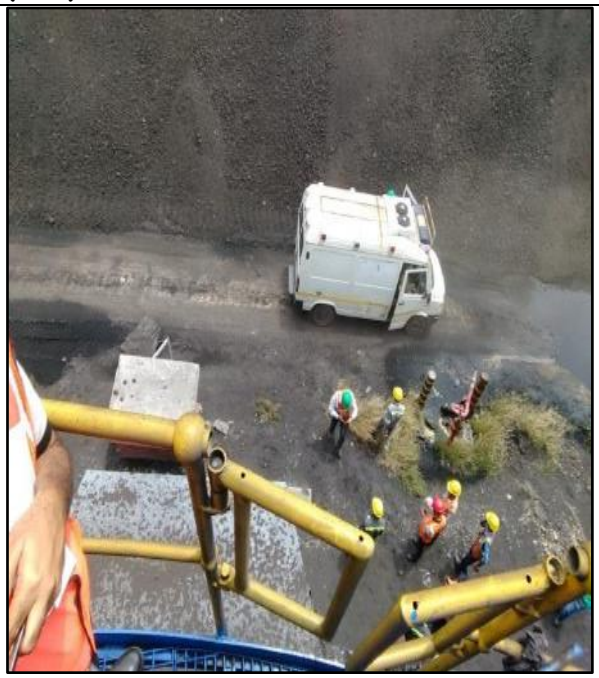
Mr. Kapildev Das and Mr. Ramesh Bhuiya doing the housekeeping work at slew area of BWR 01, Mr. Silu Panda (BWSR Attendant) observed that Mr. Kapildev (Housekeeping worker) fallen down near track of BWR 01. BWSR Attendant informed to Mr. Sourav Sankar, MHS Control Room (CCR) for the scenario.

LOCATION (WITH PHOTOGRAPH):

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

SEQUENCE OF EVENTS WITH PHOTOGRAPHS:

	
Incident Spot : BWR 01	**First Responder Mr. Silu Panda (BWSR Attendant) informed to MHS Control Room (CCR)**
	
Ambulance with Paramedic officer reached at Incident Spot	

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

Paramedic Officer reported to Incident controller (Mr. Harinder Singh) and First Responder guide to Paramedic Officer

Casulity shifting to Ambulance and Ambulance proceed to OHC for further treatment of casulity

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

HODs / HOSs and Shift Incharge reported at Incident Spot

- Sharing of Observations by Observers and Incident Controller
- De-briefing of Importance of Mock Drill and Vote of Thanks By Mr. Bharat Kumar Pokar (Safety Officer) and Mr. Kaushik Modha (Sr. Fire Officer)

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

RESPONSE TIME:

#	Description		Exact Time
1.	First responder informed to Mr. Sourav Sankar MHS Control Room (CCR) through Mobile phone	:	11:38 AM
2.	**Declaration of Emergency**	**:**	**11:38 AM**
3.	CCR informed to OHC (Occupational Health Centre)	:	11:39 AM
4.	CCR informed to BWSR Shift Incharge	:	11:40 AM
5.	CCR informed to Duty Safety Officer	:	11:41 AM
6.	CCR informed to Sh. Harinder Singh (Incident Controller / Head – West Basin)	:	11:41 AM
7.	Mr. Nikunj Prajapati (BWSR Shift Incharge) called to first responder regarding incident	:	11:41 AM
8.	CCR informed to Sh. Kuldeep Zala (Head ES – West Basin)	:	11:42 AM
9.	Ambulance took turn-out with paramedic officer	:	11:42 AM
10.	CCR informed to Sh. Bibhudatta Ray (Head Dry Cargo – West Basin)	:	11:42 AM
11.	CCR informed to Mr. Ravi V (RM – CREW)	:	11:43 AM
12.	CCR informed to Mr. Mahesh Kumar (HOD ES – CREW)	:	11:43 AM
13.	CCR informed to Mr. Tapan Kumar Sarkar (HOD Operation – CREW)	:	11:44 AM
14.	Mr. Nikunj Prajapati (Shift Incharge – MHS BWSR) reached at Incident Spot	:	11:44 AM
15.	Mr. Vikram Gadhvi (Fire S/I) called to Mr. Kaushik Modha regarding Incident	:	11:45 AM
16.	CCR informed to Mr. Nital Bhut	:	11:46 AM
17.	CCR informed to Mr. Mayur Sadhu (APSEZ ES Shift Incharge)	:	11:46 AM
18.	Mr. George R (CREW: HOS) called to first responder regarding confirmation on incident	:	11:46 AM
19.	**Ambulance along with paramedic officer reached at incident spot**	**:**	**11:48 AM**
20.	Paramedic Officer check the casualty	:	11:48 AM
21.	Casualty shifted from incident spot to Ambulance	:	11:49 AM
22.	Ambulance moved to OHC	:	11:50 AM
23.	Dry Cargo Shift Incharge (CREW) reported at incident spot	:	11:51 AM
24.	Mr. Mahesh Kumar (CREW), Mr. TV Babulal (CREW), Mr. Harish Maheshwari (CREW) & Mr. Tapan Kumar Sarkar (CREW) reported at incident spot	:	11:52 AM
25.	Ambulance reached at OHC	:	11:53 AM
26.	Mr. Kashyap Pandya (APSEZ) and Mr. Nital Bhut (APSEZ) reached at incident spot	:	11:53 AM
27.	Mr. Atul K (Duty Safety Marshal) reported at incident spot	:	11:55 AM
28.	Mr. Ketan Joshi (APSEZ), Mr. Nirbhay Devmurari (APSEZ), Mr. Shiv lal (APSEZ - DC Shift Incharge) reported at incident spot	:	11:59 AM
29.	Mr. Arun Nahak (CREW) and Mr. Deepak Barad (CREW)	:	11:59 AM

	reported at incident spot		
30.	Mr. Ravi V (RM CREW) reported at incident spot	:	12:00 PM
31.	**Termination of Emergency by Incident controller**	**:**	**12:01 PM**
32.	De-briefing of Mock drill observations by Observers and Incident controller at SS 01 Conference Hall	:	**12:15 PM to 12:50 PM**
33.	First person at Assembly Point	:	--
34.	Last person at Assembly Point	:	--
35.	Maintenance/ Rescue Arrangement at site	:	--
36.	Corporate Affairs team reaching on site	:	--
37.	Liaoning officer reached at site	:	--
38.	Audibility of the scenario on PA system	:	--

Note: For more than one assembly point, please mention details for point 10 & 11.

COMMUNICATION & ACTIONS:

Action By	Information To / Action By	Remarks
First Responder	Information given to CCR about situation / scenario.	**Yes**
Site Incident Controller	Assess the site and declare emergency.	**Yes**
MHS Control Room (CCR)	Inform to OHC, Incident controller, HODs / HODs, Shift Incharge, safety etc.	**Yes**
Engineering Services	NA	**NA**
Corporate Affairs	NA	**NA**
HR/ Admin	HR Team reached at assembly Point and ensure manned and all persons reporting there properly with co-ordination of incident controller. Admin team reached at assembly point and ensure Arrange for hot drinks/ snacks/ foods as requires at incident location with co-ordination of incident controller.	**NA**
Safety	Discuss to mitigate catastrophic effects with incident controller and ask for any add or services required like PPE's, Ambulance etc.	**Yes**
OHC	Mobilize ambulance at OHC for further treatment.	**Yes**
Security	Controlling the traffic at main gate & scene.	**NA**
Fire Crew	Firefighting and rescue operation	**NA**

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

COMMUNICATION TO MUTUAL AID GROUP
(IF REQUIRED, AS AND WHEN MUTUAL AID IS CALLED) – Not Required.

To	By Whom/ Media	Standard	Performance
IOCL		2 min. after receiving information to Emergency Control Room	
HPCL			
JINDAL SAW			
ADANI POWER			
CGPL			
HMEL			

RESPONSE TIME PERFORMANCE OF ACTION

Agency	Standard Time	Performance	Rating (Max. 9/ Block)	
			+VE Marks	-VE Marks
Ambulance	280-300 Second	540 Second	**5**	**4**
Safety	280-300 Second	1020 Second	**8**	**1**
Fire Services	280-303 Second	NA	**9**	**0**

A. PERFORMANCE OF OHS & F SERVICES & RESCUE SERVICES

Performance	Performance	Rating (Max. 3 per Block)	
		+VE Marks	-VE Marks
Turn out time of Fire Team	Fire team reached at site within benchmark of response time. **(NA)**	**3**	**0**
Turn out time of OHC Team	OHC team reached at site within benchmark of response time.	**2**	**1**
Turn out/ response time of Safety Team and in coordination with incident controller mobilisation of personnel and resources.	Response time of Safety team is within benchmark and will coordinate with incident controller for mobilisation of personnel, resources, PPE's etc.	**3**	**0**
Firefighting at the site	Start the fire fighting with co – ordination of incident controller. **(NA)**	**3**	**0**
Medical attention at the site	Reported to incident Controller and discussed about injury and further treatment	**3**	**0**
Rescue of person	Causality shifted from incident spot to Ambulance	**3**	**0**

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

B. PERFORMANCE OF MAINTENANCE DEPARTMENT

Performance	Performance	Rating (Max. 3 per Block)	
		+VE Marks	-VE Marks
Power shut down/ cut off	NA	3	0
Immediate arrangements at the site	NA	3	0
Mobilizing of personnel and resources	Maintenance team reached at site with tool kit and appropriate PPEs.	3	0
Maintenance activities being carried out at the site	As per guided by incident controller leak controlled by maintenance team with help of tool kit.	3	0
Clearing debris	NA	3	0
Other arrangement at required to meet emergency	Not required.	3	0

C. PERFORMANCE OF SECURITY SERVICES

Performance	Performance Rating	Rating (Max. 3 per Block)	
		+VE Marks	-VE Marks
Turnout of Security	Security team reached within time and barricade the area reported to incident controller for further update.	3	0
Performance of security guards	Security guards was closed the main gate & Exit lane **(N/A)**	3	0
Security officer's command & control	Security officers restrict the entry of unauthorized persons / also ensure that vehicles do not enter the gate. **(N/A)**	3	0
Area cordoned off	Immediate barricade the area for restrict to entry at scene by security team as guided by incident controller.	3	0
Prevent unwanted/ unauthorized entry and traffic controlled at incident spot / location	Security officers restrict the entry of unauthorized persons / also ensure that traffic controlled and access / road free for Emergency Vehicle.	3	0
Closer of gates	Vehicle & man movement	3	0

	entry gates closed by security guard. **(N/A)**		
Providing security coverage at main gate and directing concern person to the site	There is no proper guidance to emergency vehicle to reach at scene. . **(N/A)**	**3**	**0**

D. PERFORMANCE OF OPERATION/ CONCERN DEPARTMENT

Performance	Performance Rating	Rating (Max. 3 per Block)	
		+VE Marks	-VE Marks
Immediately pass the communication message through VHF / other available media to subordinates & emergency response team.	Communication / Information on emergency conveyed to all concern except environment team by incident controller.	**3**	**0**
Stopping of operation / like critical operations first & on priority basis	All operations stopped by incident controller.	**3**	**0**
Emergency response of particular department at site	Response time of concern department found adequate.	**3**	**0**
Support for evacuation of people at site and head count along with HR/ Admin	Message was not conveyed by CCR **(N/A)**	**3**	**0**
Availability and response of emergency kit / equipment / Other.	AED available at OHC for CPR, Paramedic aware about same **(N/A)**	**0**	**3**
Audibility of the scenario on PA System by Persons	**(N/A)**	**3**	**0**

Good Observations:

1. Response of Emergency Agencies (i.e. OHC) was satisfactory.
2. First responder guide to paramedical officer effectively.
3. Response of paramedical officer at incident spot is very good, immediate refered causality to OHC and start treatment.
4. Ambulance driver and paramedical officer buckle up seat belt while driving ambulance.

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

Observer – I: Mr. Harinder Singh (Incident Controller)

1. Nobody took action to save / move casualty to OHC prior to arrival of ambulance and nobody assisted to paramedical officer after arrival of ambulance.
2. CCR did not convey Message to Incident controller in properly.
3. First responder called to CCR but did not respond in first-call.

Observer – I: Mr. Kuldeep Zala (Incident Spot)

1. First Responder (BWSR Attendant) does not have CCR Contact No.
2. AED Machine did not carry with Ambulance by OHC team
3. Paramedical Officer (OHC) did not get exact position of R 01 from CCR, so they were confirmed with fire control room which resulted in delayed response time.
4. Beacon light of Ambulance was not functioning.

Observer – II: Mr. Bibhudatta Ray (MHS Control Room – CCR)

1. CCR Operator was not conveyed incident message with correct position (Location) of BWR 01
2. It is recommended to note incident message in notepad so that proper message can be conveyed to concern agencies.

Overall rating

Marks from 95 to 100 - Excellent

Marks from 90 to 95 - Very Good

Marks below 90 - Needs Improvement

VOTE OF THANKS:

Vote of the thanks by Mr. Bharat Kumar Pokar (Safety) and Mr. Kaushik Modha (Fire Services) and given to the special thanks to all team members of mock drill participants.

SUPPORTING STAFF:

Drill Organized By : Mr. Bharat Kumar Pokar (Safety Officer)

Drill guided By : Mr. Harinder Singh (Head – West Basin)

ADANI PORTS & SPECIAL ECONOMIC ZONE LIMITED

MOCK DRILL REPORT

Exercise Performance Assessor : Mr. Kuldeep Zala (ES) & Mr. Bibhudatta Ray (DC)

Site incident controller : Mr. Harinder Singh (Head – West Basin)

Report prepared By : Mr. Bharat Kumar Pokar & Mr. Kaushik Modha

COMPLIANCE REPORT FOR MOCK DRILL

Plant/ Facilities: West Basin Terminal
Date of Mock Drill : 29.06.2019

Sr. No	Recommendations	Action Taken	Target Date	Tracking ID (Gensuite ATS)
1	**Suggestion:** Plant familiarization to be done for new requirement OHC staff at west basin Baroda life management incharge should ensure that prior to assign duty at west basin	Mr. Divyesh (M/s BLM) & Mr. Bharat Pokar (APSEZ)	As and when required	**2648**
2	Educate the workforce to assist to the victim prior to arrival of medical assistance and during shifting of victim into ambulance if required	CREW HOD / HOSs	25.08.2019	**2649**
3	It is recommended to CCR operator to note incident message in notepad so that proper message can be conveyed to concern agencies.	Mr. Tapan Kumar Sarkar (M/s CREW)	02.08.2019	**2650**
4	CCR operators have to be attentive as there may be emergency call, Training need to be imparted to all CCR Operators on proper communication to the concern agencies	Mr. Prashant Pathak (M/s CREW) & Mr. Dindayal Pandey (M/s CREW)	10.08.2019	**2651**
5	AED Machine need to be carry with Ambulance during emergency call as per established practice	Duty Paramedical Officer	As and When required	**2652**
6	Beacon light of Ambulance was not functioning, Need to be repaired	Mr. Divyesh (M/s BLM)	02.08.2019	**2653**
7	Provision of vehicle (LMV) to duty safety officer for attending emergency call in coal stack yard	Mr. Tapan Kumar Sarkar	As and When required	**2654**
8	Proper road condition to be maintain at both sides of coal stack yards to transport emergency vehicle	Mr. TV Babulal (M/s CREW)	Regular	**2655**

Annexure – 6

ANNEXURES

INITIAL OIL SPILL REPORT		ANNEXURE 1
Particulars of person, office reporting	Capt.Anubhav jain, HOD Marine, APSEZ Mundra,	
Tel No.	8980015245	
Date & time of incident	22.02.2019 / 10:00 hrs	
Spill location	South Basin	
Likely cause of spill	Unknown	Witness – Boat Anjali
Initial response action	Informed Port Control	By- Boat Anjali
Any other information	OSR action plan initiated	

Identity of informant	Boat Anjali Master (Hired to APSEZ)
Time of FIR	19 / 10 00 HRS
Source of spill	Unknown
Cause of spill	Unknown
Type of spill	White Oil
Colour code information (from CG)	White
Radius of slick	5 to 8 m
Tail	10 m
Volume	0.3 to 0.5 cubic meter approx.
Quantity	450 to 500 L
Weather	SW' Ly x 20 - 22 knts.
Tide / current	Ebbing / 0.2 to 0.5 knts.
Density	0.7 to 0.8 specific gravity
Layer thickness	0.7 to 0.8 mm approx.
Air / Sea temp.	35 deg C / 29 deg C
Predicted slick movement	Towards break water
Size of spill classification (Tier 1, 2 or 3)	Tier 1

POLREP **ANNEXURE 2**

In case of an oil spill, MPSEZ will provide information to Commandant Coast Guard District 1 Porbandar COMDIS 1 and Coast Guard Station Vadinar CGS Vadinar in the following format:

SN.	Parameter	Data
1.	Identity of the informant	Boat Anjali
2.	Time of information receipt	10:00 hrs
3.	Source of Spill	Unknown
4.	Cause of Spill	Unknown
5.	Type of oil	White Oil
6.	Colour code information	White
7.	Configuration	-
8.	Radius	5 to 8 m
9.	Tail	10 m
10.	Volume	0.3 to 0.5 cubic meter approx.
11.	Quantity	450 to 500 L
12.	Weathered or Fresh	Weathered
13.	Density	0.7 to 0.8 specific gravity
14.	Viscosity	-
15.	Wind	SW' Ly x 20 - 22 knts.
16.	Wave Height	0.1 to 0.2 m
17.	Current	0.2 to 0.5 knts.
18.	Layer Thickness	0.7 to 0.8 mm approx.
19.	Ambient air temperature	35 deg C
20.	Ambient sea temperature	29 deg C
21.	Predicted slick movement	Towards Break Water
22.	Confirm Classification of spill size	Tier 1

Page Number: 1 of 1	**Date**: 22.02.2019
Name: Santosh Oza & Rishikesh	**Position:** Radio Officer
Contact Number: 9825228673	**Signature:**

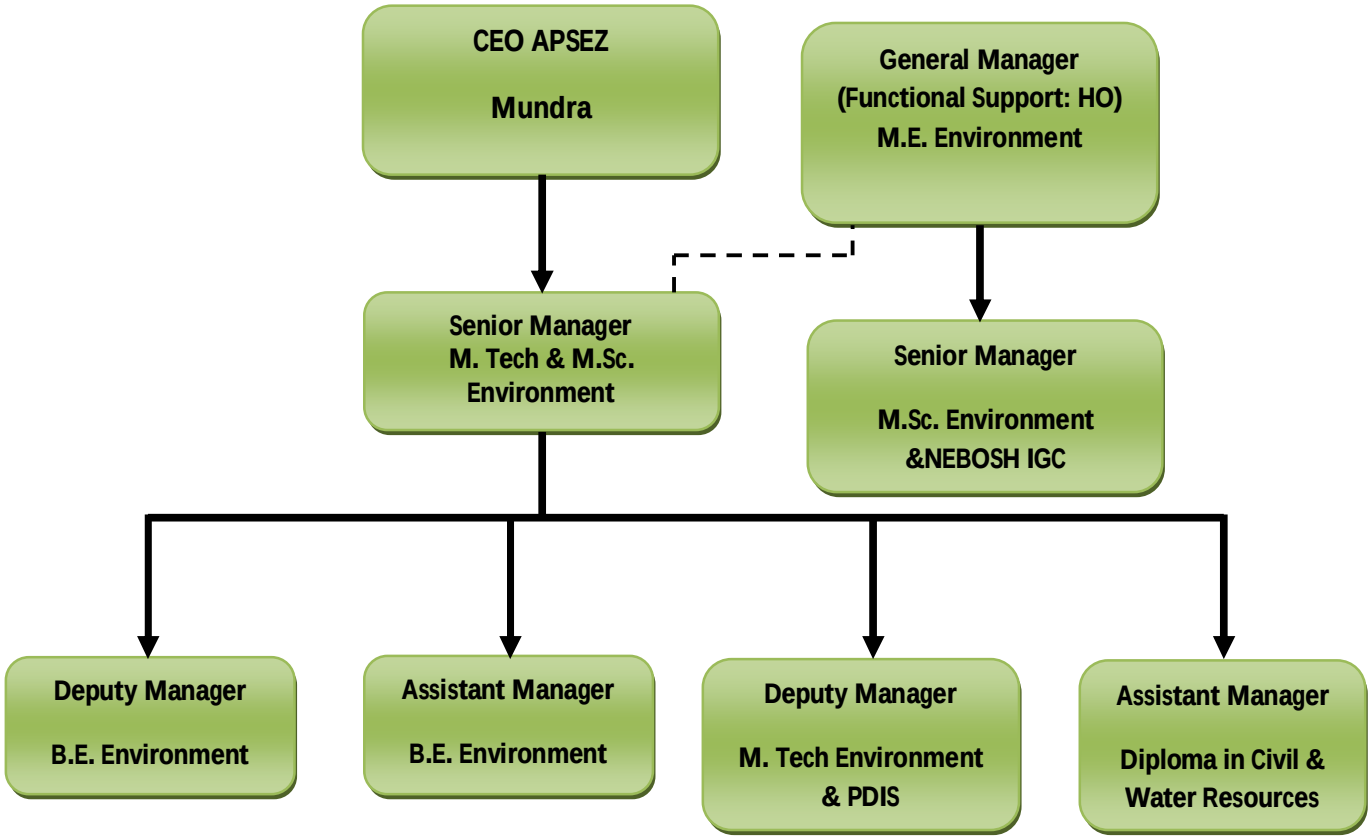
Time	Activity Completed:
10:00	Information received from Boat Anjali that there is oil patch in South Basin
10:01	Information given to HOD, HOS, SPM Manager and Informed Boat Anjali to follow the slick.
10:05	Instructed Dolphin 11 to proceed to south basis for Oil Spill Response.
10:35	Dolphin 11 reported at South Basin and deployment of Oil Spill Response started.
11:11	Dolphin 11 confirmed Boom layout of 250 m completed and skimmer deployed and Oil Recovery commenced.
12:35	Oil recovery completed. Boom and other equipment recovered onboard. Mock Drill Called Off.

PHOTOS TAKEN DURING THE DRILL

1. Capt. Anubhav Jain
2. Mr. Sanjay Kewalramani
3. Mr. M P Choudhary
4. Mr. Anand Raithatha
5. Mr. Ramdas Pawale
6. Mr. Bharmal Bishnoi
7. Mr. Y K Sharma
8. Mr. Sashikant Padave
9. Mr. Santosh Rasam
10. Mr. Vishwanath Chavan
11. Mr. Upinder Samkaria
12. Mr. Sudhakar Singh
13. Mr. Ashish Kadiyan
14. Mr. Narayan Tamhankar
15. Mr. Manoj
16. Mr. Sujit Jena
17. Mr. Jimish Patel
18. Crew of Dolphin 11
19. Crew of Boat Anjali

Annexure – 7

Organogram of Environment Management Cell, APSEZ, Mundra



Annexure – 8

Cost of Environmental Protection Measures

Sr. No.	Activity	Cost incurred (INR in Lacs)			Budgeted Cost (INR in Lacs)
		2017 – 18	2018 – 19	2019 – 20 (Till Sep'19)	2019 – 20
1.	Environmental Study / Audit and Consultancy	9.0	6.7	1.35	6.0
2.	Legal & Statutory Expenses	5.07	4.42	0.78	5.7
3.	Environmental Monitoring Services	27.02	20.36	11.23	25
4.	Hazardous / Non Hazardous Waste Management & Disposal	65.62	95.72	44.57	78.5
5.	Environment Days Celebration	2.85	0.28	3.5	10
6.	Treatment and Disposal of Bio-Medical Waste	1.13	1.21	0.68	1.5
7.	Mangrove Plantation, Monitoring & Conservation	60.0	47.0	Nil	Nil
8.	Other Horticulture Expenses	547.0	579.32	546.60	696.46
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	70.02	144.29	43.42	116.44
10.	Expenditure of Environment Dept. (Apart from above head)	102.15	109.28	75.13	102.5
	Total	**889.86**	**1008.58**	**727.26**	**1042.10**

Annexure – 9

adani

PCB ID: 17739

APSEZ/EnvCell/2019-20/034

Date: 30.08.2019

To,
Regional Officer,
Regional Office (East – Kutch),
Gujarat Pollution Control Board,
Gandhidham – 370201.

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

Reference: GPCB Inspection letter dated 27.08.2019, PCB ID: 17739 (**Annexure – A**)

Dear Sir,

With reference to the above mentioned subject and references, APSEZ is submitting the compliance details of your instruction are as below:

Our Reply against your Instruction:

- ✓ Tank wise liquid cargo stock within storage terminal as on 27th Aug, 2019 is enclosed as **Annexure – B**.
- ✓ Category wise hazardous waste stock as on 27th Aug, 2019 is enclosed as **Annexure – C**.

APSEZ 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 Limited**

Authorised Signatory

Copy to:
Unit Head (Kutch Unit),
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector – 10A,
Gandhinagar – 382010.

Received
Gujarat Pollution Control Board
Regional Office
Kutch (East)

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

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

O/C

adani

PCB ID: 17739

APSEZ/EnvCell/2019-20/034 **Date:** 30.08.2019

To,
Regional Officer,
Regional Office (East – Kutch),
Gujarat Pollution Control Board,
Gandhidham – 370201.

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

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Thanking you,
For, **Adani Ports and Special Economic Zone Limited**

Authorised Signatory

Copy to:
Unit Head (Kutch Unit),
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector – 10A,
Gandhinagar – 382010.

12/9/19
Gujarat Pollution Control Board
Sector No. 10 A,
Gandhinagar - 382 010

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

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

ANNEXURE - A

ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડ

પ્રાદેશિક કચેરી : કચ્છ (પૂર્વ)

દિનદયાલ પોર્ટ ટ્રસ્ટનું વહીવટ મકાન રૂમ નં. ૨૧૫, ૨૧૬, ૨૧૭, બીજો માળ,
સેક્ટર નં. ૮, ગાંધીધામ-૩૭૦૨૦૧, કચ્છ. ફોન : ૦૨૮૩૬-૨૩૦૮૨૮

તપાસ માટે દાખલ થવાની સૂચના (નોટીસ)

પાણી અધિનિયમ ૧૯૭૪ ની કલમ - ૨૩, હવા અધિનિયમ ૧૯૮૧ ની કલમ - ૨૪ અને પર્યાવરણ (સુરક્ષા) અધિનિયમ - ૧૯૮૬ની કલમ-૧૦ હેઠળ બાયો મેડીકલ વેસ્ટ નિયમ-૨૦૧૬ હેઠળ અમોને મળેલ સત્તાની રૂએ અમો નીચે સહી કરનાર અમોને જરૂરી લાગે તેની સહાય લઇને તમામ સમયે નીચેના હેતુઓ માટે આપની જગ્યામાં દાખલ થવાનો અને તપાસ કરવાનો અધિકાર ધરાવીએ છીએ.

(૧) અમોને સોંપેલા રાજ્ય બોર્ડ/કેન્દ્ર સરકારના કાર્ય બજાવવાના હેતુ માટે

(૨) આવા કોઇ કાર્યો બજવવાના છે કે કેમ અને તેમ હોય તો કઇ રીતે બજાવવાના છે અથવા આ અધિનિયમ અથવા તે હેઠળ કરેલા નિયમોની અથવા આ અધિનિયમ હેઠળ બજાવેલી કોઇ નોટીસની, કરેલા કોઇ હુકમની, આદેશની અથવા આપેલા કોઇ અધિકાર પત્રની કોઇ જોગવાઇનું પાલન કરવામાં આવી રહ્યું છે કે પાલન કરવામાં આવ્યું છે કે કેમ તે નક્કી કરવાના હેતુ માટે.

(૩) કોઇ સાધન સામગ્રી, ઔધોગિક પ્લાન્ટ રેકર્ડ, રજીસ્ટર, દસ્તાવેજ અથવા અન્ય કોઇ મહત્વની વસ્તુની તપાસ કરવા અને તેની કસોટી કરવાના હેતુ માટે અથવા જે જગ્યામાં તેને એમ માનવાને કારણ હોય કે આ કાયદા કે તે હેઠળ કરેલા નિયમો મુજબ કોઇ ગુનો કરવામાં આવ્યો છે, અથવા થવાની તૈયારીમાં છે, તેવી કોઇ જગ્યાની ઝડતી લેવા માટે અને તેને એમ માનવાને કારણ હોય કે આ કાયદા કે તે હેઠળ કરેલ નિયમો હેઠળ કરેલ શિક્ષાપાત્ર કોઇ ગુનો કર્યાનો પુરાવો, તેવા સાધન સામગ્રી ઔધોગિક પ્લાન્ટ, રેકર્ડ, રજીસ્ટર, દસ્તાવેજ અથવા અન્ય મહત્વની વસ્તુ કબજે લેવા માટે અમે નીચે જણાવેલ સમયે દાખલ થઇએ છીએ.

ઉદ્યોગ/.....માં દાખલ થવાનો સમય : સવારના / સાંજના....17:50....તા. 27/08/2019

અમારી સાથે સહાય માટે નીચેની વ્યકિતઓ પણ છે.

૧. R. J. Acharya - AEE

૨. H. R. Parmar - APE

૩. I

PCB/ID/- 17739

પ્રતિ,

Adani Ports & SEZ Ltd;
P.O. Mundra (GIDC), Taluka Mundra; Kutch.

નકલ મળેલ છે.

આ સુચના (નોટીસ) મેળવનારની સહી

(Mr. Sumit Patiwal)
Head - Environment

સહી :

અધિકારીનું નામ : K. B. Chaudhari

હોદ્દો : RO.

ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડ

પ્રાદેશિક કચેરી : કચ્છ (પૂર્વ)

દિનદયાલ પોર્ટ ટ્રસ્ટનું વહીવટ મકાન રૂમ નં. ૨૧૫, ૨૧૬, ત્રીજો માળ,
સેક્ટર નં. ૮, ગાંધીધામ-૩૭૦૨૦૧, કચ્છ. ફોન : ૦૨૮૩૬-૨૩૦૮૨૮

પ્રતિ,

Adani Ports & ~~AP~~ SEZ Ltd.
Plot no:- 169/P ; at. Navinal
Island, T.T- Mundra ; Dist.:- Kutch

તારીખ : 27-05-2019

જીપીસીબી આઇડી : 17739

ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડના અધિકારીઓ દ્વારા આપના એકમની આજરોજ જુદા જુદા પર્યાવરણીય નિયમોને આધિન સ્થળ મુલાકાત લેવામાં આવેલ.આપના એકમના સ્થળ મુલાકાત દરમ્યાન કરેલ અવલોકનો, આપે આપેલ માહિતી / દસ્તાવેજો અને પર્યાવરણીય નિયમોની જોગવાઇ આધીન, આપને નીચે મુજબ સુચનાઓ આપવામાં આવે છે જેની પૂર્તતા/સ્પષ્ટતા અંગેનો અહેવાલ (કોમ્પલાયન્સ રીપોર્ટ) આ આદેશ મળ્યાની તારીખથી કામકાજના દિવસ-૩ માં લેખીત/એક્ષજીએન/ઇલેક્ટ્રોનિક માધ્યમ મારફતે બોર્ડની વડી કચેરી ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડ, પર્યાવરણ ભવન, સેક્ટર ૧૦-એ, ગાંધીનગર-૩૮૨૦૧૦ ને આ કચેરીની જાણ હેઠળ અચૂક મોકલી આવવો.

(1) liquid storage terminal જ્યાં storage material Stock tank wise રજુ કરવા category wise Hazardous waste ના Stock ની Ledger રજુ કરવી.

એકમના પ્રતિનિધિનું નામ અને હોદ્દો

(Mr. Sumit Patwal)	(H.R. Parmar)	(R.J. Acharya)	(K.B. Chaudhary)
Head - Environment	APE	AEE	RO

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ANNEXURE – B

SN	Tank No.	Existing / Previous Product	Existing stock in MT
1	T-1	CRUDE SOYABEAN OIL	2109.498
2	T-2	CRUDE SOYABEAN OIL	1478.132
3	T-3	PALM KERNEL FATY ACID DISTILLATE	263.077
4	T-4	ALPHAPLUS C-20/24	184.457
5	T-5	HEAVY WHITE OIL	1687.96
6	T-6	CRUDE GLYCERINE	2186.872
7	T-7	F. O.	830.785
8	T-8	F. O.	211.995
9	T-9	CRUDE SUNFLOWER OIL	1288.105
10	T-10	ALPHAPLUS (R) 1-DODECENE	757.819
11	T-11	CRUDE SUNFLOWER OIL	1250.775
12	T-12	CRUDE GLYCERINE	797.272
13	T-13	OLEFINS(C13+ALL ISOMERS)ALPHAPLUS (R)C24-28	848.251
14	T-14	DENATURED ETHYL ALCOHOL	1102.048
15	T-15	LINEAR ALKYL BENZENE	1045.641
16	T-16	CRUDE SOYABEAN OIL	600.042
17	T-17	DENATURED ETHYL ALCOHOL	0.1
18	T-18	DENATURED ETHYL ALCOHOL	Nil
19	T-19	DENATURED ETHYL ALCOHOL	755.556
20	T-20	PETROLEUM HYDROCARBON PLUS	699.97
21	T-21	DENATURED ETHYL ALCOHOL	760.98
22	T-22	DENATURED ETHYL ALCOHOL	754.582
23	T-23	DENATURED ETHYL ALCOHOL	84.201
24	T-24	LINEAR ALKYL BENZENE	28.645
25	T-25	DENATURED ETHYL ALCOHOL	1118.079
26	T-26	VINYL ACETATE MONOMER	473.042
27	T-27	PETROLEUM HYDROCARBON SOLVENT	759.71
28	T-28	ACETIC ACID	Nil
29	T-29	ACETIC ACID	Nil
30	T-30	METHANOL	721.123
31	T-31	METHANOL	Nil
32	T-32	DENATURED ETHYL ALCOHOL	Nil
33	T-33	DENATURED ETHYL ALCOHOL	758.863
34	T-34	METHANOL	2202.179
35	T-35	LINEAR ALKYL BENZENE	1005.495
36	T-36	DENATURED ETHYL ALCOHOL	746.676
37	T-37	DENATURED ETHYL ALCOHOL	Nil
38	T-38	PETROLEUM HYDROCARBON SOLVENT	145.34
39	T-39	ACETIC ANHYDRIDE	994.91
40	T-40	ACETIC ACID	46.517
41	T-41	CARBON BLACK FEED STOCK	89.407
42	T-42	CARBON BLACK FEED STOCK	108.497
43	T-43	CARBON BLACK FEED STOCK	78.167
44	T-44	CARBON BLACK FEED STOCK	3969.538
45	T-45	CRUDE GLYCERINE	5434.791
46	T-51	DENATURED ETHYL ALCOHOL	3795.873
47	T-52	DENATURED ETHYL ALCOHOL	3808.276
48	T-53	DIETHYLENE GLYCOL	1753.342
49	T-54	DENATURED ETHYL ALCOHOL	3808.187
50	T-55	DENATURED ETHYL ALCOHOL	3666.574
51	T-56	DENATURED ETHYL ALCOHOL	3789.477
52	T-57	CRUDE SUNFLOWER OIL	4464.542
53	T-58	CRUDE SOYABEAN OIL	2585.861
54	T-59	CRUDE SOYABEAN OIL	217.812
55	T-60	CRUDE PALM STEARIN	4083.556
56	T-61	RBD PALM STEARIN	3773.897
57	T-62	CRUDE PALM OIL	82.44
58	T-63	CRUDE SUNFLOWER OIL	4396.703
59	T-64	CRUDE SOYABEAN OIL	Nil
60	T-65	CRUDE SUNFLOWER OIL	4382.376
61	T-66	CRUDE SOYABEAN OIL	4441.261
62	T-67	CRUDE PALM STEARIN	4081.051
63	T-68	CRUDE PALM STEARIN	3957.749

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

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SN	Tank No.	Existing / Previous Product	Existing stock in MT
64	T-69	CRUDE SOYABEAN OIL	4388.316
65	T-70	CRUDE SOYABEAN OIL	750.883
66	T-71	CRUDE SOYABEAN OIL	0.046
67	T-72	FATTY ACID C1618 UNDISTILLED	3155.932
9	T-73	CRUDE PALM KERNEL OIL	4248.324
69	T-74	CRUDE SUNFLOWER OIL	4430.727
70	T-75	FATTY ACID C1618 UNDISTILLED	177.396
71	T-76	CRUDE SOYABEAN OIL	14071.563
72	T-77	CRUDE SOYABEAN OIL	12037.572
73	T-101	GAS OIL (HSD)	6641.515
74	T-102	DENATURED ETHYL ALCOHOL	12015.588
75	T-103	NAPHTHA	3850.37
76	T-104	SUPERIOR KEROSENE OIL	2601.796
77	T-105	CARBON BLACK FEED STOCK	3591.307
78	T-106	F. O.	Nil
79	T-107	F. O.	3734.832
80	T-108	F. O.	9298.044
81	T-113	METHANOL	1445.182
82	T-114	DENATURED ETHYL ALCOHOL	3798.384
83	T-115	METHYL TERTIARY BUTYL ETHER	3443.2
84	T-116	DENATURED ETHYL ALCOHOL	3552.196
85	T-117	CAUSTIC SODA LIQUID	4493.478
86	T-118	DENATURED ETHYL ALCOHOL	3481.691
87	T-119	METHYL TERTIARY BUTYL ETHER	3109.97
88	T-120	METHANOL	2448.584
89	T-121	NAPHTHA	1107.949
90	T-122	METHANOL	2431.346
91	T-123	METHANOL	2282.432
92	T-124	DENATURED ETHYL ALCOHOL	714.938
93	T-125	DENATURED ETHYL ALCOHOL	2444.56
94	T-126	DENATURED ETHYL ALCOHOL	873.589
95	T-127	DENATURED ETHYL ALCOHOL	Nil
96	T-128	DENATURED ETHYL ALCOHOL	2508.219
97	T-201	BITUMEN	2595.95
98	T-202	BITUMEN	2293.09
99	T-203	BITUMEN	Nil
100	T-204	BITUMEN	2806.7
		TOTAL	**226293.743**

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

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

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ANNEXURE – C

Sr. No.	Type of Hazardous Waste	Sch / Cat.	Approx. Stock Quantity in MT As on 27.08.2019
1	Used/Spent Oil	Sch-I/5.1	75.0
2	ETP Sludge	Sch-I/35.3	2.0
3	Sludge & Filters contaminated with oil	Sch-I/3.3	2.0
4	Waste Residue Containing Oil / Oily Rags	Sch-I/33.2	3.0
5	Pig Waste	Sch-I/3.1	0.9
6	Tank Bottom sludge	Sch-I/3.2	1.8
7	Discarded containers/ barrels	Sch-I/33.3	2.5
8	Asbestoses Waste	Sch-I/15.2	Nil
9	Glass wool Waste (Thermal Insulation Material)	Sch-II/C-9	Nil
10	Downgrade Chemicals	Sch-I/20.2	Nil
11	Waste Oil	Sch-I/5.2	Nil
12	Expired Paint Material	Sch-I/21.1	0.2

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Adani House,
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Gujarat, India

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www.adani.com

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