

Ref No. APMT/ENV/MoEF&CC/EC&CRZ/21-22/07

Dated;30-Nov-2021

To,
The Principal Chief Conservator of Forests (C),
Ministry of Env., Forest and Climate Change
Regional Office (Western Zone),
Kendriya Paryavaran Bhawan,
E-5 Arera Colony, Link Road-3,
Ravishankar Nagar, Bhopal-462016

Sub: Submission of Six-Monthly Compliance Status of Environmental & CRZ Clearance Report for APM Terminal- Pipavav, Rajula- Gujarat.

Ref:

1. Environmental Clearance Letter No.: 10-91/2009-IA.III, dated; 5 June 2012.
2. EC Amendment Vide No. 11-91/2009-IA.III, dated; 18 Feb 2014.
3. EC Amendment Vide No. 11-91/2009-IA.III, dated; 30 March 2015.
4. EC Amendment Vide No. 11-91/2009-IA.III, dated; 02 Sep 2019.

Respected Sir,

With reference to the above subject, please find enclosed Six- Monthly (Half Yearly) Environmental Clearance (EC) and CRZ Clearance Compliance Status report for the period of April-2021 to Sep-2021 along with Environmental Parameters Report and Corporate Social Responsibility status report.

kindly acknowledge the receipt of these reports.

Continued....

Thanking You,

Yours faithfully

For APM Terminal Pipavav


Sanjay Singh
Head- HSSE Improvement
APM Terminals, Pipavav
Post- Uchhaiya, Taluka-Rajula
District- Amreli, Pipavav Port-365560



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CC:

1. **The Chairman, Zonal Office**-Central Pollution Control Board, Parivesh Bhavan, Opp. VMC ward Office No. 10, Subhanpura, Vadodara-390023
2. **The Member Secretary**, Gujarat Pollution Control Board, Paryavaran Bhavan, Opp. Bij Nigam, CHH Road, Sector 10A, Gandhinagar, Gujarat 382010.
3. **The Regional Officer**, Gujarat Pollution Control Board, Swastik Complex, 1st Floor, Plot No. 1616/1617, Near Vir Mokhadaji Circle, Ghogha Road, Bhavnagar-364001(Gujarat).
4. **Director (IA-III)**, Monitoring Cell, Ministry of Environment, Forest & Climate Change, CGO Complex, Lodhi Road, New Delhi-110003.

Encl: EC & CRZ Compliance Report (April-2021 to Sep-2021)

**SIX MONTHLY COMPLIANCE REPORT
OF
ENVIRONMENT & CRZ CLEARANCE
GUJARAT PIPAVAV PORT LIMITED
(APM TERMINAL-PIPAVAV)**

**At
RAJULA, DISTRICT- AMRELI
GUJARAT**

Submitted to:

**Ministry of Environment Forest & Climate Change, (WR Office) Bhopal
Ministry of Environment Forest & Climate Change, New Delhi
Central Pollution Control Board, Zonal Office (Vadodara)
Gujarat Pollution Control Board-Bhavnagar/Gandhinagar (HO)**

Submitted by:

**APM Terminals Pipavav
Gujarat Pipavav Port Ltd.
Post Office- Rampara No.2, Village- Rajula
District- Amreli, Gujarat-365560-India**

PERIOD: APRIL 2021- SEPTEMBER 2021

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited**

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**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited**

1.0: Introduction:

1. Gujarat Port Pipavav is operated by APM Terminals, part of the A.P. Moller-Maersk Group, one of the largest container terminal operators in the world.
2. APM Terminals operate a network of 76 ports globally.
3. Port Pipavav is in Saurashtra region in the state of Gujarat, 152 nautical miles northwest of Mumbai (less than ten hours steaming time) on the west coast of India. Approximately 140 kilometers southwest of Bhavnagar, situated at a latitude of 20°54'N and a longitude of 71°30'E. Port Pipavav is an all-weather port in the state of Gujarat and provides immediate access to a rich hinterland and key markets in northwest India.
4. All the operation related permits, including Environmental Clearance, Forest Clearance, CRZ Clearance from MOEF&CC and consents from Gujarat Pollution Control Board, are in place.
5. Annual Environmental quality monitoring in & around the port site is being done by M/s. Kadam Environmental Consultant, a NABL & MoEF&CC approved Laboratory.
6. Upliftment of the socio -economic status of the nearby community and society are carried out on a continuous basis through various programmes run under the company's Corporate Social Responsibility (CSR) scheme.
7. A vast green belt as per the CPCB guidelines is being developed to curb the emission and to provide an aesthetic look.
8. Point wise compliance status of Environmental Clearance for GPPL is furnished herewith.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited**

**Compliance Status on Environment & CRZ Clearance
(Gujarat Pipavav Port Limited)**

1. MOEF Ref. Letter No.: 10-91/2009-IA.III, dated 5 June 2012
2. MOEF Ref. Letter No.: 11-91/2009-IA.III, dated 18 Feb 2014
3. MOEF Ref. Letter No.: 11-91/2009-IA.III, dated 30 March 2015.
4. MOEF&CC Ref Letter No.: 11-91/2009-IA.III, dated 2 Sep 2019.

Sr. No.	Stipulation	Compliance Status
35.	Specific Condition:	
1.	The landing jetty for the mooring of ferry crafts which facilitates transport of Shiyalbet Islanders to/from the Shiyalbet Island shall be upgraded with proper connectivity as committed.	<p>Complied.</p> <p>Existing facility upgraded with concrete road facility, up to the jetty. External Paved Road of GPPL is also being used by the Villagers.</p> <p>Roads and landing jetty for Shiyalbet are damaged due to cyclone Tauktae, and the repairing works completed.</p>
2.	The coal shall be stored only in designated stock yard with dust control measures viz. wind screen of height at least 2 ft above the of coal stock, made of fabric/HDPE, water sprinkler assignment, green belt of at least three layers of suitable trees and scrubs. Use of creepers should also be exploded in consultation with the Forest Department.	<p>Being Complied.</p> <p>Major Steps Taken-</p> <ul style="list-style-type: none"> ➤ Coal has been stored in dedicated, designed COAL YARD. ➤ WATER CURTAIN has been installed on windward side of yard, which blanket the area with very fine water spray. ➤ The yard is encircled by three meters high chain link fence with synthetic mesh all around the Coal yard and with three levels tree plantations. Creepers has also planted to make green canopy on the chain link fencing.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited**

		<ul style="list-style-type: none"> ➤ Green Belt development in coal yard has restarted after the damage by cyclone Taukate. ➤ Coal water Re-circulation system is in place.
3.	<p>The project Proponent shall provide additional plantation in the gaps to develop proper filter screen.</p> <p>(a) The entry and exit points for dumper trucks shall be suitably designed with loop in and loop out arrangement of traffic and a fabric mesh for acting as a filter barrier for coal dust.</p> <p>(b) Bus frequency for Shiyalbet Island residents should be increased during peak hours so as to reduce the waiting time to 10 minutes.</p>	<p>Being Complied.</p> <p>Gap Filling and New Plantation/ sampling is being carried out on regular basis. Local villagers are engaged through local agency for green belt development works. After cyclone major plantation damaged which are now being regenerated.</p> <p>Coal yard perimeter wall and wind curtain have been damaged due to cyclone and now it is in process.</p> <p>Loop in & Loop Out Traffic Management is in practice and heavy penalty provision in port for the violation of traffic rules.</p> <p>Bus frequency increased for Shiyalbet Island residents.</p>
4	<p>The vehicle used for coal transportation to M/s. UltraTech Cement Ltd. at Jaffarabad shall be properly covered to prevent dust pollution.</p>	<p>Being Complied.</p> <p>All the raw material transportation out -side of port premises is being done only through covered trucks/ dumpers. Dedicated Safe Truck tarpaulin covering area is in place for covering the truck with tarpaulin.</p>
5.	<p>16.5 Mcum dredged material out of total 18 Mcum is proposed to be utilized for reclamation purpose in port development. The rest shall be disposed of shore at the site suggested by NIOT.</p>	<p>Noted for Compliance.</p>
6.	<p>PP shall adopt closed conveyer coal transport to the proposed power plants in the vicinity.</p>	<p>Noted for Compliance.</p> <p>At present no such facility has been set up in the immediate vicinity of the port.</p>

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited**

7.	Consent for establishment shall be obtained from Gujarat pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.	<p>Complied.</p> <p>CTE order, vide its no. PC/CCA-AMR-13(7)/GPCB ID 14808/115982, dated 22/06/2012. Which was valid up to 04/01/2017.</p> <p>The CTE was renewed and amended up to 30 April 2022, vide its order no. PC/CCA-AMR-13(7)/GPCB ID 14808/411575, dated 5/5/2017.</p>
8.	The dredge materials contain sand-46%, silt-21% and clay 33 %. However, the proponent shall carry out chemical characteristics before disposal/using it for reclamation to ensure its suitability and prevent any likely impact.	<p>Complied.</p> <p>The study of characterization has been done and submitted to MoEF&CC, DoEF, CPCB and GPCB, vide our letter no. APMT/ENV-54/5269, dated 30/01/13.</p>
9.	The storm water management shall be put in place before the commencement of the activities. Storm management report with technical details shall be submitted to RO of MoEF&CC within six months.	<p>Being Complied.</p> <p>The Concept report prepared and submitted to RO of MoEF&CC, DoEF, CPCB & GPCB, vide letter no. APMT/ENV-44/3966, dated 23/11/12 and APMT/ENV-54/5269, dated 30/01/13.</p>
10.	The proponent shall provide minimum 100 meters buffer from the mangroves. The existing mangroves shall be documented with latest satellite map and shall be submitted to RO, MoEF&CC for compliance verification purpose.	<p>Complied.</p> <p>100 meters of buffer from mangroves is maintained.</p> <p>Documentation of existing Mangroves along with provision for maintaining 100 meters buffer are being maintained and report submitted to MoEF&CC, DoEF, and GPCB, vide letter no. APMT/ENV-54/5269, dated 30/01/13.</p> <p>Mangroves are also severe damaged by the cyclone and now it is regenerated.</p>
11.	Requisite clearance including clearance from Petroleum and explosives Safety organization (PESO) formerly Explosive	<p>Complied.</p>

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	<p>Department, Nagpur shall be obtained for establishment tank farms. All relevant provisions of MSIHC Rules 1989 shall be complied.</p>	<p>PESO License (for Fuel Station) vide no. P/WC/GJ/15/384(P 143282) is valid up to 31-12-2024.</p> <p>PESO permission vide no. G-22 (47) 162, dated; 10-April-2012 for Commissioning of upgraded Sea water Based Firefighting System for handling LPG, POL and Chemicals on bulk liquid jetty at Port Pipavav.</p> <p>PESO permission vide no. G-22 (47) 162, dated; 29-Nov-2018 for Commissioning of Butadiene handling at bulk jetty no. 5 of Port Pipavav.</p>
12.	<p>Green belt of not less than 33 % shall be developed and maintained all along the boundary.</p>	<p>Being Complied.</p> <p>Total 2,55,742 plantation has been done over an area of 258 acre, with survival rate of more than 80 %.</p> <p>Plantation is being done on phased manner.</p> <p>Approx. 20% plantation damage due to cyclone and now it is regenerated.</p>
13.	<p>The dry cargo shall be unloaded into hopper and from hopper it will be taken through closed conveyor system to the storage yards.</p>	<p>Complied.</p> <p>Current closed conveyer is under structural integrity review and during the cyclone conveyor system has also suffered damaged and cannot be made operational till such time coal unloading is done through hopper with mechanical open and close system which delivers the cargo to dumpers. No coal dumping carried out on jetty complete operation is through hoppers.</p>
14.	<p>Mitigation plan for handling the dusty cargo/around storage yards as per presentation may be stipulated.</p>	<p>Being Complied.</p> <p>An Environmental Steering Committee is formed at site to monitor and implement the</p>

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		<p>best environmental practices as per mitigation plan/ guidelines issued by MoEF&CC, CPCB & GPCB.</p> <p>Continuous monitoring & assessment of plan/ guidelines is being carried out by the team on regular basis.</p>
15.	There shall be no ground water drawl within CRZ area.	<p>Complied.</p> <p>The Port has piped water (Narmada Water) connection by M/s. Gujarat Water Infrastructure Ltd.- Barwala.</p> <p>Withdrawal of ground water within CRZ area of Port is strictly prohibited and there is no ground water withdrawal in port area for any purpose.</p>
16.	Sewage shall be treated, and the treatment facility shall be provided in accordance with the Coastal Regulation Zone notification, 2011.The disposal of treated water shall confirm the regulation of State pollution Control Board.	<p>Complied.</p> <p>A modern technology, MBBR based Sewage Treatment Plant having capacity of 370 KLD for Residential Colony is installed and operational since June,2015. Another,80 KLD capacity mechanized tank STP is installed and operational near 370 KLD STP for Residential Colony.</p> <p>For Port, 25 KLD capacity STP is installed and operational near jetty.</p> <p>Treated water from both the STP is being re-used for green belt development and as sprinkling purpose to reduce fugitive emissions.</p> <p>Sample of STP inlet and Outlet is being analyzed by NABL & MoEF&CC approved laboratory and being submitted to the authorities.</p>

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17.	Solid waste management shall be as per Municipal Solid waste (management and handling) Rules, 2000.	<p>Being Complied.</p> <p>3Types of bins (Bio-degradable, Non-biodegradable & hazardous wastes) placed in various locations across the port and in residential township. Solid waste is being segregated from these bins by local Vendors and being disposed of by them.</p> <p>Plastic waste, wooden waste, E- waste, MS Scrap waste and HW are being collected from the site and stored in Hazardous Waste Storage area from there it is being sold out to authorized Recycler/Re-processors.</p> <p>Organic Waste Converter Machine (OWC) is installed at the site for the conversion of Organic Waste into the form of green Manure. <i>An Eco-friendly Initiative.</i></p> <p>Woodchipper/Mulch Machine has installed at the site to use the green belt waste like branches and stem coming out during maintenance of trees like trimming and all, and it is converted in to woodchipper. Woodchippers will use in green belt development to retain moisture in the soil, prevents soil erosion and will maintain the soil nutrients.</p>
18.	The project shall be executed in such a manner that there shall not be any disturbance to the fishing activity.	Noted and Agreed.
19.	It shall be ensured that there is no displacement of people houses or fishing activity as a result of the project.	<p>Complied.</p> <p>No Displacement of people due to existing and/or proposed activities.</p>
20.	No construction works other than those permitted in Coastal Regulation Zone	Noted for Compliance.

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	notification shall be carried out in Coastal Regulation Zone area.	
21.	The project proponent shall set up separate environment management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied. Separate Environment Management Cell is setup with qualified Environment background professional and the cell is headed by General Manager- HSSE, who directly report to Managing Director- APM Pipavav Port.
22.	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Being Complied. Separate Budget allotted for Environmental protection in every financial year under Budget Head HSSE [cost center (internal) 242 and GL Account 522650 to 105610].
36. General Standards:		
1.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Noted for Compliance. All appropriate measures will be taken well in advance during start of Project Construction activities.
2.	Fully support shall be extended to the officers of this Ministry/Regional Office by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Noted & Adhered.
3.	A six -monthly monitoring report shall need to be submitted by the project proponent to the Regional Office of this Ministry at Bhopal regarding the implementation of the stipulated conditions.	Being Complied. Half Yearly Compliance report is being submitted to Regional Office of MoEF&CC at Bhopal/ New Delhi, Gujarat Pollution Control Board-Bhavnagar/ Gandhinagar, along with Environmental Parameters Monitoring reports & CSR details as per timeline stipulated by MoEF&CC.

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4.	Ministry of Environment & Forest or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary, in the interest of environment and the same shall be complied with.	Noted & Agreed.
5.	The ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted & Agreed.
6.	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forest.	Noted for Compliance.
7.	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Complied. Existing project is self-financed. For Expansion Project if lenders (Bank’s) are involved authorities will be intimated in advance.
8.	A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.	Complied.
9.	Gujarat pollution control Board shall display a copy of the clearance letter at the Regional Office, district industries Centre and Collector’s office/Tehsildar’s Office for 30 days.	Complied.
10.	These stipulations would be enforced among others under the provisions of Water	Noted.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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	(prevention and control of pollution) Act 1974, the Air (prevention and control of pollution) Act 1981, the Environment (protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA notification, 1994, including the amendments and rules made thereafter.	
11.	All other statutory clearance such as the approvals for storage of diesel from Chief Controller of Explosives, Fire department, Civil Aviation Department, Forest Conservation Act, 1980 and Wild life (protection) Act, 1972 etc. shall be obtained, as applicable by the project proponents from the respective competent authorities.	Complied. PESO License (for Fuel Station) vide no. P/WC/GJ/15/384(P 143282) is valid up to 31-12-2024.
12.	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded environmental clearance and copies of clearance letters are available with the Gujarat Pollution Control board and may also be seen on the website of the ministry of Environment and Forest at http://www.envfor.nic.in . The advertisement should be made within 10 days from the date of receipt of clearance letter and a copy of the same should be forwarded to the Regional Office of this ministry at Bhopal.	Complied. Advertisement for EC approval published in two local News Papers, <u>AVADH TIMES-AMRELI</u> (in Gujarati) and <u>FINANACIAL EXPRESS</u> (in English, all edition) on 11 April-2015.
13.	Environment clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	Noted. EC & CRZ Clearance is valid up to 04-June-2022.
14.	A copy of the clearance letter shall be sent by the proponent to be concerned Panchayat, Zilla Parishad/municipal Corporation, urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any,	Complied. https://www.apmterminals.com/en/pipavav/CSR/environment

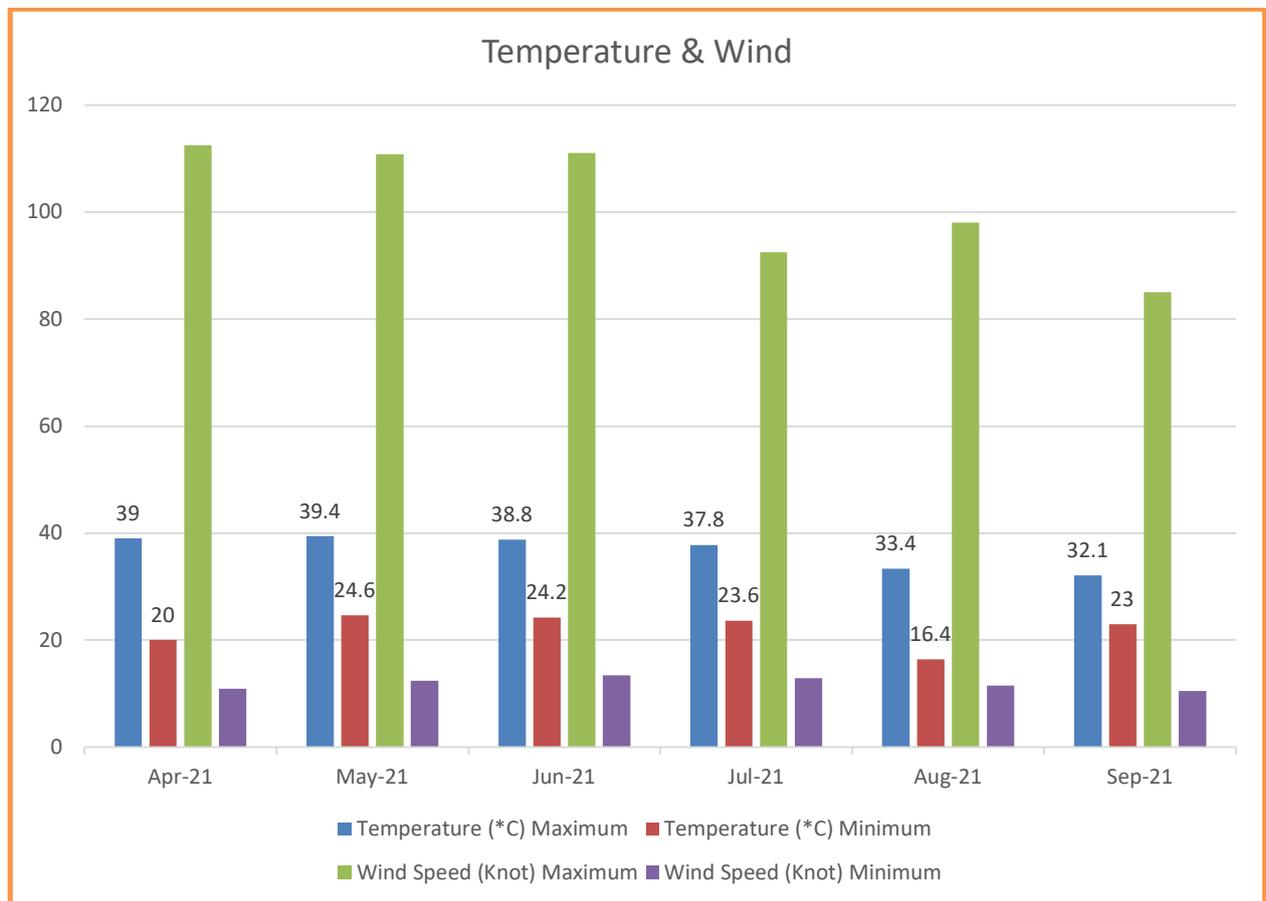
**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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	<p>were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.</p>	
15.	<p>The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB</p>	<p>Being Complied. https://www.apmterminals.com/en/pipavav/CSR/environment Half yearly Compliance report is also being submitted in hard & soft copy to the concerned authorities. Last half yearly compliance report submitted on 26-May-2021, vide No. APMT/ENV/MoEF&CC/ EC&CRZ/21-22/04.</p>
16.	<p>The environmental statement for each financial year ending 31st March in FORM-V as is mandated to be submitted by the project proponent to the concerned State pollution Control Board as prescribed under the Environment (Protection) Rules, 1986 as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e mail.</p>	<p>Being Complied. Last Environment Statement Report is submitted in Form-V to the concerned Authorities vide no. APMT/ENV/GPCB/ES/21-22/05 dated; 17-Sep-2021. https://www.apmterminals.com/en/pipavav/CSR/environment</p>

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited
METEOROLOGICAL DATA OF APM PORT PIPAVAV**

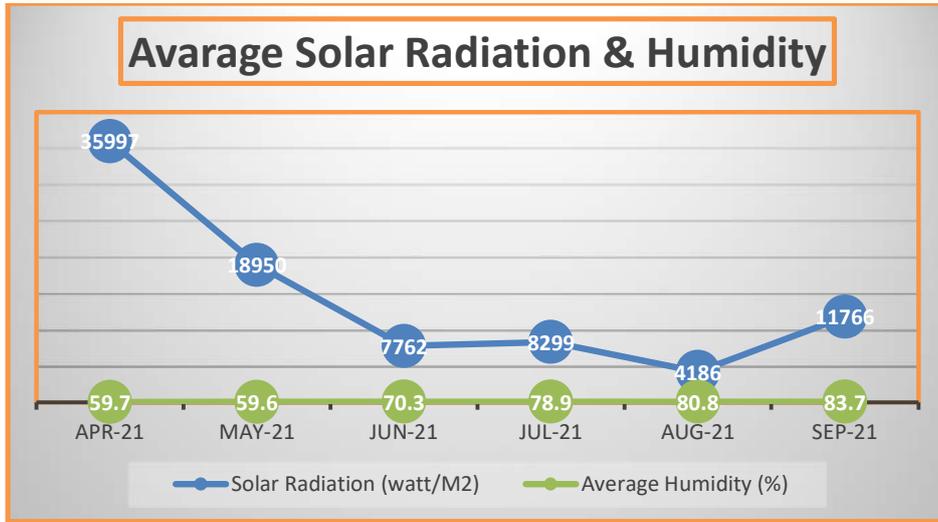
APM Port Pipavav has installed Meteorological Station at the roof of Marine Building, which are near to jetty. Details of Ambient Temperature, Wind Speed, Barometric Pressure, Humidity and Rain fall for the period **April- 2021 to September-2021** are as:

Month	Temperature (*C)		Wind Speed (Knot)		Solar Radiation (watt/M2)	Average Humidity (%)	Total Rainfall (mm)
	Maximum	Minimum	Maximum	Minimum			
Apr-2021	39.0	20.0	112.5	10.9	35997	59.7	0.0
May-2021	39.4	24.6	110.8	12.4	18950	59.6	0.0
June-2021	38.8	24.2	111.0	13.4	7762	70.3	0.0
July-2021	37.8	23.6	92.5	12.9	8299	78.9	18.9
Aug-2021	33.4	16.4	98.0	11.5	4186	80.8	14.4
Sep-2021	32.1	23.0	85.0	10.5	11766	83.7	436.2

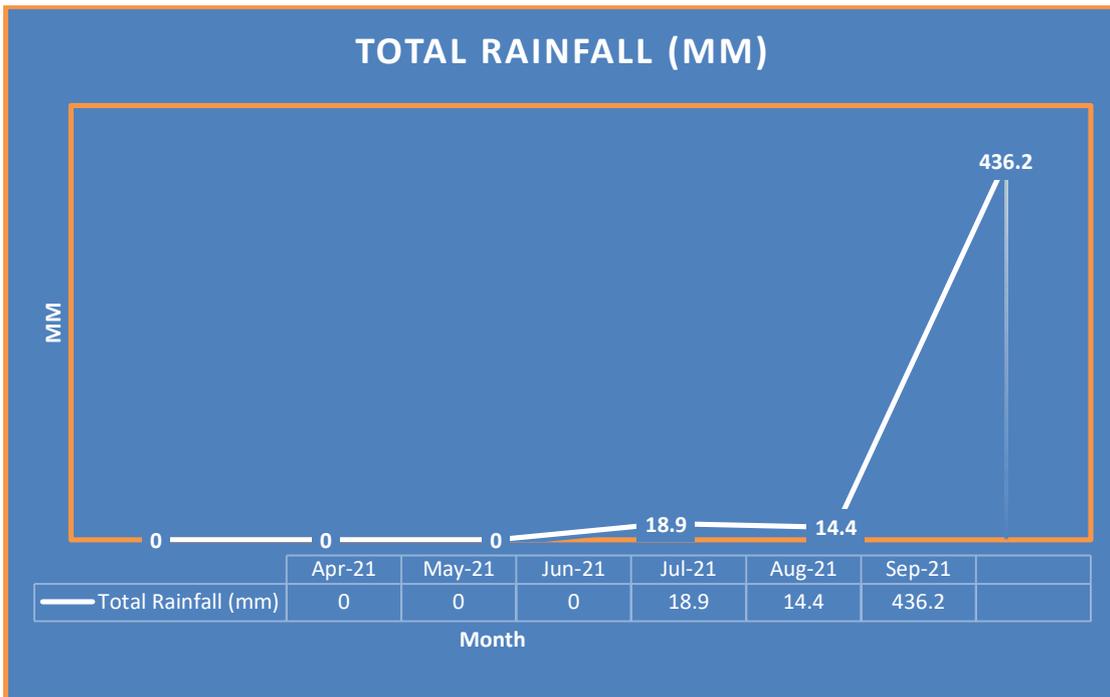


Ambient Temperature & Wind Speed Data for the Period April 2021 to Sep-2021

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited**



Average Relative Humidity & Solar radiation Data for the Period April 2021to Sep-2021



Rain Fall Data for the Period April-2021 to Sep-2021

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited
ENVIRONMENTAL MONITORING AT APM PORT PIPAVAV**

1. Ambient Air Quality:

The scenario of existing Ambient Air Quality in the study area has been assessed through a network of 04 Ambient Air Quality locations which is inside & outside the port premises. One station is in buffer zone area and the rest 3 are in core zone area. The monitoring network in the air quality surveillance program has been established based on wind direction i.e. 1 location in upwind direction, 2 locations are in downwind direction & 1 in crosswind direction.

A third party NABL & MOEF&CC accredited laboratory, M/s. Kadam Environmental Consultant has been entrusted for carrying out Environmental monitoring, analysis & reporting of environmental parameters at locations designated within and outside port premises.

Pre-calibrated Fine dust samplers have been used for carrying out ambient air quality monitoring in line with provisions of National Ambient Air Quality Standards-2009 (NAAQS). The parameters monitored are PM₁₀, PM_{2.5}, Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) & Carbon Mono Oxide (CO). Environmental Monitoring activities at the site not performed in the month of April-2020 and up to May-2020 due to the COVID-19 restrictions imposed by Gov. of India.

- 2. Flue Gas Emission:** Stack emission for 3 no. DG sets, analyzed for the parameters Particulate Matter (PM), Oxides of Nitrogen (NO_x) and Sulphur Di Oxide (SO₂) and all the results are well within the CPCB/GPCB limits.
- 3. Noise Environment:** Noise level being monitored in Ambient, Work zone & for Occupational area at approx. 15 Locations on monthly basis. The noise levels at each location were recorded for 24 hours (Day & Night), using integrated sound level meter, and all the results are well within stipulated norms.
- 4. Water Quality:** The existing status of water quality for sea water and surface water was assessed by collecting the water samples from sea, Narmada river and water storage tank established at site. The overall water quality parameters have been found to be below the stipulated permissible limits.
- 5. Wastewater Quality:** Inlet & Outlet samples of sewage Treatment Plant of 25 KL and 450 KL are taken and analyzed, and all the parameters are well within the limits. Treated water is being re-used for Green Belt development within Port premises.
- 6. Solid waste Analysis:** Solid waste is being taken care of by Amreli Municipal Corporation approved vendor on day-to-day basis from port area along with residential colony. Test report of solid waste is well within standards.
- 7. Soil Analysis:** Soil analysis is being carried out on half yearly basis and report is being submitted along Half yearly EC Compliance Report.
- 8. Fugitive Emissions:** Fugitive emissions are being monitored in CHP area and on Jetty along with Ammonia Monitoring in Fertilizer shed on quarterly basis.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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HAZARDOUS WASTE MANAGEMENT

A well-defined hazardous waste storage yard is established at site as per the guidelines, all the waste materials collected from the site is being stored here in a designated place and from HW storage yard it is being sold out to CPCB/GPCB registered Re-cyclers/Re-processors within stipulated timeline as per Hazardous Waste Management Rules. Hazardous Waste Management Committee is formed at site for the disposal of waste as per the guidelines. Details of Hazardous waste disposed from the site is being submitted through Annual HW return.

BIO-MEDICAL WASTE MANAGEMENT

Bio-medical waste is being disposed of through M/s. Distromed (BMWTSD Facility)-Rajkot, which are authorized by GPCB. Details of waste disposed from the site is being submitted through Annual BMW return.

COVID-19: For the collection of Masks, face shield, Aprons & Hand globes a bio-waste designated bins are placed at various places in the Port Premises area. Bins are already marked with Bio-Hazard symbol. Bio-Waste from bins are being collected in yellow color-coded bags and being dispose to M/s. Distromed on every alternate day.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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**CORPORATE SOCIAL RESPONSIBILITY REPORT
(CSR REPORT April-2021 TO September-2021)**

Tree Plantation: Project area: 16 Villages

Duration: April 2021 to Sep.2021 Numbers of plants: - 16456

Brief description: Trees and forests provide a habitat for many species of animals and plants. Tropical rainforests are among the most biodiversity habitats in the world. Trees provide shade and shelter, timber for construction, fuel for cooking and heating, and fruit for food as well as having many other uses.

Impact: Reducing erosion and moderating the climate, reduction of carbon dioxide from the atmosphere, shelter for related biotic resources, biomass for manure and fuel.

Sr No.	Village	Planted on 2021-22
1	Bhachadar	100
2	Charodiya	50
3	Kotdi	50
4	Uchaiya	800
5	Vad	1200
6	Bherai	470
7	Rampara	250
8	Kumbhariya	8392
9	Japodar	100
10	Davka	150
11	Nigala	70
12	Devpar	822
13	Divlo	390
14	PIPAAV	2400
15	Thavi	900
16	Padar (Rampara-2)	2012
	total	16456



**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Biomass stove support

- Project area: 1 Villages
- Duration: April 2021 to Sep. 2021
- Numbers of unit: - 40
- Reasons behind this activity: -
- Brief description: Biomass Chula support- This activity has done in 40 needy family of Bherai, Thavi village
- **Impact**
About in which activity 40 needy/ BPL family (225 family members) of Bherai Thavi village covering. And improve human health and environment health, 50% wood fuel saving.



Desilting (deepening) of Pond and Check dam

Project area:2 Villages
Number of check dam: 3 unit
Duration: April 2021 to Sep.2021
Reason behind this activity: Harvesting the rainwater, help in increasing water level and reduce TDS.

Brief description: – It comprises of activities like construction of check dam, renovation of existing check dam and pond deepening of structures for increasing its water harvesting capacity. Deepening work in 3 sites and construction renovation of structures in 3 sites were undertaken to benefit 123 farmers and villages and by converting 120 Ha of rainfed area under single critical irrigation in rabbi season.

Impact: Increase water level, reduce TDS, Improve soil and quality.



Sr no	Village	activity	work	water Capacity
1	Mota Riganiyala	Delisting (deepening) of Pond	6000cmt	0.24 mcft
2	Mota Riganiyala	Delisting (deepening) of Check dem	4000cmt	0.14 mcft
3	Ningala	Delisting (deepening) of Sukani River	1212 cmt	0.040 mcft

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Vermicompost-

- Project area: 18 Villages
- Number of Vermibed: 55
- Duration: April 2021 to Sep.2021
- Reason behind this activity:Turning farmers toward organic farming reduce cost of fertilizer.
- Brief description: Vermi bed has gained popularity in both industrial and domestic settings because, as compared with conventional composting, it provides a way to treat organic wastes more quickly. It also generates products that have lower salinity levels that are therefore more beneficial to plant mediums.
- **Impact: Improve soil fertility and quality, reduce fertilizer and pesticide.**

Sr no	Villages	No unit
1	Vad	3
2	Bherai	3
3	Bhachadar	3
4	Thvi bherai	2
5	Dharano nesh	3
6	kumbhariya	3
7	kotdi	3
8	Mota Agriya	3
9	khari	3
10	Chapri	3
11	Doliya	3
12	Nani Kherali	3
13	charodiya	2
14	Dhareshvar	7
15	khakhabai	1
16	Navaagriya	3
17	Pipavav dham	1
18	Vavera	6
	Total	55

Outcomes: Reduce cost of cultivation up to 15% , Improve soil health Increasing quality base crop yield



**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Training and Capacity Building

- Project Area: -Rajula 45 villages
- Duration: April to Sep 2021
- Number of Meeting and Training 37 and 1539 farmers trained
- Reason behind this activity: Need to create a wariness about environment, how to save the environment.
- Brief description: Capacity building is the long-term, voluntary process of increasing the ability of a country to identify and solve its own problems and risks, and to maximize its opportunities. It involves both the mobilization of human, institutional and other resources and their subsequent strengthening and development.



**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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School Program

- Project area: 6 Villages
- Number of School Program: 12 (1280)
- Duration: April to Sep 2021
- Reason behind this activity: Making youth to understanding about environment.
- Brief description: Environmental education is a lifelong process with the objective of imparting to its target groups in the formal and non-formal education sectors environmental awareness, ecological knowledge, attitudes, values, commitments for actions, and ethical responsibilities for the rational use of resources and for sound and sustainable development.
- **Impact: Understanding values of nature, environment education, and ethical awareness.**

Kitchen gardening

Project area: 8 Villages

Duration: April 2021 to Sep.2021

To obtain nutritional food, Kitchen gardening activity was done among 313 BPL and Needy families. Increased production of Vegetable crop - approx. Amount Saved Rs. 1.30 lakhs

Production of Kitchen gardening																	
Sr no	Village	No of Beni	No of Family Members	Okra	Rs	Cluster bean	Rs	Ridge gourd	Rs	Bottle gourd	Rs	Cow pea	Rs	Bitter gourd	Rs	total	Rs
1	Bherai - Thavi	49	241	69	3105	45.75	2287.5	81	3240	117.25	4690	52	3380	63.5	2540	428.5	19242.5
2	Devpara	48	233	66.8	3006	51.5	2575	90	3600	98.5	3940	60.25	3916.25	69.75	2790	436.8	19827.25
3	Divlo	48	240	54.5	2452.5	42.75	2137.5	69.25	2770	94.25	3770	46	2990	42.5	1700	349.25	15820
4	Kumbhariya	30	150	52	2340	38	1900	71	2840	50	2000	45	2925	51	2040	307	14045
5	Kadiyali	47	133	66.25	2981.25	53.5	2675	77	3080	129	5160	59.75	3883.75	72.5	2900	458	20680
6	Ningala	52	213	73.3	3298.5	51.5	2575	78.5	3140	109.75	4390	53.75	3493.75	71.75	2870	438.55	19767.
7	Shiyalbet	11	47	13	585	7.75	387.5	16.5	660	19	760	9	585	9	360	74.25	3337.
8	Padar (Rampara)	28	140	60	2700	47	2350	61	2440	88	3520	64	4160	54	2160	374	17330
	Total	313	1397	454.85	20468.25	337.75	16887.5	544.25	21770	705.75	28230	389.75	25333.75	434	17360	2866.35	130049.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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રાજુલા તાલુકાના પીપાવાવ ધામમાં ગુજરાત પીપાવાવ પોર્ટ અને વી.આર.ટી.આઈ. સંસ્થા દ્વારા બાગાયતી રોપાઓનું વિતરણ કરવામાં આવ્યું

**ગુજરાત કાદમ બુલેટિન
આસિફ કાદરી (રાજુલા)**

આજે વિશ્વમાં દિવસે ને દિવસે ઓર્ગેનિક બાગાયતી પાકો નું મહત્વ વધતું જાય છે અને લોકોનાં સ્વાસ્થ્ય ની દ્રષ્ટિએ પણ ખૂબ ઉપયોગી છે તેમજ વિશ્વમાં થઈ રહેલા ક્લાઈમેન્ટ ચેન્જ ની પરિસ્થિતિ નાં કારણે વૃક્ષો અને પર્યાવરણ નું રક્ષણ કરવું પણ ખૂબ જરૂરી છે ત્યારે ગુજરાત પીપાવાવ પોર્ટ ની સી.એસ.આર પ્રવૃત્તિઓ અંતર્ગત વી.આર.ટી.આઈ સંસ્થા નાં સહયોગથી રાજુલા તાલુકાના પીપાવાવ ધામ ખાતે ગ્રામજનો ને ઘરઆંગણે ઓર્ગેનિક ફળો મળી રહે તે હેતુથી પીપાવાવ ધામમાં ગામના દરેક પરિવારોને



બાગાયતી રોપાનું વિતરણ કરવામાં આવ્યું હતું. વધુ બાગાયતી ફળોનાં રોપાઓનું વિતરણ કરવામાં આવ્યું હતું જેમાં વી.આર.ટી.આઈ. સંસ્થાનાં

કર્મચારી તથા પીપાવાવ ધામ જાગૃત સરપંચ ભાણાભાઈ ગુજરીયા, અજય શિયાળનાં હસ્તે વિતરણ કરવામાં આવ્યું હતું.

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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KADAM ENVIRONMENTAL CONSULTANTS

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(MoEF Approved)

871/B/3, Near Himalaya Machinery, GIDC Makarpura, Vadodara-10.

Phone : (O) 0265 - 6131000, 6131001



ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav			
STACK AIR QUALITY DATA			
April 2021 to September 2021			
D.G. Set Capacity	: D.G.Set (1250 KVA)		
Stack Height	: 12M		
Stack Dia	: 300 MM		
Months	Pollutants	Locations and Concentrations (in mg/Nm ³)	
		D.G.Set-1 (1250 KVA)	D.G.Set-3 (1250 KVA)
Jun-21	PM	48	42
	SO ₂	5.12	6.18
	NO _x	11.26	12.11
	CO	43.11	38.18

A handwritten signature in blue ink, appearing to be 'Santosh', is written over a horizontal line.

Approved By -

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ENVIRONMENTAL MONITORING REPORT



APM Terminals Pipavav									
AMBIENT AIR QUALITY									
April 2021 to September 2021									
Months	Pollutants	Locations and Concentrations (in $\mu\text{g}/\text{m}^3$)							
		AAQ1		AAQ2		AAQ3		AAQ4	
		Min	Max	Min	Max	Min	Max	Min	Max
Apr-21	PM10	48	64	43	87	44	60	50	62
	PM2.5	31	42	22	42	21	41	31	51
	SO2	7.72	10.61	5.42	7.2	6.19	11.7	10.02	13.41
	NO2	10.51	12.99	7.48	12.81	8.21	14.21	9.83	15.21
	CO	1103	1236	1130	1431	812	1532	813	1411
May-21	PM10	47	63	41	57	43	56	62	69
	PM2.5	35	40	24	30	29	39	35	55
	SO2	7.73	10.73	6.02	6.98	9.53	11.96	12.22	13.48
	NO2	10.51	12.73	7.38	10.08	12.37	14.19	10.59	11.66
	CO	1057	1236	967	1138	820	1218	896	1372
Jun-21	PM10	49	65	37	53	41	58	58	66
	PM2.5	21	33	23	30	20	31	30	44
	SO2	7.86	10.5	5.42	7.8	9.28	11.36	11.93	13.22
	NO2	10.62	12.42	6.99	9.93	11.36	14.22	8.21	11.63
	CO	1251	1515	1027	1308	889	1019	1120	1463
Jul-21	PM10	50	68	41	48	43	54	58	61
	PM2.5	20	36	22	31	24	29	30	37
	SO2	7.39	10.02	6.59	7.66	9.71	11.23	11.02	12.93
	NO2	8.31	11.39	8.73	9.93	12.12	14.09	8.93	10.76
	CO	1212	1331	930	1193	922	1136	1066	1319
Aug-21	PM10	46	66	42	53	44	55	56	60
	PM2.5	29	36	21	27	24	31	31	34
	SO2	7.94	10.7	6.33	8.03	9.06	11.39	10.87	13.39
	NO2	4.08	12.73	7.18	10.33	11.21	13.88	8.35	11.58
	CO	1231	1402	936	1011	1043	1253	1159	1366
Sep-21	PM10	46	61	42	57	42	63	55	61
	PM2.5	28	33	22	28	25	34	21	37
	SO2	8.06	11.4	6.58	12.1	9.02	14.21	9.27	13.72
	NO2	4.13	12.50	7.29	10.16	10.57	13.8	7.39	11.42
	CO	1209	1508	996	1160	812	1090	980	1322

AAQ = Ambient Air Quality

AAQ1 = Near Main Gate, AAQ2 = Near Admin Building, AAQ3 = Near Marine Building, AAQ4 = HOTEL PORT VIEW


Approved By -



ENVIRONMENTAL MONITORING REPORT

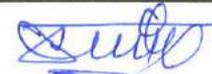
APM Terminals Pipavav SEWAGE WATER ANALYSIS REPORT April 2021 to September 2021

JETTY

STP Outlet	Concentration of Pollutants (STP Outlet)					
	pH	BOD	COD	TSS	Oil & Grease	Residual Chlorine
PERMISSIBLE LIMITS: mg/l	5.5 to 9.0	10.00	50.00	50.00	10.00	..
Apr-21	7.36	7	40	15	<1	<1
May-21	7.1	12	45	22	<1	<1
Jun-21	-	-	-	-	-	-
Jul-21	7.06	15	56	17	<1	<1
Aug-21	7.13	13	48	21	<1	<1
Sep-21	7.26	15	50	18	<1	<1

TOWNSHIP

STP Outlet	Concentration of Pollutants (STP Outlet)					
	pH	BOD	COD	TSS	Oil & Grease	Residual Chlorine
PERMISSIBLE LIMITS: mg/l	5.5 to 9.0	10.00	50.00	50.00	10.00	..
Apr-21	7.81	16	60	20	<1	3.61
May-21	7.14	19	69	16	<1	1.59
Jun-21	7.22	22	70	17	<1	3.72
Jul-21	7.26	21	76	18	<1	1.50
Aug-21	7.31	19	68	15	<1	3.19
Sep-21	7.25	20	72	17	<1	3.06


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav SEWAGE WATER ANALYSIS REPORT April 2021 to September 2021

JETTY

STP Inlet	Concentration of Pollutants (STP Inlet)					
	pH	BOD	COD	TSS	Residual Chlorine	Oil & Grease
PERMISSIBLE LIMITS: mg/l			
Apr-21	7.21	38	139	88	0.08	<1
May-21	6.71	40	146	105	0.05	<1
Jun-21	-	-	-	-	-	-
Jul-21	6.83	43	156	123	<1	<1
Aug-21	7.09	41	148	118	<1	<1
Sep-21	7.16	43	152	142	<1	<1

TOWNSHIP

STP Inlet	Concentration of Pollutants (STP Inlet)					
	pH	BOD	COD	TSS	Residual Chlorine	Oil & Grease
PERMISSIBLE LIMITS: mg/l			
Apr-21	7.91	45	155	62	<0.1	<1
May-21	6.93	42	154	69	<0.1	<1
Jun-21	6.98	48	160	77	<0.1	<1
Jul-21	6.93	46	168	85	<0.1	<1
Aug-21	6.98	45	164	81	<0.1	<1
Sep-21	7.03	42	160	89	<0.1	<1

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav									
Drinking Water Quality									
April 2021 to September 2021									
Parameters	Units	IS:10500 1991:2012) (Acceptable Limits)	Apr-21						
			Monitoring Location						
			DW1	DW2	DW3	DW4	DW5	DW6	DW7
pH	..	6.5 to 8.5	6.97	7.13	7.31	7.39	7.61	7.73	7.55
Turbidity	NTU	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colour (Hazen Units)	Pt-CO	5	<1	<1	<1	<1	<1	<1	<1
Sulphates	mg/L	200	70	63	72	76	75	70	63
Fluoride	mg/L	1	0.62	0.57	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.15	1.36	2.51	1.86	2.15	1.79	1.23
Phenolic Compound	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	696	424	320	332	304	400	348
Alkalinity	mg/L	200	130	160	54	31	55	590	51
Total Hardness	mg/L	200	190	180	170	150	200	260	250
Calcium	mg/L	75	48	47	24	24	30	28	28
Magnesium	mg/L	30	17	15	22	22	22	22	22
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	142	128	88	65	65	70	69
Cadmium	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Total Coliform	MPN/100 ml	Shall not be detectable in any 100 ml Sample	N.D.(<1.8)	N.D.(<1.8)	N.D.(<1.1)				
E. Coli	/100 ml		Absent	Absent	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1= Narmada Reservoir Inlet, DW2= Narmada Reservoir Outlet, DW3= Jetty No.4, DW4= Engineering Workshop, DW5= Security Gate, DW6= Fertilizer Shed, DW7= Fertilizer Shed

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ENVIRONMENTAL MONITORING REPORT



APM Terminals Pipavav

Drinking Water Quality

Parameters	Units	IS:10500 1991:2012 (Acceptable Limits)	May-21				
			Monitoring Location				
			DW1	DW2	DW3	DW4	DW5
pH	..	6.5 to 8.5	7.53	7.86	7.83	7.91	7.56
Turbidity	NTU	1	<0.1	<0.1	<0.1	<0.1	<0.1
Colour (Hazen Units)	Pt-CO	5	<1	<1	<1	<1	<1
Sulphates	mg/L	200	71	64	73	78	76
Fluoride	mg/L	1	0.66	0.52	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.36	1.72	2.79	1.58	2.87
Phenolic Compound	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	752	448	368	388	332
Alkalinity	mg/L	200	110	120	51	38	59
Total Hardness	mg/L	200	150	160	190	180	180
Calcium	mg/L	75	43	42	20	30	24
Magnesium	mg/L	30	10	14	22	26	22
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	156	132	102	71	59
Cadmium	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Total Coliform	MPN/100 ml	Shall not be detectable in any 100 ml Sample	N.D.(<1.8)	N.D.(<1.8)	N.D.(<1.1)	N.D.(<1.1)	N.D.(<1.1)
E. Coli	/100 ml		Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1= Narmada Reservoir Inlet, DW2= Narmada Reservoir Outlet, DW3= Jetty Marine Building, DW4= Jetty Approach 1, DW5= Security Barrack


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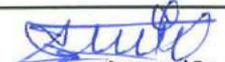
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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav									
Drinking Water Quality									
Parameters	Units	IS:10500 1991:2012 (Acceptable Limits)	Jun-21						
			Monitoring Location						
			DW1	DW2	DW3	DW4	DW5	DW6	DW7
pH	..	6.5 to 8.5	7.41	7.43	7.91	7.82	7.77	7.67	7.51
Turbidity	NTU	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colour (Hazen Units)	Pt-CO	5	<1	<1	<1	<1	<1	<1	<1
Sulphates	mg/L	200	78	58	79	70	84	84	84
Fluoride	mg/L	1	0.81	0.47	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.39	1.44	2.84	2.66	1.29	2.93	2.93
Phenolic Compound	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	712	456	397	410	423	352	322
Alkalinity	mg/L	200	130	130	55	52	51	61	61
Total Hardness	mg/L	200	170	190	210	230	190	160	210
Calcium	mg/L	75	46	42	28	25	32	20	28
Magnesium	mg/L	30	14	21	22	21	24	18	24
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	164	138	110	102	82	64	66
Cadmium	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Total Coliform	MPN/100 ml	Shall not be detectable in any 100 ml Sample	N.D.(<1.8)	N.D.(<1.8)	N.D.(<1.1)				
E. Coli	/100 ml		Absent	Absent	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1= Narmada Reservoir Inlet, DW2= Narmada Reservoir Outlet, DW3= Suvidha Store Purification Tank Inlet, DW4= Suvidha Store Purification Tank Outlet, DW5= Jetty Approach 2, DW6= Engineering Workshop, DW7= Fertilizer Shed


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ENVIRONMENTAL MONITORING REPORT



APM Terminals Pipavav

Drinking Water Quality

Parameters	Units	IS:10500 1991:2012 (Acceptable Limits)	Jul-21					
			Monitoring Location					
			DW1	DW2	DW3	DW4	DW5	DW6
pH	..	6.5 to 8.5	7.39	7.56	7.37	7.61	7.48	7.64
Turbidity	NTU	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colour (Hazen Units)	Pt-CO	5	<1	<1	<1	<1	<1	<1
Sulphates	mg/L	200	74	63	73	71	76	78
Fluoride	mg/L	1	0.65	0.57	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.65	1.5	1.93	3.01	3.08	2.58
Phenolic Compound	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	380	332	372	420	352	300
Alkalinity	mg/L	200	90	130	38	150	54	6
Total Hardness	mg/L	200	120	140	160	150	150	130
Calcium	mg/L	75	41	38	22	20	22	18
Magnesium	mg/L	30	4	11	26	22	24	20
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	147	112	69	108	54	68
Cadmium	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Total Coliform	MPN/100 ml	Shall not be detectable in any 100 ml Sample	N.D.<(1.8)	N.D.<(1.8)	N.D.<(1.1)	N.D.<(1.1)	N.D.<(1.1)	N.D.<(1.1)
E. Coli	/100 ml		Absent	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1= Narmada Reservoir Inlet, DW2= Narmada Reservoir Outlet, DW3= Suidha Store Purification Tank Outlet, DW4= Jetty Approach 3, DW5= Engineering Workshop, DW6= Admin Office

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ENVIRONMENTAL MONITORING REPORT



APM Terminals Pipavav

Drinking Water Quality

Parameters	Units	IS:10500 1991:2012 (Acceptable Limits)	Aug-21					
			Monitoring Location					
			DW1	DW2	DW3	DW4	DW5	DW6
pH	..	6.5 to 8.5	7.31	7.62	7.44	7.57	7.49	6.88
Turbidity	NTU	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colour (Hazen Units)	Pt-CO	5	<1	<1	<1	<1	<1	<1
Sulphates	mg/L	200	72	62	71	72	76	76
Fluoride	mg/L	1	0.62	0.6	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.93	1.29	2.08	2.87	2.87	2.36
Phenolic Compound	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	772	448	384	404	336	324
Alkalinity	mg/L	200	120	110	88	70	51	56
Total Hardness	mg/L	200	140	130	130	120	140	140
Calcium	mg/L	75	96	92	26	22	18	16
Magnesium	mg/L	30	38	87	19	22	21	22
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	161	97.84	66	98	59	73
Cadmium	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Total Coliform	MPN/100 ml	Shall not be detectable in any 100 ml Sample	N.D.(<1.8)	N.D.(<1.8)	N.D.(<1.1)	N.D.(<1.1)	N.D.(<1.1)	N.D.(<1.1)
E. Coli	/100 ml		Absent	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1= Narmada Reservoir Inlet, DW2= Narmada Reservoir Outlet, DW3= Suvidha Store Purification Tank Outlet, DW4= Jetty Approach 3, DW5= Engineering Workshop, DW6= Admin Office

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav								
Drinking Water Quality								
Parameters	Units	IS:10500 1991:2012 (Acceptable Limits)	Sep-21					
			Monitoring Location					
			DW1	DW2	DW3	DW4	DW5	DW6
pH	..	6.5 to 8.5	7.44	7.77	7.57	7.61	7.56	6.69
Turbidity	NTU	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Colour (Hazen Units)	Pt-CO	5	<1	<1	<1	<1	<1	<1
Sulphates	mg/L	200	78	56	75	75	77	78
Fluoride	mg/L	1	0.57	0.54	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.84	1.2	1.93	2.51	2.73	2.26
Phenolic Compound	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	741	423	359	392	332	339
Alkalinity	mg/L	200	130	120	40	80	48	52
Total Hardness	mg/L	200	160	136	122	116	140	130
Calcium	mg/L	75	92	86	22	21	16	15
Magnesium	mg/L	30	34	32	18	19	20	24
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	152	96.18	60	92	62	67
Cadmium	mg/L	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Total Coliform	MPN/100 ml	Shall not be detectable in any 100 ml Sample	N.D.(<1.8)	N.D.(<1.8)	N.D.(<1.1)	N.D.(<1.1)	N.D.(<1.1)	N.D.(<1.1)
E. Coli	/100 ml		Absent	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1= Narmada Reservoir Inlet, DW2= Narmada Reservoir Outlet, DW3= Suvidha Store Purification Tank Outlet, DW4= Jetty Approach 3, DW5= Engineering Workshop, DW6= Admin Office


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav Marine Water Quality April 2021 to September 2021 Apr-21		
Parameters	Unit(SI)	Monitoring Location
		Marine Sea Water
pH		7.91
Dissolved oxygen	mg/L	5.8
BOD (3 days at 27 °C)	mg/L	9
Oil & Grease	mg/L	<1
Fecal Coliform Bacteria	MPN/100ml	N.D.(<1.8)

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APM Terminals Pipavav Marine Water Quality April 2021 to September 2021 May-21			
Parameters	Unit(SI)	Monitoring Location	Monitoring Location
		Marine Water (Shiyal Bet)	Marine Water (Jetty)
pH		8.03	8.1
Dissolved oxygen	mg/L	5.2	4.9
BOD (3 days at 27 °C)	mg/L	5	6
Oil & Grease	mg/L	<1	<1
Fecal Coliform Bacteria	MPN/100ml	N.D.(<1.8)	N.D.(<1.8)

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APM Terminals Pipavav Marine Water Quality April 2021 to September 2021 Jun-21		
Parameters	Unit(SI)	Monitoring Location
		Marine Water (Shiyal Bet)
pH		8.11
Dissolved oxygen	mg/L	4.9
BOD (3 days at 27 °C)	mg/L	6
Oil & Grease	mg/L	<1
Fecal Coliform Bacteria	MPN/100ml	N.D.(<1.8)

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ENVIRONMENTAL MONITORING REPORT

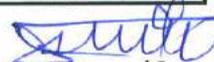
APM Terminals Pipavav Marine Water Quality April 2021 to September 2021		
Jul-21		
Parameters	Unit(SI)	Monitoring Location
		Marine Water (Jetty)
pH		8.06
Dissolved oxygen	mg/L	4.8
BOD (3 days at 27 °C)	mg/L	7
Oil & Grease	mg/L	<1
Fecal Coliform Bacteria	MPN/100ml	280

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APM Terminals Pipavav Marine Water Quality April 2021 to September 2021		
Aug-21		
Parameters	Unit(SI)	Monitoring Location
		Marine Water (Jetty Shiyal Bet)
pH		8.12
Dissolved oxygen	mg/L	4.8
BOD (3 days at 27 °C)	mg/L	5
Oil & Grease	mg/L	<1
Fecal Coliform Bacteria	MPN/100ml	170

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APM Terminals Pipavav Marine Water Quality April 2021 to September 2021		
Sep-21		
Parameters	Unit(SI)	Monitoring Location
		Marine Water (Jetty Shiyal Bet)
pH		8.23
Dissolved oxygen	mg/L	4.1
BOD (3 days at 27 °C)	mg/L	5
Oil & Grease	mg/L	<1
Fecal Coliform Bacteria	MPN/100ml	N.D.(<1.8)


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav				
Pond Water Quality				
April 2021 to September 2021				
Parameters	Unit(SI)	May-21		
		Near Fertilizer Shed-1	Near Narmada Reservoir	Dhatarwadi River
		SW-1	SW-1	SW
pH		7.23	7.41	7.39
Temperature	°C	27.3	27.4	28.2
Sulphates	mg/L	101	99	66
Ammonical Nitrogen	mg/L	0.53	0.5	<0.05
COD	mg/L	24	16	24
BOD(3days at 27)0C	mg/L	7	5	7
Total Dissolved solids	mg/L	1208	1212	372
Suspended solids	mg/L	19	9	9
Oil and Grease	mg/L	<1	<1	<1
Arsenic	mg/L	<0.01	<0.01	<0.01
Total hardness	mg/L	206	192	130
Calcium Hardness	mg/L	108	96	98
Magnesium Hardness	mg/L	98	96	32
Chlorides	mg/L	250	254	16
Lead	mg/L	<0.02	<0.02	<0.02
Mercury	mg/L	<0.02	<0.02	<0.02
Total Chromium	mg/L	<0.02	<0.02	<0.02
Total Coliform	MPN/100ml	17	N.D.(<1.8)	N.D.(<1.1)
E Coli.	N.A.	Absent	Absent	Absent

SW= Surface Water
SW1=POND


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav			
Pond Water Quality			
April 2021 to September 2021			
Parameters	Unit(SI)	Jun-21	
		Near Fertilizer Shed-1	DSS Pond
		SW-1	SW-1
pH		7.43	7.53
Temperature	°C	28.1	27.8
Sulphates	mg/L	112	90
Ammonical Nitrogen	mg/L	0.58	0.55
COD	mg/L	26	22
BOD(3days at 27)OC	mg/L	8	8
Total Dissolved solids	mg/L	1251	1229
Suspended solids	mg/L	23	11
Oil and Grease	mg/L	<1	<1
Arsenic	mg/L	<0.01	<0.01
Total hardness	mg/L	219	198
Calcium Hardness	mg/L	102	91
Magnesium Hardness	mg/L	96	95
Chlorides	mg/L	258	272
Lead	mg/L	<0.02	<0.02
Mercury	mg/L	<0.02	<0.02
Total Chromium	mg/L	<0.02	<0.02
Total Coliform	MPN/100	140	N.D.(<1.8)
E Coli.	N.A.	Present	Absent

SW= Surface Water
SW1=POND

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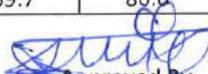


ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav WORKPLACE NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Apr-21		
Jetty No 3	61.4	84.1
Engineering Workshop	64.5	72.9
Fire Office	34.5	76.1
Store	44.2	76.5
Fertilizer Shed	49.9	73.8

APM Terminals Pipavav WORKPLACE NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
May-21		
Jetty Approach - 2	66.2	84
Jetty Approach - 4	71.7	83.9
Engineering Workshop	66.6	70.6
Fire Station	56.3	69.9
Store Area	43.3	56.3
Fertilizer Shed	51.3	66.4
Project Side (Nr. Fertilizer Shed)	71.7	78

APM Terminals Pipavav WORKPLACE NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Jun-21		
Jetty Approach - 2	67.3	82.7
Jetty Approach - 1	70.5	84.1
Engineering Workshop	65.4	71.8
Fire Station	54.6	67.9
Store Area	49.5	63.4
Fertilizer Shed	64.7	76.3
Project Side (Nr. Fertilizer Shed)	69.7	80.6


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APM Terminals Pipavav WORKPLACE NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Jul-21		
Jetty Approach – 3	60.4	82.7
Jetty Approach – 4	64.4	84.1
Engineering Workshop	68.4	71.8
Fertilizer Shed	71.7	67.9
Fire Station	52.7	63.4
Store Area	47.3	76.3
Project Side (Nr. Fertilizer Shed)	67.9	80.6

APM Terminals Pipavav WORKPLACE NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Aug-21		
Jetty Approach – 3	62.1	73.8
Jetty Approach – 4	65.3	75.2
Engineering Workshop	69.7	79.1
Fertilizer Shed	68.2	77.6
Fire Station	57.4	64.3
Store Area	50.3	69.7
Project Side (Nr. Fertilizer Shed)	66.8	76.4

APM Terminals Pipavav WORKPLACE NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Sep-21		
Jetty Approach – 1	56.1	69.8
Jetty Approach – 2	60.1	72.9
Engineering Workshop	60.8	78.6
Fertilizer Shed	71.5	74.2
Fire Station	50.5	67.4
Store Area	39.7	61.7
Project Side (Nr. Fertilizer Shed)	61.3	79.3


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Apr-21		
Medical Centre	34	78.7
Township Gate No. 2	34.2	70.4
Township Main Gate	42	59.5
APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
May-21		
Medical Centre	54.6	60.2
Township Gate No. 2	56	69.5
Township Main Gate	53.8	66.9
APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Jun-21		
Medical Centre	54.1	62.1
Township Gate No. 2	57.4	63.2
Township Main Gate	59.9	65.5
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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Jul-21		
Medical Centre	57.2	62.1
Township Gate No. 2	57.2	63.2
Township Main Gate	58.2	65.5
APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Aug-21		
Medical Centre	56.4	59.7
Township Gate No. 2	58.6	65.3
Township Main Gate	60.2	68.1
APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING April 2021 to September 2021		
Month/Locations	Day	
	Min	Max
Sep-21		
Medical Centre	45.6	57.6
Township Gate No. 2	47.6	54.9
Township Main Gate	53.8	66.2
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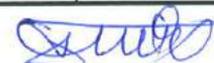
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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav AMBIENT NOISE MONITORING April 2021 to September 2021				
Month/Locations	Day		Night	
	Min	Max	Min	Max
Apr-21				
Near Main Gate	64.1	71.4	63.8	67.8
Near Admin Building	55.7	63.4	55.7	60.2
Near Marine Building	64.8	70.2	65.4	68.1
HOTEL PORT VIEW	63.2	70.2	61.8	67.5
May-21				
Near Main Gate	63.2	69.8	63.7	66.3
Admin building	57.3	62.8	56.9	62.3
Marine Building	64.3	70.1	61.3	66.7
HOTEL PORT VIEW	65.4	69.5	66.3	69.2
Jun-21				
Near Main Gate	61.9	68	61.9	66.3
Admin building	57.9	62.3	57.6	61.1
Marine Building	63.2	69.1	60.2	66.0
Durlabh Nagar, Rajula	61.3	68.9	61.6	64.7
Jul-21				
Near Main Gate	50.0	59.3	36.2	53.3
Admin building	43.1	52.9	41.2	52.7
Marine Building	58.0	64.7	55.5	61
HOTEL PORT VIEW	54.2	62.2	52.2	58.7
Aug-21				
Near Main Gate	56.2	64.6	53.6	58.2
Admin building	56.3	65.3	48.6	56.3
Marine Building	61.9	72.9	58.5	64.8
HOTEL PORT VIEW	55.4	65.7	48.2	57.1
Sep-21				
Near Main Gate	56.3	64.6	50.6	56.3
Admin building	-	-	-	-
Marine Building	-	-	-	-
HOTEL PORT VIEW	-	-	-	-

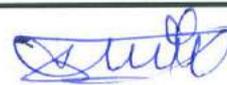

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav		
Solid Waste Quality		
April 2021 to September 2021		
Apr-21		
Parameters	Units	Monitoring Location
		Used Oil (Store Area)
Cadmium	gm/kg	<0.0002
Lead	gm/kg	<0.0004
Nickel	gm/kg	<0.0004
Chromium	gm/kg	<0.0004
Arsenic	gm/kg	<0.01
Water Content	%	5.32
Polycarbonated Biphenyls (PCB)	mg/l	B.L.Q.(Q.L.=0.01)
Polynuclear Aromatic Hydrocarbons (PAH)	mg/l	B.L.Q.(Q.L.=0.01)

APM Terminals Pipavav		
Solid Waste Quality		
April 2021 to September 2021		
Apr-21		
Parameters	Units	Monitoring Location
		Solid Waste (Coal yard Area)
pH (10% solution)	-	7.34
Moisture Content	%	16.8
Bulk Density	gm/ml	1.23
Organic Carbon	%	1.13
Total Nitrogen	%	0.036
Gross Calorific Value	kcal/kg	2857


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav		
Soil Quality		
April 2021 to September 2021		
Apr-21		
Parameters	Units	Monitoring Location
		Coal Yard
pH	-	7.34
Conductivity	µmhos/cm	1239
Exchangeable Calcium	gm/kg	8
Exchangeable Magnesium	gm/kg	16
Sodium	gm/kg	0.48
Potassium	gm/kg	0.23
Phosphorous	gm/kg	0.05
Sulphate	gm/kg	0
Organic Matter	gm/kg	0.78
Aluminium	gm/kg	<0.2
Manganese	gm/kg	<1
Iron	gm/kg	<1
Zinc	gm/kg	<1
Texture	--	Sandy Loam
Chloride	gm/kg	36
Organic Carbon	%	1.13
SAR	--	1.48
Boron	gm/kg	<0.05
Ion Exchange Property	meq/100gm	24

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav					
Soil Quality					
April 2021 to September 2021					
May-21					
Parameters	Units	Monitoring Location			
		Coal Yard	Near Hazardous Waste Storage	Near CFS Yard	Near STP Gate No.1
pH	-	7.23	7.09	7.16	7.06
Conductivity	µmhos/cm	1181	1719	1473	1517
Exchangeable Calcium	gm/kg	8	8	5	5
Exchangeable Magnesium	gm/kg	15	14	10	9
Sodium	gm/kg	0.39	0.41	0.8	0.3
Potassium	gm/kg	0.24	0.021	0.038	0.019
Phosphorous	gm/kg	0.06	0.04	0.06	0.08
Sulphate	gm/kg	610	567	0.39	577
Organic Matter	gm/kg	0.76	0.61	0.82	0.89
Aluminium	gm/kg	<0.2	<0.2	<0.2	<0.2
Manganese	gm/kg	0.21	0.17	0.22	0.28
Iron	gm/kg	0.46	0.44	0.32	0.32
Zinc	gm/kg	0.011	0.011	0.009	0.011
Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
Chloride	gm/kg	108	104	98	104
Organic Carbon	%	1.18	0.97	0.39	0.37
SAR	--	1.11	1.32	0.89	0.88
Boron	gm/kg	<0.05	<0.05	<0.05	<0.05
Ion Exchange Property	meq/100gm	20	18.7	17.11	16.18

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