

Ref No. APMT/ENV/MoEF&CC/EC&CRZ/20-21/19

Dated: 7-Dec-2020

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-2020 to September-2020 along with Environmental Parameters Report and Corporate Social Responsibility status report.

This is for your kind information & record please.

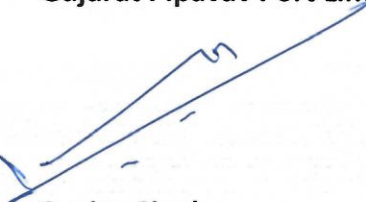
Kindly acknowledge the receipt of these reports.

Thanking You,

Yours faithfully

**For APM Terminals,
Gujarat Pipavav Port Limited**




**Sanjay Singh
Head of HSSE Improvement
APM Terminals, Pipavav
Post- Rampara-2, Taluka-Rajula
District - Amreli, Pipavav Port-365560**

Continued....

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-2020 to September-2020)

**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 2020- SEPTEMBER 2020

**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>
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>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. ➤ Green cover has been upgraded by gap filling. Species planted as recommended by local Forest Officer. ➤ Coal water Re-circulation system is in place.

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

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.</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 near the port.</p>
7.	<p>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>	<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>

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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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>
11.	Requisite clearance including clearance from Petroleum and explosives Safety organization (PESO) formerly Explosive Department, Nagpur shall be obtained for establishment tank farms. All relevant provisions of MSIHC Rules 1989 shall be complied.	<p>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</p>

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		Butadiene handling at bulk jetty no. 5 of Port Pipavav.
12.	Green belt of not less than 33 % shall be developed and maintained all along the boundary.	<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>
13.	The dry cargo shall be unloaded in to hopper and from hopper it will be taken through closed conveyor system to the storage yards.	<p>Complied.</p> <p>Current closed conveyer is under structural integrity review. 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.	Mitigation plan for handling the dusty cargo/around storage yards as per presentation may be stipulated.	<p>Being Complied.</p> <p>An Environmental Steering Committee is formed at site to monitor and implement the 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>

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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<p>16.</p>	<p>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>	<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>
<p>17.</p>	<p>Solid waste management shall be as per Municipal Solid waste (management and handling) Rules, 2000.</p>	<p>Being Complied.</p> <p>3 Types 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 in to the form of green Manure. An Eco-friendly Initiative.</p>

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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.	Complied. No Displacement of people due to existing and/or proposed activities.
20.	No construction works other than those permitted in Coastal Regulation Zone notification shall be carried out in Coastal Regulation Zone area.	Noted for Compliance.
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	Noted & Adhered.

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	in respect of mitigation measures and other environmental protection activities.	
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 time line stipulated by MoEF&CC.
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) involve will inform to Authorities well in advance.

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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 (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.	Noted.
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	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.

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	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.	
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, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied. https://www.apmterminals.com/en/pipavav/CSR/environment
15.	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	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 20-May-2020, vide No. APMT/ENV/MoEF&CC/ EC&CRZ/20-21/8.
16.	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	Being Complied. Last Environment Statement Report is submitted in Form-V to the concerned Authorities vide no. APMT/ENV/GPCB/ES/20-21/14 dated; 18-Aug-2020.

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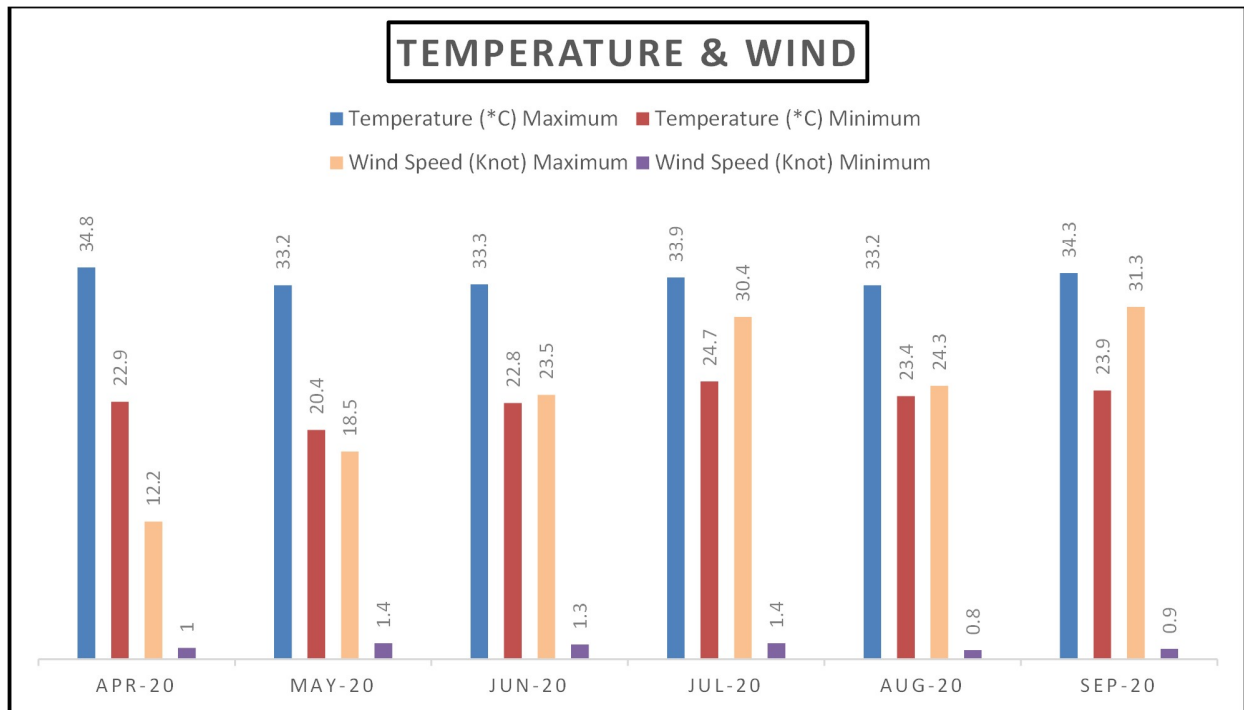
status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e mail.

<https://www.apmterminals.com/en/pipavav/CSR/environment>

METEOROLOGICAL DATA OF APM PORT PIPAVAV

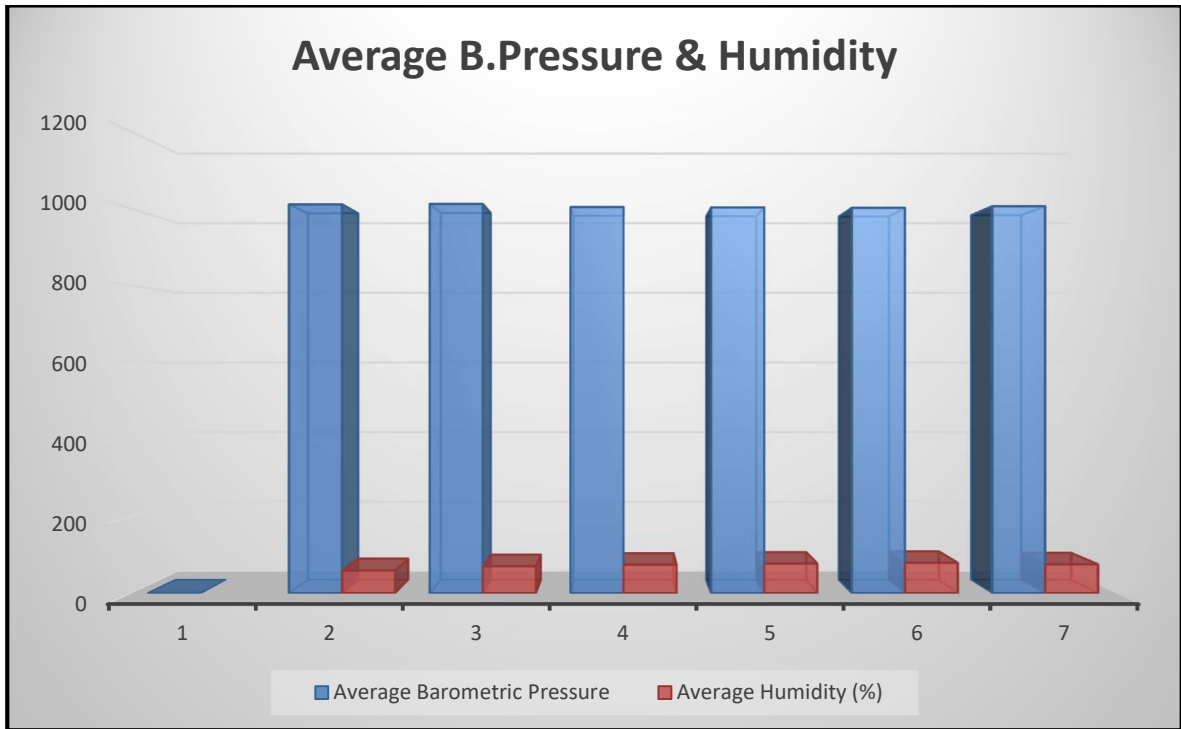
APM Port Pipavav has installed Meteorological Station at the roof of Marine Building, which are near to jetty. Details of Ambient Temperature, Wind Speed, Barometric Pressure, Humidity and Rain fall for the period April- 20 to Sep-20 are as:

Month	Temperature (*C)		Wind Speed (Knot)		Average Barometric Pressure (Mb)	Average Humidity (%)	Total Rainfall (mm)
	Maximum	Minimum	Maximum	Minimum			
Apr-20	34.8	22.9	12.2	1.0	1011	59	0.0
May-20	33.2	20.4	18.5	1.4	1012	70	24.02
June-20	33.3	22.8	23.5	1.3	1004	74	94.06
July-20	33.9	24.7	30.4	1.4	1003	77	254.6
Aug-20	33.2	23.4	24.3	0.8	1002	79	223.0
Sep-20	34.3	23.9	31.3	0.9	1006	75	94.8

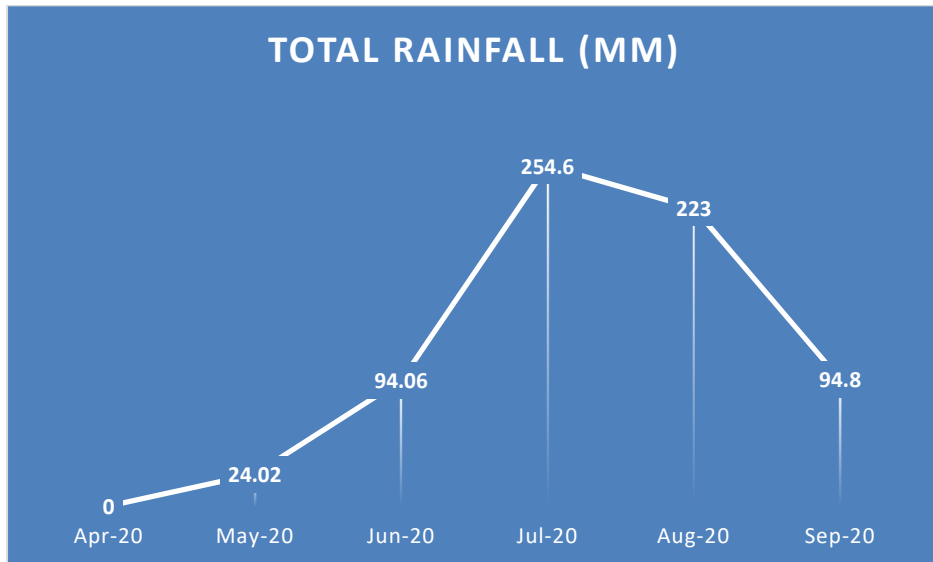


Ambient Temperature & Wind Speed Data for the Period April-20 to Sep-2020

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Average Barometric Pressure & Humidity Data



Rain Fall Data for the Period April-2020 to Sep-2020

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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 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.

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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 time line 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.

Green Belt Development:

A green belt is being developed along the port boundary, along the roads, in Residential Township & other available open spaces using native species avenue plantation as per the CPCB guidelines for curbing emission and providing aesthetic look.

2,55,742 trees covering an area of 258 acre, with survival rate of 80 % have already been planted till 30-Sep-2020. A nursery for growing the saplings, being used for plantation purposes, has also been established inside the port premises.

It is also planned to develop fruits garden & an herbal garden to create awareness & aesthetic view. Areas in front of various buildings and the entrance of port is being landscaped with green cover, shrubs, trees based on factors like climate, adaptability etc.

Criteria used for selection of species for greenbelt:

- Fast growing
- Thick canopy cover
- Perennial & evergreen
- Large leaf area index
- High sink potential
- Efficient in absorbing pollutants without affecting their growth
- Suitable for the local seasons

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Greenery in Township



Aesthetic View of The Internal Roads

Pollution Control Measures at GPPL



Dust Suppression Water Reservoir



Dust Suppression System

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Coal Settling Tank



Automatic Dust Sweeping Machine



Tarpaulin Covered Truck



Internal RCC Roads



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



Green Curtain in Coal Yard



Water Sprinkler in Coal yard



25 KLD STP at Port



450 KLD STP for Residential Area



60 Acre of Mangroves in Port Area



500 Ha of Mangroves in Surat & Bharuch Area

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



Hazardous Waste Storage Yard



Green Belt Photographs



**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Mangroves Plantation within Port Area



Organic Waste Converter Machine



Micro Meteorological Station at Port



Online Environmental Parameter Display Board installed at Main Gate of Port

**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
Accorded by the MoEF&CC for Gujarat Pipavav Port Limited
CORPORATE SOCIAL RESPONSIBILITY REPORT
(CSR REPORT APR-2020 TO SEP-2020)**

Tree Plantation: Project area: 25 Villages

Duration: April 2020 to Sep 2020

Numbers of plants: - 16251

Reasons behind this activity: -To protect environment, reduce carbon dioxide, healthy and green planet

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	Villages	No plants	Sr no	Villages	No plants
1	Barpatoli	500	14	Utiya	233
2	Bhachadar	1056	15	Vavera	250
3	Charodiya	410	16	Davka	757
4	Chattadiya	117	17	Nigala	1097
5	Uchaiya	435	18	Devpar	240
6	Vad	2050	19	Divlo	276
7	Bherai	122	20	PIPAAV	4675
8	Rampara	62	21	Thavi	1337
9	Kadiyali	784	22	Hadmatiya	27
10	Kumbhariya	336	23	Rajpada	257
11	Zanjarda	705	24	Ganjavadar	45
12	Khakhbai	205	25	Jolapar	25
13	Nava gariya	250	26	Total	16251



**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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Laser Irrigation

Project Area: -12 Villages

Duration: April to Sep. 2020

Number of Laser Irrigation Unit: - 23 Total 23 Ha.

Reason behind this activity: -

Need to create awareness about laser irrigation, how to this system is useful the farmers.

Brief description: Laser Irrigation is the best drip irrigation system for small-plot farmers - affordable, high quality, and easy-to-use. Without the need for expensive and complex emitters, these systems are priced at least 50% lower than traditional commercially available drip irrigation systems. A small-plot family would be able to afford and purchase these systems that will produce enough to increase their income. After buying this system, farmers can recoup their initial investment in less than 6 months, with significant increases in income over the next 3-5 years



Varmiwash

Project area:4 Villages

Number of Varmiwash: 9

Duration: April to Sep. 2020

Reason behind this activity: - Turning farmers toward organic farming reduce cost of fertilizer.

Brief description: Varmiwash 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 farmers	Land Covered (Ha)
1	Uchaiya	3	6
2	Barbtana	3	7
3	vad	2	5
4	Charodiya	1	2
		9	20

Varmi wash **Liquid maturing Used 121** farmers with 283 Ha land. In cotton

Benefits: Reduce input cost, Pest repellent, increasing quality base yield

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

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

Project Area: -Rajula 35 villages

Duration: April to Sep. 2020

Number of Meeting: and Training 3500 farmers trained

Reason behind this activity: - Need to create awareness 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.

kitchen Garden Initiative success story-



Project area: 7 Villages

Duration: April to Sep. 2020

To obtain nutritional food, Kitchen gardening activity was done among BPL and Needy families. Increased production of Vegetable crop - approx. Amount Saved Rs. 2.50 lakhs in kharif

Kitchen gardening protection data

Sr no	Village	No of Beni	No of Family Members	Okra	Rs	Cluster bean	Rs	Brinjal	Rs	Ridge gourd	Rs	Smooth gourd	Rs	Bottle gourd	Rs	TOTAL	Rs
1	Thavi	43	259	146.5	4393.5	84.2	5052	14	1120	440	15400	218.05	8722	248.25	12413	1151	47100

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

2	Devpara	41	195	120.7	3621	77.95	4677	11	880	311.5	10903	166.65	6666	171.97	8599	859.77	35345
3	Divlo	46	221	151.5	4545	91	5460	12	960	383	13405	268.95	10758	271.35	13568	1177.8	48695.5
4	Kumbhariya	25	145	77.5	2325	42.05	2523	4	320	212.5	7438	128.8	5152	131.25	6563	596.1	24320
	total	250	1325	793	23781	466	27987	65	5200	2096	73369	1371	54852	1356	67814	6148	253002

Some of the CSR activities undertaken by APM Terminals, Gujarat Pipavav Port Ltd. related to COVID 19 and lock down are as follows.

- Food support to Needy and poor family:** We have distributed 1500 grocery kits among poor family belonging to Rampara, Divalo area, Devpara, Thavi area, Bherai, Kadiyali, Ningala, Kumbhariya, Pipavavdham and Shiyalbet villages.
- Uninterrupted supply of drinking water through 12 water ATMs:** 12 water ATMs are functional during lockdown period too, they are regularly monitored for quality. They are sanitized regularly, and social distancing marks are placed at every plant.
- Medical services for Livestock:** On an average we are attending to 6 medical cases daily related to cattle through mobile vet clinic. Yesterday at Shiyalbet a cow was very critical, our mobile vet clinic rushed to the spot and saved the cow.
- Education and tele. counselling:** Mobile based education support is regularly provided to the students and parents and villagers of Rampara, Devpara, Bherai, Shiyalbet, Kadiyali, Kumbhariya and other 28 villages of Rajula block.
- Sanitizer and mask distribution:** for health workers as recommended by the Govt Medical Officer BHO, Rajula we are providing sanitizer and mask to all PHC as well as urban health Centre Rajula, as per requirement.
- We are also providing instant food packets among truck drivers.



**Compliance Status Report for “Environmental Clearance & CRZ Clearance”
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પિપાવાવ પોર્ટ અને વી.આર.ટી.આઈ. સંસ્થાનાં સહયોગથી રોપાઓનું વિતરણ



આજે વિશ્વમાં દિવસે ને દિવસે ઓર્ગેનિક શાકભાજી ભાગ્યથી પાકોનું આસ્વાદ્ય વધતું જાય છે અને લોકોના સ્વાસ્થ્યની દ્રષ્ટિ પણ ખૂબ ઉપયોગી છે. ત્યારે ગુજરાત પિપાવાવ પોર્ટની સી.એસ.આર. પ્રવૃત્તિઓ અંતર્ગત વી.આર.ટી.આઈ. સંસ્થાના સહયોગથી રાજીયા તાલુકાના પિપાવાવ ધામ ખાતે ગ્રામજનોને ધરઆંગણે ઓર્ગેનિક શાકભાજી અને ફળો મળી રહે તે હેતુથી ક્વિન ગાર્ડન પ્રોજેક્ટ હેઠળ ગામના ૨૮૮ જેટલા પરિવારોને ૧૨-૧૨ જેટલા રોપાઓ આપવામાં આવેલા હતા. જેમાં ગામમાં કુલ ૬૦૧ ઓંબા, ૬૨૬ નાળિયેરી, ૫૯૧ લીંબડી, ૫૭૬ દાડમના રોપા, ૪૭૦ પરીયા, ૨૦૦ સરગવો, ૨૦૦ સીતાફળી, આમ સંસ્થા દ્વારા વિનામૂલ્યે કુલ ૩૨૦૮થી વધુ ભાગ્યથી ફળોના રોપાઓનું વિતરણ કરવામાં આવ્યું હતું જેમાં પિપાવાવ ધામના જાગૃત આગેવાન તથા પૂર્વ સરપંચ ભાણાખાઈ ગુરુદીયા, તલાટી કમ મંત્રી નિહાલભાઈ ભટ્ટ તથા યુવા આગેવાન અશ્વય શિયાળ સહિતના આગેવાનો ઉપસ્થિત રહ્યા હતા.

KADAM ENVIRONMENTAL CONSULTANTS

An ISO 9001-2015 Certified Company

(MoEF Approved)

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

Phone : (O) 0265 - 6131000, 6131001

ENVIRONMENTAL MONITORING REPORT



APM Terminals Pipavav													
AMBIENT AIR QUALITY DATA													
APRIL 2020 to SEPTEMBER 2020													
Months	Pollutants	Locations and Concentrations (in $\mu\text{g}/\text{m}^3$)											
		AAQ1			AAQ2			AAQ3			AAQ4		
		Min	Max	AAQ	Min	Max	AAQ	Min	Max	AAQ	Min	Max	AAQ
May-20	PM10	56	63	43	50	62	69	63	67				
	PM2.5	35	40	25	29	33	38	31	38				
	SO2	5.55	6.94	8.86	9.45	8.28	9.21	9.85	10.86				
	NO2	15.12	18.18	15.62	20.08	16.08	17.07	17.28	18.5				
	CO	1401	1775	747	947	852	956	1133	1311				
Jun-20	PM10	51	61	46	51	41	52	43	49				
	PM2.5	33	40	26	35	29	35	31	35				
	SO2	5.55	6.75	6.04	9.45	7.25	8.77	9.9	10.86				
	NO2	16.22	18.81	17.25	20.08	12.52	16.5	15.3	18.5				
	CO	1734	1782	1501	1600	799	932	1179	1232				
Jul-20	PM10	53	62	42	49	39	44	39	49				
	PM2.5	33	39	22	27	25	30	26	38				
	SO2	6.30	6.9	7.07	9.6	7.52	9.06	8.19	10.89				
	NO2	11.51	13.17	8.91	10.62	11.07	15.93	13.91	15.02				
	CO	928	1180	893	1173	803	936	802	1125				
Aug-20	PM10	57	57	45	45	36	36	50	50				
	PM2.5	34	34	23	23	28	28	39	39				
	SO2	6.17	6.17	8.84	8.84	7.71	7.71	10.8	10.8				
	NO2	11.36	11.36	10.91	10.91	14.07	14.07	11.89	11.89				
	CO	1211	1211	812	812	1052	1052	1366	1366				
Sep-20	PM10	60	66	47	59	39	53	46	47				
	PM2.5	32	39	20	23	31	37	40	45				
	SO2	7.78	8.1	6.09	7.07	7.42	8.1	10.8	11.31				
	NO2	12.17	12.9	10.18	12.19	13.28	14.42	10.69	12.33				
	CO	1497	1871	1054	1508	851	1206	1113	1136				

AAQ = Ambient Air Quality

AAQ1 = Near Main Gate, AAQ2 = Near Admin Building, AAQ3 = Near Marine Building,

AAQ4 = HOTEL PORT VIEW

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav AMBIENT NOISE MONITORING APRIL 2020 to SEPTEMBER 2020				
Month/Locations	Day		Night	
	Min	Max	Min	Max
May-20				
Near Main Gate	65.4	71.8	64.4	67.1
Near Admin Building	56.1	63.2	51.5	56.5
Near Marine Building	67.9	74.3	65.5	68.4
HOTEL PORT VIEW	67.9	74	63.6	68.7
Aug-20				
Near Main Gate	63.4	70.5	64.5	71.2
Admin building	55.8	62.3	55.6	61.5
Marine Building	64.3	70.2	65.2	67.8
HOTEL PORT VIEW	64.8	71.7	65.3	68
Sep-20				
Near Main Gate	61.8	69.8	61.9	69.2
Admin building	54.6	61	53.2	60.2
Marine Building	61.5	69.5	62.9	66.5
HOTEL PORT VIEW	63.5	70	63.2	68.9

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav							
Drinking Water Quality							
APRIL 2020 TO SEPTEMBER 2020							
Parameters	Units	IS:10500 1991:2012) (Acceptable Limits)	May-20				
			Monitoring Location				
			DW1	DW2	DW3	DW4	DW5
pH	..	6.5 to 8.5	7.85	7.77	7.33	7.91	7.78
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	58	59	62	71	54
Fluoride	mg/L	1	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	1.8	1.67	1.51	1.47	1.58
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	372	361	402	372	384
Alkalinity	mg/L	200	42	42	50	51	47
Total Hardness	mg/L	200	200	230	230	220	210
Calcium	mg/L	75	20	24	20	24	28
Magnesium	mg/L	30	36	41	32	36	36
Residual Chlorine	mg/L	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorides	mg/L	250	72	68	60	68	71
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	/100 ml	Shall not be	79	Absent	Absent	Absent	Absent
E. Coli	/100 ml	detectable in	Present	Absent	Absent	Absent	Absent

DW= Drinking Water DW1=DW1 (COAL YARD ,DW2= Drinking Water(JETTY NO 3), DW3 = NARMADARA RESERVOIR DW 4 = ENGI WORKSHOP
DW5= SECURITY BARRAC


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav							
Drinking Water Quality							
Parameters	Units	IS:10500 1991:2012 (Acceptable Limits)	Jun-20				
			Monitoring Location				
			DW1	DW2	DW3	DW4	DW5
pH	..	6.5 to 8.5	7.71	7.98	7.63	8.02	7.53
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	49	125	101	125	92
Fluoride	mg/L	1	<0.05	<0.05	0.55	<0.05	<0.05
Nitrate	mg/L	45	1.47	1.58	0.32	1.65	1.52
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	187	399	385	355	388
Alkalinity	mg/L	200	52	48	48	54	51
Total Hardness	mg/L	200	210	200	210	230	210
Calcium	mg/L	75	26	26	26	24	20
Magnesium	mg/L	30	35	33	35	41	39
Residual Chlorine	mg/L	0.2	0.28	0.31	0.25	0.3	0.28
Chlorides	mg/L	250	94	130	128	108	129
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	/100 ml	Shall not be	Absent	Absent	Absent	Absent	Absent
E. Coli	/100 ml	detectable in	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water DW1=DW1 (SUVIDHA ,DW2= Drinking Water(FERTILIZER SHED), DW3 = NARMADA RESERVOIR DW4= IT 09 DW5 =

For Kadam Environmental Consultants

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav				
Drinking Water Quality				
Parameters	Units	IS:10500 1991:2012(Acceptable Limits)	Aug-20	
			Monitoring Location	
			DW1	DW2
pH	..	6.5 to 8.5	7.35	7.74
Turbidity	NTU	1	9.7	3.5
Colour (Hazen Units)	Pt-CO	5	<1	<1
Sulphates	mg/L	200	58	53
Fluoride	mg/L	1	0.68	0.62
Nitrate	mg/L	45	0.77	0.71
Phenolic Compound	mg/L	0.001	<0.001	<0.001
Aluminium	mg/L	0.03	<0.03	<0.03
Hexavalent Chromium	mg/L	2	<0.02	<0.02
Arsenic	mg/L	0.01	<0.01	<0.01
Boron	mg/L	0.5	<0.05	<0.05
Cyanide	mg/L	0.05	<0.05	<0.05
Total Dissolved Solids	mg/L	500	550	492
Alkalinity	mg/L	200	60	90
Total Hardness	mg/L	200	190	160
Calcium	mg/L	75	53	59
Magnesium	mg/L	30	14	3
Residual Chlorine	mg/L	0.2	0.1	0.1
Chlorides	mg/L	250	137	117
Cadmium	mg/L	0.003	<0.003	<0.003
Copper	mg/L	0.05	<0.03	<0.03
Lead	mg/L	0.01	<0.01	<0.01
Iron	mg/L	0.3	<0.05	<0.05
Zinc	mg/L	5	<0.03	<0.03
Mercury	mg/L	0.001	<0.001	<0.001
Manganese	mg/L	0.1	<0.02	<0.02
Odour	..	Agreeable	Agreeable	Agreeable
Total Coliform	/100 ml	Shall not be detectable in	Absent	Absent
E. Coli	/100 ml		Absent	Absent

DW= Drinking Water DW1=NARMADA RES INLET ,DW2= NARMADA RES OUTLET

Approved By -

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav								
Drinking Water Quality								
Parameters	Units	IS:10500 1991:2012(Acceptable Limits)	Sep-20					
			Monitoring Location					
			DW1	DW2	DW3	DW4	DW5	DW6
pH	..	6.5 to 8.5	7.93	9.86	8.05	7.71	7.89	7.53
Turbidity	NTU	1	9.1	<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	84	53	59	60	63	56
Fluoride	mg/L	1	0.82	0.71	<0.05	<0.05	<0.05	<0.05
Nitrate	mg/L	45	0.65	0.83	1.23	1.58	1.7	1.41
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	556	376	216	292	240	244
Alkalinity	mg/L	200	70	100	41	46	58	53
Total Hardness	mg/L	200	180	150	110	180	160	140
Calcium	mg/L	75	51	58	20	24	24	22
Magnesium	mg/L	30	13	1	21	22	26	23
Residual Chlorine	mg/L	0.2	<0.2	0.89	1.33	1.06	1.11	1.19
Chlorides	mg/L	250	142	128	66.53	76	71.91	69.96
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	/100 ml	Shall not be	Absent	Absent	Absent	Absent	Absent	Absent
E. Coli	/100 ml	detectable in	Absent	Absent	Absent	Absent	Absent	Absent

DW= Drinking Water, DW1= Drinking Water(Narmada Reservoir water INLET),,DW2= Drinking Water(Narmada Reservoir water OUTLET),, DW3 = SUVIDHA. DW 4= SECURITY BARRAC , DW5=RAMPARA VILL.,DW6= FERTILIZER SHED

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav		
Ground Water Quality		
Parameters	Unit(SI)	Jun-20
		Monitoring
		R1
pH		7.86
Temperature	0C	24.9
Sulphates	mg/L	62
Ammonical Nitrogen	mg/L	3.01
COD	mg/L	12
BOD(3days at 27)0C	mg/L	4
Total Dissolved solids	mg/L	384
Suspended solids	mg/L	12
Oil and Grease	mg/L	0.4
Arsenic	mg/L	<0.01
Total hardness	mg/L	120
Calcium Hardness	mg/L	90
Magnesium Hardness	mg/L	30
Chlorides	mg/L	63
Lead	mg/L	<0.01
Mercury	mg/L	<0.001
Total Chromium	mg/L	<0.02
Total Coliform	MPN/100	Absent
E Coli.	N.A.	Absent
GW = Ground Water R = RAIN WATER		


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav		
Ground Water Quality		
Parameters	Unit(SI)	Jul-20
		Monitoring
		GW 1
pH		8.25
Temperature	0C	25.2
Sulphates	mg/L	64
Ammonical Nitrogen	mg/L	<0.05
COD	mg/L	<5
BOD(3days at 27)0C	mg/L	<2
Total Dissolved solids	mg/L	436
Suspended solids	mg/L	<2
Oil and Grease	mg/L	<1
Arsenic	mg/L	<0.01
Total hardness	mg/L	180
Calcium Hardness	mg/L	84
Magnesium Hardness	mg/L	96
Chlorides	mg/L	15
Lead	mg/L	<0.01
Mercury	mg/L	<0.001
Total Chromium	mg/L	<0.02
Total Coliform	MPN/100	Absent
E Coli.	N.A.	Absent

GW = Ground Water R =WELL WATER

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav Ground Water Quality May-20		
Parameters	Unit(SI)	Monitoring Location
		M 1
pH		7.94
Dissolved oxygen	mg/L	6.2
BOD (3 days at 27 °C)	mg/L	<2
Oil & Grease	mg/L	<1

APM Terminals Pipavav Ground Water Quality Jun-20		
Parameters	Unit(SI)	Monitoring Location
		M 1
pH		7.9
Dissolved oxygen	mg/L	4.8
BOD (3 days at 27 °C)	mg/L	4
Oil & Grease	mg/L	<1

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav		
Surface Water Quality		
Jun-20		
Parameters	Unit(SI)	Monitoring Location
		SW1
pH		7.38
Temperature	0C	25.8
Sulphates	mg/L	7
Ammonical Nitrogen	mg/L	2.77
COD	mg/L	28
BOD(3days at 27)0C	mg/L	9
Total Dissolved solids	mg/L	1581
Suspended solids	mg/L	19
Oil and Grease	mg/L	0.4
Arsenic	mg/L	<0.01
Total hardness	mg/L	100
Calcium Hardness	mg/L	80
Magnesium Hardness	mg/L	20
Chlorides	mg/L	144
Lead	mg/L	<0.01
Mercury	mg/L	<0.001
Total Chromium	mg/L	<0.02
SW= Surface Water		
SW1=POND		

For Kadam Environmental Consultants

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav Surface Water Quality Jul-20		
Parameters	Unit(SI)	Monitoring Location
		SW1
pH		8.22
Temperature	OC	24.8
Sulphates	mg/L	67
Ammonical Nitrogen	mg/L	<0.05
COD	mg/L	<5
BOD(3days at 27)OC	mg/L	<2
Total Dissolved solids	mg/L	428
Suspended solids	mg/L	<2
Oil and Grease	mg/L	<1
Arsenic	mg/L	<0.01
Total hardness	mg/L	171
Calcium Hardness	mg/L	86
Magnesium Hardness	mg/L	85
Chlorides	mg/L	14
Lead	mg/L	<0.01
Mercury	mg/L	<0.001
Total Chromium	mg/L	<0.02

SW= Surface Water
SW1=DHATARWADI RIVER river water


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav		
Surface Water Quality		
Aug-20		
Parameters	Unit(SI)	Monitoring Location
		SW1
pH		8.54
Temperature	0C	25.2
Sulphates	mg/L	109
Ammonical Nitrogen	mg/L	0.46
COD	mg/L	16
BOD(3days at 27)0C	mg/L	5
Total Dissolved solids	mg/L	1104
Suspended solids	mg/L	8
Oil and Grease	mg/L	0.4
Arsenic	mg/L	<0.01
Total hardness	mg/L	204
Calcium Hardness	mg/L	118
Magnesium Hardness	mg/L	86
Chlorides	mg/L	347
Lead	mg/L	<0.02
Mercury	mg/L	<0.02
Total Chromium	mg/L	<0.02

SW= Surface Water

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav

Surface Water Quality

Sep-20

Parameters	Unit(SI)	Monitoring Location		
		SW1	SW2	SW3
pH		6.9	8.01	8.8
Temperature	OC	25.2	25.3	25.1
Sulphates	mg/L	105	98	88
Ammonical Nitrogen	mg/L	0.5	0.46	0.4
COD	mg/L	20	29	32
BOD(3days at 27)OC	mg/L	4	5	9
Total Dissolved solids	mg/L	1096	1050	1192
Suspended solids	mg/L	7	4	8
Oil and Grease	mg/L	<1	<1	<1
Arsenic	mg/L	<0.01	<0.01	<0.01
Total hardness	mg/L	216	210	224
Calcium Hardness	mg/L	106	102	126
Magnesium Hardness	mg/L	110	108	98
Chlorides	mg/L	322	342	410
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

SW= Surface Water

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ENVIRONMENTAL MONITORING REPORT

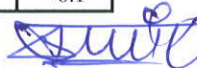
APM Terminals Pipavav
SEWAGE WATER ANALYSIS REPORT
(APRIL 2020 to SEPT, 2020)

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	..
May-20	6.98	21	69	20	<1	4.5
Aug-20	6.92	16	54	10	<1	6.91
Sep-20	7.28	9	61	13	<1	6.03

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	..
Jun-20	6.91	18.00	61.00	10.00	<1	<0.1
Jul-20	7.26	18	65	10	<1	<0.1
Sep-20	6.85	13	49	11	<1	<0.1


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav
SEWAGE WATER ANALYSIS REPORT
(APRIL 2020 to SEPT, 2020)

STP Inlet	Concentration of Pollutants (STP Inlet)					
	pH	BOD	COD	TSS	Residual Chlorine	Oil & Grease
PERMISSIBLE LIMITS: mg/l			
May-20	6.8	105	350	71	<0.1	<1
Aug-20	6.68	103	343	54	<0.1	<1
Sep-20	6.95	94	368	72	<0.1	<2

STP Inlet	Concentration of Pollutants (STP Inlet)					
	pH	BOD	COD	TSS	Residual Chlorine	Oil & Grease
PERMISSIBLE LIMITS: mg/l			
Jun-20	6.78	109	361	70	<0.1	<1
Jul-20	6.66	109	362	14	<0.1	<1
Sep-20	6.9	103	360	68	<0.1	<1

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING (APRIL 2020 to SEPT, 2020)

Month/Locations	Day		NIGHT	
	Min	Max	Min	Max
May-20				
Medical center (silence Zone)	54.1	49.5		
Colony Gate (Residential Area)	58	54.2		
Admin Building (Industrial Area)	60.2	58.2		
Jun-20				
Medical Center (Silent Zone)	54.8	48.7		
Front of Suvidha Store (Commercial Zone)	69.1	58.2		
Security Gate 2 (Industrial Zone)	75.1	63.5		
Township Gate (Residential Zone)	66.2	52.3		
Aug-20				
Suvidha Store	46.2	72	32.6	53.3
Township Gate	48.4	76.2	45.8	66.4
Security Gate No 2	31.5	57.9	30.5	52.4
Medical Centre	31.8	56.1	31.5	54.9
Sep-20				
Railway Construction	52.3	72.6		
RMCG Yard	55.8	75		
Fire Office	35.8	73.9		
Marine Building Office	35.9	65.8		
Jetty	58.4	81.2		

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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING (APRIL 2020 to SEPT, 2020)		
Month/Locations	Day	
	Min	Max
May-20		
Engineering Workshop	78.6	68.2
Custom Gate	73.5	64.7
Gate No. 1	75.9	61.7
Jetty	73.4	65.2
Fertilizer Shed	77.5	68.9

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING (MAY 2020 to SEPT, 2020)		
Month/Locations	Day	
	Min	Max
Jun-20		
Engineering Workshop	92.8	74.9
Marine Building	69.2	57.8

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING (APRIL 2020 to SEPT, 2020)				
Month/Locations	Day		NIGHT	
	Min	Max	Min	Max
Aug-20				
Engineering Workshop	38.2	74.8	35.7	71.7
Fertilizer Shed	67.4	86.6	51.2	76.4
Narmada Reserve Wire	56.7	84.1	38.7	60.5
Call Yard	61.2	78.3	50.4	70.4
Jetty No 3	62.5	81.2	40.9	69.2
Utsav Yard	51.8	75.6	40.6	66.7

APM Terminals Pipavav OCCUPATIONAL NOISE MONITORING (APRIL 2020 to SEPT, 2020)		
Month/Locations	Day	
	Min	Max
Sep-20		
Gate No. 1	56.1	78.7
Medical Centre	51.1	74.8
WTP(Narmada)	52.5	75.8
Pre Gate	62.8	78.7
Fertilizer Shed	57.2	74.5
Engineering Workshop	45.4	81.3

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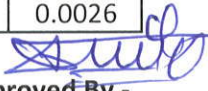
ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav

Ground Water Quality

May-20

Parameters	Unit(SI)	Monitoring Location
		UO 1
Poly chlorinated Biphenyls (PCBs)	mg/L	<0.001
Lead	ppm	0.05
Arsenic	ppm	0.04
Cadmium	ppm	0.53
Chromium	ppm	<0.02
Nickel	ppm	0.07
Poly Aromatic Hydrocarbons (PAH)	%	0.0026


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav

Ground Water Quality

May-20

Parameters	Unit(SI)	Monitoring Location
		UO 1
pH (10% solution)	--	8.09
Moisture Content	%	7.74
Bulk Density	gm/ml	0.3613
Organic Carbon	%	24.6
Total Nitrogen	%	0.82
Gross Calorific Value	kcal/kg	1596


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ENVIRONMENTAL MONITORING REPORT

APM Terminals Pipavav

Ground Water Quality

Sep-20

Parameters	Unit (SI)	RESULT			
		S1	S2	S3	S4
pH	-	7.34	7.29	7.2	7.16
Conductivity	µmhos/cm	1125	1621	1509	1517
Exchangeable Calcium	gm/kg	8	7	5	7
Exchangeable Magnesium	gm/kg	11	13	9	13
Sodium	gm/kg	0.41	0.4	0.41	0.42
Potassium	gm/kg	0.26	0.15	0.15	0.21
Phosphorous	gm/kg	0.02	0.05	0.02	0.04
Sulphate	gm/kg	12.34	12.38	12.42	12.22
Organic Matter	gm/kg	1.08	0.41	0.77	0.49
Aluminium	gm/kg	<0.2	<0.2	<0.2	<0.2
Manganese	gm/kg	0.26	0.18	0.18	0.24
Iron	gm/kg	0.4	0.44	0.31	0.37
Zinc	gm/kg	0.017	0.008	0.016	0.01
Texture	--	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
Chloride	gm/kg	112	98		108
Organic Carbon	%	0.84	0.55	0.34	0.56
SAR	--	1.29	0.772	0.469	0.721
Boron	gm/kg	<0.05	<0.05	<0.05	<0.05
Ion Exchange Property	meq/100gm	15.28	16.52	15.84	14.08


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