

## Dantuluri Jyothi

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**From:** Dantuluri Jyothi  
**Sent:** Tuesday, May 21, 2024 10:32 AM  
**To:** 'suresh.pasupuleti@gov.in'; 'sureshpasupuleti@yahoo.com'; 'Ch. Rajasekhar'  
**Subject:** AKPL - NABL EC Compliance - Submitted - Reg.  
**Attachments:** AKPL NABL HYC 2024 - Parivesh - Ack 20.05.2024-1.pdf; APPCB Portal - ACK 20.05.2024.pdf; AKPL - NABL - HYC - 2024 - 20.05.2024 - Total Final.pdf

Dear Sir,

It is to submit that the NABL Certified EC & CRZ Compliance of Adani Krishnapatnam Port Limited for the period from October 2023 to March 2024 have successfully submitted through the respective Portal/Website (Parivesh & APPCB Compliance Portal) in compliance with the condition stipulated in EC & CRZ Orders of MoEF & CC and CTE & CTO of APPCB,

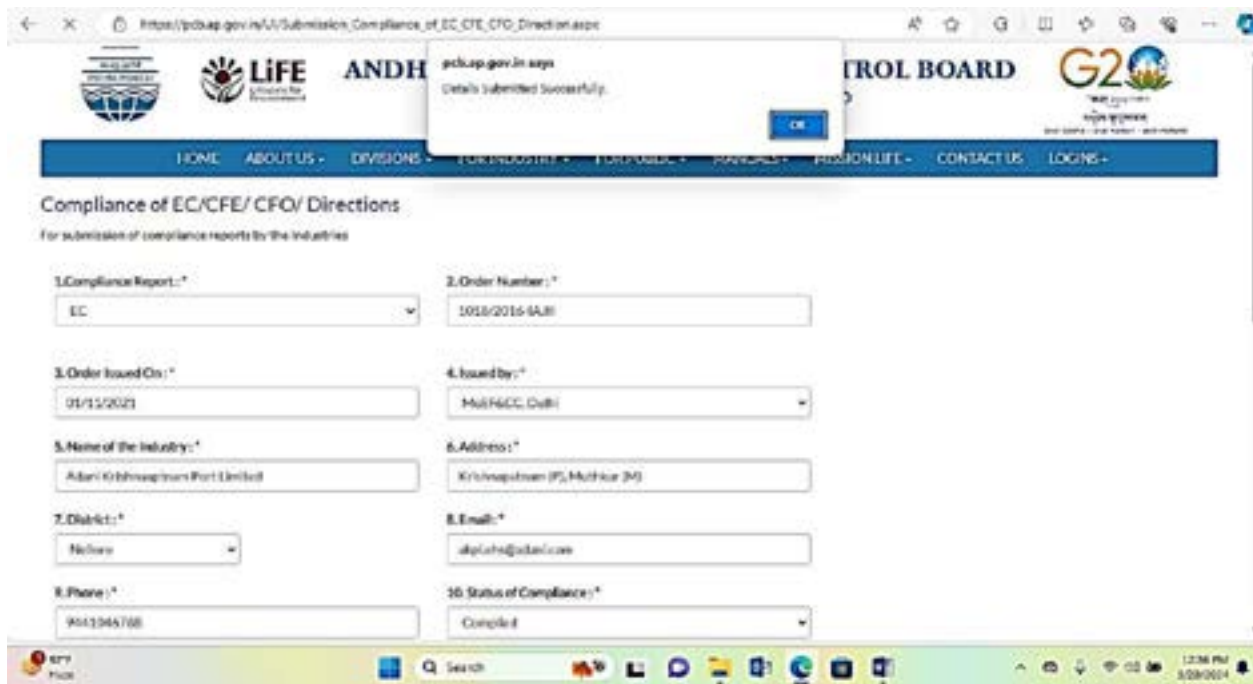
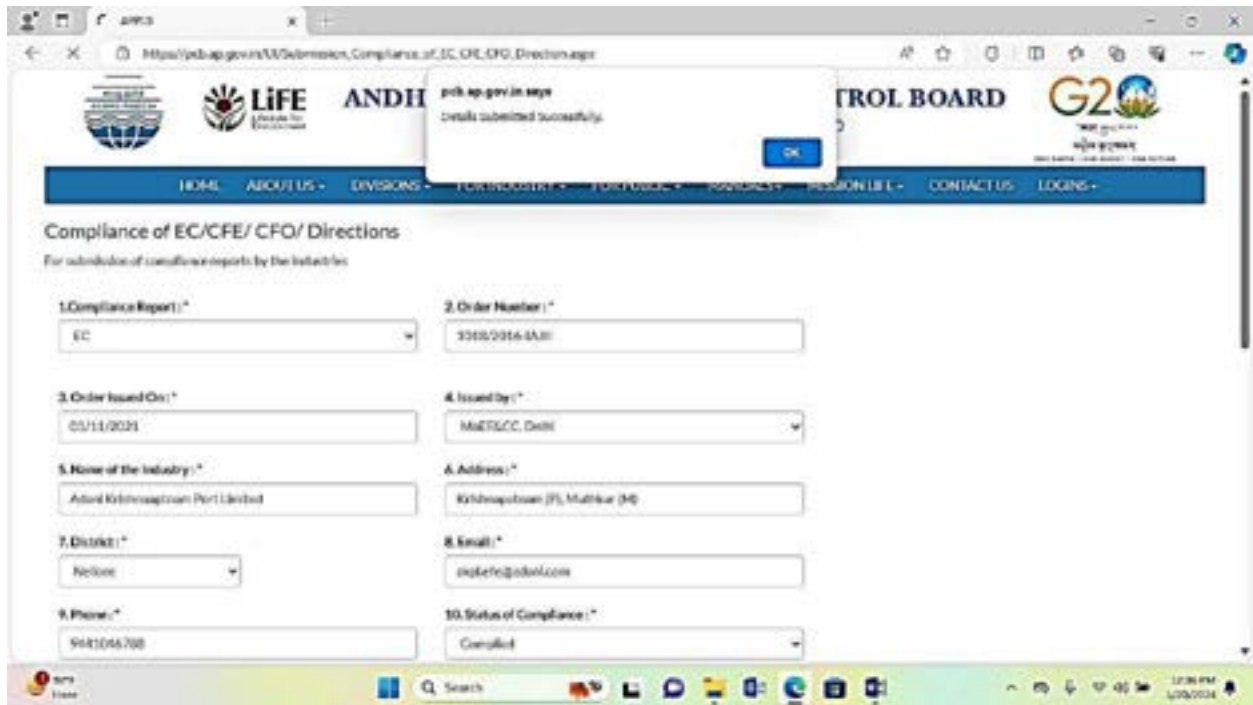
The Certified Compliance reports along with the Acknowledgement of Parivesh Portal and Screenshot of APPCB Compliance portal towards successful submission are attached herewith.

With Best Regards  
Dr.D. Jyothi  
Vice President - Env

Your (**Environment Clearance**) application has been **Submitted** with following details

<b>Proposal No</b>	IA/AP/MIS/566/2009
<b>Compliance ID</b>	28144510
<b>Compliance Number(For Tracking)</b>	EC/M/COMPLIANCE/28144510/2024
<b>Reporting Year</b>	2024
<b>Reporting Period</b>	01 Jun(01 Oct - 31 Mar)
<b>Submission Date</b>	20-05-2024
<b>IRO Name</b>	V Geroge Jenner
<b>IRO Email</b>	tr025@ifs.nic.in
<b>State</b>	ANDHRA PRADESH
<b>IRO Office Address</b>	Integrated Regional Offices, Vijayawada

**Note:-** SMS and E-Mail has been sent to V Geroge Jenner, ANDHRA PRADESH with Notification to Project Proponent.





# SPECTRA ENVIROTECH PVT LTD

Accredited by : MoEF, NABL, ISO 45001:2018 & ISO 9001:2015  
Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering



Letter No. SEPL/AKPL/MoEF&CC/NABL/2024/1805

Dated: 18.05.2024

To

The Integrated Regional Officer (IRO),  
Ministry of Environment, Forest & Climate Changes (MoEF&CC),  
Green House Complex, Gopal Reddy Road,  
Vijayawada, Andhra Pradesh – 520010

Dear Sir,

Sub:- SEPL - Certified Half Yearly Compliance Report of M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthkur (M), SPSR Nellore Dist., on the conditions of EC & CRZ clearances of MoEF & CC along with the APPCB CTE & CTO Compliance and Monitoring reports for the period of October 2023 to March 2024– Submitted - Reg.

Ref:- 1. AKPL Work Order No.5702016189, dated 22.03.2024.  
2. MoEF & CC S.O. No. 3067 (E) dated 01.12.2009, 5845 (E) dated 2611.2018 & Newspaper notification dated 15.09.2019

The project proponent M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthkur (M), SPSR Nellore Dist., shall have to submit the NABL 3<sup>rd</sup> party certified Half-yearly compliance reports for the period from October to March along with the monitoring reports on the conditions stipulated in EC, CTE & CTO orders issued by MoEF&CC and State Pollution Control Board on or before 1st June every year.

As per the Notifications & Circulars, the proponent M/s. Adani Krishnapatnam Port Limited (AKPL) approached Spectra Envirotech Pvt. Ltd., (SEPL) to undertake Auditing, preparation & Certification of the compliance status of the conditions stipulated in the EC & CRZ Clearance of MoEF & CC, CTE & CTO of APPCB including Monitoring/Sampling of Air, Terrestrial & Marine parameters and Environmental Data analysis for various environmental factors for which SEPL accepted the job to Audit, prepare & submit the certified Half-yearly Compliance to MoEF & CC & APPCB.

As per the scope of the work, the Environmental data has been collected for various environmental components viz.

1. Ambient Air Quality Monitoring in and around the port purview considering the upwind & downwind directions.
2. Terrestrial sampling, analysis & preparation of reports
  - Ground water sampling at surrounding villages
  - Surface water sample collection & analysis
  - Sewage Treatment Plant (STP) (Inlet & Outlet)
  - Noise Levels dB (A)
  - Soil Sampling
  - DG Set Stack Monitoring
3. Marine sampling, analysis & preparation of reports.
4. Preparation of Compliance & Uploading in the portal.



LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Anakapalli - 531 035  
Web : [www.spectraenviro.com](http://www.spectraenviro.com) | E-mail: [spectra.qc@gmail.com](mailto:spectra.qc@gmail.com) | [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com)  
Cell: 80199 55333, 222, 111 | BRANCHES: VIJAYAWADA and HYDERABAD





# SPECTRA ENVIROTECH PVT LTD

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Environmental, Micro Biology, Analytical Testings & RO, ETP, STP's Engineering



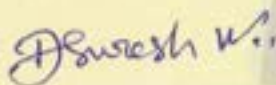
This report comprises with 11 chapters including Annexures covering all the information of the Port activities & updated compliance status of all the conditions stipulated in EC & CRZ of MoEF & CC, CTE & CTO of A.P. Pollution Control Board.

This report has been prepared by Spectra Envirotech Pvt. Ltd., with all reasonable skill, care and diligence within the terms of the contract with the client, and with the data provided & available, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

Thanking you,

Yours sincerely,

For Spectra Envirotech Pvt. Ltd.,



Authorized Signatory



Encl. Certified EC & CRZ compliance of M/s. Adani Krishnapatnam Port Limited., along with the CTE & CTO Compliance and monitoring reports for the period from October 2023 to March 2024 along with the monitoring reports.

LABORATORY : Plot No 142/1, Eruvada Junction, Sabbavaram (M), Anakapalli - 531 035  
Web : [www.spectraenviro.com](http://www.spectraenviro.com) | E-mail: [spectra.qc@gmail.com](mailto:spectra.qc@gmail.com) | [sepl.sjn@gmail.com](mailto:sepl.sjn@gmail.com)  
Cell: 80199 55333, 222, 111 | BRANCHES: VIJAYAWADA and HYDERABAD



**Letter No AKPL/EHS/MoEF/018/2024-25**

**Date:18.05.2024**

To

The Integrated Regional Officer (IRO),  
Ministry of Environment, Forest & Climate Changes (MoEF&CC),  
Green House Complex, Gopal Reddy Road,  
Vijayawada, Andhra Pradesh – 520010

Dear Sir,

Sub:- AKPL - NABL Accredited 3rd Party Certified Half Yearly Compliance Report on the conditions of EC & CRZ clearances of MoEF & CC along with the APPCB CTE & CTO Compliance and Monitoring reports for the period of October 2023 to March 2024– Submitted - Reg.

- Ref:-
1. MoEF EC Order No. 10-22/2005-IA-III dated 26.07.2006
  2. MoEF EC & CRZ Clearance Order F. No. 11 – 62 / 2009 – IA.III dated 13.11. 2009 extended vide Oder dated 18.08.2015 & 16.04.2018 and amended order dated 16.3.2016.
  3. MoEF & CC EC & CRZ Clearance File No: 1018/2016-IA.III dated 11.01.2021,
  4. APPCB CTE Order No: 633/APPCB/CFE/RO-NLR/HO/2010 Dt. 25.02.2021 and amended order dated 06.04.2021 & 16.07.2021.
  5. APPCB CTO & HWA Order No: APPCB/VJA/NLR/11344/CFO/HO/2019 dated 11/11/2022 valid upto 31.08.2027.

In compliance to the conditions stipulated in EC, CTE & CTO orders issued by MoEF&CC and State Pollution Control Board, the project proponent shall submit Half-yearly (six monthly) compliance reports along with the monitoring reports on 1st June and 1st December every year.

As per the MoEF & CC S.O. No. 3067 (E) dated 01.12.2009, 5845 (E) dated 26.11.2018 & MoEF&CC Newspaper notification dated 15.09.2019, the project proponent shall have to submitted the 1st Half-yearly compliance reports (self-certified) for the period from April to September on or before 1<sup>st</sup> December & 2<sup>nd</sup> Half-yearly compliance reports (NABL Accredited 3<sup>rd</sup> party certified) for the period from October to March shall be submitted on or before 1<sup>st</sup> June, every year.

As per APPCB Newspaper Notification in the Hindu & Eenadu on 07.09.2019 and as per the condition stipulated in the CTO & HWA Order dated 19.09.2020 & 13.01.2023, the project proponent shall have to submit the self-certified compliance reports for the period from April to September on or before 1<sup>st</sup> December & 2<sup>nd</sup> NABL accredited 3<sup>rd</sup> party certified compliance reports for the period from October to March shall be submitted on or before 1<sup>st</sup> June every year.

The Compliance report shall be uploaded through [ecompliance-ap@gov.in](mailto:ecompliance-ap@gov.in) web site & of MoEF&CC, Gol, New Delhi Parivesh Portal <https://parivesh.nic.in>

In this regard, the Joint Director, MoEF&CC, Sub-Office, Vijayawada, Andhra Pradesh circulated certain guidelines on 29.03.2024 regarding the submission of Half-yearly compliance:

- It shall be mandatory for the project management to submit half yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year.
- It is required to monitor the environmental parameters viz., Stack Emissions, Ambient Air Quality (AAQ), Work Zone Emissions, Noise Level, Water Quality etc. by MoEF & CC/NABL accredited laboratory and the monitoring report (copies of reports generated by laboratory) to be submitted along with six monthly compliance reports.

Complying with the above Notifications & Circulars, we (Adani Krishnapatnam Port Ltd.,) have been submitting the compliance reports periodically well within the due dates by uploading through [ecompliance-ap@gov.in](mailto:ecompliance-ap@gov.in) web site & of MoEF&CC, Gol, New Delhi Parivesh Portal <https://parivesh.nic.in>.

Accordingly, the Self-certified half-yearly compliance report for the period from April 2023 to September 2023 were submitted on 29.11.2023 through [ecompliance-ap@gov.in](mailto:ecompliance-ap@gov.in) web site and also through Parivesh portal on 30.11.2023.

Now, we are submitting the NABL Accredited 3rd Party certified EC & CRZ compliance for the period from October 2023 to March 2024 along with the CTE & CTO Compliance and monitoring reports through [ecompliance-ap@gov.in](mailto:ecompliance-ap@gov.in) web site & of MoEF&CC, Gol, New Delhi Parivesh Portal <https://parivesh.nic.in>.

Thanking you,

Yours sincerely,


For **Adani Krishnapatnam Port Limited.,**



**Dr. D. Jyothi**  
Vice President - Environment

Encl. NABL Accredited 3rd Party certified EC & CRZ compliance along with the CTE & CTO Compliance and monitoring reports for the period from October 2023 to March 2024 along with the monitoring reports.

**Half Yearly Compliance Report****2024****01 Jun(01 Oct - 31 Mar)****Acknowledgment**

<b>Proposal Name</b>	Expansion of Krishnapatnam Port (Phase III)		
<b>Name of Entity / Corporate Office</b>	Adani Krishnapatnam Port		
<b>Village(s)</b>	N/A		
<b>District</b>	SPSR  NELLORE		
<b>Proposal No.</b>	IA/AP/MIS/566/2009	<b>Category</b>	INFRA-1
<b>Plot / Survey / Khasra No.</b>	N/A	<b>Sub-District</b>	N/A
<b>State</b>	ANDHRA PRADESH	<b>Entity's PAN</b>	NA
<b>MoEF File No.</b>	10-18/2016-IA.III	<b>Entity name as per PAN</b>	NA

**Compliance Reporting Details**

<b>Reporting Year</b>	2024
<b>Remarks (if any)</b>	<p>Complying with the MoEF &amp; CC Notifications &amp; Circulars, we (Adani Krishnapatnam Port Ltd.,) have been submitting the compliance reports periodically well within the due dates by uploading through ecompliance-ap@gov.in web site &amp; of MoEF&amp;CC, GoI, New Delhi Parivesh Portal <a href="https://parivesh.nic.in">https://parivesh.nic.in</a>. Accordingly, the Self-certified half-yearly compliance report for the period from April 2023 to September 2023 were submitted on 29.11.2023 through ecompliance-ap@gov.in web site and also through Parivesh portal on 30.11.2023. Now, we are submitting the NABL Accredited 3rd Party certified EC &amp; CRZ compliance for the period from October 2023 to March 2024 along with the CTE &amp; CTO Compliance and monitoring reports through ecompliance-ap@gov.in web site &amp; of MoEF&amp;CC, GoI, New Delhi Parivesh Portal <a href="https://parivesh.nic.in">https://parivesh.nic.in</a>.</p>



**Reporting Period** 01 Jun(01 Oct - 31 Mar)

## Details of Production and Project Area

**Name of Entity / Corporate Office** Adani Krishnapatnam Port

	<b>Project Area as per EC Granted</b>	<b>Annual Project Area in Possession</b>
Private	0	0
Revenue Land	0	0
Forest	0	0
Others	0	0
Total	0	0

## Production Capacity

Sr. no	Product Name	units	Valid Upto	Capacity	Production last year	Capacity as per CTO
1	Coal	Million Tons per Annum (MTPA)	31/08/2027	134	35.21	46
2	Iron Ore	Million Tons per Annum (MTPA)	31/08/2027	8	1.75	8
3	General Cargo	Million Tons per Annum (MTPA)	31/08/2027	24.5	9.45	14
4	Liquid Cargo	Million Tons per Annum (MTPA)	31/08/2027	51.7	0	10
5	Container Cargo	Others:MTEU's per Annum	31/08/2027	3.1	0.1	2

## Conditions

### General Conditions

Sr.No.	Condition Type	Condition Details
1	WASTE MANAGEMENT	Dredged material shall be disposed safely in the designated areas.

**PPs Submission:** Being Complied  
Being complied.

Date:  
20/05/2024

2 GREENBELT

Top soil shall be separately stored and used in the development of green belt.

**PPs Submission:** Being Complied  
Being complied. AKPL is using coco peat, red soil and vermi compost for enriching the topsoil.

Date:  
20/05/2024

3	ENERGY PRESERVATION MEASURES	Provide LED lights in their offices and port areas.
<b>PPs Submission:</b> Being Complied Being complied All the office buildings and other operation buildings are provided with LED lights,		Date: 20/05/2024
4	WASTE MANAGEMENT	Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.
<b>PPs Submission:</b> Being Complied Being Complied		Date: 20/05/2024
5	WASTE MANAGEMENT	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.
<b>PPs Submission:</b> Being Complied Being Complied.		Date: 20/05/2024
6	Statutory compliance	The project proponent shall abide by all the commitments and recommendations made in the Form-II, EIA and EMP report, submissions made during Public Hearing and also that have been made during their presentation to EAC.
<b>PPs Submission:</b> Being Complied Being complied		Date: 20/05/2024
7	WASTE MANAGEMENT	The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.
<b>PPs Submission:</b> Being Complied Being Complied.		Date: 20/05/2024
8	ENERGY PRESERVATION MEASURES	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights parking around project area and maintain the same regularly
<b>PPs Submission:</b> Being Complied Being complied The Port is being supplied with Non-conventional source of energy through Power Grid for uninterrupted power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)		Date: 20/05/2024
9	Statutory compliance	The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained. Creek water monitoring program shall be implemented during the construction phase
<b>PPs Submission:</b> Being Complied Being complied.		Date: 20/05/2024
10	Statutory compliance	Development of green belt by native species with consultation with state forest department shall be ensured.
<b>PPs Submission:</b> Complied Complied. • Development of Greenbelt is a regular process in AKPL • As on 31st March 2023,		Date:

<p>AKPL has successfully developed Developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue&amp; median plantations. • Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port). • Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary. • Maintaining 20-meter width greenbelt around the coal stack yards.</p>		20/05/2024
11	Statutory compliance	<p>The proposed expansion entails 60 million cum of dredging in soft soil. As proposed, the PP shall utilize 26 million cu m of dredged sand for reclamation of low lying areas of port, stock pile 2 million cu m on the coast north of north breakwater for long term coastal protection as recommended by NIOT and disposal of balance 32 million cu m of dredged spoil in the identified dredge disposal area of 56 Km2 beyond (-) 20 m contour. The impact of dredging on the marine environment should be monitored and necessary measures shall be taken on priority basis if any adverse impact is observed. NIOT will oversee the work as scientific body and continue to monitor its impact/benefits for at least 5 years post project completion. Necessary financial assistance to be provided by project proponent to NIOT. The report of the same to be submitted to regional office of MoEFCC by project proponent.</p>
<p><b>PPs Submission:</b> Being Complied • The impact of dredging activities has been monitoring by NIOT for 5 years post completion of the project.</p>		<p>Date: 20/05/2024</p>
12	Statutory compliance	<p>The Environmental and CRZ Clearance to the project is primarily under provisions of EIA Notification, 2006 and CRZ Notification, 2011. It does not amount to approvals/consent/ permissions etc., required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals / clearances under any other Acts/ Regulations or Statutes as applicable to the project.</p>
<p><b>PPs Submission:</b> Agreed to Comply Agreed to Copley</p>		<p>Date: 20/05/2024</p>
13	Statutory compliance	<p>Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. No construction works other than those permitted i n Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.</p>
<p><b>PPs Submission:</b> Being Complied Being Complied</p>		<p>Date: 20/05/2024</p>
14	Statutory compliance	<p>All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide letter 202/CRZ/IND/201930 dated 21.05.2020 shall be complied with</p>
<p><b>PPs Submission:</b> Agreed to Comply Agreed to comply.</p>		<p>Date: 20/05/2024</p>
15	AIR QUALITY MONITORING AND PRESERVATION	<p>Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low Sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board</p>

<p><b>PPs Submission: Being Complied</b> Being Complied. i. The Port is being supplied with Non-conventional source of energy through Power Grid for uninterrupted power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh) ii. The DG Sets are being operated as back up for emergency lighting &amp; safety during power breakdowns. iii. Retrofitting certification was carried-out for the DG Sets. iv. The DG Sets are being monitored ones in 6 months through a NABL Accredited 3rd Party and submitting the analysis reports the concerned departments. Latest Analysis reports dated 21.03.2024 are furnished at chapter - 5</p>		<p>Date: 20/05/2024</p>
16	<p><b>AIR QUALITY MONITORING AND PRESERVATION</b></p>	<p>Shrouding shall be carried out in the work site enclosing the dock/proposed facility area. This will act as dust curtain as well achieving zero dust discharge from the site. These curtain or shroud will be immensely effective in restricting disturbance from wind in affecting the dry dock operations, preventing waste dispersion, improving working conditions through provision of shade for the workers.</p>
<p><b>PPs Submission: Being Complied</b> Being complied. • Erected &amp; maintaining wind breaking wall of height 14 mtrs to prevent any dust nuisance towards habitation supported with high density greenbelt. • Covered the operational area with rows of plantation which are acting as wind barricades. • Ensuring water sprinkling on haul roads.</p>		<p>Date: 20/05/2024</p>
17	<p><b>AIR QUALITY MONITORING AND PRESERVATION</b></p>	<p>A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.</p>
<p><b>PPs Submission: Being Complied</b> Complied AKPL appointed M/s. FP Project Management to study and prepare a Traffic Management and Decongestion Plan. The study was completed and received the final report. Report submitted to the competent authorities. Copy of the Acknowledgement is attached as Annexure - XXII</p>		<p>Date: 20/05/2024</p>
18	<p><b>WATER QUALITY MONITORING AND PRESERVATION</b></p>	<p>The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.</p>
<p><b>PPs Submission: Being Complied</b> Being complied No creeks or rivers are blocked in the port premises and ensuring free flow of water.</p>		<p>Date: 20/05/2024</p>
19	<p><b>WATER QUALITY MONITORING AND PRESERVATION</b></p>	<p>Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. Silt curtains shall be used to contain the spreading of suspended sediment during dredging within the dredging area.</p>
<p><b>PPs Submission: Being Complied</b> Being complied.</p>		<p>Date: 20/05/2024</p>
20	<p><b>MISCELLANEOUS</b></p>	<p>The Ministry reserves the right to stipulate additional conditions if</p>

		found necessary. The Company in a time bound manner shall implement these conditions.
<b>PPs Submission:</b> Agreed to Comply Agreed to comply		Date: 20/05/2024
21	WASTE MANAGEMENT	Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill would be assessed. Guidelines given in MARPOL and Shipping Acts for oil spill management would be followed. Mechanism for integration of terminals oil contingency plan with the overall area contingency plan under the co- ordination of Coast should be covered.
<b>PPs Submission:</b> Being Complied Being complied • Port has been maintaining Oil Spill Contingency Plan. • Port has Tier-I Oil Spill response equipment for recovery of oil spill in coordination with ICG, Krishnapatnam and follows the guidelines given in MARPOL and Shipping Acts.		Date: 20/05/2024
22	GREENBELT	Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines.
<b>PPs Submission:</b> Being Complied Being complied		Date: 20/05/2024
23	Marine/Coastal	The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.
<b>PPs Submission:</b> Being Complied Being complied.		Date: 20/05/2024
24	Marine/Coastal	While carrying out dredging, an independent monitoring shall be carried out through a Government Agency/Institute to assess the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.
<b>PPs Submission:</b> Being Complied Being complied.		Date: 20/05/2024
25	MISCELLANEOUS	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/ monitoring reports.
<b>PPs Submission:</b> Agreed to Comply Agreed to comply		Date: 20/05/2024
26	Marine/Coastal	A detailed marine biodiversity management plan shall be prepared through the NIO or any other institute of repute on marine, brackish water authority. The report shall be based on a study of the impact of the project activities on the intertidal biotopes, corals and coral communities, molluscs, sea grasses, sea weeds, sub- tidal habitats, fishes, other marine and aquatic micro, macro and mega flora and fauna including benthos, plankton, turtles, birds etc. as also the productivity. The data collection and impact assessment shall be as per standards survey methods and include underwater photography.

<p><b>PPs Submission: Being Complied</b> Being complied AKPL appointed Sugandhi Devadason Marine Research Institute for preparing detailed Biodiversity management plan. Final study report is yet to be received.</p>		<p>Date: 20/05/2024</p>
27	Marine/Coastal	Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components including all micro, macro and mega floral and faunal components of marine biodiversity.
<p><b>PPs Submission: Being Complied</b> Being complied AKPL Appointed a NABL Accredited Laboratory for Monitoring the Terrestrial &amp; Marine parameters viz., Marine water quality, Marine sediment quality, Surface Water Quality and ground water quality at regular intervals with NABL Laboratory. Copies of the Analysis reports for the Period from October 2023 to March 2024 are furnished at chapter - 5</p>		<p>Date: 20/05/2024</p>
28	Marine/Coastal	The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.
<p><b>PPs Submission: Being Complied</b> Being complied. • There are no aquatic wildlife sanctuaries in the vicinity of the Port. • AKPL has been ensuring that the water traffic does not impact the marine ecosystem for port operations.</p>		<p>Date: 20/05/2024</p>
29	PUBLIC HEARING	The work space shall be maintained as per international standards for occupational health and safety with provision of fresh air respirators, blowers, and fans to prevent any accumulation and inhalation of undesirable levels of pollutants including VOCs.
<p><b>PPs Submission: Being Complied</b> Being complied.</p>		<p>Date: 20/05/2024</p>
30	PUBLIC HEARING	Workers shall be strictly enforced to wear personal protective equipment's like dust mask, ear muffs or ear plugs, whenever and wherever necessary/ required. Special visco-elastic gloves will be used by labour exposed to hazards from vibration.
<p><b>PPs Submission: Being Complied</b> Being complied. AKPL strictly enforcing all the workers, employees, stakeholders to wear PPEs at operational areas.</p>		<p>Date: 20/05/2024</p>
31	PUBLIC HEARING	Safety training shall be given to all workers specific to their work area and every worker and employee will be engaged in fire hazard awareness training and mock drills which will be conducted regularly. All standard safety and occupational hazard measures shall be implemented and monitored by the concerned officials to prevent the occurrence of untoward incidents/ accidents.
<p><b>PPs Submission: Being Complied</b> Being complied. • All the employees, workers &amp; contractors are given daily toolbox talks, monthly review meetings with employees engaged in various activities of the Port. • Port implemented and monitoring all standard safety and occupational hazard measures to prevent untoward incidents.</p>		<p>Date: 20/05/2024</p>
32	PUBLIC HEARING	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
<p><b>PPs Submission: Being Complied</b></p>		<p>Date:</p>

Being complied. Port has developed Emergency Preparedness Plan and Disaster Management Plan		20/05/2024
33	PUBLIC HEARING	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
<b>PPs Submission:</b> Being Complied Being complied.		Date: 20/05/2024
34	PUBLIC HEARING	Occupational health surveillance of the workers shall be done on a regular basis.
<b>PPs Submission:</b> Being Complied Being complied.		Date: 20/05/2024
35	Corporate Environmental Responsibility	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
<b>PPs Submission:</b> Being Complied Being complied. AKPL has been implementing all the statutory regulations / directions prescribed and submitting the compliance reports periodically to the authorities viz., MoEF&CC, CPCP & SPCB.		Date: 20/05/2024
36	Corporate Environmental Responsibility	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
<b>PPs Submission:</b> Being Complied Being complied. AKPL has formed Environment Cell Headed by Vice President & supporting staff at port level.		Date: 20/05/2024
37	Corporate Environmental Responsibility	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
<b>PPs Submission:</b> Being Complied Being complied The Funds & Expenditure earmarked for environment protection measures are being reported in Form – V Environmental Statement and submitting the same to APPCB & MoEF& CC. Latest submission is on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure - VII		Date: 20/05/2024
38	Corporate Environmental	Self-environmental audit shall be conducted annually. Every three

	Responsibility	years third party environmental audit shall be carried out.
<p><b>PPs Submission: Being Complied</b> Being complied. Submitting the 6 Monthly Self Certified &amp; NABL Accredited 3rd Party Compliance Reports for the period from April to September &amp; October to March respectively along with Terrestrial &amp; Marine Monitoring reports to MoEF &amp; CC and APPCB. Copy attached as Annexure - XII. The detailed parameter values are furnished at Chapter - 5</p>		Date: 20/05/2024
39	MISCELLANEOUS	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
<p><b>PPs Submission: Being Complied</b> Complied. Advertisement was published in District Newspapers namely "Vartha" in local language &amp; "The New Indian Express" in English language dated 21.01.2021. Copy attached as Annexure - XIII</p>		Date: 20/05/2024
40	MISCELLANEOUS	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
<p><b>PPs Submission: Complied</b> Complied. A copy of the Environmental clearance is submitted to the District Collector vide our letter dated 03.02.2021 and local Panchayats vide letter dated 01.02.2021. Copy attached as Annexure - XIX</p>		Date: 20/05/2024
41	Statutory compliance	Marine ecological monitoring and its mitigation measures for protection of phytoplankton, zooplanktons, macrobenthos, estuaries, sea-grass, algae, sea weeds, Crustaceans, Fishes, coral reefs and mangroves etc. as given in the EIA-EMP Report shall be complied with in letter and spirit with the help of reputed organization or individuals of national repute having knowledge in the said subject. Necessary financial assistance to be provided by project proponent.
<p><b>PPs Submission: Being Complied</b> Being complied. • NCSCM is Monitoring the Land, Air quality, Noise, Water, Marine, Marine sediment parameters and mangroves, ones in four years. • Latest NCSCM Monitoring report is attached as - XXIV. • AKPL appointed a NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters. • The reports for the period from October 2023 to March 2024 are furnished at Chapter - 5 The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</p>		Date: 20/05/2024
42	Statutory compliance	Continuous online monitoring of air and water covering the total area shall be carried out and the compliance report of the same shall be submitted along with the 6 monthly compliance reports to the regional office of MoEF&CC.
<p><b>PPs Submission: Complied</b> Complied. AKPL has been Operating 3 Nos of Continuous Ambient Air Quality Monitoring stations and connected to APPCB website. In addition, AKPL appointed an NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters. The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis. The reports for the period from October 2023 to March 2024 are furnished at chapter 3/3.4 page 37</p>		Date: 20/05/2024



43	Statutory compliance	The actions shall be in accordance with proposed landscape planning concepts to minimize major landscape changes. The change in land use pattern shall be limited to the proposed port limits and be carried out in such a way as to ensure proper drainage by providing surface drainage systems including storm water network.
<b>PPs Submission: Being Complied</b> Being complied		Date: 20/05/2024
44	Statutory compliance	Suitable preventive measures be taken to trap spillage of fuel / engine oil and lubricants from the construction site. Measures should be taken to contain, control and recover the accidental spills of fuel during cargo handling.
<b>PPs Submission: Being Complied</b> Being complied Port has existing Tier-I oil spill response equipment to combat any oil spill and coordinate with Indian Coast Guard to contain, control, and recover the accidental spills of fuel during cargo handling.		Date: 20/05/2024
45	Statutory compliance	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF & CC along with half yearly compliance report.
<b>PPs Submission: Complied</b> Complied.		Date: 20/05/2024
46	Statutory compliance	The company shall draw up and implement Corporate Social Responsibility Plan as per the Company's Act of 2013.
<b>PPs Submission: Being Complied</b> Being complied.		Date: 20/05/2024
47	Statutory compliance	As per the Ministry's Office Memorandum F. No. 22-65/2017-IA.III dated 30th September, 2020, the project proponent shall abide by all the commitments made by them to address the concerns raised during the public consultation. The project proponent shall initiate the activities proposed by them, based on the commitment made in the public hearing, and incorporate in the Environmental Management Plan and submit to the Ministry. All other activities including pollution control, environmental protection and conservation, R&R, wildlife and forest conservation/protection measures including the NPV, Compensatory Afforestation etc., either proposed by the project proponent based on the social impact assessment and R&R action plan carried out during the preparation of EIA report or prescribed by EAC, shall also be implemented and become part of EMP.
<b>PPs Submission: Being Complied</b> Being complied • The Public Consultation for Phase-III expansion was exempted as it was developed in the existing land area of 6800 Ac. • All the commitments made in the public consultation for Phase-II during 2009 were complied. • All the activities proposed in the EMP for Phase-II along with the Phase -III EMP including Pollution control measures, Environmental protection and conservation, R&R, Wildlife and forest conservation/ protection measures including the NPV, Compensatory Afforestation, etc., are being implemented.		Date: 20/05/2024
48	Statutory compliance	Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011 and the State Coastal Zone Management Plan as drawn up by the State Government. No construction works other than those permitted in Coastal Regulation

		Zone Notification shall be carried out in Coastal Regulation Zone area. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.	
<b>PPs Submission:</b> Being Complied Being Complied.			Date: 20/05/2024
49	Statutory compliance	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Coast Guard, Civil Aviation Department shall be obtained, as applicable by project proponents from the respective competent authorities.	
<b>PPs Submission:</b> Being Complied Complied. AKPL obtained Fire NOC & PESO approvals Copy of approvals attached as Annexure XVIII & as Annexure - XX			Date: 20/05/2024
50	AIR QUALITY MONITORING AND PRESERVATION	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and Nox in reference to SO2 and Nox emissions) within and outside the project area at least at four locations covering upwind and downwind directions.	
<b>PPs Submission:</b> Being Complied Being complied. • The Port has been operating 3 No. of CAAQM stations at the below mentioned locations as suggested by APCB within the Port premises to monitor the parameters viz., PM10, PM2.5, SO2, NO, NO2, CO and the data is being uploaded to APPCB website. a. CVR Amenities Complex b. Thamminapatnam Village c. Krishnapatnam Village • Environmental Monitoring has been rendered by NABL accredited laboratory along with AAQ monitoring at 7 locations covering upwind and downwind directions. The monthly reports for the period from October 2023 to March 2024 are furnished at Chapter - 5			Date: 20/05/2024
51	AIR QUALITY MONITORING AND PRESERVATION	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.	
<b>PPs Submission:</b> Being Complied Being complied. Port has adopted & implementing the following measures for the control of fugitive emissions during handling of bulk & non-bulk cargo and vehicular movement: i. Established mechanical conveyor system for handling coal & Iron ore. ii. Provided closed hoods for the conveyor system. iii. Stacker cum re-claimers is being used for loading and unloading the coal. iv. The railway wagons are being loaded mechanically. v. Installed fully mechanized coal handling systems with gantry grab type ship loaders/unloaders. vi. Provided hooded conveyor belt for cargo transferring directly from ship to the designated stack yard by means of closed hoppers and transfer towers. vii. Established closed warehouses for storage of weather sensitive cargoes. viii. The loading and discharge points of the conveyor carrying material are covered with exhaust hoods to prevent the formation of dust clouds. ix. All the conveyor galleries are covered to ensure zero dust emission during cargo transfer. x. Provided water sprinkling system at transfer towers to arrest the dust spreading into the atmosphere. xi. Provided semi mechanized facilities for truck tarpaulin covering stations to ensuring all the outgoing cargos by trucks are covered with tarpaulin. xii. Ensuring all the outgoing Railway Rakes are covered with Tarpaulin. xiii. Mist Canon systems provided for watering avenue plantations and road wetting on haul roads xiv. Operating Mechanical dust suppression system comprises of 248 canons. xv. Deploying DSS Tankers of Cannon mounted for sprinkling water on haul roads and yards to arrest the dust causing by the vehicular movement xvi. The Cargo stocks/heaps are covered with tarpaulin. xvii. Provided 8 No. tractor mounted hydraulic broom sweeping machines for cleaning the roads and jetty areas, xviii. 2 No of Heavy Duty Sweeping Machines are being deployed at operational areas and all internal roads. xix. Erected & maintaining wind breaking wall of height 14 mtrs to prevent any dust nuisance towards habitation supported with high density greenbelt. xx. Greenbelt in an extent of 196.25 Ha Developed & maintaining green belt			Date: 20/05/2024

		along the port covering, yards, roads and all operational areas.	
52	AIR QUALITY MONITORING AND PRESERVATION	Dust collectors shall be deployed in all areas where blasting (surface cleaning) and painting operations are to be carried out, supplemented by stacks for effective dispersion.	
<b>PPs Submission:</b> Being Complied Being complied. No blasting activities involved in the Port operations.			Date: 20/05/2024
53	AIR QUALITY MONITORING AND PRESERVATION	The Vessels shall comply the emission norms prescribed from time to time.	
<b>PPs Submission:</b> Being Complied Being complied.			Date: 20/05/2024
54	MISCELLANEOUS	The criteria pollutant levels namely; PM2.5, PM10, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	
<b>PPs Submission:</b> Complied Complied			Date: 20/05/2024
55	MISCELLANEOUS	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	
<b>PPs Submission:</b> Being Complied Being Complied AKPL obtained CTE of APPCB for Order No. 633/APPCB/CFE/RO-NLR/HO/2010 dated 25.02.2021. The project is yet to be implemented.			Date: 20/05/2024
56	MISCELLANEOUS	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	
<b>PPs Submission:</b> Agreed to Comply Agreed to Complied.			Date: 20/05/2024
57	MISCELLANEOUS	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	
<b>PPs Submission:</b> Agreed to Comply Agreed to Comply			Date: 20/05/2024
58	MISCELLANEOUS	No further expansion or modifications in the port area shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	
<b>PPs Submission:</b> Agreed to Comply Agreed to comply			Date: 20/05/2024
59	MISCELLANEOUS	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action	

		under the provisions of Environment (Protection) Act, 1986.
<b>PPs Submission:</b> Agreed to Comply Agreed to comply		Date: 20/05/2024
60	MISCELLANEOUS	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
<b>PPs Submission:</b> Agreed to Comply Agreed to comply		Date: 20/05/2024
61	MISCELLANEOUS	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
<b>PPs Submission:</b> Agreed to Comply Agreed to comply		Date: 20/05/2024
62	MISCELLANEOUS	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
<b>PPs Submission:</b> Complied Complied.		Date: 20/05/2024
63	MISCELLANEOUS	The project proponent shall submit six- monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
<b>PPs Submission:</b> Complied Complied.		Date: 20/05/2024
64	MISCELLANEOUS	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
<b>PPs Submission:</b> Being Complied Being complied Form – V Environmental Statement submitted to APPCB & MoEF& CC. Latest submission is on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure - VII		Date: 20/05/2024
65	WATER QUALITY MONITORING AND PRESERVATION	No ships docking at the proposed project site will discharge its on-board waste water untreated in to the estuary / channel. All such wastewater load will be diverted to the proposed Effluent Treatment Plant of the project site.
<b>PPs Submission:</b> Being Complied Being complied No ships are allowed to discharge on board wastewater.		Date:

			20/05/2024
66	WATER QUALITY MONITORING AND PRESERVATION	Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.	
<b>PPs Submission:</b> Being Complied Being complied. Port has existing Tier-I oil spill response equipment to combat any oil spill supported by Indian Coast Guard to contain, control and recover the oil spill.			Date: 20/05/2024
67	WATER QUALITY MONITORING AND PRESERVATION	The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.	
<b>PPs Submission:</b> Being Complied Being a Port activity, this condition is Not Applicable and there is no intake and discharge of waters involved in the Port operations.			Date: 20/05/2024
68	WATER QUALITY MONITORING AND PRESERVATION	Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.	
<b>PPs Submission:</b> Being Complied Complied • Oil Spills are being managed as per the approved Oil Spill Contingency Plan. • AKPL has provided Oil Boom, Skimmer and chemicals to attend any accidental oil spills. • Staff was trained to meet Tier-I Oil spills. • As per Disaster Management Plan, Indian Coast Guard will be alerted to coordinate. • Details were furnished to the MoEF&CC Regional Office, Bangalore, vide our letter no. KP/MoEF/PH-II/20 dated 02.02.2010. • Latest OPR drill was conducted at the port on 16.04.2023. Copy attached as Annexure – XVI. • Copy of the latest Mock Drills conducted is attached as Annexure – XVII.			Date: 20/05/2024
69	WATER QUALITY MONITORING AND PRESERVATION	Total fresh water use shall not exceed the proposed requirement as provided in the project details. Prior permission from competent authority shall be obtained for use of fresh water.	
<b>PPs Submission:</b> Complied Complied.			Date: 20/05/2024
70	WATER QUALITY MONITORING AND PRESERVATION	Sewage Treatment Plant shall be provided to treat the wastewater generated from the project. Treated water shall be reused for horticulture, flushing, backwash, HVAC purposes and dust suppression.	
<b>PPs Submission:</b> Complied • AKPL has been operating 2 no. of Sewage Treatment Plants of 1 X 500 KLD STP at CVR Amenities Complex & 1 X 40 KLD STP Admin. Building. • Treated wastewater from STP is being utilized for the green belt within port premises. • Septic tank and soak pit systems are being followed at offices and isolated buildings which are far from STPs.			Date: 20/05/2024
71	WATER QUALITY MONITORING AND PRESERVATION	A certificate from the competent authority for discharging treated effluent/ untreated effluents into the Public sewer/ disposal/ drainage systems along with the final disposal point should be obtained.	
<b>PPs Submission:</b> Complied AKPL is not discharging any treated effluent/ untreated effluent into the public sewer. The treated domestic water is being utilized for greenbelt development and dust suppression.			Date: 20/05/2024

72	WATER QUALITY MONITORING AND PRESERVATION	No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.
PPs Submission: Being Complied Being Complied.		Date: 20/05/2024
73	WATER QUALITY MONITORING AND PRESERVATION	All the erosion control measures shall be taken at water front facilities. Earth protection work shall be carried out to avoid erosion of soil from the shoreline/boundary line from the land area into the marine water body.
PPs Submission: Being Complied Being Complied.		Date: 20/05/2024
74	Noise Monitoring & Prevention	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
PPs Submission: Being Complied Being complied AKPL appointed a NABL Accredited Laboratory to monitor Noise quality at the following locations: 1. Zero Point 2. Thamminapatnam 3. CVR Building 4. Gopalapuram 5. Chalivendram 6. Krishnapatnam 7. Krishnapatnam Village near Light House Submitting the reports to APPCB on monthly basis and to MoEF & CC on Half yearly basis. The reports for the period from October-2023 to March 2024 are furnished at chapter - 5		Date: 20/05/2024
75	Noise Monitoring & Prevention	Noise from vehicles, power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipment.
PPs Submission: Being Complied Being complied.		Date: 20/05/2024
76	Noise Monitoring & Prevention	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.
PPs Submission: Being Complied Being complied.		Date: 20/05/2024
77	Noise Monitoring & Prevention	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
PPs Submission: Being Complied Being complied.		Date: 20/05/2024
78	WASTE MANAGEMENT	Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring reports.
PPs Submission: Being Complied Being complied AKPL appointed NIOT for shoreline monitoring. Draft report received and under review.		Date: 20/05/2024

79	WASTE MANAGEMENT	Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986.
<b>PPs Submission:</b> Being Complied Being complied.		Date: 20/05/2024
80	WASTE MANAGEMENT	A certificate from the competent authority handling municipal solid wastes should be obtained, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project.
<b>PPs Submission:</b> Being Complied Being Complied.		Date: 20/05/2024
<b>Visit Remarks</b>		
<b>Last Site Visit Report Date:</b>		N/A
<b>Additional Remarks:</b>		The NABL Accredited 3rd Party certified EC & CRZ compliance for the period from October 2023 to March 2024 along with the CTE & CTO Compliance and monitoring reports through MoEF&CC, GoI, New Delhi Parivesh Portal <a href="https://parivesh.nic.in">https://parivesh.nic.in</a> .



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**CERTIFIED HALF YEARLY COMPLIANCE REPORT  
ON THE CONDITIONS STIPULATED  
IN  
ENVIRONMENTAL & CRZ CLEARANCE,  
CONSENT FOR ESTABLISHMENT &  
CONSENT FOR OPERATION APPROVALS  
OF  
M/s. ADANI KRISHNAPATNAM PORT LIMITED,  
KRISHNAPATNAM (PO) MUTHUKUR (M)  
SPSR NELLORE Dist., ANDHRA PRADESH**

**For the period**

**From October 2023 to March 2024**

**Prepared by:**

**M/s. Spectra Envirotech Pvt. Ltd.,**

Plot No.142/1, Eruvada Junction,  
Sabbavaram (M),  
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*Bharath U.*  
Authorized by  
Managing Director

**Submitting to:**

Ministry of Environment, Forest & Climate  
Change,

A.P. Pollution Control Board,  
Regional Office, Nellore.





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



**Certified Half Yearly Compliance Report**  
**on the Conditions Stipulated in**  
**Environmental & CRZ clearance,**  
**Consent for Establishment & Consent for Operation**  
**For the period from October 2023 to March 2024**

This report has been prepared by **Spectra Envirotech Pvt. Ltd.**, with all reasonable skill, care and diligence within the terms of the contract with the client, and with the data provided & available, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

**for Spectra Envirotech Pvt. Ltd.,**



*Harish K.*  
Authorized by  
Managing Director



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## 1.0 INTRODUCTION

**Spectra Envirotech Pvt. Ltd., (SEPL)** is an ISO45001:2018 premier laboratory located at Plot No.142/1, Eruvada Junction, Sabbavaram (M), Anakapalli Dist., (Earlier Visakhapatnam Dist.), Andhra Pradesh in the year 2010 with Environmental testing laboratory facility with sophisticated equipment. Qualified & experience Scientific staff to carry out monitoring & analysis covering all fields of environment i.e. Marine, Water, Air, Wastewater, Soil, Noise & Vibration Monitoring to provide services in the field of Environmental Monitoring & Chemical Testing and Environmental Consultancy services.

**SEPL** has been providing value-added Environmental Monitoring and Testing, Biological Analysis of drugs, Water, Food, Chemical Analysis, Water & Wastewater, Supply and AMC of ETPs, STPs & DM Plants.

**SEPL** is committed to providing good laboratory services by adopting procedures, and professional practices at International Standards complying with the requirements of ISO/IEC 17025:2017 to the satisfaction of all concerned while ensuring integrity, confidence, and impartiality.

**SEPL** had accredited by NABL vide Certificate Number TC – 13099, dated 16.02.2024 in accordance with the standard ISO/ICE/17025:2017 "General Requirements for Competence of Testing & Calibration Laboratories". The validity of Certificate is valid up to 15.02.2026.





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**National Accreditation Board for  
Testing and Calibration Laboratories**

**CERTIFICATE OF ACCREDITATION**

**SPECTRA ENVIROTECH PRIVATE LIMITED**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2017**

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

for its facilities at

**PLOT NO.142/1, ERUVADA JUNCTION, SABBAVARAM MANDAL, VISAKHAPATNAM, ANDHRA  
PRADESH, INDIA**

in the field of

**TESTING**

Certificate Number: TC-13099

Issue Date: 16/02/2024

Valid Until:

15/02/2026

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.  
(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Name of Legal Entity: Spectra Envirotech Private Limited

Signed for and on behalf of NABL.



**N. Venkateswaran  
Chief Executive Officer**



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



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CERTIFICATE CERTIFICADO SERTIFIKAT CERTIFICATE

# Certificate of Registration

This is to certify that the Health & Safety Management System of

**SPECTRA ENVIROTECH PVT. LTD.**

PLOT NO. 142/1, ERUVADA JUNCTION, SABBAVARAM, MANDAL, VISAKHAPATNAM, ANDHRA PRADESH - 531035, INDIA

has been assessed independently by RQC and found to comply with the requirements of

**(Occupational Health & Safety Management System)**

**ISO 45001:2018**

For the following scope:

**AMBIENT AIR QUALITY MONITORING STACK EMISSION MONITORING NOISE LEVEL MONITORING WATER ANALYSIS WASTE WATER ANALYSIS SOIL ANALYSIS AND ENGINEERING OF STP AND ETP**

**Certification Calendar:**

Certificate No: INOHSM0403715/10715

Registered on: 04.03.2024

Issued on: 04.03.2024

Expires on: 03.03.2027

1<sup>st</sup> Surveillance on/before: 03.03.2025

2<sup>nd</sup> Surveillance on/before: 03.03.2026

**Executive Director**  
RADIANCE QUALITY CERTIFICATIONS  
Regd. Office - 20-22 Wenlock Rd, Hoxton, London N1 7GU, UK



Regd. off. 20-22 Wenlock Rd, Hoxton, London N1 7GU, UK

**Terms & conditions**

1. Validity of this certificate is subject to the organization maintaining its system in accordance with respective management systems standards along with RQC requirements.
2. This certificate remains the property of radiance quality certifications to whom it must be returned upon request.
3. Use of logo must be in accordance with the requirement of the UKAS, accreditation board (in any) failure to meet the requirement shall be held liable for actions.
4. This certificate is not final evidence of certification status, status may be verified in writing from [info@ukashd.co.uk](mailto:info@ukashd.co.uk) or it can be verified online at <http://ukashd.co.uk/certified-clients>.



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### **1.1 Scope of work:**

The project proponent M/s. Adani Krishnapatnam Port Limited (AKPL) approached **Spectra Envirotech Pvt. Ltd., (SEPL)** to undertake Auditing, preparation & Certification of the compliance status of the conditions stipulated in the EC & CRZ Clearance of MoEF & CC, CTE & CTO of APPCB including Monitoring/Sampling of Air, Terrestrial & Marine parameters and Environmental Data analysis for various environmental factors for which SEPL accepted the job to Audit, prepare & submit the certified Half-yearly Compliance to MoEF & CC & APPCB.

As per the scope of the work, the Environmental data has been collected for various environmental components viz.

1. Air Quality Monitoring
2. Noise Levels dB (A)
3. Terrestrial sampling, analysis & preparation of reports
  - Sewage water (Outside)
  - Ground & Surface water sample collection & analysis
  - Sewage Treatment Plant (STP) (Inlet & Outlet)
  - Soil sampling
  - DG Set Stack Monitoring
4. Marine sampling, analysis & preparation of reports:
5. Preparation of Compliance & Uploading in the portal:



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This certified compliance comprises with 11 chapters covering all the information of the Port activities & updated compliance status of all the conditions stipulated in EC & CRZ of MoEF & CC, CTE & CTO of A.P. Pollution Control Board.

Chapter No.	Description	Page No.
1	Preamble	9 – 21
2	Port Operations	22 – 30
3	Environment Department Activities	31 – 59
4	Review & Remarks on Self-Certified Compliance for the period April to September 2023	60 – 80
5	Environment Protection & Conservation and Sustainability.	81 – 103
6	Implementation of EMP & Sustainable Measures.	104 – 124
7	Promotion of Environment & Sustainability Marine, Fire & Safety Awareness programmes/activities, Mock drills, Welfare & CSR Activities	125 - 154
8	Monitoring, Sampling & Analysis of Environment Parameters within the operational area.	155 – 184
9	Compliance Status	185 – 285
10	Conclusion Remarks	286 – 292
11	Attachments	293



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



# CHAPTER -1



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



<b>Chapter No.</b>	<b>Description</b>	<b>Page No.</b>
<b>Chapter - I - Introduction</b>		
1.0	Preamble	10
1.1	ISO Certification	11
1.2	Classification of the Port	12
1.3	Location of Port (Coordinates)	12
1.4	Key highlights & Advantages of AKPL	14
1.5	Port Policy	16
1.6	Purpose of the Report	17
1.7	Statutory Approvals	19
1.8	Process description	19
<b>Images</b>		
Image - 1	Port Location	12
Image - 2	Port Limits	13
Image - 3	Port Layout	13
Image - 4	Berths Layout	21
Image - 5	Cargo handling at AKPL	21





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## 1.0 Preamble

The port has its historical back ground. When Sri Krishnadevaraya, the Vijayanagar Emperor, used to operate the port, thus the name was given to it as Krishnapatnam Port & now the name has been changed to Adani Krishnapatnam Port Limited (AKPL)

AKPL, a private port operator located on the East Coast of India, an all-weather world class deep water port of International standards and capable of handling Cape Size vessels round the clock throughout the year.

The port caters to land locked hinterland of South India with multimodal connectivity. Seamless connectivity by road and rail with very close proximity to National Highway 16 and National Rail Network (Chennai – Kolkata Main Line).

AKPL has got State of Art Infrastructure, Mechanized Handling Systems and dedicated storage yards which provides clean and contamination free handling facilities for bulk and break bulk cargo.

AKPL is AEO Certified Port and has Customs EDI Connectivity with Customs Office headed by Joint Commissioner which is located within the port for faster custom clearance and quick assessment of cargo and containers.

AKPL is an ISMS Certified Port in relation to Core Port Operations – Information Technology, HR & Admin., Finance & Account, Safety & Environment, Security, Engineering Services, Dry Cargo Operations, Dredging, Commercial & Stores, Container Operations, Marine Services, and Railway Operations.





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 1.1 ISO Certification:

- AKPL also an ISO 28000: 2007, ISO 9001:2015, ISO 14001 2015, ISO 45001:2018, and ISO 50001:2018, Certified Port for providing Port facilities for berthing, double banking, handling of ships, bulk, breakbulk, liquid and containerized cargos, its storage and transportation by road, rail, pipeline and conveyor.



Indian Register Quality System, (A division of IRCLAS Systems and Solutions Pvt. Ltd.) audit was held from 18.03.2024 to 21.03.2024.

The renewed certificates of EMS (ISO 14001), HSMS (ISO 45001:2018), QMS (ISO 9001:2015), & SMS (ISO 28000:2007) are yet to be received.

## 1.2 Classification of the Port

As per the Environment Impact Assessment (EIA) Notification dated 14<sup>th</sup> September 2006 and the amendments thereof, Krishnapatnam port is classified under 'Category A' as schedule under activity 7(e).

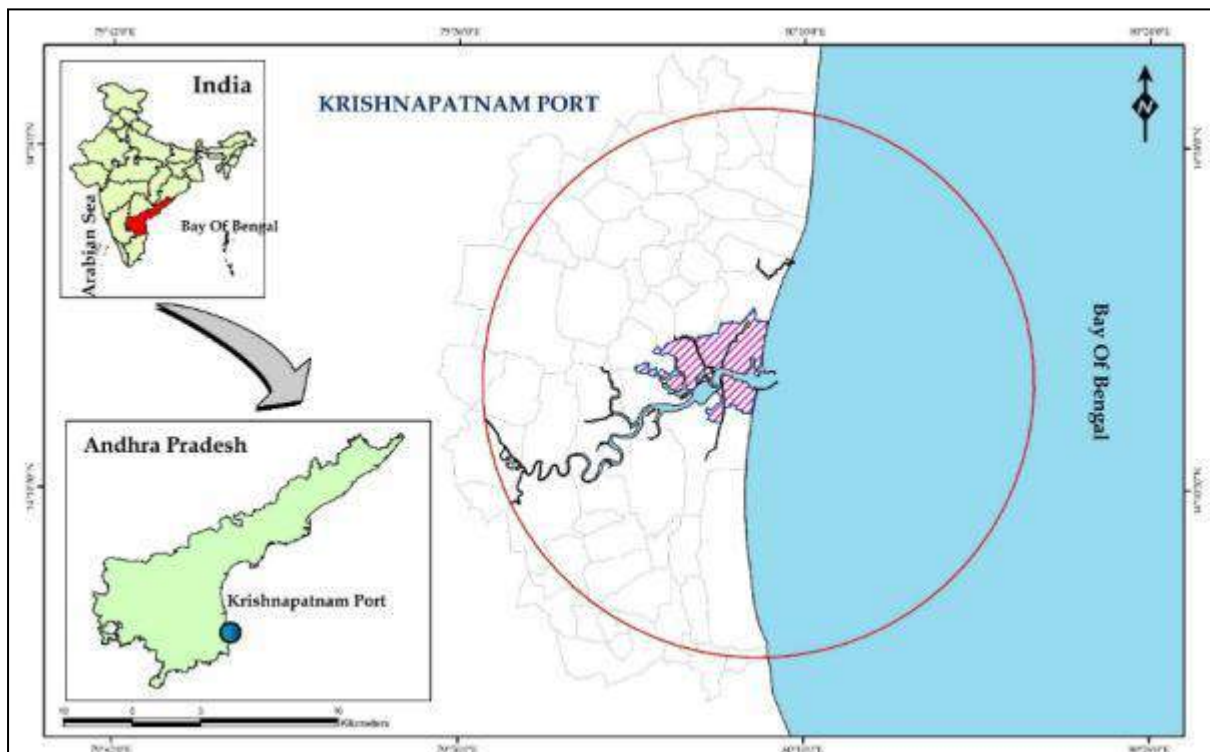
## 1.3 Project Location

AKPL located at 14° 15'10" N Latitude and 80° 08'05" E Longitude in the state of Andhra Pradesh, SPSR Nellore District, Muthkuru along east coast of India about 180 km to north of Chennai Port.

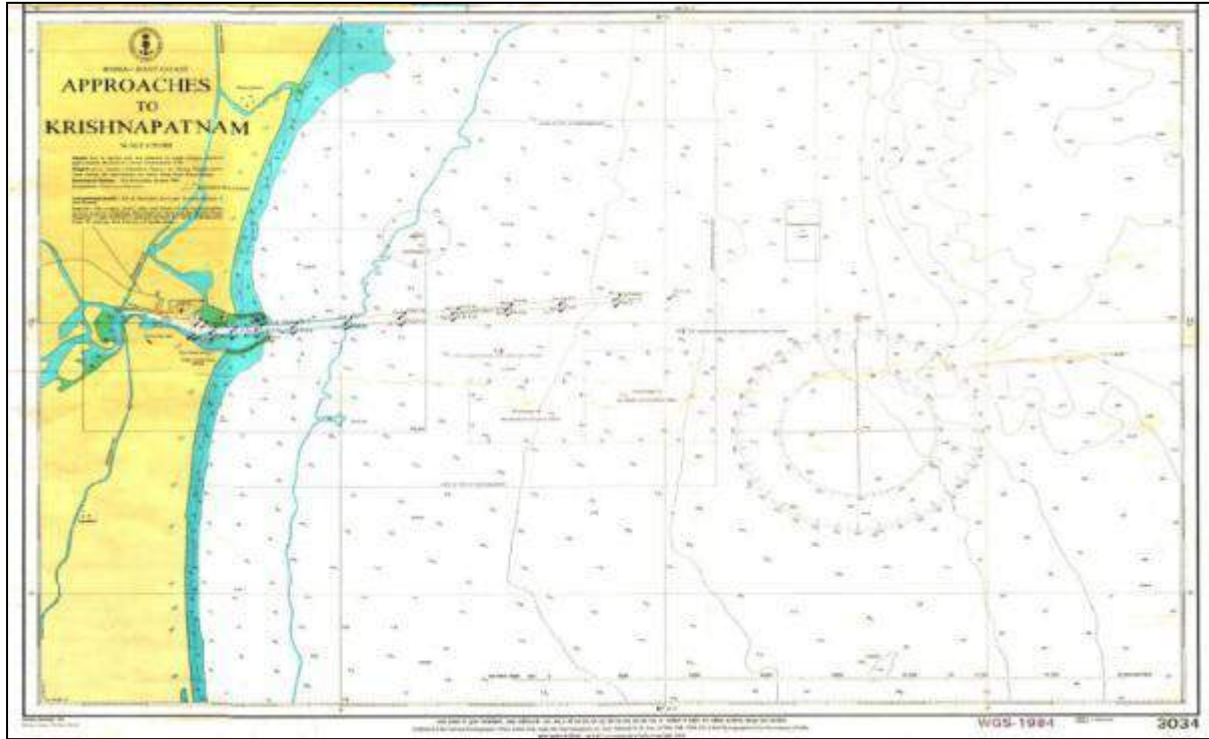
AKPL has easy access to the hinterlands in close proximity covering Andhra Pradesh, Karnataka and North Tamil Nadu by road, rail and air. It has become the largest automated port in the South Asia.

Port location, port limits and approved Master Plan of AKPL is shown in

**Image - 1 - Port Location**



**Image – 2 – Port Limits**



**Image – 3 Port Layout**



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#### **1.4 Key highlights & Advantages of AKPL:**

- AKPL is a major economic gateway that caters to the land locked southern hinterland of India with multimodal connectivity. It is an all Weather Port with Deep Draft Capable of Handling Capesize and Panamax Vessels. Round-The-Clock Navigation and provides Two Way Traffic for Both Onshore & Offshore Logistics, State of the art Infrastructure with Bulk Cargo Handled by Mechanized Handling Systems, Dedicated Storage Areas are the main strength of the Port. AKPL provides Clean & Contamination Free Handling Facilities for Break-Bulk Cargo.
- It has been rated high in terms of operations, reliability, optimum cost, time and best available services to customers. Some of the key features of KPCL are fastest turnaround time for all types of vessels, minimal waiting time, Deep Draft capable of Handling Cape size and Panamax Vessels leading to significant savings in Ocean Freight, 365 days of operation (all-weather port), huge backup area of 6800 acres allotted by GoAP (under various Phase-of development), quick response customer service, mechanised handling systems.
- Capable of handling.
  - largest crude carriers in the World viz. VLCC
  - largest cape size bulk carrier in the World
  - largest container vessel in the World
  - largest car carrier in the World
  - largest LNG vessel in the World
- Port has installed high speed ship unloaders / mobile harbor cranes for faster discharge of coal cargo and mechanized storage yards & integrated conveyor system to handle huge volumes of cargo.
- Deep draft berth facilitates berthing of largest container vessels arriving at the ports and best-in-class infrastructure ensures world class productivity, fast turnaround of vessels and efficient evacuation of containers from the port.
- Port extends marine and vessel related services on demand to the vessels that come calling. Young fleet and a regular and rigorous repair and maintenance cycle, guaranteeing a high degree of reliability and quality, which are pivotal for the smooth running of port operations.
- Cargo can be received and evacuated by road, rail, air, conveyors and pipelines.



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- Capable of handling 80 rakes per day for inbound and out bound cargo. Separate sidings are provided for Agri, Fertilizer, Coal cargo and Liquid cargo.
- The port has 4 / 6-lanes road connectivity allowing easy movement of cargo to and from the port.
- **Bulk and Break Bulk:** Port has installed high speed ship unloaders / mobile harbor cranes for faster discharge of cargo. Mechanized storage yards & integrated conveyor system to handle huge volumes of cargo. The port has covered, open storage areas and special demarcated concrete storage yards with enormous capacity. Cargo Wise dedicated Rail siding for smooth and faster evacuation
- **World Class Facilities and infrastructure to handle containers Pan-India.** Deep draft berth facilitates berthing of largest container vessels arriving at the port and best-in-class infrastructure ensures world class productivity, fast turnaround of vessels and efficient evacuation of containers from the port.
- Natural gateway to cargo clusters in Southwest India offering undisputable logistics cost advantage to exporters & importers
- Port with efficient multi-modal transport connectivity for seamless movement of cargo
- Single Window Clearance - Container Scanning facility for quick assessment of containers and faster custom clearance.
- Berths equipped with 2 nos. 16 inch pipelines from jetty to tanks in customer's locations to ensure safe and efficient handling of liquid products in big parcels.
- AKPL is fast emerging as a recognized hub for edible oil refineries with optimal blend of port infrastructural facilities and Greenfield opportunities.
- The Port has a dedicated POL Jetty equipped with State of Art Fire Fighting systems to handle LPG and POL products.
- Diversified Operational experience of handling vessels of different categories.



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 1.5 Port Policy



**adani**  
Ports and  
Logistics


### Environmental Policy

Adani Ports and Special Economic Zone Limited's (APSEZ) environmental responsibilities are driven by its commitment to preserve the environment and are integral to the way we do business. We shall strive to integrate best environmental practices across APSEZ's management and governance systems to minimize environmental impacts and attain a leadership position in environmental stewardship.

APSEZ, its subsidiaries, joint ventures, suppliers, service providers and contractors shall keep its commitment to:

- Build and operate the facilities in compliance with all applicable environmental laws, regulations, obligations and endeavor to go beyond compliances.
- Identify and evaluate environmental and climate impacts and their associated risks for all activities including distribution & logistics and formulate a mitigation strategy.
- Define roles and responsibilities for implementing environmental management policy.
- Conduct training for employees to understand the impacts of business activities on the environment.
- Continually improve the environmental performance by setting objectives, targets and processes for efficient use of natural resources, waste management and minimization, emission reduction, noise level control and pollution prevention.
- Conserve and protect environment in and around of our operational sites in consultation with stakeholders.
- Conduct environmental due diligence for new and expansion of existing projects, mergers and acquisitions by set procedures.
- Create environmental awareness through continuous engagement and training with stakeholders including employees, customers, suppliers, service providers, contractors and local communities.
- Measure, monitor, review and report the environmental performance and issues of the organization in accordance with this policy at regular intervals and audit (internal/ external) before communicating to relevant stakeholders.

**Date:** August 09, 2023



**Karan Adani**  
Whole-Time Director & CEO



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## 1.6 Purpose of the Report

- As per the MoEF& CC. S.O. 3067 (E) dated 1st December 2009, it shall be mandatory for the Project Proponent to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.
- As per the MoEF& CC. S.O. 5845 (E) dated 26th Nov, 2018 the Project Proponent shall submit half-yearly (six monthly) compliance reports in soft copy instead of hard copy.
- As per the MoEF & CC. S.O. 3067 (E) dated 1st December 2009, it shall be mandatory for the Project Proponent to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.
- As per the MoEF & CC. S.O. 5845 (E) dated 26th Nov, 2018 the Project Proponent shall submit half-yearly (six monthly) compliance reports in soft copy instead of hard copy.
- As per the newspaper notification issued by APPCB on 07.09.2019, (Hindu & Eenadu) that - "all the Red & Orange category industries (other than stone crusher & mining units) existing in State of Andhra Pradesh, to furnish the half yearly compliance reports to all the stipulated conditions in Environmental Clearance (EC), and Consent to Establishment (CTE) and Consent to Operation (CTO) through website i.e., <https://pcb.ap.gov.in> by 1st of January and 1st of July of every year.
- The first half yearly compliance reports shall be furnished by the industry and second half yearly compliance reports shall be the audited through NABL accredited third party.
- As per the newspaper notification issued by the MoEF&CC on 15.09.2019, the project proponent of Andhra Pradesh State shall send their compliance reports to [ecompliance-ap@gov.in](mailto:ecompliance-ap@gov.in)
- As per the Consent to Operation Order of APPCB, dated 08.06.2009, the industry shall submit half yearly compliance reports to all the stipulated conditions in Environmental Clearance (EC), Consent for Establishment (CTE) and Consent to Operation (CTO) through website i.e., <https://pcb.ap.gov.in> by 1<sup>st</sup> of January and 1<sup>st</sup> July of every year. The first half yearly compliance reports shall be furnished by the industry and second half yearly compliance reports shall be the audited through NABL accredited third party.





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- As per the additional conditions stipulated in renewed CFO & HWA Order of APPCB, dated 02.02.2011, CFO renewal dated 24.09.2015 and amendments thereof, CFO renewal dated 29.07.2018 and amendments thereof, CFO for Phase III dated 11.11.2022 the industry shall submit Half yearly compliance reports to all the stipulated conditions in Environmental Clearance (EC) and CRZ clearance, Consent for Establishment (CFE) and Consent for Operation (CFO) through website i.e., <https://pcb.ap.gov.in> by 1<sup>st</sup> of January and 1<sup>st</sup> July of every year.
- The first half yearly compliance reports shall be furnished by the industry and second half yearly compliance reports shall be audited through MoEF&CC recognized and National Accreditation Board for Laboratory Testing (NABL) accredited third party.
- The Joint Director, MoEF&CC, Sub-Office, Vijayawada, Andhra Pradesh circulated certain guidelines on 29.03.2024 regarding the submission of Half-yearly compliance:
  - It shall be mandatory for the project management to submit half yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.
  - It is required to monitor the environmental parameters viz., Stack Emissions, Ambient Air Quality (AAQ), Work Zone Emissions, Noise Level, Water Quality etc by MoEF & CC/NABL accredited laboratory and the monitoring report (copies of reports generated by laboratory) to be submitted along with six monthly compliance reports.



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## 1.7 Statutory Approvals:

### a. Environment & CRZ Clearances from MoEF & CC

- i. For Phase – I -Vide Order No. 10-22/2005-IA-III dated 26<sup>th</sup> July, 2006
- ii. For Phase II - vide F. No. 11 – 62 / 2009 – IA.III dated 13<sup>th</sup> November, 2009 and extended vide Oder even No. dated 18.08.2015 & 16.04.2018 and amended vide order dated 16.3.2016.
- iii. Phase III vide File No: 1018/2016-IA.III dated 11.01.2021.

### b. Consent to Establishment-CTE from A.P. Pollution Control Board

- i. Order No. APPCB/VJA/NLR/633/HO/2004/9 - 467 dt. 25.05.2004. The Phase - I facility was commissioned during the year 2009.
- ii. T Order No. 633/PCB/CFE/RO-NLR/HO/2010-390 dated 08.05.2010. Extended vide Order dated 02.07.2015 and amended vide Orders dated 14.03.2014, 02.07.2015, 10.02.2016, 04.01.2017 & 22.02.2018.
- iii. Order No: 633/APPCB/CFE/RO-NLR/HO/2010 Dt. 25.02.2021 and amended vide order dated 06.04.2021 and 16.07.2021.

### c. Consent to Operate-CTO from A.P. Pollution Control Board

- i. Order No. APPCB/VSP/VJA/NLR/633/CFO/HO/2009-582, dated 08.06.2009
- ii. Order No. APPCB/VJA/NLR/11344/CFO/HO/2018 dated 29.07.2018 & 30.08.2018 which is valid till 31st October, 2023.
- iii. Order No: APPCB/VJA/NLR/11344/CFO/HO/2019 dated 11.11.2022 valid till 31.08.2027. This CFO has superseded all CFO and its amendments issued by APPCB earlier.

## 1.8 Process Description

- Obtained, EC & CRZ Clearance from MoEF & CC vide Order No. 1018/2016-IA.III dated 11.01.2021 for 150.20 MMTPA (Non- Container) + 1.1 TEUsPA (Container) with 16 No. of Berths (Incl. 3 Liquid Berths) and 3 SBMs.
- Obtained CTE from APPCB vide Order No: 633/APPCB/CFE/RO-NLR/HO/2010 dated 25.02.2021 under Phase - III which was further amended vide order dated 06.04.2021 & 16.07.2021. The Phase – III expansion project is yet to be implemented.



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- The approved capacities of Phase – III are as below:

Cargo	Capacity approved till Phase II	Phase III Proposed expansion	Total after implementation of Phase III
Coal	51 MMTPA	88 MMTPA	139 MMTPA
Iron Ore	8 MMTPA	-	8 MMTPA
General Cargo	9 MMTPA	10.5 MMTPA	19.5 MMTPA
Liquid Cargo	-	51.7 MMTPA	51.7 MMTPA
Container	2 MTEUsPA	1.1 MTEUsPA	3,1 MMTPA
No. of Berths	12 Berths	Approved 16 (Incl. 3 Liquid Berths & and 3 SBMs Constructed 1 Liquid jetty)	28 berths
<b>Total Capacity</b>	68 MMTPA (Non- Container) + 2 MTEUs PA (Container)	150.2 MMTPA (Non- Container) + 1.1 MTEUs PA (Container)	218.2 MMTPA (Non- Container) + 3 1MTEUs PA (Container)

AKPL is presently operating 13 No. of Berths. Out of which

S. No	Name of the Berths	Type of Cargo handled	Type of Loading/ Unloading System
1.	N1	Container berth	Mechanized
2.	N2	Container berth	Mechanized
3.	N3	General Cargo berth	Semi-Mechanized
4.	N4	General Cargo berth	Fully Mechanized
5.	N5	Coal cargo berth	Semi-Mechanized
6.	N6	Coal cargo berth	Fully Mechanized
7.	N7	Coal cargo berth	Fully Mechanized
8.	N8	Coal cargo berth	Fully Mechanized
9.	NW1	Multipurpose	Fully Mechanized
10.	NW2	Iron Ore	Fully Mechanized
11.	NW3	General Cargo	Fully Mechanized
12.	S4	Coal cargo berth	Semi-Mechanized
13.	L4	Liquid jetty for POL products	Pipelines

**Image – 4 - Berthing layout:** The present operating Berths layout is as below:



The approved consented non-container cargo capacity of 78 MTPA of cargo and 2.0 MTEUs PA of container cargo are as below:

S. No.	Type of Cargo	Quantity
1.	Coal	46 Million Tons/ Annum
2.	Iron Ore	8 Million Tons/Annum
3.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others).	14 Million Tons/Annum
4.	Liquid Cargo (POL, LNG, LPG, Chemical products and Crude oil)	10 Million Tons/Annum
5.	Container Cargo	2.0 Million TEUs/A
6.	Total	78.0 Million Tons/A Non-container cargo + 2.0 Million TEUs/A container cargo
7.	No. of Berths	13 Berths (12 + 1 berth – Liquid Jetty L4)

**Image – 5 - Cargo handling at AKPL**





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## CHAPTER - 2



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## TABLE OF CONTENTS

S. No.	Description	Page No.
2.0	Operations	24
2.1	Handling of Coal	24
2.2	Handling of Iron Ore	24
2.3	Fertilizers Handling	25
2.4	Cement Handling	25
2.5	Granite and other dry cargo handling	25
2.6	Edible Oil/Crude Oil, POL & other Liquid Cargo Handling	26
2.7	General Preventive Measures for Spillage	26
2.8	Port Operations & Process of cargo handling	26
2.9	Conveyor Systems directly transferring cargo to industries	27
2.10	<u>Hoppers, Electrical Cranes and Grabs at Berths</u>	28
2.11	<u>Closed Cargo Sheds</u>	28
2.12	Details of Mechanized equipment	29
2.13	Cargo Evacuation percentage	29
2.14	Brief description of stock yards	29
2.15	Mechanical Dust Suppression System at Ship Un loaders using Sprinklers system	30
2.16	Cargo handled for the period from October 2023 to March 2024	30



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## **2.0 Operations:**

The majority of Port operations are carried out through mechanized cargo handling equipment so as to avoid cargo spillage and dust emissions during the cargo handling activities

AKPL has provided the State of art Mechanical Dust Depression system at various critical points i.e., equipment (Hopper & Declaimer), hooded conveyor belts and the storage yards have been functioning well throughout the system. By using these measures, the Port is able to mitigate all the dust that is being generated during the operations.

### **2.1 Handling of Coal:**

- The coal cargo is usually unloaded by mechanical means using Grab unloaders which are extremely versatile, mobile cranes and grabs used are equipped with ECO control system (100 % closed grabs).
- The coal is transported from berth by conveyor belts to destination in case of neighbouring thermal power plants and to storage yards in respect of remaining volume.
- The stackers will be used for stacking coal by mechanical means, Reclaimers will be used to reclaim and transport to wagon loader by conveyor.
- Coal is transported by roadways (trucks) as well as waterways (ships or barges) for which the transport is done by conveyors and trucks and loading by mechanical means into the ships.
- All conveyors are covered and transfer houses are provided with cladding to avoid transit spillage.
- All the outbound railway wagons and trucks are fully covered. The Spillage at loading station will be very nominal as wagon loading stations are electronically controlled with PLCs.
- Mechanized dust suppression systems are provided for coal storage yards, conveyors, wagon loading station. Heavy duty atomizers for other areas augmented with mobile sprinkler systems.

### **2.2 Handling of Iron Ore:**

- The capacity of iron ore handled is 8 MTPA only. Due to the ban imposed by the Central Government of India, the export of iron ore has been declined recently. As and when the iron ore is handled, proper water sprinkling system is used at high pressure with swiveling type nozzles operated regularly to cover entire stockpile.



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### **2.3 Fertilizers Handling:**

- The fertilizers will be unloaded from ships by mechanical means with Grab unloaders. Transport from berth by covered conveyors to covered warehouses as cargo is hygroscopic. Reclaiming will be done by reclaimers and transported to wagon loader by conveyor and loading into wagons by continuous wagon loader, in case of bulk transport. In respect of bagged transport, conveyor transports the bulk fertilizer to mechanized bagging plant and transports bagged fertilizer by wagons and trucks.
- All conveyors are covered and transfer houses are provided with cladding. All outbound Railway wagons and trucks are fully covered.

### **2.4 Cement Handling:**

- The cement in bulk form from grinding unit to berth will be transported by means of closed conveyor. The loading of ships will be done by mechanical means. Transport of bagged cement by trucks to berth and loading will be by means of ships gear or shore crane. Conveyors and warehouses are fully covered as the cargo is hygroscopic.
- All conveyors are covered and transfer houses are provided with cladding. All outbound Railway wagons and trucks are fully covered.
- Unloading/loading from/to ships will be by mechanical means with Grab unloaders. Transport from berth will be by covered conveyors/trucks to covered warehouses as the cargo is hygroscopic.
- In respect of bagged transport, conveyor transport of bulk cement to mechanized bagging plant and bagged cement transported by wagons and trucks. All the outbound railway wagons and trucks are fully covered.

### **2.5 Granite and other dry cargo handling:**

- Transport of Granite & other dry cargo to storage yards will be done by railway wagons and trucks. The transport from storage yards to berths will be by trucks and loading into ships will be by ships gear or shore cranes.
- All railway wagons and trucks are fully covered. Nominal spillage if any will be very less and will be reclaimed and deposited in the warehouse.
- Mechanized dust suppression systems for storage yards, with heavy duty atomizers augmented with mobile sprinkler systems have been provided.



## 2.6 Edible Oil/Crude Oil, POL & other Liquid Cargo Handling

- The cargo will be unloaded from ships through ship pumps. It will be then transported to refineries /storage by pipelines
- The liquid cargo will be unloaded by means of ships pumps and loaded by means of pumping at source and conveyance by pipeline.

## 2.7 General Preventive Measures for Spillage

- For the road transport of all types of cargoes/containers which are not transported by rail conveyor, pipeline or waterways:
  - ✓ All trucks with dust generating cargo shall be covered.
  - ✓ All roads are paved and mechanized dry heavy duty sweeping are being deployed.
  - ✓ Spillage if any will be immediately reclaimed and deposited back to respective storage to the extent feasible.
  - ✓ Nominal spill, if any, which cannot be reclaimed will be stored and passed on to respective cargo owners or disposed by suitable means as maybe required, as per relevant norms.
  - ✓ Surface drainages along-side roads and from storage area will be routed through drains to collection pits and guard ponds with facility to recycle for dust suppression.
  - ✓ Adequate greenbelt around storage yards and along periphery of port boundary and dust shields has been developed.

## 2.8 Port Operations & Process of cargo handling:



**Closed hood conveyors & mechanical handling systems**



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**Silo for Railway rake loading**



**Hooded conveyors**



**Hooded conveyors**

## 2.9 Conveyor Systems directly transferring cargo to industries





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## 2.10 Hoppers, Electrical Cranes and Grabs at Berths:



Fully Electric Operated Cranes



Fully mechanized container handlers



Hoppers



Closed & Mechanized operations

## 2.11 Closed Cargo Sheds

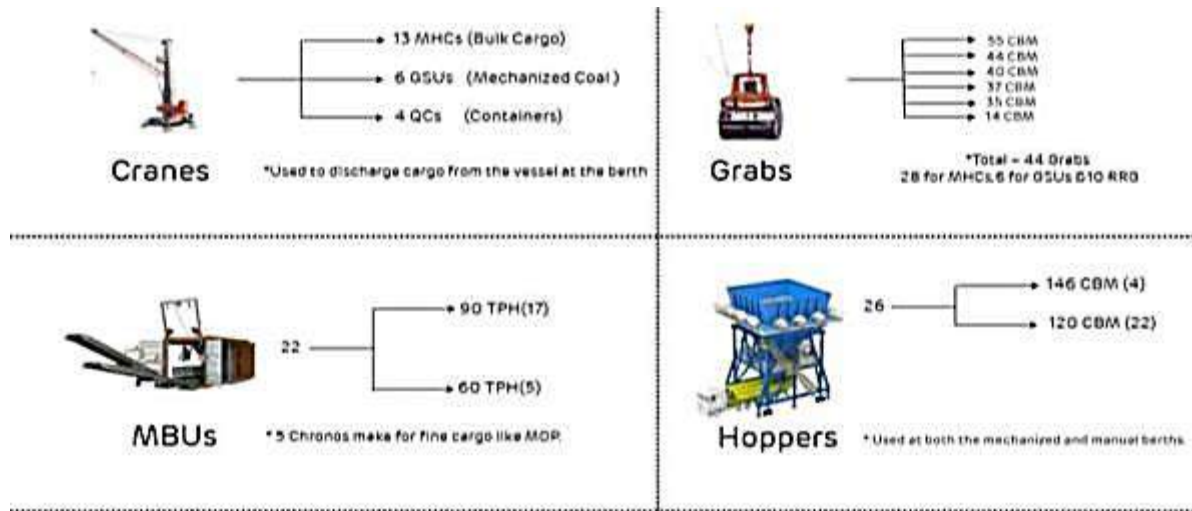




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## 2.12 Details of Mechanized equipment



## 2.13 Cargo Evacuation percentage



## 2.14 Brief description of stock yards

- AKPL developed the modern mechanized stockyards.
- The stockyards are supported by scientifically designed Mechanical Dust Suppression System (MDSS) at all yards including coal and iron ore storage area to suppress dust during stacking of cargo in yards.

## 2.15 Mechanical Dust Suppression System at Ship Un loaders using Sprinklers system

- The dust suppression system comprises of canons supported by electrical motors and operated at regular intervals to cover water fog all over cargo stacks and other areas. The water is sprayed from various points by water cannons at pressure of about 2-4 Kg/cm<sup>2</sup> to form a mist over the cargo stacks and other places and the mist attracts the dust to settle it down without spreading along the wind. AKPL has established a total of 248 cannons.
- Water sprinkling is being carried out on the general cargo berth and in other areas viz. Roads and yards through water tankers to arrest the dust pollution caused by vehicular movement in the port.
- Greenbelt developed around the Yards which acting as wind barricades to arrest the dust spreading into the atmosphere.



## 2.16 Cargo handled for the period from October 2023 to March 2024

S. No	Type of Cargo	Consented as per CTO dated 11.11.2022	Cargo handled for
1.	Coal	46 Million Tons/ Annum	22.04 MMT
2.	Iron Ore	8 Million Tons/Annum	2.60 MMT
3.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others).	14 Million Tons/Annum	4.12 MMT
4.	Liquid Cargo (Crude oil, POL, LNG, LPG, Chemical products)	10 Million Tons/Annum	0.44 MMT
		Total	29.20
	<b>Total Cargo handled during the last six months</b>		
5.	Container Cargo	2.0 Million TEUs/A	0.04 TEUs



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## CHAPTER - 3



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## Table of Contents

S. No.	Description	Page No.
3.0	Environment & Sustainability Facilities & Provisions	33
3.1	The Ambient Air Quality (CAAQM Stations)	33
3.2	CAAQM Stations/Equipment – Calibration Certificates	34
3.3	Ambient Air Quality Monitoring Stations – Locations	35
3.4	CAAQM Averages for the period from October 2023 to March 2024	36
3.5	Water - source, consumption, conservation, treatment & disposal	37
3.6	Waste Management and Disposal	39
3.7	Bio-Medical Waste	41
3.8	Water Treatment & Disposal (STP)	41
3.9	D.G. Sets	43
3.10	Rain Water Harvesting Pits	45
3.11	Statutory returns/ compliance reports	46
3.12	Nursery & Green Belt Development	47
3.13	Greenbelt Development:	48
3.14	Mangrove Conservation	50
3.15	Weather Station	52



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 3.0 Environment & Sustainability Facilities & Provisions:

#### 3.1 The Ambient Air Quality – CAAQM Stations

AKPL has been operating 3 No. of CAAQM stations of Beta Ray Attenuation technology to measure the parameters PM 10, PM 2.5, NOx, NH3, SO2, CO, , at the following locations and data connected to APPCB website.

1. Station - 1 – (CVR Amenities Complex)
2. Station - 2 – (Thamminapatnam Village)
3. Station - 3 – (Krishnapatnam Village)



CVR Complex



Thamminapatnam (V)



Krishnapatnam Village

Sl.	Details	Station -1		Station-2		Station-3	
1.	Location	CVR Amenities Complex		Near & towards Thamminapatnam Village		Near & towards Krishnapatnam Village	
2.	Model No.	PM10 & PM2.5 (5028i), CO (48i), SO2 (43i), NH3-NOx(17i)		PM10 & PM2.5 (5028i), CO (48i), SO2 (43i), NH3-NOx(17i)		PM10 & PM2.5 (BAM 1020), CO (48i), SO2 (43i), NH3-NOx(17i)	
3.	Make	Thermofisher Scientific (All analyzers)		Thermofisher Scientific (All analyzers)		Thermofisher Scientific & BAM 1020 is MET One	
4.	Type	PM10-2.5: - Betta ray attenuation. CO: Infrared radiation SO2: Ultraviolet NH3-NOx: Chemiluminescence		PM10-2.5: - Betta ray attenuation. CO: Infrared radiation SO2: Ultraviolet NH3-NOx: Chemiluminescence		PM10-2.5: - Betta ray attenuation. CO: Infrared radiation SO2: Ultraviolet NH3-NOx: Chemiluminescence	
5.	Parameters	NOx	NH <sub>3</sub>	SO <sub>2</sub>	CO	PM10	PM 2.5
		Nitrogen Oxide	Ammonia	Sulfur dioxide	Carbon Monoxide	PM – Particulate Matter	
6.	Standards	0 to 80 ug/m <sup>3</sup>	0 to 80 ug/m <sup>3</sup>	0 to 80 ug/m <sup>3</sup>	0 to 4.0 mg/m <sup>3</sup>	100 ug/m <sup>3</sup>	60 ug/m <sup>3</sup>
7.	Supplier/AMC	Thermofisher Scientific : Service order no: 5702007783					
8.	Installed on	24.06.2023		24.06.2023		24.06.2023	
9.	Calibrated on	12.03.2024		13.03.2024		14.03.2024	
11.	Server	G-Lens		G-Lens		G-Lens	
12.	Connectivity	APPCB website <a href="http://aprtcms.ap.gov.in">http://aprtcms.ap.gov.in</a>					
13.	Accessibility	Public domain at <a href="http://aprtcms.ap.gov.in/publicView/#/landing/dashboard">http://aprtcms.ap.gov.in/publicView/#/ landing/dashboard</a>					





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### 3.2 CAAQM Stations/Equipment – Calibration Certificates:

**ThermoFisher SCIENTIFIC**

**AAQMS Analyzers Calibration Report**

Calibration date: 12-09-2024

AAQMS – 11 (CR Building)  
Site Address: Krishnapatnam Port, Muthukur Mandal, SPSR Nellore, Andhra Pradesh

Thermo Scientific Analyzer	Parameter			Analyzer Measured Value			Acceptable error in full scale 1000 ppb (SO2 & NOx) and 1 ppm (NH3)
	Standard	Concentration	Unit of Measure	Before	After	error	
NOx S No. CM23087130	Zero	0.0	PPM	2.1	00	0.3	±3%
	NOx Span	500	PPM	493	500	7	±1.5%
NH3 S No. CM23087131	Zero	0.0	PPM	2.1	00	0.4	±3%
	NH3 Span	500	PPM	494	500	6	±1.5%
SO2 S No. CM23087132	Zero	0.0	PPM	0.1	00	0.1	±3%
	SO2 Span	400	PPM	393	400	7	±1.5%
CO S No. CM23087133	Zero	0.0	PPM	0.11	00	0.11	±3%
	CO Span	4	PPM	3.95	4	0.05	±1.5%
PM10 S No. CM23087134	Zero/Fail	0	µg	0	0	0	100 µg
	Span/Fail	1200	µg	1219	1200	9	±0.75%
PM2.5 S No. CM23087135	Zero/Fail	0	µg	0	0	0	100 µg
	Span/Fail	1200	µg	1201	1200	1	±0.08%

- Above analyzers are purged with zero air before performing the calibration.
- Thermo Scientific make 186 Dynamic Gas Calibrator used for diluting span gases.
- All the SPAN Gas Cylinders are the balance of N2.

M/s. Thermo Fisher Scientific

M/s. Adani Krishnapatnam Port Ltd

**ThermoFisher SCIENTIFIC**

**AAQMS Analyzers Calibration Report**

Calibration date: 12-09-2024

AAQMS – 21 (Teesingoham)  
Site Address: Krishnapatnam Port, Muthukur Mandal, SPSR Nellore, Andhra Pradesh

Thermo Scientific Analyzer	Parameter			Analyzer Measured Value			Acceptable error in full scale 1000 ppb (SO2 & NOx) and 1 ppm (NH3)
	Standard	Concentration	Unit of Measure	Before	After	error	
NOx S No. CM22297080	Zero	0.0	PPM	2.1	00	0.3	±3%
	NOx Span	500	PPM	494	500	6	±1.5%
NH3 S No. CM22297081	Zero	0.0	PPM	2.1	00	0.4	±3%
	NH3 Span	500	PPM	494	500	6	±1.5%
SO2 S No. CM22427032	Zero	0.0	PPM	0.1	00	0.1	±3%
	SO2 Span	400	PPM	393	400	7	±1.5%
CO S No. CM23077132	Zero	0.0	PPM	0.11	00	0.11	±3%
	CO Span	4	PPM	3.95	4	0.05	±1.5%
PM10 SO2B S No. CM23087132	Zero/Fail	0	µg	0	0	0	100 µg
	Span/Fail	1200	µg	1201	1200	1	±0.08%
PM2.5 SO2B S No. CM23087132	Zero/Fail	0	µg	0	0	0	100 µg
	Span/Fail	1200	µg	1204	1200	4	±0.33%

- Above analyzers are purged with zero air before performing the calibration.
- Thermo Scientific make 186 Dynamic Gas Calibrator used for diluting span gases.
- All the SPAN Gas Cylinders are the balance of N2.

M/s. Thermo Fisher Scientific

M/s. Adani Krishnapatnam Port Ltd

**ThermoFisher SCIENTIFIC**

**AAQMS Analyzers Calibration Report**

Calibration date: 14-01-2024

AAQMS – 3 (Krishnapatnam Village)  
Site Address: Krishnapatnam Port, Muthukur Mandal, SPSR Nellore, Andhra Pradesh

Thermo Scientific Analyzer	Parameter			Analyzer Measured Value			Acceptable error in full scale 1000 ppb (SO2 & NOx) and 1ppm (NH3)
	Standard	Concentration	Unit of Measure	Before	After	error	
NOx S No. CM23087129	Zero	0.0	PPM	2.1	00	0.3	±3%
	NOx Span	500	PPM	493	500	7	±1.5%
NH3 S No. CM23087129	Zero	0.0	PPM	2.1	00	0.4	±3%
	NH3 Span	500	PPM	494	500	6	±1.5%
SO2 S No. CM23087071	Zero	0.0	PPM	0.1	00	0.1	±3%
	SO2 Span	400	PPM	393	400	7	±1.5%
CO S No. CM23087071	Zero	0.0	PPM	0.11	00	0.11	±3%
	CO Span	4	PPM	3.95	4	0.05	±1.5%

- Above analyzers are purged with zero air before performing the calibration.
- Thermo Scientific make 186 Dynamic Gas Calibrator used for diluting span gases.
- All the SPAN Gas Cylinders are the balance of N2.

M/s. Thermo Fisher Scientific

M/s. Adani Krishnapatnam Port Ltd

**SWAN ENVIRONMENTAL PVT. LTD.,**  
ISO 9001 : 2015 CERTIFIED

Plot No. 502 & 503, Second Avenue Co-Op Society, Madhavaram, Hyderabad - 500 081, Telangana, India.  
Phone: +91-40-42216184/6, Fax: +91-40-42219185  
Email: info@swanenv.com Website: www.swanenv.com

**CALIBRATION CERTIFICATE**

Certificate No: SW/PLA/ADM/INP/2023/112 Date of Issue: 05-11-2023  
Customer: M/s. Krishnapatnam port, Muthukur mandal, SPSR Nellore, Andhra Pradesh.  
Location: AAQMS-3 (Krishnapatnam village)

**Instrument Details:**  
Instrument: PM 2.5 Analyzer Date of Calibration: 05-11-2023  
Make: Met One Instruments, Inc., USA. Due Date: 01-08-2024  
Model: 8AA-7020  
Serial No.: 1 X78360

**Calibration Film Details:**

Details	Serial No.	Calibration Film Value
Calibration Film	416128	0.0110µg/cm2

**Calibration Details:**

Parameter	Span Calibration		
	Standard Value	Measured Value	% of Deviation
Film Value	0.011 µg/cm2	0.0109µg/cm2	2.80%

Accepted Tolerance: ± 3%

Result: The Calibration of above instrument is performed and it meets the acceptance criteria.

Calibrated & Checked by: [Signature]  
Checked by: [Signature]  
Inspector: [Signature]



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### 3.3 Ambient Air Quality Monitoring Stations – Locations:

1. Station - 1 – (CVR Amenities Complex)
2. Station - 2 – (Thamminapatnam Village)
3. Station - 3 – (Krishnapatnam Village)



AKPL appointed an NABL Accredited and MoEF&CC accredited Laboratory “M/s.SV Enviro Labs and Consultants” to carry-out terrestrial & marine water quality parameters and monitoring the Ambient Air Quality at 7 locations within 10 Km radius of project site (5 stations in buffer zone & 2 location inside plant area) and submitting the reports to APPCB on Monthly basis.

Station code	Location	Direction w.r.t. Project site
A1	At Zero Point	W
A2	At Thamminapatnam Village	S
A3	At CVR Building	WNW
A4	At Gopalpuram Village	NW
A5	At Chalivendram	WNW
A6	At Krishnapatnam	NNW
A7	At Light House	SW

The locations of ambient air quality stations are given below:





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**3.4 CAAQM Averages for the period from October 2023 to March 2024 are as below:**

Month	Location	CVR CAAQMS - 1					Tamminapatnam CAAQMS - 2					Krishnapatnam - CAAQMS - 3				
	Parameter	PM10	PM2.5	SO2	Nox	CO	PM10	PM2.5	SOx	Nox	CO	PM10	PM2.5	SOx	Nox	CO
	Standard	100 ug/m <sup>3</sup>	60 ug/m <sup>3</sup>	80 ug/m <sup>3</sup>	4 ug/m <sup>3</sup>	4 ug/m <sup>3</sup>	100 ug/m <sup>3</sup>	60 ug/m <sup>3</sup>	80 ug/m <sup>3</sup>	4 ug/m <sup>3</sup>	4 ug/m <sup>3</sup>	100 ug/m <sup>3</sup>	60 ug/m <sup>3</sup>	80 ug/m <sup>3</sup>	4 ug/m <sup>3</sup>	4 ug/m <sup>3</sup>
October	Minimum	22.71	9.23	3.85	14.78	0.82	0	0	0.18	3.56	0.61	10.76	1.9	9.64	17.18	0.55
	Maximum	98.19	51.75	7.25	27.21	1.31	95.4	57.3	3.58	17.06	1.41	153.14	119.88	30.53	31.56	0.99
	Average	53.98	28.98	4.84	19.1	1.2	47.48	26.86	1.76	8.2	0.99	62.82	32.05	11.73	21.48	0.8
November	Minimum	10.52	1.75	5.44	3.53	0.4	0.08	0.01	0.29	5.21	0.18	0	0.04	8.11	0.41	0.77
	Maximum	123.87	57.31	17.47	31.02	0.83	145.56	53.48	7.21	80.92	1.51	984	934.85	11.29	18.76	1.18
	Average	50.37	18.79	7.05	7.74	0.58	41.37	14.15	5.45	15.4	0.62	80.3	98.74	9.35	2.97	0.98
December	Minimum	25.35	4.43	7.19	0.88	0.46	15.28	2.91	8.1	5.3	0.42	0	22.17	9.54	0.42	0.69
	Maximum	87.98	54.68	14.48	10.74	0.85	82.94	52.46	10.47	13.33	1.88	0	95.42	12.85	7.02	1.04
	Average	52	27.09	8.89	5.68	0.69	45.83	26.46	8.72	10.21	1.03	0	51.88	11.11	3.13	0.82
January	Minimum	6.99	7.87	7.14	4.06	0.66	2.39	2.27	0	3.13	0.2	12.65	0.01	9.89	2.89	0.71
	Maximum	57.28	37.21	18.91	20.41	0.89	54.85	41.58	14.3	11.11	1.64	120.03	75.81	14.14	13.25	1.4
	Average	24.86	19.51	8.28	12.65	0.75	20.75	15.47	6.09	7.68	0.41	47.43	23.2	10.73	6.03	1.01
February	Minimum	4.68	6.42	7.12	9.52	0.7	4.01	3.73	0	0.55	0.52	20.67	1.07	10.23	2.81	1.2
	Maximum	69.62	36.44	11.68	20.42	0.91	35.62	23.59	10.03	9.11	1.21	55.55	40.5	21.51	14.96	1.55
	Average	26.94	17.12	8.01	13.64	0.83	18.52	12.76	4.84	5.18	0.73	35.95	20.95	12.06	7.07	1.37
March	Minimum	19.1	6.66	7.3	6.27	0.94	37.67	23.32	11.92	7.98	1.18	15.84	3.35	10.8	2.49	1.62
	Maximum	50.5	22.44	8.84	25.72	1.45	9.84	1.59	8.93	0.38	0.79	134.71	35.88	17.49	9.36	2.64
	Average	34.8	15.93	7.57	16.67	1.12	24.27	14.98	10.02	3.84	0.99	60.64	20.28	12.71	6.55	2.07
6 months Average	Minimum	<b>14.89</b>	<b>6.06</b>	<b>6.34</b>	<b>6.51</b>	<b>0.66</b>	<b>9.91</b>	<b>5.37</b>	<b>3.42</b>	<b>4.29</b>	<b>0.52</b>	<b>9.99</b>	<b>4.76</b>	<b>9.70</b>	<b>4.37</b>	<b>0.92</b>
	Maximum	<b>81.24</b>	<b>43.31</b>	<b>13.11</b>	<b>22.59</b>	<b>1.04</b>	<b>70.70</b>	<b>38.33</b>	<b>9.09</b>	<b>21.99</b>	<b>1.41</b>	<b>241.24</b>	<b>217.06</b>	<b>17.97</b>	<b>15.82</b>	<b>1.47</b>
	Average	<b>40.49</b>	<b>21.24</b>	<b>7.44</b>	<b>12.58</b>	<b>0.86</b>	<b>33.04</b>	<b>18.45</b>	<b>6.15</b>	<b>8.42</b>	<b>0.80</b>	<b>47.86</b>	<b>41.18</b>	<b>11.28</b>	<b>7.87</b>	<b>1.18</b>

### 3.5 Water - source, consumption, conservation, treatment & disposal

The consented source of water is from Muthukur Reservoir with a withdrawal quantity of 1000 KLD and 4 MLD of water from Nakkala kalava drain.

AKPL is collecting 1000 KLD of water from Muthukur Reservoir through tankers and Nakkala Kaluva water is through pipeline directly to Port:

Nakkala Kaluva Drain & Sump:



Pump house at Nakkala Kaluva



Pipeline from Nakkala Kaluva to Port.





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Storage tank within the Port premises to store the Nakkalalakuva water:



Pump house within the Port premises to distribute the Nakkalalakuva water:



As per APPCB Consent, the existing permitted water quantities for different applications are as below:

S. No.	Purpose	Quantity (KLD)	Average consumption KLD
1.	Dust suppressions & Miscellaneous (Fire protection services)	1950.0	<b>1525.07</b>
2.	Gardening	400.0	<b>157.87</b>
3.	Domestic	650.0	<b>520.11</b>
	<b>Total</b>	<b>3000.0</b>	<b>2203.05</b>

The average daily water consumption for the last six months i.e., from October 2023 to March, 2024 was 2203 KLD. The water consumption is within the consented quantities only.

3.As per the records (Form – 1) produced, the water consumed for different activities in a month during the above period are as below.

Water Consumption for the period from October -2023 to March 2024						
Month	Domestic	Industrial			Total KLD	Average / Day
		DSS	Green belt	Total		
Oct-23	18700	40900	10800	51700	70400	2271
Nov-23	17500	38200	9500	47700	65200	2173
Dec-23	10220	31333	510	31843	42063	1357
Jan-24	13170	53415	2470	55885	69055	2228
Feb-24	17560	57290	2740	60030	77590	2676
Mar-24	18030	57950	2870	60820	78850	2544
Average	<b>520.11</b>	<b>1525.07</b>	<b>157.87</b>		<b>403158</b>	<b>2203</b>

The Port is submitting the water consumption details in Form – 1 to APPCB on Monthly basis & MoEF &CC on Half-yearly basis.

### 3.6 Waste Management and Disposal

- **Solid waste / Organic waste**

- AKPL has provided collection bins at about 120 locations for collection of dry & wet solid, organic & domestic waste.
- Developed bin collection system with dedicated collection vehicles and manpower.
- Segregating recyclable at the source and being recycled through vendors.
- Biodegradable waste is converting to manure through natural composting process/Giving to Pig farms.
- AKPL provided a Food Waste Converter facility to convert the domestic & canteen waste generated within the Port and utilizing the same as manure for development of Nursery & Greenbelt.
- Organic waste- is being collected on regular basis within the Port and using for vermi-compost preparation. The vermin-compost is using for captive nursery development.



Waste converter



Vermi Composting Unit



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



- **Plastic waste** is being collected and disposed of to SPCB authorized plastic waste recycling units.
- **E - Waste** is being collected and disposed to SPCB authorized E-waste recyclers and submitting the details in Form – 3 to SPCB regularly. The latest submission is on 30.06.2023 for the Year 2022-2023.
- **Hazardous waste (Waste oil)** – as per the CFO & HWA of APPCB, AKPL is permitted to generate & dispose of waste oil including bilge oil. AKPL is quantifying the waste oil and disposing to SPCB authorized Waste oil recyclers and submitting the details in Form – 4 to SPCB regularly. The latest submission is on 30.06.2023 for the Year 2022-2023.
- The facility has disposed the following wastes during the period October 2023 to March 2024.

S. no.	Name of waste	Oct.23	Nov.23	Dec.23	Jan.24	Feb.24	Mar.24	Total
1.	Oily Cotton Waste & Filters	0.00	0.00	0.00	0.00	0.00	1.12	1.12
2.	Tank Bottom Sludge	0.00	0.00	0.00	0.00	21.22	73.28	94.5
3.	Used / Spent / Waste Oil (Disposed to vendor))	0.00	0.00	69.44	84.30	19.70	16.42	189.86
4.	Battery Waste	0.00	0.00	0.00	0.00	0.00	8.38	8.38
5.	Bio Medical Waste	0.12	0.14	0.10	0.13	0.11	0.12	0.72
6.	Plastic Waste	22.90	0.00	15.70	25.84	0.58	1.00	66.02
7.	Metal Scrap	407.00	201.92	216.50	195.62	133.52	71.04	1225.6
8.	Aluminum Scrap & Copper	10.74	0.00	0.60	1.10	0.52	2.72	15.68
9.	Rubber Waste	50.56	0.00	0.00	0.00	0.00	10.72	61.28
10.	Used / Spent / Waste Oil (within the Port)	0.27	0.06	0.16	0.04	0.59	0.02	1.14
11.	Organic / Food Waste	3.80	3.22	2.91	2.91	2.87	2.95	18.66
12.	Horticulture Waste	1.65	1.12	1.20	1.09	0.97	1.40	7.43
13.	Garbage- Municipal Solid Waste	48.64	48.53	41.60	73.76	73.28	95.48	381.29
	Total	545.68	254.99	348.21	384.79	253.36	284.65	



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- AKPL has been disposing the hazardous waste (In-house generated waste/used oil & Ship waste/used oil through M/s. APEMC and during the period October 2023 to March 2024 the following quantities have been disposed:

S. No	Receiver Name	Waste Name	Quantity Sent by Industry
1	Supreme Petro Products (Waste Oil)	Waste oil from Ships	35.82 Tons
2	Sri Balaji Petrochem	Waste oil from Ships	232.12 Tons
3	Coastal Waste Management Project (Unit-2) – Incinerator	Sludge and filters contaminated with oil	1.12 Tons
4	Jyothi Lubricants	Waste oil/Used oil from D.G Sets, Vehicles, dredgers and other machinery	16.42 Tons
		Total	285.48 Tons

- 3.7 Bio-Medical Waste** – Adani Foundation (a different entity) has been operating Adani Medical Center, Adani Dental Care & Adani Homeopathy Clinic within the Port premises at CVR Complex, to provide First Aid facility to the victims and generating very less quantity of Bio-Medical Waste.



- Adani foundation made an agreement with M/s. SS Bio Care an authorized Bio-medical waste Treatment Facility, Safe Collection, Transportation & disposal of properly segregated and packed BMW and/or Bio-Hazardous waste as per APPCB, CPCB norms.

**3.8 Water Treatment & Disposal – Sewage Treatment Plants:**

AKPL has constructed and operating Sewage Treatment Plant of capacity of 300 KLD under Phase 1 & II which consisting of Bar Screen, Sewage collection Sump, fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc. for treatment of the domestic effluents.

In Phase –III, AKPL provided additional Sewage Treatment Plant of capacity of 240 KLD consisting of Sewage collection pit – 2 pumps of 1hp each, Aeration tank, Coagulation tank, Tube settler tank Sludge, Biotreat, Ozonation tank, Pressure sand filter, activated carbon filter, UV sterilization and Chlorine dosing, Treated water tank for treatment of the domestic effluents. After treatment, the treated water utilized for Green belt development and dust suppression to cater to the sewage that would be generated from the Phase III domestic.





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Presently the Sewage Treatment Plants of 500 KLD (300 + 200) & 40 KLD are in operation and the treated water has been utilizing for greenbelt development & STP sludge is being use as manure for development of greenbelt within the Port.



The wastewater generation details for the last 6 months for the period from October 2023 to March 2024 are as below:

Month	Quantity KL		
	STP- 1	STP-2	Total
Oct.23	200	2.0	202
Nov.23	189	15.0	204
Dec.23	210	4.0	214
Jan.24	188	25	213
Feb.24	188	26	214
Mar.24	173	32	205
Average KLM	1148	104	1252

The STP flow meters are being calibrated periodically for better performance:





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 3.9 DG Sets

AKPL has been operating the following capacities of DG Sets for emergency power back.

S. No.	Capacity	Nos.
1	82.5 KVA	4
2	125 KVA	5
3	160 KVA	4
4	250 KVA	9
5	320 KVA	6
6	380 KVA	1
7	500 KVA	1

- The Port has been receiving Power Grid & Non-conventional source of energy through Power Grid for power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)
- The facility kept the DG Sets for uninterrupted port operations during emergency.
- All the DG sets are being monitored through a NABL Accredited 3<sup>rd</sup> Party and submitting to APPCB, RO, Nellore along with Monthly compliance reports.
- The DG Sets have retrofitting certification.

**TEST REPORT**

Customer Name: M/s. Adani Krishnapatnam Port Ltd.  
 Address: PO Box No. 02, Muthukur, Nellore SPSR Nellore 524044  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.  
 Date of Sampling: 03.05.2023  
 Sample Received on: 03.05.2023  
 Test Commenced on: 03.05.2023  
 Test Completed on: 03.05.2023  
 Sampling Location: Muthukur  
 Dock Diameter: 0.1 (Diameter)  
 Serial No: P/CCM/AP/00025

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS AS PER 'APPCB'
				Before CEM	After CEM	
1	Ambient Temperature	°C	IS 11071 (Part 1)	32.2	33.1	---
2	Wind Speed	m/s	IS 11071 (Part 1)	27.4	27.2	---
3	Wind Rose	km/h	IS 11071 (Part 1)	464	440	---
4	Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 11071 (Part 1)	115.4	112.9	150
5	Ambient Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 11071 (Part 1)	5.94	5.58	---
6	Di-oxide of Nitrogen (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 11071 (Part 1)	219	212.4	---
7	Carbon monoxide (CO)	%	IS 11071	0.16	0.16	---
8	Carbon dioxide (CO <sub>2</sub> )	%	IS 11071	4.9	4.3	---
9	Oxygen (O <sub>2</sub> )	%	IS 11071	21.8	21.5	---

Verified by: H. BALAJI, Deputy Quality Manager  
 Authorized Signatory: K. KAPALAMATHAN, Deputy Technical Manager

**TEST REPORT**

Customer Name: M/s. Adani Krishnapatnam Port Ltd.  
 Address: PO Box No. 02, Muthukur, Nellore SPSR Nellore 524044  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.  
 Date of Sampling: 03.05.2023  
 Sample Received on: 03.05.2023  
 Test Commenced on: 03.05.2023  
 Test Completed on: 03.05.2023  
 Sampling Location: Muthukur  
 Dock Diameter: 0.1 (Diameter)  
 Serial No: P/CCM/AP/00025

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS AS PER 'APPCB'
				Before CEM	After CEM	
1	Ambient Temperature	°C	IS 11071 (Part 1)	32.8	33.1	---
2	Wind Speed	m/s	IS 11071 (Part 1)	27.2	27.2	---
3	Wind Rose	km/h	IS 11071 (Part 1)	459	440	---
4	Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 11071 (Part 1)	105.4	112.9	150
5	Ambient Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 11071 (Part 1)	5.82	5.42	---
6	Di-oxide of Nitrogen (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 11071 (Part 1)	236.4	212.4	---
7	Carbon monoxide (CO)	%	IS 11071	0.16	0.16	---
8	Carbon dioxide (CO <sub>2</sub> )	%	IS 11071	4.9	4.3	---
9	Oxygen (O <sub>2</sub> )	%	IS 11071	21.8	21.5	---

Verified by: H. BALAJI, Deputy Quality Manager  
 Authorized Signatory: K. KAPALAMATHAN, Deputy Technical Manager

**TEST REPORT**

Customer Name: M/s. Adani Krishnapatnam Port Ltd.  
 Address: PO Box No. 02, Muthukur, Nellore SPSR Nellore 524044  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.  
 Date of Sampling: 03.05.2023  
 Sample Received on: 03.05.2023  
 Test Commenced on: 03.05.2023  
 Test Completed on: 03.05.2023  
 Sampling Location: Muthukur  
 Dock Diameter: 0.1 (Diameter)  
 Serial No: P/CCM/AP/00025

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS AS PER 'APPCB'
				Before CEM	After CEM	
1	Ambient Temperature	°C	IS 11071 (Part 1)	32.2	33.1	---
2	Wind Speed	m/s	IS 11071 (Part 1)	27.4	27.2	---
3	Wind Rose	km/h	IS 11071 (Part 1)	464	440	---
4	Particulate Matter (PM10)	µg/m <sup>3</sup>	IS 11071 (Part 1)	115.4	112.9	150
5	Ambient Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	IS 11071 (Part 1)	5.94	5.58	---
6	Di-oxide of Nitrogen (NO <sub>2</sub> )	µg/m <sup>3</sup>	IS 11071 (Part 1)	219	212.4	---
7	Carbon monoxide (CO)	%	IS 11071	0.16	0.16	---
8	Carbon dioxide (CO <sub>2</sub> )	%	IS 11071	4.9	4.3	---
9	Oxygen (O <sub>2</sub> )	%	IS 11071	21.8	21.5	---

Verified by: H. BALAJI, Deputy Quality Manager  
 Authorized Signatory: K. KAPALAMATHAN, Deputy Technical Manager



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**LSL** **LIFE SHELL LABS INDIA PVT. LTD.**  
 (The Compliance Environmental Service Provider)  
 No. 25, Nellore Road, Madhav Nagar, Phase 1,  
 Chandrababu Naidu, -522007, Tamil Nadu.  
 Tel: +91 94 40 30 40 40 | Email: info@lsllabs.com  
 www.lsllabs.com

**TEST REPORT**

Sample ID: 22216M JCB-1033 Report Date: 20/06/2023

Customer Name: M/s. Adani Krishnapatnam Port Ltd.,  
 Address: PO Bag NO-02, Muthukur, Nellore SPSR Nellore District,  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.

Date of Sampling: 14/05/2023 Sampled by: JCB  
 Sample Received on: 15/05/2023 Sample Description: Stack Emission  
 Test Commenced on: 15/05/2023 Sample Mark: 001-002 PMS-0  
 Test Completed on: 15/05/2023 Sampling Procedure: As per Method as per Test Method

Sampling Location: Admin Building Analytical Temp during sampling: 27.1 (Avg.)  
 Stack Diameter: 1.0 (Diameter) Wet during sampling: 40% (Avg.)  
 Stack No: P/COM/NT/00027 06 Number: 4013 (No. 06)

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS as per "PERM"
				Before Emission	After Emission	
1	Stack Temperature	°C	IS 1170 (Part 0)	100	100	--
2	Flue Gas Velocity	m/s	IS 1170 (Part 0)	15.7	15.0	--
3	Flue Gas	kg/hr	IS 1170 (Part 0)	300	270	--
4	Particulate Matter (PM)	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	22.0	22.7	100
5	Sulfur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	0.20	0.20	--
6	Oxide of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	250.0	250.0	--
7	Carbon Monoxide (CO)	%	IS 1170 (Part 0)	800 (max)	800 (max)	--
8	Carbon Dioxide (CO <sub>2</sub> )	%	IS 1170 (Part 0)	8.6	8.6	--
9	Oxygen (O <sub>2</sub> )	%	IS 1170 (Part 0)	13.8	13.8	--

Verified by: **M. BALAJI** Deputy Quality Manager  
 Authorized Signatory: **E. KAPSALEATHAN** Deputy Technical Manager

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 www.lsllabs.com

**TEST REPORT**

Sample ID: 22216M JCB-1033 Report Date: 20/06/2023

Customer Name: M/s. Adani Krishnapatnam Port Ltd.,  
 Address: PO Bag NO-02, Muthukur, Nellore SPSR Nellore District,  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.

Date of Sampling: 14/05/2023 Sampled by: JCB  
 Sample Received on: 15/05/2023 Sample Description: Stack Emission  
 Test Commenced on: 15/05/2023 Sample Mark: DS-120 R0A-3  
 Test Completed on: 15/05/2023 Sampling Procedure: As per Method as per Test Method

Sampling Location: Admin Building Analytical Temp during sampling: 27.1 (Avg.)  
 Stack Diameter: 1.0 (Diameter) Wet during sampling: 40% (Avg.)  
 Stack No: P/COM/NT/00027 06 Number: 4013 (No. 06)

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS as per "PERM"
				Before Emission	After Emission	
1	Stack Temperature	°C	IS 1170 (Part 0)	107	100	--
2	Flue Gas Velocity	m/s	IS 1170 (Part 0)	15.7	15.0	--
3	Flue Gas	kg/hr	IS 1170 (Part 0)	300	270	--
4	Particulate Matter (PM)	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	22.7	22.7	100
5	Sulfur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	0.20	0.20	--
6	Oxide of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	220.0	220.0	--
7	Carbon Monoxide (CO)	%	IS 1170 (Part 0)	800 (max)	800 (max)	--
8	Carbon Dioxide (CO <sub>2</sub> )	%	IS 1170 (Part 0)	8.6	8.6	--
9	Oxygen (O <sub>2</sub> )	%	IS 1170 (Part 0)	13.8	13.8	--

Verified by: **M. BALAJI** Deputy Quality Manager  
 Authorized Signatory: **E. KAPSALEATHAN** Deputy Technical Manager

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**TEST REPORT**

Sample ID: 22216M JCB-1033 Report Date: 20/06/2023

Customer Name: M/s. Adani Krishnapatnam Port Ltd.,  
 Address: PO Bag NO-02, Muthukur, Nellore SPSR Nellore District,  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.

Date of Sampling: 14/05/2023 Sampled by: JCB  
 Sample Received on: 15/05/2023 Sample Description: Stack Emission  
 Test Commenced on: 15/05/2023 Sample Mark: 001-002 PMS-0  
 Test Completed on: 15/05/2023 Sampling Procedure: As per Method as per Test Method

Sampling Location: Admin Building Analytical Temp during sampling: 27.1 (Avg.)  
 Stack Diameter: 1.0 (Diameter) Wet during sampling: 40% (Avg.)  
 Stack No: P/COM/NT/00027 06 Number: 4013 (No. 06)

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS as per "PERM"
				Before Emission	After Emission	
1	Stack Temperature	°C	IS 1170 (Part 0)	100	100	--
2	Flue Gas Velocity	m/s	IS 1170 (Part 0)	15.7	15.0	--
3	Flue Gas	kg/hr	IS 1170 (Part 0)	300	270	--
4	Particulate Matter (PM)	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	22.0	22.7	100
5	Sulfur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	0.20	0.20	--
6	Oxide of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	250.0	250.0	--
7	Carbon Monoxide (CO)	%	IS 1170 (Part 0)	800 (max)	800 (max)	--
8	Carbon Dioxide (CO <sub>2</sub> )	%	IS 1170 (Part 0)	8.6	8.6	--
9	Oxygen (O <sub>2</sub> )	%	IS 1170 (Part 0)	13.8	13.8	--

Verified by: **M. BALAJI** Deputy Quality Manager  
 Authorized Signatory: **E. KAPSALEATHAN** Deputy Technical Manager

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**TEST REPORT**

Sample ID: 22216M JCB-1033 Report Date: 20/06/2023

Customer Name: M/s. Adani Krishnapatnam Port Ltd.,  
 Address: PO Bag NO-02, Muthukur, Nellore SPSR Nellore District,  
 Client Name: M/s. Adani Krishnapatnam Port Ltd.

Date of Sampling: 14/05/2023 Sampled by: JCB  
 Sample Received on: 15/05/2023 Sample Description: Stack Emission  
 Test Commenced on: 15/05/2023 Sample Mark: 001-002 PMS-0  
 Test Completed on: 15/05/2023 Sampling Procedure: As per Method as per Test Method

Sampling Location: Admin Building Analytical Temp during sampling: 27.1 (Avg.)  
 Stack Diameter: 1.0 (Diameter) Wet during sampling: 40% (Avg.)  
 Stack No: P/COM/NT/00027 06 Number: 4013 (No. 06)

S. No.	PARAMETERS	UNIT	TEST METHOD	RESULTS		LIMITS as per "PERM"
				Before Emission	After Emission	
1	Stack Temperature	°C	IS 1170 (Part 0)	100	100	--
2	Flue Gas Velocity	m/s	IS 1170 (Part 0)	15.7	15.0	--
3	Flue Gas	kg/hr	IS 1170 (Part 0)	300	270	--
4	Particulate Matter (PM)	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	22.0	22.7	100
5	Sulfur Dioxide (SO <sub>2</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	0.20	0.20	--
6	Oxide of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	IS 1170 (Part 0)	250.0	250.0	--
7	Carbon Monoxide (CO)	%	IS 1170 (Part 0)	800 (max)	800 (max)	--
8	Carbon Dioxide (CO <sub>2</sub> )	%	IS 1170 (Part 0)	8.6	8.6	--
9	Oxygen (O <sub>2</sub> )	%	IS 1170 (Part 0)	13.8	13.8	--

Verified by: **M. BALAJI** Deputy Quality Manager  
 Authorized Signatory: **E. KAPSALEATHAN** Deputy Technical Manager

### 3.10 Rain Water Harvesting Pits

Rainwater Harvesting pits of 13 nos are available within the Port premises. The availability of water is in the rainy & winter seasons. Percolation is faster due to sandy soil. The water is being utilized for dust suppression to the extent possible.

S No.	AKPL - (Krishnapatnam) Site-locations	Capacity (KL)
1	North west of the Port - Level crossing 2 (LC 2) Pond	5000
2	Coal yard Zone 5 Pond 1	5000
3	Coal yard Zone 5 Pond 2	3000
4	Coal yard Zone 4 Pond	2000
5	Coal yard Zone 6 Pond 1	1500
6	Coal yard Zone 6 Pond 2	1500
7	Zero Point pond	1200
8	Natural Pond NEC road	6000
9	NEC 1 railway Siding pond	1000
10	South port pond 1 Traffic centre	2000
11	South port pond 2 Gummaldibba road near to check post	5000
12	South port pond 3 Harijanawada	5000
13	South port pond 4 Tamminapatnam CAAQM 2	2000

#### Location Google Map of the Rainwater harvesting pits:





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



### 3.11 Statutory returns/ compliance reports

The Environment Department headed by Vice President with supporting Officers, Executives & Field staff is taking care for periodical submission of the following statutory returns/ compliance reports to the concerned statutory departments i.e., MoEF & CC and APPCB:

- **Monthly** - Submitting Consent compliance reports to APPCB with Air Quality Monitoring, Marine & Terrestrial Monitoring reports along with water consumption details (Form – 1) under the Water (Prevention and Control of Pollution) Cess Act, 1977 and amendments thereof. Copies of the compliance reports are attached as **Annexure – IV**
- **Half-Yearly** - Submitting half yearly compliance of the conditions stipulated in EC, CTE & CTO Orders issued by MoEF&CC and APPCB.
  - NABL Accredited Agency Certified Half-Yearly compliance report for the period from October 2022 to March 2023 submitted on 30.05.2023. (Parivesh Portal Acknowledgement & screen shot of successful submission attached as **Annexure -XII**).
  - Self-Certified Half-yearly compliance report for the period from April 2023 to September 2023 submitted on 29.11.2023 (screen shot of successful submission attached as **Annexure -XII**)
- **Annual/Yearly** –
  - Submitting the Annual Returns of Generation, Storage & Disposal of E – Waste in **Form- 3** as per the E-Waste (Management) Rules, 2016 and amendments thereof. The latest submission for the FY 2022-23 is on 30.06.2023. (**Attached as Annexure - V**).
  - Submitting the Annual Returns of Generation, Storage & Disposal of Hazardous Waste (Waste/Used Oil) in **Form- 4** as per the Hazardous and other Waste (Management and Transboundary Movement) Rules, 2016 (HOWM Rules, 2016) and amendments thereof. The latest submission for the FY 2022-23 is on 30.06.2023. (**Attached as Annexure -VI**).
  - Submitting of Environmental Statement **Form – 5** as per Rule No.14 of E (P) Rules,1986 & amendments thereof. The latest submission for the FY 2022-23 is on 30.09.2023. (**Attached as Annexure -VII**).
  - Submitting the Annual Returns of Generation, Storage & Disposal of Used Batteries in **Form- 8** as per the Batters (Management & Handling) Rules, 2010 and amendments thereof to the APPCB. The latest submission for the FY 2022-23 is on 30.06.2023. (**Attached as Annexure VIII**)



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



### 3.12 Nursery Development

AKPL takes pride in maintaining its own nursery, where saplings are propagated for the annual plantation drive. Since the beginning of the port's operations, the AKPL nursery has consistently maintained a stock of 100,000 to 500,000 saplings.





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### **3.13 Greenbelt Development:**

- As on 31st March 2023, AKPL has successfully developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue & median plantations.
- Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).
- Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.
- Maintaining 20-meter width greenbelt around the coal stack yards.





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



**Green Belt – South Shore**



**Green Belt – North Shore**



**Green Belt – Zero Point Entrance**



**Green Belt – West Port**



**Avenue Plantations towards berths**



**Warehouses – Avenue Plantations**



**Greenbelt Protection to Buckingham Canal inside the port premises**





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



Green Belt towards Industries



Green Belt – Coal sidings



Block plantation at yards & Terminals

### 3.14 Mangrove Conservation

Existing mangrove areas in the AKPL are being protected and conserved with suitable barricading, erection of display boards and ensuring the tidal flow. As a part of Phase I EC compliance, an area of 9 acres (3.64 ha) of mangroves are being conserved in the port areas since its inception.



Mangroves conservation 200 Ha.



Mangroves - Developed 50 Hectares



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### Mangrove protection of 3.64 ha (9 acres) at AKPL

AKPL has undertaken plantation of mangroves in the upstream and downstream of the creek by adopting fish-bone technique. All the major seven mangrove species were recorded in this creek with a dominance of *Avicennia marina*.





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



### 3.15 Weather Station



AKPL has been operating One Weather Station within the Port premises to know the weather forecast. Maximum and Minimum values of each month recorded in the Continuous Weather Monitoring station.



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## CHAPTER - 4



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



### Table of contents

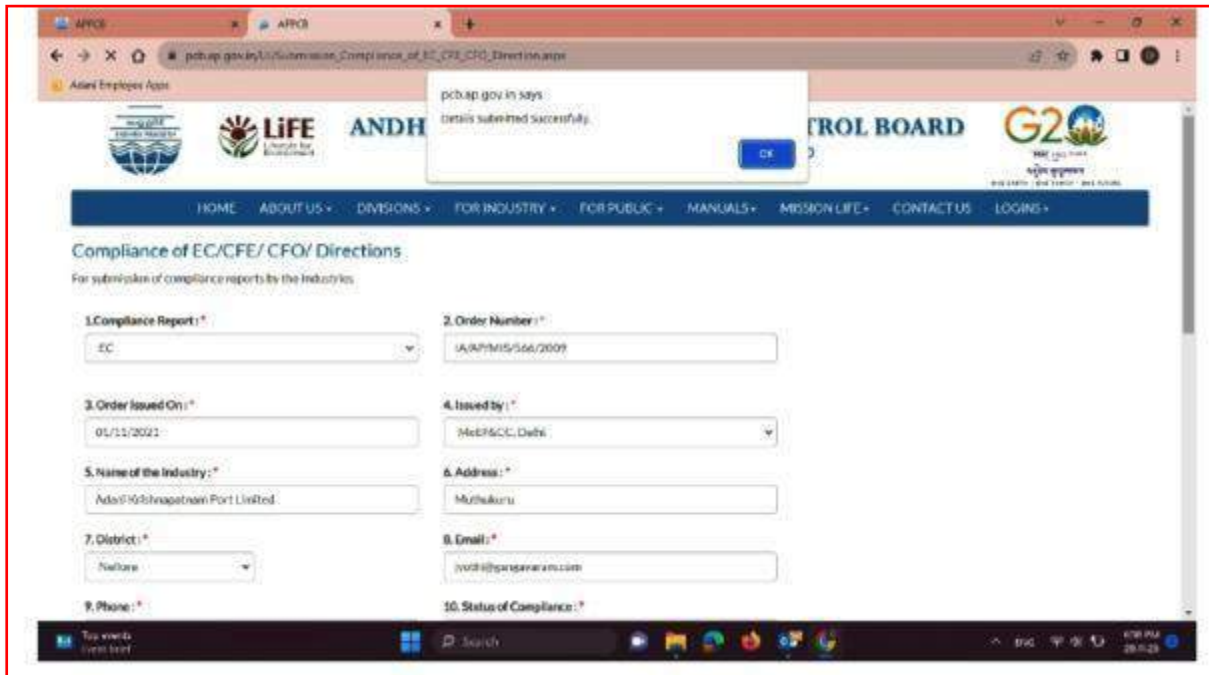
S. No.	Description	Page No.
4.0	The summary of the self-certified compliance for the period from April 2023 to September 2023	55
4.1	Environment protection & sustainability	56
4.2	Cargo handling, water consumption, treated water generation & disposal, Hazardous, solid & BMW waste disposal and plantation details:	59
4.3	Submission of Statutory returns/ compliance reports	63
4.4	Greenbelt Development & Mangroves Conservation:	64
4.5	New Initiatives for effective Environment & Sustainability:	64
4.6	Promotion of Environment & Sustainability awareness	65
4.7	Community Development Programmes:	67
4.8	Village Sanitation Program:	67
4.9	Safety Mock Drill / Emergency Exercise	68
4.10	Vigilance & Taskforce:	69
4.11	CSR Activities	69
4.12	Awards & appreciations	70



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**4.0 AKPL has submitted self-certified EC Half-Yearly compliance for the period from April 2023 to September 2023 through Parivesh portal on 28.11.2023 & through eccompliance-ap@gov.in web site on 29.11.2023.**



Your application has been Submitted with following details	
Proposal No	EC21A033AP141550
Compliance ID	27603396
Compliance Number(For Tracking)	EC/M/COMPLIANCE/27603396/2023
Reporting Year	0
Reporting Period	0
Submission Date	28-11-2023
IRO Name	P Subramanyam
IRO Email	agmu102@ifs.nic.in
State	ANDHRA PRADESH
IRO Office Address	Budgam
<b>Note:-</b> SMS and E-Mail has been sent to P Subramanyam, ANDHRA PRADESH with Notification to Project Proponent.	

The summary of the self-certified compliance for the period from April 2023 to September 2023 is as below:



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



#### **4.1 Environment protection & sustainability:**

1. AKPL has been operating 3 No. of CAAQM stations of Beta Ray Attenuation technology to measure the parameters PM 10, PM 2.5, NO<sub>x</sub>, NH<sub>3</sub>, SO<sub>2</sub>, CO, , at the following locations and data connected to APPCB website.
  - Station - 1 – (CVR Amenities Complex)
  - Station - 2 – (Thamminapatnam Village)
  - Station - 3 – (Krishnapatnam Village)
  - The CAAQM instruments are being calibrated periodically.
  - The CAAQM stations are connected & data uploading to APPCB website.
  - AKPL is submitting the daily average CAAQM data to APPCB on monthly basis and on Half-yearly basis to MoEF & CC. As per the values, the CAAQM parameters are within the stipulated limits.
2. AKPL appointed an NABL Accredited and MoEF&CC accredited Laboratory "M/s.SV Enviro Labs and Consultants" to carry-out terrestrial & marine water quality parameters and monitoring the Ambient Air Quality at 7 locations within 10 Km radius of project site (5 stations in buffer zone & 2 location inside plant area) and submitting the reports to APPCB on Monthly basis.
  - Analyses reports of marine water and sediment quality reveals that all the parameters were within normal value. The parameters like DO, BOD, COD, Ammonia, Organic loads, etc., are within the prescribed limits. The results indicate no gross changes in water and sediment component by port activities.
3. Measures to control of fugitive emissions & dust suppression:
  - High pressure water sprinkling system provided at all transfer towers.
  - Tarpaulin covering on the stake plies to the possible extent
  - Ensuring the stacks are continuously wetted with watersprinkling system.
  - Provided closed godowns for storage of fertilizer & food grains cargo.



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- Hydraulic sweeping machines are being deployed for cleaning of roads, warehouses areas and container yards.
  - Operating atomizers as innovative technology in dust suppression system
  - Deploying DSS Tankers for dust suppression at internal roads, yards & all operational areas
  - Ensuring Manual Cleaning of internal roads & other operational areas & time to time Cleaning & lifting of cargo spillages
  - Established 14 no. of truck tyre tarpaulin covering stations and ensuring all the outbound cargo trucks & rakes are covered with tarpaulin to avoid transit spillages
  - Operating an automatic sensor-based Truck tyre washing facility and ensuring all the outgoing cargo carrying trucks tires passing through North Side port are properly cleaned before leaving the port premises
  - Ensuring all the outbound cargo rakes are covered with tarpaulin and tightened with rope to avoid transit spillages
  - Developed block plantation around the stack yards
  - A wind barrier screen of 14 meters' height has been developed adjacent to the coal yard, supported with greenbelt is developed at 10-12 meters' height adjacent to the wind screen structure.
4. Maintaining/ cleaning the storm water drain periodically by removing the settled sludge to avoid contamination in surrounding water bodies.
  5. AKPL has provided collection bins at about 120 locations for collection of dry & wet solid, organic & domestic waste. Developed bin collection system with dedicated collection vehicles and manpower. Segregating recyclable at the source and being recycled through vendors.
  6. Biodegradable waste is converting to manure through natural composting process/Giving to Pig farms.
  7. AKPL provided a Food Waste Converter facility to convert the domestic & canteen waste generated within the Port and utilizing the same as manure for development of Nursery & Greenbelt.





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8. 3<sup>rd</sup> party Audit M/s Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., Hyderabad appointed by APMB, visited AKPL on 25<sup>th</sup> & 26<sup>th</sup> September 2023 to Audit the 1<sup>st</sup> quarter i.e., April to June 2023 compliance status: Some of the notable remarks are as below:
  - The Cargo comprises mainly of Coal, Iron Ore and Oil. The bulk Liquids are handled through the ship's pumps. Pipelines have been provided for transportation of liquid cargo from berths to tank farms of users.
  - Environmental monitoring of Air, Noise, Water, Marine Sediment, Effluents etc., are being observed periodically by AKPL
9. AKPL has developed 194.5 Ha of Green belt along port boundary, around coal yards, avenue & median plantations.
10. AKPL has been protecting and conserving the existing mangroves with suitable barricading, erection of display boards and ensuring the tidal flow. As a part of Phase I EC compliance, an area of 9 acres (3.64 ha) of mangroves are being conserved in the port areas since its inception.
11. There is no Ground Water withdrawal within the Port premises & not discharging any waste water into the water bodies or Sea thereby.
12. AKPL has been utilizing the storm drain water, settling ponds supernatant water and rain harvested water for dust suppression to the extent possible.
13. Conducting seminars/workshops/programmes/competitions & rallies on Environment & Sustainability among the employees & associates as a part of promoting awareness.



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## 4.2 Cargo handling, water consumption, treated water generation & disposal, Hazardous, solid & BMW waste disposal and plantation details:

### a. Cargo Handling;

The Cargo comprises mainly of Coal, Gypsum and Granite. The bulk Liquids are handled through the ship's pumps. Pipelines have been provided for transportation of liquid cargo from berths to tank farms of users.

- AKPL has been operating 13 No. of Berths. Out of which Berth No. N1 and N2 are Container berths, Berth No. N4,N6,N7,N8, NW1, NW2 & NW3 are fully mechanized berths. Berths N3, N5 & S4 are semi-mechanized berths. Berth no L4 is Liquid Jetty dedicated for POL products.
- The volume of cargo handled during the period April 2023 to September 2023 was 28.18 MMTs of Commodities & 0.07 MTEUs of Containers

S. No	Type of Cargo	Quantity As per CTO dated 11.11.2022	Cargo handled for the period from April to September 2023
1.	Coal	46 Million Tons/ Annum	20.94
2.	Iron Ore	8 Million Tons/Annum	2.45
3.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others).	14 Million Tons/Annum	4.46
4.	Liquid Cargo (Crude oil, POL, LNG, LPG, Chemical products)	10 Million Tons/Annum	0.33
	Total Cargo handled during the last six months		28.18
5.	Container Cargo	2.0 Million TEUs/A	0.07



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**b. Water Consumption:**

- The source of water is Muthukur Reservoir 1000 KLD and 4 MLD of water from Nakkala kalava irrigation drain.
- As per APPCB Consent, the existing permitted water quantities for different applications are as below:

S. No.	Purpose	Quantity (KLD)
1.	Dust suppressions & Miscellaneous (Fire protection services)	1950.0
2.	Gardening	400.0
3.	Domestic	650.0
	<b>Total</b>	<b>3000.0</b>

- The average daily water consumption for the last six months i.e., from April 2023 to September, 2023 is 2570.16 KLD. As per details, the water consumption for different activities in a month during the above period is as below:

S.No	Month	KLD
1.	Apr,23	3006
2.	May,23	2730
3.	June, 23	2803
4.	July, 23	2087
5.	Aug, 23	2377
6.	Sep, 23	2418
	Total	15421
	Average (KLD)	2570.16
	Consented (KLD)	3000

- AKPL has been submitting the water consumption details in Form – 1 to APPCB on Monthly basis & MoEF &CC on Half-yearly basis.



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**c. Sewage Treatment Plants (STP)**

- AKPL has been operating Sewage Treatment Plants (STP) of 540 KLD to treat the domestic sewage generating within the Port.
  - 500 KLD STP (1 X 300 KLD & 1 X 200 KLD) at CVR Amenities Complex
  - 40 KLD STP Admin. Building.
- The Port constructed and operating Sewage Treatment Plant of capacity of 300 KLD under Phase 1 & II which consisting of Bar Screen, Sewage collection Sump, fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc. for treatment of the domestic effluents. After treatment, the treated water is being utilized for Green belt development and dust suppression.
- In Phase –III, the Port provided Sewage Treatment Plant of capacity of 240 KLD consisting of Sewage collection pit – 2 pumps of 1hp each, Aeration tank, Coagulation tank, Tube settler tank Sludge, Biotreat, Ozonation tank, Pressure sand filter, Activated carbon filter, UV sterilization and Chlorine dosing, Treated water tank for treatment of the domestic effluents. After treatment, the treated water utilized for Green belt development and dust suppression to cater to the sewage that would be generated from the Phase III domestic.
- The details of treated water generated during the period from April 2023 to September 2023 are as below. The water was utilized for on-land greenbelt & dust suppression purpose within the Port premises.

Month	Treated water generated		
	STP- 1	STP-2	Total
April 2023	300.33	9.27	310.20
May 2023	193.70	12.73	206.43
June 2023	169.63	10.63	180.26
July 2023	182.00	6.47	188.47
August 2023	184.60	12.20	196.80
September 2023	193.70	6.83	200.53

- As part of compliance monitoring, AKPL has been carrying out the Sampling and analysis of STP treated water through an agency accredited by NABL and approved by MoEF&CC. Results of monitoring conform to norms and periodical Monitoring Reports are being submitted to APPCB regularly.



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#### d. Solid / Hazardous Waste – Generation & Disposal:

- AKPL has provided collection bins at about 120 locations for collection of dry & wet solid & domestic waste. Developed bin collection system with dedicated collection vehicles and manpower.
- Segregating recyclable at the source and being recycled through vendors. Biodegradable waste is converting to manure through natural composting process/Giving to Pig farms.
- **Plastic waste** is being collected and disposed of to SPCB authorized plastic waste recycling units.
- **E – Waste** is being collected and disposed to SPCB authorized E-waste recyclers and submitting the details in Form – 3 to SPCB regularly. The latest submission is on 30.06.2023 for the Year 2022-2023.
- **Hazardous waste (Waste oil)** – as per the CFO & HWA of APPCB, AKPL is permitted to generate & dispose of waste oil including bilge oil. AKPL is quantifying the waste oil and disposing to SPCB authorized Waste oil recyclers and submitting the details in Form – 4 to SPCB regularly. The latest submission is on 30.06.2023 for the Year 2022-2023.
- AKPL has disposed the following wastes during the period April 2023 to September 2023.

Sl. No.	Date	Recycling Unit	Quantity
1.	04-09-2023	Jyothi Lubricants	4.00 Tonnes
2.	31-08-2023	Jyothi Lubricants	10.00 Tonnes
3.	06-06-2023	Supreme Petro Products (Used Oil)	19.06 Tonnes
4.	03-06-2023	Supreme Petro Products (Used Oil)	12.58 Tonnes
5.	24-05-2023	Thirupathi Oil Company Unit-1	20.60 Tonnes

- **Solid waste** – AKPL made arrangements for daily collecting and disposing of the domestic solid waste for further waste management process.
- **Organic waste**– is being collected on a regular basis within the Port and being used for greenbelt development.
- **Bio-Medical Waste** – Adani Foundation (a different entity) has been operating an Onsite Health Centre (OHC) to provide First Aid facility to the victims and generating very less quantity of Bio-Medical Waste. Adani foundation made an agreement with M/s. SS Bio Care an authorized Bio-medical waste Treatment Facility, Safe Collection, Transportation & disposal of properly segregated and packed BMW and/or Bio-Hazardous waste as per APPCB, CPCB norms.



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### 4.3 Submission of Statutory returns/ compliance reports

The Environment Department headed by Vice President with supporting Officers, Executives & Field staff is taking care for periodical submission of the following statutory returns/ compliance reports to the concerned statutory departments i.e., MoEF & CC and APPCB:

- **Monthly** - Submitted Consent compliance reports to APPCB with Air Quality Monitoring, Marine & Terrestrial Monitoring reports along with water consumption details (Form – 1) under the Water (Prevention and Control of Pollution) Cess Act, 1977 and amendments thereof. Copies of the compliance reports are attached as **Annexure – IX**
- **Half-Yearly** - Submitted half yearly compliance of the conditions stipulated in EC, CTE & CTO Orders issued by MoEF&CC and APPCB.
  - NABL Accredited Agency Certified Half-Yearly compliance report for the period from October 2022 to March 2023 submitted on 30.05.2023. (Parivesh Portal Acknowledgement & screen shot of successful submission attached as **Annexure -XII**).
  - Self-Certified Half-yearly compliance report for the period from April 2023 to September 2023 submitted on 29.11.2023 (screen shot of successful submission attached as **Annexure -XII**) and
- **Annual/Yearly** –
  - Submitted the Annual Returns of Generation, Storage & Disposal of E – Waste in **Form- 3** as per the E-Waste (Management) Rules, 2016 and amendments thereof. The latest submission for the FY 2022-23 is on 30.06.2023. (**Attached as Annexure - V**).
  - Submitted the Annual Returns of Generation, Storage & Disposal of Hazardous Waste (Waste/Used Oil) in **Form- 4** as per the Hazardous and other Waste (Management and Transboundary Movement) Rules, 2016 (HOWM Rules, 2016) and amendments thereof. The latest submission for the FY 2022-23 is on 30.06.2023. (**Attached as Annexure -VI**).
  - Submitted of Environmental Statement **Form – 5** as per Rule No.14 of E (P) Rules,1986 & amendments thereof. The latest submission for the FY 2022-23 is on 30.09.2023. (**Attached as Annexure -VII**).
  - Submitting the Annual Returns of Generation, Storage & Disposal of Used Batteries in **Form- 8** as per the Batters (Management & Handling) Rules, 2010 and amendments thereof to the APPCB. The latest submission for the FY 2022-23 is on 30.06.2023. (**Attached as Annexure VIII**)



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



#### **4.4 Greenbelt Development & Mangroves Conservation:**

Development of the greenbelt has been carried out in phases I and II, resulting in a total area of 191.5 hectares that has been developed and maintained within the port premises.

In line with the expansion plans for phase III of Krishnapatnam Port, an additional 3 hectares of greenbelt has been established, contributing to the proposed 120 hectares of greenbelt for this phase in addition to the existing 191.5 Ha.

The facility is maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).

Port has developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.

The facility is maintaining 20-meter width greenbelt around the coal stack yards.

AKPL has been protecting and conserving the existing Mangroves with suitable barricading, erection of display boards and ensuring the tidal flow. As a part of Phase I EC compliance, an area of 9 acres (3.64 ha) of mangroves are being conserved in the port areas since its inception.

#### **4.5 New Initiatives for effective Environment & Sustainability:**

- Completed Electrification of Cranes & Compressor from diesel Cranes
- Usage of EV 4 – wheelers for Employee transportation
- Converted 9 no's Liebherr cranes from diesel operated to Electrically operated.
- Converted 1 diesel operated oil compressor to electrically operated.
- All Marine tugs provided with shore power 100% while at jetty.
- Established hooded conveyor belts to mitigate dust emission into the atmosphere.
- Provided Fire hydrant system for Wagon loading station.
- Provided facilities for truck tarpaulin covering stations of 14 nos. at various transit locations to facilitate and ensure tarpaulin coverage to all the outgoing cargo trucks.
- Provided facilities for Railway Rake to ensure tarpaulin coverage to all the outgoing cargo rakes.



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



#### 4.6 Promotion of Environment & Sustainability awareness

AKPL has conducted seminars/workshops/programmes/competitions & rallies on Environment & Sustainability among the employees & associates as a part of promoting awareness on the regular basis and on the below mentioned days:

Sl	Name of the day	Day
1	World Environment Day	5 June 2023
2	World Ocean Day	8 June 2023
3	Ozone Day	16 September 2023

##### 1. World Environment Day – 5<sup>th</sup> June 2023

On the occasion of World Environment Day 2023, AKPL actively participated in the green rally organized by the Andhra Pradesh Pollution Control Board - Nellore, in collaboration with the Nellore Municipal Corporation



On the occasion of World Environment Day 2023, AKPL, in association with the Adani Foundation, conducted a sapling plantation drive in Krishnapatnam Village at various locations of the village, including in the houses of villagers.







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An awareness session was conducted for field staff on plastic pollution and its effects on the environment. The session aimed to raise awareness and promote the adoption of eco-friendly alternatives to single-use plastics



## 2. World Ocean Day – 8<sup>th</sup> June 2023.

- On the occasion of World Oceans Day 2023, Adani Krishnapatnam Port has organized an Ocean cleanup program within the port limits.
- In a mass gathering event in the evening session, employees made a pledge to avoid plastic products. In addition, awareness sessions were conducted by the Environment Cell.



## 3. Ozone Day 16<sup>th</sup> September 2023

- On the occasion of Ozone Day AKPL took a commitment pledge for ozone protection.
- 500 saplings planted at Dr. APJ Abdul Kalam Garden & other locations in port premises





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



#### 4. Promotion of Environment sustainability activities:

On the occasion of Ganesh Chaturthi, distributed Clay Ganesh Idols among AKPL Employees & associates to promote environment sustainability:



#### 4.7 Community Development Programmes:

##### Health Awareness Camps

AKPL has conducted Health Awareness Camps which includes:

- Blood donation camps
- Eye checkup camps
- Malaria controlling program
- Health hazard prevention measures
- Programs for employee health awareness
- Water Purification- Reverse Osmosis Process

**Total Health** – Adani Foundation in collaboration with Apollo Foundation Total Health invoked Total Health Programme in all 8 CSR Community villages in Muthukuru, SPSR Nellore District and Chillakuru, Tirupati District. Technical assistance is provided by Apollo Foundation Total Health.



#### 4.8 Village Sanitation Program:

Adani Foundation is supporting Sanitation Program in all 8 community villages to enable to provide safe health environment to the community families. Foundation is carrying out Village Sanitation with 136 community workers to keep these community villages free from poor sanitation and keep these areas clean and neat. Totally 17960 community families are benefitted by means of this program and maintaining good health.



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#### 4.9 Safety Mock Drill / Emergency Exercise

- Organizing periodical mock drills to draw the attention of the employees and to create the awareness of safety issues.
- Organizing periodical fire & safety trainings as a part of preparedness to face the challenges.
- Conducting workshops/seminars by top management involving all the employees & stakeholders to create the awareness of safety issues and preventive measures.





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#### **4.10 Vigilance & Taskforce:**

AKPL is operating an Integrated Security Control Room (ISCR) for close observation of all incoming & outgoing trucks phase wise viz., Loading, weighing of loaded trucks, tarpaulin coverage, washing of trucks at tyre washing facility, final weighing, and entrance & exit gate of the port.

- AKPL is following a strict vigilance on the fitness of the trucks at entrance gate only before allowing the truck for loading of cargo and rejecting trucks which are not possessing the statutory records/permits and meeting the fitness standards.
- AKPL ensures that valid vehicle fitness certificates and pollution certificates in front of the vehicle is displayed. It will be made compulsories for all vehicles to display the stickers and the same will be monitored regularly.
- AKPL constituted a dedicated taskforce team comprising with Safety, Security & Environment Departments to verify the dusty cargo vehicle movement & to monitor proper covering of Truck / Wagons with tarpaulin, spillage of materials and overloaded trucks etc. During the verification, if any violation observed, fine will be imposed.

#### **4.11 CSR Activities**

- 500 houses built with roads and green belt zones
- 27 schools run in 4 Mandals
- Skill Building & Development Centers
- Hostel facilities | Old age homes | Places of worship
- Hospitals | Medical camps
- RO Plants set up for 24/7 Drinking Water facility
- Training Academies with university affiliated programs and certifications
- Women Empowerment Programs
- All-inclusive residential International School for the marginalised providing world class education



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



#### 4.12 Awards & appreciations

AKPL was the winner of Greentech International Foundation Awards consecutively for the years 2022-2023 & 2023-2024 in the categories.



2022 – 2023  
EHS Best Practices category



2023 – 2024  
Environment Excellence category



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# CHAPTER - 5



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## Table of Contents

S. No.	Description	Page No.
5.0	Environment Parameters Monitoring & Institutional Arrangements	73
5.1	Terrestrial Parameters, frequency and monitoring locations are as below	74
5.2	Ambient Air Quality Monitoring through NABL Accredited 3 <sup>rd</sup> Party	75
5.3	Noise Monitoring	80
5.4	Sewage Water – Treatment & disposal	81
5.5	Ground Water Monitoring	84
5.6	Soil Quality	84
5.7	DG Sets Monitoring	84
5.8	Marine Monitoring sampling frequency	86
5.9	Marine Monitoring sampling locations	87
5.10	Marine waters sampling analysis values	88
5.11	Surface waters sampling analysis values	112
5.12	Marine Water Sediment sampling & analysis values – October 2023	114
5.13	Marine Water Sediment sampling & analysis values – November 2023	116
5.14	Marine Water Sediment sampling & analysis values – December 2023	118
5.15	Marine Water Sediment sampling & analysis values – January – 2024	120
5.16	Marine Water Sediment sampling & analysis values – February – 2024	122
5.17	Marine Water Sediment sampling & analysis values – March – 2024	124
5.18	Marine Water Turbidity sampling & analysis values – October – 2023	126
5.19	Marine Water Turbidity sampling & analysis values – November – 2023	127
5.20	Marine Water Turbidity sampling & analysis values – December – 2023	128
5.21	Marine Water Turbidity sampling & analysis values – January – 2024	129
5.22	Marine Water Turbidity sampling & analysis values – February – 2024	130
5.23	Marine Water Turbidity sampling & analysis values – March – 2024	131



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 5.0 Environment Parameters Monitoring & Institutional Arrangements:

AKPL established an Environment Department for institutional Arrangements for Environment Protection, Sustainability & Conservation.

The Department is headed by the Vice President, Senior Officer Environment, Environment Engineer followed by Senior Officer Horticulture, and other supporting field staff.

AKPL appointed an NABL Accredited and MoEF&CC recognized lab "M/s.SV Enviro Labs and Consultants" to carry-out monitoring parameters of terrestrial as well as marine water quality.

AKPL has been submitting the Monitoring reports along with CTO Compliance report to A.P. Pollution Control Board on monthly basis.

NABL Certification and MoEF&CC Gazette Notification of the SV Enviro Labs & Consultants are as furnished below:







Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



MoEF&CC Gazette notification of M/s. S.V.Enviro Labs

<b>MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE</b>			
<b>NOTIFICATION</b>			
New Delhi, the 24th August, 2021			
<p><b>S.O. 3511(E).</b>—In exercise of the powers conferred by clause (b) of sub-section (1) of sections 12 and section 13 of the Environment (Protection) Act, 1986 (29 of 1986), read with rule 10 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the notification of the Government of India in the erstwhile Ministry of Environment and Forests, published in the Gazette of India, Part II, Section 3, Sub-section (ii) vide number S.O. 1174(E), dated the 18<sup>th</sup> July, 2007, namely:—</p> <p>In the said notification, in the table,—</p> <p>(i) for Sl. No. 13,14,24,56,59,63,64,69,71,79,113,114,115,117,123,124,126,134,175 and 196 and the entries relating thereto, the following Sl. No. and entries shall respectively be substituted, namely:—</p>			
<b>Table</b>			
79	M/s. S.V Enviro Labs and Consultants Block B, B-1 IDA, Autonagar, Visakhapatnam-	(1) Mr. Murali Krishna Malasani (2) Mr. Jalem Srinivas (3) Mr. Akunuru Sam Prasanth	11 <sup>th</sup> November, 2023

### 5.1 Terrestrial Parameters, frequency and monitoring locations are as below.

S. No.	Parameter	Frequency	Location & No. of Samples
1.	Air Monitoring PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>2</sub> , NH <sub>3</sub> , Ozone (O <sub>3</sub> ), Lead (Pb), Carbon Monoxide, Benzene, Benzo(a) pyrene- (BaP) Arsenic (As), Nickel (Ni)	Monthly Once - 24 Hours basis	<b>7 Locations</b> i. CAAQMS station 1 – at Amenities Complex ii. CAAQMS station 2 – at Tamminapatnam Village (South Port) iii. CAAQMS station 3 - at Krishnapatnam Village iv. Gopalapuram Village v. Chalivendram Village vi. Port Main Gate ("O" Point) vii. New Light House
2.	Noise Levels covering day and night noise levels in dB (A)	Monthly-24 Hours basis	<b>8 Locations</b> I. KrishnapatnamVillage II. Gopalapuram Village III. Chalivendram Village IV. Port Main Gate ("O" Point) V. Amenities Complex VI. New Light House VII. Tamminapatnam Village (South Port) I. Any 2 of Port Operational areas (1 Point at North Port & 2nd point at South Port)
3.	Sewage Treatment Plant Inlet and Outlet pH, Total Suspended Solids, Total Dissolved Solids, Oil & Grease, COD, BOD.	Monthly once	<b>2 Locations</b> STP (Outlet) 500 KLD-1 unit 40 LD-1 unit



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 5.2 Ambient Air Quality Monitoring through NABL Accredited 3<sup>rd</sup> Party

In addition to the Port CAAQM Stations, the ambient air quality is being assessed at 7 locations within 10 Km radius of project site (5 stations in buffer zone & 2 locations inside plant area).

The locations of ambient air quality stations are given below:

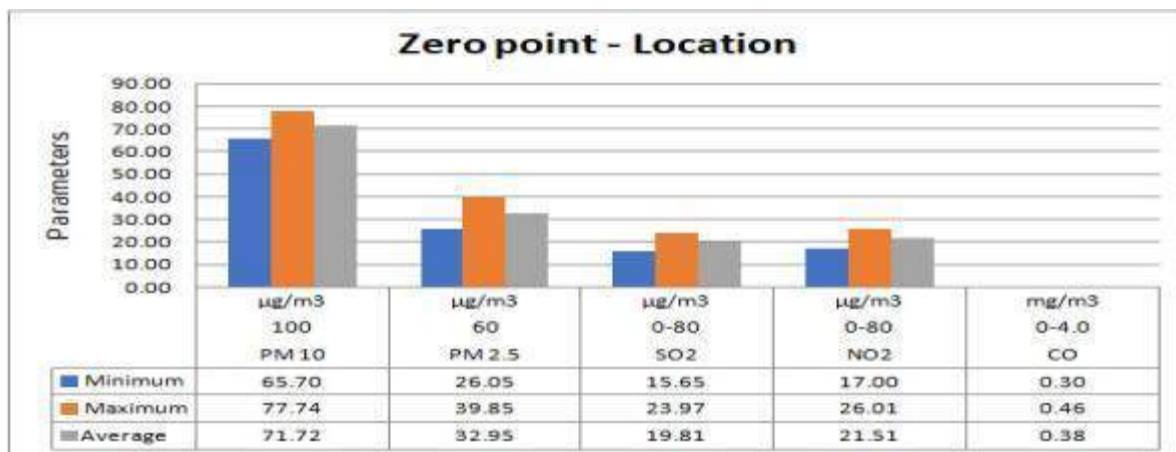
### DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS

Station code	Location	Direction w.r.t. Project site
A1	At Zero Point	W
A2	At Thamminapatnam Village	S
A3	At CVR Building	WNW
A4	At Gopalpuram Village	NW
A5	At Chalivendram	WNW
A6	At Krishnapatnam	NNW
A7	At Light House	SW

Summary of Ambient Air Quality Monitoring values in the port surrounding area for the period from October - 2023 to March 2024 are as below:

#### Location - Zero Point

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	80	80	100	4
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Oct-23	65.50	25.90	15.80	17.00	11.40	0.29
Nov-23	68.30	27.50	16.70	18.10	12.60	0.33
Dec-23	62.80	24.60	14.90	16.30	11.00	0.27
Jan-24	66.30	26.50	15.80	17.40	12.20	0.31
Feb-24	64.10	25.00	14.60	15.90	10.80	0.26
Mar-24	68.60	27.40	15.70	16.80	11.60	0.30
Minimum	62.80	24.60	14.60	15.90	10.80	0.26
Maximum	68.60	27.50	16.70	18.10	12.60	0.33



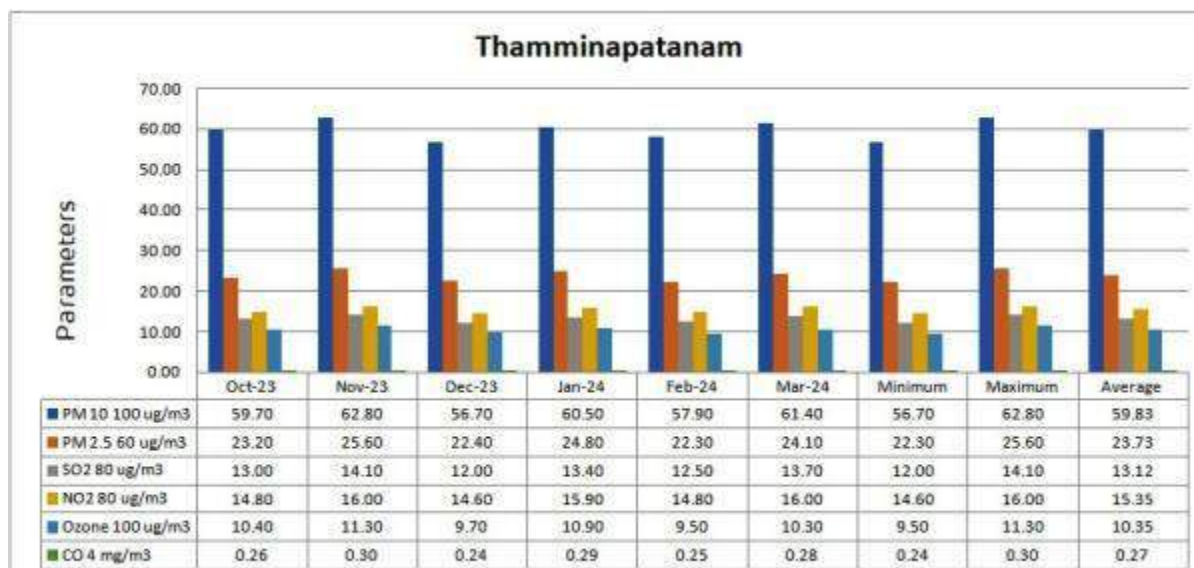
#### Location - Thamminapatnam Village



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	80	80	100	4
Unit	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	mg/m <sup>3</sup>
Oct-23	59.70	23.20	13.00	14.80	10.40	0.26
Nov-23	62.80	25.60	14.10	16.00	11.30	0.30
Dec-23	56.70	22.40	12.00	14.60	9.70	0.24
Jan-24	60.50	24.80	13.40	15.90	10.90	0.29
Feb-24	57.90	22.30	12.50	14.80	9.50	0.25
Mar-24	61.40	24.10	13.70	16.00	10.30	0.28
Minimum	56.70	22.30	12.00	14.60	9.50	0.24
Maximum	62.80	25.60	14.10	16.00	11.30	0.30
Average	59.83	23.73	13.12	15.35	10.35	0.27

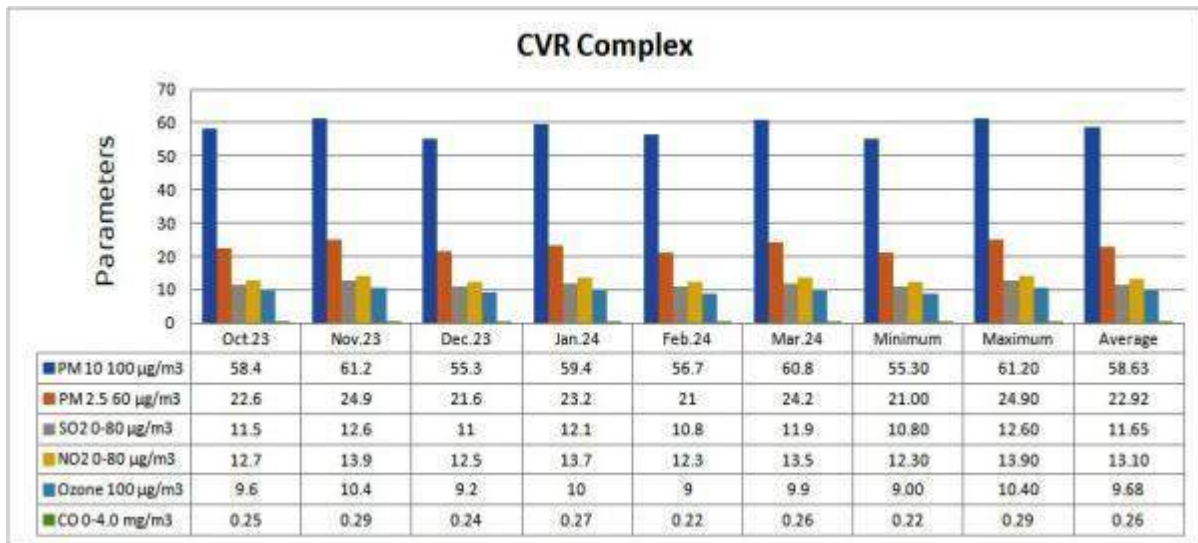


### Location - 3 - CVR Building

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	58.4	22.6	11.5	12.7	9.6	0.25
Nov.23	61.2	24.9	12.6	13.9	10.4	0.29
Dec.23	55.3	21.6	11	12.5	9.2	0.24
Jan.24	59.4	23.2	12.1	13.7	10	0.27
Feb.24	56.7	21	10.8	12.3	9	0.22
Mar.24	60.8	24.2	11.9	13.5	9.9	0.26
Minimum	55.30	21.00	10.80	12.30	9.00	0.22
Maximum	61.20	24.90	12.60	13.90	10.40	0.29
Average	58.63	22.92	11.65	13.10	9.68	0.26

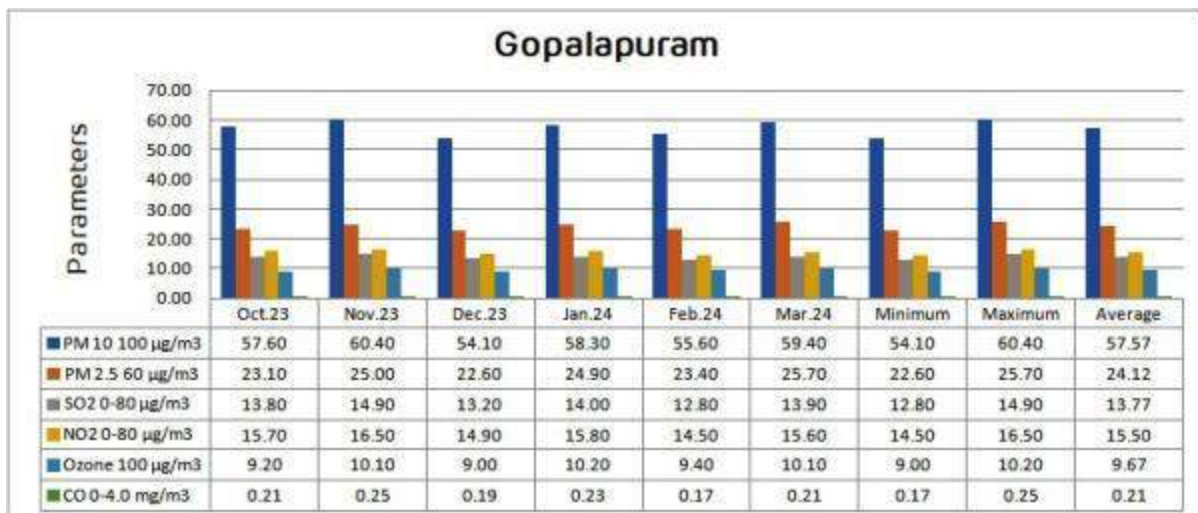


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



#### Location - 4 - Gopalpuram (V)

Parameter	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>2</sub>	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	57.60	23.10	13.80	15.70	9.20	0.21
Nov.23	60.40	25.00	14.90	16.50	10.10	0.25
Dec.23	54.10	22.60	13.20	14.90	9.00	0.19
Jan.24	58.30	24.90	14.00	15.80	10.20	0.23
Feb.24	55.60	23.40	12.80	14.50	9.40	0.17
Mar.24	59.40	25.70	13.90	15.60	10.10	0.21
Minimum	54.10	22.60	12.80	14.50	9.00	0.17
Maximum	60.40	25.70	14.90	16.50	10.20	0.25



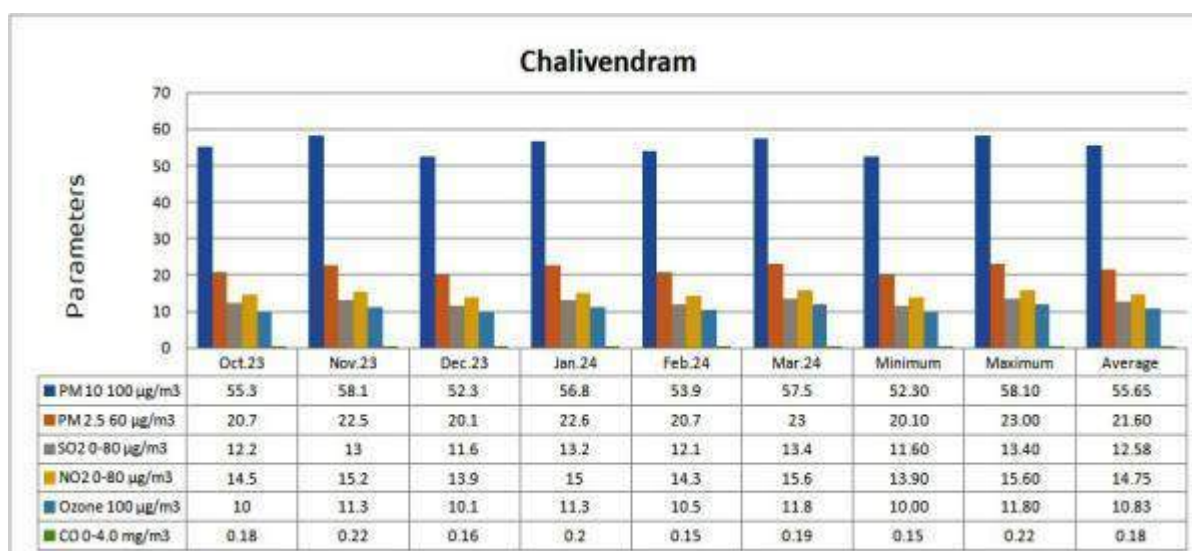


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### Location - 5 - Chalivendram

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	55.3	20.7	12.2	14.5	10	0.18
Nov.23	58.1	22.5	13	15.2	11.3	0.22
Dec.23	52.3	20.1	11.6	13.9	10.1	0.16
Jan.24	56.8	22.6	13.2	15	11.3	0.2
Feb.24	53.9	20.7	12.1	14.3	10.5	0.15
Mar.24	57.5	23	13.4	15.6	11.8	0.19
Minimum	52.30	20.10	11.60	13.90	10.00	0.15
Maximum	58.10	23.00	13.40	15.60	11.80	0.22

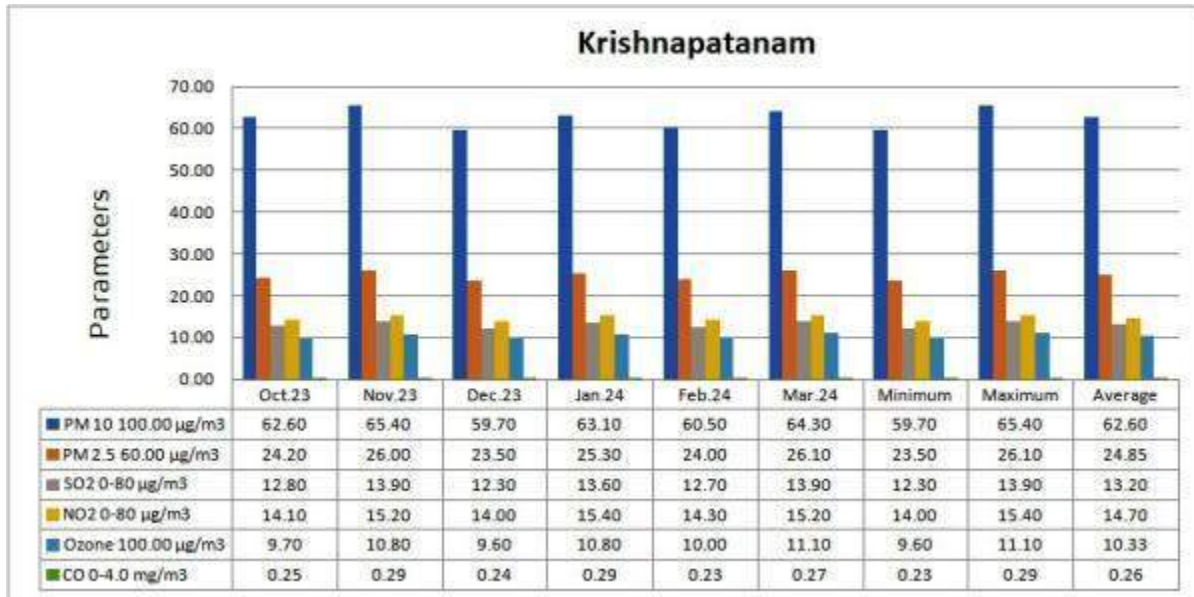


### Location - Krishnapatnam

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100.00	60.00	0-80	0-80	100.00	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	62.60	24.20	12.80	14.10	9.70	0.25
Nov.23	65.40	26.00	13.90	15.20	10.80	0.29
Dec.23	59.70	23.50	12.30	14.00	9.60	0.24
Jan.24	63.10	25.30	13.60	15.40	10.80	0.29
Feb.24	60.50	24.00	12.70	14.30	10.00	0.23
Mar.24	64.30	26.10	13.90	15.20	11.10	0.27
Minimum	59.70	23.50	12.30	14.00	9.60	0.23
Maximum	65.40	26.10	13.90	15.40	11.10	0.29

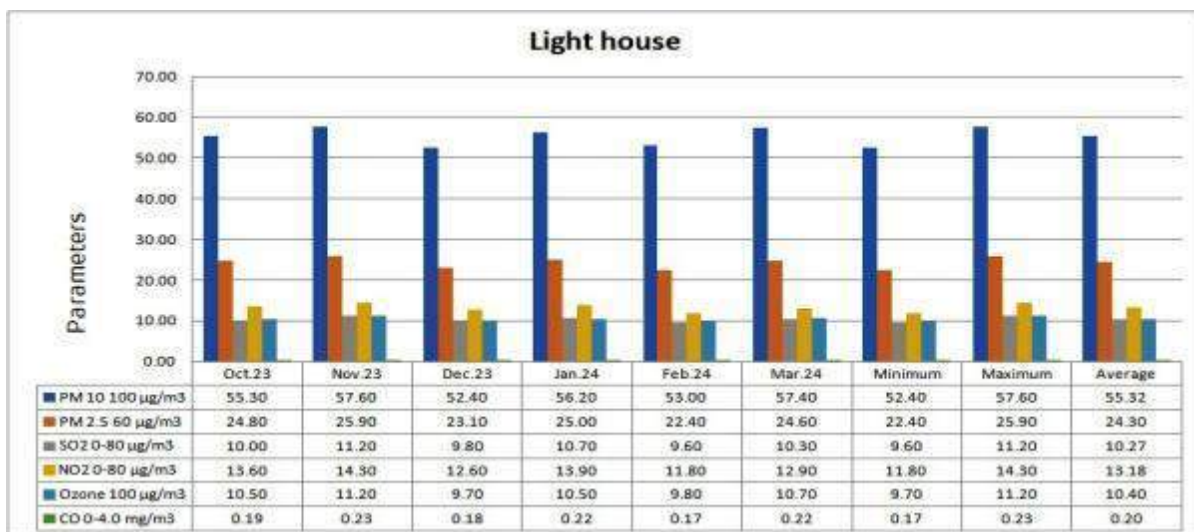


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### Location – Light House (Krishnapatnam)

Parameter	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>2</sub>	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	55.30	24.80	10.00	13.60	10.50	0.19
Nov.23	57.60	25.90	11.20	14.30	11.20	0.23
Dec.23	52.40	23.10	9.80	12.60	9.70	0.18
Jan.24	56.20	25.00	10.70	13.90	10.50	0.22
Feb.24	53.00	22.40	9.60	11.80	9.80	0.17
Mar.24	57.40	24.60	10.30	12.90	10.70	0.22
Minimum	52.40	22.40	9.60	11.80	9.70	0.17
Maximum	57.60	25.90	11.20	14.30	11.20	0.23





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



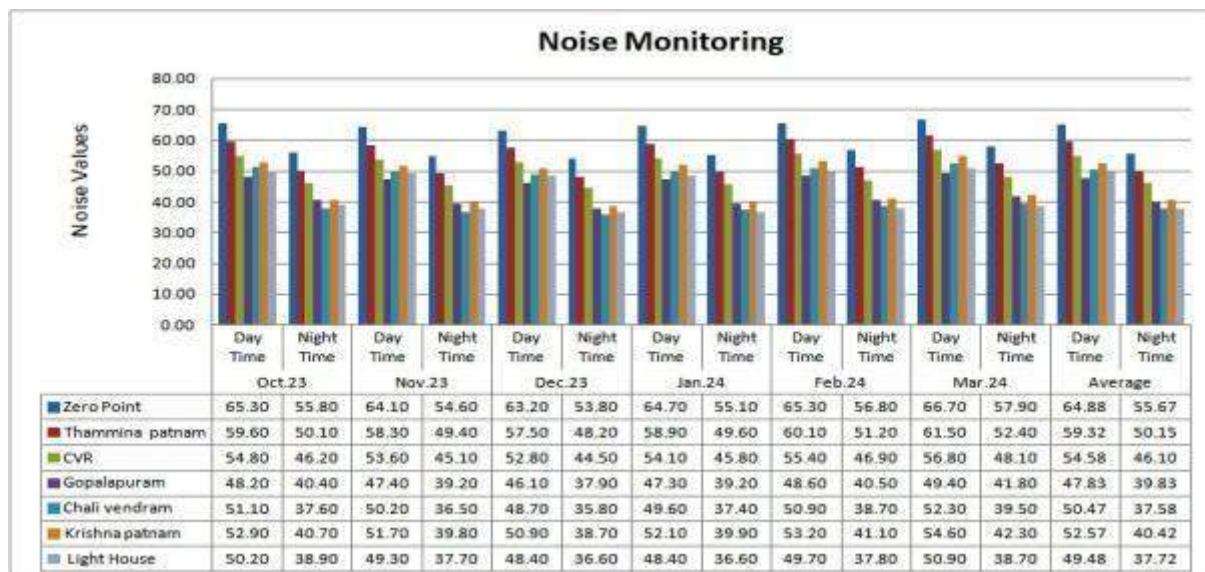
### 5.3 Noise Monitoring

Noise monitoring is being carried out monthly basis at the following locations

S. No	Monitoring Locations	DIRECTION w.r.t PROJECT SITE	CPCB Standards	
			Day Time	Night Time
1.	Zero Point	W	75	70
2.	Thamminapatnam	S	75	70
3.	CVR Building	WNW	75	70
4.	Gopalapuram	NW	55	40
5.	Chalivendram	WNW	55	45
6.	Krishnapatnam	NNW	55	45
7.	Light House near Krishnapatnam (V)	SW	55	45

Summary of Ambient Air Quality Monitoring values in the port surrounding area for the period from October - 2023 to March 2024 are as below:

Location	Time	Zero Point	Thammina patnam	CVR	Gopala puram	Chali vendram	Krishna patnam	Light House
Oct.23	LDay Time	65.30	59.60	54.80	48.20	51.10	52.90	50.20
	LNight Time	55.80	50.10	46.20	40.40	37.60	40.70	38.90
Nov.23	Day Time	64.10	58.30	53.60	47.40	50.20	51.70	49.30
	Night Time	54.60	49.40	45.10	39.20	36.50	39.80	37.70
Dec.23	Day Time	63.20	57.50	52.80	46.10	48.70	50.90	48.40
	Night Time	53.80	48.20	44.50	37.90	35.80	38.70	36.60
Jan.24	Day Time	64.70	58.90	54.10	47.30	49.60	52.10	48.40
	Night Time	55.10	49.60	45.80	39.20	37.40	39.90	36.60
Feb.24	Day Time	65.30	60.10	55.40	48.60	50.90	53.20	49.70
	Night Time	56.80	51.20	46.90	40.50	38.70	41.10	37.80
Mar.24	Day Time	66.70	61.50	56.80	49.40	52.30	54.60	50.90
	Night Time	57.90	52.40	48.10	41.80	39.50	42.30	38.70





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#### 5.4 Sewage Water – Treatment & disposal

AKPL has been operating Sewage Treatment Plants (STP) of 540 KLD to treat the domestic sewage generating within the Port.

- 500 KLD STP (1 X 300 KLD & 1 X 200 KLD) at CVR Amenities Complex
- 40 KLD STP Admin. Building.
- AKPL has constructed and operating Sewage Treatment Plant of capacity of 300 KLD under Phase 1 & II which consisting of Bar Screen, Sewage collection Sump, fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc. for treatment of the domestic effluents.
- In Phase –III, AKPL provided additional Sewage Treatment Plant of capacity of 240 KLD consisting of Sewage collection pit – 2 pumps of 1hp each, Aeration tank, Coagulation tank, Tube settler tank Sludge, Biotreat, Ozonation tank, Pressure sand filter, activated carbon filter, UV sterilization and Chlorine dosing, Treated water tank for treatment of the domestic effluents. After treatment, the treated water utilized for Green belt development and dust suppression to cater to the sewage that would be generated from the Phase III domestic.
- As part of compliance monitoring the AKPL has been carrying out the Sampling and analysis of STP treated water through a NABL accredited Laboratory and submitting the Monitoring Reports to APPCB on monthly basis. As per the monthly monitoring details, the values are meeting the stipulated standards.
- The details of treated water generated during the period from October 2023 to October 2023 are as below. The water was utilized for onland greenbelt & dust suppression purpose within the Port premises.

Month	Quantity KL		
	STP- 1	STP-2	Total
Oct.23	200	2.0	202
Nov.23	189	15.0	204
Dec.23	210	4.0	214
Jan.24	188	25	213
Feb.24	188	26	214
Mar.24	173	32	205





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



The STP sampling values for the period from October 2023 to March 2024 are as below:

**Analysis Report of 500 KLD STP**

Month	Flow	Parameter	pH	TSS	BOD	Oil & Grease	Fecal Coliform
		Unit	-	mg/l	mg/l	mg/l	MPN/ 100ml
		Outlet Standard	6.5 - 9.0	100	30	10	1000
Oct.23	<b>Inlet</b>	Values	7.38	126	123	4.6	13x10 <sup>3</sup>
	<b>Outlet</b>	Values	7.5	45	26	<1.0	258
Nov.23	<b>Inlet</b>	Values	7.21	132	128	5	15x10 <sup>3</sup>
	<b>Outlet</b>	Values	7.36	51	28	<1.0	276
Dec.23	<b>Inlet</b>	Values	7.06	121	116	4.2	12x10 <sup>3</sup>
	<b>Outlet</b>	Values	7.19	40	24	<1.0	240
Jan.24	<b>Inlet</b>	Values	7.21	113	110	3.6	10x10 <sup>3</sup>
	<b>Outlet</b>	Values	7.32	35	21	<1.0	218
Feb.24	<b>Inlet</b>	Values	7.36	124	120	4	13x10 <sup>3</sup>
	<b>Outlet</b>	Values	7.45	42	25	<1.0	252
Mar.24	<b>Inlet</b>	Values	7.45	132	128	4.5	16x10 <sup>3</sup>
	<b>Outlet</b>	Values	7.53	46	28	<1.0	287



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### Analysis Report of 40 KLD STP

Month	Flow	Parameter	pH	TSS	BOD	Oil & Grease	Fecal Coliform
		Unit	-	mg/l	mg/l	mg/l	MPN/ 100ml
		Outlet Standard	6.5 - 9.0	100	30	10	1000
Oct.23	Inlet	Values	7.59	110	106	4.2	11x10 <sup>3</sup>
	Outlet	Values	7.21	16	22	<1.0	210
Nov.23	Inlet	Values	7.43	117	114	4.7	13x10 <sup>3</sup>
	Outlet	Values	7.13	20	25	<1.0	240
Dec.23	Inlet	Values	7.3	106	102	4	10x10 <sup>3</sup>
	Outlet	Values	6.98	14	21	<1.0	204
Jan.24	Inlet	Values	7.48	98	95	3.4	8x10 <sup>3</sup>
	Outlet	Values	7.1	10	18	<1.0	186
Feb.24	Inlet	Values	7.61	110	106	4.2	12x10 <sup>3</sup>
	Outlet	Values	7.24	16	20	<1.0	210
Mar.24	Inlet	Values	7.69	118	112	4.8	15x10 <sup>3</sup>
	Outlet	Values	7.36	20	23	<1.0	242

- The values are meeting the CPCB/APPCB Prescribed standards.
- AKPL has been submitting the reports on monthly basis to APPCB & on Half-yearly basis to MoEF & CC.



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### 5.5 Ground Water Monitoring

There is no groundwater withdrawal within the Port Premises.

As per the statutory regulations & requirement, ground water quality monitoring is being carried out by AKPL on Six - monthly basis and reports being submitted to the APPCB and on Half-yearly basis to MoEF & CC.

Ground Water sampling is carried out once in six months at four locations in and around the Port. The Ground water sampling locations are listed below.

Location Code	Location
GW1	South Side of the Port
GW2	Gopalapuram Village
GW3	Krishnapatnam Village

The values meet the CPCB/APPCB Prescribed standards. AKPL is submitting the reports on monthly basis to APPCB & on Half-yearly basis to MoEF & CC.

### 5.6 Soil Quality:

AKPL has been studying the soil profile of the region; sampling locations are selected to assess the existing soil characteristics in and around the port area representing various land use conditions.

Location Code	Name of the Location
S1	Storage area towards west Buckingham Canal
S2	Storage Area at Port

The Soil sampling is carried out once in six months at the above locations in and around the Port.

The values meet the CPCB/APPCB Prescribed standards. AKPL is submitting the reports on Half-yearly basis to MoEF & CC.

### 5.7 DG Sets Monitoring

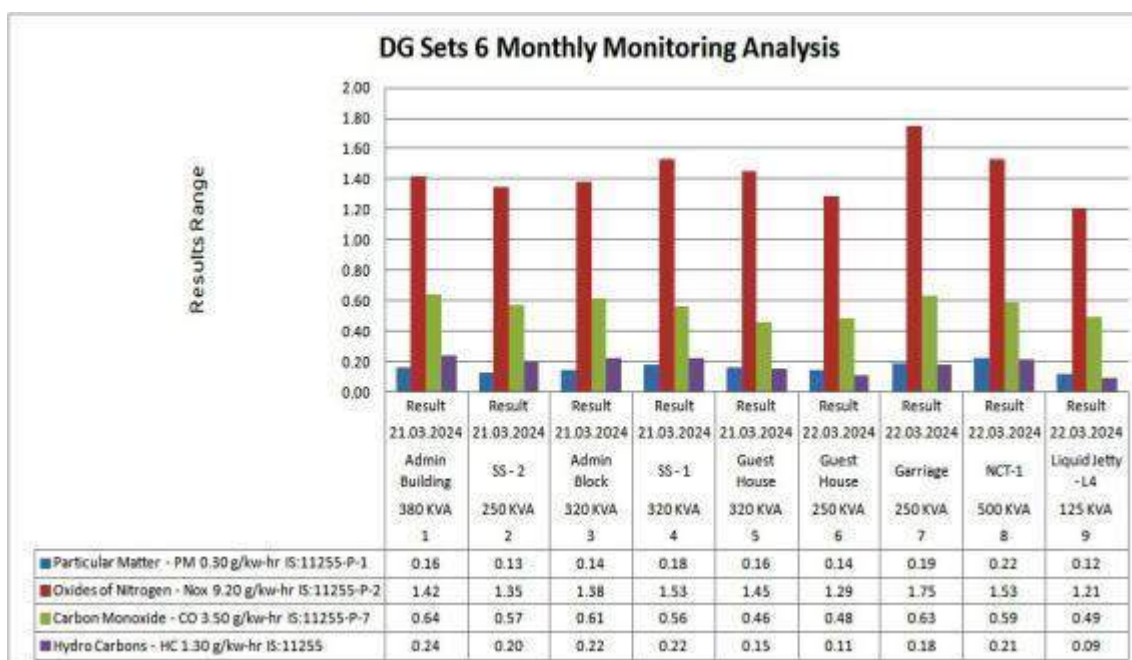
- The Port has been receiving Power Grid & Non-conventional source of energy through Power Grid for power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)
- The facility kept the DG Sets for uninterrupted port operations during emergency.
- All the DG sets are being monitored through a NABL Accredited 3<sup>rd</sup> Party on 6 monthly bases and submitting to APPCB, RO, Nellore.



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Sl. No.	DG Capacity KVA	Location	Monitored on	Parameters	Particular Matter - PM	Oxides of Nitrogen - Nox	Carbon Monoxide - CO	Hydro Carbons - HC
				Standard	0.30	9.20	3.50	1.30
				Unit	g/kw-hr	g/kw-hr	g/kw-hr	g/kw-hr
				Method	IS:11255-P-1	IS:11255-P-2	IS:11255-P-7	IS:11255
1	380	Admin Building	21.03.2024	Result	0.16	1.42	0.64	0.24
2	250	SS - 2	21.03.2024	Result	0.13	1.35	0.57	0.20
3	320	Admin Block	21.03.2024	Result	0.14	1.38	0.61	0.22
4	320	SS - 1	21.03.2024	Result	0.18	1.53	0.56	0.22
5	320	Guest House	21.03.2024	Result	0.16	1.45	0.46	0.15
6	250	Guest House	22.03.2024	Result	0.14	1.29	0.48	0.11
7	250	Garriage	22.03.2024	Result	0.19	1.75	0.63	0.18
8	500	NCT-1	22.03.2024	Result	0.22	1.53	0.59	0.21
9	125	Liquid Jetty - L4	22.03.2024	Result	0.12	1.21	0.49	0.09





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### 5.8 Marine Monitoring sampling frequency:

S. No.	Parameter	Frequency	Location & No. of Samples
1.	<p><b>Marine Water monitoring (Low Tide and High Tide)</b></p> <p><b>Physical Analysis:</b> pH, Temperature, Salinity, Density, TDS, TSS &amp; Turbidity</p> <p><b>Chemical Analysis:</b> Potassium, COD, BOD, Oil &amp; Grease, DO, Nitrates, Nitrites, Ammonia, Phosphates, Chlorides, Sodium, Sulphates, Silica, Reactive Silica, Total Phosphorus, Total Nitrogen</p> <p><b>Heavy Metals:</b> Lead, Cadmium, Copper, Zinc</p> <p><b>Biological Analysis:</b></p> <ul style="list-style-type: none"> <li>i. Primary Productivity</li> <li>ii. Chlorophyll</li> <li>iii. Phytoplankton</li> <li>iv. Numerical Abundance</li> <li>v. Diversity</li> <li>vi. Zooplankton</li> <li>vii. Diversity</li> <li>viii. Biomass</li> <li>ix. Coliforms</li> <li>x. Fecal coliforms</li> </ul>	Weekly Once every month/monthly once	<p><b>4 Locations</b></p> <ul style="list-style-type: none"> <li>1. Port entrance</li> <li>2. Turning circle</li> <li>3. Coal berth</li> <li>4. Reclamation area</li> </ul> <p><b>2 locations</b></p> <ul style="list-style-type: none"> <li>1. Buckingham canal (creek)</li> <li>2. Kandhalerru (creek)</li> </ul>
2.	<p><b>Marine Sediment:</b></p> <p><b>Physical:</b> Sediment composition, Silt + Clay, Sand, Org matter, pH</p> <p><b>Chemical:</b> Nitrogen, Phosphorus, Potassium, Sodium, Biological, Benthic Communities, MacroBenthos, Epifauna numerical abundance, Infauna numerical abundance</p> <p><b>Heavy Metals:</b> Lead, Cadmium, Copper, Zinc.</p>	Weekly once every month	<p><b>4 Locations</b></p> <ul style="list-style-type: none"> <li>1. Port Entrance – Approach channel</li> <li>2. Turning circle</li> <li>3. Near to Coal berths</li> <li>4. Reclamation</li> </ul>
3.	<p><b>Marine Water Turbidity Monitoring</b></p> <p>Turbidity, Total Dissolved Solids and Total Suspended Solids in low tide, high tide and medium tide</p>	Weekly once every month	<p><b>4 Location</b></p> <ul style="list-style-type: none"> <li>1. Port Entrance – Approach channel</li> <li>2. Turning circle</li> <li>3. Near to Coal berths</li> <li>4. Reclamation Area</li> </ul>

### 5.9 Marine Monitoring sampling locations:





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.10 Marine waters sampling analysis values

S. NO.	PARAMETER	UNIT	Location			Month: October 2023
			Port Entrance (Approach Channel)			
<b>I</b>	<b>Physical</b>		07.10.2023	14.10.2023	21.10.2023	28.10.2023
1	pH	-	7.86	7.78	7.91	8.01
2	Temperature	C	27.70	28.00	27.60	27.50
3	Salinity	Ppt	37.30	37.50	37.30	37.20
4	Density	gm/ml	1.04	1.40	1.04	1.04
5	Secchi Disk Transparency	Mts	10.20	10.10	10.30	10.40
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	304.00	312.00	296.00	282.00
2	COD	mg/l	12.80	13.00	12.60	12.40
3	BOD	mg/l	2.90	3.00	2.80	2.50
4	Oil& Grease	mg/l	<0.1	<0.1	<0.1	< 0.1
5	D.O	mg/l	5.50	5.40	5.60	5.80
6	Nitrates	mg/l	5.30	5.60	5.30	5.10
7	Nitrites	mg/l	0.26	0.28	0.25	0.22
8	Ammonia	mg/l	<0.01	<0.01	<0.01	< 0.01
9	Phosphates	mg/l	0.38	0.40	0.37	0.34
10	Chlorides	mg/l	20740.00	20789.00	20713.00	20650.00
11	Sodium	mg/l	7868.00	7891.00	7827.00	7792.00
12	Sulphates	mg/l	3628.00	3644.00	3621.00	3593.00
13	Silicates	mg/l	3.60	3.80	3.50	3.20
14	Reactive Silica	mg/l	0.03	0.03	0.03	0.03
15	Total Phosphorus	mg/l	0.27	0.29	0.26	0.24
16	Total Nitrogen	mg/l	12.30	12.50	11.90	11.20
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	44.00	43.00	44.00	46.00
2	Chlorophyll	mg/m <sup>3</sup>	1.39	1.38	1.39	1.41
3	Phtoplankton			234.00		
	a.Numerical abundance	No./ml	235.00	2.19	235.00	237.00
	b. Diversity		2.20	2.13	2.20	2.22
4	<b>Zooplankton</b>					
a	Diversity		2.14	2.13	2.14	2.16
b	Biomass	ml/100m <sup>3</sup>	10.50	10.40	10.50	10.70
c	Coliforms	CFU/100ml	14.00	13.00	14.00	16.00
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	<0.01	<0.01	<0.01	< 0.01
2	Cadmium	mg/l	<0.01	<0.01	<0.01	< 0.01
3	Copper	mg/l	<0.02	<0.02	<0.02	< 0.02
4	Zinc	mg/l	0.04	0.04	0.04	0.03



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S. NO.	PARAMETER	UNIT	Location Port Entrance (Approach Channel)			Month: November 2023
<b>I</b>	<b>Physical</b>		04.11.2023	11.11.2023	18.11.2023	25.11.2023
1	pH	-	7.94	8.1	8.01	7.93
2	Temperature	C	27.3	27.8	27.6	27.4
3	Salinity	ppt	36.9	37.2	37	36.8
4	Density	gm/ml	1.033	1.037	1.034	1.031
5	Secchi Disk Transparency	mts	10.6	10.3	10.5	10.6
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	274	302	289	271
2	COD	mg/l	12	12.6	12.3	11.9
3	BOD	mg/l	2.2	2.6	2.3	2
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	6	5.7	5.8	6
6	Nitrates	mg/l	4.6	5	4.7	4.3
7	Nitrites	mg/l	0.19	0.25	0.23	0.2
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.3	0.34	0.32	0.29
10	Chlorides	mg/l	20564	20688	20625	20549
11	Sodium	mg/l	7728	7812	7786	7741
12	Sulphates	mg/l	3542	3598	3577	3551
13	Silicates	mg/l	2.9	3.3	3	2.6
14	Reactive Silica	mg/l	0.024	0.027	0.023	0.02
15	Total Phosphorus	mg/l	0.22	0.26	0.22	0.21
16	Total Nitrogen	mg/l	10.5	11.2	10.6	10.8
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	45	43	44	47
2	Chlorophyll	mg/m3	1.4	1.37	1.38	1.42
3	Phtoplankton					
	a. Numerical abundance	No./ml	235	232	234	239
	b. Diversity		2.2	2.17	2.18	2.23
4	<b>Zooplankton</b>					
a	Diversity		2.15	2.13	2.14	2.17
b	Biomass	ml/100m3	10.5	10.3	10.4	10.8
c	Coliforms	CFU/100ml	15	13	14	17
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.03	0.026	0.024	0.03





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location			Month: December 2023
			Port Entrance (Approach Channel)			
<b>I</b>	<b>Physical</b>		09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	pH	-	8.04	8.11	7.92	7.98
2	Temperature	C	27	26.8	27.1	27.3
3	Salinity	Ppt	36.2	36	36.2	36.4
4	Density	gm/ml	1.028	1.026	1.03	1.032
5	Secchi Disk Transparency	Mts	10.8	10.9	10.7	10.6
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	260	249	263	277
2	COD	mg/l	12.5	11.7	12.3	12
3	BOD	mg/l	2.4	2.2	2.4	2.2
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	5.7	5.5	5.3	5.2
6	Nitrates	mg/l	4	3.8	4.1	4.5
7	Nitrites	mg/l	0.17	0.15	0.19	0.22
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.26	0.24	0.27	0.29
10	Chlorides	mg/l	20481	20416	20464	20543
11	Sodium	mg/l	7708	7672	7696	7725
12	Sulphates	mg/l	3532	3520	3545	3571
13	Silicates	mg/l	2.3	2.1	2.3	2.5
14	Reactive Silica	mg/l	0.018	0.016	0.019	0.023
15	Total Phosphorus	mg/l	0.19	0.16	0.2	0.22
16	Total Nitrogen	mg/l	10.5	10.3	10.6	10.8
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	Mg Cm <sup>-2</sup> d <sup>-1</sup>	48	49	48	47
2	Chlorophyll	mg/m <sup>3</sup>	1.43	1.45	1.43	1.42
3	Phtoplankton					
	a. Numerical abundance	No./ml	240	241	240	239
	b. Diversity		2.25	2.26	2.25	2.24
4	<b>Zooplankton</b>					
a	Diversity		2.18	2.19	2.17	2.15
b	Biomass	ml/100m <sup>3</sup>	10.9	11	10.9	10.7
c	Coliforms	CFU/100ml	18	19	18	17
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.028	0.025	0.027	0.029



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location Port Entrance (Approach Channel)			Month: January 2024
<b>I</b>	<b>Physical</b>		06.01.2024	14.01.2024	21.01.2024	28.01.2024
1	pH	-	7.79	8.03	7.9	7.79
2	Temperature	C	27.5	27.4	27.6	27.5
3	Salinity	Ppt	36.4	36.3	36.5	36.4
4	Density	gm/ml	1.03	1.03	1.033	1.03
5	Secchi Disk Transparency	Mts	10.9	10.9	10.7	10.9
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	270	262	278	270
2	COD	mg/l	12.5	12.6	12.9	12.5
3	BOD	mg/l	2.5	2.4	2.7	2.5
4	Oil& Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	5.1	5	4.8	5.1
6	Nitrates	mg/l	4.6	4.6	4.9	4.6
7	Nitrites	mg/l	0.19	0.19	0.22	0.19
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.26	0.26	0.29	0.26
10	Chlorides	mg/l	20437	20468	20531	20437
11	Sodium	mg/l	7662	7661	7698	7662
12	Sulphates	mg/l	3526	3534	3562	3526
13	Silicates	mg/l	2.2	2.3	2.6	2.2
14	Reactive Silica	mg/l	0.021	0.021	0.024	0.021
15	Total Phosphorus	mg/l	0.2	0.19	0.22	0.2
16	Total Nitrogen	mg/l	10.3	10.4	10.7	10.3
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	49	48	47	49
2	Chlorophyll	mg/m <sup>3</sup>	1.45	1.45	1.43	1.45
3	Phtoplankton					
	a. Numerical abundance	No./ml	241	240	239	241
	b. Diversity		2.27	2.26	2.25	2.27
4	<b>Zooplankton</b>					
a	Diversity		2.18	2.17	2.16	2.18
b	Biomass	ml/100m <sup>3</sup>	11	10.9	10.7	11
c	Coliforms	CFU/100ml	18	18	16	18
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.027	0.027	0.029	0.027



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location Port Entrance (Approach Channel)			Month: February 2024
<b>I</b>	<b>Physical</b>		03.2.2024	10.02.2024	17.02.2024	24.02.2024
1	pH	-	7.87	7.95	7.84	7.72
2	Temperature	C	27.7	27.8	27.9	27.6
3	Salinity	Ppt	36.6	36.3	36.5	36.2
4	Density	gm/ml	1.033	1.032	1.034	1.031
5	Secchi Disk Transparency	Mts	10.7	10.8	10.6	10.8
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	276	264	271	262
2	COD	mg/l	12.9	12.5	13	12.7
3	BOD	mg/l	2.7	2.6	3	2.8
4	Oil& Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	4.9	5.2	4.9	5.1
6	Nitrates	mg/l	5	4.7	5.1	4.6
7	Nitrites	mg/l	0.22	0.19	0.21	0.17
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.29	0.26	0.28	0.25
10	Chlorides	mg/l	20491	20421	20469	20396
11	Sodium	mg/l	7697	7662	7688	7660
12	Sulphates	mg/l	3549	3521	3536	3518
13	Silicates	mg/l	2.5	2.3	2.6	2.5
14	Reactive Silica	mg/l	0.024	0.022	0.025	0.021
15	Total Phosphorus	mg/l	0.23	0.2	0.23	0.19
16	Total Nitrogen	mg/l	10.7	10.4	10.8	10.5
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	48	50	49	51
2	Chlorophyll	mg/m3	1.44	1.46	1.45	1.47
3	Phtoplankton					
	a.Numerical abundance	No./ml	240	242	241	243
	b. Diversity		2.26	2.28	2.27	2.29
4	<b>Zooplankton</b>					
a	Diversity		2.17	2.19	2.18	2.2
b	Biomass	ml/100m3	10.9	11.1	11	11.2
c	Coliforms	CFU/100ml	17	17	16	18
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.029	0.026	0.029	0.025



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location				Month: March 2024
			Port Entrance (Approach Channel)				
<b>I</b>	<b>Physical</b>		02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
1	pH	-	7.85	7.97	7.83	8.03	8.03
2	Temperature	C	27.8	28	27.9	28.3	28.3
3	Salinity	ppt	36.9	37	36.8	37	37
4	Density	gm/ml	1.033	1.035	1.032	1.037	1.037
5	Secchi Disk Transparency	mts	10.6	10.4	10.7	10.4	10.4
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	276	291	276	310	310
2	COD	mg/l	13	13.4	12.9	13.5	13.5
3	BOD	mg/l	3.1	3.3	3	3.4	3.4
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	4.9	4.7	4.9	4.6	4.6
6	Nitrates	mg/l	5	5.4	5.1	5.9	5.9
7	Nitrites	mg/l	0.19	0.22	0.2	0.28	0.28
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.27	0.29	0.26	0.31	0.31
10	Chlorides	mg/l	20450	20521	20415	20535	20535
11	Sodium	mg/l	7701	7739	7688	7765	7765
12	Sulphates	mg/l	3537	3566	3527	3581	3581
13	Silicates	mg/l	2.7	3	2.6	3.4	3.4
14	Reactive Silica	mg/l	0.024	0.027	0.023	0.03	0.03
15	Total Phosphorus	mg/l	0.21	0.24	0.21	0.28	0.28
16	Total Nitrogen	mg/l	11	11.5	11.3	12	12
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm-2d-1	49	47	49	46	46
2	Chlorophyll	mg/m <sup>3</sup>	1.45	1.43	1.46	1.43	1.43
3	Phtoplankton						
	a. Numerical abundance	No./ml	241	239	241	237	237
	b. Diversity		2.28	2.26	2.28	2.24	2.24
4	<b>Zooplankton</b>						
a	Diversity		2.18	2.18	2.18	2.14	2.14
b	Biomass	ml/100m <sup>3</sup>	11	10.9	11	10.7	10.7
c	Coliforms	CFU/100ml	17	16	17	15	15
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.027	0.029	0.026	0.031	0.031



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Location - Reclamation Area						Month: October 2023
S. NO.	PARAMETER	UNIT	07.10.2023	14.10.2023	21.10.2023	28.10.2023
<b>I Physical</b>						
1	pH	-	8.21	8.11	8.29	8.42
2	Temperature	C	28.3	28.5	28.2	28
3	Salinity	ppt	38.4	38.6	38.2	38
4	Density	gm/ml	1.046	1.048	1.044	1.042
5	Secchi Disk Transparency	mts	8.6	8.5	8.8	8.9
<b>II Chemical</b>						
1	Potassium	mg/l	345	359	334	320
2	COD	mg/l	13.5	13.8	13.5	13.2
3	BOD	mg/l	3.5	3.7	3.4	3.1
4	Oil& Grease	mg/l	0.47	0.5	0.47	0.44
5	D.O	mg/l	4	3.8	4	4.2
6	Nitrates	mg/l	6.3	6.5	6.2	6
7	Nitrites	mg/l	0.35	0.37	0.34	0.31
8	Ammonia	mg/l	0.54	0.56	0.53	0.49
9	Phosphates	mg/l	0.57	0.59	0.55	0.52
10	Chlorides	mg/l	21106	21178	21096	21020
11	Sodium	mg/l	8681	8710	3675	3640
12	Sulphates	mg/l	3716	3735	3709	3682
13	Silicates	mg/l	4.4	4.6	4.4	4.1
14	Reactive Silica	mg/l	0.042	0.045	0.041	0.038
15	Total Phosphorus	mg/l	0.49	0.51	0.48	0.45
16	Total Nitrogen	mg/l	14.3	14.5	13.9	13.4
<b>III Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	23	21	23	24
2	Chlorophyll	mg/m <sup>3</sup>	1.25	1.24	1.25	1.27
3	Phtoplankton					
	a.Numerical abundance	No./ml	201	200	201	204
	b. Diversity		1.96	1.95	1.96	1.98
4	Zooplankton					
a	Diversity		1.94	1.92	1.94	1.95
b	Biomass	ml/100m <sup>3</sup>	9.54	9.53	9.54	9.57
c	Coliforms	CFU/100ml	19	18	19	21
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV Heavy Metals</b>						
1	Lead	mg/l	<0.01	<0.01	<0.01	< 0.01
2	Cadmium	mg/l	0.28	0.3	0.28	0.25
3	Copper	mg/l	0.041	0.043	0.041	0.37
4	Zinc	mg/l	0.053	0.054	0.053	0.048



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Location - Reclamation Area						Month: November 2023
S. NO.	PARAMETER	UNIT	04.11.2023	11.11.2023	18.11.2023	25.11.2023
<b>I Physical</b>						
1	pH	-	8.21	8.43	8.3	8.17
2	Temperature	C	27.8	28.2	28	27.8
3	Salinity	ppt	37.8	38.3	38.1	37.9
4	Density	gm/ml	1.04	1.043	1.041	1.039
5	Secchi Disk Transparency	mts	9	8.6	8.8	9
<b>II Chemical</b>						
1	Potassium	mg/l	309	341	325	302
2	COD	mg/l	13	13.8	13.4	12.9
3	BOD	mg/l	2.9	3.4	3.1	2.8
4	Oil & Grease	mg/l	0.41	0.46	0.43	0.39
5	D.O	mg/l	4.4	4.1	4.3	4.5
6	Nitrates	mg/l	5.7	6.3	6.1	5.8
7	Nitrites	mg/l	0.28	0.34	0.3	0.27
8	Ammonia	mg/l	0.45	0.49	0.46	0.42
9	Phosphates	mg/l	0.49	0.53	0.5	0.46
10	Chlorides	mg/l	20934	21040	20973	20902
11	Sodium	mg/l	8567	8656	8614	8565
12	Sulphates	mg/l	3629	3686	3659	3631
13	Silicates	mg/l	3.8	4.2	3.9	3.5
14	Reactive Silica	mg/l	0.035	0.039	0.035	0.031
15	Total Phosphorus	mg/l	0.42	0.46	0.41	0.42
16	Total Nitrogen	mg/l	12.6	13.4	12.8	13.1
<b>III Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	23	21	22	25
2	Chlorophyll	mg/m <sup>3</sup>	1.25	1.22	1.23	1.28
3	Phtoplankton					
	a. Numerical abundance	No./ml	201	197	198	206
	b. Diversity		1.96	1.93	1.95	1.99
4	Zooplankton					
a	Diversity		1.93	1.91	1.93	1.96
b	Biomass	ml/100m <sup>3</sup>	9.54	9.52	9.54	9.58
c	Coliforms	CFU/100ml	20	18	19	22
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	0.23	0.19	0.17	0.22
3	Copper	mg/l	0.35	0.31	0.29	0.34
4	Zinc	mg/l	0.045	0.041	0.037	0.045



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Location - Reclamation Area			Month: December 2023			
S. NO.	PARAMETER	UNIT	09.12.2023	16.12.2023	23.12.2023	30.12.2023
<b>I Physical</b>						
1	pH	-	8.31	8.43	8.29	8.37
2	Temperature	C	27.5	27.2	27.6	27.8
3	Salinity	ppt	37.3	37.1	37.4	37.7
4	Density	gm/ml	1.036	1.034	1.037	1.041
5	Secchi Disk Transparency	mts	9.2	9.3	9	8.96
<b>II Chemical</b>						
1	Potassium	mg/l	289	274	288	306
2	COD	mg/l	13.2	12.6	13.3	13
3	BOD	mg/l	3.3	3.1	3.4	3.1
4	Oil & Grease	mg/l	0.35	0.32	0.35	0.38
5	D.O	mg/l	4.3	4.1	3.8	3.6
6	Nitrates	mg/l	5.4	5.2	5.6	6
7	Nitrites	mg/l	0.23	0.2	0.25	0.27
8	Ammonia	mg/l	0.39	0.37	0.43	0.46
9	Phosphates	mg/l	0.42	0.4	0.44	0.47
10	Chlorides	mg/l	20821	20739	20802	20887
11	Sodium	mg/l	8524	8485	8517	8546
12	Sulphates	mg/l	3619	3597	3626	3649
13	Silicates	mg/l	3.2	3	3.2	3.5
14	Reactive Silica	mg/l	0.029	0.027	0.031	0.035
15	Total Phosphorus	mg/l	0.39	0.36	0.4	0.41
16	Total Nitrogen	mg/l	12.7	12.4	12.7	13.1
<b>III Biological</b>						
1	Primary Productivity	Mg Cm <sup>-2</sup> d <sup>-1</sup>	26	27	26	25
2	Chlorophyll	mg/m <sup>3</sup>	1.29	1.3	1.28	1.27
3	Phtoplankton					
	a. Numerical abundance	No./ml	207	208	206	205
	b. Diversity		2.01	2.03	2.02	2.01
4	Zooplankton					
a	Diversity		1.97	1.98	1.97	1.96
b	Biomass	ml/100m <sup>3</sup>	9.59	9.61	9.6	9.57
c	Coliforms	CFU/100ml	23	24	23	22
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	0.2	0.18	0.2	0.23
3	Copper	mg/l	0.32	0.3	0.33	0.35
4	Zinc	mg/l	0.043	0.041	0.043	0.046



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Location - Reclamation Area			January 2024			
S NO.	PARAMETER	UNIT	06.01.2024	14.01.2024	21.01.2024	28.01.2024
<b>I</b>	<b>Physical</b>					
1	pH	-	8.21	8.45	8.33	8.21
2	Temperature	C	28.1	28.1	28.3	28.1
3	Salinity	ppt	37.5	37.5	37.9	37.5
4	Density	gm/ml	1.038	1.038	1.04	1.038
5	Secchi Disk Transparency	mts	9.2	9	8.9	9.2
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	295	291	304	295
2	COD	mg/l	13.4	13.5	13.8	13.4
3	BOD	mg/l	3.3	3.4	3.6	3.3
4	Oil & Grease	mg/l	0.35	0.35	0.38	0.35
5	D.O	mg/l	3.5	3.4	3.2	3.5
6	Nitrates	mg/l	5.7	5.7	6	5.7
7	Nitrites	mg/l	0.23	0.23	0.26	0.23
8	Ammonia	mg/l	0.44	0.44	0.47	0.44
9	Phosphates	mg/l	0.45	0.45	0.48	0.45
10	Chlorides	mg/l	20775	20799	20871	20775
11	Sodium	mg/l	8510	8497	8536	8510
12	Sulphates	mg/l	3612	3602	3638	3612
13	Silicates	mg/l	3.1	3.4	3.6	3.1
14	Reactive Silica	mg/l	0.032	0.032	0.035	0.032
15	Total Phosphorus	mg/l	0.37	0.39	0.41	0.37
16	Total Nitrogen	mg/l	12.6	12.6	13	12.6
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	29	27	26	29
2	Chlorophyll	mg/m <sup>3</sup>	1.3	1.29	1.28	1.3
3	Phtoplankton					
	a. Numerical abundance	No./ml	206	205	204	206
	b. Diversity		2.04	2.03	2.02	2.04
4	Zooplankton					
a	Diversity		1.98	1.98	1.96	1.98
b	Biomass	ml/100m <sup>3</sup>	10	9.59	9.57	10
c	Coliforms	CFU/100ml	24	23	22	24
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	0.21	0.2	0.23	0.21
3	Copper	mg/l	0.32	0.32	0.34	0.32
4	Zinc	mg/l	0.043	0.043	0.046	0.043





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Location - Reclamation Area			February 2024			
S. NO.	PARAMETER	UNIT	03.02.2024	10.02.2024	17.02.2024	24.02.2024
<b>I Physical</b>						
1	pH	-	8.33	8.41	8.13	8.02
2	Temperature	C	28.4	28.5	28.8	28.5
3	Salinity	ppt	37.8	37.6	37.9	37.6
4	Density	gm/ml	1.042	1.04	1.043	1.04
5	Secchi Disk Transparency	mts	9	9.2	9	9.3
<b>II Chemical</b>						
1	Potassium	mg/l	303	287	295	282
2	COD	mg/l	13.7	13.2	13.7	13.4
3	BOD	mg/l	3.5	3.2	3.6	3.2
4	Oil& Grease	mg/l	0.38	0.34	0.39	0.36
5	D.O	mg/l	3.2	3.5	3.4	3.6
6	Nitrates	mg/l	6.2	5.8	6.2	5.8
7	Nitrites	mg/l	0.27	0.24	0.27	0.22
8	Ammonia	mg/l	0.48	0.43	0.46	0.42
9	Phosphates	mg/l	0.49	0.45	0.48	0.43
10	Chlorides	mg/l	20846	20765	20833	20759
11	Sodium	mg/l	8550	8505	8528	8493
12	Sulphates	mg/l	3634	3602	3620	3595
13	Silicates	mg/l	3.3	3.1	3.4	3.1
14	Reactive Silica	mg/l	0.036	0.033	0.037	0.033
15	Total Phosphorus	mg/l	0.4	0.38	0.41	0.38
16	Total Nitrogen	mg/l	13.2	12.8	13.6	13.1
<b>III Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	28	30	29	31
2	Chlorophyll	mg/m <sup>3</sup>	1.29	1.31	1.3	1.32
3	Phtoplankton					
	a.Numerical abundance	No./ml	205	207	205	207
	b. Diversity		2.03	2.05	2.04	2.06
4	Zooplankton					
a	Diversity		1.97	1.99	1.98	2.01
b	Biomass	ml/100m <sup>3</sup>	9.9	10	9.9	10.1
c	Coliforms	CFU/100ml	23	23	22	24
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	0.23	0.2	0.23	0.2
3	Copper	mg/l	0.35	0.31	0.35	0.31
4	Zinc	mg/l	0.045	0.042	0.046	0.043



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Location - Reclamation Area						Month: March 2024	
S. NO.	PARAMETER	UNIT	02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
<b>I Physical</b>							
1	pH	-	8.1	8.24	8.12	8.35	8.43
2	Temperature	C	28.7	28.9	28.6	28.8	28.9
3	Salinity	ppt	37.6	37.7	37.5	37.7	37.8
4	Density	gm/ml	1.043	1.046	1.043	1.045	1.047
5	Secchi Disk Transparency	mts	9	9	9.2	9	8.9
<b>II Chemical</b>							
1	Potassium	mg/l	296	310	295	302	324
2	COD	mg/l	13.7	14.1	13.7	14	14.5
3	BOD	mg/l	3.6	3.9	3.5	3.7	3.9
4	Oil& Grease	mg/l	0.39	0.42	0.39	0.41	0.44
5	D.O	mg/l	3.4	3.2	3.5	3.2	3
6	Nitrates	mg/l	6.1	6.5	6	6.4	6.8
7	Nitrites	mg/l	0.25	0.29	0.26	0.3	0.34
8	Ammonia	mg/l	0.45	0.48	0.43	0.45	0.48
9	Phosphates	mg/l	0.45	0.49	0.46	0.48	0.5
10	Chlorides	mg/l	20828	20893	20783	20877	20936
11	Sodium	mg/l	8539	8591	8526	8573	8619
12	Sulphates	mg/l	3620	3661	3616	3641	3675
13	Silicates	mg/l	3.4	3.8	3.5	3.8	4.2
14	Reactive Silica	mg/l	0.036	0.039	0.035	0.38	0.042
15	Total Phosphorus	mg/l	0.41	0.44	0.41	0.44	0.49
16	Total Nitrogen	mg/l	13.6	14.2	13.9	14.3	14.7
<b>III Biological</b>							
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	28	28	30	29	27
2	Chlorophyll	mg/m <sup>3</sup>	1.3	1.28	1.29	1.27	1.25
3	Phtoplankton						
	a.Numerical abundance	No./ml	205	203	205	204	202
	b. Diversity		2.04	2.02	2.04	2.02	2.02
4	Zooplankton						
a	Diversity		2	1.98	2.01	2	1.98
b	Biomass	ml/100m <sup>3</sup>	9.9	9.7	10	9.9	9.7
c	Coliforms	CFU/100ml	23	21	24	23	21
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	ND
<b>IV Heavy Metals</b>							
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	0.23	0.26	0.22	0.25	0.28
3	Copper	mg/l	0.33	0.35	0.31	0.34	0.36
4	Zinc	mg/l	0.045	0.048	0.045	0.048	0.05



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S. NO.	PARAMETER	UNIT	Location: Coal Berth			October 2023
			07.10.2023	14.10.2023	21.10.2023	28.10.2023
<b>I</b>	<b>Physical</b>					
1	pH	-	8.05	7.93	8.07	8.25
2	Temperature	C	28	28.3	28	27.8
3	Salinity	ppt	37.5	37.7	37.4	37.2
4	Density	gm/ml	1.031	1.033	1.03	1.028
5	Secchi Disk Transparency	mts	11.2	11	11.2	11.3
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	328	341	317	301
2	COD	mg/l	12.6	12.8	12.4	12.1
3	BOD	mg/l	2.7	2.9	2.6	2.4
4	Oil& Grease	mg/l	<0.1	<0.1	<0.1	<0.1
5	D.O	mg/l	5	4.7	4.9	5
6	Nitrates	mg/l	5.6	5.8	5.4	5.2
7	Nitrites	mg/l	0.28	0.3	0.26	0.23
8	Ammonia	mg/l	<0.01	<0.01	<0.01	<0.01
9	Phosphates	mg/l	0.42	0.45	0.41	0.38
10	Chlorides	mg/l	21063	21117	21033	20975
11	Sodium	mg/l	8234	8262	8229	8197
12	Sulphates	mg/l	3400	3417	3391	3368
13	Silicates	mg/l	3.8	4	3.8	3.5
14	Reactive Silica	mg/l	0.035	0.037	0.034	0.031
15	Total Phosphorus	mg/l	0.43	0.45	0.42	0.39
16	Total Nitrogen	mg/l	13.5	13.7	13.2	12.6
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	33	32	33	35
2	Chlorophyll	mg/m3	1.34	1.32	1.34	1.35
3	Phtoplankton					
	a.Numerical abundance	No./ml	223	222	223	226
	b. Diversity		2.25	2.24	2.25	2.27
4	<b>Zooplankton</b>					
a	Diversity		2.19	2.18	2.19	2.21
b	Biomass	ml/100m3	11.8	11.6	11.8	11.8
c	Coliforms	CFU/100ml	15	14	15	17
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	<0.01	<0.01	<0.01	<0.01
2	Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01
3	Copper	mg/l	0.036	0.37	0.036	0.31
4	Zinc	mg/l	0.041	0.042	0.041	0.035



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S. NO.	PARAMETER	UNIT	Location: Coal Berth			November 2023
<b>I</b>	<b>Physical</b>		04.11.2023	11.11.2023	18.11.2023	25.11.2023
1	pH	-	8.05	8.29	8.15	8.02
2	Temperature	C	27.6	28	27.9	27.6
3	Salinity	ppt	37	37.7	37.5	37.2
4	Density	gm/ml	1.025	1.028	1.025	1.022
5	Secchi Disk Transparency	mts	11.5	11.2	11.3	11.5
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	288	312	301	284
2	COD	mg/l	11.7	12.5	12.1	11.5
3	BOD	mg/l	2.1	2.4	2	1.9
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	5.2	5	5.2	5.4
6	Nitrates	mg/l	4.9	5.6	5.3	4.9
7	Nitrites	mg/l	0.2	0.26	0.22	0.18
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.35	0.41	0.38	0.35
10	Chlorides	mg/l	20884	21011	20952	20866
11	Sodium	mg/l	8139	8214	8178	8127
12	Sulphates	mg/l	3315	3376	3354	3328
13	Silicates	mg/l	3.2	3.7	3.4	3
14	Reactive Silica	mg/l	0.028	0.031	0.026	0.023
15	Total Phosphorus	mg/l	0.36	0.4	0.35	0.36
16	Total Nitrogen	mg/l	11.9	12.7	12.1	12.3
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	34	32	33	36
2	Chlorophyll	mg/m <sup>3</sup>	1.33	1.3	1.31	1.37
3	Phytoplankton					
	a. Numerical abundance	No./ml	224	221	223	228
	b. Diversity		2.26	2.23	2.24	2.29
4	<b>Zooplankton</b>					
a	Diversity		2.19	2.16	2.17	2.22
b	Biomass	ml/100m <sup>3</sup>	11.6	11.3	11.4	11.9
c	Coliforms	CFU/100ml	16	14	15	18
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	0.27	0.23	0.21	0.27
4	Zinc	mg/l	0.032	0.027	0.025	0.032



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S. NO.	PARAMETER	UNIT	Location: Coal Berth			December 2023
			09.12.2023	16.12.2023	23.12.2023	
<b>I</b>	<b>Physical</b>					
1	pH	-	8.24	8.33	8.16	8.05
2	Temperature	C	27.3	27.1	27.4	27.6
3	Salinity	ppt	36.7	36.5	36.8	37
4	Density	gm/ml	1.019	1.017	1.02	1.023
5	Secchi Disk Transparency	mts	11.7	11.8	11.5	11.3
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	269	256	269	285
2	COD	mg/l	12.3	11.4	12	11.6
3	BOD	mg/l	2.3	2	2.3	2
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	5.2	5	4.9	4.7
6	Nitrates	mg/l	4.5	4.3	4.7	5.1
7	Nitrites	mg/l	0.15	0.13	0.16	0.19
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.31	0.28	0.32	0.35
10	Chlorides	mg/l	20791	20722	20785	20861
11	Sodium	mg/l	7996	7958	7982	8007
12	Sulphates	mg/l	3304	3280	3312	3336
13	Silicates	mg/l	2.8	2.5	2.7	2.9
14	Reactive Silica	mg/l	0.021	0.019	0.023	0.027
15	Total Phosphorus	mg/l	0.33	0.3	0.32	0.34
16	Total Nitrogen	mg/l	12	11.8	12.1	12.5
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	37	38	37	36
2	Chlorophyll	mg/m3	1.38	1.39	1.38	1.36
3	Phtoplankton					
	a. Numerical abundance	No./ml	230	231	229	228
	b. Diversity		2.31	2.33	2.31	2.3
4	<b>Zooplankton</b>					
a	Diversity		2.23	2.25	2.23	2.21
b	Biomass	ml/100m3	12	12.1	12	11.9
c	Coliforms	CFU/100ml	19	21	20	19
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	0.25	0.23	0.25	0.27
4	Zinc	mg/l	0.03	0.028	0.03	0.033



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S. NO.	PARAMETER	UNIT	Location: Coal Berth			Month: January 2024	
<b>I</b>	<b>Physical</b>		06.01.2024	14.01.2024	21.01.2024	28.01.2024	
1	pH	-	7.98	8.16	8.1	8.19	
2	Temperature	C	27.9	27.8	28.2	28.4	
3	Salinity	ppt	36.4	36.6	36.6	36.5	
4	Density	gm/ml	1.02	1.02	1.026	1.024	
5	Secchi Disk Transparency	mts	11.7	11.6	11.4	11.5	
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	281	273	288	275	
2	COD	mg/l	12	12.1	12.6	12.1	
3	BOD	mg/l	2.3	2.3	2.6	2.4	
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
5	D.O	mg/l	4.7	4.5	4.4	4.6	
6	Nitrates	mg/l	5	5	5.5	5.1	
7	Nitrites	mg/l	0.16	0.16	0.19	0.16	
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
9	Phosphates	mg/l	0.31	0.32	0.35	0.31	
10	Chlorides	mg/l	20731	20765	20784	20703	
11	Sodium	mg/l	7653	7654	7690	7658	
12	Sulphates	mg/l	3293	3293	3319	3291	
13	Silicates	mg/l	2.5	2.7	2.8	2.6	
14	Reactive Silica	mg/l	0.025	0.026	0.028	0.025	
15	Total Phosphorus	mg/l	0.31	0.32	0.34	0.32	
16	Total Nitrogen	mg/l	11.7	11.9	12.4	11.7	
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	40	38	39	41	
2	Chlorophyll	mg/m <sup>3</sup>	1.39	1.38	1.38	1.4	
3	Phtoplankton						
	a. Numerical abundance	No./ml	233	232	232	234	
	b. Diversity		2.32	2.31	2.31	2.33	
4	<b>Zooplankton</b>						
a	Diversity		2.24	2.23	2.23	2.25	
b	Biomass	ml/100m <sup>3</sup>	11.9	12	11.9	12	
c	Coliforms	CFU/100ml	22	21	21	21	
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
3	Copper	mg/l	0.25	0.24	0.28	0.24	
4	Zinc	mg/l	0.031	0.031	0.033	0.03	



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location: Coal Berth			Month: February 2024
<b>I</b>	<b>Physical</b>		03.02.2024	10.02.2024	17.02.2024	24.02.2024
1	pH	-	7.95	8.07	8.01	7.89
2	Temperature	C	28.4	28.6	28.6	28.3
3	Salinity	ppt	37.5	37.6	36.7	36.5
4	Density	gm/ml	1.028	1.03	1.028	1.025
5	Secchi Disk Transparency	mts	11.3	11.1	11.3	11.5
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	284	297	282	269
2	COD	mg/l	12.9	13.2	12.8	12.5
3	BOD	mg/l	2.9	3.2	2.9	2.6
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	2.6
5	D.O	mg/l	4.5	4.2	4.4	4.6
6	Nitrates	mg/l	5.3	5.8	5.4	5
7	Nitrites	mg/l	0.18	0.21	0.19	0.16
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.32	0.35	0.33	0.3
10	Chlorides	mg/l	20761	20826	20763	20685
11	Sodium	mg/l	7719	7751	7681	7656
12	Sulphates	mg/l	3312	3348	3307	3288
13	Silicates	mg/l	2.8	3.2	2.9	2.6
14	Reactive Silica	mg/l	0.03	0.033	0.029	0.027
15	Total Phosphorus	mg/l	0.33	0.36	0.35	0.3
16	Total Nitrogen	mg/l	12.4	12.9	12.5	11.9
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	40	38	40	42
2	Chlorophyll	mg/m3	1.39	1.37	1.39	1.41
3	Phtoplankton					
	a. Numerical abundance	No./ml	232	230	233	235
	b. Diversity		2.31	2.29	2.31	2.33
4	<b>Zooplankton</b>					
a	Diversity		2.23	2.21	2.23	2.25
b	Biomass	ml/100m3	12	11.8	11.9	12.1
c	Coliforms	CFU/100ml	20	19	20	22
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	0.26	0.28	0.27	0.24
4	Zinc	mg/l	0.033	0.035	0.034	0.031



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S. NO.	PARAMETER	UNIT	Location: Coal Berth			Month: March 2024	
			02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
<b>I</b>	<b>Physical</b>						
1	pH	-	7.95	8.07	7.93	8.21	8.32
2	Temperature	C	28.4	28.6	28.3	28.5	28.6
3	Salinity	ppt	37.5	37.6	37.4	37.5	37.6
4	Density	gm/ml	1.028	1.03	1.027	1.029	1.031
5	Secchi Disk Transparency	mts	11.3	11.1	11.4	11.2	11
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	284	297	281	294	312
2	COD	mg/l	12.9	13.2	12.5	12.8	13.2
3	BOD	mg/l	2.9	3.2	2.8	3	3.3
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	4.5	4.2	4.4	4.3	4.2
6	Nitrates	mg/l	5.3	5.8	5.3	5.7	6.2
7	Nitrites	mg/l	0.18	0.21	0.16	0.2	0.24
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.32	0.35	0.31	0.34	0.37
10	Chlorides	mg/l	20761	20826	20725	20806	20867
11	Sodium	mg/l	7719	7751	7690	7646	7693
12	Sulphates	mg/l	3312	3348	3307	3332	3367
13	Silicates	mg/l	2.8	3.2	2.7	3.1	3.5
14	Reactive Silica	mg/l	0.03	0.033	0.029	0.032	0.035
15	Total Phosphorus	mg/l	0.33	0.36	0.32	0.35	0.38
16	Total Nitrogen	mg/l	12.4	12.9	12.6	13	13.4
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	40	38	40	39	37
2	Chlorophyll	mg/m <sup>3</sup>	1.39	1.37	1.39	1.38	1.36
3	Phtoplankton						
	a. Numerical abundance	No./ml	232	230	232	231	229
	b. Diversity		2.31	2.29	2.31	2.29	2.27
4	<b>Zooplankton</b>						
a	Diversity		2.23	2.21	2.23	2.21	2.19
b	Biomass	ml/100m <sup>3</sup>	12	11.8	12	11.8	11.6
c	Coliforms	CFU/100ml	20	19	21	20	19
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	0.26	0.28	0.25	0.28	0.3
4	Zinc	mg/l	0.033	0.035	0.031	0.035	0.037





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S. NO.	PARAMETER	UNIT	Location: Turning Circle			Month: October 2023	
			07.10.2023	14.10.2023	21.10.2023	28.10.2023	
<b>I</b>	<b>Physical</b>						
1	pH	-	7.38	7.24	7.56	7.83	
2	Temperature	C	27.9	28.1	27.8	27.6	
3	Salinity	ppt	37.6	37.9	37.5	37.3	
4	Density	gm/ml	1.043	1.045	1.042	1.04	
5	Secchi Disk Transparency	mts	11	10.8	11	11.2	
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	291	302	284	270	
2	COD	mg/l	13	13.2	12.9	12.6	
3	BOD	mg/l	3.1	3.3	3	2.8	
4	Oil & Grease	mg/l	<0.1	<0.1	<0.1	<0.1	
5	D.O	mg/l	5.4	5.2	5.4	5.6	
6	Nitrates	mg/l	5	5.3	5	4.8	
7	Nitrites	mg/l	0.29	0.31	0.27	0.24	
8	Ammonia	mg/l	<0.01	<0.01	<0.01	<0.01	
9	Phosphates	mg/l	0.4	0.43	0.4	0.37	
10	Chlorides	mg/l	20990	21051	20967	20913	
11	Sodium	mg/l	8278	8303	8274	8238	
12	Sulphates	mg/l	3451	3466	3441	3415	
13	Silicates	mg/l	3.7	3.9	3.7	3.4	
14	Reactive Silica	mg/l	0.031	0.033	0.03	0.028	
15	Total Phosphorus	mg/l	0.25	0.27	0.25	0.22	
16	Total Nitrogen	mg/l	11.8	12	11.5	10.8	
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	32	31	32	34	
2	Chlorophyll	mg/m <sup>3</sup>	1.35	1.34	1.35	1.37	
3	Phtoplankton						
	a. Numerical abundance	No./ml	228	226	228	240	
	b. Diversity		2.17	2.16	2.17	2.2	
4	<b>Zooplankton</b>						
a	Diversity		2.15	2.14	2.15	2.17	
b	Biomass	ml/100m <sup>3</sup>	11.2	11.1	11.2	11.4	
c	Coliforms	CFU/100ml	12	11	12	14	
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	<0.01	<0.01	<0.01	<0.01	
2	Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01	
3	Copper	mg/l	<0.02	<0.02	<0.02	<0.02	
4	Zinc	mg/l	0.035	0.036	0.035	0.031	



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location: Turning Circle			Month: November 2023
<b>I</b>	<b>Physical</b>		04.11.2023	11.11.2023	18.11.2023	25.11.2023
1	pH	-	7.69	7.94	7.85	7.71
2	Temperature	C	27.5	27.9	27.8	27.5
3	Salinity	ppt	37.1	37.5	37.3	37.1
4	Density	gm/ml	1.037	1.041	1.039	1.036
5	Secchi Disk Transparency	mts	11.4	11	11.2	11.4
<b>II</b>	<b>Chemical</b>					
1	Potassium	mg/l	259	291	276	258
2	COD	mg/l	12.3	12.9	12.5	12
3	BOD	mg/l	2.5	2.8	2.4	2.1
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	5.8	5.5	5.6	5.8
6	Nitrates	mg/l	4.5	4.9	4.6	4
7	Nitrites	mg/l	0.21	0.27	0.24	0.21
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.34	0.38	0.35	0.31
10	Chlorides	mg/l	20810	20926	20862	20781
11	Sodium	mg/l	8156	8282	8211	8163
12	Sulphates	mg/l	3386	3440	3415	3386
13	Silicates	mg/l	3	3.5	3.2	2.8
14	Reactive Silica	mg/l	0.025	0.029	0.025	0.022
15	Total Phosphorus	mg/l	0.19	0.23	0.2	0.2
16	Total Nitrogen	mg/l	10.1	10.8	10.3	10.5
<b>III</b>	<b>Biological</b>					
1	Primary Productivity	mgCm-2d-1	33	31	32	35
2	Chlorophyll	mg/m3	1.35	1.33	1.35	1.38
3	Phtoplankton					
	a. Numerical abundance	No./ml	238	235	236	241
	b. Diversity		2.18	2.15	2.17	2.22
4	<b>Zooplankton</b>					
a	Diversity		2.15	2.12	2.13	2.18
b	Biomass	ml/100m3	11.2	11	11.1	11.5
c	Coliforms	CFU/100ml	13	11	12	15
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.027	0.023	0.021	0.028



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S. NO.	PARAMETER	UNIT	Location: Turning Circle			Month: December 2023	
			09.12.2023	16.12.2023	23.12.2023	30.12.2023	
<b>I</b>	<b>Physical</b>						
1	pH	-	7.85	7.96	7.73	7.85	
2	Temperature	C	27.2	27	27.3	27.5	
3	Salinity	ppt	36.5	36.3	36.5	36.7	
4	Density	gm/ml	1.034	1.032	1.034	1.036	
5	Secchi Disk Transparency	mts	11.6	11.7	11.3	11.2	
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	246	232	248	263	
2	COD	mg/l	12.9	12.1	12.8	12.4	
3	BOD	mg/l	2.7	2.4	2.7	2.4	
4	Oil& Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
5	D.O	mg/l	5.6	5.3	5.1	5	
6	Nitrates	mg/l	3.7	3.5	3.9	4.3	
7	Nitrites	mg/l	0.19	0.17	0.21	0.24	
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
9	Phosphates	mg/l	0.27	0.25	0.29	0.33	
10	Chlorides	mg/l	20709	20638	20692	20786	
11	Sodium	mg/l	8129	8087	8108	8134	
12	Sulphates	mg/l	3351	3336	3368	3392	
13	Silicates	mg/l	2.5	2.3	2.5	2.6	
14	Reactive Silica	mg/l	0.02	0.018	0.021	0.025	
15	Total Phosphorus	mg/l	0.17	0.15	0.18	0.2	
16	Total Nitrogen	mg/l	10.3	10.1	10.4	10.6	
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	36	37	36	35	
2	Chlorophyll	mg/m <sup>3</sup>	1.39	1.4	1.39	1.38	
3	Phtoplankton						
	a. Numerical abundance	No./ml	242	243	241	240	
	b. Diversity		2.23	2.25	2.23	2.21	
4	<b>Zooplankton</b>						
a	Diversity		2.19	2.2	2.19	2.17	
b	Biomass	ml/100m <sup>3</sup>	11.6	11.7	11.6	11.4	
c	Coliforms	CFU/100ml	16	18	17	16	
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	
4	Zinc	mg/l	0.026	0.024	0.026	0.028	



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S. NO.	PARAMETER	UNIT	Location: Turning Circle			Month: January 2024	
			06.01.2024	14.01.2024	21.01.2024	28.01.2024	
<b>I</b>	<b>Physical</b>						
1	pH	-	7.65	7.98	7.81	7.65	
2	Temperature	C	27.6	27.6	27.8	27.6	
3	Salinity	ppt	36.5	36.5	36.7	36.5	
4	Density	gm/ml	1.033	1.034	1.036	1.033	
5	Secchi Disk Transparency	mts	11.4	11.3	11.1	11.4	
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	260	250	267	260	
2	COD	mg/l	12.9	13	13.3	12.9	
3	BOD	mg/l	2.8	2.8	3	2.8	
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
5	D.O	mg/l	4.8	4.8	4.6	4.8	
6	Nitrates	mg/l	4.2	4.1	4.5	4.2	
7	Nitrites	mg/l	0.2	0.2	0.23	0.2	
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
9	Phosphates	mg/l	0.28	0.29	0.31	0.28	
10	Chlorides	mg/l	20684	20708	20773	20684	
11	Sodium	mg/l	8064	8064	8106	8064	
12	Sulphates	mg/l	3257	3253	3282	3257	
13	Silicates	mg/l	2.4	2.5	2.7	2.4	
14	Reactive Silica	mg/l	0.023	0.023	0.025	0.023	
15	Total Phosphorus	mg/l	0.17	0.17	0.19	0.17	
16	Total Nitrogen	mg/l	10	10.2	10.5	10	
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	38	36	35	38	
2	Chlorophyll	mg/m <sup>3</sup>	1.43	1.41	1.4	1.43	
3	Phtoplankton						
	a. Numerical abundance	No./ml	243	243	241	243	
	b. Diversity		2.25	2.24	2.23	2.25	
4	<b>Zooplankton</b>						
a	Diversity		2.2	2.19	2.18	2.2	
b	Biomass	ml/100m <sup>3</sup>	11.7	11.6	11.5	11.7	
c	Coliforms	CFU/100ml	19	19	18	19	
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	
4	Zinc	mg/l	0.026	0.025	0.028	0.026	



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S. NO.	PARAMETER	UNIT	Location: Turning Circle			Month: February 2024	
			03.2.2024	10.02.2024	17.02.2024	24.02.2024	
<b>I</b>	<b>Physical</b>						
1	pH	-	7.73	7.81	7.69	7.6	
2	Temperature	C	27.9	28	28.2	27.9	
3	Salinity	ppt	35.8	35.6	35.8	35.4	
4	Density	gm/ml	1.036	1.034	1.036	1.033	
5	Secchi Disk Transparency	mts	11.1	11.2	11	11.2	
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	260	253	260	250	
2	COD	mg/l	12.9	12.7	13.2	12.9	
3	BOD	mg/l	2.8	2.8	3.3	3	
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	
5	D.O	mg/l	4.8	4.8	4.7	4.9	
6	Nitrates	mg/l	4.2	4.5	4.8	4.3	
7	Nitrites	mg/l	0.2	0.2	0.22	0.18	
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
9	Phosphates	mg/l	0.28	0.28	0.3	0.26	
10	Chlorides	mg/l	20684	20672	20730	20668	
11	Sodium	mg/l	8064	8058	8084	8046	
12	Sulphates	mg/l	3257	3256	3272	3251	
13	Silicates	mg/l	2.4	2.4	2.7	2.4	
14	Reactive Silica	mg/l	0.023	0.023	0.027	0.024	
15	Total Phosphorus	mg/l	0.2	0.18	0.21	0.16	
16	Total Nitrogen	mg/l	10.5	10	10.6	10.2	
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	37	39	38	40	
2	Chlorophyll	mg/m <sup>3</sup>	1.42	1.44	1.43	1.45	
3	Phtoplankton						
	a. Numerical abundance	No./ml	242	244	242	244	
	b. Diversity		2.24	2.26	2.25	2.27	
4	<b>Zooplankton</b>						
a	Diversity		2.19	2.21	2.2	2.22	
b	Biomass	ml/100m <sup>3</sup>	11.6	11.8	11.7	11.9	
c	Coliforms	CFU/100ml	18	18	17	19	
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	
4	Zinc	mg/l	0.03	0.028	0.031	0.028	



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. NO.	PARAMETER	UNIT	Location: Turning Circle			Month: March 2024	
<b>I</b>	<b>Physical</b>		02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
1	pH	-	7.68	7.8	7.68	7.83	7.97
2	Temperature	C	28.1	28.3	28	28.3	28.5
3	Salinity	ppt	37.4	37.5	37.3	37.4	37.5
4	Density	gm/ml	1.035	1.038	1.035	1.038	1.04
5	Secchi Disk Transparency	mts	11	10.8	11	10.9	10.7
<b>II</b>	<b>Chemical</b>						
1	Potassium	mg/l	259	273	264	289	305
2	COD	mg/l	13.2	13.7	13.3	13.6	13.9
3	BOD	mg/l	3.3	3.6	3.3	3.5	3.7
4	Oil & Grease	mg/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
5	D.O	mg/l	4.7	4.5	4.7	4.5	4.4
6	Nitrates	mg/l	4.8	5.1	4.6	4.9	5.3
7	Nitrites	mg/l	0.2	0.25	0.22	0.26	0.3
8	Ammonia	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
9	Phosphates	mg/l	0.28	0.31	0.28	0.3	0.33
10	Chlorides	mg/l	20724	20787	20674	20746	20810
11	Sodium	mg/l	8085	8133	8077	8118	8159
12	Sulphates	mg/l	3276	3310	3274	3308	3341
13	Silicates	mg/l	2.6	2.8	2.4	2.7	3
14	Reactive Silica	mg/l	0.028	0.031	0.026	0.029	0.031
15	Total Phosphorus	mg/l	0.19	0.22	0.19	0.23	0.25
16	Total Nitrogen	mg/l	10.7	11.1	10.8	11.2	11.6
<b>III</b>	<b>Biological</b>						
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	39	37	38	37	35
2	Chlorophyll	mg/m <sup>3</sup>	1.43	1.41	1.43	1.42	1.4
3	Phtoplankton						
	a. Numerical abundance	No./ml	242	240	243	241	239
	b. Diversity		2.25	2.23	2.26	2.25	2.23
4	<b>Zooplankton</b>						
a	Diversity		2.2	2.17	2.2	2.18	2.16
b	Biomass	ml/100m <sup>3</sup>	11.7	11.5	11.7	11.5	11.3
c	Coliforms	CFU/100ml	18	17	19	18	16
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2	Cadmium	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
3	Copper	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
4	Zinc	mg/l	0.03	0.033	0.03	0.033	0.035



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### 5.11 Surface waters sampling analysis values

S. No.	Parameters	Unit	Buckingham Canal					
			07.10.2023	04.11.2023	02.12.2023	06.01.2024	03.02.2024	02.03.2024
<b>I</b>	<b>Physical</b>							
1	pH	-	7.45	7.16	7.04	7.22	7.31	7.46
2	Temperature	C	27.7	27.5	27.3	27.5	28	28.2
3	Salinity	ppt	32.4	32.1	31.8	32.1	32.5	32.6
4	Density	gm/ml	1.56	1.59	1.61	1.57	1.52	1.5
<b>II</b>	<b>Chemical</b>							
1	Potassium	mg/l	325	314	302	325	330	348
2	COD	mg/l	13.9	13.2	12.9	13.3	13.6	14
3	BOD	mg/l	3.5	3.1	3	3.4	3.7	3.9
4	Oil & Grease	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
5	D.O	mg/l	5.7	5.8	6	5.8	5.6	5.4
6	Nitrates	mg/l	1.24	1.3	1.27	1.31	1.39	1.44
7	Nitrites	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8	Ammonia	mg/l	0.04	0.044	0.041	0.043	0.046	0.048
9	Phosphates	mg/l	0.83	0.87	0.84	0.87	0.92	0.95
10	Chlorides	mg/l	17986	17928	17855	17927	17976	18071
11	Sodium	mg/l	7193	7150	7105	7139	7175	7229
12	Sulphates	mg/l	2883	2860	2834	2848	2879	2902
13	Silicates	mg/l	1.55	1.51	1.47	1.51	1.55	1.58
14	Reactive Silica	mg/l	0.58	0.53	0.5	0.53	0.57	0.61
15	Total Phosphorus	mg/l	0.46	0.42	0.39	0.42	0.45	0.48
16	Total Nitrogen	mg/l	10.5	9.7	9.5	10.1	10.8	11.3
<b>III</b>	<b>Biological</b>							
1	Primary Productivity	Mg Cm-2d-1	45	47	48	46	45	44
2	Chlorophyll	mg/m <sup>3</sup>	2.28	2.3	2.31	2.29	2.26	2.23
3	Phytoplankton							
	a. Numerical abundance	No./ml	280	282	284	282	280	278
	b. Diversity		2.62	2.64	2.65	2.63	2.61	2.59
4	Zooplankton							
a	Diversity		2.69	2.71	2.73	2.71	2.7	2.68
b	Biomass	ml/100m <sup>3</sup>	12.9	13	13.1	13	12.9	12.7
c	Coliforms	CFU/100ml	17	18	13.1	18	17	15
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	ND	ND
<b>IV</b>	<b>Heavy Metals</b>							
1	Lead	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2	Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
3	Copper	mg/l	0.03	0.032	0.03	0.034	0.037	0.039
4	Zinc	mg/l	0.041	0.043	0.041	0.045	0.048	0.051



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S. No.	Parameter	Unit	Khandaleru Creek					
I	Physical		07.10.2023	04.11.2023	02.12.2023	06.01.2024	03.02.2024	02.03.2024
1	pH	-	7.45	7.16	7.04	7.22	7.31	7.46
2	Temperature	C	27.7	27.5	27.3	27.5	28	28.2
3	Salinity	ppt	32.4	32.1	31.8	32.1	32.5	32.6
4	Density	gm/ml	1.56	1.59	1.61	1.57	1.52	1.5
II	Chemical							
1	Potassium	mg/l	325	314	302	325	330	348
2	COD	mg/l	13.9	13.2	12.9	13.3	13.6	14
3	BOD	mg/l	3.5	3.1	3	3.4	3.7	3.9
4	Oil& Grease	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
5	D.O	mg/l	5.7	5.8	6	5.8	5.6	5.4
6	Nitrates	mg/l	1.24	1.3	1.27	1.31	1.39	1.44
7	Nitrites	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8	Ammonia	mg/l	0.04	0.044	0.041	0.043	0.046	0.048
9	Phosphates	mg/l	0.83	0.87	0.84	0.87	0.92	0.95
10	Chlorides	mg/l	17986	17928	17855	17927	17976	18071
11	Sodium	mg/l	7193	7150	7105	7139	7175	7229
12	Sulphates	mg/l	2883	2860	2834	2848	2879	2902
13	Silicates	mg/l	1.55	1.51	1.47	1.51	1.55	1.58
14	Reactive Silica	mg/l	0.58	0.53	0.5	0.53	0.57	0.61
15	Total Phosphorus	mg/l	0.46	0.42	0.39	0.42	0.45	0.48
16	Total Nitrogen	mg/l	10.5	9.7	9.5	10.1	10.8	11.3
III	Biological							
1	Primary Productivity	mgCm <sup>-2</sup> d <sup>-1</sup>	45	47	48	46	45	44
2	Chlorophyll	mg/m <sup>3</sup>	2.28	2.3	2.31	2.29	2.26	2.23
3	Phyoplankton							
	a.Numerical abundance	No./ml	280	282	284	282	280	278
	b. Diversity		2.62	2.64	2.65	2.63	2.61	2.59
4	Zooplankton							
a	Diversity		2.69	2.71	2.73	2.71	2.7	2.68
b	Biomass	ml/100m <sup>3</sup>	12.9	13	13.1	13	12.9	12.7
c	Coliforms	CFU/100ml	17	18	13.1	18	17	15
d	Fecal Coliforms	CFU/100ml	ND	ND	ND	ND	ND	ND
IV	Heavy Metals							
1	Lead	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2	Cadmium	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
3	Copper	mg/l	0.03	0.032	0.03	0.034	0.037	0.039
4	Zinc	mg/l	0.041	0.043	0.041	0.045	0.048	0.051





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.12 Marine Water Sediment sampling & analysis values – October 2023

S.No.	Parameter	Unit	Port Entrance Channel - October 2023			
I	Physical		07.10.2023	14.10.2023	21.10.2023	28.10.2024
1	Sediment Composition					
	a. Sand	%	35.8	37.3	34.4	32.6
	b. Silt + Clay	%	64.2	62.7	65.6	67.4
	c. Org. Matter	%	1.39	1.41	1.37	1.33
2	pH	-	7.87	7.96	8.07	7.93
II	Chemical					
1	Nitrogen	mg/kg	396	401	393	386
2	Phosphorus	mg/kg	233	236	231	227
3	Potassium	mg/kg	367	371	365	361
4	Sodium	mg/kg	16887	16915	16873	16850
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/ m <sup>2</sup>	1157	1155	1157	1158
b.	Epifauna numerical abundance	nos/ haul	27	24	26	27
c.	Infauna numerical abundance	nos/ m <sup>2</sup>	740	738	740	741
IV	Heavy Metals					
1	Lead	mg/kg	0.54	0.56	0.53	0.51
2	Cadmium	mg/kg	0.076	0.078	0.075	0.072
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.067	0.069	0.066	0.063

S.No.	Parameter	Unit	Turning Circle - October 2023			
I	Physical		07.10.2023	14.10.2023	21.10.2023	28.10.2024
1	Sediment Composition					
	a. Sand	%	35.3	36.7	33.2	31.8
	b. Silt + Clay	%	64.7	63.3	66.8	68.2
	c. Org. Matter	%	1.35	1.36	1.32	1.28
2	pH	-	7.73	7.87	7.95	7.8
II	Chemical					
1	Nitrogen	mg/kg	391	394	385	379
2	Phosphorus	mg/kg	243	247	242	238
3	Potassium	mg/kg	371	375	367	363
4	Sodium	mg/kg	17439	17464	17411	17382
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/ m <sup>2</sup>	1159	1158	1160	1162
b.	Epifauna numerical abundance	nos/ haul	26	25	27	28
c.	Infauna numerical abundance	nos/ m <sup>2</sup>	713	711	713	714
IV	Heavy Metals					
1	Lead	mg/kg	0.5	0.53	0.5	0.47
2	Cadmium	mg/kg	0.067	0.069	0.066	0.063
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.086	0.087	0.084	0.082



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. No.	Parameter	Unit	Coal Berth - October 2023			
I	Physical		07.10.2023	14.10.2023	21.10.2023	28.10.2024
1	Sediment Composition					
	a. Sand	%	35.7	36.2	34.3	32.4
	b. Silt + Clay	%	64.3	63.8	65.7	67.6
	c. Org. Matter	%	1.32	1.33	1.3	1.26
2	pH	-	8.04	8.14	8.28	8.19
II	Chemical					
1	Nitrogen	mg/kg	371	375	368	361
2	Phosphorus	mg/kg	256	260	254	250
3	Potassium	mg/kg	364	368	362	357
4	Sodium	mg/kg	17390	17427	17389	17353
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1144	1143	1145	1147
b.	Epifauna numerical abundance	nos/haul	25	23	24	25
c.	Infauna numerical abundance	nos/m <sup>2</sup>	710	709	711	712
IV	Heavy Metals					
1	Lead	mg/kg	0.55	0.58	0.54	0.52
2	Cadmium	mg/kg	0.078	0.08	0.077	0.075
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.084	0.086	0.082	0.079

S. No.	Parameter	Unit	Reclamation Area - October 2023			
I	Physical		07.10.2023	14.10.2023	21.10.2023	28.10.2024
1	Sediment Composition					
	a. Sand	%	34.8	35.2	31.9	30.6
	b. Silt + Clay	%	65.2	64.8	68.1	69.4
	c. Org. Matter	%	1.42	1.44	1.41	1.38
2	pH	-	8.16	8.29	8.38	8.24
II	Chemical					
1	Nitrogen	mg/kg	406	410	403	396
2	Phosphorus	mg/kg	282	287	282	278
3	Potassium	mg/kg	377	382	374	369
4	Sodium	mg/kg	17628	17667	17621	17579
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1141	1140	1142	1143
b.	Epifauna numerical abundance	nos/haul	19	18	20	22
c.	Infauna numerical abundance	nos/m <sup>2</sup>	701	609	701	703
IV	Heavy Metals					
1	Lead	mg/kg	0.66	0.69	0.66	0.63
2	Cadmium	mg/kg	0.093	0.095	0.092	0.089
3	Copper	mg/kg	0.47	0.49	0.45	0.44
4	Zinc	mg/kg	0.83	0.85	0.81	0.78



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.13 Marine Water Sediment sampling & analysis values – November 2023

S.No.	Parameters	Unit	Port Entrance Channel			
I	Physical		04.11.2024	11.11.2024	18.11.2024	25.11.2024
1	Sediment Composition					
	a. Sand	%	34.7	36.3	33.8	31.6
	b. Silt + Clay	%	65.3	63.7	66.2	68.4
	c. Org. Matter	%	1.31	1.34	1.32	1.3
2	pH	-	7.84	7.97	7.79	7.94
II	<b>Chemical</b>					
1	Nitrogen	mg/kg	378	401	395	380
2	Phosphorus	mg/kg	213	226	216	202
3	Potassium	mg/kg	248	259	248	240
4	Sodium	mg/kg	16772	16830	16786	16710
III	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/ m <sup>2</sup>	1159	1157	1158	1159
b.	Epifauna numerical abundance	nos/ haul	28	26	27	28
c.	Infauna numerical abundance	nos/ m <sup>2</sup>	742	740	741	742
IV	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.49	0.52	0.5	0.48
2	Cadmium	mg/kg	0.07	0.073	0.071	0.069
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.061	0.064	0.062	0.06

S.No.	Parameters	Uni	Turning Circle			
I	Physical		04.11.2024	11.11.2024	18.11.2024	25.11.2024
1	Sediment Composition					
	a. Sand	%	33.2	35.4	32.4	30.2
	b. Silt + Clay	%	66.8	64.6	67.6	69.8
	c. Org. Matter	%	1.26	1.29	1.27	1.24
2	pH	-	7.72	7.86	7.82	8.05
II	<b>Chemical</b>					
1	Nitrogen	mg/kg	367	389	381	366
2	Phosphorus	mg/kg	231	245	232	220
3	Potassium	mg/kg	348	362	350	347
4	Sodium	mg/kg	17307	17244	17189	17134
III	<b>Biological</b>					
1	Benthos Communities	nos/ m <sup>2</sup>				
a.	Macro Benthos		1163	1161	1162	1163
b.	Epifauna numerical abundance	nos/ haul	29	27	28	29
c.	Infauna numerical abundance	nos/ m <sup>2</sup>	715	713	714	715
IV	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.45	0.48	0.46	0.44
2	Cadmium	mg/kg	0.061	0.064	0.062	0.06
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.08	0.083	0.081	0.079



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S.No.	Parameters	Unit	Coal Berth			
I	Physical		04.11.2024	11.11.2024	18.11.2024	25.11.2024
1	Sediment Composition					
	a. Sand	%	34.1	36.7	33.4	32.1
	b. Silt + Clay	%	65.9	63.3	66.6	67.9
	c. Org. Matter	%	1.24	1.27	1.25	1.22
2	pH	-	8.06	8.25	8.09	8.27
II	Chemical					
1	Nitrogen	mg/kg	352	374	365	351
2	Phosphorus	mg/kg	238	252	240	236
3	Potassium	mg/kg	347	369	357	345
4	Sodium	mg/kg	17271	17340	17276	17210
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1148	1146	1147	1148
b.	Epifauna numerical abundance	nos/haul	26	24	25	26
c.	Infauna numerical abundance	nos/m <sup>2</sup>	713	711	712	713
IV	Heavy Metals					
1	Lead	mg/kg	0.5	0.53	0.51	0.49
2	Cadmium	mg/kg	0.073	0.076	0.074	0.072
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.077	0.08	0.078	0.075

S.No.	Parameters	Unit	Reclamation Area			
I	Physical		04.11.2024	11.11.2024	18.11.2024	25.11.2024
1	Sediment Composition					
	a. Sand	%	32.4	35.2	31.8	30.4
	b. Silt + Clay	%	67.6	64.8	68.2	69.6
	c. Org. Matter	%	1.36	1.39	1.37	1.34
2	pH	-	8.12	8.38	8.23	8.39
II	Chemical					
1	Nitrogen	mg/kg	382	406	398	384
2	Phosphorus	mg/kg	267	281	270	257
3	Potassium	mg/kg	356	375	362	351
4	Sodium	mg/kg	17510	17579	17510	17459
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1144	1142	1143	1144
b.	Epifauna numerical abundance	nos/haul	23	21	22	23
c.	Infauna numerical abundance	nos/m <sup>2</sup>	704	702	703	704
IV	Heavy Metals					
1	Lead	mg/kg	0.61	0.63	0.61	0.58
2	Cadmium	mg/kg	0.087	0.09	0.088	0.086
3	Copper	mg/kg	0.42	0.45	0.43	0.41
4	Zinc	mg/kg	0.76	0.79	0.77	0.75



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#### 5.14 Marine Water Sediment sampling & analysis values – December 2023

S. No.	Parameters	Unit	Port Entrance Channel				
I	Physical		02.12.2023	09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Sediment Composition						
	a. Sand	%	33.7	30.6	32.7	33.9	34.3
	b. Silt + Clay	%	66.3	69.4	67.3	66.1	65.7
	c. Org. Matter	%	1.28	1.25	1.28	1.3	1.32
2	pH	-	7.85	7.96	7.98	7.79	7.88
II	Chemical						
1	Nitrogen	mg/kg	374	368	383	396	401
2	Phosphorus	mg/kg	198	193	207	220	227
3	Potassium	mg/kg	236	231	241	248	253
4	Sodium	mg/kg	16684	16646	16720	16754	16775
III	Biological						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1160	1161	1157	1156	1155
b.	Epifauna numerical abundance	nos/haul	29	30	27	26	25
c.	Infauna numerical abundance	nos/m <sup>2</sup>	743	745	742	741	740
IV	Heavy Metals						
1	Lead	mg/kg	0.47	0.44	0.48	0.49	0.51
2	Cadmium	mg/kg	0.068	0.065	0.069	0.071	0.072
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.059	0.057	0.06	0.062	0.063

S. No.	Parameters	Unit	Turning Circle				
I	Physical		02.12.2023	09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Sediment Composition						
	a. Sand	%	32.4	29.5	31.2	32.7	33.9
	b. Silt + Clay	%	67.6	70.5	68.8	67.3	66.1
	c. Org. Matter	%	1.22	1.2	1.23	1.26	1.28
2	pH	-	7.93	8.07	8.12	7.86	7.98
II	Chemical						
1	Nitrogen	mg/kg	360	352	370	385	391
2	Phosphorus	mg/kg	216	209	324	236	243
3	Potassium	mg/kg	342	336	348	357	365
4	Sodium	mg/kg	17108	17066	17059	17087	17106
III	Biological						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1164	1166	1163	1162	1161
b.	Epifauna numerical abundance	nos/haul	30	32	30	29	28
c.	Infauna numerical abundance	nos/m <sup>2</sup>	716	718	715	714	713
IV	Heavy Metals						
1	Lead	mg/kg	0.43	0.4	0.44	0.45	0.47
2	Cadmium	mg/kg	0.059	0.056	0.059	0.06	0.061
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.078	0.076	0.079	0.081	0.083



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S.No.	Parameters	Unit	Coal Berth				
I	Physical		02.12.2023	09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Sediment Composition						
	a. Sand	%	34.2	31.8	33.3	35.2	36.8
	b. Silt + Clay	%	65.8	68.2	66.7	64.8	63.2
	c. Org. Matter	%	1.2	1.18	1.21	1.24	1.26
2	pH	-	8.12	8.29	8.29	8.05	8.17
II	Chemical						
1	Nitrogen	mg/kg	345	338	352	366	372
2	Phosphorus	mg/kg	231	224	230	242	249
3	Potassium	mg/kg	340	333	345	352	361
4	Sodium	mg/kg	17182	17140	17207	17240	17264
III	Biological						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1149	1151	1148	1147	1146
b.	Epifauna numerical abundance	nos/haul	27	28	26	25	26
c.	Infauna numerical abundance	nos/m <sup>2</sup>	714	715	711	710	709
IV	Heavy Metals						
1	Lead	mg/kg	0.48	0.44	0.49	0.51	0.53
2	Cadmium	mg/kg	0.071	0.068	0.072	0.073	0.074
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.074	0.072	0.076	0.078	0.079

S.No.	Parameter	Unit	Reclamation Area				
I	Physical		02.12.2023	09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Sediment Composition						
	a. Sand	%	31.9	28.3	30.1	32	32.6
	b. Silt + Clay	%	68.1	71.7	69.9	68	67.4
	c. Org. Matter	%	1.32	1.3	1.34	1.37	1.39
2	pH	-	8.21	8.36	8.36	8.21	8.36
II	Chemical						
1	Nitrogen	mg/kg	378	371	389	401	408
2	Phosphorus	mg/kg	252	243	258	372	280
3	Potassium	mg/kg	347	340	353	361	368
4	Sodium	mg/kg	17427	17389	17458	17486	17498
III	Biological						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1145	1147	1144	1143	1142
b.	Epifauna numerical abundance	nos/haul	24	25	22	21	20
c.	Infauna numerical abundance	nos/m <sup>2</sup>	704	706	703	702	701
IV	Heavy Metals						
1	Lead	mg/kg	0.57	0.55	0.59	0.6	0.62
2	Cadmium	mg/kg	0.085	0.082	0.085	0.086	0.087
3	Copper	mg/kg	0.4	0.38	0.42	0.43	0.44
4	Zinc	mg/kg	0.74	0.72	0.75	0.076	0.078



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### 5.15 Marine Water Sediment sampling & analysis values – January - 2024

S. No.	Parameters	Unit	Port Entrance Channel			
			06.01.2024	13.01.2024	20.01.2024	27.01.2024
<b>I</b>	<b>Physical</b>					
1	Sediment Composition					
	a. Sand	%	32.4	33.8	35.2	34.3
	b. Silt + Clay	%	67.6	66.2	64.8	65.7
	c. Org. Matter	%	1.3	1.33	1.36	1.35
2	pH	-	7.75	7.82	7.98	7.76
<b>II</b>	<b>Chemical</b>					
1	Nitrogen	mg/kg	385	398	410	402
2	Phosphorus	mg/kg	211	219	228	220
3	Potassium	mg/kg	340	343	354	344
4	Sodium	mg/kg	16730	16772	16817	16765
<b>III</b>	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1157	1156	1154	1155
b.	Epifauna numerical abundance	nos/haul	27	26	24	25
c.	Infauna numerical abundance	nos/m <sup>2</sup>	742	741	739	740
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.48	0.5	0.53	0.51
2	Cadmium	mg/kg	0.069	0.071	0.074	0.072
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.061	0.063	0.067	0.065

S.No.	Parameter	Unit	Turning Circle			
			06.01.2024	13.01.2024	20.01.2024	27.01.2024
<b>I</b>	<b>Physical</b>					
1	Sediment Composition					
	a. Sand	%	31.7	32.9	34.5	33.6
	b. Silt + Clay	%	68.3	67.1	65.5	66.4
	c. Org. Matter	%	1.25	1.27	1.3	1.29
2	pH	-	7.82	7.95	8.07	7.92
<b>II</b>	<b>Chemical</b>					
1	Nitrogen	mg/kg	374	388	399	390
2	Phosphorus	mg/kg	228	237	246	237
3	Potassium	mg/kg	351	364	372	361
4	Sodium	mg/kg	17062	17120	17172	17213
<b>III</b>	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1163	1161	1159	1160
b.	Epifauna numerical abundance	nos/haul	30	29	27	28
c.	Infauna numerical abundance	nos/m <sup>2</sup>	715	714	712	713
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.45	0.47	0.5	0.48
2	Cadmium	mg/kg	0.058	0.06	0.063	0.061
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.08	0.082	0.084	0.081



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S.No	Parameter	Unit	Coal Berth			
I	Physical		06.01.2024	13.01.2024	20.01.2024	27.01.2024
1	Sediment Composition					
	a. Sand	%	35.1	36.7	38.2	37.8
	b. Silt + Clay	%	64.9	63.3	61.8	62.2
	c. Org. Matter	%	1.24	1.26	1.28	1.26
2	pH	-	8.04	8.13	8.26	8.05
II	Chemical					
1	Nitrogen	mg/kg	360	373	384	375
2	Phosphorus	mg/kg	233	241	250	241
3	Potassium	mg/kg	347	360	370	359
4	Sodium	mg/kg	17210	17274	17325	17269
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1148	1147	1145	1146
b.	Epifauna numerical abundance	nos/haul	28	27	25	26
c.	Infauna numerical abundance	nos/m <sup>2</sup>	711	710	708	709
IV	Heavy Metals					
1	Lead	mg/kg	0.51	0.53	0.56	0.54
2	Cadmium	mg/kg	0.071	0.073	0.075	0.073
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.076	0.078	0.08	0.077

S.No.	Parameters	Unit	Reclamation Area			
I	Physical		06.01.2024	13.01.2024	20.01.2024	27.01.2024
1	Sediment Composition					
	a. Sand	%	29.6	30.4	32.1	31.4
	b. Silt + Clay	%	70.4	69.6	67.9	68.6
	c. Org. Matter	%	1.36	1.39	1.42	1.4
2	pH	-	8.21	8.34	8.43	8.19
II	Chemical					
1	Nitrogen	mg/kg	394	406	420	409
2	Phosphorus	mg/kg	265	278	289	278
3	Potassium	mg/kg	355	369	382	371
4	Sodium	mg/kg	17450	17510	17559	17510
III	Biological					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1144	1143	1141	1142
b.	Epifauna numerical abundance	nos/haul	22	21	19	20
c.	Infauna numerical abundance	nos/m <sup>2</sup>	703	702	701	703
IV	Heavy Metals					
1	Lead	mg/kg	0.6	0.63	0.65	0.63
2	Cadmium	mg/kg	0.085	0.087	0.089	0.087
3	Copper	mg/kg	0.41	0.43	0.46	0.43
4	Zinc	mg/kg	0.75	0.79	0.82	0.8





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.16 Marine Water Sediment sampling & analysis values – February – 2024

S.No.	Parameters	Unit	Port Entrance Channel			
			03.02.2024	10.02.2024	17.02.2024	24.02.2024
<b>I</b>	<b>Physical</b>					
1	Sediment Composition					
	a. Sand	%	35.2	33.6	34.8	31.6
	b. Silt + Clay	%	64.8	66.4	65.2	68.4
	c. Org. Matter	%	1.37	1.33	1.3	1.26
2	pH	-	7.85	7.73	7.88	7.95
<b>II</b>	<b>Chemical</b>					
1	Nitrogen	mg/kg	410	397	410	394
2	Phosphorus	mg/kg	228	221	231	219
3	Potassium	mg/kg	351	343	352	336
4	Sodium	mg/kg	16803	16775	16820	16782
<b>III</b>	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1154	1156	1155	1157
b.	Epifauna numerical abundance	nos/haul	24	26	25	27
c.	Infauna numerical abundance	nos/m <sup>2</sup>	739	741	740	742
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.53	0.49	0.53	0.49
2	Cadmium	mg/kg	0.074	0.07	0.072	0.068
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.067	0.065	0.067	0.063

S.No.	Parameter	Unit	Turning Circle			
			03.02.2024	10.02.2024	17.02.2024	24.02.2024
<b>I</b>	<b>Physical</b>					
1	Sediment Composition					
	a. Sand	%	33.9	31.4	32.5	30.1
	b. Silt + Clay	%	66.1	68.6	67.5	69.9
	c. Org. Matter	%	1.33	1.3	1.28	1.25
2	pH	-	8.01	7.94	8.1	8.21
<b>II</b>	<b>Chemical</b>					
1	Nitrogen	mg/kg	398	385	397	382
2	Phosphorus	mg/kg	245	237	248	234
3	Potassium	mg/kg	368	359	370	352
4	Sodium	mg/kg	17167	17135	17169	17124
<b>III</b>	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1159	1161	1160	1162
b.	Epifauna numerical abundance	nos/haul	27	29	28	30
c.	Infauna numerical abundance	nos/m <sup>2</sup>	712	714	713	715
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.51	0.47	0.5	0.47
2	Cadmium	mg/kg	0.063	0.06	0.063	0.06
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.083	0.079	0.082	0.079



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S.No.	Parameter	Unit	Coal Berth			
			03.02.2024	10.02.2024	17.02.2024	24.02.2024
<b>I</b>	<b>Physical</b>					
1	Sediment Composition					
	a. Sand	%	38.6	36.9	38.1	35.2
	b. Silt + Clay	%	61.4	63.1	61.9	64.8
	c. Org. Matter	%	1.29	1.25	1.24	1.21
2	pH	-	8.16	8.05	8.19	8.29
<b>II</b>	<b>Chemical</b>					
1	Nitrogen	mg/kg	381	365	380	362
2	Phosphorus	mg/kg	249	242	254	241
3	Potassium	mg/kg	366	359	373	356
4	Sodium	mg/kg	17307	17279	17317	17269
<b>III</b>	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1145	1147	1146	1148
b.	Epifauna numerical abundance	nos/haul	25	27	26	28
c.	Infauna numerical abundance	nos/m <sup>2</sup>	708	710	709	711
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.57	0.54	0.58	0.54
2	Cadmium	mg/kg	0.076	0.072	0.075	0.072
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.079	0.076	0.078	0.076

S.No.	Parameter	Unit	Reclamation Area			
			03.02.2024	10.02.2024	17.02.2024	24.02.2024
<b>I</b>	<b>Physical</b>					
1	Sediment Composition					
	a. Sand	%	32.5	30.8	31.9	28.6
	b. Silt + Clay	%	67.5	69.2	68.1	71.4
	c. Org. Matter	%	1.43	1.39	1.37	1.34
2	pH	-	8.27	8.14	8.32	8.41
<b>II</b>	<b>Chemical</b>					
1	Nitrogen	mg/kg	416	402	416	399
2	Phosphorus	mg/kg	289	280	293	279
3	Potassium	mg/kg	378	371	385	371
4	Sodium	mg/kg	17552	17523	17559	17515
<b>III</b>	<b>Biological</b>					
1	Benthos Communities					
a.	Macro Benthos	nos/m <sup>2</sup>	1141	1143	1142	1144
b.	Epifauna numerical abundance	nos/haul	19	21	20	22
c.	Infauna numerical abundance	nos/m <sup>2</sup>	702	704	703	705
<b>IV</b>	<b>Heavy Metals</b>					
1	Lead	mg/kg	0.66	0.63	0.66	0.63
2	Cadmium	mg/kg	0.09	0.086	0.089	0.085
3	Copper	mg/kg	0.45	0.41	0.43	0.4
4	Zinc	mg/kg	0.83	0.8	0.82	0.79



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.17 Marine Water Sediment sampling & analysis values – March - 2024

S.No.	Parameters	Unit	Port Entrance Channel				
			02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
<b>I</b>	<b>Physical</b>						
1	Sediment Composition						
	a. Sand	%	32.8	34.2	32.5	33.8	35.9
	b. Silt + Clay	%	67.2	65.8	67.5	66.2	64.1
	c. Org. Matter	%	1.29	1.3	1.32	1.34	1.36
2	pH	-	7.68	7.79	7.59	7.71	7.85
<b>II</b>	<b>Chemical</b>						
1	Nitrogen	mg/kg	402	410	393	405	412
2	Phosphorus	mg/kg	224	231	220	231	238
3	Potassium	mg/kg	341	349	336	348	354
4	Sodium	mg/kg	16810	16852	16794	16832	16861
<b>III</b>	<b>Biological</b>						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1156	1154	1157	1156	1155
b.	Epifauna numerical abundance	nos/haul	26	25	27	25	24
c.	Infauna numerical abundance	nos/m <sup>2</sup>	741	739	741	740	738
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/kg	0.51	0.54	0.51	0.55	0.58
2	Cadmium	mg/kg	0.07	0.073	0.07	0.073	0.075
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.065	0.068	0.065	0.068	0.07

S. No.	Parameter	Unit	Turning Circle				
			02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
<b>I</b>	<b>Physical</b>						
1	Sediment Composition						
	a. Sand	%	31.9	33.7	31.4	32.5	33.7
	b. Silt + Clay	%	68.1	66.3	68.6	67.5	66.3
	c. Org. Matter	%	1.27	1.29	1.31	1.33	1.37
2	pH	-	7.91	7.98	7.73	7.86	7.98
<b>II</b>	<b>Chemical</b>						
1	Nitrogen	mg/kg	388	395	384	397	404
2	Phosphorus	mg/kg	238	245	232	245	255
3	Potassium	mg/kg	359	367	351	364	371
4	Sodium	mg/kg	17152	17197	17136	17178	17201
<b>III</b>	<b>Biological</b>						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1161	1159	1160	1159	1158
b.	Epifauna numerical abundance	nos/haul	29	27	29	27	25
c.	Infauna numerical abundance	nos/m <sup>2</sup>	714	712	715	713	711
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/kg	0.49	0.51	0.48	0.52	0.55
2	Cadmium	mg/kg	0.063	0.065	0.061	0.065	0.068
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.81	0.083	0.08	0.083	0.085



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S. No.	Parameter	Unit	Coal Berth				
			02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
<b>I</b>	<b>Physical</b>						
1	Sediment Composition						
	a. Sand	%	37.5	38.9	35.2	36.4	37.6
	b. Silt + Clay	%	62.5	61.1	64.8	63.6	62.4
	c. Org. Matter	%	1.23	1.25	1.27	1.29	1.33
2	pH	-	8.06	8.19	8.04	8.16	7.98
<b>II</b>	<b>Chemical</b>						
1	Nitrogen	mg/kg	369	377	365	379	391
2	Phosphorus	mg/kg	246	253	239	251	259
3	Potassium	mg/kg	362	370	358	373	380
4	Sodium	mg/kg	17290	17346	17278	17324	17349
<b>III</b>	<b>Biological</b>						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1147	1145	1148	1147	1146
b.	Epifauna numerical abundance	nos/haul	27	25	26	24	22
c.	Infauna numerical abundance	nos/m <sup>2</sup>	710	708	711	709	707
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/kg	0.56	0.59	0.56	0.6	0.63
2	Cadmium	mg/kg	0.075	0.078	0.075	0.078	0.081
3	Copper	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
4	Zinc	mg/kg	0.079	0.081	0.077	0.081	0.084

S. No.	Parameters	Unit	Reclamation Area				
			02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
<b>I</b>	<b>Physical</b>						
1	Sediment Composition						
	a. Sand	%	30.3	31.5	29.3	30.7	32.1
	b. Silt + Clay	%	69.7	68.5	70.7	69.3	67.9
	c. Org. Matter	%	1.36	1.37	1.39	1.42	1.45
2	pH	-	8.25	8.33	8.2	8.34	8.46
<b>II</b>	<b>Chemical</b>						
1	Nitrogen	mg/kg	405	412	403	416	425
2	Phosphorus	mg/kg	284	291	278	292	304
3	Potassium	mg/kg	376	383	369	383	392
4	Sodium	mg/kg	17543	17587	17511	17554	17582
<b>III</b>	<b>Biological</b>						
1	Benthos Communities						
a.	Macro Benthos	nos/m <sup>2</sup>	1143	1141	1143	1142	1141
b.	Epifauna numerical abundance	nos/haul	21	19	21	19	17
c.	Infauna numerical abundance	nos/m <sup>2</sup>	704	702	705	703	701
<b>IV</b>	<b>Heavy Metals</b>						
1	Lead	mg/kg	0.65	0.68	0.65	0.69	0.72
2	Cadmium	mg/kg	0.087	0.089	0.086	0.089	0.092
3	Copper	mg/kg	0.42	0.45	0.42	0.45	0.48
4	Zinc	mg/kg	0.82	0.84	0.81	0.83	0.86



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.18 Marine Water Turbidity sampling & analysis values – October - 2023

S.No.	Parameter	Unit	Port Entrance Channel			
I	Low Tide		07.10.2023	14.10.2024	21.10.2023	28.10.2023
1	Turbidity	NTU	5	5.3	5	4.6
2	Total Dissolved Solids	mg/l	32782	32878	32693	32553
3	Total Suspended Solids	mg/l	10.7	11.8	11.4	10.9
II	Medium Tide					
1	Turbidity	NTU	4.1	4.3	4	3.7
2	Total Dissolved Solids	mg/l	32582	32680	32498	32358
3	Total Suspended Solids	mg/l	10.3	11.2	10.6	10
II	High Tide					
1	Turbidity	NTU	7.2	7.5	7.2	6.9
2	Total Dissolved Solids	mg/l	32993	33095	32909	32769
3	Total Suspended Solids	mg/l	12.1	13	12.5	11.9

S.No.	Parameter	Unit	Turning Circle			
I	Low Tide		07.10.2023	14.10.2024	21.10.2023	28.10.2023
1	Turbidity	NTU	6.1	6.4	6.1	5.8
2	Total Dissolved Solids	mg/l	33265	33380	32216	33087
3	Total Suspended Solids	mg/l	12	12.7	12.2	11.6
II	Medium Tide					
1	Turbidity	NTU	4.3	4.5	4.2	3.9
2	Total Dissolved Solids	mg/l	33052	33167	33006	32877
3	Total Suspended Solids	mg/l	11.4	12.1	11.4	10.8
II	High Tide					
1	Turbidity	NTU	7.1	7.3	7	6.6
2	Total Dissolved Solids	mg/l	33502	33618	33454	33325
3	Total Suspended Solids	mg/l	13.3	14.1	13.4	12.7

S.No.	Parameter	Unit	Coal Berth			
I	Low Tide		07.10.2023	14.10.2024	21.10.2023	28.10.2023
1	Turbidity	NTU	5.9	6.2	5.9	5.5
2	Total Dissolved Solids	mg/l	33315	33427	33258	33126
3	Total Suspended Solids	mg/l	12.4	13.3	12.6	11.8
II	Medium Tide					
1	Turbidity	NTU	4.8	5	4.6	4.2
2	Total Dissolved Solids	mg/l	33069	33184	33012	32883
3	Total Suspended Solids	mg/l	10.2	10.7	10.2	9.7
II	High Tide					
1	Turbidity	NTU	7.7	7.9	7.6	7.2
2	Total Dissolved Solids	mg/l	33072	33687	33512	33384
3	Total Suspended Solids	mg/l	13.9	14.8	14.2	13.6

S.No.	Parameter	Unit	Reclamation Area			
I	Low Tide		07.10.2023	14.10.2024	21.10.2023	28.10.2023
1	Turbidity	NTU	16.7	17.4	16.7	15.8
2	Total Dissolved Solids	mg/l	24164	34298	29125	28973
3	Total Suspended Solids	mg/l	15.8	16.7	15.9	15.2
II	Medium Tide					
1	Turbidity	NTU	15.6	16.3	15.6	14.9
2	Total Dissolved Solids	mg/l	33894	34029	28858	28705
3	Total Suspended Solids	mg/l	12	13	12.3	11.5
II	High Tide					
1	Turbidity	NTU	17.5	18.6	17.8	17
2	Total Dissolved Solids	mg/l	33895	34566	29391	29238
3	Total Suspended Solids	mg/l	16.3	17.9	16.7	16



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.19 Marine Water Turbidity sampling & analysis values – November - 2023

S.No.	Parameter	Unit	Port Entrance Channel			
I	Low Tide		09.11.2023	11.11.2023	18.11.2023	23.11.2023
1	Turbidity	NTU	4.3	4.8	4.5	4.1
2	Total Dissolved Solids	mg/l	32344	32636	32513	32347
3	Total Suspended Solids	mg/l	10.2	11	10.3	9.8
II	Medium Tide					
1	Turbidity	NTU	3.4	3.7	3.5	3.2
2	Total Dissolved Solids	mg/l	32149	32441	32318	32152
3	Total Suspended Solids	mg/l	9.9	10.1	9.6	9.4
II	High Tide					
1	Turbidity	NTU	6.5	6.8	6.4	6.1
2	Total Dissolved Solids	mg/l	32554.01	32846	32723	32557
3	Total Suspended Solids	mg/l	11	12.1	11.4	11

S.No.	Parameter	Unit	Turning Circle			
I	Low Tide		09.11.2023	11.11.2023	18.11.2023	23.11.2023
1	Turbidity	NTU	5.2	5.9	5.6	5.3
2	Total Dissolved Solids	mg/l	32862	33191	33015	32838
3	Total Suspended Solids	mg/l	10.9	11.8	11.2	10.5
II	Medium Tide					
1	Turbidity	NTU	3.5	3.9	3.7	3.4
2	Total Dissolved Solids	mg/l	32652.08	32981	32805	32628
3	Total Suspended Solids	mg/l	10.1	11.3	10.4	10
II	High Tide					
1	Turbidity	NTU	6.2	6.6	6.2	5.9
2	Total Dissolved Solids	mg/l	33096.08	33425	33249	33072
3	Total Suspended Solids	mg/l	11.6	12.8	12.1	11.7

S.No.	Parameter	Unit	Coal Berth			
I	Low Tide		09.11.2023	11.11.2023	18.11.2023	23.11.2023
1	Turbidity	NTU	5	5.6	5.2	4.9
2	Total Dissolved Solids	mg/l	32913	33202	33073	32892
3	Total Suspended Solids	mg/l	11	12.1	11.5	10.8
II	Medium Tide					
1	Turbidity	NTU	3.9	4.2	4	3.7
2	Total Dissolved Solids	mg/l	32667.68	32956	32827	32646
3	Total Suspended Solids	mg/l	9.2	10	9.8	9.5
II	High Tide					
1	Turbidity	NTU	6.8	7	6.7	6.4
2	Total Dissolved Solids	mg/l	33171.68	33460	33331	33150
3	Total Suspended Solids	mg/l	12.4	13.6	12.9	12.2

S.No.	Parameter	Unit	Reclamation Area			
I	Low Tide		09.11.2023	11.11.2023	18.11.2023	23.11.2023
1	Turbidity	NTU	15.2	16.5	15.7	14.6
2	Total Dissolved Solids	mg/l	33736	34021	33868	33697
3	Total Suspended Solids	mg/l	14.1	15.7	14.4	13.7
II	Medium Tide					
1	Turbidity	NTU	14.1	14.9	14.1	13.3
2	Total Dissolved Solids	mg/l	33482.31	33767	33614	33443
3	Total Suspended Solids	mg/l	10.7	12	11.2	10.8
II	High Tide					
1	Turbidity	NTU	16.2	17.8	16.9	15.9
2	Total Dissolved Solids	mg/l	34009.31	34294	34141	33970
3	Total Suspended Solids	mg/l	15.1	16.3	15.1	14.3



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 5.20 Marine Water Turbidity sampling & analysis values – December - 2023

S.No.	Parameters	Unit	Port Entrance Channel			
<b>I</b>	<b>Low Tide</b>		09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Turbidity	NTU	4	4.3	4.8	4.5
2	Total Dissolved Solids	mg/l	32091	32202	32351	32206
3	Total Suspended Solids	mg/l	9.8	10.1	10.5	10.3
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	3.1	3.5	3.7	3.5
2	Total Dissolved Solids	mg/l	31896	32007	32156	32011
3	Total Suspended Solids	mg/l	9.2	9.6	10.1	9.7
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	5.9	6.3	6.8	6.5
2	Total Dissolved Solids	mg/l	32301	32412	32561	32416
3	Total Suspended Solids	mg/l	10.7	11.4	12.6	12.3

S.No.	Parameters	Unit	Turning Circle			
<b>I</b>	<b>Low Tide</b>		09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Turbidity	NTU	5.2	5.6	6	5.7
2	Total Dissolved Solids	mg/l	32542	32665	32825	32664
3	Total Suspended Solids	mg/l	10.9	11.3	11.8	11.4
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	3.3	3.8	4.2	3.9
2	Total Dissolved Solids	mg/l	32332	32455	32615	32454
3	Total Suspended Solids	mg/l	10	10.4	11	10.6
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	5.7	6	6.5	6.3
2	Total Dissolved Solids	mg/l	32766	32899	33059	32898
3	Total Suspended Solids	mg/l	11.3	12	12.9	12.6

S.No.	Parameter	Unit	Coal Berth			
<b>I</b>	<b>Low Tide</b>		09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Turbidity	NTU	4.7	5	5.6	5.3
2	Total Dissolved Solids	mg/l	32502	32634	32776	32611
3	Total Suspended Solids	mg/l	10.7	11.2	11.9	11.6
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	3.7	4.3	4.8	4.5
2	Total Dissolved Solids	mg/l	32256	32388	32530	32365
3	Total Suspended Solids	mg/l	9.5	10	10.8	10.5
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	6.1	6.6	7.3	7
2	Total Dissolved Solids	mg/l	32760	32892	33034	32869
3	Total Suspended Solids	mg/l	12	12.8	13.6	12.4

S.No.	Parameter	Unit	Reclamation Area			
<b>I</b>	<b>Low Tide</b>		09.12.2023	16.12.2023	23.12.2023	30.12.2023
1	Turbidity	NTU	13.9	15.1	15.6	14.9
2	Total Dissolved Solids	mg/l	33390	33529	33685	33522
3	Total Suspended Solids	mg/l	13	14.6	16.2	15.8
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	12.6	13.8	14.5	13.9
2	Total Dissolved Solids	mg/l	33136	33275	33431	33268
3	Total Suspended Solids	mg/l	10.4	11	12.6	12.3
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	15.3	16.5	17.2	16.7
2	Total Dissolved Solids	mg/l	33663	33802	33958	33795
3	Total Suspended Solids	mg/l	14	15.2	16.5	16



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### 5.21 Marine Water Turbidity sampling & analysis values – January - 2024

S.No.	Parameters	Unit	Port Entrance Channel			
<b>I</b>	<b>Low Tide</b>		06.01.2024	13.01.2024	20.01.2024	27.01.2024
1	Turbidity	NTU	4.3	4.6	4.9	4.2
2	Total Dissolved Solids	mg/l	32044	32184	32305	31230
3	Total Suspended Solids	mg/l	9.8	10.5	11	10.4
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	3.2	3.7	4	3.4
2	Total Dissolved Solids	mg/l	31849	31989	32110	31935
3	Total Suspended Solids	mg/l	9.4	10.1	10.4	9.8
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	6.1	6.6	7	6.4
2	Total Dissolved Solids	mg/l	32254	32397	32515	32340
3	Total Suspended Solids	mg/l	11.8	12.4	12.9	11.9

S.No.	Parameters	Unit	Turning Circle			
<b>I</b>	<b>Low Tide</b>		06.01.2024	13.01.2024	20.01.2024	27.01.2024
1	Turbidity	NTU	5.4	6	6.2	5
2	Total Dissolved Solids	mg/l	32503	32525	32678	32515
3	Total Suspended Solids	mg/l	10.9	11.4	11.8	11.2
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	3.6	4.1	4.5	3.9
2	Total Dissolved Solids	mg/l	32293	32315	32468	32305
3	Total Suspended Solids	mg/l	10	10.8	11.2	10.5
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	5.9	6.3	6.8	6.1
2	Total Dissolved Solids	mg/l	32737	32759	32912	32749
3	Total Suspended Solids	mg/l	12.1	12.7	13.4	12.6

S.NO.	Parameters	Unit	Coal Berth			
<b>I</b>	<b>Low Tide</b>		06.01.2024	13.01.2024	20.01.2024	27.01.2024
1	Turbidity	NTU	5	5.6	5.9	5.3
2	Total Dissolved Solids	mg/l	32445	32272	32430	32245
3	Total Suspended Solids	mg/l	11.2	12	12.5	11.8
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	4.2	4.9	5.3	4.8
2	Total Dissolved Solids	mg/l	32199	32026	32184	32011
3	Total Suspended Solids	mg/l	9.8	10.4	10.8	10.1
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	6.6	7.2	7.6	7
2	Total Dissolved Solids	mg/l	32703	32530	32688	32503
3	Total Suspended Solids	mg/l	11.8	12.4	12.7	12

S.No.	Parameters	Unit	Reclamation Area			
<b>I</b>	<b>Low Tide</b>		06.01.2024	13.01.2024	20.01.2024	27.01.2024
1	Turbidity	NTU	13.7	16.2	17.3	15.8
2	Total Dissolved Solids	mg/l	33350	33485	33646	33488
3	Total Suspended Solids	mg/l	14.6	15.5	16.4	14.9
<b>II</b>	<b>Medium Tide</b>					
1	Turbidity	NTU	12.8	14.5	15.4	14
2	Total Dissolved Solids	mg/l	33096	33231	33392	32234
3	Total Suspended Solids	mg/l	11.7	13.1	14	12.8
<b>II</b>	<b>High Tide</b>					
1	Turbidity	NTU	15.5	17.2	18.1	16.7
2	Total Dissolved Solids	mg/l	33623	32530	33919	33761
3	Total Suspended Solids	mg/l	15.2	12.4	17	15.9





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## 5.22 Marine Water Turbidity sampling & analysis values – February - 2024

S.No.	Parameters	Unit	Port Entrance Channel			
I	Low Tide		03.02.2024	10.02.2024	17.02.2024	24.02.2024
1	Turbidity	NTU	4.5	4.3	4.7	4.2
2	Total Dissolved Solids	mg/l	32249	32103	32200	32071
3	Total Suspended Solids	mg/l	10.8	10.4	11.1	10.4
II	Medium Tide					
1	Turbidity	NTU	3.7	3.5	3.9	3.4
2	Total Dissolved Solids	mg/l	32054	31908	32005	31876
3	Total Suspended Solids	mg/l	10.4	9.9	10.5	9.6
II	High Tide					
1	Turbidity	NTU	6.7	6.4	6.8	6.3
2	Total Dissolved Solids	mg/l	32459	32310	32410	32281
3	Total Suspended Solids	mg/l	12.5	12	12.7	11.6

S.No.	Parameters	Unit	Turning Circle			
I	Low Tide		03.02.2024	10.02.2024	17.02.2024	24.02.2024
1	Turbidity	NTU	5.3	5.1	5.5	4.8
2	Total Dissolved Solids	mg/l	32645	32489	32597	32465
3	Total Suspended Solids	mg/l	11.9	11.5	12.2	11.5
II	Medium Tide					
1	Turbidity	NTU	4.2	4	4.5	4
2	Total Dissolved Solids	mg/l	32435	32279	32387	32255
3	Total Suspended Solids	mg/l	11.2	10.6	11.3	10.5
II	High Tide					
1	Turbidity	NTU	6.4	6	6.4	5.8
2	Total Dissolved Solids	mg/l	32879	32728	32831	32699
3	Total Suspended Solids	mg/l	13.1	12.6	13.8	13.1

S.No.	Parameters	Unit	Coal Berth			
I	Low Tide		03.02.2024	10.02.2024	17.02.2024	24.02.2024
1	Turbidity	NTU	5.6	5.4	5.8	5.2
2	Total Dissolved Solids	mg/l	32368	32216	32320	32185
3	Total Suspended Solids	mg/l	12.5	12	13	12.3
II	Medium Tide					
1	Turbidity	NTU	5.2	5	5.4	4.8
2	Total Dissolved Solids	mg/l	32122	31968	32074	31939
3	Total Suspended Solids	mg/l	10.8	10.2	10.9	10
II	High Tide					
1	Turbidity	NTU	17.2	6.9	7.4	6.2
2	Total Dissolved Solids	mg/l	32626	32476	32578	32443
3	Total Suspended Solids	mg/l	12.8	12.3	13.1	12.4

S.No.	Parameters	Unit	Reclamation Area			
I	Low Tide		03.02.2024	10.02.2024	17.02.2024	24.02.2024
1	Turbidity	NTU	16.5	15.8	17.1	15.8
2	Total Dissolved Solids	mg/l	33630	33459	33573	33425
3	Total Suspended Solids	mg/l	15.3	14.6	14.6	13.7
II	Medium Tide					
1	Turbidity	NTU	15.3	14.6	16.2	14.6
2	Total Dissolved Solids	mg/l	33376	33201	33319	33171
3	Total Suspended Solids	mg/l	13.9	12.8	14.1	12.6
II	High Tide					
1	Turbidity	NTU	17.6	16.3	17.8	16.3
2	Total Dissolved Solids	mg/l	33903	33731	33846	33698
3	Total Suspended Solids	mg/l	16.8	15.9	16.9	15.4



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 5.23 Marine Water Turbidity sampling & analysis values – March - 2024

S.No.	Parameters	Uni	Port Entrance Channel				
I	Low Tide		02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
1	Turbidity	NTU	4.4	4.9	4.3	4.5	4.8
2	Total Dissolved Solids	mg/l	32225	32375	32176	32298	32458
3	Total Suspended Solids	mg/l	10.9	11.5	10.6	11.2	12
II	Medium Tide						
1	Turbidity	NTU	3.8	4.2	3.9	4.1	4.3
2	Total Dissolved Solids	mg/l	32010	32168	31952	32097	32239
3	Total Suspended Solids	mg/l	10	10.6	9.8	10.4	11
II	High Tide						
1	Turbidity	NTU	6.7	7.2	6.7	6.9	7.2
2	Total Dissolved Solids	mg/l	32467	32619	32410	32547	32697
3	Total Suspended Solids	mg/l	12.1	12.8	12.2	12.9	13.6

S.No.	Parameters	Unit	Turning Circle				
I	Low Tide		02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
1	Turbidity	NTU	5.1	5.6	5	5.2	5.5
2	Total Dissolved Solids	mg/l	32598	32764	32548	32716	32876
3	Total Suspended Solids	mg/l	12	12.8	11.9	12.4	13.1
II	Medium Tide						
1	Turbidity	NTU	4.4	5	4.3	4.5	4.7
2	Total Dissolved Solids	mg/l	32389	32561	32335	32519	32667
3	Total Suspended Solids	mg/l	10.8	11.4	10.6	11.1	11.8
II	High Tide						
1	Turbidity	NTU	6.1	6.5	6.1	6.4	6.7
2	Total Dissolved Solids	mg/l	32849	32997	32792	32968	33108
3	Total Suspended Solids	mg/l	13.6	14.3	13.1	13.7	14.2

S.No.	Parameters	Unit	Coal Berth				
I	Low Tide		02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
1	Turbidity	NTU	5.5	6	5.5	5.7	5.9
2	Total Dissolved Solids	mg/l	32334	32481	32267	32338	32498
3	Total Suspended Solids	mg/l	12.9	13.4	12.1	12.8	13.5
II	Medium Tide						
1	Turbidity	NTU	5.1	5.4	5	5.3	5.5
2	Total Dissolved Solids	mg/l	32121	32278	32051	32125	32289
3	Total Suspended Solids	mg/l	10.5	11	10.1	10.4	11.4
II	High Tide						
1	Turbidity	NTU	6.8	7.1	6.6	6.8	7
2	Total Dissolved Solids	mg/l	32578	32725	32506	32581	32735
3	Total Suspended Solids	mg/l	12.9	13.6	12.4	13	13.8

S.No.	Parameters	Unit	Reclamation Area (Mutable)				
I	Low Tide		02.03.2024	09.03.2024	16.03.2024	23.03.2024	30.03.2024
1	Turbidity	NTU	16.5	17.3	16	16.9	17.6
2	Total Dissolved Solids	mg/l	33541	33718	33486	33661	33819
3	Total Suspended Solids	mg/l	14.6	15.3	14.1	15	15.9
II	Medium Tide						
1	Turbidity	NTU	15.2	16.1	15	15.8	16.4
2	Total Dissolved Solids	mg/l	33328	33507	32272	33446	33608
3	Total Suspended Solids	mg/l	13.4	14.2	13.1	13.6	14.8
II	High Tide						
1	Turbidity	NTU	17	18.2	17.3	18.1	19
2	Total Dissolved Solids	mg/l	33786	33956	33728	33896	34046
3	Total Suspended Solids	mg/l	16.1	17.4	16.2	17	18.6



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# CHAPTER – 6



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## Table of Contents

S. No.	Description	Page No.
6.0	Environment Sustainability & Pollution Control Measures	134
6.1	Ambient Air Quality Monitoring – AKPL CAAQM Stations	134
6.2	Summary of CAAQM average values of AKPL stations for the period from October - 2023 to March 2024	134
6.3	Ambient Air Quality Monitoring through NABL Accredited 3 <sup>rd</sup> Party	136
6.4	Summary of AAQM values in the port surrounding area for the period from October - 2023 to March 2024	136
6.5	Noise Monitoring	141
6.6	Summary of Noise Monitoring values in the port surrounding area for the period from October - 2023 to March 2024	141
6.7	Measures to control of fugitive emissions & dust suppression	142
6.8	Sewage Water – Treatment & disposal	144
6.9	The STP sampling values for the period from October 2023 to March 2023	146
6.10	Ground Water Monitoring	146
6.11	Soil Quality	146
6.12	DG Sets Monitoring	147
6.13	Maintenance of Storm drains	148
6.14	Maintenance of Rainwater Harvesting Pits & utilization of the rainwater for dust suppression:	148
6.15	3 <sup>rd</sup> Party Audit:	149
6.16	Michaung Cyclone during December 2023.	149
6.17	Commitment towards Environment Sustainability.	151



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 6.0 Environment Sustainability & Pollution Control Measures:

AKPL established an Environment Department for institutional Arrangements for Environment Protection, Sustainability & Conservation.

The Department is headed by the Vice President, Senior Officer Environment, Environment Engineer followed by Senior Officer Horticulture, and other supporting field staff.

### 6.1 Ambient Air Quality Monitoring – AKPL CAAQM Stations:

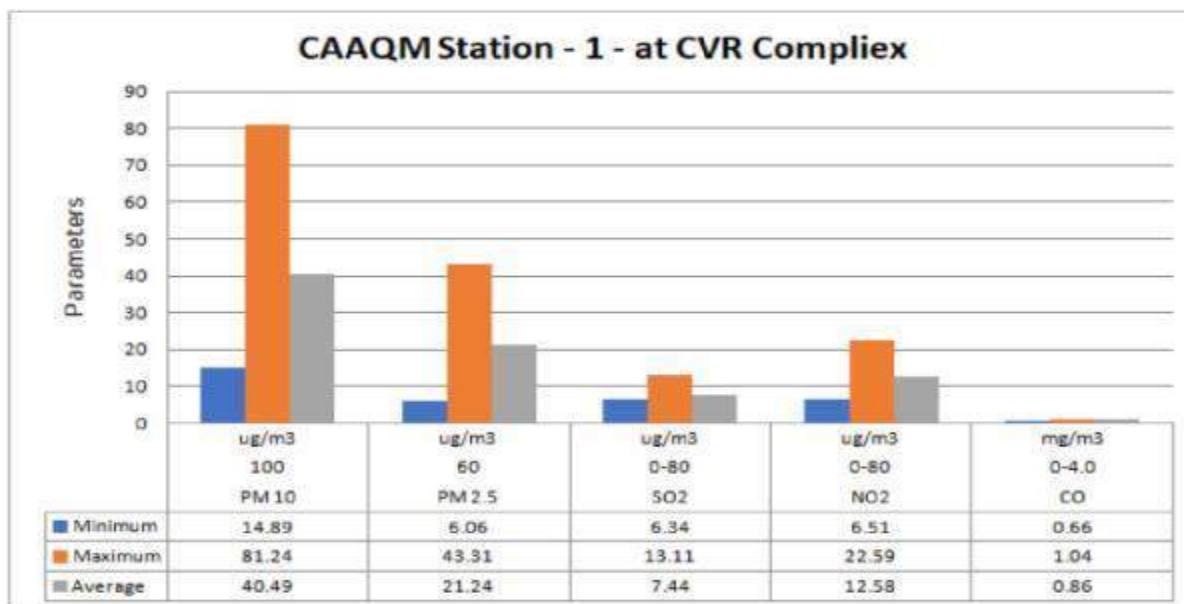
AKPL has been operating 3 No. of CAAQM stations of Beta Ray Attenuation technology to measure the parameters PM 10, PM 2.5, SO<sub>2</sub>, NO<sub>2</sub>, Ozone & CO, at the following locations and data connected to APPCB website.

1. Station - 1 – (CVR Amenities Complex)
2. Station - 2 – (Thamminapatnam Village)
3. Station - 3 – (Krishnapatnam Village)

### 6.2 Summary of Continuous Ambient Air Quality average values of AKPL stations for the period from October - 2023 to March 2024 are as below:

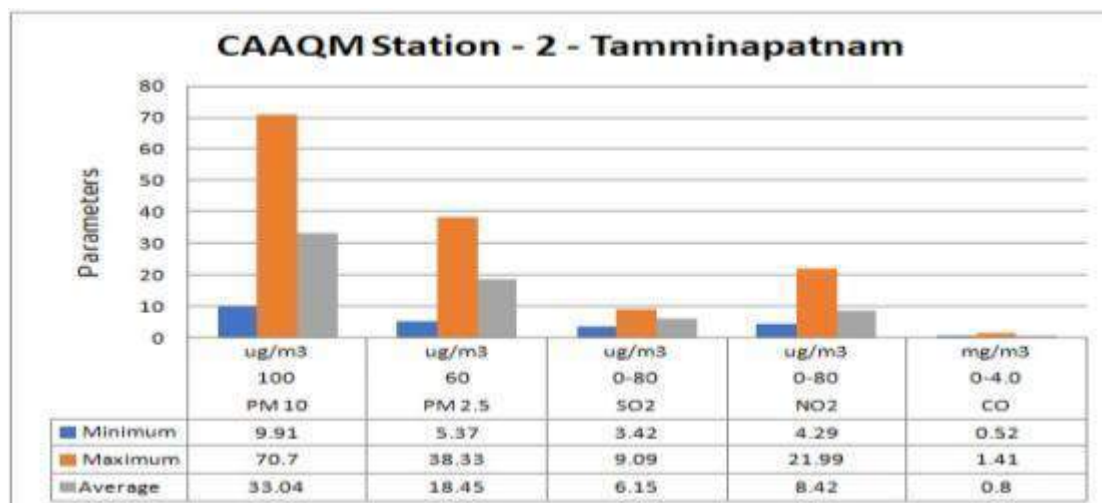
Station - 1 – (CVR Amenities Complex)

Parameter	PM 10	PM 2.5	SO <sub>2</sub>	NO <sub>2</sub>	CO
Value	100	60	0-80	0-80	0-4.0
Unit	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	mg/m <sup>3</sup>
Minimum	14.89	6.06	6.34	6.51	0.66
Maximum	81.24	43.31	13.11	22.59	1.04
Average	40.49	21.24	7.44	12.58	0.86



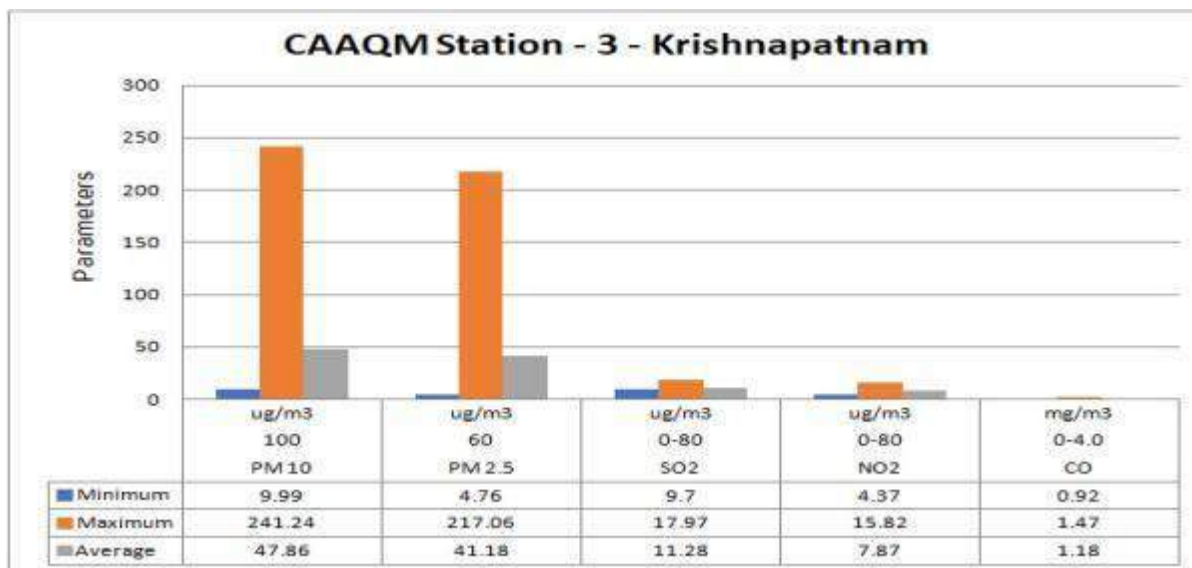
## 2. Station - 2 – (Thamminapatnam Village)

Parameter	PM 10	PM 2.5	SO2	NO2	CO
Value	100	60	0-80	0-80	0-4.0
Unit	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	mg/m <sup>3</sup>
Minimum	9.91	5.37	3.42	4.29	0.52
Maximum	70.7	38.33	9.09	21.99	1.41
Average	33.04	18.45	6.15	8.42	0.8



## 3. Station - 3 – (Krishnapatnam Village)

Parameter	PM 10	PM 2.5	SO2	NO2	CO
Value	100	60	0-80	0-80	0-4.0
Unit	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	mg/m <sup>3</sup>
Minimum	9.99	4.76	9.7	4.37	0.92
Maximum	241.2	217.1	17.97	15.82	1.47
Average	47.86	41.18	11.28	7.87	1.18





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 6.3 Ambient Air Quality Monitoring through NABL Accredited 3<sup>rd</sup> Party

In addition to the Port CAAQM Stations, the ambient air quality is being assessed at 7 locations within 10 Km radius of project site (5 stations in buffer zone & 2 locations inside plant area).

The locations of ambient air quality stations are given below:

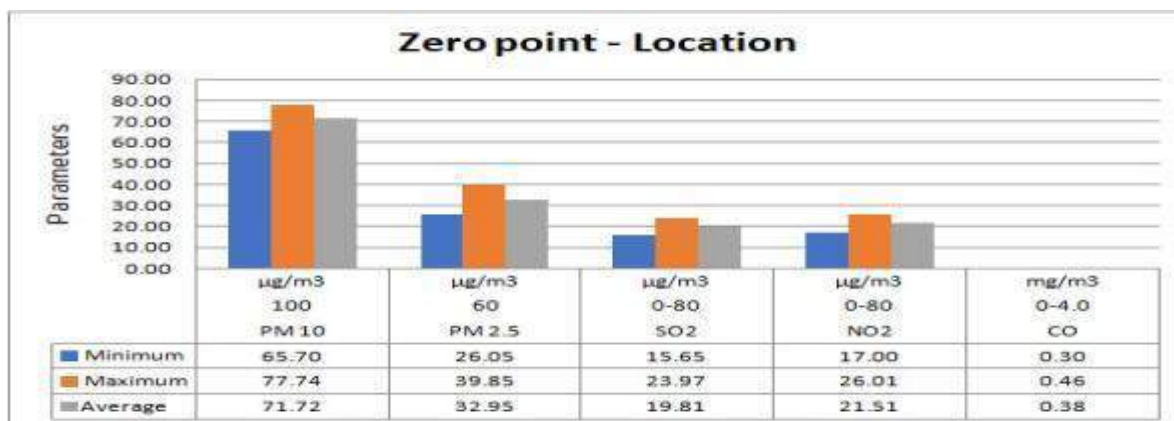
#### DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS

Station code	Location	Direction w.r.t. Project site
A1	At Zero Point	W
A2	At Thamminapatnam Village	S
A3	At CVR Building	WNW
A4	At Gopalpuram Village	NW
A5	At Chalivendram	WNW
A6	At Krishnapatnam	NNW
A7	At Light House	SW

### 6.4 Summary of Ambient Air Quality Monitoring values in the port surrounding area for the period from October - 2023 to March 2024 are as below:

#### Location - Zero Point

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	80	80	100	4
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>
Oct-23	65.50	25.90	15.80	17.00	11.40	0.29
Nov-23	68.30	27.50	16.70	18.10	12.60	0.33
Dec-23	62.80	24.60	14.90	16.30	11.00	0.27
Jan-24	66.30	26.50	15.80	17.40	12.20	0.31
Feb-24	64.10	25.00	14.60	15.90	10.80	0.26
Mar-24	68.60	27.40	15.70	16.80	11.60	0.30
Minimum	62.80	24.60	14.60	15.90	10.80	0.26
Maximum	68.60	27.50	16.70	18.10	12.60	0.33
Average	65.93	26.15	15.58	16.92	11.60	0.29



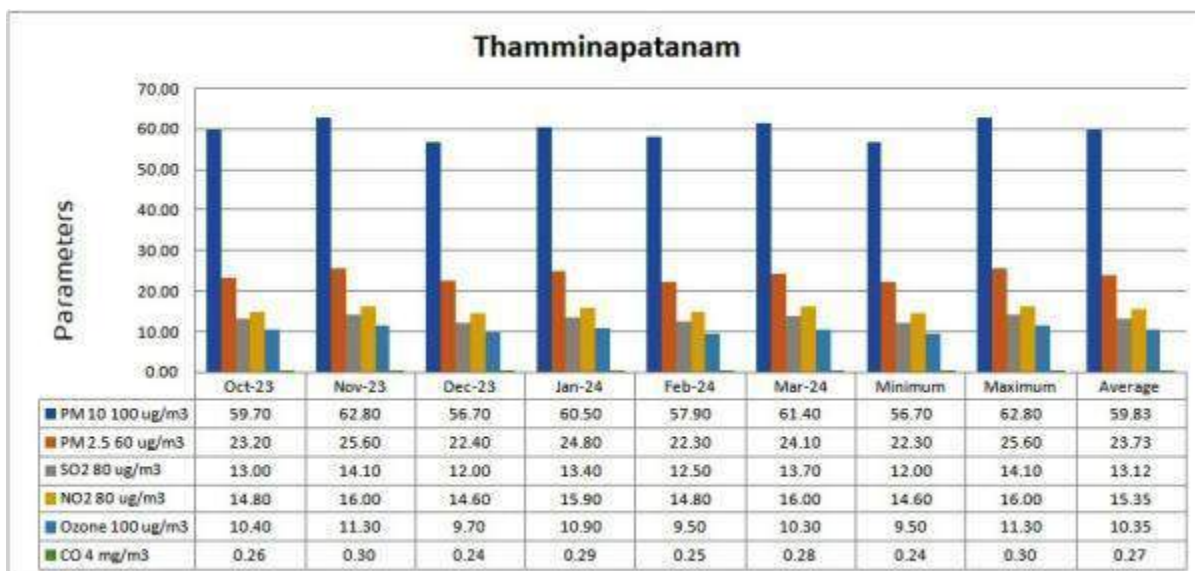


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### Location - Thamminapatnam Village

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	80	80	100	4
Unit	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	mg/m <sup>3</sup>
Oct-23	59.70	23.20	13.00	14.80	10.40	0.26
Nov-23	62.80	25.60	14.10	16.00	11.30	0.30
Dec-23	56.70	22.40	12.00	14.60	9.70	0.24
Jan-24	60.50	24.80	13.40	15.90	10.90	0.29
Feb-24	57.90	22.30	12.50	14.80	9.50	0.25
Mar-24	61.40	24.10	13.70	16.00	10.30	0.28
Minimum	56.70	22.30	12.00	14.60	9.50	0.24
Maximum	62.80	25.60	14.10	16.00	11.30	0.30
Average	59.83	23.73	13.12	15.35	10.35	0.27



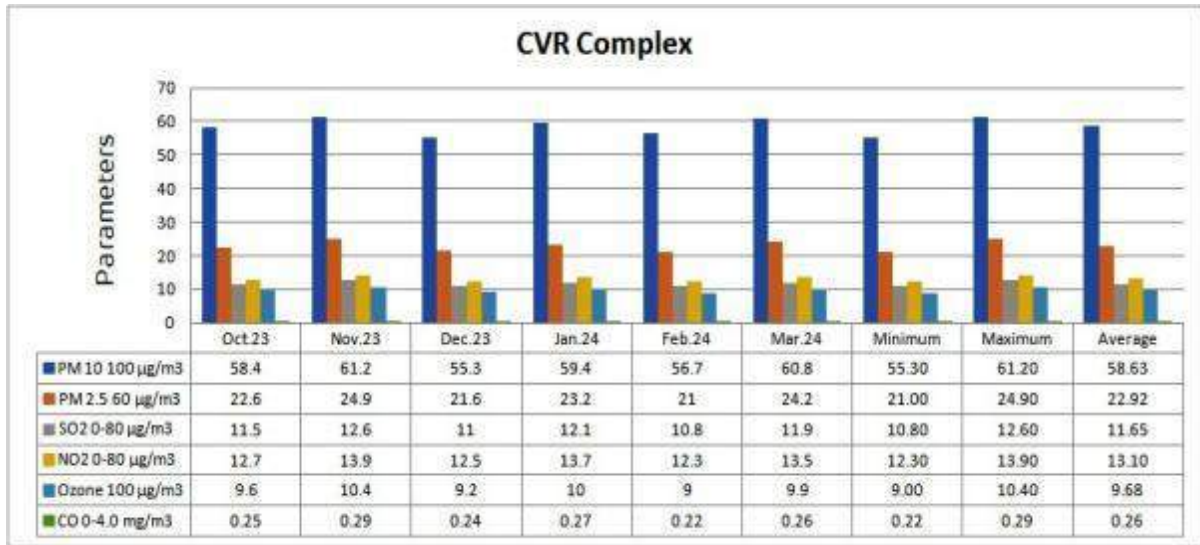
### Location - 3 - CVR Building

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	ug/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	58.4	22.6	11.5	12.7	9.6	0.25
Nov.23	61.2	24.9	12.6	13.9	10.4	0.29
Dec.23	55.3	21.6	11	12.5	9.2	0.24
Jan.24	59.4	23.2	12.1	13.7	10	0.27
Feb.24	56.7	21	10.8	12.3	9	0.22
Mar.24	60.8	24.2	11.9	13.5	9.9	0.26
Minimum	55.30	21.00	10.80	12.30	9.00	0.22
Maximum	61.20	24.90	12.60	13.90	10.40	0.29
Average	58.63	22.92	11.65	13.10	9.68	0.26



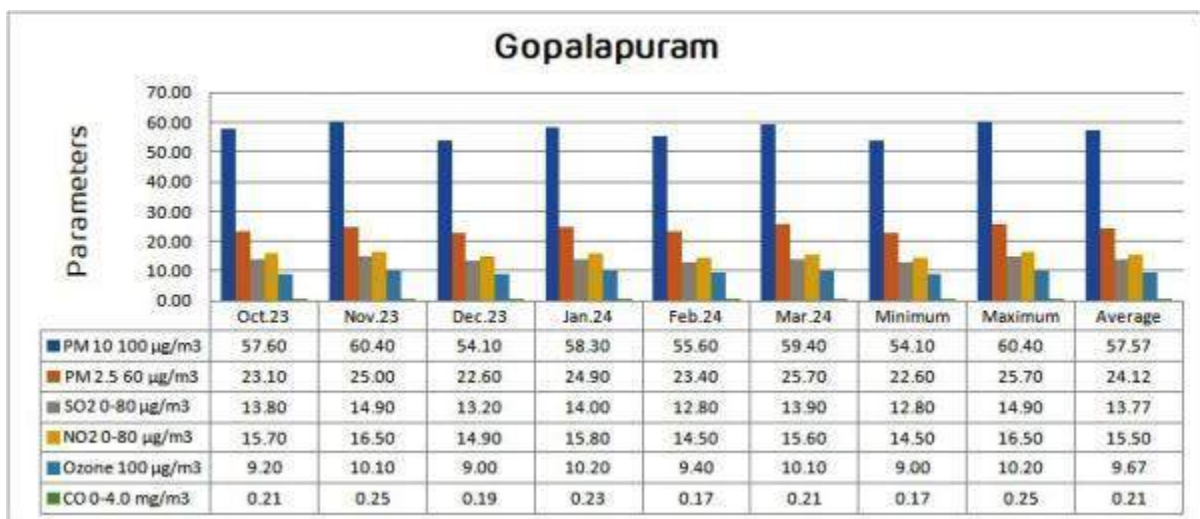


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



#### Location - 4 - Gopalpuram (V)

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	57.60	23.10	13.80	15.70	9.20	0.21
Nov.23	60.40	25.00	14.90	16.50	10.10	0.25
Dec.23	54.10	22.60	13.20	14.90	9.00	0.19
Jan.24	58.30	24.90	14.00	15.80	10.20	0.23
Feb.24	55.60	23.40	12.80	14.50	9.40	0.17
Mar.24	59.40	25.70	13.90	15.60	10.10	0.21
Minimum	54.10	22.60	12.80	14.50	9.00	0.17
Maximum	60.40	25.70	14.90	16.50	10.20	0.25
Average	57.57	24.12	13.77	15.50	9.67	0.21



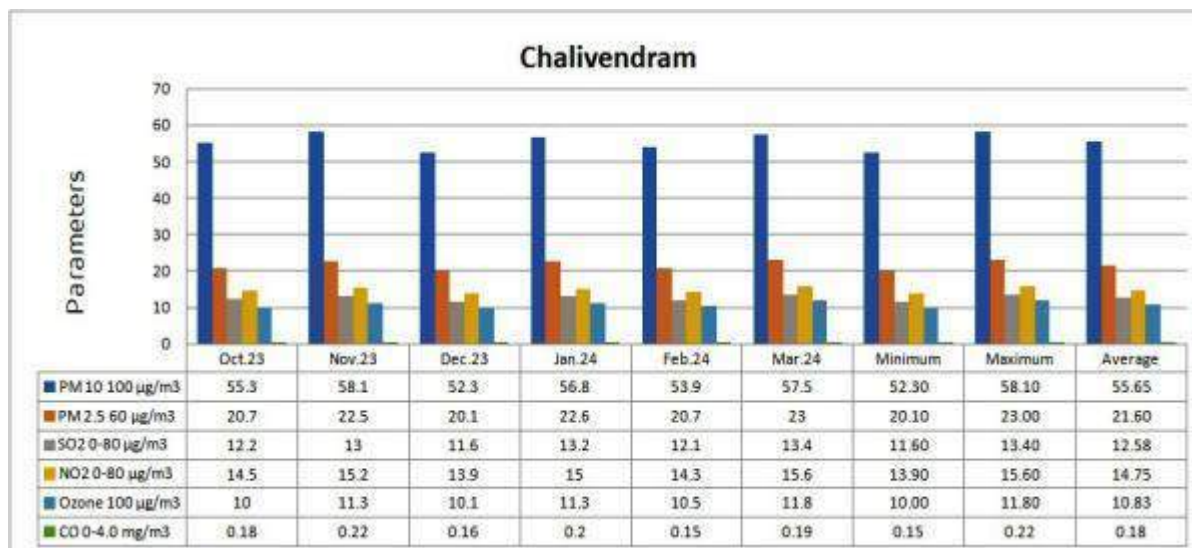


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### Location - 5 - Chalivendram

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	55.3	20.7	12.2	14.5	10	0.18
Nov.23	58.1	22.5	13	15.2	11.3	0.22
Dec.23	52.3	20.1	11.6	13.9	10.1	0.16
Jan.24	56.8	22.6	13.2	15	11.3	0.2
Feb.24	53.9	20.7	12.1	14.3	10.5	0.15
Mar.24	57.5	23	13.4	15.6	11.8	0.19
Minimum	52.30	20.10	11.60	13.90	10.00	0.15
Maximum	58.10	23.00	13.40	15.60	11.80	0.22
Average	55.65	21.60	12.58	14.75	10.83	0.18

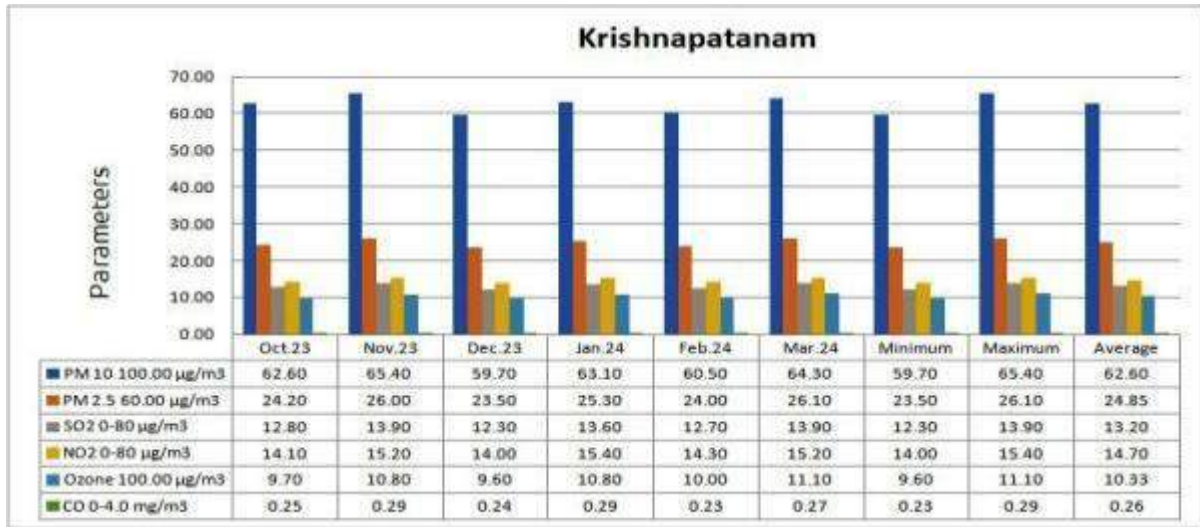


### Location - Krishnapatnam

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100.00	60.00	0-80	0-80	100.00	0-4.0
Unit	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	µg/m <sup>3</sup>	mg/m <sup>3</sup>
Oct.23	62.60	24.20	12.80	14.10	9.70	0.25
Nov.23	65.40	26.00	13.90	15.20	10.80	0.29
Dec.23	59.70	23.50	12.30	14.00	9.60	0.24
Jan.24	63.10	25.30	13.60	15.40	10.80	0.29
Feb.24	60.50	24.00	12.70	14.30	10.00	0.23
Mar.24	64.30	26.10	13.90	15.20	11.10	0.27
Minimum	59.70	23.50	12.30	14.00	9.60	0.23
Maximum	65.40	26.10	13.90	15.40	11.10	0.29
Average	62.60	24.85	13.20	14.70	10.33	0.26

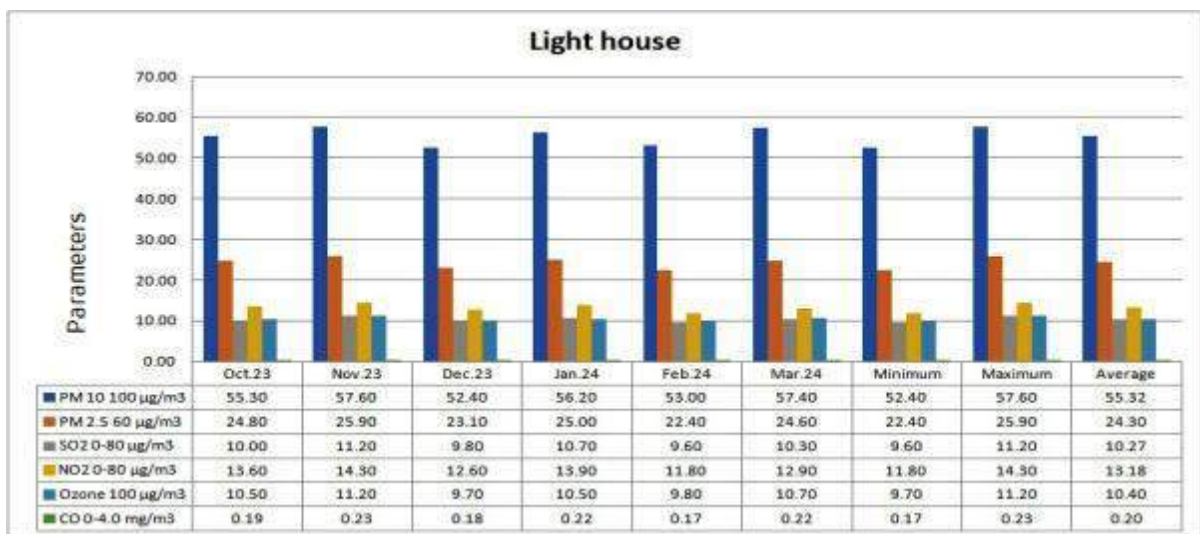


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**Location - Light House (Krishnapatnam)**

Parameter	PM 10	PM 2.5	SO2	NO2	Ozone	CO
Standard	100	60	0-80	0-80	100	0-4.0
Unit	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3
Oct.23	55.30	24.80	10.00	13.60	10.50	0.19
Nov.23	57.60	25.90	11.20	14.30	11.20	0.23
Dec.23	52.40	23.10	9.80	12.60	9.70	0.18
Jan.24	56.20	25.00	10.70	13.90	10.50	0.22
Feb.24	53.00	22.40	9.60	11.80	9.80	0.17
Mar.24	57.40	24.60	10.30	12.90	10.70	0.22
Minimum	52.40	22.40	9.60	11.80	9.70	0.17
Maximum	57.60	25.90	11.20	14.30	11.20	0.23
Average	55.32	24.30	10.27	13.18	10.40	0.20





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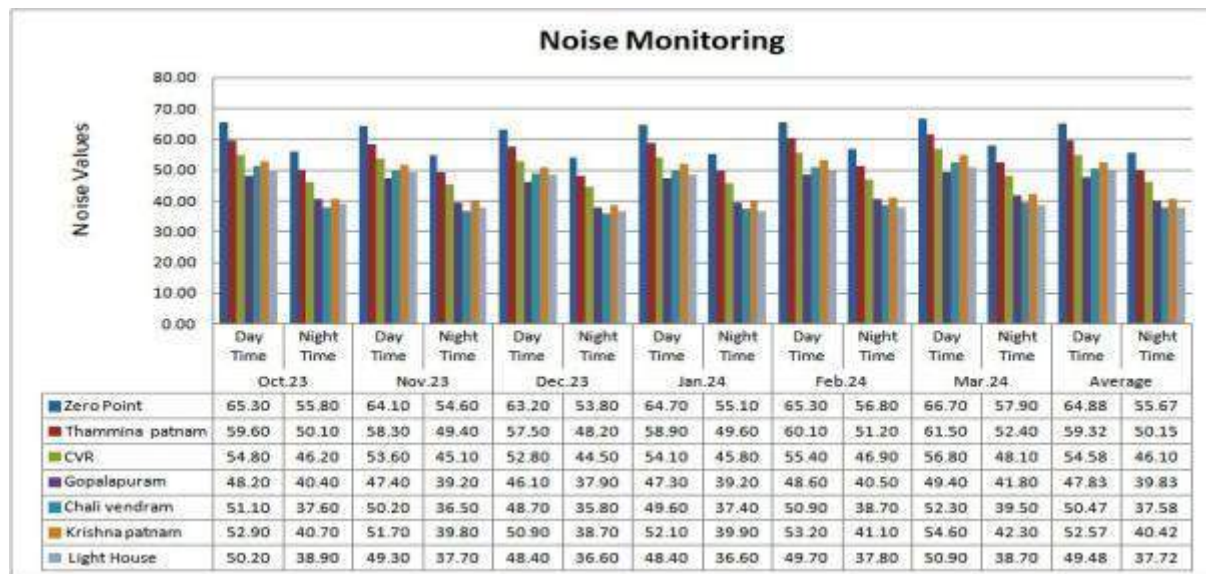
## 6.5 Noise Monitoring

Noise monitoring is being carried out monthly basis at the following locations

S. No	Monitoring Locations	DIRECTION w.r.t PROJECT SITE	CPCB Standards	
			Day Time	Night Time
8.	Zero Point	W	75	70
9.	Thamminapatnam	S	75	70
10.	CVR Building	WNW	75	70
11.	Gopalapuram	NW	55	40
12.	Chalivendram	WNW	55	45
13.	Krishnapatnam	NNW	55	45
14.	Light House near Krishnapatnam (V)	SW	55	45

## 6.6 Summary of Noise Monitoring values in the port surrounding area for the period from October - 2023 to March 2024 are as below:

Location	Time	Zero Point	Thammina patnam	CVR	Gopala puram	Chali vendram	Krishna patnam	Light House
Oct.23	Day Time	65.30	59.60	54.80	48.20	51.10	52.90	50.20
	Night Time	55.80	50.10	46.20	40.40	37.60	40.70	38.90
Nov.23	Day Time	64.10	58.30	53.60	47.40	50.20	51.70	49.30
	Night Time	54.60	49.40	45.10	39.20	36.50	39.80	37.70
Dec.23	Day Time	63.20	57.50	52.80	46.10	48.70	50.90	48.40
	Night Time	53.80	48.20	44.50	37.90	35.80	38.70	36.60
Jan.24	Day Time	64.70	58.90	54.10	47.30	49.60	52.10	48.40
	Night Time	55.10	49.60	45.80	39.20	37.40	39.90	36.60
Feb.24	Day Time	65.30	60.10	55.40	48.60	50.90	53.20	49.70
	Night Time	56.80	51.20	46.90	40.50	38.70	41.10	37.80
Mar.24	Day Time	66.70	61.50	56.80	49.40	52.30	54.60	50.90
	Night Time	57.90	52.40	48.10	41.80	39.50	42.30	38.70



## 6.7 Measures to control of fugitive emissions & dust suppression:

- High pressure water sprinkling system provided at all transfer towers which forms a mist and suppress the emissions at source itself.
- Tarpaulin covering on the stake piles to the possible extent.
- Ensuring the stacks are continuously wetted with watersprinkling system consisting with 248-gun sprinklers which will sprinkle water in the form of mist up to a range of 50 M, which will suppress the dust at source itself.
- Provided closed godowns for storage of fertilizer & food grains cargo.
- 16 no's hydraulic sweeping machines are deployed for cleaning of roads, warehouses areas and container yards.





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- Operating 2 No. of heavy duty sweeping machines for cleaning of berths, back up areas and roads.
- Operating 3 atomizers as innovative technology in dust suppression system.
- Deploying DSS Tankers for dust suppression at internal roads, yards & all operational areas.
- Manual Cleaning of internal roads & other operational areas
- Time to time Cleaning & lifting of cargo spillages.
- Established 14 no. of truck tyre tarpaulin covering stations and ensuring all the outbound cargo trucks & rakes are covered with tarpaulin to avoid transit spillages.





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- Operating an automatic sensor-based Truck tyre washing facility and ensuring all the outgoing cargo carrying trucks tires passing through North Side port are properly cleaned before leaving the port premises
- Ensuring all the outbound cargo rakes are covered with tarpaulin and tightened with rope to avoid transit spillages.
- Developed block plantation around the stack yards.
- A wind barrier screen of 14 meters' height has been developed adjacent to the coal yard, supported with greenbelt is developed at 10-12 meters' height adjacent to the wind screen structure.



## 6.8 Sewage Water – Treatment & disposal

AKPL has been operating Sewage Treatment Plants (STP) of 540 KLD to treat the domestic sewage generating within the Port.

- 500 KLD STP (1 X 300 KLD & 1 X 200 KLD) at CVR Amenities Complex
- 40 KLD STP Admin. Building.
- AKPL has constructed and operating Sewage Treatment Plant of capacity of 300 KLD under Phase 1 & II which consisting of Bar Screen, Sewage collection Sump, fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc. for treatment of the domestic effluents.



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- In Phase –III, AKPL provided additional Sewage Treatment Plant of capacity of 240 KLD consisting of Sewage collection pit – 2 pumps of 1hp each, Aeration tank, Coagulation tank, Tube settler tank Sludge, Biotreat, Ozonation tank, Pressure sand filter, 14activated carbon filter, UV sterilization and Chlorine dosing, Treated water tank for treatment of the domestic effluents. After treatment, the treated water utilized for Green belt development and dust suppression to cater to the sewage that would be generated from the Phase III domestic.
- As part of compliance monitoring the AKPL has been carrying out the Sampling and analysis of STP treated water through a NABL accredited Laboratory and submitting the Monitoring Reports to APPCB on monthly basis. As per the monthly monitoring details, the values are meeting the stipulated standards.
- The details of treated water generated during the period from October 2023 to October 2023 are as below. The water was utilized for on-land greenbelt & dust suppression purpose within the Port premises.

Month	Quantity KL		
	STP- 1	STP-2	Total
Oct.23	200	2.0	202
Nov.23	189	15.0	204
Dec.23	210	4.0	214
Jan.24	188	25	213
Feb.24	188	26	214
Mar.24	173	32	205
Average KLM	1148	104	1252







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### 6.9 The STP sampling values for the period from October 2023 to March 2023 are as below:

Parameter	Flow	Unit	Standard	Oct.23	Nov.23	Dec.23	Jan.24	Feb.24	Mar.24
pH	Inlet	0	Outlet	7.38	7.21	7.06	7.21	7.36	7.45
	Outlet	0	6.5 - 9.0	7.5	7.36	7.19	7.32	7.45	7.53
TSS	Inlet	mg/l	0	126	132	121	113	124	132
	Outlet	0	<100	45	51	40	35	42	46
BOD	Inlet	mg/l	0	123	128	116	110	120	128
	Outlet	0	30	26	28	24	21	25	28
Oil & Grease	Inlet	mg/l	0	4.6	5	4.2	3.6	4	4.5
	Outlet	0	10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fecal Coliform	Inlet	0	0	13x10 <sup>3</sup>	15x10 <sup>3</sup>	12x10 <sup>3</sup>	10x10 <sup>3</sup>	13x10 <sup>3</sup>	16x10 <sup>3</sup>
	Outlet	MPN/100ml	<1000	258	276	240	218	252	287

The values meet the CPCB/APPCB Prescribed standards. AKPL is submitting the reports on monthly basis to APPCB & on Half-yearly basis to MoEF & CC.

### 6.10 Ground Water Monitoring

There is no groundwater withdrawal within the Port Premises.

As per the statutory regulations & requirement, ground water quality monitoring is being carried out by AKPL on Six - monthly basis and reports being submitted to the APPCB and on Half-yearly basis to MoEF & CC.

The Ground water sampling locations are listed below.

Location Code	Location
GW1	South Side of the Port
GW2	Gopalapuram Village
GW3	Krishnapatnam Village

The values meet the CPCB/APPCB Prescribed standards. AKPL is submitting the reports on monthly basis to APPCB & on Half-yearly basis to MoEF & CC.

### 6.11 Soil Quality:

AKPL has been studying the soil profile of the region; sampling locations are selected to assess the existing soil characteristics in and around the port area representing various land use conditions.

Location Code	Name of the Location
S1	Storage area towards west Buckingham Canal
S2	Storage Area at Port

The Soil sampling is carried out once in six months at the above locations in and around the Port.

The values meet the CPCB/APPCB Prescribed standards. AKPL is submitting the reports on Half-yearly basis to MoEF & CC.



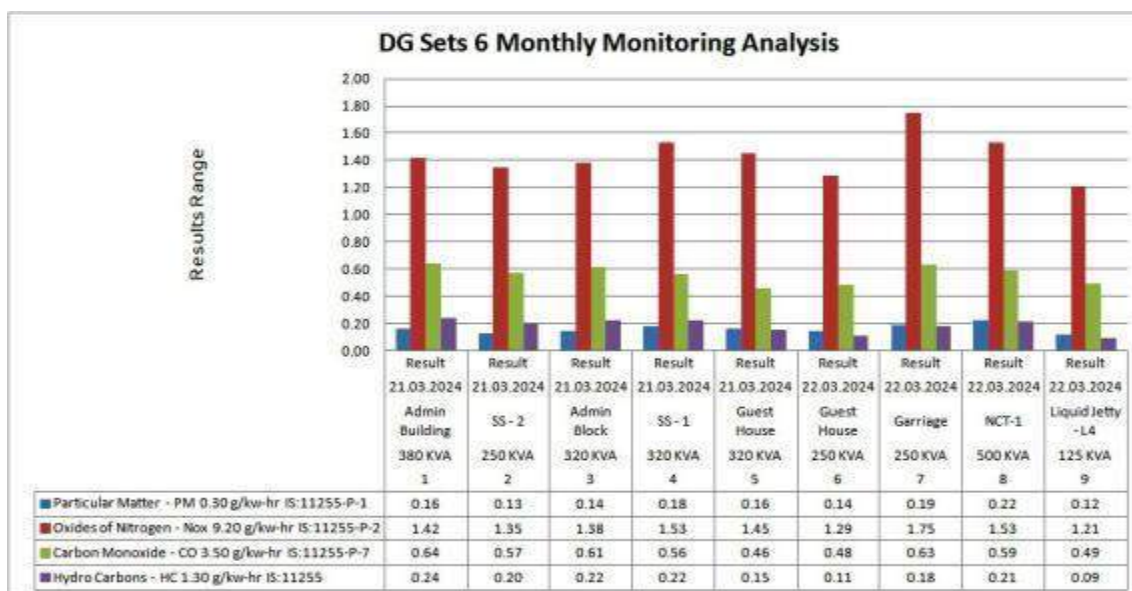
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## 6.12 DG Sets Monitoring

- The Port has been receiving Power Grid & Non-conventional source of energy through Power Grid for power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)
- The facility kept the DG Sets for uninterrupted port operations during emergency.
- All the DG sets are being monitored through a NABL Accredited 3<sup>rd</sup> Party on 6 monthly basis and submitting to APPCB, RO, Nellore.

Sl. No.	DG Capacity KVA	Location	Monitored on	Parameters	Particular Matter - PM	Oxides of Nitrogen - Nox	Carbon Monoxide - CO	Hydro Carbons - HC
				Standard	0.30	9.20	3.50	1.30
				Unit	g/kw-hr	g/kw-hr	g/kw-hr	g/kw-hr
Method	IS:11255-P-1	IS:11255-P-2	IS:11255-P-7	IS:11255				
1	380	Admin Building	21.03.2024	Result	0.16	1.42	0.64	0.24
2	250	SS - 2	21.03.2024	Result	0.13	1.35	0.57	0.20
3	320	Admin Block	21.03.2024	Result	0.14	1.38	0.61	0.22
4	320	SS - 1	21.03.2024	Result	0.18	1.53	0.56	0.22
5	320	Guest House	21.03.2024	Result	0.16	1.45	0.46	0.15
6	250	Guest House	22.03.2024	Result	0.14	1.29	0.48	0.11
7	250	Garriage	22.03.2024	Result	0.19	1.75	0.63	0.18
8	500	NCT-1	22.03.2024	Result	0.22	1.53	0.59	0.21
9	125	Liquid Jetty - L4	22.03.2024	Result	0.12	1.21	0.49	0.09





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### 6.13 Maintenance of Storm drains

AKPL is maintaining the storm water drains periodically and especially before monsoon season by removing the sludge accumulated to prevent possible flooding of the surrounding areas.



### 6.14 Maintenance of Rainwater Harvesting Pits & utilization of the rainwater for dust suppression:

Rainwater Harvesting pits of 13 nos have been maintained within the Port premises and the harvested water has been utilizing for dust suppression to the extent possible.



### **6.15 3<sup>rd</sup> Party Audit:**

Andhra Pradesh Maritime Board vide Agreement. No. 6/2022-23 dated: 02.08.2022 & Agreement No. 01/2023-24, dated 02.08.2023 appointed M/s Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., Hyderabad as the Independent Operational Auditor of Adani Krishnapatnam Port Limited.

The last audit was carried by the Auditors from 22<sup>nd</sup> & 23<sup>rd</sup> January 2024 for 3<sup>rd</sup> quarter from October 2023 to December 2023 and recorded that the Port is complying all the statutory conditions. Copy of the 3<sup>rd</sup> quarter Audit Report Attached as - 37

#### **Some of the notable remarks are as below:**

- The Cargo comprises mainly of Coal, Iron Ore and Oil. The bulk Liquids are handled through the ship's pumps. Pipelines have been provided for transportation of liquid cargo from berths to tank farms of users.
- Environmental monitoring of Air, Noise, Water, Marine Sediment, Effluents etc., are being observed periodically by AKPL

### **6.16 Michaung Cyclone during December 2023.**

Nursery & Greenbelt was badly affected due to the Michaung Cyclone during December 2023.

- All the saplings are completely inundated and drained away.



- AKPL has restored the nursery to normal. More new plants are being developed in the nursery.



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The Greenbelt at many places was also damaged badly and about 500 big plants were totally uprooted.



AKPL strived hard to remove the uprooted plants and started rebuilding the greenbelt with a campaign "Each Own One Plant" and made every employee to plant a sapling, fostering a green evolution within port.



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**6.17 Commitment towards Environment Sustainability.**

- AKPL is a city based port, surrounded by human habitation and many major industries viz., Thermal Power Plants, Cement Industries, Edible Oil Industries etc.,
- All the mitigation measures are being implemented & adopted to control the dust emissions enter into the environment & surrounding habitation.
- AKPL is continuously evaluating the environmental impacts during port operations and will promote long-term environmental sustainability by continuing all the mitigation measures to prevent the dust pollution.
- The funds allocated and utilized for Environmental Management for the last three years as below:

Item	Year 2021-22 (in Rs.Cr.)	Year 2022- 23 (in Rs.Cr.)	Year 2023 -24 (in Rs.Cr.)
Budget Allocated	9,33,80,083	9,02,55,160	9,64,83,786
Budget Utilized	6,83,10,659	6,16,76,369	9,48,68,251



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# Chapter - 7



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## TABLE OF CONTENTS

Sl. No.	Description	Page No.
7.0	Promotion of Environment & Sustainability awareness	154
7.1	Global Recycling Day – 18.03.2024	154
7.2	International day of Forests – 21 <sup>st</sup> March 2024	155
7.3	World Water Day – 22 <sup>nd</sup> March – 2024	156
7.4	World Meteorological Day – 23 <sup>rd</sup> March – 2024	156
7.5	Behavior based Safety & Occupational hygiene	157
7.6	Safety Leader Ship Walk Through Safety Mass Mela	158
7.7	Safety Mock Drill / Emergency Exercise & Tool Box Talk	158
7.8	Tool Box Talk & Safety Walk	159
7.9	35 <sup>th</sup> National Road Safety Campaign	160
7.10	Oil spill Contingency plan	160
7.11	AKPL On Site Emergency Action Plan	161
7.12	Employees harmony activities & celebrations	161
7.13	Celebrating National Integrity days	162
7.14	Town Hall Recognition	162
7.15	Implemented of Health & wellbeing Practices	163
7.16	CSR Activities	164





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## 7.0 **Promotion of Environment & Sustainability awareness**

- AKPL is conducting seminars/workshops/programmes/competitions & rallies on Environment & Sustainability among the employees & associates as a part of promoting awareness on the regular basis and on the below mentioned days:

Sl.	Name of the day	Date
1.	World Wetlands Day	02 February
2.	Global Recycling Day	18 <sup>th</sup> March
3.	World Forest Day	21 <sup>st</sup> March
4.	World Water Day	22 <sup>nd</sup> March
5.	World Atmosphere Day	10 April
6.	World Earth Day	22 April
7.	World Biodiversity Day	22 May
8.	World Environment Day	05 June
9.	World Ocean Day	08 June
10.	International Day for the Conservation of the Mangrove Ecosystem	26 July
11.	Ozone Day	16 September
12.	Zero Emissions Day	22 September
13.	World Nature Day	03 October
14.	World Wildlife Day	06 October
15.	National Pollution Prevention Day (Bhopal Gas leakage day)	02 December
16.	World Soil Day	05 December
17.	World Energy Conservation Day	14 December

### 7.1 **Global Recycling Day - 18.03.2024**

The theme of 2024 Global recycling day is “#RecyclingHeroes.”

AKPL has performed the day by campaign the significance of Global Recycling Day

- Promoted the Importance of Recycling
- Encouraged the employees to implement recycling & reuse at the house also to the extent possible.
- Discourage the utilization of single-use plastic covers or things.
- Awareness on proper/scientifically dispose of things
- Implement 3R's at Home i.e., Reduce, Reuse, Recycle



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**Awareness Campaign**



**Converted oil drums as waste collection bins**



**Plastic collection drive**

**7.2 International day of Forests – 21<sup>st</sup> March 2024**

The EHS team of AKPL conducted "Native tree planting campaign" supporting local Biodiversity on the account of International Forest Day on 21.03.2024 and planted various saplings of native fruit and flower bearing plants in AKPL premises.



On this occasion, AKPL organized a massive plantation programme and planted 2000 saplings involving all the departments.

### 7.3 World Water Day – 22<sup>nd</sup> March – 2024

The theme for 2024 is 'Water for prosperity and peace'

AKPL focused on the water conservation & Management, promoted awareness among the port employees including associates in a big way:

The sustainable water management generates a number of benefits to individuals and communities, including:

- Health,
- Food & energy security,
- Protection from natural disasters,
- Education & improved living standards and employment,
- Economic development and a variety of ecosystem services.
- It is through these benefits that water leads to prosperity, and by equitably sharing these benefits, peace is promoted.

Thus, water management needs to consider the new economic and social realities, including climate change and geopolitical changes and their implications on our water resources. Leveraging water for prosperity and peace therefore requires actions beyond the water domain.



### 7.4 World Meteorological Day – 23<sup>rd</sup> March – 2024

The theme for World Meteorological Day 2024 is "At the Frontline of Climate Action ". This theme highlights the urgent need for action against climate change and its potentially catastrophic consequences



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 7.5 Behavior based Safety & Occupational hygiene

AKPL Krishnapatnam imposed ban on purchase & utilization of plastic water bottles as well as single use plastic within the Port.

**adani**  
Ports and Logistics

24<sup>th</sup> January 2024

**Circular**

Our organization is committed for the Environmental, Social and Governance (ESG) Goals achievement.

We have taken many steps to work on all aspects of ESG. Recent past we committed to make our port Green Port, have planted more than 2 lacs trees during 2023-24.

Towards our ESG Goal, we are making our commitment to make our port Plastic Free Zone. Many initiatives were taken like (a) All food material packing has been converted from plastic to metal. (b) All Single Use plastic has been banned and drive was taken. (c) At workplace steel bottles were issued to individuals and at office we provided glass bottles. (d) For tea, everyone has been issued cups to carry and maintain.

However, there were areas where we have scope for improvement like elimination of usage of Packaged Drinking Water Plastic Bottles at certain places.

**We advise all to stop buying and usage of any packaged Drinking Water plastic bottles or any plastic product made for single use. Let us move towards eliminating the Single Use plastic completely.**

  
Ganesh Sharma  
Head HR & Admin

**Circulation**

1. All notice boards
2. E-news

Adani Krishnapatnam Port Ltd  
(Formerly Krishnapatnam Port Company Ltd)  
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## 7.6 Safety Leader Ship Walk Through Safety Mass Mela



## 7.7 Safety Mock Drill / Emergency Exercise & Tool Box Talk

- Organizing periodical mock drills to draw the attention of the employees and to create the awareness of safety issues.
- Organizing periodical fire & safety trainings as a part of preparedness to face the challenges.
- Conducting workshops/seminars by top management involving all the employees & stakeholders to create the awareness of safety issues and preventive measures.





## 7.8 Tool Box Talk & Safety Walk

Conducting Toolbox Talk & Safety awareness programs regularly involving all the field & operational employees & associates to ensure safety work environment by focusing on the following:

- To follow strictly the SOP of the respective works
- To wear PPE while at working location and to follow in regular life
- To avoid negligence while using implements by emphasizing its impact.
- To maintain speed limit within the Port area and outside too.
- To be cautious while working in bushy areas as there are chances of snake bites.
- To avoid using earphones during working in the site.
- To follow speed limits, avoid cell phone driving, drunk & drive etc., within the port premises & Impacts of negligence while driving
- To take precautions while working at heights
- To use wheel chokers & back horns to the trucks & vans
- To use safety cones while working on road & Traffic locations



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## 7.9 35<sup>th</sup> National Road Safety Campaign

On the occasion of 35<sup>th</sup> National Road Safety Campaign conducted various campaigns along with Online Quiz, Drawing competitions & Other Safety awareness sessions from Internal, External Trainers on various topics like Defensive Driving, Fatigue Management, RVDTS Etc.,



**Nukkad natak on road safety**

## 7.10 Oil spill Contingency plan:

As empowered by the Indian Ports Act 1908, Merchant shipping Act 1958 and various IMO conventions, the port authority may investigate any incident / incidences of oil pollution reported within the port limits and recover the cost of cleanup from the polluter. The responsibility of prevention and control, monitoring and surveillance and combating of marine pollution within the jurisdiction of the port lies with the Port.

The Oil spill contingency plan has been prepared & updated as per the stipulation of Ministry of Environment and Forest Clearance (MOEF) and Coast Guard Requirements. It is a strategic plan to combat oil pollution and quickly seek additional resources in a systematic manner. This plan is intended to dovetail into Regional Head Quarters plan for response level of Tier - 1 and above.

### 7.11 On Site Emergency Action Plan

The "On Site Emergency Action Plan" has been prepared with the objective of defining the functions and responsibilities of all concerned managerial, operational, supporting services and departmental personnel with respect to preparedness, detection and effective implementation of the on-site emergency action plan. The on-site plan deals with emergencies, which are contained within the port area whereas the off-site plan addresses the impact of disasters outside the port boundary.

#### The plan objectives are as follows:

1. Rapid response, control and containment of a hazardous situation.
2. Minimizing the risk and impact of the event/accident to life, property and the environment.
3. Effective rehabilitation of the affected persons/ population.

#### The key elements of this plan are;

1. Reliable and early detection of an emergency such as fire, explosion, toxic gas leakage, oil/chemical leakage/spillage, natural calamities like cyclones, earthquakes, and vessel related accidents such as collisions, grounding, hull failures, etc.
2. The command, co-ordination and response organization structure along with efficient trained personnel.
3. The availability of port owned appropriate resources for handling emergencies and sources of additional resources from mutual aid partners.
4. Appropriate emergency response actions at port, district and state level.
5. Effective notification and communication channels and facilities.
6. Effective training of the participating team and all other concerned members.

### 7.12 Employees harmony activities & celebrations



Sankranti Celebrations with Employees



Womens Day Celebrations





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### 7.13 Celebrating National Integrity days:

AKPL is celebrating the national integrity days 26<sup>th</sup> January & 15<sup>th</sup> August in a big way and performing activities within the Port involving all the employees including associates to create awareness on national integrity.

On the occasion 75<sup>th</sup> Republic Day on 26<sup>th</sup> January the CEO, AKPL unfurled the National Flag as a symbolic gesture to renew the commitment to the principles laid down in the Constitution, highlighting the shift from colonial rule to a sovereign, democratic republic.



Plantation Programme on the occasion of Republic Day

### 7.14 Town Hall Recognition

AKPL has been organizing Town Hall Recognition programmes and encouraging the employees & Associates on their individual performance achievements and safety concerns at work.





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### 7.15 Implemented of Health & wellbeing Practices

- Concerning the health condition, the management organizing periodical health checkups to the employees irrespective of cadre.
- Conducting awareness programmes/workshops/ seminars on diabetes, Cardiopulmonary Resuscitation, Yoga camps etc.
- Conducting Blood donation camps to create awareness on importance of saving lives.



**CPR Class Room training**



**CPR Awareness Classroom session**



**Eye Checking camp**



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**Blood donation camp**



**Health camp**

**7.16 CSR Activities:**

**Education – ULIC (Utthan Learning Improvement Classes)**

Free Education coaching is provided to slow learners identified in 32 Govt., Primary Schools in 28 villages of four mandals and bring them up to compete with bright students in their classes. Also provided joyful learning, yoga and coaching for getting seats in Govt., Navodaya / Residential / Gurukula / KGBV School to these fisherman community wards



**Education – Vidyarathna Scholarships**

College and Hostel Fees expenses supported to R & R Colony and Port peripheral villages fisherman community children to pursue 11<sup>th</sup> and 12<sup>th</sup> classes after passing 10<sup>th</sup> class studied in Adani Vidya Mandir, Krishnapatnam. This year one girl hailing from fisherman community family of R & R Colony is supported for hostel fees and books to pursue 1<sup>st</sup> Year MBBS Course





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### **Community Health – Adani Chikitsalayam**

Medical Health facilities are provided to the fisherman community families of R & R Colony, Muthukuru at Free of cost to promote good health environment



### **Community Health – Adani Medical Centre**

Medical checkup, treatment and medicines are provided to the work force as well as their residents of Port peripheral villages in order to protect and improve health status.



### **Community Health – Adani Dental Care**

Treatment is provided to the workforce and Port peripheral community families for their dental ailments at subsidized rates to promote dental health care.



### **Community Health – Adani Homoeopathy Clinic**

Awareness is brought among the Port workforce as well as all community families in the district about use of Homoeopathy medicine for their ailments and the response is very positive from the community families. Treatment and medicines are provided at free of cost.





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### **Community Health – Mobile Health Care Units**

Medical Treatment and medicines are provided to the community families residing in Port peripheral villages at their doorstep to promote good health status.



### **Community Health – RO Water Facility**

RO Water Plants (6 No's) are operating at Krishnapatnam, R & R Colony, Chalivendram, Narikellapalli, Ramnagar and Arcotpalem locations to provide Raw & Drinking Water to 5600 families every day, since TDS of underground water in these villages is above 2000 mg/ltr and not suitable for drinking and regular domestic utilization purpose.



### **Community Health – Village Sanitation Programme**

Awareness about good health habits by means of maintaining sanitation in Port peripheral villages including R & R Colony is brought among fisherman community families and to promote their health standards. Educating the community to maintain their village beautifully and with green environment.



### **Community Health – Total Health**

Village Total Health programme is invoked in Port peripheral villages in collaboration with Apollo Foundation Total Health Team to create awareness and safeguard their health. Arrjava Warriors will take care of the health status of the community by taking preventive measures and Yoga practicing.





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### **Women Empowerment**

To identify economically poor sections of Scheduled Tribe, Scheduled Caste and other Backward Class families and create awareness to the skilled women to generate self-employment and earning avenues to cope up with their family livelihood expenditure as well as linkage to Government Welfare Schemes.



### **Annapurna**

To bring Agriculture Reforms among poor marginal land hold farmers about soil erosion due to abundant use of chemical fertilizer, pesticides and nonuse of foundation seed, Bio-fertilizers etc to get high yield with low cost agri cultivation.



### **Rural Sports**

To elicit the skill in playing cricket, volleyball, kabaddi, carrom board, badminton etc., imbibed in fisherman community youth moving ideally in villages without any employment and identify worthy players and encourage them to enhance their skill in competitions and make them to prepare for participating in district as well as state level competitions to generate self-employment.



New program introduced in collaboration with BAIF. It is planned for Livestock Development Centre at Muthukuru. BAIF Authorities conducted survey in 8 villages and proposed to develop vermi compost pits, bio gas model units, women centric fodder development unit etc., to generate self-employment by women SHGs.





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## CHAPTER - 8



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## Table of Contents

Sl. No.	Description	Page No.
8.0	Monitoring of Ambient Air Quality & Noise Levels, Terrestrial & Marine Parameters sampling and analysis reporting	170
8.1	Monitoring/sampling Locations on Google Map with Latitude & Longitude coordinates	174
8.2	Wind direction at AKPL during monitoring period	179
8.3	Real-time values of AKPL CAAQM Stations within the Port premises	180
8.4	Ambient Air Quality Monitoring & values: Within the Port premises – parallel to the Port CAAQM Stations	183
8.5	Comparison of Ambient Air Quality with AKPL CAAQM Stations with monitoring values	185
8.6	Water Sampling – Analysis Reports	187
8.7	Terrestrial & Marine Monitoring	189





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## **8.0 Monitoring of Ambient Air Quality & Noise Levels, Terrestrial & Marine Parameters sampling and analysis reporting**

As per the requirement for preparation & submission of EC, CTE & CTO Half-yearly compliance report to the statutory authorities/departments the Monitoring & Sampling was conducted as per the Scope of the Study. The scope of the study and reports are as below:

### **One time monitoring sampling & analysis of the following Air, Water, Terrestrial & Marine, Sewage parameters within & outside the port premises**

#### **I. Ambient Air Quality Monitoring – Total 7 locations.**

##### **a. AKPL established and operating 3 No. of CAAQM Stations and connected to APPCB Website**

1. CAAQMS station 1 – at Amenities Complex
2. CAAQMS station 2 – at Tamminapatnam Village (South Port)
3. CAAQMS station 3 - at Krishnapatnam Village

##### **b. In addition to the above Port own CAAQM Stations, one-time sampling monitoring to be carried at the following locations:**

1. Gopalapuram Village
2. Chalivendram Village
3. Port Main Gate ("O" Point)
4. New Light House

##### **c. The parameters identified for monitoring as given in the NAAQS, 2009 notification are 12 in number and The values shall be compared with MoEF&CC notification, G.S.R. 826 (E), Revised National Ambient Air Quality Standards, dated 16.11.2009). Submit valid certificate copies for Calibration of each ambient air RDS & FDS.**

#### **II. Ground & Surface Water Quality Monitoring at the below Locations as per IS 10500-2012.**

1. Krishnapatnam village
2. South side of the port
3. Gopalapuram village



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**Physical Parameters – pH, Electrical Conductivity**

Chemical Parameters – TDS, Total Alkalinity, Chlorides, Sodium, Potassium, Fluoride, Nitrates, Cyanides, Total Hardness, Salinity, Sulphates & COD

**Heavy metals –** Mercury, Cadmium, Arsenic, Selenium, Iron, Lead, Chromium & Zinc

**Biological -** Total Coliforms & Fecal Coliforms

**Surface Water parameters –** pH, DO, COD, BOD, Oil & Grease & Nitrate

**III. Terrestrial & Marine Monitoring:**

**a. Noise Monitoring**

- 1 Krishnapatnam Village
- 2 Gopalapuram Village
- 3 Chalivendram Village
- 4 Port Main Gate ("O" Point)
- 5 Amenities Complex
- 6 New Light House
- 7 Tamminapatnam Village (South Port)
- 8 Any 2 of Port Operational areas (1 Point at North Port & 2<sup>nd</sup> point at South Port)

**Ambient Noise Levels dB (A)**

Hourly monitoring of noise levels (Leq) should be recorded for 24 hours by using noise level meter as designated for residential, commercial, industry areas and silence zones and as per the Noise Pollution (Regulation and Control) Rules, 2000 notified by the Ministry of Environment and Forests.

Area Code	Category of Area/Zone	Limits in dB (A) Leq	
		Day Time	Night Time
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence Zone	50	40



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**b. DG Set engine capacity up to 800 KW:**

**AKPL is operating the following DG sets for power backup**

1 x 380 KVA, 4x 320 KVA, 9 x 250 KVA, 4x 160 KVA, 5 x 125 KVA,  
1 x 500 KVA, 2 x 320 KVA, 4 x 82.5 KVA

**c. Soil Quality Monitoring at below 2 locations**

- a. Storage area towards west Buckingham canal
- b. Storage area at Port

**Physical Parameters:**

Texture (Soil Composition), Sand, Silt, Clay, Soil Type, pH, Bulk Density, Electrical Conductivity, Water holding capacity, Porosity

**Chemical Parameters:**

Sodium, Potassium, Phosphates, Sodium Absorption Ratio & Cation Exchange Capacity

**Heavy Metals** - Copper, Iron, Lead, Cadmium, Chromium, Manganese

**IV. Marine Water & creek water Quality Monitoring**

1. Port entrance
2. Turning circle
3. Coal berth
4. Reclamation area
5. Buckingham canal (creek)
6. Kandhalerru (creek)

**a. Physical Parameters:** pH, Temperature, Salinity, Density

**b. Chemical Parameters:**

Potassium, COD, BOD, Oil & Grease, DO, Nitrates, Nitrites, Ammonia, Phosphates, Chlorides, Sodium, Sulphates, Silica, Reactive Silica, Total Phosphorus & Total Nitrogen.

**c. Biological Parameters:**

Primary Productivity, Chlorophyll, Phytoplankton, Numerical Abundance, Diversity, Zooplankton, Diversity, Biomass, Coliforms, Fecal coliforms.



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**d. Heavy Metals:** Lead, Cadmium, Copper, Zinc

**e. Marine Water Turbidity, TDS & TSS at the following 4 locations**

1. Port Entrance – Approach channel
2. Turning circle
3. Near to Coal berths
4. Reclamation Area (mutable)

**f. Marine Sediment Quality at the following 4 locations**

**Parameters:** Sediment composition, Silt + Clay Sand, Org matter, pH

- (1) Port Entrance – Approach channel, (2) Turning circle
- (3) Near to Coal berths, (4) Reclamation

**g. Chemical Parameters** viz., Nitrogen, Phosphorus, Potassium & Sodium

**h. Biological Parameters** viz., Benthic Communities, Macro Benthos, Epifauna numerical abundance & Infauna numerical abundance

**i. Heavy Metals** viz., Lead, Cadmium, Copper, Zinc

## **V. Sewage Treatment Plant (STP) Outlet Quality Monitoring**

AKPL is operating 2 No. of STPS of capacity 1 X 500 KLD & 1 X 40 KLD to treat the domestic sewage.

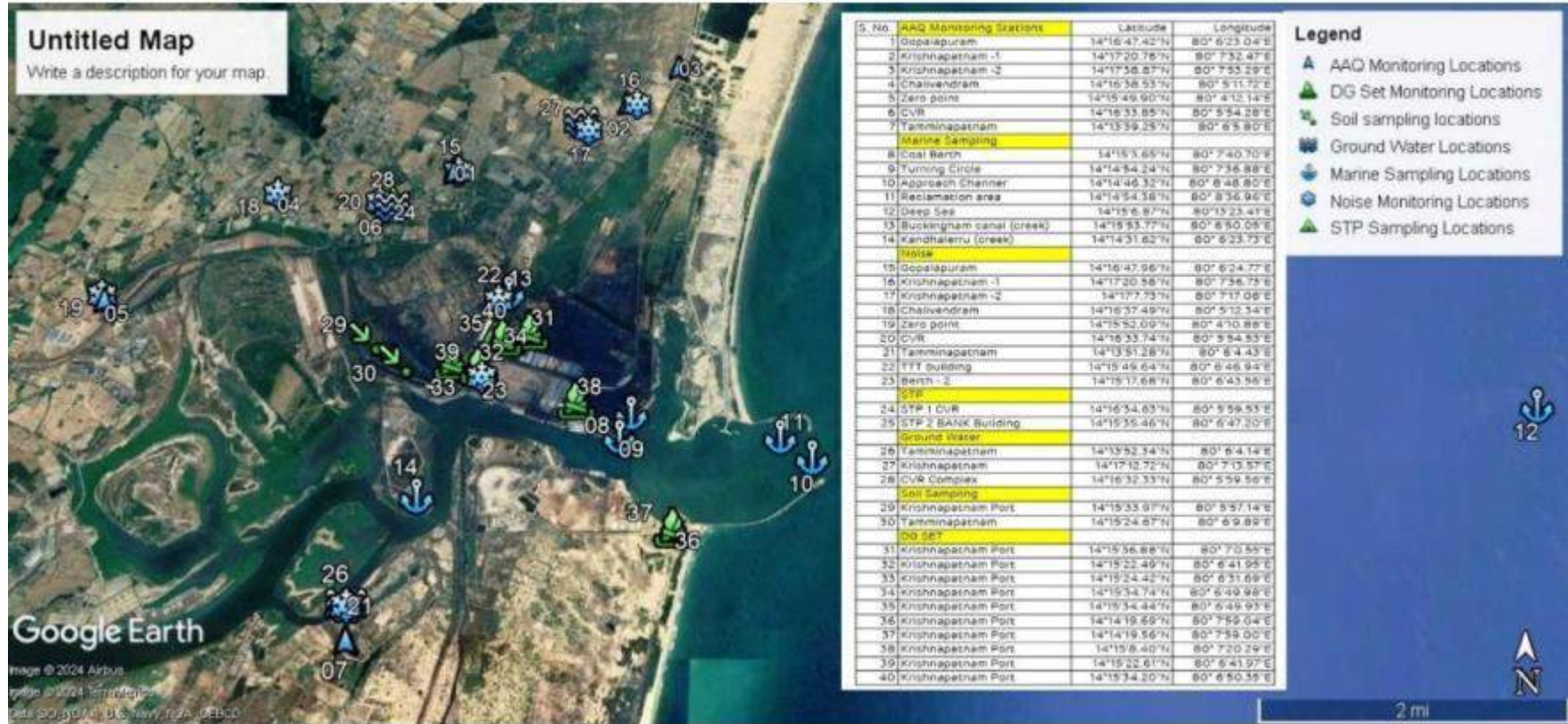
**Outlet Parameters** - pH, Total Solids, Total Suspended Solids, BOD, COD and Oil & Grease



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 8.1 Monitoring/sampling Locations on Google Map with Latitude & Longitude coordinates:





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



S.No.	AAQ Monitoring Stations	Latitude	Longitude	Date	Photo
1	Gopalapuram	14°16'47.42"N	80° 6'23.04"E	28.03.2024	
2	Chalivendram	14°16'38.53"N	80° 5'11.72"E	28.03.2024	
3	Zero point	14°15'49.90"N	80° 4'12.14"E	28.03.2024	
4	Light House	14°17'38.87"N	80° 7'53.29"E	28.03.2024	
5	CVR	14°16'33.85"N	80° 5'54.28"E	29.03.2024	
6	Tamminapatnam	14°13'39.25"N	80° 6'5.80"E	29.03.2024	



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7	Krishnapatnam -1	14°17'20.76"N	80° 7'32.47"E	29.03.2024	
Marine Sampling					
8	Coal Berth	14°15'3.65"N	80° 7'40.70"E	29.03.2024	
9	Turning Circle	14°14'54.24"N	80° 7'36.88"E	29.03.2024	
10	Approach Channer	14°14'46.32"N	80° 8'48.80"E	29.04.2024	
11	Reclamation area	14°14'54.38"N	80° 8'36.96"E	29.04.2024	
12	Deep Sea	14°15'6.87"N	80°13'23.41"E	29.03.2024	
13	Buckingham canal (creek)	14°15'53.77"N	80° 6'50.05"E	29.03.2024	



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)








14	Kandalerru (creek)	14°14'31.62"N	80° 6'23.73"E	29.03.2024	
	Noise				
15	Gopalapuram	14°16'47.96"N	80° 6'24.77"E	29.03.2024	
16	Krishnapatnam	14°17'20.58"N	80° 7'36.73"E	29.03.2024	
17	Gopalapuram	14°17'7.73"N	80° 7'17.08"E	29.03.2024	
18	Chalivendram	14°16'37.49"N	80° 5'12.34"E	29.03.2024	
19	Zero point	14°15'52.09"N	80° 4'10.88"E	29.03.2024	
20	CVR	14°16'33.74"N	80° 5'54.53"E	29.03.2024	





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



21	Tamminapatnam	14°13'51.28"N	80° 6'4.43"E		
22	TTT building	14°15'49.64"N	80° 6'46.94"E	29.03.2024	
23	Berth - 2	14°15'17.68"N	80° 6'43.56"E	29.03.2024	
	STP				
24	CVR – 500 KLD STP	14°16'34.63"N	80° 5'59.53"E	28.03.2024	
25	Bank Building – 40 KLD STP	14°15'35.46"N	80° 6'47.20"E	28.03.2024	
	Ground Water				
26	Tamminapatnam	14°13'52.34"N	80° 6'4.14"E		
27	Krishnapatnam	14°17'12.72"N	80° 7'13.57"E		
28	CVR Complex	14°16'32.33"N	80° 5'59.56"E		
	Soil Sampling				
29	Krishnapatnam Port	14°15'33.97"N	80° 5'57.14"E		
30	Tamminapatnam	14°15'24.67"N	80° 6'9.89"E		
	DG SET				
31	Krishnapatnam Port	14°15'36.88"N	80° 7'0.55"E		
32	Krishnapatnam Port	14°15'22.49"N	80° 6'41.95"E		
33	Krishnapatnam Port	14°15'24.42"N	80° 6'31.69"E		
34	Krishnapatnam Port	14°15'34.74"N	80° 6'49.98"E		
35	Krishnapatnam Port	14°15'34.44"N	80° 6'49.93"E		
36	Krishnapatnam Port	14°14'19.69"N	80° 7'59.04"E		
37	Krishnapatnam Port	14°14'19.56"N	80° 7'59.00"E		
38	Krishnapatnam Port	14°15'8.40"N	80° 7'20.29"E		
39	Krishnapatnam Port	14°15'22.61"N	80° 6'41.97"E		
40	Krishnapatnam Port	14°15'34.20"N	80° 6'50.35"E		

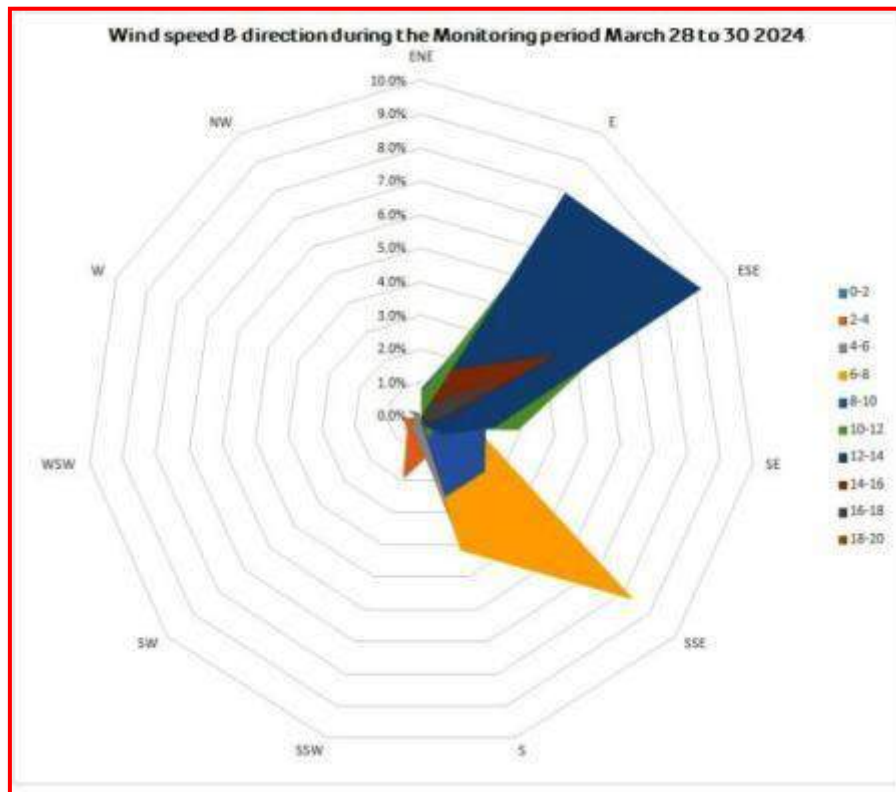


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 8.2 Wind direction at AKPL during monitoring period

As per the diagram, the predominant wind direction during 28<sup>th</sup> March 2024 to 30<sup>th</sup> March 2024 was mainly towards East, East South East & South - South East direction i.e., upwind direction.



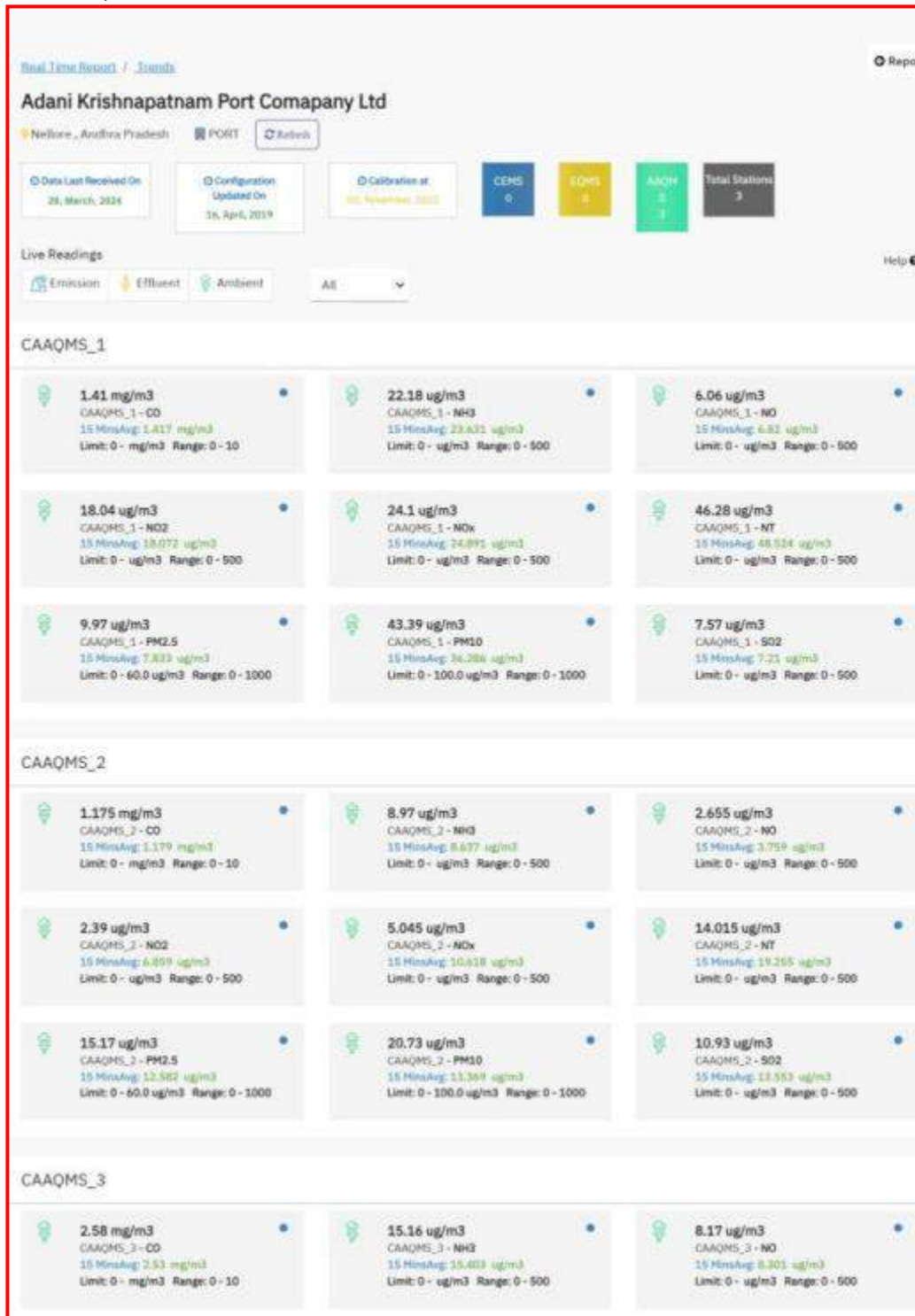


Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### 8.3 Real-time values of AKPL CAAQM Stations within the Port premises:

AKPL CAAQM Stations Real-time data -28.03.2024

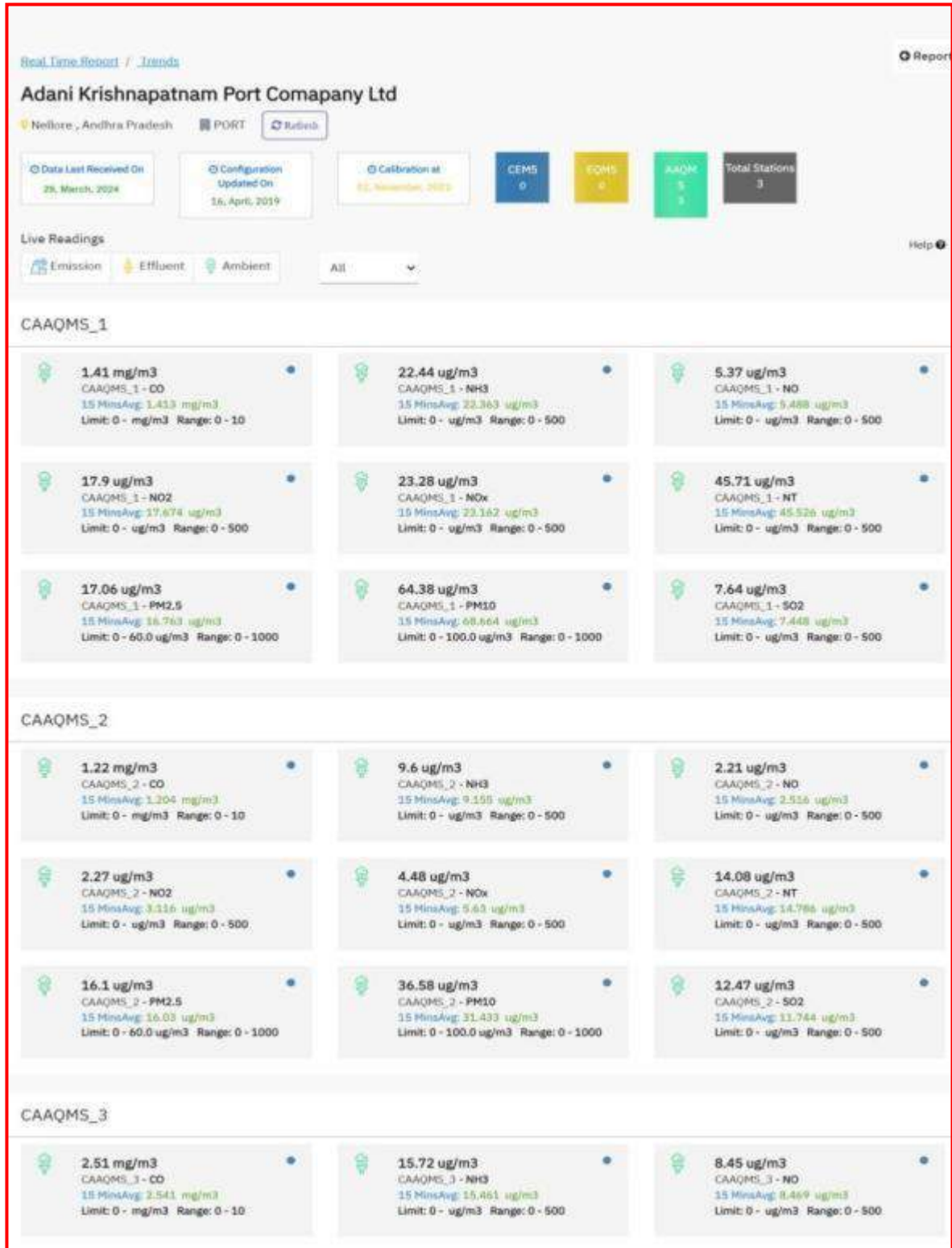




Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



AKPL CAAQM Stations Real-time data -29.03.2024

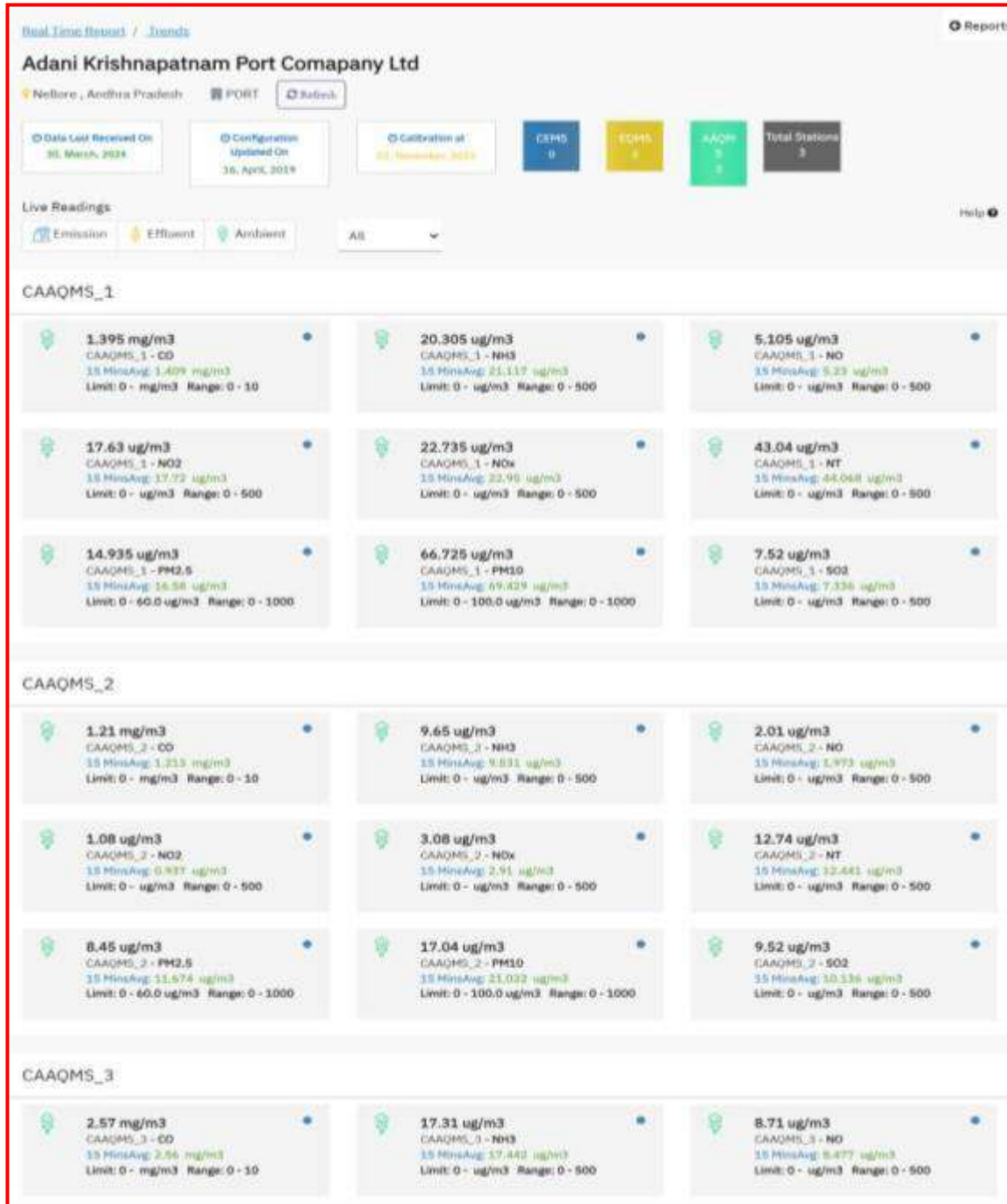




Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



AKPL CAAQM Stations Real-time data -30.03.2024





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



#### 8.4 Ambient Air Quality values - Within the Port premises - 3<sup>rd</sup> Party Monitoring & Onetime Monitoring - Comparison

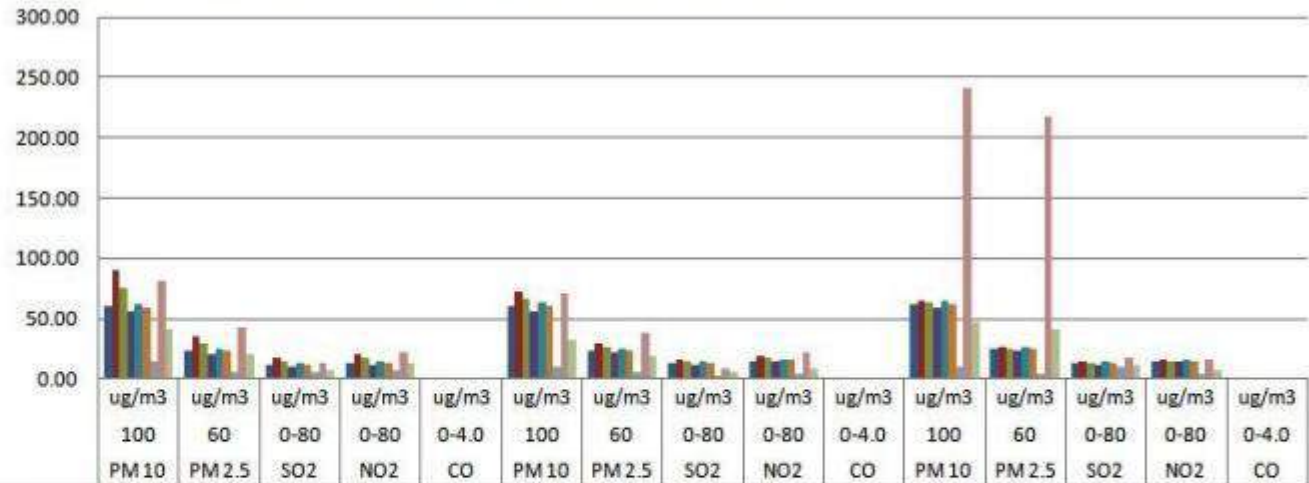
Parameter	Standard	Unit	EC Compliance One time Monitoring			3rd Party 6 Months average			AKPL Stations 6 Months average		
			CVR Building			Thamminapatnam			Krishnapatnam		
			Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average
PM 10	100	ug/m <sup>3</sup>	59.73	89.78	74.75	55.3	61.2	58.63	14.89	81.24	40.49
PM 2.5	60	ug/m <sup>3</sup>	23.93	35.87	29.90	21.00	24.90	22.92	6.06	43.31	21.24
SO <sub>2</sub>	0-80	ug/m <sup>3</sup>	12.15	18.20	15.18	10.80	12.60	11.65	6.34	13.11	7.44
NO <sub>2</sub>	0-80	ug/m <sup>3</sup>	13.50	20.25	16.88	12.30	13.90	13.10	6.51	22.59	12.58
CO	0-4.0	ug/m <sup>3</sup>	0.27	0.41	0.34	0.22	0.29	0.26	0.66	1.04	0.86
PM 10	100	ug/m <sup>3</sup>	59.75	72.95	66.35	56.70	62.80	59.83	9.91	70.70	33.04
PM 2.5	60	ug/m <sup>3</sup>	23.95	29.31	26.63	22.30	25.60	23.73	5.37	38.33	18.45
SO <sub>2</sub>	0-80	ug/m <sup>3</sup>	13.05	16.11	14.58	12.00	14.10	13.12	3.42	9.09	6.15
NO <sub>2</sub>	0-80	ug/m <sup>3</sup>	15.30	18.66	16.98	14.60	16.00	15.35	4.29	21.99	8.42
CO	0-4.0	ug/m <sup>3</sup>	0.27	0.34	0.30	0.24	0.30	0.27	0.52	1.41	0.80
PM 10	100	ug/m <sup>3</sup>	62.55	65.40	63.52	59.70	65.40	62.60	9.99	241.24	47.86
PM 2.5	60	ug/m <sup>3</sup>	24.80	26.10	25.25	23.50	26.10	24.85	4.76	217.06	41.18
SO <sub>2</sub>	0-80	ug/m <sup>3</sup>	13.10	13.90	13.40	12.30	13.90	13.20	9.70	17.97	11.28
NO <sub>2</sub>	0-80	ug/m <sup>3</sup>	14.70	15.40	14.93	14.00	15.40	14.70	4.37	15.82	7.87
CO	0-4.0	ug/m <sup>3</sup>	0.26	0.29	0.27	0.23	0.29	0.26	0.92	1.47	1.18



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### Ambient Air Quality Monitoring Comparison Chart



	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
	100	60	0-80	0-80	0-4.0	100	60	0-80	0-80	0-4.0	100	60	0-80	0-80
	PM 10	PM 2.5	SO2	NO2	CO	PM 10	PM 2.5	SO2	NO2	CO	PM 10	PM 2.5	SO2	NO2
■ EC Compliance One time Monitoring CVR Building Minimum	59.73	23.93	12.15	13.50	0.27	59.75	23.95	13.05	15.30	0.27	62.55	24.80	13.10	14.70
■ EC Compliance One time Monitoring CVR Building Maximum	89.78	35.87	18.20	20.25	0.41	72.95	29.31	16.11	18.66	0.34	65.40	26.10	13.90	15.40
■ EC Compliance One time Monitoring CVR Building Average	74.75	29.90	15.18	16.88	0.34	66.35	26.63	14.58	16.98	0.30	63.52	25.25	13.40	14.93
■ 3rd Party 6 Months average Thamminapatanam Minimum	55.3	21.00	10.80	12.30	0.22	56.70	22.30	12.00	14.60	0.24	59.70	23.50	12.30	14.00
■ 3rd Party 6 Months average Thamminapatanam Maximum	61.2	24.90	12.60	13.90	0.29	62.80	25.60	14.10	16.00	0.30	65.40	26.10	13.90	15.40
■ 3rd Party 6 Months average Thamminapatanam Average	58.63	22.92	11.65	13.10	0.26	59.83	23.73	13.12	15.35	0.27	62.60	24.85	13.20	14.70
■ AKPL Stations 6 Months average Krishnapatanam Minimum	14.89	6.06	6.34	6.51	0.66	9.91	5.37	3.42	4.29	0.52	9.99	4.76	9.70	4.37
■ AKPL Stations 6 Months average Krishnapatanam Maximum	81.24	43.31	13.11	22.59	1.04	70.70	38.33	9.09	21.99	1.41	241.24	217.06	17.97	15.82
■ AKPL Stations 6 Months average Krishnapatanam Average	40.49	21.24	7.44	12.58	0.86	33.04	18.45	6.15	8.42	0.80	47.86	41.18	11.28	7.87



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



### 8.5 Ambient Air Quality values - Surrounding locations – 3<sup>rd</sup> Party Monitoring & Onetime Monitoring – Comparison

Monitoring		3rd Party 6 Monthly averages					Onetime sampling averages				
Parameter		PM 10	PM 2.5	SO2	NO2	CO	PM 10	PM 2.5	SO2	NO2	CO
Standard		100	60	80	80	4	100	60	80	80	4
Unit		ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
Zero Point	Minimum	62.8	24.6	14.6	15.9	0.26	65.7	26.05	15.65	17	0.3
	Maximum	68.6	27.5	16.7	18.1	0.33	77.74	39.85	23.97	26.01	0.46
	Average	65.93	26.15	15.58	16.92	0.29	71.72	32.95	19.81	21.51	0.38
Gopalapuram	Minimum	54.1	22.6	12.8	14.5	0.17	57.25	24.15	13.85	15.5	0.21
	Maximum	60.4	25.7	14.9	16.5	0.25	87.61	36.98	21.26	23.75	0.34
	Average	57.57	24.12	13.77	15.5	0.21	67.48	28.42	16.29	18.25	0.25
Chalivendram	Minimum	52.3	20.1	11.6	13.9	0.15	55.2	21.55	12.5	14.75	0.19
	Maximum	58.1	23	13.4	15.6	0.22	84.48	33.08	19.24	22.55	0.29
	Average	55.65	21.6	12.58	14.75	0.18	65.11	25.41	14.78	17.35	0.22
Light House	Minimum	52.4	22.4	9.6	11.8	0.17	55	24.15	10.4	13.05	0.2
	Maximum	57.6	25.9	11.2	14.3	0.23	63.96	37.18	15.93	20.27	0.32
	Average	55.32	24.3	10.27	13.18	0.2	69.64	30.74	13.1	16.73	0.26

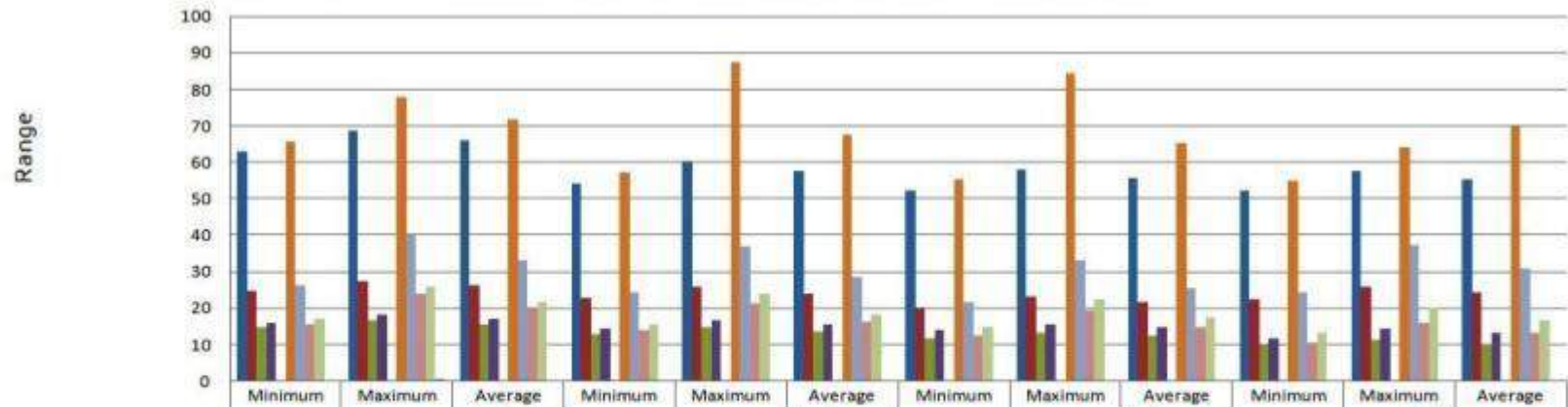




Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



### AAQ - Comparison - 3<sup>rd</sup> Party & Onetime Monitoring of Surrounding locations



	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average
	Zero Point			Gopalapuram			Chalivendram			Light House		
3rd Party 6 Monthly averages PM 10 100 ug/m3	62.8	68.6	65.93	54.1	60.4	57.57	52.3	58.1	55.65	52.4	57.6	55.32
3rd Party 6 Monthly averages PM 2.5 60 ug/m3	24.6	27.5	26.15	22.6	25.7	24.12	20.1	23	21.6	22.4	25.9	24.3
3rd Party 6 Monthly averages SO2 80 ug/m3	14.6	16.7	15.58	12.8	14.9	13.77	11.6	13.4	12.58	9.6	11.2	10.27
3rd Party 6 Monthly averages NO2 80 ug/m3	15.9	18.1	16.92	14.5	16.5	15.5	13.9	15.6	14.75	11.8	14.3	13.18
3rd Party 6 Monthly averages CO 4 ug/m3	0.26	0.33	0.29	0.17	0.25	0.21	0.15	0.22	0.18	0.17	0.23	0.2
Onetime sampling averages PM 10 100 ug/m3	65.7	77.74	71.72	57.25	87.61	67.48	55.2	84.48	65.11	55	63.96	69.64
Onetime sampling averages PM 2.5 60 ug/m3	26.05	39.85	32.95	24.15	36.98	28.42	21.55	33.08	25.41	24.15	37.18	30.74
Onetime sampling averages SO2 80 ug/m3	15.65	23.97	19.81	13.85	21.26	16.29	12.5	19.24	14.78	10.4	15.93	13.1
Onetime sampling averages NO2 80 ug/m3	17	26.01	21.51	15.5	23.75	18.25	14.75	22.55	17.35	13.05	20.27	16.73
Onetime sampling averages CO 4 ug/m3	0.3	0.46	0.38	0.21	0.34	0.25	0.19	0.29	0.22	0.2	0.32	0.26

As per the monitoring values, the recorded values of Ambient Air Quality are within and surrounding the Port premises are within the prescribed standards.



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 8.6 Water Sampling – Analysis Reports

Monitoring Date	March 29, 2024
Reporting Date	April 03, 2024
Type of Sample	Ground Water

S. No.	Parameter	Unit	Limit IS: 10500	Result		
				Gopala Puram (V)	Krishnapatnam (V)	South side of port
1.	Temperature	°C	-	32.6	32.4	32.8
2.	pH	H+ concen.	6.5-8.5	7.4	7.85	7.6
3.	Total Hardness	mg/l	300	880	720	848
4.	Calcium (as Ca)	mg/l	75	166	128	176
5.	Magnesium (as Mg)	mg/l	30	88	67	95
6.	Chlorides	mg/l	250	7497	999	11996
7.	Manganese	mg/l	0.1	0.002	0.04	0.004
8.	Copper	mg/l	0.05	0.020	0.016	0.016
9.	Total Alkalinity	mg/l	200	440	320	220
10.	Total Dissolved Solids	mg/l	500	4000	3600	4900
11.	Sulphate	mg/l	200	160	120	112
12.	Dissolved Oxygen	mg/l	-	3.4	3.2	3.4
13.	Nitrite (as NO <sub>2</sub> )	mg/l	0.02	0.02	0.012	0.02
14.	Iron	mg/l	0.3	0.26	0.2	0.16
15.	Fluoride	mg/l	1.0	0.2	0.6	0.4
16.	Oil & Grease	mg/l	0.01	BDL	BDL	BDL
17.	Chromium (as Cr <sup>+6</sup> )	mg/l	0.05	0.04	0.08	0.04
18.	Cyanide	mg/l	0.05	NIL	NIL	NIL
19.	Zinc	mg/l	5.0	0.2	0.2	0.2
20.	Phenolic Compound	mg/l	0.001	NIL	NIL	NIL
21.	Free Residual Chlorine	mg/l	0.2	0.12	0.08	0.08
22.	Total Coli forms Count	MPN Index/100ml	Absent	Absent	Absent	Absent
23.	E.coli	Cfu/ml	Absent	Absent	Absent	Absent



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Monitoring Date	March 29, 2024
Reporting Date	April 03, 2024
Type of Sample	Marine Water Sampling (Creek Surface Water)

S. No	Parameter	Unit	2.4	Result
1.	pH	H+ conc	8.12	8.11
2.	Temperature	°C	36.8	37.4
3.	Salinity	PSU	34	32
4.	Density	g/m <sup>3</sup>	1.2	2.20 .05 1
5.	Turbidity	NTU	48	26
6.	Total Suspended Solids	mg/l	56	41
7.	Total Dissolved Solids	mg/l	6233	4628
8.	Dissolved Oxygen	mg/l	3.4	3.6
9.	Biological Oxygen Demand	mg/l	1.2	1.4
10.	Oil & Grease	mg/l	0.06	0.05
11.	Sulphate	mg/l	988	998
12.	Phosphate	mg/l	0.34	0.36
13.	Nitrate	mg/l	15	12
14.	Nitrite	mg/l	0.026	0.024
15.	Chloride	mg/l	19436	20435
16.	Potassium	mg/l	582	572
17.	COD	mg/l	286	362
18.	Ammonia	mg/l	0.34	0.34
19.	Sodium	mg/l	1045	9434
20.	Silica	mg/l	18.6	24.4
21.	Reactive Silica	mg/l	2.2	2.6
22.	Total Phosphorus	mg/l	0.19	0.14
23.	Total Nitrogen	mg/l	0.20	0.26
24.	Lead	ppm	Nil	Nil
25.	Cadmium	ppm	Nil	Nil
26.	Copper	ppm	0.03	0.02
27.	Zinc	ppm	0.06	0.06
28.	Phytoplankton Count	No. /L	18000	12000
29.	Zooplankton Count	No./m <sup>3</sup>	1200	400
30.	Chlorophyll a	mg/m <sup>3</sup>	3.4	2.4
31.	Chlorophyll b	mg/m <sup>3</sup>	2.6	1.8
32.	Primary Productivity	gC/m <sup>2</sup>	3.2	2.0
33.	Biomass	mg/m <sup>2</sup>	2.6	1.6
34.	Coli forms	Cfu/100ml	19	28
35.	Fecal coliforms	Cfu/100ml	26	02



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 8.7 Terrestrial & Marine Monitoring

### A. Ambient Noise Levels dB (A)

Hourly monitoring of noise levels (Leq) should be recorded for 24 hours by using noise level meter.

Monitoring Date	March 29 ,2024
Reporting Date	April 03 , 2024
Type of Monitoring	Noise Levels

Location	Zero Point		CVR Complex		Thamminapatnam, Gopalapuram, Chalivendram, Krishnapatnam	
Location status	Port operational		Commercial area within the Port		Residential	
Time	Daytime	Nighttime	Daytime	Daytime	Day time	Night time
Standards	75	70	75	70	55	45

Location	One time Monitoring	
	Day Time	Night Time
Zero Point	68.26	59.04
Thamina patnam	62.69	53.53
CVR	57.96	49.48
Gopalapuram	51.21	43.21
Chali vendram	53.84	40.96
Krishna patnam	55.94	43.79
Light House	52.86	41.09

### B. DG Stacks Emissions Monitoring

- The Port has been receiving Power Grid & Non-conventional source of energy through Power Grid for power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)
- The facility kept the DG Sets for uninterrupted port operations during emergency.
- All the DG sets are being monitored through a NABL Accredited 3<sup>rd</sup> Party on 6 monthly bases and submitting to APPCB, RO, Nellore.
- Stack monitoring has to be performed to monitor emissions thrown out of the stack, chimneys DG Sets, in the air. It is also referred to as air quality monitoring. The Major pollutants are checked from stack monitoring are Particulate matter pm 2.5. The formula applied for the DG Stack height monitoring is:  $h = h + 0.2 \times OKVA$  H = Total height of stack in meter h = height



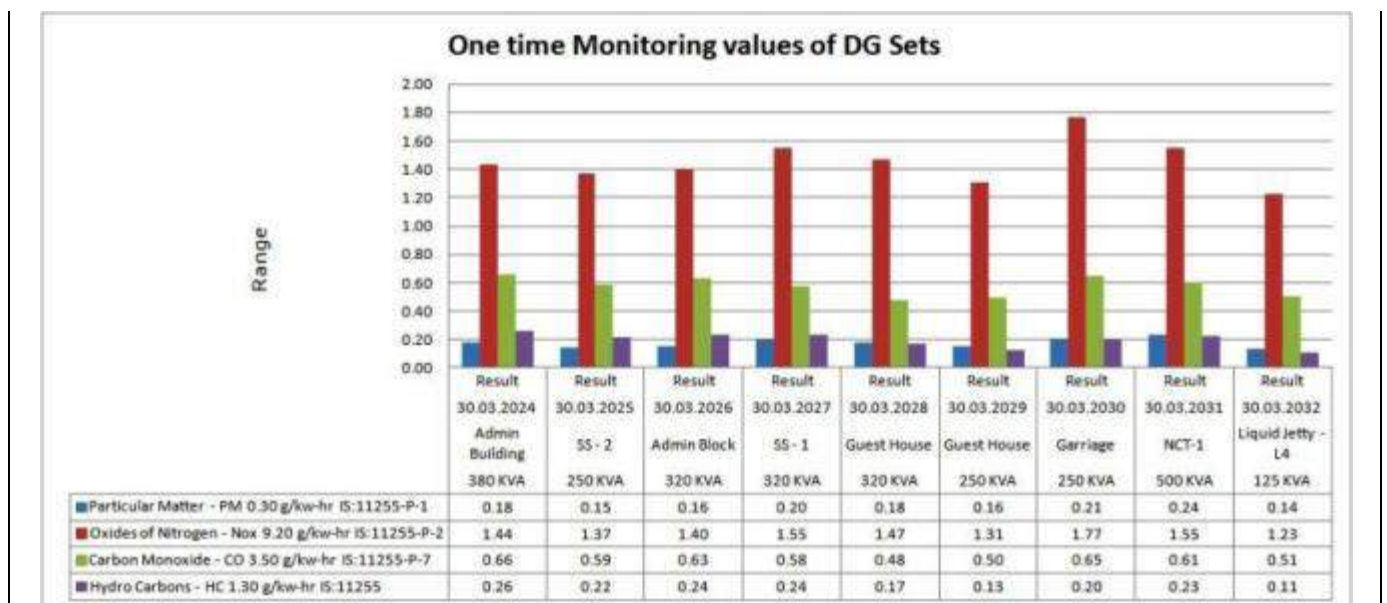
Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



of the building in meters where the generator set is installed KVA = Total generator capacity of the set in KVA

Monitoring Date	March 30 ,2024
Reporting Date	April 03 , 2024
Type of Monitoring	DG Set Stack Monitoring

Sl. No.	DG Capacity KVA	Location	Parameters	Particular Matter - PM	Oxides of Nitrogen - Nox	Carbon Monoxide - CO	Hydro Carbons - HC
			Standard	0.30	9.20	3.50	1.30
			Unit	g/kw-hr	g/kw-hr	g/kw-hr	g/kw-hr
			Method	IS:11255-P-1	IS:11255-P-2	IS:11255-P-7	IS:11255
1	380	Admin Building	Result	0.18	1.44	0.66	0.26
2	250	SS - 2	Result	0.15	1.37	0.59	0.22
3	320	Admin Block	Result	0.16	1.40	0.63	0.24
4	320	SS - 1	Result	0.20	1.55	0.58	0.24
5	320	Guest House	Result	0.18	1.47	0.48	0.17
6	250	Guest House	Result	0.16	1.31	0.50	0.13
7	250	Garriage	Result	0.21	1.77	0.65	0.20
8	500	NCT-1	Result	0.24	1.55	0.61	0.23
9	125	Liquid Jetty - L4	Result	0.14	1.23	0.51	0.11

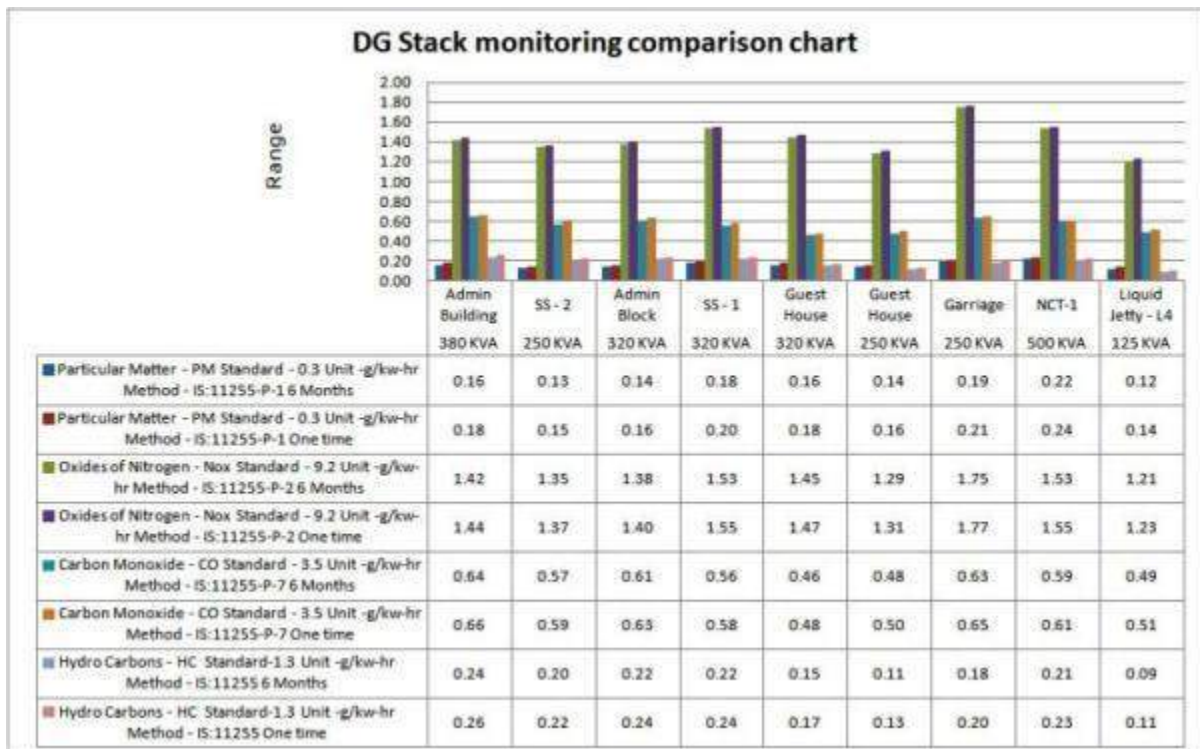




Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



DG Capacity KVA	Location	Particular Matter - PM		Oxides of Nitrogen - Nox		Carbon Monoxide - CO		Hydro Carbons - HC	
		Standard - 0.3		Standard - 9.2		Standard - 3.5		Standard-1.3	
		Unit -g/kw-hr		Unit -g/kw-hr		Unit -g/kw-hr		Unit -g/kw-hr	
		Method - IS: 11255-P-1		Method - IS: 11255-P-2		Method - IS:11255-P-7		Method - IS:11255	
		6 Months	One time	6 Months	One ime	6 Months	One time	6 Months	One time
380 KVA	Admin Building	0.16	0.18	1.42	1.44	0.64	0.66	0.24	0.26
250 KVA	SS - 2	0.13	0.15	1.35	1.37	0.57	0.59	0.20	0.22
320 KVA	Admin Block	0.14	0.16	1.38	1.40	0.61	0.63	0.22	0.24
320 KVA	SS - 1	0.18	0.20	1.53	1.55	0.56	0.58	0.22	0.24
320 KVA	Guest House	0.16	0.18	1.45	1.47	0.46	0.48	0.15	0.17
250 KVA	Guest House	0.14	0.16	1.29	1.31	0.48	0.50	0.11	0.13
250 KVA	Garriage	0.19	0.21	1.75	1.77	0.63	0.65	0.18	0.20
500 KVA	NCT-1	0.22	0.24	1.53	1.55	0.59	0.61	0.21	0.23
125 KVA	Liquid Jetty - L4	0.12	0.14	1.21	1.23	0.49	0.51	0.09	0.11





*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



**C. Sewage water – Within & outside the port premises as per PCB standards.**

**Location – 1 – at CVR Building**

**Location – 2 – at Admin. Building**

Monitoring Date	March 28 , 2024
Reporting Date	April 03 , 2024
Type of Sample	Sewage Treatment Plant

- 500 KLD STP (1 X 300 KLD & 1 X 200 KLD) at CVR Amenities Complex
- 40 KLD STP Admin. Building.
- AKPL has been operating Sewage Treatment Plant of capacity of 300 KLD under Phase 1 & II which consisting of Bar Screen, Sewage collection Sump, fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc. for treatment of the domestic effluents.
- As part of compliance monitoring the AKPL has been carrying out the Sampling and analysis of STP treated water through a NABL accredited Laboratory and submitting the Monitoring Reports to APPCB on monthly basis. As per the monthly monitoring details, the values are meeting the stipulated standards.
- One time samples were collected and the parameters were analyzed. As per the analysis reports the values are meeting the stipulated standards.

S. No.	Parameters	Method	Unit	Inlet Standard	Result 500 KLD		Result 40 KLD	
					Inlet	Outlet	Inlet	Outlet
1.	pH	IS: 11 of 3025	H+Con cen	5.0 – 9.0	6.16	6.54	6.28	6.64
2.	TSS	IS: 17 of 3025	mg/l	100	278	98	266	98
3.	TDS	IS: 16 of 3025	mg/l	2100	654	596	549	426
4.	Oil & Grease	IS: 39 of 3025	mg/l	10	3.8	3.4	4.6	2.4
5.	COD	IS: 1 of 2488	mg/l	250	321	146	26	149
6.	BOD	IS: 44 of 3025	mg/l	30	47.5	28	43.6	24
7.	Chloride	IS: 32 of 3025	mg/l	500	134	126	159	128



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



#### D. Marine monitoring

As per the Prescribed Water quality standards for coastal waters (SW - 4) as per the MoEF & CC Notification dated 22.12.1998, one-time marine monitoring was done at the below mentioned 6 locations

- i. Port entrance
- ii. Turning circle
- iii. Coal berth
- iv. Reclamation area
- v. Buckingham canal (creek)
- vi. Kandhalerru (creek)

Monitoring Date	March 29 , 2024
Reporting Date	April 03 , 2024
Type of Sample	Sediment (Marine)

S. No	Parameters	Unit	One time Sediment Sampling values					
			Port Entrance	Turning circle	Berth No.7	Reclamation area	Buckingham canal	Kandaleru (creek)
1.	Silt	%	19	20	14	19	18	19
2.	Clay	%	24	22	28	32	32	36
3.	Sand	%	54	56	56	46	46	44
4.	Organic	mg/kg	1.2	1.4	1.4	1.4	1.4	1.4
5.	pH	H+ conc	7.84	7.85	7.98	7.98	7.98	7.98
<b>Chemical</b>								
1.	Nitrogen	mg/kg	0.38	0.34	0.32	0.36	0.34	0.36
2.	Phosphorus	mg/kg	0.15	0.11	0.14	0.14	0.18	0.14
3.	Potassium	mg/kg	486	435	462	422	425	426
4.	Sodium	mg/kg	634	644	686	666	664	669
<b>Heavy metals</b>								
1.	Lead	ppm	Nil	Nil	Nil	Nil	Nil	Nil
2.	Cadmium	ppm	Nil	Nil	Nil	Nil	Nil	Nil
3.	Copper	ppm	0.02	0.01	0.01	0.02	0.01	0.01
4.	Zinc	ppm	0.016	0.014	0.018	0.014	0.016	0.021





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Monitoring Date	March 29, 2024
Reporting Date	April 03, 2024
Type of Sample	<b>Benthic Faunal Diversity</b>

S. No	Parameters	Port Entrance	Turning circle	Berth 7	Reclamation area	Buckingham canal	Kandaleru (creek)
		2..15 Result-Units (n/m <sup>2</sup> )					
1.	Macro Benthos	1705	1455	1904	1725	1820	1750
2.	Epifaunanumerical abundance	484	344	642	482	498	484
3.	Infaunanumerical abundance	522	422	480	524	524	532

S. No	Species/Group	Port Entrance	Turning circle	Berth No.7	Reclamation area	Buckingham canal (creek)	Kandaleru (creek)
		% Composition					
1.	Opheliidaesp	58	54	64	34	38	38
2.	Glyceridaesp	14	26	22	16	14	22
3.	Nereidaesp	46	42	14	14	16	22
4.	Aphroditidaesp	12	04	36	12	12	24
5.	Cirratulidaesp	51	01	02	24	24	32
6.	Capitella sp	61	31	34	16	18	14
7.	Amphipoda sp.	10	46	01	18	12	26
8.	Gastropoda	12	01	18	06	06	28
9.	Chaetognatha	04	12	12	15	14	32



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Monitoring Date	March 29 , 2024
Reporting Date	April 03 , 2024
Type of Sample	Marine Water

S. No	Parameter	Unit	Port Entrance	Turning circle	Berth No.7	Reclamation area	Buckingham canal creek)	Kandaleru (creek)
			One time monitoring/sampling values					
<b>Physical</b>								
1.	Temperature	°C	37.4	37.6	37.4	37.2	37.4	36.8
2.	pH	H+ conc	8.26	8.32	8.26	8.14	8.11	8.12
3.	Salinity	PSU	34	34	32.4	34	32	34
4.	Density	(g/m <sup>3</sup> )	1.2	1.2	1.2	1.06	1.05	1.2
5.	Turbidity	NTU	14	14	14	14	26	48
6.	TSS	mg/l	22	24	26	26	41	56
7.	TDS	mg/l	4568	4278	4826	5020	4628	6233
8.	DO	mg/l	4.4	4.4	3.6	4.4	3.6	3.4
<b>Chemical</b>								
9.	BOD	mg/l	1.4	1.2	1.3	1.4	1.4	1.2
10.	Oil & Grease	mg/l	0.03	0.04	0.02	0.02	0.05	0.06
11.	Sulphate	mg/l	1024	1028	1206	1022	998	988
12.	Phosphate	mg/l	0.34	0.34	0.36	0.34	0.36	0.34
13.	Nitrate	mg/l	12	12	14	18	12	15
14.	Nitrite	mg/l	0.026	0.026	0.022	0.026	0.024	0.026
15.	Chloride	mg/l	20642	20642	21245	22635	20435	19436
16.	Potassium	mg/l	598	598	568	582	572	582
17.	COD	mg/l	298	284	325	321	362	286
18.	Ammonia	mg/l	0.32	0.34	0.36	0.36	0.34	0.34
19.	Sodium	mg/l	1042	1043	1046	1146	9434	1045
20.	Silica	mg/l	24.2	24.2	20.2	22.8	24.4	18.6
21.	Reactive Silica	mg/l	2.8	2.4	2.2	2.6	2.6	2.2
22.	Total Phosphorus	mg/l	0.16	0.16	0.14	0.19	0.14	0.19
23.	Total Nitrogen	mg/l	0.24	0.24	0.18	0.24	0.26	0.2
<b>Heavy metals</b>								
24.	Lead	ppm	Nil	Nil	Nil	Nil	Nil	Nil
25.	Cadmium	ppm	Nil	Nil	Nil	Nil	Nil	Nil
26.	Copper	ppm	0.06	0.04	0.03	0.06	0.02	0.03
27.	Zinc	ppm	0.04	0.06	0.04	0.04	0.06	0.06
28.	Phytoplankton Count	No. /L	12000	16000	12000	16000	12000	18000
29.	Zooplankton Count	No./m <sup>3</sup>	600	1200	1200	800	400	1200
30.	Chlorophyll a	mg/m <sup>3</sup>	3.2	3.6	3.4	3.4	2.4	3.4
31.	Chlorophyll b	mg/m <sup>3</sup>	2.6	2.6	2.6	2.6	1.8	2.6
32.	Primary Productivity	gC/m <sup>2</sup>	3.2	3.4	3.2	3.4	2	3.2
33.	Biomass	mg/m <sup>2</sup>	2.6	2.2	2.8	2.6	1.6	2.6
34.	Coli forms	Cfu/100ml	6	8	4	6	28	19
35.	Fecal coliforms	Cfu/100ml	14	12	18	18	2	26



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



Monitoring Date	March 29 , 2024
Reporting Date	April 03 , 2024
Type of Sample	Marine Water (Phytoplankton & Zooplankton) Species count

S. No		Port Entrance	Turning circle	Berth No.7	Disposal area	Buckingham	Kandaleru Creek
	Species	Total Species count in 1L					
A.	Phytoplankton Species						
	<i>Prorocentrummicans</i>	32	45	58	34	34	34
	<i>Amphora lineolata</i>	14	22	26	12	14	26
	<i>Cymbella marina</i>	46	36	34	56	35	32
	<i>Bacteriastrumdelicatulum</i>	24	32	28	24	32	28
	<i>Thalassionemanitzschioides</i>	26	46	36	18	46	42
	<i>Chaetocerosdydymus</i>	18	15	12	12	28	16
	<i>Skeletonemacostatum</i>	12	28	41	26	34	32
	<i>Thalassiothrixlongissima</i>	9	22	16	9	5	28
	<i>Cymbella marina</i>	14	18	8	14	12	24
B.	Zooplankton Species						
	<i>Foraminifera</i>	56	24	44	36	48	52
	<i>Chaetognatha</i>	24	16	28	24	28	24
	<i>Amphipoda</i>	38	48	35	28	29	36
	<i>Cladocera</i>	22	14	28	12	28	21
	<i>Eggs of fish &amp; larvae</i>	1	26	12	1	8	1

All the values are meeting the Prescribed Water quality standards for coastal waters (SW – 4) as per the MoEF & CC Notification dated 22.12.1998. AKPL is submitting the reports on monthly basis to APPCB & on Half-yearly basis to MoEF & CC.



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



# CHAPTER - 9



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## Table of Contents

Sl. No.	Compliance Status	Page No.
9.0	Existing statutory approvals	199
9.1	Compliance on the conditions stipulated in EC & CRZ Clearance vide MoEF & EC Order No.10-22/2005-IA-III dated 26.07.2006. (For Phase – 1)	200
9.2	Compliance on the conditions stipulated in EC & CRZ Clearance vide (For Phase – 2) Order No.11-62/2009-IA-III dated 13.11.2009.	212
9.3	Compliance on the conditions stipulated in APCZMA – NOC vide letter no.202/CRZ/IND/2019-30 dated 21.05.2020	225
9.4	Compliance on the conditions stipulated in EC & CRZ Clearance (For Phase – 3) Vide Order No.10-08/2016-IA-III dated 11.01.2021.	232
9.5	Compliance on the conditions stipulated in APPCB CTE order vide No. 633/APPCB/CFE/RO-NLR/HO/2010/390 dated 25.02.2021 for phase III	253
9.6	Compliance on the conditions stipulated in Schedule – A, B & C of APPCB CTO & HWA Combined Order No. APPCB/VJA/NLR/11344/CFO/HO/2019 11/11/2022, valid up to 31.08.2027.	268



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



## 9.0 Existing statutory approvals:

- **MoEF** - EC & CRZ Clearance vide MoEF & EC Order No.10-22/2005-IA-III dated 26.07.2006. (For Phase – 1)
- **MoEF** - EC & CRZ Clearance vide (For Phase – 2) Order No.11-62/2009-IA-III dated 13.11.2009.
- **APCZMA** – NOC vide letter no.202/CRZ/IND/2019-30 dated 21.05.2020
- **MoEF & CC** EC & CRZ Clearance (For Phase – 3) Vide Order No.10-08/2016-IA-III dated 11.01.2021.
- **APPCB** - CTE order vide No. 633/APPCB/CFE/RO-NLR/HO/2010/390 dated 25.02.2021 for phase III
- **APPCB** - CTO & HWA Combined Order No. APPCB/ VJA/ NLR/ 11344/ CFO/HO/2019 11/11/2022, valid up to 31.08.2027.

The compliance report on the conditions stipulated in the above approvals/ Orders are furnished here forth



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



**9.1 Compliance on the conditions stipulated in EC & CRZ Clearance vide MoEF & EC Order No.10-22/2005-IA-III dated 26.07.2006. (For Phase - 1)**

S. No	Conditions	Compliance status
<b>(A) Specific Conditions</b>		
•	All the conditions stipulated by Andhra Pradesh State Pollution Control Board in their letter Order No. APPCB/VJA/NLR/633/ HO/ 2004/ 9/467, dated 25.05.2004 should be strictly implemented.	Complied. AKPL has been submitting Condition wise compliance reports to APPCB on monthly basis. <b>Copy attached as Annexure - IX.</b>
•	Detailed plan for protection of the 9 acres of the mangroves should be provided.	Complied.
•	The fisherman and salt pan workers should be rehabilitated as per the Rules of Government of Andhra Pradesh.	Complied. Resettlement and Rehabilitation (R&R) of fishing villages was carried out by Government of Andhra Pradesh (GoAP) as per government norms.
•	Adequate shore protection measures, including construction of revetments/rip-raps, should be taken up based on the scientific studies. The action plan for implementing the shore protection measures should be submitted to this Ministry within 6 months from the date of receipt of this letter.	Complied. <ul style="list-style-type: none"> <li>• Hydro dynamic studies were conducted by M/s. HR Wallingford, UK.</li> <li>• Shoreline monitoring &amp; marine biodiversity studies are being carried out regularly for shore protection.</li> <li>• M/s. Indian National Centre for Ocean Information Services (INCOIS), Hyderabad has been monitoring using satellite imagery</li> <li>• AS per the INCOIS Report for the period October 2008 to January 2010, the coastline is found to be stable.</li> <li>• Long-time Shoreline stability study was conducted by NIOT, Chennai in 2017-18, 2019.</li> <li>• As per the NIOT Report, the coastline is found to be stable and "cause negligible impacts on the environment".</li> </ul>



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<ul style="list-style-type: none"> <li>Green belt area should be developed along the project and budget earmarked.</li> </ul>		<p>Complied.</p> <ul style="list-style-type: none"> <li>Development of Greenbelt is a regular process in AKPL</li> <li>As on 31st March 2023, AKPL has successfully developed Developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue&amp; median plantations.</li> <li>Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
<ul style="list-style-type: none"> <li>For rail and road connectivity of the project, separate application should be submitted to this Ministry.</li> </ul>		<p>Complied.</p>
<ul style="list-style-type: none"> <li>The Bay is reported to be calm for most of the days of the year. Even on the day of the visit, having a deep depression in South-West Bay of Bengal, the basin was calm, though the Bay experienced high waves. Hence, dredging operation in the estuary should not have any adverse impact on the existing mangroves blocks.</li> </ul>		<p>The Port officials informed that:</p> <ul style="list-style-type: none"> <li>Dredging has been carried out in phased manner without disturbing the existing mangroves blocks.</li> <li>Mangrove mapping study was carried by NIOT, Chennai in the year 2017-18, 2019 and reported that no adverse impact observed on the existing mangroves.</li> <li>Studies were also conducted by NCSCM during May 2022 &amp; 2023 and reported that this condition is complied.</li> </ul>
<ul style="list-style-type: none"> <li>During the rough weather, resulting in high flood tides, dredging operation in the estuary should be stopped.</li> </ul>		<p>The Port officials informed that they are not planning dredging activity during high flood &amp; rough weather conditions.</p>





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<ul style="list-style-type: none"> <li>Regarding the location of stock yard in the salt pan area to be acquired, the proponent should not take up any developmental works in the mangrove area and should ensure that no destruction of mangroves takes place.</li> </ul>		<p>AKPL officials informed that they have noted the condition and will be complied.</p>
<ul style="list-style-type: none"> <li>A disaster management plan covering emergency evacuation mechanism etc., to deal with natural disaster events should be prepared and furnished to the Ministry.</li> </ul>		<p>Complied. <b>Copy attached as Annexure - XVII</b></p>
<ul style="list-style-type: none"> <li>The company must take up and earmark adequate funds for the socio-economic development and for welfare measures in the area including drinking water supply, vocational training, and fishery</li> </ul>		<p>Complied.</p>
<ul style="list-style-type: none"> <li>The fishing activities by the fishermen living in the settlement along the creek should not be hindered and a mechanism may be evolved for the movement of fishing boats vis-a-vis shipping activities.</li> </ul>		<p>The Port officials informed that they have complied with this condition.</p> <p>It was found that the fishing boats have been allowed for shipping activities.</p>
<ul style="list-style-type: none"> <li>The Relocation of the fishermen and local communities in the area should be done strictly in accordance with the norms prescribed by the State Government. The relocated communities should be provided with all facilities including health care, education, sanitation and livelihood.</li> </ul>		<p>Complied.</p> <ul style="list-style-type: none"> <li>GoAP Rehabilitated the Fishermen and Local Communities.</li> <li>AKPL provided infrastructure facilities under CSR activities at the Rehabilitation Colony</li> </ul>
<ul style="list-style-type: none"> <li>The company should take up green belt program in the project area including an ecological park and the plan may be submitted to the Ministry within one year.</li> </ul>		<p>Complied.</p> <ul style="list-style-type: none"> <li>Development of Greenbelt is a regular process in AKPL</li> </ul>



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		<ul style="list-style-type: none"> <li>As on 31st March 2023, AKPL has successfully developed Developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue &amp; median plantations.</li> <li>Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
<ul style="list-style-type: none"> <li>The company may suitably modify the alignment of channel entrance including its width, turning circle, taking into consideration the wave traversal, its intensity etc., to facilitate smoother navigation of ships.</li> </ul>	Complied.	The channel alignment for ship navigation was designed based on navigation simulation studies dated March 2009 by M/s. HR Wallingford, UK.
<ul style="list-style-type: none"> <li>The breakwater alignment and its design should be further modified based on relevant model studies, borehole data etc., keeping in view the tranquillity condition required for</li> </ul>	Complied.	
<ul style="list-style-type: none"> <li>The height of dumping in the dumping site should be restricted to 30 cm against 90 cm proposed.</li> </ul>	Complied.	The Port officials informed that the Bathymetry of dumping site is being monitored periodically to avoid build up. Last Bathymetry of dumping location carried out on 28.03.2021
<ul style="list-style-type: none"> <li>The project proponent will not undertake any destruction of mangroves during construction and operation of the project.</li> </ul>	Complied.	



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<ul style="list-style-type: none"> <li>• Sewage arising in the port area should be disposed-off through septic tank – soak pit system or should be treated along with the industrial effluents to conform to the standards stipulated by Andhra Pradesh Pollution Control Board and should be utilized/ re-cycled for gardening, plantation and irrigation.</li> </ul>		<p>Complied</p> <ul style="list-style-type: none"> <li>• AKPL has been operating 2 No. of Sewage Treatment Plants (STP) 1 X 500 KLD &amp; 1 X 40 KLD for treatment of sewage generated in the port.</li> <li>• Treated wastewater from STP is being utilized for the green belt within port premises.</li> <li>• Septic tank and soak pit systems are being followed at offices and isolated buildings which are far from STPs.</li> </ul>
<ul style="list-style-type: none"> <li>• Adequate plantation should be carried out along the roads of the Port premises and a green belt should be developed.</li> </ul>		<p>Complied.</p> <ul style="list-style-type: none"> <li>• Development of Greenbelt is a regular process in AKPL</li> <li>• As on 31st March 2023, AKPL has successfully developed Developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue&amp; median plantations.</li> <li>• Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>• Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>• Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
<ul style="list-style-type: none"> <li>• Project proponent should prepare and regularly update the Disaster Management Plan from time to time.</li> </ul>		<p>Complied.</p> <p><b>Copy attached as Annexure - XVII</b></p>
<ul style="list-style-type: none"> <li>• Fire Fighting arrangements are examined to the new proposal.</li> </ul>		<p>Complied</p> <ul style="list-style-type: none"> <li>• Port has developed dedicated fire-fighting system with required equipment and trained professionals.</li> </ul>



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		<ul style="list-style-type: none"> <li>Developed Fire contingency plan and implementing the same.</li> <li>Port Tugs are also having firefighting equipment</li> </ul>
<ul style="list-style-type: none"> <li>There should be no withdrawal of ground water in CRZ area, for this project. The proponent should ensure that as a result of the proposed constructions, ingress of saline water into ground water does not take place. Piezometers should be installed for regular monitoring for this purpose at appropriate locations on the project site.</li> </ul>	Complied	<ul style="list-style-type: none"> <li>There is no withdrawal of ground water.</li> <li>AKPL is meeting water requirement from Nakkala kalava &amp; DSS Tankers.</li> <li>Piezometer (Automatic water level monitoring system including temperature monitoring) has been installed at port and regular monitoring being carried out with NABL Accredited Laboratory.</li> <li>Reports for the last six months from October 2023 to March 2024 are attached as Annexure - IX</li> </ul>
<ul style="list-style-type: none"> <li>The project should not be commissioned till the requisite water supply and electricity to the project are provided by the PWD/Electricity Department.</li> </ul>	Complied	
<ul style="list-style-type: none"> <li>Specific arrangements for rainwater harvesting should be made in the project design and the rainwater so harvested should be optimally utilized. Details in this regard should be furnished to this Ministry's Regional Office at Bangalore within 3 months.</li> </ul>	Complied.	13 no. of Rainwater harvesting ponds developed at various locations in Port premises.
<ul style="list-style-type: none"> <li>The facilities to be constructed in the CRZ area as part of this project should be strictly in conformity with the provisions of the CRZ Notification, 1991 as amended subsequently.</li> </ul>	Complied.	
<ul style="list-style-type: none"> <li>Green buffer zone should be provided all around the project area in consultation with local forest department and the</li> </ul>	Complied.	<ul style="list-style-type: none"> <li>Development of Greenbelt is a regular process in AKPL</li> </ul>



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	report submitted to this Ministry's Regional Office at Bangalore.	<ul style="list-style-type: none"> <li>As on 31st March 2023, AKPL has successfully developed Developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue &amp; median plantations.</li> <li>Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
•	No product other than those permissible in the Coastal Regulation Zone Notification, 1991 should be stored in the Coastal Regulation Zone area.	Complied
<b>(B) General Conditions</b>		
i.	Construction of the proposed structures should be undertaken meticulously conforming to the existing Central/local rules and regulations including Coastal Regulation Zone Notification 1991 & its amendments. All the construction designs / drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments / Agencies	Complied
ii.	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc., should be ensured for construction workers during the	Complied  The construction of Phase-I development was completed on



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	construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.	01.09.2009 and commercial operations started on 20.03.2009.												
iii.	The project authorities must take necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper waste water treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise level etc., must conform to the standards laid down by the competent authorities including the Central / State Pollution Control Board and the Union Ministry of Environment and Forests under the Environment (Protection) Act, 1986, whichever are more stringent.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>Solid waste has been collected, segregated and disposed as below:</li> </ul> <table border="1"> <thead> <tr> <th>S. No</th> <th>Material</th> <th>Method of Disposal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Biodegradable waste</td> <td>Canteen waste: Composting &amp; used as manure/sand to pig-farms</td> </tr> <tr> <td>2</td> <td>Non-Biodegradable waste</td> <td>Disposal to appropriate recyclers</td> </tr> <tr> <td>3</td> <td>Used Oils/Used Batteries</td> <td>Batteries are procured on buy back basis and Used oil is being disposed to approved vendors of APPCB</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Operating 2 No. of STPs (1 X 500 KLD &amp; 1 X 40 KLD) outside the CRZ area.</li> <li>Appointed an NABL accredited agency to carry-out Terrestrial &amp; Marine Monitoring and STP inlet &amp; outlet sample analysis.</li> <li>Submitting the report to SPCB on monthly basis &amp; on Half-yearly basis to MoEF &amp; CC.</li> <li>Treated water is being used for Green Belt development.</li> <li>The reports for the period from October 2023 to March 2024 are furnished at page no.43 /chapter-3</li> </ul>	S. No	Material	Method of Disposal	1	Biodegradable waste	Canteen waste: Composting & used as manure/sand to pig-farms	2	Non-Biodegradable waste	Disposal to appropriate recyclers	3	Used Oils/Used Batteries	Batteries are procured on buy back basis and Used oil is being disposed to approved vendors of APPCB
S. No	Material	Method of Disposal												
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3	Used Oils/Used Batteries	Batteries are procured on buy back basis and Used oil is being disposed to approved vendors of APPCB												
iv.	The proponents should provide for a regular monitoring mechanism so as to ensure that the treated effluents conform to the prescribed standards. The records of analysis reports must be properly maintained and made available for	<p>Complied</p> <ul style="list-style-type: none"> <li>AKPL has been operating 2 No. of STPs (1 X 500 KLD &amp; 1 X 40 KLD).</li> <li>Appointed an NABL accredited agency to carry-out Terrestrial &amp; Marine Monitoring and STP inlet &amp; outlet sample analysis.</li> </ul>												



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	inspection to the concerned State / Central officials during their visits.	<ul style="list-style-type: none"> <li>Submitting the report to SPCB on monthly basis &amp; on Half-yearly basis to MoEF &amp; CC.</li> <li>Records are being maintained and made available for statutory inspection during their visits.</li> </ul>
v.	In order to carry out the environmental monitoring during the operational phase of the project, the project authorities should provide an environmental laboratory well equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters.	<p>Complied</p> <p>AKPL appointed an NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</p> <p>The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</p> <p>The reports for the period from October 2023 to March 2024 are furnished at Chapter - 5</p>
vi.	The sand dunes and mangroves, if any, on the site should not be disturbed in any way.	Complied.
vii.	A copy of the clearance letter will be marked to the concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.	<p>Complied.</p> <p>Copies of Environmental Clearance letters were submitted to Sarpanch, Krishnapatnam Grama Panchayat, Nellore and to the President, Nellore District Mechanized Fishing Boat Operators Association on 10.08.2006.</p>
viii.	The Andhra Pradesh Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's Office for 30 days.	<p><b>Complied.</b></p> <p>The copies of Environmental Clearance were displayed by APPCB.</p>
ix.	The funds earmarked for environment protection measures should be maintained, in a separate account and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to this Ministry's Regional Office at	<p>Complied</p> <p>The Funds &amp; Expenditure earmarked for environment protection measures are being reported in Form - V Environmental Statement and Submitting the same to APPCB &amp; MoEF&amp; CC.</p> <p>Copy attached as Annexure VII</p>



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	Bangalore and the State Pollution Control Board.	Latest submission is on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure - VII
x.	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the officers of the Central and State Pollution Control Boards by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	Being Complied
xi.	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection.	AKPL officials informed that they have noted the condition and will be complied.
xii.	The Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	AKPL officials informed that they have noted the condition and will be complied.
xiii.	The Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which should be complied with.	AKPL officials informed that they have noted the condition and will be complied.
xiv.	The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which should be in the	Complied. Advertisement was published in Local Newspaper Andhra Jyothi dated 11.08.2006.





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	<p>vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen at Website of the Ministry of Environment &amp; Forests at <a href="http://www.envfornic.in">http://www.envfornic.in</a>. The advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bangalore.</p>	<p>Copy attached as Annexure - XIII</p> <p>A copy of the advertisement was submitted to the Regional Office, Bangalore of MoEF vide Letter No.KP/MOEF/346 dated 23.08.2007.</p>
xv.	<p>The project proponents should inform the Regional Office at Bangalore 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.</p>	<p><b>Complied.</b></p> <p>Financial Closure was completed on 16.10.2006.</p> <p>Details were furnished to the MoEF&amp;CC, Regional Office, Bangalore, vide our letter no. KP/MOEF/60 dated 16th Feb, 2007.</p> <p>Approval of the Project by GoAP: 17.09.2004 Start of Land Development June, 2006.</p>
xvi.	<p>The above mentioned stipulations will be enforced among others under the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (protection) Act, 1986, the Hazardous Chemicals (Manufacture, Storage and Import) Rules, 1989, the Coastal Regulation Zone Notification, 1991 and its</p>	<p>AKPL officials informed that they have noted the condition and will be complied.</p>



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subsequent amendments and the Public Liability Insurance Act, 1991 and the Rules made there under from time to time. The project proponents should also ensure that the proposal complies with the provisions of the approved Coastal Zone Management Plan of Andhra Pradesh State and the Supreme Court's order dated 18<sup>th</sup> April, 1996 in the Writ Petition No.664 of 1993 to the extent the same are applicable to this proposal.



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**9.2 Compliance on the conditions stipulated in EC & CRZ Clearance vide (For Phase – 2) Order No.11-62/2009-IA-III dated 13.11.2009.**

S. No	Conditions	Compliance
<b>Specific Conditions</b>		
1.	All the conditions as stipulated by the Forests & Environment Department, Govt. of Andhra Pradesh vide letter No.2286/CZMA/2009; dated 11.05.2009 shall be strictly complied.	The Port officials informed that they had complied.
2.	<p>All the details / information submitted by the project proponent vide letter No.KP/MOEF/PH-II/174, dated 17.08.2009 shall be strictly complied. The details are as follows:</p> <ul style="list-style-type: none"> <li>i. Southern Boundary of proposed dredge disposal area of Phase-II shall be moved towards North to coincide with Northern Boundary of Phase-I dredge disposal area.</li> <li>ii. Impact of bridges &amp; conveyor across creeks to be re-examined to avoid impact on mangroves.</li> <li>iii. To engage INCOIS or other reputed organization to monitor coastal behavior for a longer period.</li> <li>iv. Runoff from Coal Stock piles shall be collected in dump ponds and recycled for dust suppression and fire protection.</li> </ul>	<p>Complied.</p> <ul style="list-style-type: none"> <li>i. The Southern Boundary of proposed dredge disposal area of Phase-II was moved towards North to coincide with Northern Boundary of Phase-I dredge disposal area.</li> <li>ii. Belt Conveyors and Road Bridge crossings have no impact on Mangroves. Railway Bridge Location was reworked to avoid disturbance to mangroves.</li> <li>iii. M/s. Indian National Centre for Ocean Information Services (INCOIS) was engaged for coastal monitoring.</li> <li>iv. As per their Report for the period 2008-10, the port development did not impact the coast.</li> <li>v. Runoff from coal storage yards has been routed through peripheral drains, collection pits and guard (Dump) ponds with a provision to recycle the water for dust suppression.</li> <li>vi. As per the NIOT, Chennai study report for the period 2017-18, 2019 there was no adverse impact to the mangroves.</li> </ul>



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S. No	Conditions	Compliance
		vii. Long time Shoreline stability study conducted by NIOT, Chennai in the year 2017-18 and same continuing in year 2022-23, reported that the coastline is found to be stable
3.	The hydro-dynamic studies shall be undertaken to ascertain the impact to the shoreline in the stretch and ecologically sensitive areas and the report shall be submitted to the Ministry.	Complied. a. Hydro dynamic studies were conducted by M/s. HR Wallingford, UK. b. Shoreline monitoring & Marine biodiversity studies are being carried out regularly for shore protection. c. M/s. Indian National Centre for Ocean Information Services (INCOIS), Hyderabad has been monitoring through satellite imagery. d. As per the INCOIS Report for the period October 2008 to January 2010, the coastline is found to be stable. e. Long-time Shoreline stability study was conducted by NIOT, Chennai in 2017-18, 2019. f. As per the NIOT Report, the coastline is found to be stable and "cause negligible impacts on the environment".
4.	Ministry has taken a decision that the plantation of mangroves shall be undertaken on an area of 50 ha. as the Phase-II of the project spreads over 800 ha.	Complied.
5.	Six monthly monitoring shall be carried out and a comparative analysis shall be made to examine for any mitigative measures required.	Complied. • Copies of the Acknowledgements are attached as Annexure – XII.



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6.	The temperature, salinity and tidal inflow shall be monitored weekly.	Complied. <ul style="list-style-type: none"><li>• AKPL appointed a NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</li><li>• The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</li><li>• The reports for the period from October 2023 to March 2024 are furnished at Chapter - 5</li></ul>
7.	The greenbelt of 100 m. width shall be developed around the coal stack yard as per the request in the public hearing.	Complied <ul style="list-style-type: none"><li>• AKPL submitted a letter to MoEF&amp;CC vide letter No.: KP/MOEF/113 dated 29.08.2012 to modify this condition and developed 100 m width Green belt along the port boundary, coastal area and 20 m wide green belt around coal stack yards instead of 100 m width greenbelt development around the coal yards as requested during public hearing.</li><li>• Copy of the letter is attached as Annexure – XIV.</li></ul>
8.	Impact on the drawl of the water from the Kandaleru Creek shall be regularly monitored and report submitted to the Ministry.	Complied <ul style="list-style-type: none"><li>• AKPL is not withdrawing water from Kandaleru Creek.</li><li>• Complying with the condition, the quality of water is being monitored and the reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</li><li>• The reports for the period from October 2023 to March 2024 furnished at chapter - 5</li></ul>



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9.	Continuous monitoring on disposal of dredged material shall be put in place for both pre and post monsoon periods.	Complied. Bathymetry of the disposal area of dredged material i.e., the dumping grounds are being monitored periodically for both pre and post monsoon periods.
10.	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Being complied.
11.	Oil spills if any shall be properly collected and disposed as per the Rules.	Complied <ul style="list-style-type: none"><li>Oil Spills are being managed as per the approved Oil Spill Contingency Plan.</li><li>AKPL has provided Oil Boom, Skimmer and chemicals to attend any accidental oil spills.</li><li>Staff was trained to meet Tier-I Oil spills.</li><li>As per Disaster Management Plan, Indian Coast Guard will be alerted to coordinate.</li><li>Details were furnished to the MoEF&amp;CC Regional Office, Bangalore, vide our letter no. KP/MoEF/PH-II/20 dated 02.02.2010.</li><li>Latest OPR drill was conducted at the port on 16.04.2023. Copy attached as Annexure – XVI.</li></ul>
12.	The approach channel shall be properly demarcated with lighted buoys for safe navigation and adequate traffic control guidelines shall be framed. The fishermen shall be suitably educated and informed about the traffic guidelines.	Complied. <ul style="list-style-type: none"><li>The approach channel has been marked with lighted buoys for safe navigation.</li><li>Adequate traffic control guidelines were framed, and copy was submitted to the Fisheries Department to suitably inform fishermen.</li></ul>



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		<ul style="list-style-type: none"><li>• Copy of the letter attached as Annexure – XXII.</li></ul>
13.	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied. A separate Environmental Management cell was established headed by Vice President & supporting staff for effective implementation of the stipulated environmental safeguard.
14.	No destruction of mangrove is permitted. The project proponent shall take up mangrove plantation / green belt in the project area, wherever possible. Adequate budget shall be provided in the Environment Management Plan for such mangrove development.	Complied.
15.	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Complied.
16.	There shall be no withdrawal of groundwater in Coastal Regulation Zone area, for this project. In case any groundwater is proposed to be withdrawn from outside the CRZ area, specific prior permission from the concerned State / Central Groundwater Board shall be obtained in this regard.	Complied.
17.	The Hazardous waste generated shall be properly collected and handled as per the provisions of Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008.	Complied. <ul style="list-style-type: none"><li>• Hazardous waste like used oils / grease and batteries are being collected and handled as per the provisions of Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2016 and their amendments.</li></ul>



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18.	The wastewater generated from the activity shall be collected, treated and reused properly.	Complied. <ul style="list-style-type: none"> <li>AKPL has been operating 2 No. of Sewage Treatment Plants (STP) 1 X 500 KLD &amp; 1 X 40 KLD for treatment of sewage generated in the port.</li> <li>The Treated water is being reused for the green belt within port premises.</li> </ul>
19.	Sewage Treatment facility should be provided in accordance with the CRZ Notification.	Complied.
20.	No solid waste will be disposed of in the Coastal Regulation Zone area. The solid waste shall be properly collected, segregated and disposed as per the provision of Solid Waste (Management and Handling) Rules, 2000.	Being complied. <ul style="list-style-type: none"> <li>AKPL has provided solid waste collection bins of 120 numbers at different locations within the Port.</li> <li>Regular collection arrangements have been made from the bins provided.</li> <li>Solid wastes are being collected, Segregated and disposed as per the Solid Waste (Management and Handling) Rules, 2016 and their amendment.</li> </ul>
21.	Installation and operation of DG set if any shall comply with the guidelines of CPCB.	Being complied.
22.	There shall be no reclamation / dredging of areas.	This condition was deleted by MoEF & CC vide letter no. F. No. 11-62/2009-IA.III dated 02.03.2010. Copy attached as Annexure - 18
23.	Air quality including the VOC shall be monitored regularly as per the guidelines of CPCB reported.	This condition was deleted by MoEF&CC vide letter F. No. 11-62/2009- IA.III dated 02.03.2010. Copy attached as Annexure - XV
24.	The project proponent shall undertake green belt development.	Complied. <ul style="list-style-type: none"> <li>Development of Greenbelt is a regular process in AKPL</li> <li>As on 31st March 2023, AKPL has successfully developed Developed 196.25 Ha of Green belt along port</li> </ul>





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



		<p>boundary, around coal yards, avenue &amp; median plantations.</p> <ul style="list-style-type: none"><li>• Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li><li>• Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li><li>• Maintaining 20-meter width greenbelt around the coal stack yards.</li></ul>
25.	Necessary clearances from all the concerned agencies shall be obtained before initiating the project.	Being complied.
26.	Project proponent shall install necessary oil spill mitigation measures in the shipyard. The details of the facilities provided shall be informed to this Ministry within 3 months from the date of receipt of this letter.	Being Complied <ul style="list-style-type: none"><li>• Oil Spills are being managed as per the approved Oil Spill Contingency Plan.</li><li>• AKPL has provided Oil Boom, Skimmer and chemicals to attend any accidental oil spills.</li><li>• Staff was trained to meet Tier-I Oil spills.</li><li>• As per Disaster Management Plan, Indian Coast Guard will be alerted to coordinate.</li><li>• Details were furnished to the MoEF&amp;CC Regional Office, Bangalore, vide our letter no. KP/MoEF/PH-II/20 dated 02.02.2010.</li></ul>
27.	No hazardous chemicals shall be stored in the Coastal Regulation Zone area.	Complied.
28.	The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the PWD / Electricity Department.	Complied.



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29.	Specific arrangements for rainwater harvesting shall be made in the project design and the rainwater so harvested shall be optimally utilized.	Complied. <ul style="list-style-type: none"> <li>• Rainwater Harvesting pits of 13 nos are available within the Port premises.</li> <li>• The availability of water is in the rainy &amp; winter seasons. Ppercolation is faster due to sandy soil.</li> <li>• The water is being utilized for dust suppression to the extent possible.</li> </ul>
30.	The facilities to be constructed in the CRZ area as part of this project shall be strictly in conformity with the provisions of the CRZ Notification, 1991 and its amendment. The facilities such as office building and residential buildings which do not require waterfront and foreshore facilities shall not be constructed within the CRZ area.	Being complied.  All the construction activities are as per regulations including Coastal Regulation Zone Notification 1991 & its amendments.
<b>General Conditions</b>		
i.	Adequate provision for infrastructure facilities including water supply, fuel and sanitation must be ensured for construction workers during the construction phase of the project to avoid any damage to the environment	Complied.
ii.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Being complied.
iii.	Borrow sites for each quarry sites for road construction material and dump sites must be identified keeping in view the following:	
	a. No excavation or dumping on private property is carried out without written consent of the owner.	No excavation or dumping on private property was carried out.



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	b. No excavation or dumping shall be allowed on wetlands, forest areas or other ecologically valuable or sensitive locations.	Complied.
	c. Excavation work shall be done in close consultation with the Soil Conservation and Watershed Development Agencies working in the area, and	Complied.
	d. Construction spoils including bituminous material and other hazardous materials must not be allowed to contaminate water courses and the dump sites for such materials must be secured so that they shall not leach into the groundwater.	Complied.
iv.	The construction material shall be obtained only from approved quarries. In case new quarries are to be opened, specific approvals from the competent authority shall be obtained in this regard.	Complied.
v.	Adequate precautions shall be taken during transportation of the construction material so that it does not affect the environment adversely.	Complied.
vi.	Full support shall be extended to the officers of this Ministry/ Regional Office at Bangalore 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 and other environmental protection activities.	Being Complied
vii.	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if in the interest of environment and the same shall be complied with.	AKPL officials informed that they have noted the condition and will be complied.



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iii.	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	AKPL officials informed that they have noted the condition and will be complied.
ix.	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the MoEF.	AKPL officials informed that they have noted the condition and will be complied.
x.	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. Financial Closure was completed on 16.10.2006. Details were furnished to the MoEF&CC, Regional Office, Bangalore, vide our letter no. KP/MOEF/60 dated 16th Feb, 2007. AP Government approved the project on 17.09.2004 and the land development started in June, 2006.
xi.	APPCB 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.
x.	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.	AKPL officials informed that they have noted the condition and will be complied.
xi.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act,	Complied. AKPL obtained Fire NOC & PESO approvals Copy of approvals attached as Annexure – XVIII & XX



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



	1972 etc., shall be obtained, as applicable by project proponents from the respective competent authorities.	
xii.	<p>The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Andhra Pradesh State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bangalore.</p>	<p><b>Complied.</b></p> <p>Advertisement was given in Two Local Newspapers viz.,</p> <ul style="list-style-type: none"><li>• Deccan Chronicle dated 22.11.2009 and Andhra Jyothi dated 22.11.2009.</li><li>• A copy of the advertisement was sent to Regional Office, Bangalore of MoEF vide Letter No.KP/MOEF/PH.II/08 dated 18.01.2009.</li></ul>
xiii.	<p>Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.</p>	<p>AKPL officials informed that they have noted the condition and will be complied.</p>
xiv.	<p>Any appeal against this EC shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.</p>	<p>AKPL officials informed that they have noted the condition and will be complied.</p>
xv.	<p>A copy of the clearance letter shall be sent by the proponent to 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.</p>	<p>Complied.</p>



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xvi.	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. The criteria pollutant level namely; SPM, RSPM, SO <sub>2</sub> , NO <sub>x</sub> (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the Company in the public domain.	Being complied.  Submitting the 6 Monthly Self Certified & NABL Accredited 3 <sup>rd</sup> Party Compliance Reports for the period from April to September & October to March respectively along with Terrestrial & Marine Monitoring reports to MoEF & CC and APPCB.  Copies of the Acknowledgements are attached as Annexure – XII.
xvii.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Being complied.  Submitting the 6 Monthly Self Certified & NABL Accredited 3 <sup>rd</sup> Party Compliance Reports for the period from April to September & October to March respectively along with Terrestrial & Marine Monitoring reports to MoEF & CC and APPCB.  Copies of the Acknowledgements are attached as Annexure – XII.
xviii.	The environmental statement for each financial year ending 31 <sup>st</sup> 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.	Being complied.  The Latest submission was on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure – VII

**Specific Conditions vide MoEF&CC order F.No. 11-62/2009-IA.III (Pt) dated 16.03.2016**



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xix.	Construction activity shall be carried out strictly according to the provision of CRZ notification, 2011. No construction work other than those permitted in coastal Regulation Zone Notification shall be carried out in Coastal regulation Zone area.	Being complied.
xx.	All the recommendations and conditions specified by AP Coastal Zone Management Authority (APCZMA) vide letter No.3160/ Env/CZMA/2014, dated 14.08.2014 shall be complied with.	AKPL officials informed that they have noted the condition and will be complied.



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**9.3 Compliance on the conditions stipulated in APCZMA – NOC vide letter no.202/CRZ/IND/2019-30 dated 21.05.2020**

<b>Part A- Specific Conditions</b>		
Sl. No.	Condition	Compliance
i.	The project proponent shall comply with all the conditions stipulated in the Environment & CRZ clearances, CFEs, CFOs issued to M/s. KPCL Phase-I and Phase-II projects in this Phase-III project also	Being complied.
ii.	The proposed constructions shall conform to the norms prescribed in CRZ notification issued by the Ministry of Environment and Forests, Government of India as per S. No. 19€, dated 06.01.2011.	Being complied.
iii.	No activity on ground shall be undertaken without obtaining Environmental clearance from Ministry of Environment and Forests, Government of India as per S. No. 19(E), dated 06.01.2011.	Being complied.
iv.	Continuous monitoring of circulation of seawater shall be carried out every six months by engaging reputed agencies like NIOT. The port shall undertake the study of multi sensor, multi date data to study the sedimentation studies in the inner harbour channel in addition to the in-house studies undertaken as part of regular monitoring of sedimentation in the harbour channel. The monthly reports shall be submitted to APPCB.	Being complied. <ul style="list-style-type: none"> <li>• NCSCM is Monitoring the Land, Air quality, Noise, Water, Marine, Marine sediment parameters and mangroves, ones in four years.</li> <li>• Latest NCSCM Monitoring report is attached as Annexure – 21.</li> <li>• AKPL appointed a NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</li> <li>• The reports for the period from October 2023 to March 2024 are attached as Annexure – XXIV</li> <li>• The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</li> </ul>





Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



v.	Study on marine biodiversity by engaging a reputed organization/ university having a proven expertise in the relevant field shall be taken up. Similar monitoring mechanism shall be developed for monitoring terrestrial part to determine the impacts.	Being Complied
vi.	The Port authorities shall continue to nourish the beaches located on the north side of the North breakwaters within the port limits, which are vulnerable to sea erosion during the monsoon season and also during cyclone.	Being complied
vii.	The Port shall also undertake the scientific studies by engaging reputed agencies like National Institute of Ocean Technology (NIOT) and Indian Institute of Technology, Chennai to study the feasibility of constructing submerged breakwaters to protect the beach road from seasonal erosion and also during cyclones.	Being Complied  AKPL appointed NIOT for preparing the feasibility report. The study is under progress.
viii.	The applicant shall ensure that continuous monitoring systems of all likely affected parameters including air/fish/flora/fauna/water quality/waste water discharges/solid waste disposal/construction material disposal etc., are installed and reports shared with the National Institute of Oceanography (NIO) on continuous basis and a monthly report submitted to the APPCB by the NIO, all through construction period and at least for one year after commencement of operations.	Being complied. <ul style="list-style-type: none"><li>• AKPL submitted a letter to APCZMA vide letter No. AKPL/APCZMA/ 2022-23/069 dated 09.09.2022.</li><li>• Copy of the letter attached as Annexure - XXV</li><li>• AKPL appointed an NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</li><li>• The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</li><li>• The reports for the period from October 2023 to March 2024 are attached as Annexure – IX</li></ul>



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ix.	A team of APPCB scientists and environmental engineers shall be kept continuously informed and apprised of the project by the applicant, so that environmental mitigation measures are adopted on a continuous basis.	Senior Officials of APPCB are being visiting AKPL on 6 Monthly bases to verify the compliance status under Randomized Inspection of Industries.
x.	The project proponent while executing this project shall not disturb any of the ecologically sensitive areas like mangroves, sand heaps sand dunes etc.	Being complied.
xi.	No construction shall be taken in the No Development Zone. However, if any permitted activity is to be taken up, the proponent may apply to the competent authority separately. Permanent structures shall be avoided in this zone.	Being complied.
xii.	Priority to be given to the maintenance of storm water drains from the surrounding area to prevent possible flooding of the surrounding areas.	Complied. AKPL is maintaining the storm water drains periodically and especially before monsoon season by removing the sludge accumulated to prevent possible flooding of the surrounding areas.
xiii.	Mechanization of Port operations shall be taken up to improve the air quality in the bowl area. SPM and RSPM levels to be maintained within the standards stipulated by the APPCB/CPCB.	Being complied. <ul style="list-style-type: none"> <li>• Majority of Port operations are carried out through mechanized cargo handling equipment so as to avoid cargo spillage and dust emissions during the cargo handling activities</li> <li>• Provided Mechanical Dust Depression system at various critical points.</li> <li>• Implementing appropriate measures, able to mitigate all the dust being generated during the operations</li> </ul>
xiv.	Raising and maintenance of greenbelt within and outside the port area to be taken up on priority	Being complied.



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	and necessary assistance shall be extended to the local agencies involved in the implementation of afforestation programme.	
xv.	The project proponent shall submit the half yearly compliance reports of CRZ clearance duly audited by the accredited consultants on the degree of compliance by the project proponent during and after construction of the project.	<p>Complied.</p> <ul style="list-style-type: none"> <li>• Development of Greenbelt is a regular process in AKPL</li> <li>• As on 31st March 2023, AKPL has successfully developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue &amp; median plantations.</li> <li>• Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>• Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>• Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
xvi.	Dredged material shall be utilized for nourishment of beaches.	Being complied.
xvii.	Full cooperation shall be extended to all inspecting authorities/ organizations such as APPCB, MoEF&CC, CPCB and local Environment Protection Organizations.	Being complied.
xviii.	A team of APPCB scientists and environmental engineers shall be kept continuously informed and apprised of the project by the applicant, so that environmental mitigation measures are adopted on a continuous basis.	Senior Officials of APPCB are being visiting AKPL on 6 Monthly bases to verify the compliance status under Randomized Inspection of Industries.
xix.	The project activity shall be carried out strictly as per the provisions of CRZ Notification, 2011, and shall not affect the coastal ecology of the area including flora and fauna.	Being complied.



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xx.	The project proponent shall ensure that there is no destruction of mangroves during the construction as well as the operation phase of the project.	Being complied.
xxi.	There shall be no dressing or alteration of the sand dunes and natural features, including landscape changes for beautification, recreation and other such purpose.	Being complied.
xxii.	All conditions/ recommendations stipulated by other statutory authorities shall strictly be complied with, as may be applicable.	AKPL officials informed that they have noted the condition and will be complied.
xxiii.	The project proponent shall obtain all necessary clearances/ permissions from the concerned authorities as applicable.	Being complied.
xxiv.	'Consent for Establishment' and CFO as may be applicable, shall be obtained from State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Complied Obtained CTE for Phase-III expansion vide Order no. 633/ APPCB/CFE/RO- NLR/HO/2010 dated 25.02.2021. Copy of the CTE Order is attached as Annexure – II
xxv.	All waste (liquid and solid) arising from the proposed development will be disposed of as per the norms prescribed by State Pollution Control Board. There shall not be any disposal of untreated effluent into the sea/coastal water bodies.	Being complied.
xxvi.	No permanent labour camp, machinery and material storage shall be allowed in CRZ area.	Being complied.
xvii.	There shall no groundwater withdrawal within CRZ without prior approval of the State Groundwater Authority.	Complied.
xviii.	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be	Being complied.



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disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

**Part B - General Conditions**

i.	A copy of the clearance letter shall also be displayed on the website of the AP Pollution Control Board. The clearance letter shall also be displayed at the AP Pollution Control Board Regional Office, District Industries centre and District Collector office/ Mandal Revenue Office for 30 days.	Complied. A copy of the Environmental clearance was submitted to <ul style="list-style-type: none"> <li>• The Environmental Engineer, APPCB Regional office vide letter dated 12.01.2021,</li> <li>• The District Collector vide our letter dated 03.02.2021 and local panchayats vide letter dated 01.02.2021.</li> </ul> Copy attached as Annexure – XIX
ii.	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure shall be reported to the Andhra Pradesh Coastal Zone Management Authority (APCZMA) and AP Pollution control Board Regional office.	Being Complied
iii.	Concealing factual data by the project proponent, any officer behalf of the project proponent and consultants hired by the project proponent or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	AKPL officials informed that they have noted the condition and will be complied.
iv.	The above stipulations would be enforced among others under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of	AKPL officials informed that they have noted the condition and will be complied.



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	Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability (insurance) Act, 1991, the EIA Notification, 2006 and the CRZ Notification, 2011.	
v.	Full co-operation shall be extended to the officials from the APCZMA, APPCB and Regional office of MoEF&CC, during monitoring of implementation of environmental safeguards stipulated. It shall be ensured that documents/data sought pertinent is made available to the monitoring team. A complete set of all the documents submitted to APCZMA shall be forwarded to the AP Pollution Control Board Regional office.	AKPL officials informed that they have noted the condition and will be complied.
vi.	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by the APCZMA.	AKPL officials informed that they have noted the condition and will be complied.
vii.	The APCZMA reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	AKPL officials informed that they have noted the condition.
viii.	All other statutory clearances shall be obtained, as applicable by project proponents from the respective competent authorities.	AKPL officials informed that they have noted the condition and will be complied.
ix.	The project proponent should 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 CRZ clearance and copies of clearance letters are available with the AP Pollution Control Board and may also be seen on the website of APCZMA.	Complied Advertisement was published in District Newspapers namely "Vartha" & "The New Indian Express" dated 21.01.2021. Copy attached as Annexure - XIII



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	The advertisement should be made within seven days from the date of receipt of the clearance letter and a copy of the same should be forwarded to the AP Pollution Control Board Regional office.	
x.	This clearance is subject to any order passed by any Hon'ble Courts, as may be applicable to this project.	AKPL officials informed that they have noted the condition.
xi.	A copy of the clearance letter shall be sent by the proponent to concern panchayat, Zilla Parisad/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. A copy of the Environmental clearance was submitted to <ul style="list-style-type: none"> <li>• The Environmental Engineer, APPCB Regional office vide letter dated 12.01.2021,</li> <li>• The District Collector vide our letter dated 03.02.2021 and local panchayats vide letter dated 01.02.2021.</li> <li>• Copy attached as Annexure – XIX</li> </ul>
xii.	The proponent shall upload the status of compliance of the stipulated conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the AP Pollution Control Board Regional office and, the concerned District Collector and the APPCB.	Being complied. Submitting the 6 Monthly Self Certified & NABL Accredited 3 <sup>rd</sup> Party Compliance Reports for the period from April to September & October to March respectively along with Terrestrial & Marine Monitoring reports to MoEF & CC and APPCB. Copies of the Acknowledgements are attached as Annexure – XII.
xiii.	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 Andhra Pradesh Pollution Control Board as prescribed under the Environmental (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of clearance conditions and shall also be sent to the AP Pollution Control Board regional office, APCZMA and APPCB by email.	Complied Form – V Environmental Statement Submitted on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure – VIII



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**9.4 Compliance on the conditions stipulated in EC & CRZ Clearance (For Phase - 3) Vide Order No.10-08/2016-IA-III dated 11.01.2021.**

S.No	Conditions	Compliance
	<b>Special Conditions</b>	
i.	The Environmental and CRZ Clearance to the project is primarily under provisions of EIA Notification, 2006 and CRZ Notification, 2011. It does not amount to approvals/consent/permissions etc., required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals / clearances under any other Acts/ Regulations or Statutes as applicable to the project.	AKPL officials informed that they have noted the condition and will be complied.
ii.	The project proponent shall abide by all the commitments and recommendations made in the Form-II, EIA and EMP report, submissions made during Public Hearing and also that have been made during their presentation to EAC.	Being complied
iii.	Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Being complied
iv.	All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide letter 202/CRZ/IND/201930 dated 21.05.2020 shall be complied with.	AKPL officials informed that they have noted the condition and will be complied.
v.	The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained. Creek water monitoring program shall be implemented during the construction phase	Being complied





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vi.	Development of green belt by native species with consultation with state forest department shall be ensured.	<p>Complied.</p> <ul style="list-style-type: none"> <li>• Development of Greenbelt is a regular process in AKPL</li> <li>• As on 31st March 2023, AKPL has successfully developed Developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue &amp; median plantations.</li> <li>• Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>• Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>• Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
vii.	The proposed expansion entails 60 million cum of dredging in soft soil. As proposed, the PP shall utilize 26 million cu m of dredged sand for reclamation of low lying areas of port, stock pile 2 million cu m on the coast north of north breakwater for long term coastal protection as recommended by NIOT and disposal of balance 32 million cu m of dredged spoil in the identified dredge disposal area of 56 Km <sup>2</sup> beyond (-) 20 m contour. The impact of dredging on the marine environment should be monitored and necessary measures shall be taken on priority basis if any adverse impact is observed. NIOT will oversee the work as scientific body and continue to monitor its impact/benefits for at least 5 years post project completion. Necessary financial assistance to be provided by project proponent to NIOT. The	<ul style="list-style-type: none"> <li>• AKPL has obtained Consent to Establishment (CTE) from APPCB vide Order No. 633/ APPCB/ CFE/RO-NLR/HO/2010 dated 25.02.2021.</li> </ul> <p>Copy of the CTE Order is attached as Annexure – II</p> <ul style="list-style-type: none"> <li>• The impact of dredging activities have been monitoring by NIOT for 5 years post completion of the project.</li> </ul>



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	report of the same to be submitted to regional office of MoEFCC by project proponent.	
viii.	Marine ecological monitoring and its mitigation measures for protection of phytoplankton, zooplanktons, macrobenthos, estuaries, sea-grass, algae, sea weeds, Crustaceans, Fishes, coral reefs and mangroves etc. as given in the EIA-EMP Report shall be complied with in letter and spirit with the help of reputed organization or individuals of national repute having knowledge in the said subject. Necessary financial assistance to be provided by project proponent.	<p>Being complied.</p> <ul style="list-style-type: none"> <li>• NCSCM is Monitoring the Land, Air quality, Noise, Water, Marine, Marine sediment parameters and mangroves, ones in four years.</li> <li>• Latest NCSCM Monitoring report is attached as - XXIV.</li> <li>• AKPL appointed a NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</li> <li>• The reports for the period from October 2023 to March 2024 are furnished at Chapter - 5</li> </ul> <p>The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</p>
ix.	Continuous online monitoring of air and water covering the total area shall be carried out and the compliance report of the same shall be submitted along with the 6 monthly compliance reports to the regional office of MoEF&CC.	<p>Complied.</p> <p>AKPL has been Operating 3 Nos of Continuous Ambient Air Quality Monitoring stations and connected to APPCB website.</p> <p>In addition, AKPL appointed an NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</p> <p>The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</p> <p>The reports for the period from October 2023 to March 2024 are furnished at chapter 3/3.4 page 37</p>
x.	The actions shall be in accordance with proposed landscape planning concepts to minimize major landscape changes. The change in	Being complied



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	land use pattern shall be limited to the proposed port limits and be carried out in such a way as to ensure proper drainage by providing surface drainage systems including storm water network.	
xi.	Suitable preventive measures be taken to trap spillage of fuel / engine oil and lubricants from the construction site. Measures should be taken to contain, control and recover the accidental spills of fuel during cargo handling.	Being complied Port has existing Tier-I oil spill response equipment to combat any oil spill and coordinate with Indian Coast Guard to contain, control, and recover the accidental spills of fuel during cargo handling.
xii.	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF & CC along with half yearly compliance report.	Complied
xiii.	The company shall draw up and implement Corporate Social Responsibility Plan as per the Company's Act of 2013.	Being complied
xiv.	As per the Ministry's Office Memorandum F. No. 22-65/2017-IA.III dated 30th September, 2020, the project proponent shall abide by all the commitments made by them to address the concerns raised during the public consultation. The project proponent shall initiate the activities proposed by them, based on the commitment made in the public hearing, and incorporate in the Environmental Management Plan and submit to the Ministry. All other activities including pollution control, environmental protection and conservation, R&R, wildlife and forest conservation/protection measures including the NPV, Compensatory Afforestation etc., either proposed by the project	Being complied <ul style="list-style-type: none"> <li>• The Public Consultation for Phase-III expansion was exempted as it was developed in the existing land area of 6800 Ac.</li> <li>• All the commitments made in the public consultation for Phase-II during 2009 were complied.</li> <li>• All the activities proposed in the EMP for Phase-II along with the Phase -III EMP including Pollution control measures, Environmental protection and conservation, R&amp;R, Wildlife and forest conservation/ protection measures including the NPV, Compensatory Afforestation, etc., are being implemented.</li> </ul>



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	proponent based on the social impact assessment and R&R action plan carried out during the preparation of EIA report or prescribed by EAC, shall also be implemented and become part of EMP.	
i.	Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011 and the State Coastal Zone Management Plan as drawn up by the State Government. No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.	Being complied
ii.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Coast Guard, Civil Aviation Department shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied. AKPL obtained Fire NOC & PESO approvals Copy of approvals attached as Annexure XVIII & as Annexure - XX
<b>Air Quality Monitoring and Preservation</b>		
i.	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and Nox in reference to SO2 and Nox emissions) within and outside the project area at least at four locations covering upwind and downwind directions.	Being complied. <ul style="list-style-type: none"> <li>The Port has been operating 3 No. of CAAQM stations at the below mentioned locations as suggested by APCB within the Port premises to monitor the parameters viz., PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO, NO<sub>2</sub>, CO and the data is being uploaded to APPCB website.               <ol style="list-style-type: none"> <li>CVR Amenities Complex</li> <li>Thamminapatnam Village</li> <li>Krishnapatnam Village</li> </ol> </li> </ul>



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		<ul style="list-style-type: none"> <li>Environmental Monitoring has been rendered by NABL accredited laboratory along with AAQ monitoring at 7 locations covering upwind and downwind directions.</li> </ul> <p>The monthly reports for the period from October 2023 to March 2024 are furnished at Chapter - 5</p>
ii.	<p>Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.</p>	<p>Being complied.</p> <p>Port has adopted &amp; implementing the following measures for the control of fugitive emissions during handling of bulk &amp; non-bulk cargo and vehicular movement:</p> <ol style="list-style-type: none"> <li>Established mechanical conveyor system for handling coal &amp; Iron ore.</li> <li>Provided closed hoods for the conveyor system.</li> <li>Stacker cum re-claimers is being used for loading and unloading the coal.</li> <li>The railway wagons are being loaded mechanically.</li> <li>Installed fully mechanized coal handling systems with gantry grab type ship loaders/unloaders.</li> <li>Provided hooded conveyor belt for cargo transferring directly from ship to the designated stack yard by means of closed hoppers and transfer towers.</li> <li>Established closed warehouses for storage of weather sensitive cargoes.</li> <li>The loading and discharge points of the conveyor carrying material are covered with exhaust hoods to prevent the formation of dust clouds.</li> </ol>



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		<ul style="list-style-type: none"><li>ix. All the conveyor galleries are covered to ensure zero dust emission during cargo transfer.</li><li>x. Provided water sprinkling system at transfer towers to arrest the dust spreading into the atmosphere.</li><li>xi. Provided semi mechanized facilities for truck tarpaulin covering stations to ensuring all the outgoing cargos by trucks are covered with tarpaulin.</li><li>xii. Ensuring all the outgoing Railway Rakes are covered with Tarpaulin.</li><li>xiii. Mist Canon systems provided for watering avenue plantations and road wetting on haul roads</li><li>xiv. Operating Mechanical dust suppression system comprises of 248 canons.</li><li>xv. Deploying DSS Tankers of Cannon mounted for sprinkling water on haul roads and yards to arrest the dust causing by the vehicular movement</li><li>xvi. The Cargo stocks/heaps are covered with tarpaulin.</li><li>xvii. Provided 8 No. tractor mounted hydraulic broom sweeping machines for cleaning the roads and jetty areas,</li><li>xviii. 2 No of Heavy Duty Sweeping Machines are being deployed at operational areas and all internal roads.</li><li>xix. Erected &amp; maintaining wind breaking wall of height 14 mtrs to prevent any dust nuisance towards habitation supported with high density greenbelt.</li></ul>
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		xx. Greenbelt in an extent of 196.25 Ha Developed & maintaining green belt along the port covering, yards, roads and all operational areas.
iii.	Shrouding shall be carried out in the work site enclosing the dock/proposed facility area. This will act as dust curtain as well achieving zero dust discharge from the site. These curtain or shroud will be immensely effective in restricting disturbance from wind in affecting the dry dock operations, preventing waste dispersion, improving working conditions through provision of shade for the workers.	Being complied. <ul style="list-style-type: none"> <li>Erected &amp; maintaining wind breaking wall of height 14 mtrs to prevent any dust nuisance towards habitation supported with high density greenbelt.</li> <li>Covered the operational area with rows of plantation which are acting as wind barricades.</li> <li>Ensuring water sprinkling on haul roads.</li> </ul>
iv.	Dust collectors shall be deployed in all areas where blasting (surface cleaning) and painting operations are to be carried out, supplemented by stacks for effective dispersion.	Being complied. No blasting activities involved in the Port operations.
v.	The Vessels shall comply the emission norms prescribed from time to time.	Being complied.
vi.	Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low Sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.	Being Complied. <ol style="list-style-type: none"> <li>The Port is being supplied with Non-conventional source of energy through Power Grid for uninterrupted power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)</li> <li>The DG Sets are being operated as back up for emergency lighting &amp; safety during power breakdowns.</li> <li>Retrofitting certification was carried-out for the DG Sets.</li> <li>The DG Sets are being monitored ones in 6 months through a NABL Accredited 3<sup>rd</sup> Party and submitting the analysis reports the concerned departments.</li> </ol>



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		Latest Analysis reports dated 21.03.2024 are furnished at chapter - 5
vii.	A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.	<p>Complied</p> <p>AKPL appointed M/s. FP Project Management to study and prepare a Traffic Management and Decongestion Plan.</p> <p>The study was completed and received the final report.</p> <p>Report submitted to the competent authorities.</p> <p>Copy of the Acknowledgement is attached as Annexure - XXII</p>
<b>Water quality monitoring and preservation:</b>		
i.	The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.	<p>Being complied</p> <p>No creeks or rivers are blocked in the port premises and ensuring free flow of water.</p>
ii.	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. Silt curtains shall be used to contain the spreading of suspended sediment during dredging within the dredging area.	Being complied
iii.	No ships docking at the proposed project site will discharge its on-board waste water untreated in to	<p>Being complied</p> <p>No ships are allowed to discharge on board wastewater.</p>





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	the estuary / channel. All such wastewater load will be diverted to the proposed Effluent Treatment Plant of the project site.	
iv.	Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.	Being complied. Port has existing Tier-I oil spill response equipment to combat any oil spill supported by Indian Coast Guard to contain, control and recover the oil spill.
v.	The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.	Being a Port activity, this condition is Not Applicable and there is no intake and discharge of waters involved in the Port operations.
vi.	Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.	Complied <ul style="list-style-type: none"> <li>Oil Spills are being managed as per the approved Oil Spill Contingency Plan.</li> <li>AKPL has provided Oil Boom, Skimmer and chemicals to attend any accidental oil spills.</li> <li>Staff was trained to meet Tier-I Oil spills.</li> <li>As per Disaster Management Plan, Indian Coast Guard will be alerted to coordinate.</li> <li>Details were furnished to the MoEF&amp;CC Regional Office, Bangalore, vide our letter no. KP/MoEF/PH-II/20 dated 02.02.2010.</li> <li>Latest OPR drill was conducted at the port on 16.04.2023. Copy attached as Annexure – XVI.</li> <li>Copy of the latest Mock Drills conducted is attached as Annexure – XVI.</li> </ul>
vii.	Total fresh water use shall not exceed the proposed requirement as provided in the project details. Prior permission from competent	Complied.



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	authority shall be obtained for use of fresh water.																																				
viii.	Sewage Treatment Plant shall be provided to treat the wastewater generated from the project. Treated water shall be reused for horticulture, flushing, backwash, HVAC purposes and dust suppression.	<ul style="list-style-type: none"> <li>AKPL has been operating 2 no. of Sewage Treatment Plants of 1 X 500 KLD STP at CVR Amenities Complex &amp; 1 X 40 KLD STP Admin. Building.</li> <li>Treated wastewater from STP is being utilized for the green belt within port premises.</li> <li>Septic tank and soak pit systems are being followed at offices and isolated buildings which are far from STPs.</li> <li>The treated water details for the last six months are as below: <table border="1"> <thead> <tr> <th rowspan="2">Month</th> <th colspan="3">Quantity KL</th> </tr> <tr> <th>STP- 1</th> <th>STP-2</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Oct.23</td> <td>200</td> <td>2.0</td> <td>202</td> </tr> <tr> <td>Nov.23</td> <td>189</td> <td>15.0</td> <td>204</td> </tr> <tr> <td>Dec.23</td> <td>210</td> <td>4.0</td> <td>214</td> </tr> <tr> <td>Jan.24</td> <td>188</td> <td>25</td> <td>213</td> </tr> <tr> <td>Feb.24</td> <td>188</td> <td>26</td> <td>214</td> </tr> <tr> <td>Mar.24</td> <td>173</td> <td>32</td> <td>205</td> </tr> <tr> <td>Average KLM</td> <td>1148</td> <td>104</td> <td>1252</td> </tr> </tbody> </table> </li> </ul>	Month	Quantity KL			STP- 1	STP-2	Total	Oct.23	200	2.0	202	Nov.23	189	15.0	204	Dec.23	210	4.0	214	Jan.24	188	25	213	Feb.24	188	26	214	Mar.24	173	32	205	Average KLM	1148	104	1252
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ix.	A certificate from the competent authority for discharging treated effluent/ untreated effluents into the Public sewer/ disposal/ drainage systems along with the final disposal point should be obtained.	<p>AKPL is not discharging any treated effluent/ untreated effluent into the public sewer.</p> <p>The treated domestic water is being utilized for greenbelt development and dust suppression.</p>																																			
x.	No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.	Being complied																																			
xi.	All the erosion control measures shall be taken at water front facilities. Earth protection work shall be carried out to avoid erosion of soil from the shoreline/boundary line	Being complied																																			



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	from the land area into the marine water body.	
<b>Noise Monitoring and prevention</b>		
i.	Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.	<p>Being complied</p> <p>AKPL appointed a NABL Accredited Laboratory to monitor Noise quality at the following locations:</p> <ol style="list-style-type: none"> <li>1. Zero Point</li> <li>2. Thamminapatnam</li> <li>3. CVR Building</li> <li>4. Gopalapuram</li> <li>5. Chalivendram</li> <li>6. Krishnapatnam</li> <li>7. Krishnapatnam Village near Light House</li> </ol> <p>Submitting the reports to APPCB on monthly basis and to MoEF &amp; CC on Half yearly basis.</p> <p>The reports for the period from October-2023 to March 2024 are furnished at chapter - 5</p>
ii.	Noise from vehicles, power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipment.	Being complied
iii.	Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.	Being complied
iv.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Being complied.
<b>Energy Conservation measures</b>		
i.	Provide solar power generation on roof tops of buildings, for solar light	Being complied



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	system for all common areas, street lights parking around project area and maintain the same regularly	The Port is being supplied with Non-conventional source of energy through Power Grid for uninterrupted power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)
ii.	Provide LED lights in their offices and port areas.	Being complied All the office buildings and other operation buildings are provided with LED lights,
<b>Waste Management</b>		
i.	Dredged material shall be disposed safely in the designated areas.	Being complied.
ii.	Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring reports.	Being complied AKPL appointed NIOT for shoreline monitoring. Draft report received and under review.
iii.	Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986.	Being complied
iv.	The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.	Being complied.
v.	Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.	Being complied.
vi.	A certificate from the competent authority handling municipal solid wastes should be obtained, indicating the existing civic capacities of	Being complied



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	handling and their adequacy to cater to the M.S.W. generated from project.	
vii.	Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.	Being complied
viii.	Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill would be assessed. Guidelines given in MARPOL and Shipping Acts for oil spill management would be followed. Mechanism for integration of terminals oil contingency plan with the overall area contingency plan under the co-ordination of Coast should be covered.	Being complied <ul style="list-style-type: none"> <li>Port has been maintaining Oil Spill Contingency Plan.</li> <li>Port has Tier-I Oil Spill response equipment for recovery of oil spill in coordination with ICG, Krishnapatnam and follows the guidelines given in MARPOL and Shipping Acts.</li> </ul>
<b>Greenbelt</b>		
i.	Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines.	Being complied
ii.	Top soil shall be separately stored and used in the development of green belt.	Being complied. AKPL is using coco peat, red soil and vermi compost for enriching the top soil.
<b>Marine Ecology</b>		
i.	The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.	Being complied
ii.	While carrying out dredging, an independent monitoring shall be carried out through a Government Agency/Institute to assess the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.	Being complied
iii.	A detailed marine biodiversity management plan shall be prepared through the NIO or any other institute of repute on marine,	Being complied AKPL appointed Sugandhi Devadason Marine Research



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	brackish water authority. The report shall be based on a study of the impact of the project activities on the intertidal biotopes, corals and coral communities, molluscs, sea grasses, sea weeds, sub-tidal habitats, fishes, other marine and aquatic micro, macro and mega flora and fauna including benthos, plankton, turtles, birds etc. as also the productivity. The data collection and impact assessment shall be as per standards survey methods and include underwater photography.	Institute for preparing detailed Biodiversity management plan. Final study report is yet to be received.
iv.	Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components including all micro, macro and mega floral and faunal components of marine biodiversity.	Being complied AKPL Appointed a NABL Accredited Laboratory for Monitoring the Terrestrial & Marine parameters viz., Marine water quality, Marine sediment quality, Surface Water Quality and ground water quality at regular intervals with NABL Laboratory. Copies of the Analysis reports for the Period from October 2023 to March 2024 are furnished at chapter - 5
v.	The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.	Being complied. <ul style="list-style-type: none"> <li>• There are no aquatic wildlife sanctuaries in the vicinity of the Port.</li> <li>• AKPL has been ensuring that the water traffic does not impact the marine ecosystem for port operations.</li> </ul>
<b>Public hearing and human health issues</b>		
i.	The work space shall be maintained as per international standards for occupational health and safety with provision of fresh air respirators, blowers, and fans to prevent any accumulation and inhalation of	Being compiled.



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	undesirable levels of pollutants including VOCs.	
ii.	Workers shall be strictly enforced to wear personal protective equipment's like dust mask, ear muffs or ear plugs, whenever and wherever necessary/ required. Special visco-elastic gloves will be used by labour exposed to hazards from vibration.	Being complied.  AKPL strictly enforcing all the workers, employees, stakeholders to wear PPEs at operational areas.
iii.	Safety training shall be given to all workers specific to their work area and every worker and employee will be engaged in fire hazard awareness training and mock drills which will be conducted regularly. All standard safety and occupational hazard measures shall be implemented and monitored by the concerned officials to prevent the occurrence of untoward incidents/ accidents.	Being complied.  <ul style="list-style-type: none"> <li>All the employees, workers &amp; contractors are given daily toolbox talks, monthly review meetings with employees engaged in various activities of the Port.</li> <li>Port implemented and monitoring all standard safety and occupational hazard measures to prevent untoward incidents.</li> </ul>
iv.	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Being complied.  Port has developed Emergency Preparedness Plan and Disaster Management Plan
v.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Being complied.
vi.	Occupational health surveillance of the workers shall be done on a regular basis.	Being complied

**Environmental Responsibility**



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i.	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/ deviation/ violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	Being complied.  AKPL has been implementing all the statutory regulations / directions prescribed and submitting the compliance reports periodically to the authorities viz., MoEF&CC, CPCP & SPCB.
ii.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.	Being complied.  AKPL has formed Environment Cell Headed by Vice President & supporting staff at port level.
iii.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.	Being complied  The Funds & Expenditure earmarked for environment protection measures are being reported in Form – V Environmental Statement and submitting the same to APPCB & MoEF& CC.  Latest submission is on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure - VII
iv.	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	Being complied.  Submitting the 6 Monthly Self Certified & NABL Accredited 3 <sup>rd</sup> Party Compliance Reports for the period from April to September &





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		<p>October to March respectively along with Terrestrial &amp; Marine Monitoring reports to MoEF &amp; CC and APPCB.</p> <p>The detailed parameter values are furnished at Chapter - 5</p>
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**Miscellaneous**

i.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.	<p><b>Complied.</b></p> <p>Advertisement was published in District Newspapers namely "Vartha" in local language &amp; "The New Indian Express" in English language dated 21.01.2021.</p> <p>Copy attached as Annexure - XIII</p>
ii.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in tum has to display the same for 30 days from the date of receipt.	<p>Complied.</p> <p>A copy of the Environmental clearance is submitted to the District Collector vide our letter dated 03.02.2021 and local Panchayats vide letter dated 01.02.2021.</p> <p>Copy attached as Annexure - XIX</p>
iii.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Complied.
iv.	The project proponent shall submit six- monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Complied.



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v.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Being complied  Form – V Environmental Statement submitted to APPCB & MoEF& CC.  Latest submission is on 30.09.2023 for the period 2022-2023. Copy Attached as Annexure - VII
vi.	The criteria pollutant levels namely; PM2.5, PM10, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Complied.
vii.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	AKPL obtained CTE of APPCB for Order No. 633/APPCB/CFE/RO-NLR/HO/2010 dated 25.02.2021.  The project is yet to be implemented.
viii.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.	AKPL officials informed that they have noted the condition and will be complied.
ix.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Being Complied.
x.	No further expansion or modifications in the port area shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).	AKPL officials informed that they have noted the condition and will be complied.



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xi.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.	AKPL officials informed that they have noted the condition and will be complied.
xii.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	AKPL officials informed that they have noted the condition
xiii.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.	AKPL officials informed that they have noted the condition
xiv.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/ monitoring reports.	AKPL officials informed that they have noted the condition
xv.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	AKPL officials informed that they have noted the condition



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**9.5 Compliance on the conditions stipulated in APPCB CTE order vide No. 633/APPCB/CFE/RO-NLR/HO/2010/390 dated 25.02.2021 for phase III**

S.No	Conditions	Compliance																				
1.	The proponent shall obtain Consents for Operation (CFO) from APPCB, as required Under Sec.25/26 of the Water (P&C of P) Act, 1974 and under sec. 21/22 of the Air (P&C of P) Act, 1981, before commencement of the activity.	Complied.  Obtained CTO from APPCB vide Order No. APPCB/ VJA/ NLR/11344/CFO/HO/2019 11/11/2022, valid up to 31.08.2027																				
2.	Compensation is to be paid for any environmental damage caused by it, as fixed by the Collector and District Magistrate as civil liability.	AKPL officials informed that they have noted the condition.																				
3.	The rules and regulations notified by Ministry of Law and Justice, GOI, regarding the Public Liability Insurance Act, 1991 shall be followed.	AKPL officials informed that they have noted the condition.																				
4.	<p><b>Water:</b> The source of water is Muthukur Reservoir of 1000 KLD and 4 MLD of water from Nakkala kalava irrigation drain. The maximum permitted water consumption after proposed expansion is as following:</p> <table border="1"> <thead> <tr> <th>S. No</th> <th>Purpose</th> <th>Qty as per CFO (Phase I &amp; II) (KLD)</th> <th>Proposed in Expansion under Phase III (KLD)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dust Suppression &amp; Other Utilities</td> <td>1600</td> <td>1700</td> </tr> <tr> <td>2</td> <td>Gardening</td> <td>300</td> <td>200</td> </tr> <tr> <td>3</td> <td>Domestic</td> <td>600</td> <td>600</td> </tr> <tr> <td colspan="2"><b>Total</b></td> <td><b>2500</b></td> <td><b>2500</b></td> </tr> </tbody> </table> <p>Separate meters with necessary pipeline shall be provided for assessing the quantity of water used for each of the purposes viz., Dust suppression, Domestic purposes,</p>	S. No	Purpose	Qty as per CFO (Phase I & II) (KLD)	Proposed in Expansion under Phase III (KLD)	1	Dust Suppression & Other Utilities	1600	1700	2	Gardening	300	200	3	Domestic	600	600	<b>Total</b>		<b>2500</b>	<b>2500</b>	<p>Being Complied.</p> <ul style="list-style-type: none"> <li>The consented source of water is from Muthukur Reservoir with a withdrawal quantity of 1000 KLD and 4 MLD of water from Nakkala kalava drain.</li> <li>AKPL is collecting 1000 KLD of water from Muthukur Reservoir through tankers and Nakkala Kaluva water is through pipeline directly to Port.</li> <li>The average daily water consumption for the last six months i.e., from October 2023 to March, 2024 was 2203 KLD which was within the consented quantities.</li> <li>AKPL is submitting the water consumption details in Form – 1 to APPCB on monthly basis</li> </ul>
S. No	Purpose	Qty as per CFO (Phase I & II) (KLD)	Proposed in Expansion under Phase III (KLD)																			
1	Dust Suppression & Other Utilities	1600	1700																			
2	Gardening	300	200																			
3	Domestic	600	600																			
<b>Total</b>		<b>2500</b>	<b>2500</b>																			



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



	Washing and servicing, development of greenery.	and Half-yearly basis to MoEF & CC.																				
5.	<b>Wastewater Generation</b>																					
	<table border="1"> <thead> <tr> <th>S. No</th> <th>Purpose</th> <th>Qty as per CFO(Phase I &amp; II) (KLD)</th> <th>Proposed in Expansion under Phase III (KLD)</th> <th>Total after Expansion (KLD)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Other Utilities</td> <td>-</td> <td>240</td> <td>240</td> </tr> <tr> <td>2</td> <td>Domestic</td> <td>300</td> <td>450</td> <td>750</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>Total</b></td> <td><b>300</b></td> <td><b>690</b></td> <td><b>990</b></td> </tr> </tbody> </table>	S. No	Purpose	Qty as per CFO(Phase I & II) (KLD)	Proposed in Expansion under Phase III (KLD)	Total after Expansion (KLD)	1	Other Utilities	-	240	240	2	Domestic	300	450	750	<b>Total</b>		<b>300</b>	<b>690</b>	<b>990</b>	
S. No	Purpose	Qty as per CFO(Phase I & II) (KLD)	Proposed in Expansion under Phase III (KLD)	Total after Expansion (KLD)																		
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	<b>Treatment &amp; Disposal (As per EC order)</b>																					
	<table border="1"> <thead> <tr> <th>Source of Effluent</th> <th>Treatment</th> <th>Mode of Final Disposal</th> </tr> </thead> <tbody> <tr> <td>Domestic</td> <td>Sewage Treatment Plant of capacity of 700 KLD consisting of Sewage collection Sump, Fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc.</td> <td>Treated domestic effluents shall be utilized for Green belt development and dust suppression</td> </tr> <tr> <td>Utilities</td> <td>Effluent Treatment Plant of 300 KLD capacity consisting of Neutralization tank, Equalization tank, Oil Grease trap, flash mixing tank, clariflocculator, aeration tank, secondary clarifier, holding tank, pressure sand filter, activated carbon filter, sludge drying beds etc. for treating effluents</td> <td>Treated effluent shall be reused for green belt and for dust suppression</td> </tr> </tbody> </table>	Source of Effluent	Treatment	Mode of Final Disposal	Domestic	Sewage Treatment Plant of capacity of 700 KLD consisting of Sewage collection Sump, Fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, treated water tank, Sludge drying beds etc.	Treated domestic effluents shall be utilized for Green belt development and dust suppression	Utilities	Effluent Treatment Plant of 300 KLD capacity consisting of Neutralization tank, Equalization tank, Oil Grease trap, flash mixing tank, clariflocculator, aeration tank, secondary clarifier, holding tank, pressure sand filter, activated carbon filter, sludge drying beds etc. for treating effluents	Treated effluent shall be reused for green belt and for dust suppression												
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	<p><b>Compliance:</b></p> <ul style="list-style-type: none"> <li>At present AKPL has been operating 2 no. of Sewage Treatment Plants as detailed below: <ol style="list-style-type: none"> <li>500 KLD STP at CVR Amenities Complex</li> <li>40 KLD STP Admin. Building.</li> </ol> </li> <li>Treated wastewater from STP is being utilized for the green belt within port premises.</li> </ul>																					



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- Septic tank and soak pit systems are being followed at offices and isolated buildings which are far from STPs.
- Additional capacities shall be provided as per requirement.
- The wastewater generation details for the last 6 months for the period from October 2023 to March 2024 are as below:

Month	Quantity KL		
	STP- 1	STP-2	Total
Oct.23	200	2.0	202
Nov.23	189	15.0	204
Dec.23	210	4.0	214
Jan.24	188	25	213
Feb.24	188	26	214
Mar.24	173	32	205
Average KLM	1148	104	1252

6. The effluent / sewage shall be treated to the on land for irrigation standards, as stipulated under Schedule VI of Environment (Protection) Rules, 1986, notified by Ministry of Environment and Forests, Government of India vide G.S.R.422 (E), dt.19.05.1993 and its amendments thereof. The treated wastewater shall be used for development of greenery, dust suppression, re-used for various purposes within the premises.

Complied.

7. **Air:**  
The Air pollution Control equipment shall be installed along with the commissioning of the activity and shall comply with the following for controlling air pollution:

S.No	Details of Stack	Stack 01
1.	Attached to	DG Sets
2.	Capacity of D.G. set	5 x 2000 KVA, 1 x 1000 KVA, 2 x 750 KVA, 5x 500 KVA, 3 x 320 KVA, 3 x 250 KVA, 3 x 160 KVA, 10 x 125 KVA, 10 x 82.5 KVA, 3 x 380 KVA
	Fuel	<b>Diesel</b>
3.	Stack height above the ground	This condition has been amended vide CFE order No: 633/APP/CB/CFE/RONLR/HO/2010 dated 06.04.2021 The Port shall provide stack heights for the DG sets based on the following formula. $H=h+0.2\sqrt{KVA}$ Where H= Total height



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		of the stack in meters, h= Height of the building in meters
4.	Details of air pollution control equipment	Acoustic enclosures with silencers
<p><b>Compliance:</b></p> <ul style="list-style-type: none"> <li>The Port is being supplied with Non-conventional source of energy through Power Grid for uninterrupted power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)</li> <li>The DG Sets are being operated as back up for emergency lighting &amp; safety during power breakdowns.</li> <li>Retrofitting certification was carried-out for the DG Sets.</li> <li>The DG Sets are being monitored ones in 6 months through a NABL Accredited 3<sup>rd</sup> Party and submitting the analysis reports the concerned departments.</li> <li>Latest Analysis reports dated 21.03.2024 are furnished at Chapter - 5</li> </ul>		
8.	<p>The proponent shall comply with the following for controlling fugitive emissions:</p> <ul style="list-style-type: none"> <li>Vehicle movement shall be minimized / eliminated by implementing mechanical operation.</li> <li>All the vehicles involved in transportation of cargo shall be covered with tarpaulin.</li> <li>Vehicles shall be managed to avoid traffic congestion and shall provide empty dusting vehicle washings / dry cleaning system to clean all out going cargo vehicles.</li> <li>Based on traffic density/vehicular movements anticipated from the port, parking facilities shall be provided.</li> </ul>	<p>Complied.</p> <p>AKPL is implementing the following to control fugitive emissions.</p> <ol style="list-style-type: none"> <li>Provided mechanized ship loaders &amp; unloaders and conveyer systems</li> <li>Provided Water sprinkler system in ship unloaders and conveyer system for dust suppression.</li> <li>Provided GI sheet covering for all transfer towers and Conveyor.</li> <li>Provided MDSS with 248 Nos sprinklers at yards</li> <li>Deployed 12 Nos. of Truck mounted sprinklers for roads and transit areas &amp; stock piles.</li> <li>Provided 8 No. tractor mounted hydraulic broom sweeping machines for cleaning the roads and jetty areas.</li> <li>All the loaded trucks and wagons are ensured to be covered with tarpaulins.</li> </ol>



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		viii. Provided wheel washing facility at the entrance of the dusty cargo storage area.
9.	<p>All the transfer points, loading / unloading points and conveyer systems shall be housed completely with leak proof arrangements. Adequate dust suppression and containment measures shall be implemented for effective control of fugitive emissions.</p>	<p>Being complied.</p> <p>Port has adopted &amp; implementing the following measures for the control of fugitive emissions during handling of bulk &amp; non-bulk cargo and vehicular movement:</p> <ul style="list-style-type: none"> <li>i. Established mechanical conveyor system for handling coal &amp; Iron ore.</li> <li>ii. Provided closed hoods for the conveyor system.</li> <li>iii. Stacker cum re-claimers is being used for loading and unloading the coal.</li> <li>iv. The railway wagons are being loaded mechanically.</li> <li>v. Installed fully mechanized coal handling systems with gantry grab type ship loaders/unloaders.</li> <li>vi. Provided hooded conveyor belt for cargo transferring directly from ship to the designated stack yard by means of closed hoppers and transfer towers.</li> <li>vii. Established closed warehouses for storage of weather sensitive cargoes.</li> <li>viii. The loading and discharge points of the conveyor carrying material are covered with exhaust hoods to prevent the formation of dust clouds.</li> <li>ix. All the conveyor galleries are covered to ensure zero dust emission during cargo transfer.</li> </ul>





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		<ul style="list-style-type: none"><li>x. Provided water sprinkling system at transfer towers to arrest the dust spreading into the atmosphere.</li><li>xi. Provided semi mechanized facilities for truck tarpaulin covering stations to ensuring all the outgoing cargos by trucks are covered with tarpaulin.</li><li>xii. Ensuring all the outgoing Railway Rakes are covered with Tarpaulin.</li><li>xiii. Mist Canon systems provided for watering avenue plantations and road wetting on haul roads</li><li>xiv. Operating Mechanical dust suppression system comprises of 248 canons.</li><li>xv. Deploying DSS Tankers of Cannon mounted for sprinkling water on haul roads and yards to arrest the dust causing by the vehicular movement</li><li>xvi. The Cargo stocks/heaps are covered with tarpaulin.</li><li>xvii. Provided 8 No. tractor mounted hydraulic broom sweeping machines for cleaning the roads and jetty areas,</li><li>xviii. 2 No of Heavy Duty Sweeping Machines are being deployed at operational areas and all internal roads.</li><li>xix. Erected &amp; maintaining wind breaking wall of height 14 mtrs to prevent any dust nuisance towards habitation supported with high density greenbelt.</li></ul>
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xx. Greenbelt in an extent of 196.25 Ha Developed & maintaining green belt along the port covering, yards, roads and all operational areas.

**10. Hazardous / Solid Waste details:**

The Port Authority shall comply with the following w.r.t disposal of solid waste after expansion:

S. No	Name of Waste	Quantity	Mode of Disposal
1.	Solid waste (degradable)	1800 kg/day	To
2.	Solid waste (non-degradable)	200 kg/day	To authorized recyclers
3.	STP Sludge	120 kg/day	To be used as manure
4.	ETP Sludge	50 kg/day	To TSDF for secure fill
5.	Oil containing cargo residue washing water and sludge	250 KLPA	To authorized recyclers/reprocessors/TSDF
6.	Chemical cargo containing residue and sludge	100 KLPA	
7.	Sludge and filters contaminated with oil	200 TPA	
8.	Ballast water containing oil from ships	250 KLPA	
9.	Used/ Spent Oil	350 KLPA	
10.	Wastes/residues containing oil	100 TPA	
11.	Sludge from treatment of waste water arising out of cleaning/ disposal of barrels/ containers	100 TPA	
12.	Discarded containers/barrels/liners contaminated with Hazard waste/chemicals	100 TPA	
13.	Flue gas cleaning residue	10 TPA	
14.	Chemical waste sludge from water treatment	100 TPA	
15.	Oil and skimming residues	20 TPA	

**Compliance:**

AKPL has been collecting, storing and disposing all the wastes generated to authorized recyclers/re-processors and through APEMCL Portal.

- E – Waste is being collected and disposed to SPCB authorized E-waste recyclers and submitting the details in Form – 3 to SPCB regularly. The latest submission is on 30.06.2023 for the Year 2022-2023. Copy Attached as Annexure - V
- Hazardous waste (Waste oil) – AKPL is quantifying the waste oil and disposing to SPCB authorized Waste oil recyclers through APEMCL



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	portal and submitting the details in Form – 4 to SPCB regularly. The latest submission is on 30.06.2023 for the Year 2022-2023. Copy attached as Annexure – VI.	
11.	The following rules and regulations notified by the MOE&F, GOI shall be implemented.	
	a.	Regulation of Persistent Organic Pollutants Rules, 2018.
	b.	Hazardous waste and other wastes (Management and Transboundary Movement) Rules, 2016.
	c.	Plastic Waste Management Rules, 2016.
	d.	Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
	e.	Fly Ash Notification, 2016.
	f.	Batteries (Management & Handling) Rules, 2010.
	g.	E-Waste (Management) Rules, 2016.
	h.	Construction and Demolition waste Management Rules, 2016.
	i.	Solid Waste Management Rules, 2016.
	j.	The Public Liability Insurance Act, 1991 and its amendments thereof other conditions.
	<b>Compliance – AKPL has been following as applicable.</b>	
12.	The Port shall comply with the following conditions as committed during the CFE Committee meeting held on 23.02.2021:	
	i. M/s. KPCL shall implement Mechanized MDSS systems for effective dust control. Water meters and energy meters shall be installed to record the quantity of water consumed and electricity consumed for MDSS systems.	Complied. <ul style="list-style-type: none"> <li>Installed and operating Mechanical Dust Suppression System (MDSS) with 248 Nos. of sprinklers at coal stacking and wagon loading areas.</li> <li>Separate Energy meters are installed to record the electricity consumption for MDSS.</li> </ul>
	ii. M/s. KPCL shall conduct performance evaluation of MDSS systems.	AKPL officials informed that they have noted the condition and will be complied.
	iii. M/s. KPCL shall explore the possibility of usage of Chemical suppressants such as Sodium / Potassium Aluminates, for effectively mitigating the dust emissions during coal / dusty cargo handling.	AKPL officials informed that they have noted the condition and will be complied.



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	<p>iv. M/s. KPCL shall restrict the coal stack height to 10 m only. In future, APPCB will examine the increase in stack height of dusting cargo from 10 m to 12 m depending up on the justification submitted by the port.</p>	<p>Being complied.</p>
	<p>v. This condition has been amended vide CFE order No: 633/APPCB/CFE/RO-NLR/HO/2010 dated 06.04.2021</p> <p>vi. The Govt. of A.P allotted surface water i.e., 1000 KLD from Muthukur Reservoir and 4MLD of water from Nakkalalva irrigation waste water drain, which is sufficient to meet the total water requirement for port utilization for Phase-III. Further, Nellore Municipal Corporation commissioned one STP of 5 MLD capacity to treat municipal sewage. STPs of capacity 70 MLD are under construction. The Port shall explore possibility of utilization of treated waste water for dust suppression purpose in the Port area. The KPCL shall not draw the ground water under any circumstances.</p>	<p>Being Complied.</p> <ul style="list-style-type: none"> <li>• The consented source of water is from Muthukur Reservoir with a withdrawal quantity of 1000 KLD and 4 MLD of water from Nakkala kalava drain.</li> <li>• AKPL is collecting 1000 KLD of water from Muthukur Reservoir through tankers and Nakkala Kaluva water is through pipeline directly to Port.</li> <li>• The average daily water consumption for the last six months i.e., from October 2023 to March, 2024 was 2203 KLD which was within the consented quantities.</li> <li>• AKPL is submitting the water consumption details in Form – 1 to APPCB on monthly basis and Half-yearly basis to MoEF &amp; CC.</li> </ul> <p>Copy of Form – 1 for the period from October 2023 to March 2024 are attached as Annexure – IV.</p>
	<p>vii. M/s. KPCL shall not allow the effluents / leachate generated from dust suppression / coal handling etc., into sea under any circumstances. The garland drains, settling tanks shall be desilted regularly for free flow.</p>	<p>Being complied.</p> <ul style="list-style-type: none"> <li>• AKPL is not discharging the runoff water from coal storage yards and water from dust suppression to the sea.</li> <li>• The runoff water is being diverted to sedimentation pits and the supernatant water is</li> </ul>



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		being used for green belt / dust suppression within the Port.
viii.	Greenbelt of width 100 m shall be developed along the boundary of the port as committed in the public hearing (para no. 5 of EC order dt.11.01.2021) and as stipulated in the CFE order dt.08.05.2010. The greenbelt shall be developed in an area not less than 120 Ha along the Port boundary and around the coal storage areas with native species, as stipulated in EC order dt.11.01.2021. Saline water-resistant saplings shall be planted as Bay-of-Bengal is located in the vicinity.	<p>Being complied.</p> <ul style="list-style-type: none"> <li>• Development of Greenbelt is a regular process in AKPL</li> <li>• As on 31st March 2023, AKPL has successfully developed 196.25 Ha of Green belt along port boundary, around coal yards, avenue &amp; median plantations.</li> <li>• Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port).</li> <li>• Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary.</li> <li>• Maintaining 20-meter width greenbelt around the coal stack yards.</li> </ul>
ix.	The liquid cargo / chemicals shall be stored in the port area complying with OISD norms. All precautions shall be taken to prevent any chemical accidents. The chemicals stored in the port premises and their capacities shall be informed to the EE, RO: Nellore from time to time.	AKPL officials informed that they have noted the condition and will be followed.
x.	This condition has been amended vide CFE order No: 633/APP/CFE/RO-NLR/HO/2010 dated 06.04.2021 The Port shall implement effective dust suppression measures to meet National Ambient Air Quality standards.	Complied.



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	<p>xi. This condition has been amended vide CFE order No: 633/APPCB/CFE/RO-NLR/HO/2010 dated 06.04.2021 The Port shall maintain and operate 3 nos. of CAAQM stations properly, consistently and transmit the data to the APPCB server, online.</p>	<p>Complied.</p>
	<p>xii. The Coal stock yard shall be enclosed suitably to have three layers of green belt of varying height on all the sides.</p>	<p>Complied. Maintaining 20-meter width greenbelt around the coal stack yards.</p>
	<p>xiii. Dusty cargos shall be handled through mechanized handling equipment for loading &amp; unloading operations.</p>	<p>Being complied.</p>
	<p>xiv. Closed conveyor belt with water sprinkling arrangement shall be provided for conveying dusty cargos like coal&amp; iron ore.</p>	<p>Being complied.</p>
	<p>xv. The ship un-loader for unloading and transfer of material shall be provided with in-situ water sprinkling system to avoid dust nuisance.</p>	<p>Being complied.</p>
	<p>xvi. Mechanical stackers cum reclaimers for staking transfer and reclamation and conveyors for transfer of material without manual handling.</p>	<p>Being complied.</p>
	<p>xvii. Dry fogging system shall be provided at transfer points.</p>	<p>Being complied.</p>
	<p>xviii. Automatic water sprinkling shall be provided at all dusty cargo stock yards. There shall be interlocking between the CAAQM station values for particulate matter and MDSS.</p>	<p>Being complied. Presently AKPL has been provided Mechanical dust suppression system. It was informed that the possibility of providing automatic water sprinkling system will be explored during the implementation of Phase – III.</p>



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	xix. The facility shall maintain standby centrifugal pump with drive motor for uninterrupted dust suppression of the cargo.	Being complied.
	xx. The coal & iron ore shall be transported by rail from the stacking area as far as possible. The residual cargo if any shall be transported by road through covered trucks duly complying with the following measures:	Being complied. <ul style="list-style-type: none"> <li>• Majority of the coal is being transported to the nearby Power plants through closed conveyors,</li> <li>• For the steel plants and cement plants the coal is being transferred through rail with tarpaulin covers,</li> <li>• A small quantity of coal is being transferred through truck covered with tarpaulins.</li> </ul>
	a. Traffic congestion shall be avoided.	Being complied.
	b. Automated mechanical water sprinkling shall be provided on roads and at dusty cargo storage areas, for suppression of dust.	Presently AKPL has been deploying DSS Tankers for dust suppression on the roads.
	c. All the vehicles involved in transportation of cargo during the break downs shall be covered with tarpaulin and also ensure to manage vehicles	Being complied.
	d. The truck movement shall be through a dedicated road meant for truck movement located and avoid movement of trucks closer to residential areas.	Being complied.
	e. The trucks shall be fully covered with tarpaulin while playing with cargo on the roads.	Being complied.
	f. All cargo vehicles moving out from the port shall be passed through vehicle wheel wash area.	Being complied.



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	g. The port shall provide oil spill containment facilities around the SBM.	Being complied. Port is equipped with Tier-1 Oil spill response equipment.
	h. The port shall take necessary environmental protection measures for the dump yard of the dredged material.	Being complied.
13.	The industry shall comply with all the conditions stipulated in the EC order dt. 11.01.2021 issued by MoEF&CC, GoI, New Delhi.	Being complied.
14.	Fire detection and firefighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.	Being complied. AKPL is having 2 no. of Fire Tenders and 10 no. of Tankers with Fire guns with sufficient water storage facility.
15.	Onsite & offsite Disaster Management plan shall be prepared to meet any eventuality in case of any accident. Mock drills shall be conducted atleast twice a year and modifications required if any shall be incorporated in Disaster Management Plan and shall submit to Board.	Complied.
16.	The Port Authorities shall prepare a safety report and carry out an independent safety audit report of the respective industrial activities including chemical storages / isolated storages by an expert not associated with such industrial activity as required under Rule 10 of MSIHC Rules, 1989 and get it approved by the Factories Dept., and submit the compliance along with copy of the safety report, safety audit report and safety certificate at concerned Regional Office, APPCB.	Being complied.
17.	The Port Authorities shall submit a copy of the NOC issued by the Andhra Pradesh State Disaster Response and Fire Service Dept.,	Being complied.





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	(APSDRFSD) at concerned Regional Office, APPCB.	
18.	The Port Authorities shall submit risk assessment report covering worst scenario clearly describing impact within the industry premises and outside the industry premises and emergency response system.	Complied.
19.	The Port Authorities shall obtain prior permission from MoEF&CC, Gol and APPCB for any changes in the cargo type / capacity.	AKPL officials informed that they have noted the condition and will be complied.
20.	DO levels in the sea water at the dredging area shall be monitored at regular interval and the dredging time shall be suitably regulated to prevent depletion of DO levels in the sea water.	<p>Being complied.</p> <ul style="list-style-type: none"> <li>• AKPL appointed a NABL Accredited Laboratory to conduct Environmental Monitoring i.e., Terrestrial &amp; Marine parameters.</li> <li>• The reports are being submitted to APPCB on monthly basis and MoEF&amp;CC on half-yearly basis.</li> <li>• The reports for the period from October 2023 to March 2024 are furnished at chapter - 5</li> <li>• In addition, NCSCM is Monitoring the Land, Air quality, Noise, Water, Marine, Marine sediment parameters and mangroves, ones in four years.</li> <li>• Latest NCSCM Monitoring report is attached as Annexure – XXIV.</li> </ul>
21.	The industry shall submit compliance to the conditions stipulated in the EC and CFE orders to the concerned Regional Officer of APPCB every six months and shall upload the same at APPCB website viz., <a href="https://pcb.ap.gov.in/UI/Submission_Compliance_of_EC_CFE_CFO_Direction.aspx">https://pcb.ap.gov.in/UI/Submission_Compliance_of_EC_CFE_CFO_Direction.aspx</a> .	Complied. Copies of the Acknowledgements are attached as Annexure – IX.



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22.	Concealing the factual data or submission of false information/ fabricated data and failure to comply with any of the conditions mentioned in this order may result in withdrawal of this order and attract action under the provisions of relevant pollution control Acts.	AKPL officials informed that they have noted the condition and will be followed.
23.	Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves its right and power Under Sec. 27(2) of Water (Prevention and Control of Pollution) Act, 1974 and Under Sec.21(4) of Air (Prevention and Control of Pollution) Act, 1981 to revoke the order, to review any or all the conditions imposed herein and to make such modifications as deemed fit and stipulate any additional conditions.	AKPL officials informed that they have noted the condition and will be followed.
24.	Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules,1982, to such authority (hereinafter referred to as the Appellate Authority) constituted under Section 28 of Water (Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air (Prevention and Control of Pollution) Act, 1981.	AKPL officials informed that they have noted the condition and will be followed.



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**9.6 Compliance on the conditions stipulated in Schedule – A, B & C of APPCB CTO & HWA Combined Order No. APPCB/ VJA/NLR/11344/CFO/HO/2019 11/11/2022, valid up to 31.08.2027.**

S No	CFO conditions	Status
<b>Schedule - A</b>		
1.	Any up-set condition in any industrial plant / activity of the industry, which result in, increased effluent / emission discharge and/ or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge / emission below the limits.	AKPL officials informed that they have noted the condition and will be followed.
2.	The port should carryout analysis of wastewater discharges or emissions through chimneys for the parameters mentioned in this order on quarterly basis and submit to the Board.	Being Complied. AKPL appointed an NABL Accredited and MoEF&CC recognized Labs and Consultants to carry-out monitoring the parameters of terrestrial as well as marine water quality and submitting the report to A.P. Pollution Control Board on monthly basis.
3.	All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 should be followed as applicable.	AKPL officials informed that they have noted the condition and will be followed.
4.	Notwithstanding anything contained in this consent order, the Board hereby reserves the right and powers to review / revoke any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.	AKPL officials informed that they have noted the condition and will be followed.
5.	The industry shall ensure that there shall not be any change in the process technology, source & composition of raw materials and scope of working without prior approval from the Board.	AKPL officials informed that they have noted the condition and will be followed.
6.	The applicant shall submit Environment statement in Form V before 30th September every year as per Rule No.14 of E (P) Rules, 1986 & amendments thereof.	Complied Environmental Statement in Form – V is being submitted annually. Form-V Environment Statement for the FY 2022-2023 is submitted on 30.09.2023.



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7.	The applicant should make applications through Online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board.	Complied AKPL obtained CFO & HWA from APPCB vide order No APPCB/VJA/NLR/ 11344/CFO/HO/2019 dated 11.11.2022 valid up to 31 <sup>st</sup> August 2027.
8.	The port should immediately submit the revised application for consent to this Board in the event of any change in the raw material used, processes employed, quantity of trade effluents & quantity of emissions. Any change in the management shall be informed to the Board. The person authorized should not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.	AKPL officials informed that they have noted the condition and will be followed.
9.	Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air(Prevention and Control of Pollution) Act, 1981.	AKPL officials informed that they have noted the condition and will be followed.
10.	The conditions stipulated are without prejudice to the rights and contentions of this Board in any Hon'ble court of law.	AKPL officials informed that they have noted the condition and will be followed.
11.	The port shall be liable to pay Environmental Compensation / Other Environmental Taxes, if any environmental damage caused to the surroundings, as fixed by the Collector & District Magistrate or any other competent authority as per the Rules in vogue.	AKPL officials informed that they have noted the condition and will be followed.
12.	The port may explore the possibility of tapping the solar energy for their energy requirements.	AKPL officials informed that they have noted the condition and will be followed.



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13.	The port should educate the workers and nearby public of possible accidents and remedial measures.	AKPL officials informed that they have noted the condition and will be followed.
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S. No	Conditions	Compliance
	<b>Schedule - B</b>	
1.	The port shall complete mechanizing of Berth No.6 by 31st March, 2023.	Complied. Mechanization of berth no 6 has been completed in the month April 2023.
2.	The port shall complete the mechanization of Berth No. 5 within 24 months from the date when the coal handled at Berth No. 5 is adequate to handle through mechanization system. Till the mechanization is completed, the port shall do sprinkling along with MDSS to control dust pollution due to handling of coal.	Being Complied. Mobile atomizers and water tankers are being deployed while handling coal at berth no 5.
3.	The port shall maintain the existing greenbelt of 100m width along the periphery. Further, development of 100m green belt at other expansion areas shall be taken up at the time of expansion of the port facility and shall be completed within 3 years.	Complied.
4.	The port shall develop the 20m width greenbelt along the existing coal stock yards as per EC & CFO conditions within a time period of 2 years	Complied. 20 meters with greenbelt developed around the coal stack yards
5.	The port shall maintain storm water drains and improvement of the storm water drains in new areas shall be taken up along with the expansion of the port.	Complied.



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6.	<p>The source of water is Muthukur Reservoir 1000 KLD and 4 MLD of water from Nakkala kalava irrigation drain. The maximum permitted water consumption after proposed expansion is as following:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Purpose</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Dust suppressions &amp; Miscellaneous (Fire protection services)</td> <td>1950.0 KLD</td> </tr> <tr> <td>2.</td> <td>Gardening</td> <td>400.0 KLD</td> </tr> <tr> <td>3.</td> <td>Domestic</td> <td>650.0 KLD</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td>3000.0 KLD</td> </tr> </tbody> </table> <p>Separate meters with necessary pipe-line shall be maintained for assessing the quantity of water used for each of the purposes mentioned above</p>	S. No.	Purpose	Quantity	1.	Dust suppressions & Miscellaneous (Fire protection services)	1950.0 KLD	2.	Gardening	400.0 KLD	3.	Domestic	650.0 KLD	Total:		3000.0 KLD	<p>The average water consumption for the April 2024 was 2853 KLD against the permitted of 3000 KLD, i.e.,</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Purpose</th> <th>Quantity KLD</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Dust suppressions &amp; Miscellaneous (Fire protection services)</td> <td>1854.45</td> </tr> <tr> <td>2.</td> <td>Gardening</td> <td>380.30</td> </tr> <tr> <td>3.</td> <td>Domestic</td> <td>618.25</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td>2853.00</td> </tr> </tbody> </table>	S. No.	Purpose	Quantity KLD	1.	Dust suppressions & Miscellaneous (Fire protection services)	1854.45	2.	Gardening	380.30	3.	Domestic	618.25	Total:		2853.00
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7.	<p>The port shall comply the following effluent discharge standards based on the disposal points permitted:</p> <table border="1"> <thead> <tr> <th>Outlet</th> <th>Parameter No.</th> <th>Limiting Standards</th> </tr> </thead> <tbody> <tr> <td rowspan="5">1</td> <td>pH</td> <td>6.50 – 9.00</td> </tr> <tr> <td>Total Suspended Solids (TSS at 103 – 105°C)</td> <td>&lt;100.00 mg/l</td> </tr> <tr> <td>Oil and Grease</td> <td>10.00 mg/l</td> </tr> <tr> <td>Biochemical Oxygen Demand (BOD 3 days at 27°C)</td> <td>30.00 mg/l</td> </tr> <tr> <td>Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml)</td> <td>&lt;1000 MPN/100 ml</td> </tr> </tbody> </table>	Outlet	Parameter No.	Limiting Standards	1	pH	6.50 – 9.00	Total Suspended Solids (TSS at 103 – 105°C)	<100.00 mg/l	Oil and Grease	10.00 mg/l	Biochemical Oxygen Demand (BOD 3 days at 27°C)	30.00 mg/l	Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml)	<1000 MPN/100 ml	<p>AKPL has been operating</p> <ul style="list-style-type: none"> <li>- 500 KLD STP (1 X 300 KLD &amp; 1 X 200 KLD) at CVR Amenities Complex</li> <li>- 40 KLD STP Admin. Building</li> </ul>																
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8.	<p>The port shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 and ~S.R.448(E), dated 12.07.2004 under the Environment (Protection) Act Rules. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986</p>	<p>Complied. AKPL appointed a NABL Accredited Laboratory for Environment, Terrestrial &amp; Marine Monitoring. DG stack Emission is being monitored by the third party once in 6 months and submitting the reports. The latest monitoring was during March 2024. <b>The reports furnished in Chapter - 5</b></p>																														



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9.	<p>The port shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10<math>\mu</math>.m) - 100 <math>\mu</math>g/ m<sup>3</sup>; PM2.5 (Particulate Matter size less than 2.5 <math>\mu</math>m) - 60 <math>\mu</math>g/ m<sup>3</sup>; SO<sub>2</sub> - 80 <math>\mu</math>g/ m<sup>3</sup>; NO<sub>x</sub> - 80 <math>\mu</math>g/ m<sup>3</sup>, outside the factory premises at the periphery of the industry.</p> <p>Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.E-29016/20/90/PCI-I, dated 18.11.2009.</p> <p>Noise Levels: Day time (6 AM to 10 PM) - 75 dE (A) Night time (10 PM to 6 AM) - 70 dB (A)</p>	<p>Complied.</p> <p>AKPL has been operating 3 no. of Continuous Ambient Air Quality Monitoring stations at CVR Amenities Complex, towards Thamminapatnam Village and towards Krishnapatnam Village for the parameter PM2.5, PM10, SO<sub>2</sub>, NO<sub>x</sub>, CO and NH<sub>3</sub>.</p>
10.	<p>The Port shall take all measures including latest available technologies to comply with above ambient air quality standards</p>	<p>Being complied.</p> <p>Port has adopted &amp; implementing the following measures for the control of fugitive emissions during handling of bulk &amp; non-bulk cargo and vehicular movement:</p> <ol style="list-style-type: none"> <li>i. Established mechanical conveyor system for handling coal &amp; Iron ore.</li> <li>ii. Provided closed hoods for the conveyor system.</li> <li>iii. Stacker cum re-claimers is being used for loading and unloading the coal.</li> <li>iv. The railway wagons are being loaded mechanically.</li> <li>v. Installed fully mechanized coal handling systems with gantry grab type ship loaders/unloaders.</li> <li>vi. Provided hooded conveyor belt for cargo transferring directly from ship to the designated stack yard by means of closed hoppers and transfer towers.</li> </ol>



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	<ul style="list-style-type: none"><li>vii. Established closed warehouses for storage of weather sensitive cargoes.</li><li>viii. The loading and discharge points of the conveyor carrying material are covered with exhaust hoods to prevent the formation of dust clouds.</li><li>ix. All the conveyor galleries are covered to ensure zero dust emission during cargo transfer.</li><li>x. Provided water sprinkling system at transfer towers to arrest the dust spreading into the atmosphere.</li><li>xi. Provided semi mechanized facilities for truck tarpaulin covering stations to ensuring all the outgoing cargos by trucks are covered with tarpaulin.</li><li>xii. Ensuring all the outgoing Railway Rakes are covered with Tarpaulin.</li><li>xiii. Mist Canon systems provided for watering avenue plantations and road wetting on haul roads</li><li>xiv. Operating Mechanical dust suppression system comprises of 248 canons.</li><li>xv. Deploying DSS Tankers of Cannon mounted for sprinkling water on haul roads and yards to arrest the dust causing by the vehicular movement</li><li>xvi. The Cargo stocks/heaps are covered with tarpaulin.</li><li>xvii. Provided 8 No. tractor mounted hydraulic broom</li></ul>
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Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



		<p>sweeping machines for cleaning the roads and jetty areas,</p> <p>xviii. 2 No of Heavy Duty Sweeping Machines are being deployed at operational areas and all internal roads.</p> <p>xix. Erected &amp; maintaining wind breaking wall of height 14 mtrs to prevent any dust nuisance towards habitation supported with high density greenbelt.</p> <p>xx. Greenbelt in an extent of 196.25 Ha Developed &amp; maintaining green belt along the port covering, yards, roads and all operational areas.</p>																					
11.	The Port shall not increase the capacity beyond the permitted capacity mentioned in this order, without obtaining CFE & CFO of the Board	<p>AKPL has handled 5.36 MMTs of permitted Commodities in the Month of April 2024.</p> <table border="1"> <thead> <tr> <th>S. N</th> <th>Type of Cargo</th> <th>Cargo handled in April 2024</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Coal</td> <td>4.38 MMT</td> </tr> <tr> <td>2.</td> <td>Iron Ore</td> <td>0.29 MMT</td> </tr> <tr> <td>3.</td> <td>General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others).</td> <td>0.53 MMT</td> </tr> <tr> <td>4.</td> <td>Liquid Cargo (POL, LNG, LPG, Chemical products)</td> <td>0.08 MMT</td> </tr> <tr> <td></td> <td>Total</td> <td>5.28</td> </tr> <tr> <td>5.</td> <td>Container Cargo</td> <td>0.01 TEUs</td> </tr> </tbody> </table>	S. N	Type of Cargo	Cargo handled in April 2024	1.	Coal	4.38 MMT	2.	Iron Ore	0.29 MMT	3.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others).	0.53 MMT	4.	Liquid Cargo (POL, LNG, LPG, Chemical products)	0.08 MMT		Total	5.28	5.	Container Cargo	0.01 TEUs
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12.	Coal stack heights in all coal yards shall not be more than 12mts.	Complied																					
13.	The port shall ensure required wetness all the time on the surface of stock piles to avoid the dust emissions from the stock piles.	AKPL has been carrying out sprinkling around the stock piles and operating MDSS.																					
14.	The port shall install sufficient number of CAAQM stations in between the villages and the port area. The stations	Complied.																					



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	shall be located at the periphery of the villages to monitor all the parameters given in the consent order.	
15.	The port shall maintain properly the three CAAQM stations provided and shall be connected to APPCB website.	Complied.
16.	Unloading of iron ore from the railway wagons house should be carried out with wagon tippers only, in case, handling of iron ore is more than 6 MTPA. As and when iron ore handling is to be done intermittently, it should be handled with water sprinkling system at high pressure with swiveling type nozzles operated regularly to cover entire stockpile. Nozzles shall be operated along stockpile at regular intervals to cover stockpile height and width.	AKPL has been carrying out sprinkling around the stock piles and operating MDSS.
17.	The port shall take adequate air pollution control measures with respect to the enhanced dusty materials handling capacities	Complied. Deploying 5 no. of jet water tankers in addition to 10 no. of DSS tankers to control dust emissions.
18.	The port shall stock all the dusty materials within the designated storage yards only.	Complied Designated storage yards have been provided for dusty cargo.
19.	The port activities are concentrating in north quay by construction of 12th Berth, hence the stocking of dusty materials shall not be extended towards the residential areas around the port area.	Complied.
20.	The dusty materials transporting vehicles shall be closed in all respects/ covered with tarpaulin for controlling fugitive emissions	Being Complied. Provided 14 No. of Truck tarpaulin covering stations and ensuring all the outgoing cargo vehicles are properly covered with tarpaulin and tightened with rope to control fugitive emissions and transit spillages.
21.	The port shall provide wheel washing facility near the dusty cargo stocking	Complied. Operating one wheel washing facility at NEC Road, Near to East



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	area, to the freighted vehicles going outside the port.	- West Gate. Establishment of 2 <sup>nd</sup> Truck wheel wash facility and the same is in progress expected to be completed by the end of June 2024.
22.	The port shall inform the modifications made in port infrastructure developments to the MoEF&CC and to the Board time to time.	Being complied.
23.	The port shall obtain EC for any change of scope of the project and shall restrict the port activities as permitted vide EC Orders Dt.26.07.2006 for Phase - I, 13.11.2009 for Phase - II & Phase-III (Expansion) 11.01.2021	Being complied.
24.	The port shall continuously operate the 3 CAAQM stations installed in between villages and port area to monitor all the parameters given in the consent order and upload the data continuously to the APPCB / CPCB websites.	Complied.
25.	The MDSS system shall be in operation wherever the stock of any bulk material (Dusty cargo) is piled in a way to ensure wetness on the surface of stock piles.	Complied. Deploying 5 no. of jet water tankers in addition to 10 no. of DSS tankers to control dust emissions.
26.	As regards to deviation in location of facilities such as stock piles and other facilities, from the originally envisaged plan, amendments for the EC and CFE have to be obtained immediately.	Being complied.
27.	The port shall maintain the existing green belt with adequate width and density and in vacant places	Complied.
28.	The port shall use road sweeping machines to clean all port internal roads regularly.	Complied. AKPL has been operating 2 no. of heavy duty Sweeping mechanics and 10 mechanical road sweeping mechanic
29.	The port shall ensure that the trucks transporting cargos to outside the port shall be covered with tarpaulin to avoid fugitive emissions / spillages.	Being complied.



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30.	All conveyor belts and other transfer points shall be covered with GI sheets to mitigate fugitive emissions generated during conveying of dusty cargos.	Complied Provided GI Sheet cladding and with sprinklers system to control fugitive emissions.
31.	The port shall maintain water sprinklers for effective control of fugitive emissions generated during handling of cargo and increased volume of vehicular traffic.	Complied. Deploying 5 no. of jet water tankers in addition to 10 no. of DSS tankers to control dust emissions.
32.	The port shall maintain Mechanical Dust Suppression System (MDSS) for stock yards, dusty cargo berths and conveyor belts.	Complied.
33.	The port shall develop and maintain 100 m width greenbelt along the periphery & 20m width around coal stack yards as per EC / CFE condition.	Complied.
34.	The port shall maintain empty dusty cargo vehicles washing system to clean dusty cargo empty vehicles.	Complied.
35.	The port shall record the energy consumption for the energy meters provided for Sewage Treatment Plant (STP), pump houses to water sprinklers / dust suppression measures and Air Pollution Control Equipments (APCE)	Complied.
36.	The port shall not allow any hazardous wastes through the port other than waste oil from DG Set, Waste oil from Ship, Wastes / residues containing oil from ships, used oil generated in the Port without prior permission of Board and shall comply with EC conditions.	Complied.  All the generated hazardous waste are being disposed through APEMC
37.	The port shall not store any hazardous waste within the premises as per the time frame mentioned in HWM Rules	Complied
38.	In case a leaky container of hazardous cargo is found, a separate permission of the Board may be obtained after establishing the quality and the type of waste for disposal	Being complied



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39.	All types of the fertilizers should be stored in the closed warehouses only. The Port should ensure that there should not be any open storage of urea or any other fertilizer materials. There shall not be any effluent generation	Complied. Provided closed sheds of 13 Nos. to store the fertilizers.
40.	The port shall store fuel oils used for construction equipment, vessels and vehicles in a well designed manner and protect them against fire hazards by construction of compound wall to prevent access to unauthorized elements. The surface run off from storage area shall pass through oil water separator before being discharged.	Complied
41.	The port shall provide fire detection and fire fighting facilities with adequate water storage in fire prone areas in consultation with Directorate of fire fighting.	Complied. AKPL is having 2 no. of Fire Tenders and 10 no. of Tankers with Fire guns with sufficient water storage facility..
42.	The port shall comply latest technologies for controlling fugitive emissions including the following: a) Fully mechanized handling equipment for loading and unloading operations b) Closed conveyor belt with water sprinkling arrangement for suppression of dust while conveying dusty cargoes like coal, iron ore etc. c) Specially designed iron ore ship loader with necessary precautions to reduce drop height of iron ore into the ship, while handling more than 6 Million Tons per annum. d) Mechanical water sprinkling shall be provided on roads and at dusty cargo storage areas for suppression of dust.	Complied. a. Provided coal ship un loaders and conveyor at berths 6,7 & 8 b. Provided water sprinkling system in ship un loaders and conveyor system for dust suppression c. Provided Mechanical water sprinkling at coal storage yard and tankers to suppress the dust.
43.	The port shall maintain adequate number of ground water monitoring location on scientific basis and the	There is no ground water withdrawal within the port premises. AKPL appointed a NABL



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	same shall be monitored every six months	Accredited Laboratory to monitor the Ground water at 4 locations outside the port. As per the analysis reports, there was no adverse impact due to port operations.
44.	The port shall construct the storm water drains to avoid the contamination of runoff with other effluents.	Complied.
45.	The port shall regularly clean the drains to avoid siltation.	Being complied.
46.	The port shall monitor compliance through Environment Management Cell with qualified and trained staff.	Complied
47.	The port shall maintain onsite emergency action plan after carrying out risk analysis and hazop studies	Maintaining
48.	The port shall comply with the conditions of CFE order dated 08.05.2010, 22.02.2018 and 25.2.2021.	Being complied.
49.	The port shall submit monthly monitoring reports to RO: Nellore	Being submitted on monthly basis.
50.	The port shall comply with standards and directions issued by APPCB / CPCB / MoEF&CC as and when notifications are issued from time to time	Being complied.
51.	The port shall install digital display boards at publicly visible places at the main gate indicating the products manufactured Vs permitted quantities, Treated effluent concentrations Vs discharge standards, Stack emission & AAQ concentrations Vs standards, hazardous waste generation, disposed, stock Vs permitted quantities and validity of CFO; and exhibit the CFO order at a prominent place in the factory premises, as per Hon'ble Supreme Court order	Complied.
52.	The port shall submit Half yearly compliance reports to all the stipulated conditions in Environmental Clearance (EC), Consent for Establishment (CFE) and Consent for Operation (CFO) through	Complied.



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	website i.e., <a href="https://pcb.ap.gov.in">https://pcb.ap.gov.in</a> by 1st of January and 1st July of every year. The first half yearly compliance reports shall be furnished by the port and second half yearly compliance reports shall be the audited through MoEF&CC recognized and National Accreditation Board for Laboratory Testing (NABL) accredited third party	
53.	The port shall possess valid NOC issued by the Andhra Pradesh State Disaster Response and Fire Service Dept., (APSDRFSD) and submit a copy at concerned Regional Office, APPCB.	Complied.
54.	The port shall prepare a safety report and carry out an independent safety audit report of the respective industrial activities including chemical storages / isolated storages by an expert not associated with such industrial activity as required under Rule 10 of MSIHC Rules, 1989 and get it approved by the Factories Dept., and submit the compliance along with copy of the safety report, safety audit report and safety certificate at concerned Regional Office, APPCB.	Complied
55.	The port shall extend training to the working personnel for the prevention of accidents and necessary antidotes to ensure safety, as per the MSIHC Rules, 1989.	Being Complied.
56.	The port shall carryout calibration of safety equipment and leak detection systems at regular intervals and shall certify the same with the Factories Department. That certified copy shall be submitted to the APPCB, Regional Office.	Being complied.
57.	The port shall install fluorescent Wind Vane at the highest point in the port premises	Installed.
58.	The port shall submit Risk analysis and risk assessment covering worst	Complied.



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	scenario clearly describing impact within the port premises and outside the port premises and emergency response system.	
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59.	The port shall submit the copy of the safety audit report and On-Site / Off Site Emergency Plans as applicable after being certified by the Factories Department to the APPCB, Regional Office from time to time, if the storage quantity of hazardous chemicals is equal to or, in excess of the threshold quantities specified in schedule 2 & 3 of MSIHC Rules, 1989.	Complied.
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**Schedule C**

<b>1</b>	The authorized person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.	AKPL officials informed that they have noted the condition and will be complied.
<b>2</b>	The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the State Pollution Control Board.	AKPL is having APPCB CTO & HWA Combined Order No. APPCB/VJA/NLR/11344/CFO/HO/2 019 11/11/2022, valid up to 31.08.2027
<b>3</b>	The person authorized shall not rent, lend, sell, transfer, or otherwise transport the Hazardous and other wastes except what is permitted through this authorization.	Being complied.
<b>4</b>	Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization	Being complied.
<b>5</b>	The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site-specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;	AKPL officials informed that they have noted the condition and will be complied.





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<b>6</b>	The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty".	AKPL officials informed that they have noted the condition and will be complied.
<b>7</b>	It is the duty of the authorized person to take prior permission of the State Pollution Control Board to close the facility.	AKPL officials informed that they have noted the condition and will be complied.
<b>8</b>	An application for the renewal of an authorization shall be made as laid down under these Rules.	AKPL is having APPCB CTO & HWA Combined Order No. APPCB/VJA/NLR/11344/CFO/HO/2 019 11/11/2022, valid up to 31.08.2027
<b>9</b>	Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.	AKPL officials informed that they have noted the condition and will be complied.
<b>Specific conditions</b>		
<b>10</b>	The port shall comply with the provisions of HWM Rules, 2016 in terms of interstate transport of Hazardous Waste and manifest document prescribed Under Rule 18 and 19 of the HWM Rules, 2016.	Being Complied. AKPL has been disposing the Hazardous Waste through APEMCL Portal only.
<b>11</b>	The port shall not store hazardous waste for more than 90 days as per the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.	Being complied.
<b>12</b>	The port shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.	Being complied.
<b>13</b>	The industry shall transport the hazardous waste to cement industries only through vehicle fitted with GPS tracking system.	Being Complied. AKPL has been disposing the Hazardous Waste through APEMCL Portal only and the vehicles registered in the Portal are provided with GPS Tracking.
<b>14</b>	The industry shall maintain 7 copy manifest system for transportation of waste	Being Complied.



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	generated and a copy shall be submitted to concern Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card	AKPL has been disposing the Hazardous Waste through APEMCL Portal only
<b>15</b>	The industry shall maintain proper records for Hazardous and Other Wastes stated in Authorization in Form-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form-4 as per Rule 20 (2) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.	Being complied. Form - 4 submitted on 30.06.2023
<b>16.</b>	Annual return shall be filed by June 30th for the period ensuring 31st March of the year.	Complied. Form - 4 (Hazardous Waste) Annual Report submitted on 30.06.2023 Copy attached as Annexure - VI



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# Chapter -10



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



## 10.0 Conclusion Remarks & Compliance Certification:

The project proponent M/s. Adani Krishnapatnam Port Limited (AKPL) approached **Spectra Envirotech Pvt. Ltd., (SEPL)** to undertake Auditing, preparation & Certification of the compliance status of the conditions stipulated in the EC & CRZ Clearance of MoEF & CC, CTE & CTO of APPCB including Monitoring/Sampling of Air, Terrestrial & Marine parameters and Environmental Data analysis for various environmental factors for which SEPL accepted the job to Audit, prepare & submit the certified Half-yearly Compliance to MoEF & CC & APPCB.

As per the scope of the work, the Environmental data has been collected for various environmental components viz.

1. Ambient Air Quality Monitoring in and around the port purview considering the upwind & downwind directions.
2. Terrestrial sampling, analysis & preparation of reports
  - Ground & Surface water sample collection & analysis
  - Sewage Treatment Plant (STP) (Inlet & Outlet)
  - Noise Levels dB (A)
  - DG Set Stack Monitoring
3. Marine sampling, analysis & preparation of reports:
4. Preparation of Compliance & Uploading in the portal.

This is a certified compliance comprises with 11 chapters covering all the information of the Port activities & updated compliance status of all the conditions stipulated in EC & CRZ of MoEF & CC, CTE & CTO of A.P. Pollution Control Board.

This report has been prepared by **Spectra Envirotech Pvt. Ltd.**, with all reasonable skill, care and diligence within the terms of the contract with the client, and with the data provided & available, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

### **M/s. Spectra Envirotech Pvt. Ltd.,**

Plot No.142/1, Eruvada Junction,  
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Anakapalli Dist., (Earlier Visakhapatnam Dist.)  
Pin: 531 035



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### **10.1 Compliance Audit Remarks:**

- 1 AKPL is an ISO 9001:2015, 14001 2015, 45001:2018, 50001:2018 and ISO 14001-2015 Certified Port for providing Integrated Seaport Facilities and Related Services for Handling, Storage and Delivery of Cargo.
- 2 AKPL is having valid consent of A.P. Pollution Control Board up to 31.08.2027 and the cargo handled for the FY 2023-24 is within the limits of the consented volume.
- 3 Out of 13 Berths, 2 Berths are Container Berths, 7 Berths are fully mechanized berths, 3 Berths are Semi-mechanized and one berth is a liquid Jetty equipped with pipelines.
- 4 Majority of Port operations (80%) are carried out through mechanized terminals and through sophisticated cargo handling equipment so as to avoid cargo spillage and dust emissions during the cargo handling activities.
- 5 All conveyors are covered and transfer houses are provided with cladding.
- 6 Constructed & operating 13 No. of Closed Cargo Sheds to handle fertilizer, food grains etc.,
- 7 The source of water is from Muthukur Reservoir with a withdrawal quantity of 1000 KLD and 4 MLD of water from Nakkala kalava drain.
- 8 AKPL has been collecting 1000 KLD of water from Muthukur Reservoir through tankers and Nakkala Kaluva water is through pipeline directly to Port.
- 9 The Rain water harvesting pits of 13 no. are available within the port and the water is being used for dust suppression of internal haul roads & yards.
- 10 AKPL has been operating 3 No. of CAAQM stations at the locations advised APPCB to measure the parameters PM 10, PM 2.5, SO<sub>2</sub>, NO, NO<sub>2</sub>, CO and data connected to APPCB website. The values are within the prescribed standards.
- 11 AKPL appointed an NABL Accredited and MoEF&CC accredited Laboratory to monitoring the Ambient Air Quality at 7 locations within 10 Km radius of



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project site (5 stations in buffer zone & 2 location inside plant area) and submitting the reports to APPCB on Monthly basis.

- 12 AKPL has been maintaining the stacks height below 10 mts height as per the CTO Order dated 11.11.2022.
- 13 AKPL has been operating Mechanical Dust Suppression System comprising with 248 No. of gun sprinklers for wetting the stacks in the stack yards and 20 No. of tankers are being used for dust suppression to ensuring continuous wetting of internal roads.
- 14 Provided 14 No. of semi mechanized truck tarpaulin covering stations at various locations within the Port and Rail Wagon tarpaulin covering facility to ensure all the outgoing cargos by Trucks are covered with tarpaulin.
- 15 Operating an automatic sensor-based truck tyre washing facility on 24/7 basis, and initiated establishing 2nd automatic sensor based truck tyre washing facility at south berth area.
- 16 Operating 2 No. of heavy duty sweeping machines for cleaning of berths, back up areas & roads and cleaning the haulage roads manually.
- 17 Operating 3 atomizers as innovative technology in dust suppression system.
- 18 AKPL appointed an NABL Accredited and MoEF&CC recognized lab to carry-out monitoring parameters of terrestrial as well as marine water quality and submitting the report to A.P. Pollution Control Board on monthly basis. The values are found to be within the prescribed standards.
- 19 Analyses reports of marine water and sediment quality showed that all the parameters are within normal value. The parameters like DO, BOD, COD, Ammonia, Organic loads, etc., are within the prescribed limits. The results indicate no gross changes in water and sediment component by port activities.
- 20 Maintaining/ cleaning the storm water drain periodically by removing the settled sludge to avoid contamination in surrounding water bodies.



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- 21 Provided collection bins at about 120 locations within the port premises for collection of dry & wet solid & domestic waste, and disposing the waste to scientifically.
- 22 Provided a Food Waste Converter facility to convert the domestic & canteen waste generated within the Port and utilizing the same as manure for development of Nursery & Greenbelt
- 23 Provided Settling ponds at yards for collection of yards runoff and the supernatant water is being used for dust suppression.
- 24 Maintaining exclusive nursery with about 60 to 70,000 saplings of Avenue, Ornamental & Fruit bearing species
- 25 Developed greenbelt of 196.25 Ha of along port boundary, around coal yards, avenue & median plantations. Maintaining greenbelt of 100 m width along the periphery, except lighthouse area (north port) and towards AP Genco conveyor (north port). Developed 3.5 Ha of greenbelt near liquid jetty area in phase III along the shoreline boundary. Maintaining 20-meter width greenbelt around the coal stack yards.
- 26 Protecting and conserving the existing mangrove areas with suitable barricading, erection of display boards and ensuring the tidal flow. As a part of Phase I EC compliance, and area of 9 acres (3.64 ha) of mangroves are being conserved in the port areas since its inception.
- 27 Maintaining a Vermi Compost unit and the compost is being used for nursery development.
- 28 Operating 2 No. of Sewage Treatment Plants to cater the needs of sewage water treatment and the treated water is being used for greenbelt development / Dust suppression within the Port premises.
- 29 STP Treated water has been utilizing for greenbelt development / dust suppression.
- 30 There is no Ground Water withdrawal within the Port premises.



*Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)*



- 31 Operating Medical Center, Dental Care & Homeopathy Clinic within the Port premises at CVR Complex, to provide First Aid facility to the victims and generating very less quantity of Bio-Medical Waste.
- 32 Submitting all the monthly, half-yearly and annual compliance reports viz., Form – 1 – Water Consumption, Form – 3, E-waste, Form – 4 Hazardous Waste, Form – 5 Annual Environment Statement, MoEF & CC Half yearly compliance reports within the stipulated date.
- 33 The Port has been receiving Non-conventional source of energy through Power Grid for power supply. (BLYTH Wind Park Pvt. Ltd., Ananthapur Dist., Andhra Pradesh)
- 34 The facility kept the DG Sets for uninterrupted port operations during emergency. All the DG sets are being monitored through a NABL Accredited 3<sup>rd</sup> Party and submitting to APPCB, RO, Nellore along with Monthly compliance reports. The DG Sets have retrofitting certification.
- 35 Complying with all the conditions & directions issued by the statutory departments.
- 36 Conducting seminars/workshops/programmes/competitions & rallies on Environment & Sustainability among the employees & associates as a part of promoting awareness.
- 37 Organizing periodical mock drills, fire & safety trainings workshops/seminars involving all the employees & stakeholders to create the awareness of safety issues and preventive measures.
- 38 AKPL has been focused on safety aspects and maintaining SOP (Standard Operating Procedure) for every minor or major works, and strictly implementing "No SOP – No Work" policy.
- 39 All the activities are closely monitored through an Integrated Security Control Room (ISCR).
- 40 AKPL has been operating One Weather Station within the Port premises to know the weather forecast. Maximum and Minimum values of each month recorded in the Continuous Weather Monitoring station.





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41 AKPL Krishnapatnam imposed ban on purchase & utilization of plastic water bottles as well as single use plastic within the Port.

42 Andhra Pradesh Maritime Board has appointed M/s Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., Hyderabad as an Operation Auditing Agency. The 3<sup>rd</sup> party Audit Team has been visiting AKPL on quarterly basis and recording the compliance status: Some of the notable remarks are as below:

- The Cargo comprises mainly of Coal, Iron Ore and Oil. The bulk Liquids are handled through the ship's pumps. Pipelines have been provided for transportation of liquid cargo from berths to tank farms of users.
- Environmental monitoring of Air, Noise, Water, Marine Sediment, Effluents etc., are being observed periodically by AKPL

43 AKPL appointed a NABET Accredited 3<sup>rd</sup> party agency for Environment Compliance support. The Environment Experts of the agency are visiting the Port and supporting the Environment Department to meet the compliance status.

44 Officials from MoEF &CC, IRO, Vijayawada and EE, APPCB, RO, Nellore inspected AKPL and surroundings on 06.10.2023 & 07.10.2023 verify the compliance status and reported that AKPL is complying with the conditions stipulated by the statutory department and implementing all the necessary mitigation measures for better environment & sustainability.

45 APPCB Senior Officer inspected AKPL on 26.10.2023 verify the compliance status and reported that AKPL is complying with the conditions stipulated by APPCB and implementing all the necessary mitigation measures for better environment & sustainability.





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46 As per the Phase – II EC TOR Condition, AKPL has been carrying out a comprehensive environmental monitoring program once in 4 years through NCSCM.

47 AKPL has been carrying out Shoreline changes study through NIOT as per EC Compliance. The NIOT has been carrying-out the study for every 6 months. As per the study & reports, the shoreline is in a stable condition.

48 AKPL has been carrying out a Comprehensive Biodiversity Assessment, Impact Assessment & Management Plan for the Marine, Brackish-water & Freshwater Ecosystems in and around AKPL through Suganthi Devadason Marine Research Institute (SDMRI).

49 AKPL has been carrying out the Greenbelt & Carbon Sequestration study through M/s. Blue Bay Coastal Research Foundation (BBCRF), Kanchipuram

50 AKPL is the winner of has been honoured with the prestigious Gold Award at the CII Andhra Pradesh Industrial Safety Excellence Awards 2023.



51 AKPL won the Greentech International Foundation Award in the categories viz., EHS Best Practices & Environment Excellency consecutively for the years 2022 -23 & 2023 - 24.



2022 – 2023 - for EHS Best Practices



2023–2024- for Environment Excellence



Half-Yearly Compliance status on the conditions stipulated in EC & CRZ Clearance, CTE & CTO Orders (including Amendments) issued to M/s. Adani Krishnapatnam Port Limited, Krishnapatnam (P), Muthukur (M), SPSR Nellore District, Andhra Pradesh by MOEF & SPCB (for the period from October 2023 to March 2024)



52 AKPL is the Platinum Award winner of Apex India Green Leaf Award 2023 for Environment Excellence for the year 2023- 2024.



**M/s. Spectra Envirotech Pvt. Ltd.,**  
Plot No.142/1, Eruvada Junction,  
Sabbavaram (M),  
Anakapalli Dist., (Earlier Visakhapatnam Dist.)  
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*Bharath K.*  
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**Submitted to:**

Ministry of Environment, Forest & Climate  
Change,

A.P. Pollution Control Board,  
Regional Office, Visakhapatnam



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# Chapter -11

**File No.: 10-18/2016-IA.III**  
**Proposal No. IA/AP/MIS/566/2009**  
Government of India  
Ministry of Environment, Forest and Climate Change  
(Impact Assessment Division)

Annexure - I

Indira Paryavaran Bhawan,  
Jor Bagh Road, Ali Ganj  
New Delhi – 110 003

**Dated: 11<sup>th</sup> January, 2021**

To

**The Director and Chief Executive Officer**

M/s Krishnapatnam Port Company Ltd  
1st Floor, 48-9-17, Dwarakanagar,  
Visakhapatnam – 530 016, Andhra Pradesh

**Subject: Expansion of Krishnapatnam Port (Phase III) at SPSR Nellore District, Andhra Pradesh by M/s Krishnapatnam Port Company Ltd - Environmental and CRZ Clearance.**

Sir,

This has reference to your online proposal to this Ministry on 05<sup>th</sup> June 2020 regarding Environmental and CRZ Clearance for Expansion of Krishnapatnam Port (Phase III) at SPSR Nellore District, Andhra Pradesh by M/s Krishnapatnam Port Company Ltd.

2. Krishnapatnam Port located at 14°15'10" N Latitude and 80°08'05" E Longitude in Sri Potti Sri Ramulu (SPSR) Nellore District, AP is developed by Krishnapatnam Port Company Ltd (KPCL) as an all-weather, deep water, multi-purpose port. The Phase I & II developments of Krishnapatnam Port comprising of 12 berths out of 17 approved berths with required marine infrastructure were developed in a designated land area of Ha.1240 (Ac. 3064) to cater to 68 MTPA of various types of cargo plus 2.0 MTEUsPA of container traffic. To cater to future traffic needs, KPCL has proposed to take up Phase III expansion of the port.

3. The proposed phase-III project comprising of 16 Berths including 3 jetties for liquid cargo and 3 SBM's in deep waters within Port Limits to cater 150.2 MTPA of various types of cargo plus 1.1 MTEUsPA of container cargo. The proposed expansion entail 60 million cu m of dredging in soft soil, utilize 26 million cu m of dredged sand for reclamation of low lying areas of port, stock pile 2 million cu m on the coast north of north breakwater for long term coastal protection as recommended by NIOT and disposal of balance 32 million cu m of dredged spoil in the identified dredge disposal area of 56 Km<sup>2</sup> beyond (-) 20 m contour. In view of the severe floods that have occurred in the Nellore region during 2015, in order to improve the discharge through Kandaleru Creek the GoAP also suggested cutting through the Islands in the Creek. The Masterplan development as well as the proposed Phase-III expansion of Krishnapatnam Port envisaged training the meanders of the Kandaleru Creek by forming a straight cut across the sand bar existing in the Kandaleru Creek within the port limits and develop the west dock with berths on both sides of the straight cut and reclaim the erstwhile meanders of the creek.

4. The proposed proposal fall under 7(e), Category A as per EIA notification 2006. The overall cost of the project is Rs. 907000 Lakhs. The Term of Reference (ToR) was issued *vide*

letter No. 10-18/2016-IA.III dated 4<sup>th</sup> May 2016. Amendment in TOR was done vide Letter No. of even number dated 24<sup>th</sup> November 2017. Further amendment in TOR was done vide Letter No. of even number dated 27<sup>th</sup> August 2018. Public hearing was exempted as per the ToR amendment vide Letter No.10-18/2016-IA-III dated 24<sup>th</sup> November 2017. However, it was recommended that the Project Proponent shall address the compliance of the recommendations made in the Public Hearing 2009 and submit the same as separate document attached to EIA report.

5. As per the commitments made during the public hearing 100 m green belt has been developed along the boundary of the port. Further as desired by APPCB, 191.5 Ha of green belt has been developed. Dedicated 4 lane port road connectivity has been developed to NH-16 by GoAP. Further, as requested by local public, Krishnapatnam Port is undertaking environmental protection measures to combat air pollution. Total no of village population working directly and indirectly in the port and port based industries are 10,500. Further KPCL has adopted 33 surrounding villages and is carrying out necessary developmental activities.

6. Total area of the proposed project is 1094 Ha (Ac.2703). The project does not involve any land acquisition and R&R as the proposed project activities will be developed within the exiting designated Krishnapatnam port facility. There is no diversion of forest land. The patches of mangroves around 7.128 Ha of area is falling in proposed Phase-III development area will be protected. There is no Eco-Sensitive Zone (ESZ)/Protected Areas such as National Parks, Sanctuaries and Tiger Reserves etc., within the 10 km radius of the project area.

7. The proposed project site is located in the coastal area and attracts CRZ Notification, 2011. The CRZ Area details of the proposed project activities as per the revised layout of the Phase-III expansion of KPCL has been provided by Institute of Remote Sensing, Anna University, which is an authorized agency for CRZ map preparation. The layout superimposed on CRZ map was done at 1:4000 scales. The proposed project was appraised by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) and the recommendation was obtained vide Letter No. 202/CRZ/IND/201930 dated 21.05.2020.

8. The project site is located on the east coast alongside Bay of Bengal. The Kandaleru Creek and Upputeru creeks, Buckingham canal passes through the project site. The other surface water bodies in the study area include irrigation drains from agricultural fields, Sarvepalli reservoir and Govindapalli reservoir. The ephemeral drains inside the project site will not be disturbed and culverts CED 1 and CED 2 are proposed to be provided for the road and rail bridges over the drains without affecting their flow. The mangroves inside the Phase-III developmental area will be conserved and pipelines from the nearby drain are provided for tidal exchange. The Kandaleru Creek will be straightened to develop the west dock. NIOT has studied the impacts of creek rerouting and it was found that there is only slight change in the water level and no impact on flushing and tidal exchange due to the proposed development.

9. The existing port facility has a water supply of 5 MLD which includes 1 MLD of water from Muthukur Reservoir provided by Government of Andhra Pradesh and 4 MLD of water from Nakkala Kalava irrigation drain provided by Irrigation Department of Andhra Pradesh. The present Port facility (Phase-I and Phase-II developments) utilizes 2.5 MLD of water and the water requirement for the proposed Phase-III development is estimated to be 2.5 MLD. No groundwater will be extracted/utilized for the proposed project.

10. The port is proposed to install a Sewage Treatment Plant (STP) of capacity 700 KLD to treat the sewage and an Effluent Treatment Plant (ETP) of 300 KLD capacities to treat the

wastewater from the Port. The treated wastewater will be utilized for greenbelt and dust suppression systems. Greenbelt is proposed in an area of 120 Ha along the Port boundary and around the coal storage areas with native species.

11. Benefits of the project: The proposed development would generate large scale direct and indirect employment for the local people in both the skilled and unskilled worker class. Further there would be an improvement to the local infrastructures in the vicinity of the port through CSR. About 6200 people will get employment during construction and operation phase. The proposed development will help in handling the increased cargo demand due to industrialization. This will contribute towards the growth in economy of the region and the nation. The increased revenue due to proposed development would contribute to the exchequer i.e., Central Government departments like Customs & Excise, Railways, Commercial Taxes and Income Tax. This will eventually contribute towards the State Government of Andhra Pradesh by way of share of revenue and lease rentals.

12. The project proponent along with the EIA consultant M/s Cholamandalam MS Risk Services Limited, Chennai made a presentation through Video Conferencing during 249<sup>th</sup> EAC meeting held on 14<sup>th</sup> December 2020. The EAC based on the information submitted and clarifications provided by the project proponent and detailed discussions held on all the issues, recommended the project for grant of environmental and CRZ clearance with stipulated specific conditions along with other Standard EC Conditions as specified by the Ministry vide OM dated 4<sup>th</sup> January, 2019 for the said project/activity.

13. The Ministry of Environment, Forest and Climate Change has considered the proposal based on the recommendations of the Expert Appraisal Committee (Infrastructure, CRZ and other Miscellaneous projects) and hereby decided to grant Environmental and CRZ Clearance for the "Expansion of Krishnapatnam Port (Phase III) at SPSR Nellore District, Andhra Pradesh by M/s Krishnapatnam Port Company Ltd." under the EIA Notification, 2006 as amended and CRZ Notification 2011, subject to strict compliance of the following specific conditions, in addition to all standard conditions applicable for such projects.

- (i) The Environmental and CRZ Clearance to the project is primarily under provisions of EIA Notification, 2006 and CRZ Notification, 2011. It does not tantamount to approvals/consent/permissions etc required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes as applicable to the project.
- (ii) The project proponent shall abide by all the commitments and recommendations made in the Form-II, EIA and EMP report, submissions made during Public Hearing and also that have been made during their presentation to EAC.
- (iii) Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
- (iv) All the recommendations and conditions specified by the Andhra Pradesh Coastal Zone Management Authority (APCZMA) vide letter 202/CRZ/IND/201930 dated 21.05.2020 shall be complied with.

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- (v) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained. Creek water monitoring program shall be implemented during the construction phase
- (vi) Development of green belt by native species with consultation with state forest department shall be ensured.
- (vii) The proposed expansion entail 60 million cu m of dredging in soft soil. As proposed, the PP shall utilize 26 million cu m of dredged sand for reclamation of low lying areas of port, stock pile 2 million cu m on the coast north of north breakwater for long term coastal protection as recommended by NIOT and disposal of balance 32 million cu m of dredged spoil in the identified dredge disposal area of 56 Km<sup>2</sup> beyond (-) 20 m contour. The impact of dredging on the marine environment should be monitored and necessary measures shall be taken on priority basis if any adverse impact is observed. NIOT will oversee the work as scientific body and continue to monitor its impact/benefits for at least 5 years post project completion. Necessary financial assistance to be provided by project proponent to NIOT. The report of the same to be submitted to regional office of MoEFCC by project proponent.
- (viii) Marine ecological monitoring and its mitigation measures for protection of phytoplankton, zooplanktons, macrobenthos, estuaries, sea-grass, algae, sea weeds, Crustaceans, Fishes, coral reefs and mangroves etc. as given in the EIA-EMP Report shall be complied with in letter and spirit with the help of reputed organization or individuals of national repute having knowledge in the said subject. Necessary financial assistance to be provided by project proponent
- (ix) Continuous online monitoring of air and water covering the total area shall be carried out and the compliance report of the same shall be submitted along with the 6 monthly compliance reports to the regional office of MoEF&CC.
- (x) The actions shall be in accordance with proposed landscape planning concepts to minimise major landscape changes. The change in land use pattern shall be limited to the proposed port limits and be carried out in such a way as to ensure proper drainage by providing surface drainage systems including storm water network.
- (xi) Suitable preventive measures be taken to trap spillage of fuel / engine oil and lubricants from the construction site. Measures should be taken to contain, control and recover the accidental spills of fuel during cargo handling.
- (xii) All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF&CC along with half yearly compliance report.
- (xiii) The company shall draw up and implement Corporate Social Responsibility Plan as per the Company's Act of 2013.
- (xiv) As per the Ministry's Office Memorandum F. No. 22-65/2017-IA.III dated 30<sup>th</sup> September, 2020, the project proponent shall abide by all the commitments made by them to address the concerns raised during the public consultation. The project proponent shall initiate the activities proposed by them, based on the commitment made



in the public hearing, and incorporate in the Environmental Management Plan and submit to the Ministry. All other activities including pollution control, environmental protection and conservation, R&R, wildlife and forest conservation/protection measures including the NPV, Compensatory Aforestation etc, either proposed by the project proponent based on the social impact assessment and R&R action plan carried out during the preparation of EIA report or prescribed by EAC, shall also be implemented and become part of EMP.

## **B. STANDARD CONDITIONS:**

### **I. Statutory compliance:**

- (i) Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011 and the State Coastal Zone Management Plan as drawn up by the State Government. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
- (ii) A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.
- (iii) All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Coast Guard, Civil Aviation Department shall be obtained, as applicable by project proponents from the respective competent authorities.

### **II. Air quality monitoring and preservation:**

- (i) The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM<sub>10</sub> and PM<sub>2.5</sub> in reference to PM emission, and SO<sub>2</sub> and NO<sub>x</sub> in reference to SO<sub>2</sub> and NO<sub>x</sub> emissions) within and outside the project area at least at four locations covering upwind and downwind directions.
- (ii) Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.
- (iii) Shrouding shall be carried out in the work site enclosing the dock/proposed facility area. This will act as dust curtain as well achieving zero dust discharge from the site. These curtain or shroud will be immensely effective in restricting disturbance from wind in affecting the dry dock operations, preventing waste dispersion, improving working conditions through provision of shade for the workers.
- (iv) Dust collectors shall be deployed in all areas where blasting (surface cleaning) and painting operations are to be carried out, supplemented by stacks for effective dispersion.
- (v) The Vessels shall comply the emission norms prescribed from time to time.
- (vi) Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.

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- (vii) A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

### **III. Water quality monitoring and preservation:**

- (i) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.
- (ii) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. Silt curtains shall be used to contain the spreading of suspended sediment during dredging within the dredging area.
- (iii) No ships docking at the proposed project site will discharge its on-board waste water untreated in to the estuary/ channel. All such wastewater load will be diverted to the proposed Effluent Treatment Plant of the project site.
- (iv) Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.
- (v) The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.
- (vi) Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.
- (vii) Total fresh water use shall not exceed the proposed requirement as provided in the project details. Prior permission from competent authority shall be obtained for use of fresh water.
- (viii) Sewage Treatment Plant shall be provided to treat the wastewater generated from the project. Treated water shall be reused for horticulture, flushing, backwash, HVAC purposes and dust suppression.
- (ix) A certificate from the competent authority for discharging treated effluent/ untreated effluents into the Public sewer/ disposal/drainage systems along with the final disposal point should be obtained.
- (x) No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.
- (xi) All the erosion control measures shall be taken at water front facilities. Earth protection work shall be carried out to avoid erosion of soil from the shoreline/boundary line from the land area into the marine water body.

#### **IV. Noise monitoring and prevention:**

- (i) Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
- (ii) Noise from vehicles, power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipments.
- (iii) Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.
- (iv) The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

#### **V. Energy Conservation measures:**

- (i) Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
- (ii) Provide LED lights in their offices and port areas.

#### **VI. Waste management:**

- (i) Dredged material shall be disposed safely in the designated areas.
- (ii) Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring reports.
- (iii) Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986.
- (iv) The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.
- (v) Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.
- (vi) A certificate from the competent authority handling municipal solid wastes should be obtained, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project.
- (vii) Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.
- (viii) Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill would be assessed. Guidelines given in MARPOL and Shipping Acts for oil spill management would be followed. Mechanism



for integration of terminals oil contingency plan with the overall area contingency plan under the co-ordination of Coast should be covered.

#### **VII. Green Belt:**

- (i) Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines.
- (ii) Top soil shall be separately stored and used in the development of green belt.

#### **VIII. Marine Ecology:**

- (i) The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.
- (ii) While carrying out dredging, an independent monitoring shall be carried out through a Government Agency/Institute to assess the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.
- (iii) A detailed marine biodiversity management plan shall be prepared through the NIO or any other institute of repute on marine, brackish water and fresh water ecology and biodiversity and submitted to and implemented to the satisfaction of the State Biodiversity Board and the CRZ authority. The report shall be based on a study of the impact of the project activities on the intertidal biotopes, corals and coral communities, molluscs, sea grasses, sea weeds, sub-tidal habitats, fishes, other marine and aquatic micro, macro and mega flora and fauna including benthos, plankton, turtles, birds etc. as also the productivity. The data collection and impact assessment shall be as per standards survey methods and include underwater photography.
- (iv) Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components including all micro, macro and mega floral and faunal components of marine biodiversity.
- (v) The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.

#### **IX. Public hearing and human health issues:**

- (i) The work space shall be maintained as per international standards for occupational health and safety with provision of fresh air respirators, blowers, and fans to prevent any accumulation and inhalation of undesirable levels of pollutants including VOCs.
- (ii) Workers shall be strictly enforced to wear personal protective equipments like dust mask, ear muffs or ear plugs, whenever and wherever necessary/ required. Special visco-elastic gloves will be used by labour exposed to hazards from vibration.
- (iii) Safety training shall be given to all workers specific to their work area and every worker and employee will be engaged in fire hazard awareness training and mock drills which will be conducted regularly. All standard safety and occupational hazard measures shall be implemented and monitored by the concerned officials to prevent the occurrence of untoward incidents/ accidents.
- (iv) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.



- (v) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (vi) Occupational health surveillance of the workers shall be done on a regular basis.

#### **X. Environment Responsibility:**

- (i) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- (ii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
- (iii) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- (iv) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

#### **XI. Miscellaneous:**

- (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- (iv) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- (v) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the

*K*

Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.

- (vi) The criteria pollutant levels namely; PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub> (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- (vii) The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- (viii) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (ix) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- (x) No further expansion or modifications in the port area shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- (xi) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- (xii) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- (xiii) The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- (xiv) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- (xv) The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- (xvi) Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

19. This issues with the approval of the Competent Authority.

  
(Amardeep Raju)  
Scientist-E

Copy to:

1. The Principal Secretary, Department of Forests & Environment and Chairman, APCZMA, Govt. of Andhra Pradesh, A.P. Secretariat, Velagapudi, Amaravathi, A.P.

2. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 32
3. The Member Secretary, AP Pollution Control Board, Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010.
4. The APCCF (C), Tulja Guda Complex, building, M.J. Market, Hyderabad, (Andhra Pradesh) – 500001
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
6. Guard File/Record File
7. Notice Board.

  
(Amardeep Raju)  
Scientist-E



**CONSENT ORDER FOR ESTABLISHMENT**

**Order No: 633/APP/PCB/CFE/RO-NLR/HO/2010**

**Dt. 25.02.2021**

Sub: **APP/PCB – CFE - M/s. Krishnapatnam Port Co. Ltd., Krishnapatnam (V), Muthukur (M), SPSR Nellore District – Consent for Establishment (CFE) Expansion of the Board under Sec.25 of Water (P & C of P) Act, 1974 and Under Sec.21 of Air (P & C of P) Act, 1981 - Issued - Reg.**

- Ref:
1. CFE order No.633/PCB/CFE/RO-NLR/HO/2010, dt.08.05.2010.
  2. CFE amendment order dt. 22.02.2018 for change of Cargo mix without change in overall cargo handling capacity
  3. EC & CRZ clearance order dt.11.01.2021 accorded for Port development by the MoEF & CC, GOI, under Phase-III.
  4. CFE application received on 27.01.2021 through APOCMS.
  5. R.O's inspection report dt. 12.02.2021.
  6. CFE Committee meetings held on 18.02.2021 & 23.02.2021.
  7. Proponent Ir dt.19.02.2021

1. In the reference 4<sup>th</sup> cited, an application was submitted to the Board seeking Consent for Establishment (CFE) expansion (Phase-III) of the Port for Cargo handling, as mentioned below, with an additional investment of Rs.9070 Cores.

S. No.	Type of Cargo	As per CFE amendment order dt.22.02.2018	As per CFO order dt.29.07.2018 & Amendment order dt.10.02.2020	Proposed expansion under Phase-III	Total after expansion
1.	Coal	51 Million TPA	51 Million TPA	88 Million TPA	139 Million TPA
2.	Iron Ore	8 Million TPA	8 Million TPA	-	8 Million TPA
3.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others )	9 Million TPA	9 Million TPA	10.5 Million TPA	19.5 Million TPA
4	Liquid Cargo (POL, LNG, LPG, Chemical products)	4.3 Million TPA (dropped due to expiry of EC validity period)	--	51.7 Million TPA	51.7 Million TPA
5.	Container Cargo	3.3 Million TEUs/ Annum (dropped due to expiry of EC validity period)	2.0 Million TEUs/ Annum	1.1 Million TEUs/ Annum	3.1 MTEUs/ Annum



	<b>Total</b>	<b>72.3 Million TPA + 3.3 Million TEUs/Annum</b>	68.0 Million TPA Non-container cargo + 2.0 Million TEUs/A container cargo	<b>150.2 Million TPA Non-container cargo + 1.1 Million TEUs/Annum Container cargo</b>	<b>218.2 Million TPA Non-container cargo + 3.1 Million TEUs/Annum Container cargo</b>
6.	No. of Berths	17 Berths	12 Berths	16 Berths (including 3 Nos. of handling Liquid cargo) + 3 Single Buoy Moorings (SBM)	28 Berths (including 3 Nos. of handling Liquid cargo) + 3 Single Buoy Moorings (SBM)

The proposed berth requirement of 16 Nos. under Phase –III to handle the envisaged traffic is placed below:-

Type of Cargo	No. of Berths to be developed	Location	Berth * Numbers
Coal	7	North Dock	N9, N10, N11, N13, N14, N15 and N16
General Cargo	4	North West dock	NW4, NW5
		South Quay	S1
		North Dock	N12
Container Cargo	2	West Dock	W1 and W2
Liquid Cargo (LNG / LPG/ POL/ Chemicals)	3	--	L2, L3 & L4
<b>Total excluding SBMs (Liquid Cargos)</b>	<b>16</b>		
Three Single Buoy Moorings SBMs for Liquid Cargos, POL & other products		Geo-Coordinates 1) 14 <sup>0</sup> 14' 00" N 80 <sup>0</sup> 18' 12" E 2) 14 <sup>0</sup> 12' 54" N 80 <sup>0</sup> 19' 06" E 3) 14 <sup>0</sup> 17' 00" N 80 <sup>0</sup> 17' 48" E	

\* The berth numbers shall be indicated on the berths.

- As per the application, the above activity is to be located in the existing premises of **Krishnapatnam (V), Muthukur (M), SPSR Nellore District** in an area of 1094Ha.
- The above site was inspected by Environmental Engineer (FAC) and Asst. Environmental Engineer, Regional Office: Nellore, A.P Pollution Control Board on 02.02.2021 and found that the site is in the Krishnapatnam Port.
- The Board, after careful scrutiny of the application, verification report of Regional Officer and recommendation of the CFE Committee, hereby issues **CONSENT FOR ESTABLISHMENT for EXPANSION** under Section 25 of Water (Prevention & Control of Pollution) Act 1974 and Section 21 of Air (Prevention & Control of Pollution) Act, 1981 and the rules made there under. **This order is issued to the activity as mentioned at para (1) only.**

5. This Consent Order now issued is subject to the conditions mentioned in Annexure.
6. This order is issued from pollution control point of view only. Zoning and other regulations are not considered.
7. **This order is valid for a period of 7 years from the date of issue.**

Encl: Annexure.

**Nambada  
Venkata  
Bhaskara Rao**

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**JOINT CHIEF ENVIRONMENTAL ENGINEER (UH-1) (FAC)**

**To**  
**M/s. Krishnapatnam Port Co. Ltd.,(expn)(Phase-III),**  
**Krishnapatnam (V), Muthukur (M),**  
**SPSR Nellore District.**  
environment.akpl@adani.com

**Copy to:** 1. The JCEE, Z.O: Vijayawada for information and necessary action.  
2. The E.E., R.O: Nellore for information and necessary action.

## ANNEXURE

1. The proponent shall obtain Consents for Operation (CFO) from APPCB, as required Under Sec.25/26 of the Water (P&C of P) Act, 1974 and under sec. 21/22 of the Air (P&C of P) Act, 1981, before commencement of the activity.
2. Compensation is to be paid for any environmental damage caused by it, as fixed by the Collector and District Magistrate as civil liability.
3. The rules and regulations notified by Ministry of Law and Justice, GOI, regarding the Public Liability Insurance Act, 1991 shall be followed.

### Water:

4. The source of water is Muthukur Reservoir of 1000 KLD and 4 MLD of water from Nakkala kalava irrigation drain. The maximum permitted water consumption after proposed expansion is as following:

S. No.	Purpose	Qty as per CFO (Phase-1 & 2) (KLD)	Proposed in Expansion under Phase-III (KLD)	Total after expansion (KLD)
1.	Dust suppressions & other utilities	1600.0	1700	3300
2.	Gardening	300.0	200	500
3.	Domestic	600.0	600.0	1200.0
	<b>Total:</b>	<b>2500.0 KLD</b>	<b>2500.0 KLD</b>	<b>5000.0 KLD</b>

Separate meters with necessary pipe-line shall be provided for assessing the quantity of water used for each of the purposes viz., Dust suppression, Domestic purposes, Washing and servicing, development of greenery.

### **5. Waste water generation:**

S. No.	Purpose	Qty as per CFO (Phase-1 & 2) (KLD)	Proposed in Expansion under Phase-III (KLD)	Total after expansion (KLD)
1.	Other Utilities	-	240.0	240.0
2.	Domestic	300.0	450.0	750.0
	<b>Total</b>	<b>300.0 KLD</b>	<b>690.0 KLD</b>	<b>990.0 KLD</b>

### **Treatment & Disposal (As per EC order):**

Source of effluent	Treatment	Mode of final disposal
Domestic	Sewage Treatment Plant of capacity of 700 KLD consisting of Sewage collection Sump, Fluidized Bed Bio Reactor, Secondary clarifier, Clarifier Water Tank, Dual Media Filter, Treated water tank, Sludge drying beds etc.	Treated domestic effluents shall be utilized for Green belt development and dust suppression

Utilities	Effluent Treatment Plant of 300 KLD capacity consisting of Neutralization tank, Equalization tank, Oil Grease trap, flash mixing tank, clariflocculator, aeration tank, secondary clarifier, holding tank, pressure sand filter, activated carbon filter, sludge drying beds etc. for treating effluents	Treated effluent shall be reused for green belt and for dust suppression.
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6. The effluent / sewage shall be treated to the on land for irrigation standards, as stipulated under Schedule VI of Environment (Protection) Rules, 1986, notified by Ministry of Environment and Forests, Government of India vide G.S.R.422 (E), dt.19.05.1993 and its amendments thereof. The treated waste water shall be used for development of greenery, dust suppression, re-used for various purposes within the premises.

**Air:**

**The Air pollution Control equipment shall be installed along with the commissioning of the activity and shall comply with the following for controlling air pollution:**

S. No.	Details of stack	Stack 01
a)	Attached to	D.G. Sets
b)	Capacity of D.G. set	5 x 2000 KVA, 1 x 1000 KVA, 2 x 750 KVA, 5 x 500 KVA, 3 x 320 KVA, 3 x 250 KVA, 3 x 160 KVA, 10 x 125 KVA, 10 x 82.5 KVA, 3 x 380 KVA
c)	Fuel	Diesel
d)	Stack height above the ground	Individual stacks of height 15 m each proposed
e)	Details of air pollution control equipment	Acoustic enclosures with silencers

7. The proponent shall ensure compliance of the National Ambient Air quality standards notified by MoE & F, GoI vide notification No. GSR 826(E), dated. 16.11.2009 during construction and regular operational phase of the project.
8. The proponent shall comply with the following for controlling fugitive emissions:
- Vehicle movement shall be minimized / eliminated by implementing mechanical operation.
  - All the vehicles involved in transportation of cargo shall be covered with tarpaulin.
  - Vehicles shall be managed to avoid traffic congestion and shall provide empty dusting vehicle washings / dry cleaning system to clean all out going cargo vehicles.
  - Based on traffic density/ vehicular movements anticipated from the port, parking facilities shall be provided.
9. All the transfer points, loading / unloading points and conveyer systems shall be housed completely with leak proof arrangements. Adequate dust suppression and containment measures shall be implemented for effective control of fugitive emissions.

## 10. Hazardous / Solid Waste details:

The Port Authority shall comply with the following w.r.t disposal of solid waste after expansion:

S.No.	Name of Waste	Quantity	Mode of disposal	
1	Solid waste (degradable)	1800 kg/day	To reuse as manure for green belt	
2	Solid waste (Non-degradable)	200 kg/day	To authorized recyclers	
3	STP sludge	120 kg/day	To be used as manure	
4	ETP sludge	50 kg/day	To TSDF for secured land fill	
5	Oil containing cargo residue washing water and sludge	250 KLPA	To authorized recyclers/ reprocessors/ TSDF	
6	Chemical containing cargo residue and sludge	100 KLPA		
7	Sludge and filters contaminated with oil	200 TPA		
8	Ballast water containing oil from ships	250 KLPA		
9	Used/ Spent Oil	350 KLPA		
10	Wastes / residues containing oil	100 KLPA		
11	Sludge from treatment of waste water arising out of cleaning/ disposal of barrels/ containers	100 TPA		
12	Discarded containers/ barrels/ liners contaminated with Haz. Waste/ chemicals	100 TPA		To authorized recyclers/ reprocessors / TSDF
13	Flue gas cleaning residue	10 TPA		
14	Chemical sludge from waste water treatment	100 TPA		
15	Oil and grease skimming residues	20 PA		

11. The following rules and regulations notified by the MOE&F, GOI shall be implemented.
- Regulation of Persistent Organic Pollutants Rules, 2018.
  - Hazardous waste and other wastes (Management and Transboundary Movement) Rules, 2016.
  - Plastic Waste Management Rules, 2016.
  - Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
  - Fly Ash Notification, 2016.
  - Batteries (Management & Handling) Rules, 2010.
  - E-Waste (Management) Rules, 2016.
  - Construction and Demolition waste Management Rules, 2016.
  - Solid Waste Management Rules, 2016.
  - The Public Liability Insurance Act, 1991 and its amendments thereof.

### **Other Conditions:**

12. The Port shall comply with the following conditions as committed during the CFE Committee meeting held on 23.02.2021:
- M/s. KPCL shall implement Mechanized MDSS systems for effective dust control. Water meters and energy meters shall be installed to record the quantity of water consumed and electricity consumed for MDSS systems.
  - M/s. KPCL shall conduct performance evaluation of MDSS systems.
  - M/s. KPCL shall explore the possibility of usage of Chemical suppressants such as Sodium / Potassium Aluminates, for effectively mitigating the dust emissions during coal / dusty cargo handling.
  - M/s. KPCL shall restrict the coal stack height to 10 m only. In future, APPCB will examine the increase in stack height of dusting cargo from 10 m to 12 m depending up on the justification submitted by the port.
  - M/s. KPCL shall install desalination plants to treat the sea water and use in the port area. This will minimize the fresh water consumption.
  - M/s. KPCL shall allow the effluents / leachate generated from dust suppression / coal handling etc., into sea under any circumstances. The garland drains, settling tanks shall be de-silted regularly for free flow.
  - Greenbelt of width 100 m shall be developed along the boundary of the port as committed in the public hearing (para no. 5 of EC order dt.11.01.2021) and as stipulated in the CFE order dt.08.05.2010. The greenbelt shall be developed in an area not less than 120 Ha along the Port boundary and around the coal storage areas with native species, as stipulated in EC order dt.11.01.2021. Saline water resistant saplings shall be planted as Bay-of-Bengal is located in the vicinity.
  - The liquid cargo / chemicals shall be stored in the port area complying with OISD norms. All precautions shall be taken to prevent any chemical accidents. The chemicals stored in the port premises and their capacities shall be informed to the EE, RO: Nellore from time to time.
  - As per the power point presentation given by the port officials, the values of PM<sub>10</sub> in the month of March, 2020 are ranging from 77.6 to 96.6 µg/m<sup>3</sup> inside the port premises. These values are representing the pollution levels in the Ambient Air due to present handling capacity of cargo in the port. These values are higher than the AAQ standards stipulated by CPCB i.e., 60 µg/m<sup>3</sup>. Hence, the port shall immediately upgrade existing MDSS to suppress dust effectively so as to achieve the standards stipulated by the CPCB.
  - It is observed from the EE,RO: Nellore report that Tamminapatnam, Continuous Ambient Air Quality Monitoring Station (CAAQMS) is not working. It is to be repaired and made functional immediately.
  - The Coal stock yard shall be enclosed suitably to have three layers of green belt of varying height on all the sides.
  - Dusty cargos shall be handled through mechanized handling equipment for loading & unloading operations.

- Closed conveyor belt with water sprinkling arrangement shall be provided for conveying dusty cargos like coal & iron ore.
  - The ship un-loader for unloading and transfer of material shall be provided with in-situ water sprinkling system to avoid dust nuisance.
  - Mechanical stackers cum reclaimers for staking transfer and reclamation and conveyors for transfer of materials without manual handling.
  - Dry fogging system shall be provided at transfer points.
  - Automatic water sprinkling shall be provided at all dusty cargo stock yards. There shall be interlocking between the CAAQM station values for particulate matter and MDSS.
  - The facility shall maintain standby centrifugal pump with drive motor for uninterrupted dust suppression of the cargo.
  - The coal & iron ore shall be transported by rail from the stacking area as far as possible. The residual cargo if any shall be transported by road through covered trucks duly complying with the following measures:
    - i. Traffic congestion shall be avoided.
    - ii. Automated mechanical water sprinkling shall be provided on roads and at dusty cargo storage areas, for suppression of dust.
    - iii. All the vehicles involved in transportation of cargo during the break downs shall be covered with tarpaulin and also ensure to manage vehicles
    - iv. The truck movement shall be through a dedicated road meant for truck movement located and avoid movement of trucks closer to residential areas.
    - v. The trucks shall be fully covered with tarpaulin while plying with cargo on the roads.
    - vi. All cargo vehicles moving out from the port shall be passed through vehicle wheel wash area.
  - The port shall provide oil spill containment facilities around the SBM.
  - The port shall take necessary environmental protection measures for the dump yard of the grudged material.
13. **The industry shall comply with all the conditions stipulated in the EC order dt.11.01.2021 issued by MoEF & CC, Gol, New Delhi under Phase-III.**
14. Fire detection and fire fighting facilities with adequate water storage facility shall be provided in fire prone area in consultation with competent authorities.
15. Onsite & offsite Disaster Management plan shall be prepared to meet any eventuality in case of any accident. Mock drills shall be conducted atleast twice a year and modifications required if any shall be incorporated in Disaster Management Plan and shall submit to Board.
16. **The Port Authorities shall prepare a safety report and carry out an independent safety audit report of the respective industrial activities including chemical storages / isolated storages by an expert not associated with such industrial activity as required under Rule 10 of MSIHC Rules, 1989 and get it approved by the Factories Dept., and submit the compliance along with copy of the safety report, safety audit report and safety certificate at concerned Regional Office, APPCB.**

17. **The Port Authorities shall submit a copy of the NOC issued by the Andhra Pradesh State Disaster Response and Fire Service Dept., (APSDRFSD) at concerned Regional Office, APPCB.**
18. **The Port Authorities shall submit risk assessment report covering worst scenario clearly describing impact within the industry premises and outside the industry premises and emergency response system.**
19. The Port Authorities shall obtain prior permission from MoEF & CC, Gol and APPCB for any changes in the cargo type / capacity.
20. DO levels in the sea water at the dredging area shall be monitored at regular interval and the dredging time shall be suitably regulated to prevent depletion of DO levels in the sea water.
21. **The industry shall submit compliance to the conditions stipulated in the EC and CFE orders to the concerned Regional Officer of APPCB every six months and shall upload the same at APPCB website viz., [https://pcb.ap.gov.in/UI/Submission\\_Combpliance\\_of\\_EC\\_CFE\\_CFO\\_Direction.aspx](https://pcb.ap.gov.in/UI/Submission_Combpliance_of_EC_CFE_CFO_Direction.aspx).**
22. Concealing the factual data or submission of false information/ fabricated data and failure to comply with any of the conditions mentioned in this order may result in withdrawal of this order and attract action under the provisions of relevant pollution control Acts.
23. Notwithstanding anything contained in this conditional letter or consent, the Board hereby reserves its right and power Under Sec. 27(2) of Water (Prevention and Control of Pollution) Act, 1974 and Under Sec.21(4) of Air (Prevention and Control of Pollution) Act, 1981 to revoke the order, to review any or all the conditions imposed herein and to make such modifications as deemed fit and stipulate any additional conditions.
24. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules,1982, to such authority (hereinafter referred to as the Appellate Authority) constituted under Section 28 of Water (Prevention and Control of Pollution)Act,1974 and Section 31 of the Air (Prevention and Control of Pollution) Act, 1981.

**Nambada  
Venkata  
Bhaskara Rao**

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**JOINT CHIEF ENVIRONMENTAL ENGINEER (UH-1)(FAC)**

**To**

**M/s. Krishnapatnam Port Co. Ltd.,  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District.  
environment.akpl@adani.com**





**ANDHRA PRADESH POLLUTION CONTROL BOARD**  
**D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre,**  
**Chalamalavari Street, Kasturibaipet, Vijavawada – 520010.**

Website : www.appcb.ap.nic.in

**Order No. 633 /APPCB/CFE/RO-NLR/HO/2010**

**Dt:22.02.2018**

**Sub:** APPCB - CFE - **M/s. Krishnapatnam Port Co. Ltd., Krishnapatnam (V), Muthukur (M), SPSR Nellore district – CFE amendment for Cargo Mix without change in overall Cargo handling capacity – Issued – Reg.**

- Ref:**
1. EC orders dt. 26.07.2006 & 13.11.2009 issued by MoE&F, Gol, New Delhi.
  2. CFE expansion order dt. 08.05.2010.
  3. CFE amendment orders dt. 02.07.2015 & 10.02.2016.
  4. CFE application for amendment recd on 30.01.2018.
  5. Regional Officer report dt. 05.02.2018.
  6. CFE Committee meeting held on 07.02.2018.

The Board issued amendment to CFE vide reference 3<sup>rd</sup> cited to M/s. Krishnapatnam Port Co. Ltd., (M/s. KPCL) as following:

S. No.	Type of Cargo	Phase -1	Phase-II	Total of Phase I & II
1	Coal (Million Tons/Annum)	12	39	51
2.	Iron Ore (Million Tons/Annum)	10	-	10
3	Fertilizers, Food grains, Sugar, Cement & Cement clinker, barites, Feldspar, Edible oils. (Million Tons/Annum)	4	5	9
4	Container Cargo	-	3.30 Million TEUs/year	3.30 Million TEUs/year
5	Bulk Liquid Cargo (POL)	2	0,3	2,3
	<b>Total</b>	<b>28</b>	<b>44,3 Million Tons/Annum + 3.3 Million TEU</b>	<b>72,3 Million Tons/Annum + 3,3 Million TEU</b>
6	No. of Berths	3 Nos. (Total length of 850 m)	14 Nos. Total length—4100 m (North Port—2,000 m South Port—2,100 m)	<b>17 Nos.</b>

M/s. Krishnapatnam Port Co. Ltd., vide reference 4<sup>th</sup> cited requested for amendment for change of Cargo mix without change in overall Cargo handling capacity. The EE, RO: Nellore has submitted a report vide reference 5<sup>th</sup> cited.

In view of the above, the Board after careful examination of Industry's request, remarks of the Regional Officer and recommendations of the CFE Committee, hereby issues **AMENDMENT TO THE CFE ORDER issued vide reference 3<sup>rd</sup> cited, for change of cargo mix without increasing the total permitted cargo handling capacity** under Sec.25/26 of the Water (Prevention and Control of Pollution) Act, 1974 and under Sec.21 of the Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof as following:

S N	Quantity as per CFE amendment order dt. 10.02.2016 in Million Tons/Annum			Total of Phase I & II	Proposed quantity after change of cargo mix in Phase-1 & II
	Type of Cargo	Phase -1	Phase-II		
1	Coal (Million Tons/Annum)	12	39	51	51
2.	Iron Ore (Million Tons/Annum)	10	-	10	8
3	Fertilizers, Food grains, Sugar, Cement & Cement clinker, barites, Feldspar, Edible oils. (Million Tons/Annum)	4	5	9	9

4	Container Cargo	-	3.30 Million TEUs/year	3.30 Million TEUs/year	3.30 Million TEUs/year
5	Bulk Liquid Cargo (POL)	2	0.3	2.3	4.3 Million Tons/Annum
	<b>Total</b>	<b>28</b>	<b>44.3 Million Tons/Annum + 3.3 Million TEU</b>	<b>72.3 Million Tons/Annum + 3.3 Million TEU</b>	<b>72.3 Million Tons/Annum Non container cargo + 3.3 Million TEU container cargo</b>
6	No. of Berths	3 Nos. (Total length of 850 m)	14 Nos. Total length—4100 m (North Port—2,000 m South Port—2,100 m)	17 Nos.	17 Nos.

**M/s. Krishnapatnam Port Company Ltd., shall comply with the following:**

1. The port authorities shall submit a copy of the order to the MoEF&CC, GoI, New Delhi for record.
2. All other conditions stipulated in the CFE orders issued vide references 2<sup>nd</sup> and 3<sup>rd</sup> cited remain the same.

**B S S  
Prasad**

Digitally signed by B S S Prasad  
DN: cn=IN, o=Member Secretary, A.P.  
Pollution Control Board, ou=EF.S. & T.,  
c=IN, email=B.S.S.Prasad, postalCode=500018,  
st=ANDHRA PRADESH  
Date: 2018.02.22 15:25:48 +05'30'

**MEMBER SECRETARY**

**To**

**M/s. Krishnapatnam Port Co., Ltd.,  
8-2-293/A/379, Ground Floor,  
Plot No. 379, Road No. 36,  
Jubilee Hills, Hyderabad-500033.  
sanjayn@necltd.com, ceo@krishnapatnamport.com**

**Cc:**

1. The JCEE, ZO: Vijayawada for information and necessary action.
2. The EE, RO: Nellore for information and necessary action.



BY REGD POST WITH ACK DUE

Order No. 633 /APPCB/CFE/RO-NLR/HO/2010

Dt: 10.02.2016

**Sub:** APPCB - CFE - M/s. Krishnapatnam Port Co. Ltd., Krishnapatnam (V), Muthukur (M), SPSR Nellore district - CFE amendment for the change of cargo mix - Issued - Reg.

- Ref:**
1. EC orders dt. 26.07.2006 & 13.11.2008 issued by MoES&F, Gol, New Delhi.
  2. CFE expansion order dt. 08.05.2010.
  3. CFE (amend) order dt. 02.07.2015.
  4. CFE application recd on 01.01.2016.
  5. Regional Officer report dt. 08.01.2016.
  6. CFE Committee meeting held on 30.01.2016.
  7. Lr. dt. 01.02.2016 recd from M/s. KPCL.

1. M/s. Krishnapatnam Port Co. Ltd., (M/s. KPCL) obtained ECs vide reference 1<sup>st</sup> cited, for expansion (Phase - II development) of Krishnapatnam Port to handle the cargo as following:

S.No.	Activity	Phase-I	Phase-II	Total
1	Iron ore	18 Million tones/annum (1 berth)	---	18 Million tones/annum (1 berth)
2	Iron ore	6 Million tones/annum (1 berth)	---	6 Million tones/annum (1 berth)
3	General cargo	4 Million tones/annum (1 berth)	5 Million tones/ annum (2 berths)	9 Million tones/ annum (3 berths)
4	Coal	---	39 Million tones/ annum (4 berths)	39 Million tones/ annum (4 berths)
5	Container berth	---	3.3 Million TEU (6 berths)	3.3 Million TEU (6 berths)
6	POL berth	---	0.3 Million tones/ annum (1 berth)	0.3 Million tones/ annum (1 berth)
	Total	28 Million tones/annum	44.3 Million tones/annum + 3.3 Million TEU	72.3 Million tones/annum + 3.3 Million TEU

2. The Board issued CFE (exp) vide reference 2<sup>nd</sup> cited for the cargo handling capacities as following:

S. N.	Products / Line of Activity Type of Cargo	Permitted capacity as per CFE order dt. 08.05.2010 after Phase II (Million Tons/Annum)		
		Phase I	Phase II	Total
1.	Coal	6	39	45
2.	Iron Ore	18	-	18
3.	General Cargo (Fertilizers, Food grains, Granite blocks, Bulk liquid cargo etc.).	4	5	9.3
	Bulk liquid cargo	-	0.30	
4.	Container Cargo	-	3.3 MTEU	3.3 MTEU
	<b>Total</b>	<b>28 MTPA</b>	<b>44.3 MTPA + 3.3 Million TEU</b>	<b>72.3 MTPA + 3.3 Million TEU</b>
5.	No. of Berths	2 Nos.	14 Nos. (4100 m)	16 Nos.

3. The Board vide reference 3<sup>rd</sup> cited issued amendment to CFE order as following:

Sl. No	Existing capacity (Phase -I) (as per the CFE order dt.25.05.2004)		Expansion (Phase -II)	
	Type of Cargo	Quantity	Type of Cargo	Quantity
1	Coal	6 million tons /annum (Coal – 20000 to 30000 TPD)	Dry Bulk Cargo (Coal)	39 MTPA
2	Iron Ore	18 Million tons/ annum (60,000 to 80,000 TPD)	Container Cargo	3.30 Million TEUs/year
3	Fertilizers, Food grains, Sugar, Cement & Cement clinker, barites, Feldspar, Edible oils.	4 Million tons/annum	General Cargo	5.0 MTPA
4	-	-	Bulk Liquid Cargo (POL)	0.30 MTPA
	<b>Total</b>	<b>28.0 Million tons/annum</b>	<b>Total</b>	<b>44.3 MTPA &amp; 3.3 Million TEUs/year of container cargo</b>
	No. of Berths	3 Nos. Total length 850m.	No. of Berths • Coal Berths – 5 Nos. (4 North port & 1 South port) • Container berths – 6 Nos. (1 North side + 5 South side) • General Cargo Berths – 2 Nos • POL berth – 1No.	17 nos  Total length – 4100 m  (North port – 2,000 m, South port – 2,100 m)

4. M/s. KPCL has submitted an application seeking CFE of the Board to Change the Cargo Handling Capacity due to change in current market and regulatory ban an Iron ore exports. It is proposed to optimize the resources and cater the growing needs of clients in private and Govt. sectors without increase in the overall approved cargo handling capacity as mentioned. The EE, RO: Nellore has submitted a report vide reference 5th cited.
5. In view of the above, the Board after careful examination of Industry's request, remarks of the Regional Officer and recommendations of the CFE Committee, hereby issues **AMENDMENT TO THE CFE ORDER** issued vide reference 2<sup>nd</sup> and 3<sup>rd</sup> cited, for change of cargo mix without increasing total permitted cargo handling capacity under Sec.25/26 of the Water (Prevention and Control of Pollution) Act, 1974 and under Sec.21 of the Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof as following:

S.No.	Activity	Phase-I	Phase-II	Total
1	Iron ore	10 Million tones/ annum	---	10 Million tones/annum
2	Coal	12 Million tones/ annum	39 Million tones/ annum	51 Million tones/annum
3	General cargo i.e Fertilizers, good grains, sugar, cement and cement clinker, berles, fertilizer, edible oils	4 Million tones/ annum	5.0 Million tones/ annum	9 Million tones/ annum
4	Container cargo	--	3.3 Million TEU	3.3 Million TEU
5	POL berth	2.0 Million tones/ annum	0.3 Million tones/ annum	2.3 Million tones/ annum.
	<b>Total</b>	<b>28.0 Million tones/ annum</b>	<b>44.3 Million tones/ annum + 3.3 Million TEU</b>	<b>72.3 Million tones/ annum + 3.3 Million TEU</b>
6.	No of berths	3 no Total length 850m	14 no Total length - 4100 m (North port - 2,000 m, South port - 2,100 m)	17 no.

6. M/s. Krishnapatnam Port Company Ltd., shall comply with the following:

- The mechanical dust suppression system (sprinklers and fogging) of adequate capacity shall be provided at the coal handling points such as loading and unloading from the ship, stacking and reclaiming processed in the stack yard to control dust generation and air emissions.
  - Wind breaking wall / sheets shall be provided all along the Coal / Iron ore stacks yards towards villages viz., Chalivendra, Gopalapuram and Krishnapatnam taking into consideration the meteorological characteristics of the location within 3 months as committed vide l.r.dt. 01.02.2018.
7. The port authorities shall submit a copy of the order issued by the Board to the MoEF&CC, Govt. New Delhi for record.
8. All other conditions stipulated in the CFE orders issued vide references 2<sup>nd</sup> and 3<sup>rd</sup> cited remain the same.

Sd/-  
MEMBER SECRETARY

To  
M/s. Krishnapatnam Port Co., Ltd.,  
B-2-293/A/379, Ground Floor,  
Plot No. 379, Road No. 36,  
Jubilee Hills, Hyderabad-500033.  
Mail id: [sanjayn@necpltd.com](mailto:sanjayn@necpltd.com), [ceo@krishnapatnamport.com](mailto:ceo@krishnapatnamport.com).

- Cc:
- The JCEE, ZO: Vijayawada for information and necessary action.
  - The EE, RO: Nellore for information and necessary action.

// T.C.F.B.O. //

  
JOINT CHIEF ENVIRONMENTAL ENGINEER(UH-I)

**ANDHRA PRADESH POLLUTION CONTROL BOARD**

D.No.33-26-14D/2, Near Sunrise Hospital, Pushpa Hotel Centre,  
Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010  
Phone. No.0866-2463200, Website : <https://pcb.ap.gov.in/>

**RED CATEGORY  
COMBINED CONSENT & AUTHORIZATION ORDER**

**Consent Order No: APPCB/VJA/NLR/11344/CFO/HO/2019****11/11/2022**

CONSENT is hereby granted for Operation under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and Authorisation under Rule 6 of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 & Amendments thereof and the rules and orders made there under (hereinafter referred to as 'the Acts', 'the Rules') to:

**M/s. Adani Krishnapatnam Port Limited,  
(formerly M/s. Krishnapatnam Port Co. Ltd),  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District.**

**Email:** [environment.akpl@adani.com](mailto:environment.akpl@adani.com); [venugopalreddy.e@adani.com](mailto:venugopalreddy.e@adani.com); [eswarasarma6@gmail.com](mailto:eswarasarma6@gmail.com)

**(The Consent Order No. APPCB/VJA/NLR/11344/CFO/HO/2018 dated 29.07.2018, valid up to 31.10.2023; CFO Amendment Order No. APPCB/VJA/NLR/11344 /CFO/ HO/2018 dt 30.08.2018 for storage & handling of Haz. Chemicals; CFO Amendment Order No.APPCB/VJA/NLR/11344/ CFO/HO/2019 dt.10.02.2020 (for additional berth NW-3 and for enhanced additional coal handling capacity of 4.5 Million TPA) and CFO (Expansion Phase-III) Order No.APPCB/VJA/NLR/11344/ CFO/HO/2019, dt.08.08.2022 issued to the industry is having validity up to 29<sup>th</sup> February, 2024, stands cancelled)**

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

**i) Outlets for discharge of effluents:**

Outlet No.	Outlet Description	Max Daily Discharge (KLD)	Point of Disposal
1.	Domestic	540.0	Treated domestic effluents shall be utilized for Green belt development and dust suppression.

**ii) Emissions from chimneys:**

Chimney No.	Description of Chimney	Quantity of Emissions at peak flow (m <sup>3</sup> /hr)
1.	Attached to 1 x 380 KVA D.G. Set	---
2.	Attached to 4 x 320 KVA D.G. Set	---
3.	Attached to 9 x 250 KVA D.G. Set	---
4.	Attached to 4 x 160 KVA D.G. Set	---

5.	Attached to 5 x 125 KVA D.G. Set	---
6.	Attached to 1 x 500 KVA D.G. Set	---
7.	Attached to 2 x 320 KVA D.G. Set	---
8.	Attached to 4 x 82.5 KVA D.G. Set	---

**iii) Hazardous Waste Authorisation (Form – II) [See Rule 6 (2)]:**

M/s. Adani Krishnapatnam Port Limited (formerly M/s. Krishnapatnam Port Co. Ltd), Krishnapatnam (V), Muthukur (M),SPSR Nellore District is hereby granted an authorization to operate a facility for collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

• **Hazardous Wastes With Disposal Option:**

Sl. No.	Name of the Hazardous Waste	Quantity	Method of disposal
1	Solid waste (degradable)	250 Kgs/ day	To use as manure for green belt.
2	Solid waste (Non-degradable)	2050 Kgs/ day	Shall be disposed to authorized recyclers / cement industries through APEMC
3	STP sludge	120 Kgs/ day	To use as manure
4	Waste Oil from DG sets	350 KLPA	Shall be disposed to authorized recyclers/ re-processor / TSDF through APEMC
5	Waste Oil from Ships	2.5 Lakhs LPA	
6	Wastes / residues containing oil from ships	100 KLPA	
7	Sludge from treatment of waste water arising out of cleaning/ disposal of barrels/ containers	100 TPA	
8	Discarded containers/ barrels/ liners contaminated with Haz. Waste/ chemicals	100 TPA	
9	Oil and grease skimming residues	20 TPA	
10	Oil containing cargo residue washing water and sludge from ships	2500 KLPA	
11	Chemical containing cargo residue and sludge	100 KLPA	
12	Sludge and filters contaminated with oil	200 TPA	

This consent order is valid to handle the following cargo along with quantities only:

Sl. No.	Products	Quantity
1.	Coal	46 Million Tons/ Annum
2.	Iron Ore	8 Million Tons/Annum
3.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others ).	14 Million Tons/Annum
4.	Liquid Cargo (POL, LNG, LPG, Chemical products)	10 Million Tons/Annum
5.	Container Cargo	2.0 Million TEUs/A
	<b>Total :</b>	78.0 Million Tons/A, Non-container cargo + 2.0 Million TEUs/A container cargo

6. No. of Berths	13 Berths (12 + Liquid Jetty L4)
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This order is subject to the provisions of 'the Acts' and the Rules' and orders made there under and further subject to the terms and conditions incorporated in the schedule A, B & C enclosed to this order.

This combined order of consent & Hazardous Waste Authorization shall be valid for a period ending with the **31<sup>st</sup> August, 2027.**

**VIJAY KUMAR GSRKR IAS, MEMBER SECY(GSRKRVK), O/o MEMBER SECRETARY-  
APPCB**

**To**

**M/s. Adani Krishnapatnam Port Limited,  
(formerly M/s. Krishnapatnam Port Co. Ltd),  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District.**

**Email:** [environment.akpl@adani.com](mailto:environment.akpl@adani.com); [venugopalreddy.e@adani.com](mailto:venugopalreddy.e@adani.com); [eswarasarma6@gmail.com](mailto:eswarasarma6@gmail.com)

**Copy to:**

1. The JCEE, Zonal Office, Vijayawada for information and necessary action.
2. The Environmental Engineer, Regional Office, Nellore for information and necessary action.

#### **SCHEDULE - A**

1. Any up-set condition in any industrial plant / activity of the port, which result in, increased effluent / emission discharge and/ or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge / emission below the limits.
2. The port should carryout analysis of waste water discharges or emissions through chimneys for the parameters mentioned in this order on quarterly basis and submit to the Board.
3. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 should be followed as applicable.
4. Notwithstanding anything contained in this consent order, the Board hereby reserves the right and powers to review / revoke any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.
5. The port shall ensure that there shall not be any change in the process technology, source & composition of raw materials and scope of working without prior approval from the Board.
6. The applicant shall submit Environment statement in Form V before 30th September every year as per Rule No.14 of E (P) Rules, 1986 & amendments thereof.
7. The applicant should make applications through Online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board.
8. The port should immediately submit the revised application for consent to this Board in the event of any change in the raw material used, processes employed, quantity of trade effluents & quantity of emissions. Any change in the management shall be informed to the Board. The person authorized should not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.
9. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air(Prevention and Control of Pollution) Act, 1981.
10. The conditions stipulated are without prejudice to the rights and contentions of this Board in



any Hon'ble court of law.

11. The port shall be liable to pay Environmental Compensation / Other Environmental Taxes, if any environmental damage caused to the surroundings, as fixed by the Collector & District Magistrate or any other competent authority as per the Rules in vogue.
12. The port may explore the possibility of tapping the solar energy for their energy requirements.
13. The port should educate the workers and nearby public of possible accidents and remedial measures.

### **SCHEDULE-B**

**The port shall comply with the following conditions, as committed by the port vide undertaking dt.08.11.2022:**

1. The port shall complete mechanizing of Berth No.6 by 31<sup>st</sup> March, 2023.
2. The port shall complete the mechanization of Berth No. 5 within 24 months from the date when the coal handled at Birth No. 5 is adequate to handle through mechanization system. Till the mechanization is completed, the port shall do sprinkling along with MDSS to control dust pollution due to handling of coal.
3. The port shall maintain the existing greenbelt of 100m width along the periphery. Further, development of 100m green belt at other expansion areas shall be taken up at the time of expansion of the port facility and shall be completed within 3 years.
4. The port shall develop the 20m width greenbelt along the existing coal stock yards as per EC & CFO conditions within a time period of 2 years.
5. The port shall maintain storm water drains and improvement of the storm water drains in new areas shall be taken up along with the expansion of the port.

#### **Water:**

6. The source of water is Muthukur Reservoir 1000 KLD and 4 MLD of water from Nakkala kalava irrigation drain. The maximum permitted water consumption after proposed expansion is as following:

S. No.	Purpose	Quantity (KLD)
1.	Dust suppressions & Miscellaneous (Fire protection services)	1950.0
2.	Gardening	400.0
3.	Domestic	650.0
<b>Total</b>		<b>3000.0</b>

Separate meters with necessary pipe-line shall be maintained for assessing the quantity of water used for each of the purposes mentioned above.

7. The port shall comply the following effluent discharge standards based on the disposal points permitted:

Outlet	Parameter	Concentration
1	pH	6.5 - 9.0
	Total Suspended Solids (TSS)	<100 mg/l
	Oil and Grease	10 mg/l
	Biochemical Oxygen Demand (BOD)	30 mg/l
	Fecal Coliform (FC) (Most Probable Number per 100 Milliliter, MPN/100ml)	<1000 MPN/100 ml

**Air:**

8. The port shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 under the Environment (Protection) Amendment Rules, 2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.
9. The port shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10mm) - 100 mg/ m<sup>3</sup>; PM2.5 (Particulate Matter size less than 2.5 mm) - 60 mg/ m<sup>3</sup>; SO<sub>2</sub> - 80 mg/ m<sup>3</sup>; NO<sub>x</sub> - 80 mg/m<sup>3</sup>, outside the factory premises at the periphery of the port. Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009.  
Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)  
Night time (10 PM to 6 AM) - 70 dB (A)
10. The Port shall take all measures including latest available technologies to comply with above ambient air quality standards.
11. The Port shall not increase the capacity beyond the permitted capacity mentioned in this order, without obtaining CFE & CFO of the Board.
12. Coal stack heights in all coal yards shall not be more than 12mts.
13. The port shall ensure required wetness all the time on the surface of stock piles to avoid the dust emissions from the stock piles.
14. The port shall install sufficient number of CAAQM stations in between the villages and the port area. The stations shall be located at the periphery of the villages to monitor all the parameters given in the consent order.
15. The port shall maintain properly the three CAAQM stations provided and shall be connected to APPCB website..
16. Unloading of iron ore from the railway wagons house should be carried out with wagon tippers only, in case, handling of iron ore is more than 6 MTPA. As and when iron ore handling is to be done intermittently, it should be handled with water sprinkling system at high pressure with swiveling type nozzles operated regularly to cover entire stockpile. Nozzles shall be operated along stockpile at regular Intervals to cover stockpile height and width.
17. The port shall take adequate air pollution control measures with respect to the enhanced dusty materials handling capacities.
18. The port shall stock all the dusty materials with in the designated storage yards only.
19. The port activities are concentrating in north quay by construction of 12<sup>th</sup> Berth, hence the stocking of dusty materials shall not be extended towards the residential areas around the port area.
20. The dusty materials transporting vehicles shall be closed in all respects/ covered with tarpaulin for controlling fugitive emissions.
21. The port shall provide wheel washing facility near the dusty cargo stocking area, to the freighted vehicles going outside the port.
22. The port shall inform the modifications made in port infrastructure developments to the MoEF&CC and to the Board time to time.
23. The port shall obtain EC for any change of scope of the project and shall restrict the port activities as permitted vide EC Orders Dt.26.07.2006 for Phase - I, 13.11.2009 for Phase - II & Phase-III (Expansion) 11.01.2021.
24. The port shall continuously operate the 3 CAAQM stations installed in between villages and port area to monitor all the parameters given in the consent order and upload the data continuously to the APPCB / CPCB websites.

**General:**

25. The MDSS system shall be in operation wherever the stock of any bulk material (Dusty cargo) is piled in a way to ensure wetness on the surface of stock piles.
26. As regards to deviation in location of facilities such as stock piles and other facilities, from the originally envisaged plan, amendments for the EC and CFE have to be obtained immediately.
27. The port shall maintain the existing green belt with adequate width and density and in vacant places
28. The port shall use road sweeping machines to clean all port internal roads regularly.
29. The port shall ensure that the trucks transporting cargos to outside the port shall be covered with tarpaulin to avoid fugitive emissions / spillages.
30. All conveyor belts and other transfer points shall be covered with GI sheets to mitigate fugitive emissions generated during conveying of dusty cargos.
31. The port shall maintain water sprinklers for effective control of fugitive emissions generated during handling of cargo and increased volume of vehicular traffic.
32. The port shall maintain Mechanical Dust Suppression System (MDSS) for stock yards, dusty cargo berths and conveyor belts.
33. The port shall develop and maintain 100 m width greenbelt along the periphery & 20m width around coal stack yards as per EC / CFE condition.
34. The port shall maintain empty dusty cargo vehicles washing system to clean dusty cargo empty vehicles.
35. The port shall record the energy consumption for the energy meters provided for Sewage Treatment Plant (STP), pump houses to water sprinklers / dust suppression measures and Air Pollution Control Equipments (APCE)
36. The port shall not allow any hazardous wastes through the port other than waste oil from DG Set, Waste oil from Ship, Wastes / residues containing oil from ships, used oil generated in the Port without prior permission of Board and shall comply with EC conditions.
37. The port shall not store any hazardous waste within the premises as per the time frame mentioned in HWM Rules.
38. In case a leaky container of hazardous cargo is found, a separate permission of the Board may be obtained after establishing the quality and the type of waste for disposal
39. All types of the fertilizers should be stored in the closed warehouses only. The Port should ensure that there should not be any open storage of urea or any other fertilizer materials. There shall not be any effluent generation
40. The port shall store fuel oils used for construction equipment, vessels and vehicles in a well designed manner and protect them against fire hazards by construction of compound wall to prevent access to unauthorized elements. The surface run off from storage area shall pass through oil water separator before being discharged.
41. The port shall provide fire detection and fire fighting facilities with adequate water storage in fire prone areas in consultation with Directorate of fire fighting.
42. The port shall comply latest technologies for controlling fugitive emissions including the following:
  - a. Fully mechanized handling equipment for loading and unloading operations
  - b. Closed conveyor belt with water sprinkling arrangement for suppression of dust while conveying dusty cargoes like coal, iron ore etc.
  - c. Specially designed iron ore ship loader with necessary precautions to reduce drop height of iron ore into the ship, while handling more than 6 Million Tons per annum.
  - d. Mechanical water sprinkling shall be provided on roads and at dusty cargo storage areas for suppression of dust.
43. The port shall maintain adequate number of ground water monitoring location on scientific basis and the same shall be monitored every six months.
44. The port shall construct the storm water drains to avoid the contamination of runoff with other effluents.
45. The port shall regularly clean the drains to avoid siltation.
46. The port shall monitor compliance through Environment Management Cell with qualified and

- trained staff.
47. The port shall maintain onsite emergency action plan after carrying out risk analysis and hazop studies.
  48. The port shall comply with the conditions of CFE order dated 08.05.2010, 22.02.2018 and 25.2.2021.
  49. The port shall submit monthly monitoring reports to RO: Nellore
  50. The port shall comply with standards and directions issued by APPCB / CPCB / MoEF&CC as and when notifications are issued from time to time.
  51. The port shall install digital display boards at publicly visible places at the main gate indicating the products manufactured Vs permitted quantities, Treated effluent concentrations Vs discharge standards, Stack emission & AAQ concentrations Vs standards, hazardous waste generation, disposed, stock Vs permitted quantities and validity of CFO; and exhibit the CFO order at a prominent place in the factory premises, as per Hon'ble Supreme Court order
  52. The port shall submit Half yearly compliance reports to all the stipulated conditions in Environmental Clearance (EC), Consent for Establishment (CFE) and Consent for Operation (CFO) through website i.e., <https://pcb.ap.gov.in> by 1<sup>st</sup> of January and 1st July of every year. The first half yearly compliance reports shall be furnished by the port and second half yearly compliance reports shall be the audited through MoEF&CC recognized and National Accreditation Board for Laboratory Testing (NABL) accredited third party.

**Special Conditions:**

53. The port shall possess valid NOC issued by the Andhra Pradesh State Disaster Response and Fire Service Dept., (APSDRFSD) and submit a copy at concerned Regional Office, APPCB.
54. The port shall prepare a safety report and carry out an independent safety audit report of the respective industrial activities including chemical storages / isolated storages by an expert not associated with such industrial activity as required under Rule 10 of MSIHC Rules, 1989 and get it approved by the Factories Dept., and submit the compliance along with copy of the safety report, safety audit report and safety certificate at concerned Regional Office, APPCB.
55. The port shall extend training to the working personnel for the prevention of accidents and necessary antidotes to ensure safety, as per the MSIHC Rules, 1989.
56. The port shall carryout calibration of safety equipment and leak detection systems at regular intervals and shall certify the same with the Factories Department. That certified copy shall be submitted to the APPCB, Regional Office.
57. The port shall install fluorescent Wind Vane at the highest point in the port premises.
58. The port shall submit Risk analysis and risk assessment covering worst scenario clearly describing impact within the port premises and outside the port premises and emergency response system.
59. The port shall submit the copy of the safety audit report and On-Site / Off Site Emergency Plans as applicable after being certified by the Factories Department to the APPCB, Regional Office from time to time, if the storage quantity of hazardous chemicals is equal to or, in excess of the threshold quantities specified in schedule 2 & 3 of MSIHC Rules, 1989.

**SCHEDULE – C**

*[See rule 6]*

**[CONDITIONS OF AUTHORISATION FOR OCCUPIER OR OPERATOR HANDLING HAZARDOUS WASTES]**

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the Hazardous

and other wastes except what is permitted through this authorisation.

4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”.
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
8. An application for the renewal of an authorisation shall be made as laid down under these Rules.
9. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.

**Specific Conditions:**

10. The port shall comply with the provisions of HWM Rules, 2016 in terms of interstate transport of Hazardous Waste and manifest document prescribed Under Rule 18 and 19 of the HWM Rules, 2016.
11. The port shall not store hazardous waste for more than 90 days as per the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
12. The port shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.
13. The port shall transport the hazardous waste through vehicle fitted with GPS tracking system.
14. The port shall maintain 7 copy manifest system for transportation of waste generated and a copy shall be submitted to concerned Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card.
15. The port shall maintain proper records for Hazardous and Other Wastes stated in Authorisation in Form-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form-4 as per Rule 20 (2) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
16. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

**VIJAY KUMAR GSRKR IAS, MEMBER SECY(GSRKRVK), O/o MEMBER SECRETARY-  
APPCB**

**To**

**M/s. Adani Krishnapatnam Port Limited,  
(formerly M/s. Krishnapatnam Port Co. Ltd),  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District.**

**Email:** [environment.akpl@adani.com](mailto:environment.akpl@adani.com); [venugopalreddy.e@adani.com](mailto:venugopalreddy.e@adani.com); [eswarasarma6@gmail.com](mailto:eswarasarma6@gmail.com)



**ANDHRA PRADESH POLLUTION CONTROL BOARD**

Paryavarana Bhavan, A-III, Industrial Estate,  
Sanathnagar, Hyderabad-500 018  
Phone : 040-23887500, Website : www.appcb.ap.nic.in

**RED CATEGORY  
CONSENT & AUTHORIZATION ORDER**

**Consent Order No: APPCB/VJA/NLR/11344/CFO/HO/2019**

**08/08/2022**

CONSENT is hereby granted for Operation under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and Authorisation under Rule 6 of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 & Amendments thereof and the rules and orders made there under (hereinafter referred to as 'the Acts', 'the Rules') to:

**M/s. Adani Krishnapatnam Port Limited (Expansion Phase-III),  
(formerly M/s. Krishnapatnam Port Co. Ltd),  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District.  
Email: [environment.akpl@adani.com](mailto:environment.akpl@adani.com)**

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

**(i) Outlets for discharge of effluents:**

Outlet No.	Outlet Description	Max Daily Discharge (KLD)	Point of Disposal
1.	Domestic	240.0	Treated domestic effluents shall be utilized for Green belt development and dust suppression

**(ii) Emissions from chimneys: NIL**

**(iii) Hazardous Waste Authorisation (Form – II) [See Rule 6 (2)]:**

M/s. Adani Krishnapatnam Port Limited (formerly M/s. Krishnapatnam Port Co. Ltd), Krishnapatnam (V), Muthukur (M), SPSR Nellore District is hereby granted an authorization to operate a facility for collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

• **Hazardous Wastes With Disposal Option:**

Sl. No.	Name of the Hazardous Waste	Quantity	Method of disposal
1	Solid waste (degradable)	2050 Kgs/day	To use as manure for green belt.
2	Solid waste (Non-degradable)	200 Kgs/day	Shall be disposed to authorized recyclers through APEMC
3	STP sludge	120 Kgs/	To use as manure

		day	
4	Oil containing cargo residue washing water and sludge	250 KLPA	Shall be disposed to authorized recyclers/ reprocessor / TSDF through APEMC
5	Chemical containing cargo residue and sludge	100 KLPA	
6	Sludge and filters contaminated with oil	200 TPA	
7	Ballast water containing oil from ships	250 KLPA	
8	Used/ Spent Oil	350 KLPA	
9	Wastes / residues containing oil	100 KLPA	
10	Sludge from treatment of waste water arising out of cleaning/ disposal of barrels/ containers	100 TPA	
11	Discarded containers/ barrels/ liners contaminated with Haz. Waste/ chemicals	100 TPA	
12	Oil and grease skimming residues	20 TPA	

This consent order is valid to manufacture the following products along with quantities only:

Sl. No.	Products	Quantity
1.	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others).	5.0 Million* Tons/Annum

\*The port shall reduce the existing consented (issued vide order dt.29.07.2018) coal handling capacity from 51 Million Tons/Annum to 46 Million Tons/Annum to cater this additional General Cargo of 5 Million Tons/Annum.

This order is subject to the provisions of 'the Acts' and the Rules' and orders made there under and further subject to the terms and conditions incorporated in the schedule A, B & C enclosed to this order.

This combined order of consent & Hazardous Waste Authorization shall be valid for a period ending with the **29<sup>th</sup> February, 2024.**

**VIJAY KUMAR GSRKR IAS, MEMBER SECY(GSRKRVK), O/o MEMBER SECRETARY-  
APPCB**

**To**

**M/s. Adani Krishnapatnam Port Limited,  
(formerly M/s. Krishnapatnam Port Co. Ltd),  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District.  
Email: [environment.akpl@adani.com](mailto:environment.akpl@adani.com)**

**Copy to:**

1. The JCEE, Zonal Office, Vijayawada for information and necessary action.
2. The Environmental Engineer, Regional Office, Nellore for information and necessary action.

#### **SCHEDULE - A**

1. Any up-set condition in any industrial plant / activity of the industry, which result in, increased effluent / emission discharge and/ or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge / emission below the limits.
2. The industry should carryout analysis of waste water discharges or emissions through chimneys for the parameters mentioned in this order on quarterly basis and submit to the Board.
3. All the rules & regulations notified by Ministry of Law and Justice, Government of India

regarding Public Liability Insurance Act, 1991 should be followed as applicable.

4. Notwithstanding anything contained in this consent order, the Board hereby reserves the right and powers to review / revoke any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.
5. The industry shall ensure that there shall not be any change in the process technology, source & composition of raw materials and scope of working without prior approval from the Board.
6. The applicant shall submit Environment statement in Form V before 30th September every year as per Rule No.14 of E (P) Rules, 1986 & amendments thereof.
7. The applicant should make applications through Online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board.
8. The industry should immediately submit the revised application for consent to this Board in the event of any change in the raw material used, processes employed, quantity of trade effluents & quantity of emissions. Any change in the management shall be informed to the Board. The person authorized should not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.
9. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air(Prevention and Control of Pollution) Act, 1981.
10. The conditions stipulated are without prejudice to the rights and contentions of this Board in any Hon'ble court of law.
11. The industry shall be liable to pay Environmental Compensation / Other Environmental Taxes, if any environmental damage caused to the surroundings, as fixed by the Collector & District Magistrate or any other competent authority as per the Rules in vogue.
12. The industry may explore the possibility of tapping the solar energy for their energy requirements.
13. The industry should educate the workers and nearby public of possible accidents and remedial measures.

**SCHEDULE-B**

**The industry shall comply with the following:**

1. High silt deposition is observed in the storm water drains for which the port need to make temporary and permanent measures to ensure no silt is carried into the storm water drains.
2. There is a high in-consistency in respect of the CAAQMS data. Hence, the port needs to replace the old CAAQM stations so that the data generated matches the actual scenario.

**Water:**

3. The source of water is Muthukur Reservoir 1000 KLD and 4 MLD of water from Nakkala kalava irrigation drain. The maximum permitted water consumption after proposed expansion is as following:

S. No.	Purpose	Quantity (KLD)
1.	Dust suppression & other utilities	250.0
2.	Domestic	250.0
	<b>Total</b>	<b>500.0</b>

Separate meters with necessary pipe-line shall be maintained for assessing the quantity of water used for each of the purposes mentioned above.



4. The port shall comply the following effluent discharged standards based on the disposal points permitted:

Outlet	Parameter	Concentration
1	pH	5.5 - 9.0
	Total Suspended Solids (TSS)	<100 mg/l
	Oil and Grease	10 mg/l
	Biochemical Oxygen Demand (BOD)	30 mg/l
	Fecal Coliform (FC) (Most Probable Number per 100 Milliliter, MPN/100ml)	<1000 MPN/100 ml

**Air:**

5. The port shall comply with emission limits for DG sets of capacity upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 under the Environment (Protection) Amendment Rules, 2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets of capacity more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.
6. The port shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10mm) - 100 mg/ m<sup>3</sup>; PM2.5 (Particulate Matter size less than 2.5 mm) - 60 mg/ m<sup>3</sup>; SO<sub>2</sub> - 80 mg/ m<sup>3</sup>; NO<sub>x</sub> - 80 mg/m<sup>3</sup>, outside the factory premises at the periphery of the industry.  
Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009.  
Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)  
Night time (10 PM to 6 AM) - 70 dB (A)
7. The Port shall take all measures including latest available technologies to comply with above ambient air quality standards.
8. The Port shall not increase the capacity beyond the permitted capacity mentioned in this order, without obtaining CFE & CFO of the Board.
9. Coal stack heights in all coal yards shall not be more than 12mts.
10. The port shall ensure required wetness all the time on the surface of stock piles to avoid the dust emissions from the stock piles.
11. The port shall install sufficient number of CAAQM stations in between the villages and the port area. The stations shall be located at the periphery of the villages to monitor all the parameters given in the consent order.
12. The port shall maintain properly the three CAAQM stations provided.
13. Unloading of iron ore from the railway wagons house should be carried out with wagon tippers only, in case, handling of iron ore is more than 6 MTPA. As and when iron ore handling is to be done intermittently, it should be handled with water sprinkling system at high pressure with swiveling type nozzles operated regularly to cover entire stockpile. Nozzles shall be operated along stockpile at regular Intervals to cover stockpile height and width.

**General:**

14. The MDSS system shall be in operation wherever the stock of any bulk material (Dusty cargo) is piled in a way to ensure wetness on the surface of stock piles.
15. As regards to deviation in location of facilities such as stock piles and other facilities, from the originally envisaged plan, amendments for the EC and CFE have to be obtained immediately.
16. In no case the Hazardous chemicals shall be handled openly in the Port either from or into the ship. Hazardous Chemicals if any shall be handled only in closed containers. Hazardous

- chemicals / cargo shall not be stored in CRZ area.
17. The port shall maintain the existing green belt with adequate width and density and in vacant places
  18. The port shall use road sweeping machines to clean all port internal roads regularly.
  19. The port shall ensure that the trucks transporting cargos to outside the port shall be covered with tarpaulin to avoid fugitive emissions / spillages.
  20. All conveyor belts and other transfer points shall be covered with GI sheets to mitigate fugitive emissions generated during conveying of dusty cargos.
  21. The port shall maintain water sprinklers for effective control of fugitive emissions generated during handling of cargo and increased volume of vehicular traffic.
  22. The port shall maintain Mechanical Dust Suppression System (MDSS) for stock yards, dusty cargo berths and conveyor belts.
  23. The port shall develop and maintain 100 m width greenbelt along the periphery & 20 m width around coal & iron ore stack yards
  24. The port shall maintain empty dusty cargo vehicles washing system to clean dusty cargo empty vehicles.
  25. The port shall record the energy consumption for the energy meters provided for Sewage Treatment Plant (STP), pump houses to water sprinklers / dust suppression measures and Air Pollution Control Equipments (APCE)
  26. The port shall not allow any hazardous wastes through the port other than waste oil / used oil generated in the Port without prior permission of Board and shall comply with EC conditions.
  27. The port shall not store any hazardous waste within the premises a per the time frame mentioned in HWM Rules.
  28. In case a leaky container of hazardous cargo is found, a separate permission of the Board may be obtained after establishing the quality and the type of waste for disposal
  29. All types of the fertilizers should be stored in the closed warehouses only. The Port should ensure that there should not be any open storage of urea or any other fertilizer materials. There shall not be any effluent generation
  30. The port shall store fuel oils used for construction equipment, vessels and vehicles in a well designed manner and protect them against fire hazards by construction of compound wall to prevent access to unauthorized elements. The surface run off from storage area shall pass through oil water separator before being discharged.
  31. The port shall provide fire detection and fire fighting facilities with adequate water storage in fire prone areas in consultation with Directorate of fire fighting.
  32. The port shall comply latest technologies for controlling fugitive emissions including the following:
    - a. Fully mechanized handling equipment for loading and unloading operations
    - b. Closed conveyor belt with water sprinkling arrangement for suppression of dust while conveying dusty cargoes like coal, iron ore etc.
    - c. Specially designed iron ore ship loader with necessary precautions to reduce drop height of iron ore into the ship.
    - d. Mechanical water sprinkling shall be provided on roads and at dusty cargo storage areas for suppression of dust.
  33. The port shall maintain adequate number of ground water monitoring location on scientific basis and the same shall be monitored every six months.
  34. The port shall construct the storm water drains to avoid the contamination of runoff with other effluents.
  35. The port shall regularly clean the drains to avoid siltation.
  36. The port shall operate Sewerage Treatment Plant (STP) and after treatment, the treated water should be used for washing purposes/flushing of sewers /green belt development etc, treated sewage should not be disposed into the sea.
  37. The port shall monitor compliance through Environment Management Cell with qualified and trained staff
  38. The port shall maintain onsite emergency action plan after carrying out risk analysis and

hazop studies.

39. The port shall comply with the conditions of CFE order dated 08.05.2010, 22.02.2018 and 25.2.2021.
40. The port shall submit monthly monitoring reports to RO: Nellore
41. The port shall comply with standards and directions issued by APPCB / CPCB / MoEF&CC as and when notifications are issued from time to time.
42. The port shall install digital display boards at publicly visible places at the main gate indicating the products manufactured Vs permitted quantities, Treated effluent concentrations Vs discharge standards, Stack emission & AAQ concentrations Vs standards, hazardous waste generation, disposed, stock Vs permitted quantities and validity of CFO; and exhibit the CFO order at a prominent place in the factory premises, as per Hon'ble Supreme Court order
43. The port shall submit Half yearly compliance reports to all the stipulated conditions in Environmental Clearance (EC), Consent for Establishment (CFE) and Consent for Operation (CFO) through website i.e., <https://pcb.ap.gov.in> by 1<sup>st</sup> of January and 1st July of every year. The first half yearly compliance reports shall be furnished by the industry and second half yearly compliance reports shall be the audited through MoEF&CC recognized and National Accreditation Board for Laboratory Testing (NABL) accredited third party.

**Special Conditions:**

44. The port shall possess valid NOC issued by the Andhra Pradesh State Disaster Response and Fire Service Dept., (APSDRFSD) and submit a copy at concerned Regional Office, APPCB.
45. The port shall prepare a safety report and carry out an independent safety audit report of the respective industrial activities including chemical storages / isolated storages by an expert not associated with such industrial activity as required under Rule 10 of MSIHC Rules, 1989 and get it approved by the Factories Dept., and submit the compliance along with copy of the safety report, safety audit report and safety certificate at concerned Regional Office, APPCB.
46. The port shall extend training to the working personnel for the prevention of accidents and necessary antidotes to ensure safety, as per the MSIHC Rules, 1989.
47. The port shall carryout calibration of safety equipment and leak detection systems at regular intervals and shall certify the same with the Factories Department. That certified copy shall be submitted to the APPCB, Regional Office.
48. The port shall install fluorescent Wind Vane at the highest point in the industry premises.
49. The port shall submit Risk analysis and risk assessment covering worst scenario clearly describing impact within the industry premises and outside the industry premises and emergency response system.
50. The port shall submit the copy of the safety audit report and On-Site / Off Site Emergency Plans as applicable after being certified by the Factories Department to the APPCB, Regional Office from time to time, if the storage quantity of hazardous chemicals is equal to or, in excess of the threshold quantities specified in schedule 2 & 3 of MSIHC Rules, 1989.

**SCHEDULE – C**

**[See rule 6]**

**[CONDITIONS OF AUTHORISATION FOR OCCUPIER OR OPERATOR HANDLING  
HAZARDOUS WASTES]**

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the Hazardous and other wastes except what is permitted through this authorisation.
4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.

5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”.
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
8. An application for the renewal of an authorisation shall be made as laid down under these Rules.
9. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.

**Specific Conditions:**

10. The industry shall comply with the provisions of HWM Rules, 2016 in terms of interstate transport of Hazardous Waste and manifest document prescribed Under Rule 18 and 19 of the HWM Rules, 2016.
11. The industry shall not store hazardous waste for more than 90 days as per the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
12. The industry shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.
13. The industry shall transport the hazardous waste to cement industries only through vehicle fitted with GPS tracking system.
14. The industry shall maintain 7 copy manifest system for transportation of waste generated and a copy shall be submitted to concerned Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card.
15. The industry shall maintain proper records for Hazardous and Other Wastes stated in Authorisation in Form-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form-4 as per Rule 20 (2) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
16. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

**VIJAY KUMAR GSRKR IAS, MEMBER SECY(GSRKRVK), O/o MEMBER SECRETARY-  
APPCB**

**To**  
**M/s. Adani Krishnapatnam Port Limited,**  
**(formerly M/s. Krishnapatnam Port Co. Ltd),**  
**Krishnapatnam (V), Muthukur (M),**  
**SPSR Nellore District.**  
**Email: [environment.akpl@adani.com](mailto:environment.akpl@adani.com)**



Member Secretary

**ANDHRA PRADESH POLLUTION CONTROL BOARD**  
D. No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre,  
Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010  
Website: www.appcb.ap.nic.in

**RED CATEGORY  
RENEWAL OF CONSENT & AUTHORIZATION ORDER**

**Consent Order No: APPCB/VJA/NLR/11344/CFO/HO/2018-****29/07/2018**

CONSENT is hereby granted for Operation under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof and Authorisation under Rule 6 of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 & Amendments thereof and the rules and orders made there under (hereinafter referred to as 'the Acts', 'the Rules') to:

**M/s. Krishnapatnam Port Company Ltd.,  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District – 524 344, A.P.  
E-mail: info@krishnapatnamport.com**

(Hereinafter referred to as 'the Applicant') authorizing to operate the industrial plant to discharge the effluents from the outlets and the quantity of emissions per hour from the chimneys as detailed below:

i. Outlets for discharge of effluents:

Outlet No.	Outlet Description	Max Daily Discharge	Point of Disposal
1	Domestic effluents after treatment in STP	300 KLD	Treated water shall be used for Plantation within the premises.

ii) Emissions from chimneys:

Chimney No.	Description of Chimney
1	Stack attached to 1 x 380 KVA, 2x 320 KVA, 9 x 250 KVA, 4x 160 KVA, 5 x 125 KVA, 1 x 500 KVA, 2 x 320 KVA, 4 x 82.5 KVA DG Sets

iii) Hazardous Waste Authorisation (Form – II) [See Rule 6 (2)]:

M/s. Krishnapatnam Port Company Ltd., SPSR Nellore District is hereby granted an authorization to operate a facility for collection, reception, storage, treatment, transport and disposal of Hazardous Wastes namely:

• Hazardous Wastes With Disposal Option:

S. No	Name of Hazardous Waste	Stream	Quantity	Method of disposal
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1.	Waste oil/Used oil from D.G. Sets, vehicles, dredgers and other machinery	5.1 of Schedule – I	350 KLPA	Authorised Reprocessors/ Recyclers.
2.	Waste oil from Ships	5.1 of Schedule – I	2.5 Lakh LPA	

**This consent order is valid for handling various port activities with capacities as indicated below:**

S. No	Products	Quantity
1.	Coal	46.5 Million Tons/ Annum
2.	Iron Ore	8 Million Tons/ Annum
3.	Fertilizers, Food Grains, Sugar, Cement & Cement Clinker, Barites, Feldspar, Edible Oils (General Cargo)	9.0 Million Tons/ Annum
4	Bulk Liquid Cargo (POL Berth)	---
5.	Container Cargo	2.0 MTEUs/ Annum
6.	No. of Berths	11 Berths

This order is subject to the provisions of 'the Acts' and the Rules' and orders made thereunder and further subject to the terms and conditions incorporated in the schedule A, B & C enclosed to this order.

This combined order of consent & Hazardous Waste Authorization shall be valid for a period ending with the 31<sup>st</sup> October, 2023.

**VIVEK YADAV IAS, MS(VY), O/o MEMBER SECRETARY-APPCB**

**To**

**M/s. Krishnapatnam Port Company Ltd.,  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District – 524 344, A.P.**

**Copy to:**

1. The JCEE, ZO: **Vijayawada** for information and necessary action.
2. The JCEE (UH: II), **Vijayawada** for information.
3. The EE, RO: **Nellore** for information and necessary action.

**SCHEDULE-A**

1. Any up-set condition in any industrial plant / activity of the industry, which result in, increased effluent / emission discharge and/ or violation of standards stipulated in this order shall be informed to this Board, under intimation to the Collector and District Magistrate and take immediate action to bring down the discharge / emission below the limits.
2. The industry shall carryout analysis of waste water discharges or emissions through chimneys

- for the parameters mentioned in this order on quarterly basis and submit to the Board.
3. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991 should be followed as applicable.
  4. The industry shall put up two sign boards (6x4 ft. each) at publicly visible places at the main gate indicating the products, effluent discharge standards, air emission standards, hazardous waste quantities and validity of CFO and exhibit the CFO order at a prominent place in the factory premises.
  5. Notwithstanding anything contained in this consent order, the Board hereby reserves the right and powers to review / revoke any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Acts by the Board.
  6. The industry shall file the water cess returns in Form-I as required under section (5) of Water (Prevention and Control of Pollution) Cess Act, 1977 on or before the 5th of every calendar month, showing the quantity of water consumed in the previous month along with water meter readings. The industry shall remit water cess as per the assessment orders as and when issued by Board.
  7. The applicant shall submit Environment statement in Form V before 30th September every year as per Rule No.14 of E (P) Rules, 1986 & amendments thereof.
  8. The applicant shall make applications through Online for renewal of Consent (under Water and Air Acts) and Authorization under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts and detailed compliance of CFO conditions for obtaining Consent & HW Authorization of the Board. The industry should immediately submit the revised application for consent to this Board in the event of any change in the raw material used, processes employed, quantity of trade effluents & quantity of emissions. Any change in the management shall be informed to the Board. The person authorized shall not let out the premises / lend / sell / transfer their industrial premises without obtaining prior permission of the State Pollution Control Board.
  9. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to Appellate authority constituted under Section 28 of the Water(Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air(Prevention and Control of Pollution) Act, 1981.

### SCHEDULE-B

#### **Water Pollution:**

1. The industry shall comply the following effluent standards based on the disposal points permitted:

<b>Outlet</b>	<b>Parameter</b>	<b>Concentration</b>
1	pH	5.5 - 9.0
	Total Suspended Solids (TSS)	1000 mg/l
	Total Dissolved Solids (TDS)	2100 mg/l
	Oil and Grease	10.0 mg/l
	COD	250 mg/l
	BOD	100 mg/l

2. The industry shall take steps to reduce water consumption to the extent possible and consumption shall NOT exceed the quantities mentioned below:

<b>S. No</b>	<b>Purpose</b>	<b>Quantity</b>
--------------	----------------	-----------------

1.	Dust suppression	1050.0 KLD
2.	Domestic	400.0 KLD
3.	Gardening / Irrigation	400.0 KLD
4.	Miscellaneous (Fire protection services)	650.0 KLD
	<b>Total</b>	<b>2,500.0 KLD</b>

Separate meters with necessary pipe-line shall be maintained for assessing the quantity of water used for each of the purposes mentioned above for Cess assessment purpose.

3. The additional water quantity of 500 KLD shall be used for dust suppression measures only, as committed by the Port in the CFO meeting held on 13.08.2015.
4. The Krishnapatnam Port shall comply with emission limits for DG sets upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 under the Environment (Protection) Amendment Rules, 2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets more than 800 KW shall comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.

#### **Air Pollution:**

5. The industry shall comply with ambient air quality standards of PM10 (Particulate Matter size less than 10mm) - 100 mg/ m<sup>3</sup>; PM2.5 (Particulate Matter size less than 2.5 mm) - 60 mg/ m<sup>3</sup>; SO<sub>2</sub> - 80 mg/ m<sup>3</sup>; NO<sub>x</sub> - 80 mg/m<sup>3</sup>, outside the factory premises at the periphery of the industry.

Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009.

Noise Levels: Day time (6 AM to 10 PM) - 75 dB (A)

Night time (10 PM to 6 AM) - 70 dB (A)

6. The Port shall take all measures including latest available technologies to comply with above ambient air quality standards.
7. The Krishnapatnam Port shall not increase the capacity beyond the permitted capacity mentioned in this order, without obtaining CFE & CFO of the Board.
8. Coal stack heights in all coal yards shall not be more than 12mts.
9. The industry shall ensure required wetness all the time on the surface of stock piles to avoid the dust emissions from the stock piles.
10. The industry shall install sufficient number of CAAQM stations in between the villages and the port area. The stations shall be located at the periphery of the villages to monitor all the parameters given in the consent order.
11. The Port shall link the 2<sup>nd</sup> CAAQM station to Board website within one month.
12. Unloading of iron ore from the railway wagons house should be carried out with wagon tippers only, in case, handling of iron ore is more than 6 MTPA. As and when iron ore handling is to be done intermittently, it should be handled with water sprinkling system at high pressure with swiveling type nozzles operated regularly to cover entire stockpile. Nozzles shall be operated along stockpile at regular Intervals to cover stockpile height and width.

#### **General:**

13. The MDSS system shall be in operation wherever the stock of any bulk material (Dusty cargo) is piled in a way to ensure wetness on the surface of stock piles.



14. As regards to deviation in location of facilities such as stock piles and other facilities, from the originally envisaged plan, amendments for the EC and CFE have to be obtained immediately.
15. In no case the Hazardous chemicals shall be handled openly in the Port either from or into the ship. Hazardous Chemicals if any shall be handled only in closed containers. Hazardous chemicals / cargo shall not be stored in CRZ area.
16. The port shall maintain the existing green belt with adequate width and density and in vacant places.
17. The Krishnapatnam Port shall use road sweeping machines to clean all port internal roads regularly.
18. The Krishnapatnam Port shall ensure that the trucks transporting cargos to outside the port shall be covered with tarpaulin to avoid fugitive emissions / spillages.
19. All conveyor belts and other transfer points shall be covered with GI sheets to mitigate fugitive emissions generated during conveying of dusty cargos.
20. The Krishnapatnam Port shall maintain water sprinklers for effective control of fugitive emissions generated during handling of cargo and increased volume of vehicular traffic.
21. The industry shall maintain Mechanical Dust Suppression System (MDSS) for stock yards, dusty cargo berths and conveyor belts.
22. The Port shall develop and maintain 100 m width greenbelt along the periphery & 20 m width around coal & iron ore stack yards.
23. The Krishnapatnam Port shall maintain empty dusty cargo vehicles washing system to clean dusty cargo empty vehicles.
24. The Krishnapatnam Port shall record the energy consumption for the energy meters provided for Sewage Treatment Plant (STP), pump houses to water sprinklers / dust suppression measures and Air Pollution Control Equipments (APCE).
25. The Krishnapatnam Port shall not allow any hazardous wastes through the port other than waste oil / used oil generated in the Port without prior permission of Board and shall comply with EC conditions. The Krishnapatnam Port shall not store any hazardous waste within the premises as per the time frame mentioned in HWM Rules.
26. In case a leaky container of hazardous cargo is found, a separate permission of the Board may be obtained after establishing the quality and the type of waste for disposal.
27. All types of the fertilizers should be stored in the closed warehouses only. The Port should ensure that there should not be any open storage of urea or any other fertilizer materials. There shall not be any effluent generation.
28. The Krishnapatnam Port shall store fuel oils used for construction equipment, vessels and vehicles in a well designed manner and protect them against fire hazards by construction of compound wall to prevent access to unauthorized elements. The surface run off from storage area shall pass through oil water separator before being discharged.
29. The Krishnapatnam Port shall provide fire detection and fire fighting facilities with adequate water storage in fire prone areas in consultation with Directorate of fire fighting.
30. The Krishnapatnam Port shall comply latest technologies for controlling fugitive emissions including the following:
  - a. Fully mechanized handling equipment for loading and unloading operations.
  - b. Closed conveyor belt with water sprinkling arrangement for suppression of dust while conveying dusty cargoes like coal, iron ore etc.,
  - c. Specially designed iron ore ship loader with necessary precautions to reduce drop height of iron ore into the ship.
  - d. Mechanical water sprinkling shall be provided on roads and at dusty cargo storage areas for suppression of dust.
31. The Krishnapatnam port shall maintain adequate number of ground water monitoring location on scientific basis and the same shall be monitored every six months.
32. The Krishnapatnam port shall construct the storm water drains to avoid the contamination of

- runoff with other effluents.
33. The Krishnapatnam port shall regularly clean the drains to avoid siltation.
  34. The Krishnapatnam port shall operate Sewerage Treatment Plant (STP) and after treatment waste water should be used for washing purposes/flushing of sewers /green belt development etc, treated sewage should not be disposed into the sea.
  35. The Krishnapatnam port shall monitor compliance through Environment Management Cell with qualified and trained staff.
  36. The Krishnapatnam Port shall maintain onsite emergency action plan after carrying out risk analysis and hazop studies.
  37. The Krishnapatnam Port shall comply with the conditions of CFE order dated 08.05.2010.
  38. The Krishnapatnam Port shall submit monthly monitoring reports to RO: Nellore.
  39. The Krishnapatnam Port shall follow the directions issued by the Board from time to time.
  40. The Port shall comply with standards and directions issued by CPCB / MoEF&CC as and when notifications are issued.
  41. The Port shall submit compliance report on the conditions mentioned in the consent order every six months i.e., on 1<sup>st</sup> of January and July of every year to the Regional Office/ Zonal Office.

**SCHEDULE – C**

*[See rule 6 (2)]*

**[CONDITIONS OF AUTHORISATION FOR OCCUPIER OR OPERATOR  
HANDLING HAZARDOUS WASTES]**

1. All the rules and regulations notified by Ministry of Environment and Forests, Government of India under the E (P) Act, 1986 in respect of management, handling, transportation and storage of the Hazardous wastes should be followed.
2. The industry shall not store hazardous waste for more than 90 days as per the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
3. The industry shall store Used / Waste Oil and Used Lead Acid Batteries in a secured way in their premises till its disposal to the manufacturers / dealers on buyback basis.
4. The industry shall maintain 7 copy manifest system for transportation of waste generated and a copy shall be submitted to concerned Regional Office of APPCB. The driver who transports Hazardous Waste should be well acquainted about the procedure to be followed in case of an emergency during transit. The transporter should carry a Transport Emergency (TREM) Card.
5. The industry shall maintain proper records for Hazardous and Other Wastes stated in Authorisation in FORM-3 i.e., quantity of Incinerable waste, land disposal waste, recyclable waste etc., and file annual returns in Form- 4 as per Rule 20 (2) of the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.

**VIVEK YADAV IAS, MS(VY), O/o MEMBER SECRETARY-APPCB**

**To**

**M/s. Krishnapatnam Port Company Ltd.,  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District – 524 344, A.P.**



**ANDHRA PRADESH POLLUTION CONTROL BOARD**  
D. No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre,  
Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010  
Website: www.pcb.ap.nic.in

**Order.No: APPCB/VJA/NLR/11344/CFO/HO/2019- Date: 10/02/2020**  
**Sub:APPCB-UH-IV- Amendment to CFO & HWM Order for the berth of NW-3 and for enhance Cargo Handling Capacities – M/s. Krishnapatnam Port Co. Ltd., Krishnapatnam (V), Muthukur (M), SPSR Nellore District – Amendment Order Issued – Reg.**

- Ref:**
1. CFE Order Dt.25.05.2004 for Phase - I.
  2. EC Order Dt.26.07.2006 for Phase - I
  3. EC Order Dt.13.11.2009 for Phase - II
  4. CFE Order Dt.08.05.2010 for Phase - II.
  5. CFE Amendment Orders Dt.14.03.2014, 02.07.2015, 10.02.2016 & 22.02.2018.
  6. CRZ Clearance from GoAP Dt.02.02.2013 & NOC of GoAP Dt.14.08.2014
  7. EC & CRZ Amendment Dt.16.03.2016.
  8. CFO Order Dt.29.07.2018, which is valid up to 31.10.2023.
  9. CFO application for Amendment of CFO & HWMA Order, received through APOCMMS on 25.10.2019.
  - 10.RO, Nellore report received through mail Dt.02.11.2019.
  - 11.T.O, sought clarification on 28.11.2019.
  - 12.Port clarification submitted on 04.12.2019.
  - 13.CFO Committee meeting held on 18.12.2019.
  - 14.Board sought clarification from RO, Nellore regarding applicability of EC to the port activities on 13.01.2020.
  - 15.RO, Nellore submitted report vide mail Dt.28.01.2020.
  - 16.The issue of applicability of EC to the port activities, discussed with Chairman and received instructions on 03.02.2020.

\*\*\*

M/s. Krishnapatnam Port Co. Ltd., Krishnapatnam (V), Muthukur (M), SPSR Nellore District had proposed 11 berths in North side and 6 berths in South side in Phase – I & II, with Coal handling capacity 45 Million TPA, Iron ore - 18 Million TPA, General Cargo - 9 Million TPA, Bulk liquid cargo - 0.3 Million TPA and Container cargo - 3.3 Million TEU. The total berth length proposed in North side is 2850 mtrs and in South side is 2100 mtrs.

The Board issued CFE for the port activities, vide reference 1<sup>st</sup> & 4<sup>th</sup> cited, proposed under Phase – I & II and issued subsequent amendments vide reference 5<sup>th</sup> cited.

The port has obtained NOC from GoAP, vide ref. 6<sup>th</sup> cited, for lateral shifting of general cargo berth towards West to an extent of 500 m in the approved berthing front layout without change in Number of berths as approved in the Environmental Clearance and obtained subsequent EC & CRZ Amendment for the minor modifications vide ref. 7<sup>th</sup> cited.

The port has obtained renewal of CFO & HWA Order vide ref. 8<sup>th</sup> cited, and is valid up to 31.10.2023.

The port has applied for Amendment of CFO & HWM Order, through APOCMMS, vide reference 9<sup>th</sup> cited, for inclusion of berth of NW-3 and for enhanced additional coal handling capacity of 4.5 Million TPA, with a project cost of Rs. 388 Crores. The RO, Nellore furnished the inspection report, vide ref. 10<sup>th</sup> cited.

This office sought clarification from the port on the details of EC obtained for the existing berth in NW-1, and the details of CFE & EC obtained for inclusion of additional berth of NW-3 and the permissions obtained for change in cargo mix under Notification S.O. 3518 (E), dt.23.11.2016 of the MoEF & CC. The port furnished the reply to the clarification sought by the Board, vide ref. 12<sup>th</sup> cited.

The issue of Amendment to CFO & HWA Order of M/s. KPCL, is placed before the CFO Committee held on 18.12.2019 for along with port's CFO amendment application, RO's report, port's reply to clarification and Agenda.

After careful examination, the CFO Committee recommended to issue **AMENDMENT TO THE CFO & HWA ORDER Dt.29.07.2018** for the berth NW-3 and for enhanced additional coal handling capacity of 4.5 Million TPA, without increasing the total permitted cargo handling capacity, under Section 25/26 of the Water (Prevention and Control of Pollution) Act, 1974 and under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 and amendments thereof, to the following cargo handling capacities :

S.No.	Name of the materials handling at Port	Existing Capacity as per CFO Order Dt.29.07.2018	Applied for Amendment for the capacity	Total Capacity After Amendment
1.	Coal	46.5 Million TPA	4.5 Million TPA	51 Million TPA
2.	Iron Ore	8 Million TPA	---	8 Million TPA
3.	Fertilizers, Food Grains, Sugar, Cement & Cement Clinker, Barites, Feldspar, Edible Oils (General Cargo)	9.0 Million TPA	---	9.0 Million TPA
4.	Bulk Liquid Cargo (POL Berth)	---	---	---
5.	Container Cargo	2.0 Million TEUs / Annum	---	2.0 Million TEUs / Annum
	<b>Total</b>	63.5 Million Tons / Annum : A Non-container cargo + 2.0 Million TEUs / Annum : A container cargo	---	68.0 Million TPA : A Non-container cargo + 2.0 Million TEUs / Annum : A container cargo
6.	No. of Berths	11 Berths	1 Berth	12 Berths

However, the Board sought clarification from RO, Nellore, vide reference 14th cited, regarding applicability of EC to the port activities. In response to that, the RO, Nellore vide reference 15th cited submitted clarification duly obtaining from the port authority. After carefully considering the above aspects, the Amendment for change in cargo handling capacities of coal with additional berth of NW-3 is issued to M/s. Krishnapatnam Port Company Limited subject to the following conditions :

1. The port shall take adequate air pollution control measures with respect to the enhanced dusty materials handling capacities.
2. The port shall stock all the dusty materials with in the designated storage yards only.
3. The port activities are concentrating in north quay by construction of 12<sup>th</sup> Berth, hence the stocking of dusty materials shall not be extended towards the residential areas around the port area.
4. The dusty materials transporting vehicles shall be closed in all respects/ covered with tarpaulin for controlling fugitive emissions.
5. The port shall provide wheel washing facility near the dusty cargo stocking area, to the freighted vehicles going outside the port.
6. The port shall inform the modifications made in port infrastructure developments to the MoEF&CC and to the Board time to time.
7. The port shall obtain EC for any change of scope of the project and shall restrict the port activities as permitted vide EC Orders Dt.26.07.2006 for Phase - I, 13.11.2009 for Phase - II and Amendments issued on 16.03.2016.
8. The port shall continuously operate the 3 CAAQM stations installed in between villages and port area to monitor all the parameters given in the consent order and upload the data continuously to the APPCB / CPCB websites.

All the other conditions stipulated in the existing CFO Order vide reference 8<sup>th</sup> cited, shall remain the same.

Digitally signed by Banda Siva  
Sankar Prasad  
Date: 2020.02.11 15:34:41 +05'30'

**BANDLA SIVA SANKARA PRASAD, CHAIRMAN, O/o CHAIRMAN-APPCB**

To

M/s. Krishnapatnam Port Company Ltd.,  
Krishnapatnam (V), Muthukur (M),  
SPSR Nellore District – 524 344, A.P.  
E-mail: venugopal.r@krishnapatnamport.com

Copy to:

1. The JCEE, ZO: Vijayawada for information and necessary action.
2. The JCEE (UH: II), Vijayawada for information.
3. The EE, RO: Nellore for information and necessary action.

Ports and Logistics  
Ref: AKPL/APPCB/EHS/006/2024-25

Date: 11.04.2024

To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada 520007

Dear Sir,

Sub:- AKPL - Water Consumption details (Form-1) – Submitted –  
Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of March- 2024, prepared under the Water (Prevention and  
Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,

For Adani Krishnapatnam Port Limited

  
(Dr. G. Jyothsna)  
Vice President (Environment & Sustainability)

Encl. As above.

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.

## FORM - 1

### Returns Regarding Water Consumed During Month of March - 2024

Name & Address (1)	Purpose of which water consumed (2)	Quantity of water consumed (3)	If the meter was out of order the monthly avg. consumption of the water for the past 3 months of working period (4)	Qty. of water qualifying for rebate according to the assesses (5)	Remarks (6)
Adani Krishnapacnam Part Limited. Muthukur, SPSR Nellore	1) Industrial cooling/ spraying in mine pits or boiler feed.	Total from Municipal mains i. From Municipal water supply mains ii. From well / tube well	60820		
	2) Domestic Water	i. From Municipal water supply mains ii. From well / tube well	18030		

(\*) For claiming rebate under Co. 7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.

For Assessee  
  
Date: \_\_\_\_\_



## FORM - 1

Returns Regarding Water Consumed During Month of February - 2024

Name & Address (1)	Purpose of which water consumed (2)	Quantity of water consumed (3)	If the meter was out of order the monthly avg. consumption of the water for the past 3 months of working period (4)	Qty. of water qualifying for rebate according to the assesses (5) *	Remarks (6)
Adani Krishapatnam Port Limited, Muthukur, SPSR Nellore	1) Industrial cooling/ spraying in mine pits or boiler feed.	Cum/KL	60030	-	-
	2) Domestic Water				

(\*) For claiming rebate under Col.7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.

For Adani Krishapatnam Port Limited

*D. Jayaram*  
Approved by  
(D. Jayaram)

Vice President (Environment & Sustainability)

## FORM - 1

Returns Regarding Water Consumed During Month of January - 2024

Name & Address (1)	Purpose of which water consumed (2)		Quantity of water consumed (3)	If the meter was out of order the monthly avg. consumption (4)	Qty. of water qualifying for rebate according to the assesses (5)*	Remarks (6)
Adani Krishnapatnam Port Limited, Muthukur, SPSR Nellore	1) Industrial cooling/ spraying in mine pits or boiler feed.	Total from Municipal mains i. From Municipal water supply mains ii. From well / tube well.	Cum/KL	55885	-	-
	2) Domestic Water	i. From Municipal water supply mains ii. From well / tube well	Cum/KL	13170	-	-

(\* for claiming rebate under Col.7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.



**FORM - 1**

Returns Regarding Water Consumed During Month of December - 2023

Name & Address	Purpose of which water consumed		Quantity of water consumed	If the meter was out of order the monthly avg. consumption of the water for the past 3 months of working period	Qty. of water qualifying for rebate according to the assesses	Remarks
(1)	(2)		(3)	(4)	(5) *	(6)
Adani Krishnapatnam Port Limited, Muthukur, SPSR Nellore	1) Industrial cooling/ spraying in mine pits or boiler feed.	Total from Municipal mains i. From Municipal water supply mains ii. From well / tube well.	Cum/KL	31,843.11	-	-
	2) Domestic Water	i. From Municipal water supply mains ii. From well / tube well	Cum/KL	10,220.00	-	-

(\*) for claiming rebate under Col.7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.

  
Dr. D. Jyothi  
Vice President - Environment

## FORM - 1

Returns Regarding Water Consumed During Month of November - 2023

Name & Address (1)	Purpose of which water consumed (2)		Quantity of water consumed (3)	If the meter was out of order the monthly avg. consumption of the water for the past 3 months of working period (4)	Qty. of water qualifying for rebate according to the assesses (5) *	Remarks (6)
	1) Industrial cooling/ spraying in mine pits or boiler feed.	Total from Municipal mains i. From Municipal water supply mains ii. From well / tube well.				
Adani Krishnapatnam Port Limited, Muthukur, SPSR Nellore	2) Domestic Water	i. From Municipal water supply mains ii. From well / tube well	Cum/KL	17500	-	-
	1) Industrial cooling/ spraying in mine pits or boiler feed.	i. From Municipal water supply mains ii. From well / tube well.	Cum/KL	47700	-	-

(\* for claiming rebate under Col.7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.

## FORM - 1

Returns Regarding Water Consumed During Month of October - 2023

Name & Address (1)	Purpose of which water consumed (2)	Quantity of water consumed (3)	If the meter was out of order the monthly avg. consumption of the water for the past 3 months of working period (4)	Qty. of water qualifying for rebate according to the assesses (5)*	Remarks (6)
Adani Krishnapatnam Port Limited, Muthukur, SPSR Nellore	1) Industrial cooling/ spraying in mine pits or boiler feed.	Total from Municipal mains i. From Municipal water supply mains ii. From well / tube well.	51700	.	.
	2) Domestic Water	i. From Municipal water supply mains ii. From well / tube well	18700	.	.

(\*) for claiming rebate under Col.7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.

*D. Jyoti*

Lr. No. AKPL/APPCB/EHS/030/2023-24

Date: 30.06.2023.

To

The Environmental Engineer,  
A.P. Pollution Control Board,  
Regional Office,  
SPSR Nellore



Sir,

Sub:- Adani Krishnapatnam Port Limited- Details of E - Waste generated & Disposed in Form - 3 - Submitted - Reg.

Ref:- 1. CTO & HWA Order No. APPCB/VJA/NLR/11344/CFD/HO/2019 11.11.2022

@@@

In compliance with the conditions stipulated in CTO & HWA orders vide reference cited above we are herewith submitting the Annual Returns of Generation, Storage & Disposal of E - Waste for the period April 2022 - March 2023 in **Form- 3** as per the E-Waste (Management) Rules, 2016 and amendments thereof.

Kindly acknowledge receipt of the same.

Yours truly,



Vijay Majji,

AGM - Env. & Sustainability

ADANI KRISHNAPTAM PORT LIMITED

Encl: Form 3

**FORM-3**

[See rules 4(5), 5(5), 8(6), 9(4), 10(8), 11(9), 13 (1) (xi), 13(2)(v), 13(3)(vii) and 13(4)(v)]

**FORM FOR FILING ANNUAL RETURNS**

[To be submitted by producer or manufacturer or refurbisher or dismantler or recycler by 30<sup>th</sup> day of June following the financial year to which that return relates].

**Quantity in Metric Tons (MT) and numbers**

1	Name and address of the producer or manufacturer or refurbisher or dismantler or recycler	Adani Krishnapatnam Port Limited, Krishnapatnam Village, Muthukur Mandal,524344 SPSR Nellore				
2	Name of the authorized person and complete address with telephone and fax numbers and e-mail address	Mr. Vijay Majji Adani Krishnapatnam Port Limited, Krishnapatnam Village, Muthukur Mandal,524344 SPSR Nellore 9100066727 Vijay.majji@adani.com				
3	Total quantity of e-waste collected or channelized to recyclers or dismantlers for processing during the year for each category of electrical and electronic equipment listed in the Schedule I (Attach list) by PRODUCERS	Nil *				
	Sl. No.	Sale Order No.	Date	E - Waste Type	Quantity MT.	
	1.	---	---	---	---	
				Total		
	Details of the above			TYPE	QUANTITY	No.
3(A)*	BULK CONSUMERS: Quantity of e- waste			NIL	NIL	NIL
3(B)*	REFURBISHERS: Quantity of e-waste:			X	X	X
3(C)*	DISMANTLERS: i. Quantity of e-waste processed (Code wise); ii. Details of materials or components recovered and sold; iii. Quantity of e-waste sent to recycler; iv. Residual quantity of e-waste sent to Treatment, Storage and Disposal Facility.			X	X	X

3(D) *	RECYCLERS: i. Quantity of e-waste processed (Code wise); ii. Details of materials recovered and sold in the market; iii. Details of residue sent to Treatment, Storage and Disposal Facility.	X	X	X
4	Name and full address of the destination with respect to 3(A)-3(D) above	-		
5	Type and quantity of materials segregated or recovered from e-waste of different codes as applicable to 3(A)-3(D)	Type ---	Quantity ---	

Enclose the list of recyclers to whom e-waste have been sent for recycling.

**Place: 30.06.2023**

**Date: SPSR Nellore**

  
**Signature of the authorized person**

**Note:-**

- 1 \* Strike off whichever is not applicable
- 2 Provide any other information as stipulated in the conditions to the authorizer
- 3 In case filing on behalf of multiple regional offices, Bulk Consumers and Producers need to add extra rows to 1 & 3(A) with respect to each office.



Lr. No. AKPL/APPCB/EHS/031/2023-24

Date: 30.06.2023

To

The Environmental Engineer,  
A.P. Pollution Control Board,  
Regional Office,  
SPSR Nellore



Sir,

Sub:- Adani Krishnapatnam Port Limited – Hazardous Waste Annual Returns –  
Form – 4 – Submitted – Reg.

Ref:- 1. CTO&HWA Order No APPCB/VJA/NLR/11344/CF0/HO/2019 11.11.2022

@@@

In compliance with the conditions stipulated in CTO & HWA orders vide reference cited above we are herewith submitting the Annual Returns of Generation, Storage & Disposal of Hazardous Waste (Waste/Used Oil) for the period April 2022 – March 2023 in **Form- 4** as per the Hazardous and other Waste (Management and Transboundary Movement) Rules, 2016 (HOWM Rules, 2016) and amendments thereof.

Kindly acknowledge receipt of the same.

Yours truly,



Vijay Majji,

AGM – Env. & Sustainability

ADANI KRISHNAPTAM PORT LIMITED

Encl: Form - 4

**FORM 4**  
*[See rules 6 (5), 13 (8), 16(6) and 20(2)]*  
**FORM FOR FILING ANNUAL RETURNS**

[To be submitted to state pollution control board by 30<sup>th</sup> day of June of every year for the preceding period April to March]

- |        |  |   |   |
|--------|--|---|---|
| Sl. No | General Details  | : | Information   |
| 1.     | Name and address of facility   | : | Adani Krishnapatnam Port Limited,<br>Krishnapatnam Village,<br>Muthukur Mandal,524344<br>SPSR Nellore   |
| 2.     | Authorization No. and Date of Issue  | : | CTO & HWA Order No. APPCB/VJA/NLR/11344/CFQ/HO/2019<br>11.11.2022   |
| 3.     | Name of the authorized person and full Address with telephone, fax number and e-mail | : | Mr. Vijay Majji<br>Adani Krishnapatnam Port Limited,<br>Krishnapatnam Village,<br>Muthukur Mandal,524344<br>SPSR Nellore<br>9100066727<br>Vijay.majji@adani.com |
| 4.     | Production during the year   | : | Cargo Handled April 2022 to March 2023<br><br>Cargo handled is 48.26 MMT (Coal, Iron Ore, General Cargo And Container Cargo)                                    |

**Part A. To be filled by hazardous waste generators**

1. Total quantity of waste generated :
- Category wise

Previous Storage	Generation 2021 -22	Disposal 2021-22	Stored	Generation 2022 -23	Disposal 2022-23	Stored
Quantity in MT						
0	278.6	278.1	0.5	509.41	505.26	4.15*

2. Quantity dispatched	:	
<b>Waste Oil /Used Oil (Port equipment generated)</b>	:	<b>50.82 MT</b>
i. To disposal facility	:	N.A
ii. To recycler or co-processors or pre-processor	:	<b>50.82 MT</b>
<b>Waste / Used Oil sludge generated in ships</b>	:	<b>454.44 MT</b>
i. To disposal facility	:	N.A
ii. To recycler or co-processors or pre-processor	:	<b>454.44 MT</b>
3. Quantity utilized in-house, if any-	:	<b>4.15 * MT</b>
4. Quantity in storage at the end of the year	:	<b>Nil</b>

**Part B. To be filled by Treatment, Storage and disposal facility operators**

1. Total quantity received -	:	}
2. Quantity in stock at the beginning of the year	:	
3. Quantity treated	:	
4. Quantity disposed in landfills as such and after treatment.	:	
5. Quantity incinerated (if applicable)	:	
6. Quantity processed other than specified above-	:	
7. Quantity in storage at end of the year	:	

**Part C. To be filled by recycler or co-processors or other users**

1. Quantity of the waste received during the year-	:	}
i) Domestic Sources ii) Imported (if applicable )	:	
2. Quantity in Stock at the beginning of year -	:	

- |   |   |   |
|---|---|---|
| 3. Quantity recycled or co-processed or used-             | : |   |
| 4. Quantity of product dispatched (wherever applicable) - | : | } |
| 5. Quantity of waste generated-                           | : |   |
| 6. Quantity of waste disposed-                            | : |   |
| 7. Quantity re-exported (wherever applicable)             | : |   |
| 8. Quantity in the storage at the end of the year-        | : |   |

Date: 30.06.2023  
Place: SPSR Nellore

  
Signature of the Occupier or  
Operator of the Disposal facility

AKPL/ENV/APPCB/063/2023-2024

Date: 20/09.2023

To

The Environmental Engineer  
A.P. Pollution Control Board,  
Regional Office,  
Prasanthi Nagar, Ambedkar Nagar,  
SPSR Nellore, Andhra Pradesh 524003



Sir,

Sub: Adani Krishnapatnam Port Limited, Muthukur (M), SPSR Nellore (D) -  
- Environment Statement - FORM - V - Submitted - Reg.

Ref: CFO & HWA Order No. APPCB/VJA/NLR/11344/CFO/HO/2019  
- 11.11.2022 valid up to 31.08.2027.

@@@

In compliance with the CFO condition No.6 stipulated in Schedule - A and as per Rule No.14 of E(P) Rules,1986 & amendments thereof, AKPL is submitting the Environment statement in Form V for the year 2022-2023.

Kindly acknowledge receipt of the same.

Thank you.

Yours faithfully,  
for Adani Krishnapatnam Port Limited.,

Dr. D. Vyothiraja  
Vice President - Environment & Sustainability

Encl: Copy of Form - V - Environment Statement along with attachments.

AKPL/ENV/APPCB/063/2023-2024

Date: 21.09.2023

To

The Environmental Engineer  
A.P. Pollution Control Board,  
Regional Office,  
Prasanthi Nagar, Ambedkar Nagar,  
SPSR Nellore, Andhra Pradesh 524003

Sir,

Sub: Adani Krishnapatnam Port Limited, Muthukur (M), SPSR Nellore (D) –  
- Environment Statement – FORM – V - Submitted – Reg.

Ref: CFO & HWA Order No. APPCB/VJA/NLR/11344/CFO/HO/2019  
- 11.11.2022 valid up to 31.08.2027.

@@@

In compliance with the CFO condition No.6 stipulated in Schedule – A and as per Rule No.14 of E(P) Rules,1986 & amendments thereof, AKPL is submitting the Environment statement in Form V for the year 2022-2023.

Kindly acknowledge receipt of the same.

Thank you.

Yours faithfully,  
for Adani Krishnapatnam Port Limited.,



Dr. D. Vyothiraja  
Vice President – Environment & Sustainability

Encl: Copy of Form – V – Environment Statement along with attachments.

ANNEXURE

ENVIRONMENTAL STATEMENT FORM-V  
(See rule 14)

Environmental Statement for the financial year ending with 31<sup>st</sup> March

**PART-A**

- I. Name and address of the owner/  
Occupier of the Industry : Adani Krishnapatnam Port Limited,  
Adani Corporate House,  
Shantigram, Nr.Vaishno Devi Circle,  
*Corporate Office* S.G. Highway, Khodiyar,  
Ahmedabad - 382421,  
Gujarat.
- II. *Site Office* : Adani Krishnapatnam Port Limited,  
Muthukur(Mandal),  
SPSR Nellore (D) - 524344  
Andhra Pradesh,
- III. *Operation or process* : **Port - Services**
- IV. *Industry category Primary-(STC  
Code) Secondary- (STC Code)* : ---
- V. *Production category. Units. -* : **Services**
- VI. *Year of establishment* : **2009**
- VII. *Date of the last environmental  
statement submitted* : **29.09.2022 for the period of 2021 -  
2022**

**PART .B**

- I. *Water and Raw Material  
Consumption* : **Please refer Annexure A**

*Water consumption in m<sup>3</sup>/d*  
*Process :*  
*Cooling :*  
*Domestic:*

Name of Products	Process water consumption per unit of products	
	During the previous financial year	During the current financial year
---	---	---



1

**II. Raw material consumption : Please refer Annexure B**

Name of raw materials*	Name of Products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year
---	---	---	---

\* Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

**PART-C**

**I. Pollution discharged to environment/unit of output - : Please refer Annexure C**  
(Parameter as specified in the consent issued)

Pollutants	Quantity of Pollutants discharged (mass/day)	Concentration of Pollutants Discharged (mass/volume)	Percentage of variation from Prescribed standards with Reasons.
(a) Water	---	---	---
(b) Air	---	---	---

**PART-D**

**I. HAZARDOUS WASTES : Please refer Annexure D**  
(as specified under Hazardous Wastes (Management & Handling Rules, 1989).

Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
1. From Process	---	---
2. From Pollution Control Facilities		





**PART - E**

**i. SOLID WASTES:**

Solid Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
a. From process	<p>Plastic waste, iron, aluminum, &amp; cardboard etc. are disposed to authorized recyclers/ re-processors permitted by Andhra Pradesh Pollution Control Board.</p> <p>- 2145 Tons of scrape was sold to authorized vendors for the FY 2021-2022.</p> <p>- Sludge generated from Sewage treatment plant is being used as manure for development of greenbelt within the Port premises. 12.68 Tons is used as manure during the FY 2021-2022</p>	<p>Plastic waste, iron, aluminum, &amp; cardboard etc. are disposed to authorized recyclers/ re-processors permitted by Andhra Pradesh Pollution Control Board.</p> <p>- 3916.6 Tons of scrape was sold to authorized vendors for the FY 2022-2023.</p> <p>- Sludge generated from Sewage treatment plant is being used as manure for development of greenbelt within the Port premises. 9.91 Tons is used as manure during the FY 2022-2023</p>

b. From Pollution Control Facility	-	-
c. Quantity recycled or re- utilized within the unit.	-	-

**PART - F**

- 1. Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.* : **Not Applicable**

**PART-G**

- 1. Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.* : **Not Applicable**

**PART- H**

- 1. Additional measures/investment proposal for environmental protection including abatement of pollution.* : **Please refer Annexure E**



**PART .I**

**MISCELLANEOUS:**

1.	<i>Any other particulars in respect of environmental protection and abatement of pollution.</i>
1.	<i>Celebrated World Environment Day 5<sup>th</sup> June 2022 by participating in the rally organized by Andhra Pradesh Pollution Control Board – Regional Office Nellore and conducting various long awareness program at the Port premises, to express commitment towards environment protection and environment sustainability.</i>  <i>1. Exhibited banners &amp; posters (English) at various locations of Port area emphasizing the significance of</i> <ul style="list-style-type: none"><li>- <i>Environment sustainability,</i></li><li>- <i>Discarding single use plastic,</i></li><li>- <i>Using cloth carry bags in place of single use plastic.</i></li><li>- <i>Water conservation,</i></li><li>- <i>Afforestation,</i></li><li>- <i>Housekeeping,</i></li></ul> <i>2. Plantation program organized at north conveyor belt in the Adani Krishnapatnam Port and planted 1000 no. of saplings on the eve of World Environment Day.</i>  <i>3. Pledge towards commitment to environment sustainable measures taken by all the employees and other associates.</i>
2.	<i>Celebrated World Ocean's Day 8<sup>th</sup> June 2022 by initiating awareness program at the Marine Port Control Center and beach cleaning activity at the south side of the port.</i>
3	<i>Celebrated World Ozone Day 16<sup>th</sup> September 2022 by conducted various events like drawing programs etc. and awareness session to school children in Vidhya Vihar School in Muthukur in association with Andhra Pradesh Pollution Control Board – Regional Office Nellore.</i>
4	<i>Celebrated National Pollution Prevention Day December 2<sup>nd</sup>, 2022, by conducting plantation drive and planted 1000 no. of saplings in krishnapatnam port in association with Andhra Pradesh Pollution Control Board – Regional Office Nellore.</i>
5.	<i>Conducted awareness campaign Programme on 18<sup>th</sup> March 2023 on the Global recycling day.</i>  <i>Awareness sessions given to various departments in the port.</i> <ul style="list-style-type: none"><li>- <i>Awareness of E-waste given to IT, Finance and Electrical teams.</i></li><li>- <i>Awareness of Hazardous waste given to Operations and Techno commercial department</i></li></ul> <i>Awareness of General waste, organic waste given to various work forces and admin department.</i>



**Annexure – A**

**Water usage record for Dust Suppression System - (April 2022 – March 2023)  
Source & Water Input**

Month/Year	Source			Total input Water (KLM)	
	(KL/Month)		STP Treated water	(KL/Month)	Average KLD
	Nakkala kalava	Water Tankers			
Apr.22	54290	23599	6539	84428	2814.3
May – 2022	52260	23370	4437	80067	2582.8
June – 2022	49360	24690	4692	78742	2624.7
July – 2022	48770	23950	4075	76795	2477.3
August – 2022	49935	23132	6121	79188	2554.5
September – 2022	52340	24190	7864	84394	2813.1
October – 2022	44230	23050	5488	72768	2347.4
November – 2022	45980	22940	6494	75414	2513.8
December – 2022	45910	29850	5895	81655	2634.0
January – 2023	54720	30300	6474	91494	2951.4
February – 2023	62659	30700	6731	100090	3574.6
March - 2023	67090	30260	7120	104470	3370.0
<b>Total</b>	<b>627544.00</b>	<b>310031.00</b>	<b>71930.00</b>	<b>1009505.00</b>	<b>2765.8</b>

**Water Consumption (KLD)**

Month	Application as per the Consent Order		
	Green belt	Dust Suppression	Domestic
Apr-22	12030	54290	11569
May – 2022	12560	52260	10810
June – 2022	12660	49360	12030
July – 2022	12410	48770	11540
August – 2022	12012	49935	11120
September – 2022	12320	52340	11870
October – 2022	11160	44230	11890
November – 2022	11170	45980	11770
December – 2022	11350	45910	18500
January – 2023	11150	54720	19150
February – 2023	11950	62659	18750
March - 2023	12100	67090	18160
<b>Total KL/Month</b>	<b>142872.00</b>	<b>627544.00</b>	<b>167159.00</b>
<b>Average/KLD</b>	<b>391.00</b>	<b>1719.00</b>	<b>458.00</b>
<b>Consented Qty/KLD</b>	<b>400.00</b>	<b>1950.00</b>	<b>650.00</b>



**Annexure - B**

**Cargo handled at Adani Krishnapatnam Port - (April 2022-March 2023)**

S. No	Name of the Cargo	Consented quantity	Commodities handled. MMTPA
1	Coal	46	AKPL has handled 48.26 MMTs of cargo(including containers) during the period from April 2022 to March, 2023.
2	Iron Ore	8	
3	General Cargo (Fertilizers, granites, Edible Oil and Lube oils, others ).	14	
4	Liquid Cargo (POL, LNG, LPG, Chemical products)	10	
6	Container Cargo (MTEUsA)	2.0	
	<b>Total</b>	<b>78 MMTPA + 2 MTEUsA</b>	<b>48.26 MMTs</b>

**Annexure - C**

Two numbers Sewage Treatment Plant (500 KLD and 40 KLD STPs) are provided to treat the wastewater generated in the port premises. The inlet and outlet water waters are being monitored regularly as per the statutory regulations and the treated water is well within the statutory limits. The treated water is being used for green belt development only.

**Annexure - D**

- I. *E - Waste in Form - III* : Submitted on 30.06.2023 for the FY 2022 - 2023  
(Copy of Acknowledgement - attachment 2 )
- II. *Hazardous Waste in Form - IV* : Submitted on 30.06.2023 for the FY 2022 - 2023  
(Copy of Acknowledgement attachment 3)
- III. *Used Battery Returns in Form - VIII* : Submitted on 30.06.2023 for the FY 2022 - 2023  
(Copy of Acknowledgement attachment 4)



**Annexure E**  
**COST OF ENVIRONMENTAL MEASURES FOR THE FINANCIAL YEAR 2022-**  
**2023**

S. NO	Facility details	Description	Cost in Rs.
1.	Operation & Maintenance of CAAQMS, STP (500 KLD & 40 KLD) and MDSS Systems	Annual operation & Maintenance of 3 nos. of CAAQM Stations, 2 STP's and Mechanical Dust Suppression Systems	1,83,50,126.00
2.	Water sampling & analysis	Marine, Drinking, Sewage water sampling & analysis cost	7,96,500.00
3.	Greenbelt department	Vermi compost, FYM, Plants, JCB, Transport, Diesel, Vehicle bills, Green Belt Water costing	32,55,334.23
4.	Dust suppression water tankers	Dust suppression through water tankers cost	5,81,31,422.00
5.	Water Cost – Nakkala Kalava.	Water consumption for Dust Suppression & other port operations	17,46,360.00
6.	Hydraulic Road Sweeping Machines	Sweeping machines operation, diesel consumption, & maintenance & Spares cost	36,48,638.00
7.	Sweeping with manpower	Manual cleaning of Roads, Berths, Go-downs & all operational areas	5,86,04,291.00
8.	Community development	200 farmers - Organic farming, crop change, suitability of land, marketing, soil/ water testing, applying bio fertilizers & vermicompost to derive high yield	91,63,000.00
9.	Fire tender	Fire tender diesel & maintenance cost (Engine & Tinkering works)	25,13,100.00
10.	Wheel Washing Facility	Cost of Wheel Washing Facility	27,26,559.92
11.	Vehicle Expenses	Tractors, JCB, Transport vehicles for Environment activities, Charges for collection of solid waste from 120 locations of AKPL	1,48,65,298.00
		<b>Total Amount</b>	<b>17,38,00,628.00</b>



## **Annexure F**

### **Environmental measures in the Adani Krishnapatnam Port Limited**

- Adani Krishnapatnam Port is all weather deep water & most environmentally friendly Port with state-of-the-art cargo handling equipment and operating with 13 berths, out which of 6 berths are completely mechanized and the principal cargoes are Coal & Iron Ore which are being handled through mechanized system.
- The State of art mechanical dust suppression system is provided at various critical points i.e., equipment (Hopper & Declaimer), hooded conveyor belts and the storage yards have been functioning well throughout the system. By using these measures, the Port is able to mitigate all the dust that is being generated during the operations. The other berths are being used to handle other cargos such as Project cargo, fertilizer (Urea), Sugar etc.
- The Pollution Control System is implemented, as a part of project, to mitigate the dust pollution, State of Art water sprinkling system at various locations. Around 30 people are working daily to operate the DSS.
- The dust suppression system comprises of canons supported by electrical motors and operated at regular intervals to cover water fog all over cargo stacks and other areas. The water is sprayed from various points by water cannons at pressure of about 2-4 Kg/cm<sup>2</sup> to form a mist over the cargo stacks and other places and the mist attracts the dust to settle it down without spreading along the wind. AKPL has established a total of 248 cannons.
- Water sprinkling is being carried out on the general cargo berth and in other areas viz. Roads and yards through water tankers to arrest the dust pollution caused by vehicular movement in the port. AKPL is spending around 5.98 Crores on water charges and maintenance. Around 50 people are working for this activity.
- Upgraded CAAQM Stations with latest analyzers of PM 10 and PM2.5 and included SO<sub>2</sub>, NO<sub>X</sub>, CO analyzers and digital display board with cost of 1.02 Crore.
- Provided facilities for truck tarpaulin covering stations of 14 nos. at various transit locations & at Silo to facilitate and ensure tarpaulin coverage to all the outgoing cargo trucks & wagons.
- Provided General Toilets at Berths, CS Go-downs, yards, and other operational locations to cater the needs of the contractual employees with a cost of 1 Crore.
- Established wheel washing faculty with a cost of Rs.27.2 Lakhs.



## **Environmental Monitoring Program in AKPL**

As per the statutory guidelines AKPL appointed an authorized 3<sup>rd</sup> party agency, for monitoring of the environmental parameters of the Port as well as nearby villages such as Krishnapatnam village, Gopala Puram Village, Chalivendram village and Thamminapatnam Village areas.

### **Ambient Air Quality**

Operating 3 No. of Continuous Ambient Air Quality Monitoring stations at the below mentioned locations as suggested by SPCB at the periphery of the Port premises to monitor the Ambient Air Quality viz., PM 10, PM 2.5 and the data is being uploaded to APPCB website. The Port also provided analyzers for measuring SO<sub>2</sub>, NO, NO<sub>2</sub>, & CO parameters.

- i. Towards the habitant's side of Chalivendram Village, Amenities Complex – CVR building (Station 1):
- ii. Towards the habitant's side of Thamminapatnam village, south boundary (Station2)
- iii. Towards the habitant's side of Krishnapatnam village, North-East Boundary (Station3) Ambient Air Quality Monitoring

Ambient Air Quality monitoring is carried out by NABL accredited laboratory as per the statutory regulations for the seven locations and the reports are well within the statutory limits and the same are being submitted to the APPCB on a monthly basis.

1. Zero Point gate
2. Thamminapatnam
3. CVR Building
4. Gopalapuram village
5. Chalivendram village
6. Krishnapatnam village
7. Krishnapatnam village near light house

### **Noise Monitoring**

Noise monitoring is being carried out as per the statutory regulations for the seven locations and the reports are well within the statutory limits and the same are being submitted to the APPCB on a monthly basis.

8. Zero Point gate (Industrial)
9. Thamminapatnam (Industrial)
10. CVR Building (Industrial)
11. Gopalapuram village (Residential)
12. Chalivendram village (Residential)
13. Krishnapatnam village (Residential)
14. Krishnapatnam village near light house (Residential)



### **Ground water quality monitoring**

Ground water quality monitoring is being carried out on half yearly monthly basis as per the statutory regulations for the Krishnapatnam Port premises and reports are within the statutory limits and the same are being submitted to the APPCB along with 6 months report.

1. Port side
2. Krishnapatnam village
3. South side of the port
4. Gopalapuram village

### **Marine water /sediment monitoring**

The marine water and sediment quality monitoring is being carried out weekly basis of tidal sampling for the Four locations as

1. Port entrance (Approach channel)
2. Turning Circle
3. Coal berth
4. Reclamation area (Mutable)

Physical, chemical, and biological parameters were analyzed for water as well as for sediment to assess the quality and the same is being submitted to the APPCB. The reports indicate that the waters are not having any noticeable contamination.

### **Wind Barrier Structure:**

Erected & maintained a wind barrier structure of height 14 m to prevent any dust nuisance towards villages and also provided supported greenbelt adjacent to wind barrier structure.

### **Environment Sustainability Measures:**

- Converted 9 no's Liebherr cranes from diesel operated to Electrically operated.
- Converted 1 diesel operated oil compressor to electrically operated.
- All Marine tugs provided with shore power 100% while at jetty.
- Established hooded conveyor belts to mitigate dust emission into the atmosphere.
- Provided Fire hydrant system for Wagon loading station.
- Provided facilities for truck tarpaulin covering stations of 14 nos. at various transit locations to facilitate and ensure tarpaulin coverage to all the outgoing cargo trucks.
- Provided facilities for Railway Rake to ensure tarpaulin coverage to all the outgoing cargo rakes.





### **Details of Green belt in Adani Krishnapatnam Port**

- Plantation is a regular process in the Port and for the period April, 2022 to March, 2023 AKPL has planted 1,02,604 no. of saplings within the Port premises. In total AKPL has completed plantation of in 194.5 Ha (480.6 acres) within the Port premises.
- A nursery with variety of species established and is being maintained in the Port Ltd, with variety of avenue and ornamental saplings which suits the soil condition of Adani Krishnapatnam Port Ltd.
- 5 Lakh saplings were propagated in the nursery between April 2022 to March 2023 for executing plantation plan for the financial year April 2023 to March 2023.

D. Jyoti

#### **Weather & meteorological monitoring:**

- Installed Weather station on the top of Port Operation Control for weather forecasting & meteorological data generation.

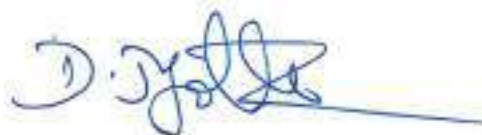
#### **Water conservation measures:**

Rainwater harvesting pits are provided across the port premises for recharging the ground water.

Domestic sewage water receiving from office buildings of different locations of Port is being treated in STPs of 500 KLD & 40 KLD and being used for greenbelt development.

#### **Waste management:**

- **Plastic waste** is being collected and disposed of to SPCB authorized plastic waste recycling units.
- **E - Waste** is being collected and disposed to SPCB authorized E-waste recyclers and submitting the details in Form - 3 to SPCB regularly
- **Hazardous waste (Waste oil)** – as per the CFO & HWA of APPCB, AKPL is permitted to generate & dispose of waste oil including bilge oil. AKPL is quantifying the waste oil and disposing to SPCB authorized Waste oil recyclers and submitting the details in Form - 4 to SPCB regularly.
- **Solid waste** – AKPL made arrangements for daily collecting and disposing of the domestic solid waste for further waste management process.
- **Organic waste**– is being collected on a regular basis within the Port and being used for greenbelt development.
- **Bio-Medical Waste** – Adani Foundation (a different entity) is operating an Onsite Health Centre (OHC) to provide First Aid facility to the victims and generating very less quantity of Bio-Medical Waste. Adani foundation made an agreement with M/s. SS Bio Care an authorized Bio-medical waste Treatment Facility, Safe Collection, Transportation & disposal of properly segregated and packed BMW and/or Bio-Hazardous waste as per APPCB, CPCB norms.



Lr. No. AKPL/APPCB/EHS/032/2023-24

Date: 30.06.2023.

To

The Environmental Engineer,  
A.P. Pollution Control Board,  
Regional Office,  
SPSR Nellore



Sir,

Sub:- Adani Krishnapatnam Port Limited – Annual Returns on Disposal of Used  
batters in Form – B - Submitted – Reg.

Ref:- 1. CTO & HWA Order No. APPCB/VJA/NLR/11344/CFO/HO/2019 11.11.2022

@@@

In compliance with the conditions stipulated in CTO & HWA orders vide reference cited above we are herewith submitting the Annual Returns of Generation, Storage & Disposal of Used Batteries for the period April 2022 – March 2023 in **Form- B** as per the Batters (Management & Handling) Rules, 2010 and amendments thereof.

Kindly acknowledge receipt of the same.

Yours truly,

Vijay Majji,

AGM – Env. & Sustainability

ADANI KRISHNAPTAM PORT LIMITED



Encl: Form - B

**FORM VIII**

[see rule 10 (2) (ii)]

**FORM FOR FILING RETURNS FOR BULK CONSUMER OF BATTERIES**

[To be submitted by the bulk consumer to the State Board by 30th June (for the period October-March) and 31st December (for the period April-September) every year]

1.	Name and Address of the bulk consumer	Adani Krishnapatnam Port Limited, Krishnapatnam Village, Muthukur Mandal,524344 SPSR Nellore
2.	Name of the Authorised person and full address with telephone and fax number	Mr. Vijay Majji Adani Krishnapatnam Port Limited, Krishnapatnam Village, Muthukur Mandal,524344 SPSR Nellore 9100066727 Vijay.majji@adani.com
3.	Number of new batteries of different categories purchased from the manufacturer/importer/dealer or any other agency during October-March and April September  Category : (i) <b>Automotive</b> (a) four wheelers (b) two wheelers (ii) <b>Industrial</b> (a) UPS (b) Motive Power (c) Stand-by (iii) <b>Others</b>	(i) No. of Batteries - 577*  (ii) Approximate weight: --- (in Metric Tonnes)
4.	Number of used batteries of categories mentioned in Sl. No. 3 and Tonnage of scrap sent to manufacturer/ dealer/ importer/ registered recycler/ or any other agency to whom the used batteries scrap was sent*.	(i) No. of Batteries: ---  (ii) Approximate weight - 8.17 ** Tons (in Metric Tonnes)

\*\* 8.17 MT of Battery waste is sent to registered recycler  
(1.88 MT Lead Acid + 1.94 MT Lead Acid + 0.94 MT of Without acid battery scrap + 2.74 MT of Lead Acid) = 7.5 MT

plus (1340 no's of Nickle metal hydride batteries) - Approximate - 0.67 MT

\* Batteries purchased during the period April 2022 to March 2023

Enclose list of manufacture/dealer/importer/registered recyclers/or any other agency to whom the used batteries scrap was sent.

Place: 30.06.2023

Date: SPSR Nellore

  
Signature of the authorized person

Date: 11/04/2024

To

The Environmental Engineer,  
A.P. Pollution Control Board  
Regional Office  
SPSR Nellore.

Dear Sir,

Sub:- Monthly CFO Compliance, Environmental Marine & Terrestrial  
Monitoring Reports and Water Consumption details (Form-1) -  
Submitted - Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

@@@

With reference to the above, we are here with submitting the monthly CFO  
compliance reports and CAAQM, Marine & Terrestrial monitoring results along  
with Water Consumption details in Form - 1 for the month of March -2024

Yours Sincerely,

For Adani Krishnaapatnam Port Limited



The Project Engineer & Manager

Encl: As above.



To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APLC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada- 520007

Dear Sir,

Sub: AKPL - Water Consumption details (Form-1) - Submitted -  
Reg.


Ref: CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of March- 2024, prepared under the Water (Prevention and  
Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,

For Adani Krishnaapatnam Port Limited

  
D. Jyoti  
Off. Ex. Jyoti  
Head, System (Commitment & Sustainability)

Encl: As above.

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.



## FORM - 1

### Returns Regarding Water Consumed During Month of March - 2024

Name & Address	Purpose of which water consumed	Quantity of water consumed	If the meter was out of order the monthly avg. consumption of the water for the past 3 months of working period	Qty. of water qualifying for rebate according to the assesses	Remarks	
(1)		(3)	(4)	(5)	(6)	
Adani Krishnapatnam Port Limited, Muthukur, SPSR Nellore	1) Industrial cooling/ spraying in mine pits or boiler feed.	Total from Municipal mains 1. From Municipal water supply mains 1. From well / tube well.	Cum/KL  60820		-	
	2) Domestic Water	1. From Municipal water supply mains 1. From well / tube well	Cum/KL  18050			

(\*) For claiming rebate under Co. 7, the assessed shall indicate in the column the analytical and other reports annexed to this return in support of this claim.

  
 \_\_\_\_\_

Ref: AKPL/APPCB/EHS/091/2023-24

Date: 15/12/2023

To

The Environmental Engineer,  
A.P. Pollution Control Board  
Regional Office  
SPSR Nellore.

Dear Sir,

Sub:- Monthly CFO Compliance, Environmental Marine & Terrestrial  
Monitoring Reports and Water Consumption details (Form-1) -  
Submitted - Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

@@@

With reference to the above, we are here with submitting the monthly CFO  
compliance reports and CAAQM, Marine & Terrestrial monitoring results along  
with Water Consumption details in Form - 1 for the month of November -2023.

Yours Sincerely,



Dr. D. Jyothi  
Vice President - Environment

Encl: As above.



Adani Krishnapatnam Port Ltd  
(Formerly: Krishnapatnam Port Company Ltd)  
PO Bag No 1, Muthukur Mandal,  
SPSR Nellore District 524344  
Andhra Pradesh, India  
CIN: U45203AP1996PL0029529

Tel: +91 861 2377999  
Fax: +91 861 237 7046  
info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Seestrigam, Nr. Vashna One Circle, S. G. Highway, Khudiyol, Alirevubad - 582421, Gujarat, India



**adani**

Ports and  
Logistics

Date: 15/12/2023

Ref: AKPL/APPCB/EHS/091c/2023-24

To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada- 520007

Dear Sir,

Sub:- AKPL - Water Consumption details (Form-1) - Submitted -  
Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of November- 2023, prepared under the Water (Prevention  
and Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,



Dr. D. Jyothi  
Vice President - Environment

Encl: As above.

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.

Adani Krishnapuram Port Ltd  
(Formerly: Krishnapuram Port Company Ltd)  
PO Bag No 1, Muthukur Mandal,  
SPSR Nellore District 524344  
Andhra Pradesh, India  
CIN: U45203AP1996PL0029529

Tel: +91 861 2377919  
Fax: +91 861 237 7046  
info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Star Square, Nr. Veetha Dora Circle, S. G. Highway, Khodiyar, Ahmedabad - 382421, Gujarat, India



Ref: AKPL/APPCB/EHS/091/2023-24

Date: 15/12/2023

To

The Environmental Engineer,  
A.P. Pollution Control Board  
Regional Office  
SPSR Nellore.

Dear Sir,

Sub:- Monthly CFO Compliance, Environmental Marine & Terrestrial  
Monitoring Reports and Water Consumption details (Form-1) –  
Submitted – Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

@@@

With reference to the above, we are here with submitting the monthly CFO  
compliance reports and CAAQM, Marine & Terrestrial monitoring results along  
with Water Consumption details in Form - 1 for the month of November -2023.

Yours Sincerely,



**Dr. D. Jyothi**  
Vice President - Environment

Encl: As above.

Adani Krishnapatnam Port Ltd  
(Formerly: Krishnapatnam Port Company Ltd)  
PO Bag No 1, Muthalur Mandal,  
SPSR Nellore District 524344  
Andhra Pradesh, India  
CIN: U45203AP1996PLD023529

Tel: +91 861 2377999  
Fax: +91 861 237 7046  
info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Shantigram, Nr. Vaishna Devi Circle, S. G. Highway, Khodiyar, Ahmedabad - 382421, Gujarat, India

Ref: AKPL/APPCB/EHS/091c/2023-24

Date: 15/12/2023

To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIIC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada- 520007

Dear Sir,

Sub:- AKPL - Water Consumption details (Form-1) – Submitted –  
Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of November- 2023, prepared under the Water (Prevention  
and Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,

  
**Dr. D. Jyothi**  
Vice President - Environment

Encl: As above.

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.

Adani Krishnapatnam Port Ltd  
(Formerly, Krishnapatnam Port Company Ltd)  
PO Bag No 1, Muthukur Mandal,  
SPSR Nellore District-524344  
Andhra Pradesh, India  
CIN: U45203AP1996PLD023529

Tel: +91 861 2377999  
Fax: +91 861 2377046  
info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Shastri Nagar, Veeshna Devi Circle, S. G. Highway, Khodiyar, Ahmedabad – 382421, Gujarat, India



**Ref: AKPL/APPCB/EHS/100/2023-24**

**Date: 09/01/2024**

To

The Environmental Engineer,  
A.P. Pollution Control Board  
Regional Office  
SPSR Nellore.

Dear Sir,

Sub:- Monthly CFO Compliance, Environmental Marine & Terrestrial  
Monitoring Reports and Water Consumption details (Form-1) –  
Submitted – Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

@@@

With reference to the above, we are here with submitting the monthly CFO  
compliance reports and CAAQM, Marine & Terrestrial monitoring results along  
with Water Consumption details in Form - 1 for the month of December -2023.

Yours Sincerely,



**Dr. D. Jyothi**  
Vice President - Environment

Encl: As above.

Adani Krishnapatnam Port Ltd  
(Formerly: Krishnapatnam Port Company Ltd)  
PO Bag No 1, Muthalur Mandal,  
SPSR Nellore District 524344  
Andhra Pradesh, India  
CIN: U45203AP1996PL0023529

Tel: +91 861 2377999  
Fax: +91 861 237 7046  
info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Shantigram, Nr. Vaikunth Devi Circle, S. G. Highway, Khodiyar, Ahmedabad - 382421, Gujarat, India

**Ref: AKPL/APP/EB/EHS/099/2023-24**

**Date: 09.01.2024**

To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIIC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada- 520007

Dear Sir,

Sub:- AKPL - Water Consumption details (Form-1) – Submitted –  
Reg.

Ref:- CFO & HWA order no APP/EB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of December- 2023, prepared under the Water (Prevention  
and Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,

  
**Dr. D. Jyothi**  
Vice President - Environment

Encl: As above.

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.

Adani Krishnapatnam Port Ltd  
(Formerly, Krishnapatnam Port Company Ltd)  
PO Bag No 1, Muthukur Mandel,  
SPSR Nellore District-524344  
Andhra Pradesh, India  
CIN: U45203AP1996PLD023529

Tel: +91 861 2377999  
Fax: +91 861 2377046  
info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Shastri Nagar, Veerha Devi Circle, S. G. Highway, Khodiyar, Ahmedabad – 382421, Gujarat, India

To

The Environmental Engineer,  
A.P. Pollution Control Board  
Regional Office  
SPSR Nellore.

Dear Sir,

Sub:- Monthly CFO Compliance, Environmental Marine & Terrestrial  
Monitoring Reports and Water Consumption details (Form-1) –  
Submitted – Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

@@@

With reference to the above, we are here with submitting the monthly CFO  
compliance reports and CAAQM, Marine & Terrestrial monitoring results along  
with Water Consumption details in Form - 1 for the month of January -2024.

Yours Sincerely,  
  
As above  


Ports and Logistics  
Ref: AKPL/APPCB/EHS/104/2023-24

Date: 06.01.2024

To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIIC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada- 520007

Dear Sir,

Sub:- AKPL - Water Consumption details (Form-1) – Submitted –  
Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of January- 2024, prepared under the Water (Prevention and  
Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,

Encl: As above

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.



Ports and  
Logistics

Ref: AKPL/EHS/APPCB/121/2023-24

Date: 13/03/2024

To

The Environmental Engineer,  
A.P. Pollution Control Board  
Regional Office  
SPSR Nellore.

Dear Sir,


Sub:- Monthly CFO Compliance, Environmental Marine & Terrestrial  
Monitoring Reports and Water Consumption details (Form-1) –  
Submitted – Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

@@@

With reference to the above, we are here with submitting the monthly CFO  
compliance reports and CAAQM, Marine & Terrestrial monitoring results along  
with Water Consumption details in Form - 1 for the month of February -2024.

Yours Sincerely,  
**for Adani Krishnapatnam Port Limited**

  
Dr.D. Jyothi,  
Vice President – Env.

Encl: As above.

Adani Krishnapatnam Port Ltd  
(Formerly, Krishnapatnam Port Company Ltd)  
PO Bag No 1, Multhukur Mandal,  
SPSR Nellore District 524344  
Andhra Pradesh, India  
CIN: U45203AP1996PLC023529

Tel +91 861 2377999  
Fax +91 861 237 7046  
info@adani.com  
www.adaniports.com



Ref: AKPL/ EHS/APPCB/120/2023-24

Date: 13.03.2024

To

Sr. Environmental Engineer, CESS  
Andhra Pradesh Pollution Control Board,  
Paryavaran Bhavan, APIIC Colony Road, Gurunanak Colony,  
Autonagar, Vijayawada- 520007

Dear Sir,

Sub:- AKPL - Water Consumption details (Form-1) – Submitted –  
Reg.

Ref:- CFO & HWA order no APPCB/VJA/NLR/11344/CFO/HO/2019 dt.  
11.11.2022 valid up to 31.08.2027

Please find enclosed herewith the water consumption statement in FORM -  
1 for the month of February- 2024, prepared under the Water (Prevention  
and Control of Pollution) Cess Act, 1977.

Thanking you

Yours Sincerely,  
**for Adani Krishnapatnam Port Limited**

  
Dr.D. Jyothi,  
Vice President – Env.

Encl: As above.

Copy submitted to the Environmental Engineer, A.P. Pollution Control Board,  
Regional Office, SPSR Nellore for kind information.



## OPERATIONAL AUDIT OF ADANI KRISHNAPATNAM PORT LIMITED



## QUARTERLY REPORT

1<sup>st</sup> October 2023 to 31<sup>st</sup> December 2023

Consultants



**aarvee associates**  
architects engineers & consultants pvt. ltd.

An ISO 9001:2015 Certified Company

e-mail: [aarvee@aarvee.net](mailto:aarvee@aarvee.net), web: [www.aarvee.net](http://www.aarvee.net)



## 1 Introduction

Adani Krishnapatnam Port is a Minor Port located at about Latitude 14<sup>o</sup> 15' 10" N and Longitude 80<sup>o</sup> 08' 05"E on the East Coast of India, about 25 kms from Nellore of SPS Nellore District in the State of Andhra Pradesh. The Port is situated on the left bank of Upputeru River. It boasts connectivity with the National Highway 16 and is located 26 km from Venkatachalam, the nearest rail head on the Chennai–Kolkata Main Line.

Government of Andhra Pradesh (GoAP) envisaged development of Krishnapatnam Port under Public Private Partnership (PPP) mode. M/s Krishnapatnam Port Company Limited (KPCL) was selected for the development and operation of Krishnapatnam Port through International competitive bidding process. It is the first Greenfield Port privatized by the Government of Andhra Pradesh and the concession agreement was concluded by GoAP with KPCL on 4th January 1997 and revised concession agreement was executed on 17th September 2004 to develop a Deep-Water Port on Build, Operate, Share and Transfer (BOST) basis.

## 2 Award of Work

Andhra Pradesh Maritime Board vide Agreement. No. 6/2022-23 dated: 02.08.2022 appointed M/s Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., Hyderabad as the Independent Operational Auditor for the Historical Audit for the year 2021-22 & Operational Audit for the year 2022-23 of Adani Krishnapatnam Port Limited in SPS Nellore District, Andhra Pradesh. The contract for the work of Independent Operational Audit of Adani Krishnapatnam Port in SPS Nellore District, Andhra Pradesh for the Financial year 2023-2024 is hereby renewed with 5% escalation vide 1st Supplemental Agreement No. 01/2023-24, dated: 02.08.2023.

## 3 Details of Site Visit

The audit team of 4 members has visited Adani Krishnapatnam Port on 22nd & 23rd January 2024 with intimation to Andhra Pradesh Maritime Board, vide Letter no: AA/APMB/2023-24/2470/7610, dated: 16.01.2024.



## 12 Audit Summary

- Performance standard, Pre-berthing time on port account for the period of 1<sup>st</sup> Oct 2023 to 31<sup>st</sup> Dec 2023 has been achieved as defined in the Revised Concession Agreement Clause no: 5.4 (a).
- Average Ship Berth day throughput of Container Cargo of Feeder and Main Line vessels are monitored with respect to net crane moves per crane hour has been achieved as per the revised concession agreement.
- Records of assets were verified.
- Preventive & Breakdown records of MHC cranes, Ship Un-Loaders and Electrical Equipment's were verified and found in order.
- AKPL has carried out Maintenance Dredging and Capital Dredging for the period.
- Requirements of ISO Certifications were adhered and found valid for the Audit Period.
- Insurance Policies were verified and found in order for the audit period.
- Quarterly Track Inspection Certificate issued by South Central Railway was verified and found in order for the audit period. It was advised by SC railway official to attend all the coal yards of AKPL by removing the coal in the tracks and in the yards for the safe passage of trains.
- All Mechanical equipment preventive maintenance schedules are being followed as per operations manual and records maintained.
- All Electrical equipment preventive maintenance schedules are being followed.
- Records of Civil Infrastructure Maintenance were verified and found in order.
- Environmental monitoring of Air, Noise, Water, Marine Sediment, Effluents etc., are being observed periodically by AKPL and some reports enclosed for reference as Annexure-VI.
- Safety measures at AKPL during the Audit period 1st Oct 2023 to 31<sup>st</sup> Dec 2023 was verified and the same was enclosed for reference as Annexure-VIII.
- It is advised to the concessionaire that without prior approval of GoAP, remove or replace of any Port Assets.
- During the Audit visit, it was came to know that the container terminal is proposed to shift to some other port. AKPL has to confirm the same.



Quarterly Report on Operational Audit of  
Adani Krishnapatnam Port in SPS Nellore District, Andhra Pradesh

S. No	Audit Scope	Clause reference in Concession Agreement	Observations/Remarks	Clarification on Performance standards achievement	Reference page no in this report
1	Monitoring of Performance Standards, such as pre-berthing time and average ship berth-day through-put, as defined in the concession agreement.	Clause 5.4	Pre berthing time and average ship berth day throughput performance standards have been achieved as per Norms.	Yes	Page no:15, 16
2	Identify instances and quantum of failure to achieve the Performance standards by the concessionaire and penalties to be paid, as per the Concession Agreement and assist Director of Ports (APMB) in determining penalties to be levied on the concessionaire for such failure.	Clause 5.5	Performance standards shall be calculated on yearly basis i.e., periods Oct 2021- March 2022 for levying of penalty.	Yes	
3	Monitor, maintenance and repairs of the port assets and recommend corrective actions/repairs to ensure assets are in good condition.	Clause 5.6	Preventive maintenance & Break down details of Mechanical, electrical equipment's were verified and assets found in order.	Yes	Page no: 23, 24 Annexure: II, III
4	Identify instances and quantum of failure to maintain and repair to port assets and penalties to be paid, as per the Concession Agreement and assist Director of Ports (APMB) in determining penalties to be levied on the concessionaire for such failure.	Clause 5.7	Records of Maintenance and repair to port assets were verified and found in order.	Yes	Page no: 23, 24 Annexure: II, III



Quarterly Report on Operational Audit of  
Adani Krishnapatnam Port in SPS Nellore District, Andhra Pradesh

S. No	Audit Scope	Clause reference in Concession Agreement	Observations/Remarks	Clarification on Performance standards achievement	Reference page no in this report
5	Inspect and comment on adequacy of maintenance schedule, manuals, etc., maintained in respect of machinery and equipment by Concessionaire.	Clause 5.8	Maintenance schedules, Manuals and records of maintenance were verified and found in order.	Yes	Page no:23, 24 Annexure: II, III
6	Assist the Director of Ports in preparation of proforma/template for seeking quarterly statistical data of operational activities and maintenance and development of its facilities and equipment and detailed quarterly operational report. Verification of cargo and vessel traffic reported by the Concessionaire by undertaking vessel and cargo sampling.	Clause 5.8	Cargo and Vessel traffic reported by the Concessionaire has been verified and found updated.	Yes	Page no: 06-21 Annexure: I
7	Assist the Director of Ports in undertaking joint surveys, inspection and asset surveys including survey of physical inventory of plants, equipments and accessories.	Clause 5.10	During Quarterly visit inspection and asset surveys including survey of physical inventory of plants, equipments and accessories were verified and found in order.	Yes	Page no: 26-28 Annexure: IV
8	Identify and report failure of the Concessionaire to operate and maintain developed premises in	Clause 5.11	Maintenance schedules, Manuals and records of maintenance were verified and found in	Yes	Page no:23, 24 Annexure: II, III

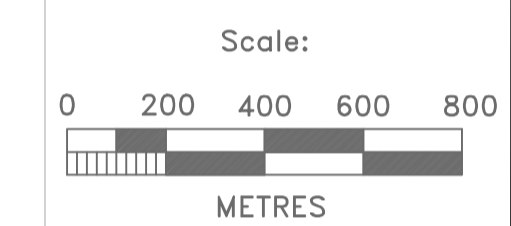
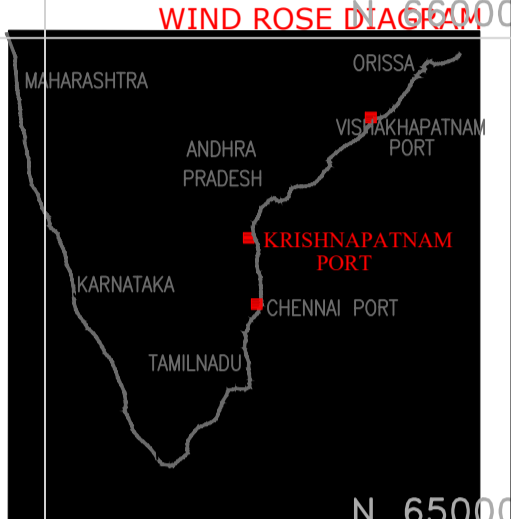
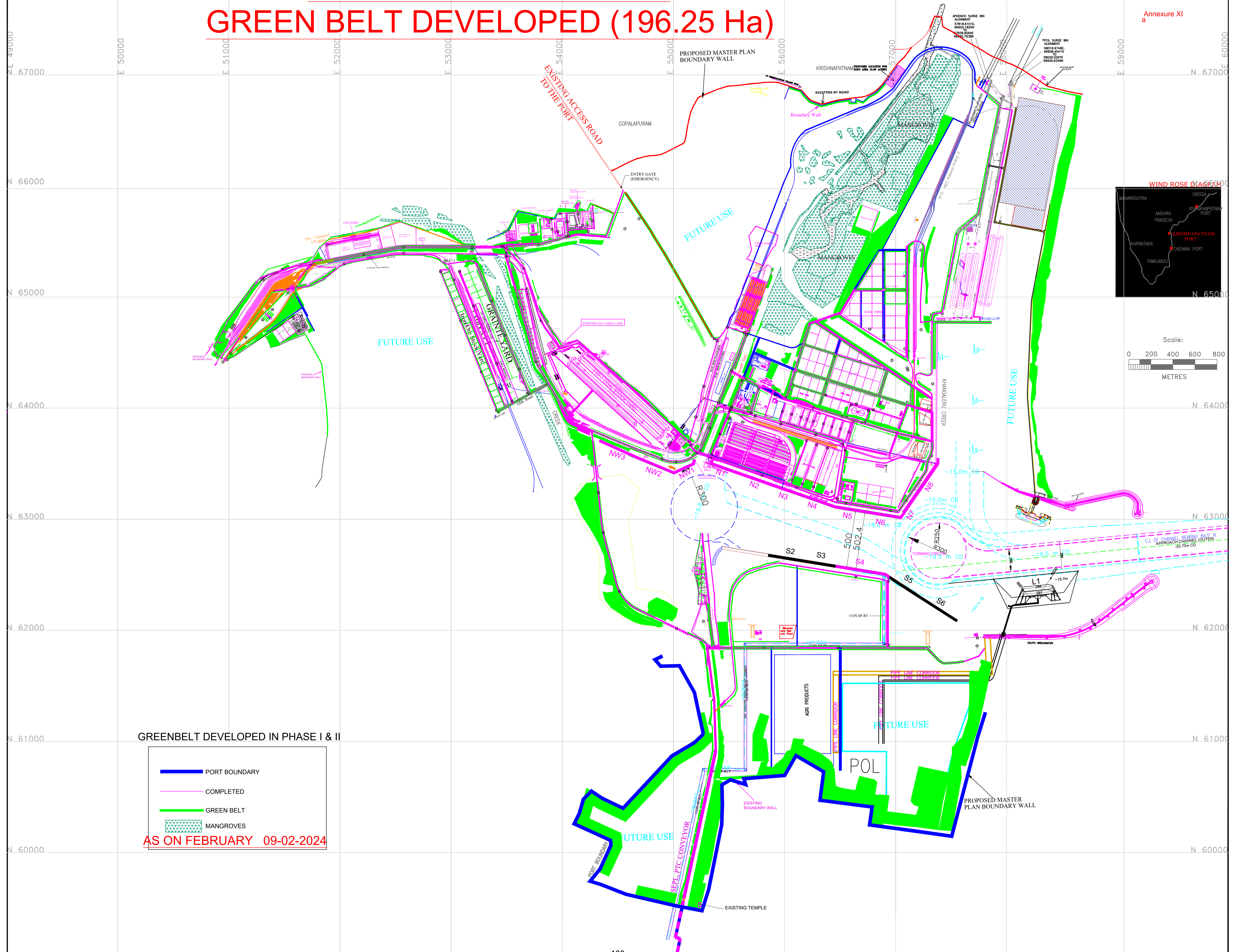


Quarterly Report on Operational Audit of  
Adani Krishnapatnam Port in SPS Nellore District, Andhra Pradesh

S. No	Audit Scope	Clause reference in Concession Agreement	Observations/Remarks	Clarification on Performance standards achievement	Reference page no in this report
	accordance with the provisions of the Concessional Agreement.		order.		
9	Monitor and report compliance/adherence of the concessionaire to all the other obligations of the concessionaire during the operation period, as per the Concession Agreement.	Clause 5.13	Monitoring the other obligations as per Clause 5.13 of Concession Agreement and observed as complied.	Yes	Page no:28-29 Annexure-V,VI
10	Report on the compliance of obligations of the GoAP during the operations period as per the Concession Agreement.	Clause 5.14	Complied as per the Concession Agreement	Yes	
11	Verify the adequacy of the insurance taken by the concessionaire as per the Concession Agreement.	Clause 5.16(b)	Insurance policies submitted by AKPL: i) Comprehensive Mega Insurance Policy ii) Workmen's compensation policy schedule. iii) Third Party Liability Insurance.	Yes	Page no:29-30

# KRISHNAPATNAM PORT GREEN BELT DEVELOPED (196.25 Ha)

Annexure XI  
a



**GREENBELT DEVELOPED IN PHASE I & II**

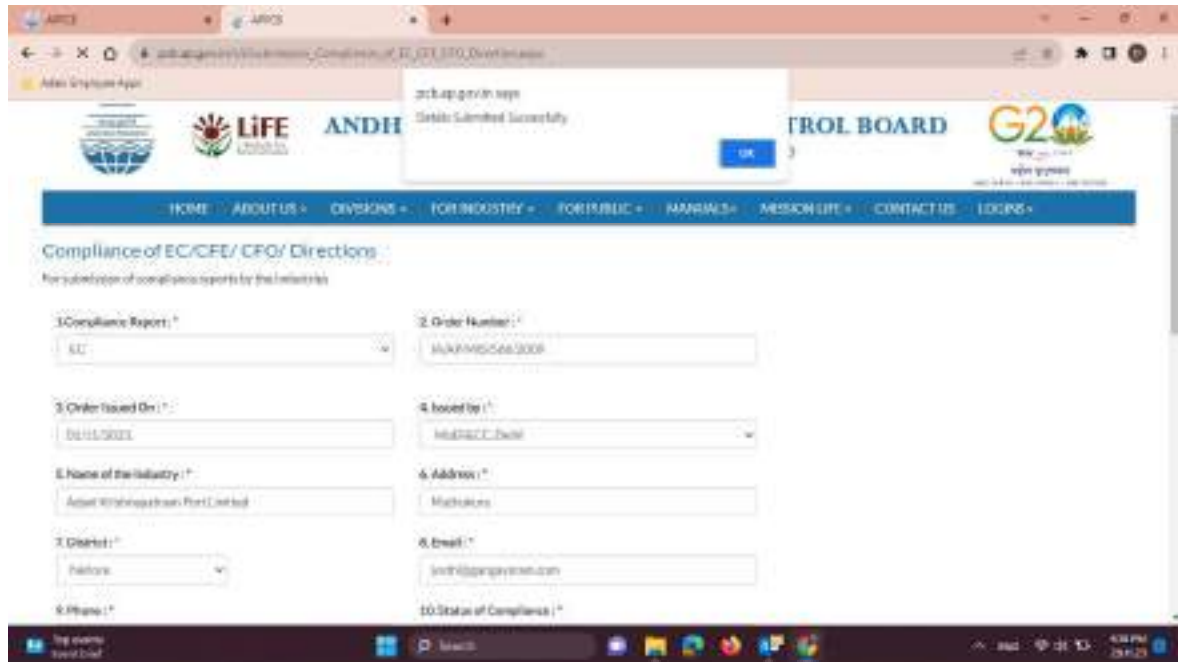
- PORT BOUNDARY
- COMPLETED
- GREEN BELT
- MANGROVES

**AS ON FEBRUARY 09-02-2024**



Annexure - XII

Half yearly Compliance status (for the period from April 2023 to September 2023) on the conditions stipulated in EC, CFE & CFO orders issued to M/s.Adani Krishnapatnam Port Limited, SPSR District, Andhra Pradesh by MOEF & SPCB submitted through website i.e., <https://pcb.ap.gov/eccompliance-ap@gov.in> on 29<sup>th</sup> November 2023.





(http://missionlife-moefcc.nic.in/)



# ANDHRA PRADESH POLLUTION CONTROL BOARD

ఆంధ్ర ప్రదేశ్ కాలుష్య నియంత్రణ మండలి



(https://www.g20.org/en/)

## Compliance of EC/CFE/ CFO/ Directions

For submission of compliance reports by the Industries

1.Compliance Report : \*

2.EC Order Number \*

3.EC Order Issued On \*

4.EC Order Issued By \*

5. Name of the Industry : \*

6. Address : \*

7. District : \*

8. Email : \*

9. Phone : \*

10. Status of Compliance : \*

11. Upload the Compliance Report : \*

Note: \*

Environmental Clearance (EC) : Project proponent shall submit Half-yearly EC Compliance report certified by accredited consultant.(self-certified compliance report in case of small projects)

Captcha : \*



Submit

## Know More

- » Copyright Policy (Copyright.aspx)
- » Privacy Policy (PrivacyPolicy.aspx)

## Government Portals

- » AP State Portal (https://www.ap.gov.in/)
- » Meekosam Portal (https://www.meekosam.ap.gov.in/)
- » Municipal Administration & Urban Development (https://cdma.ap.gov.in/)
- » AP eProcurement Portal (http://www.apecurement.gov.in/)

## Get In Touch

Office Address

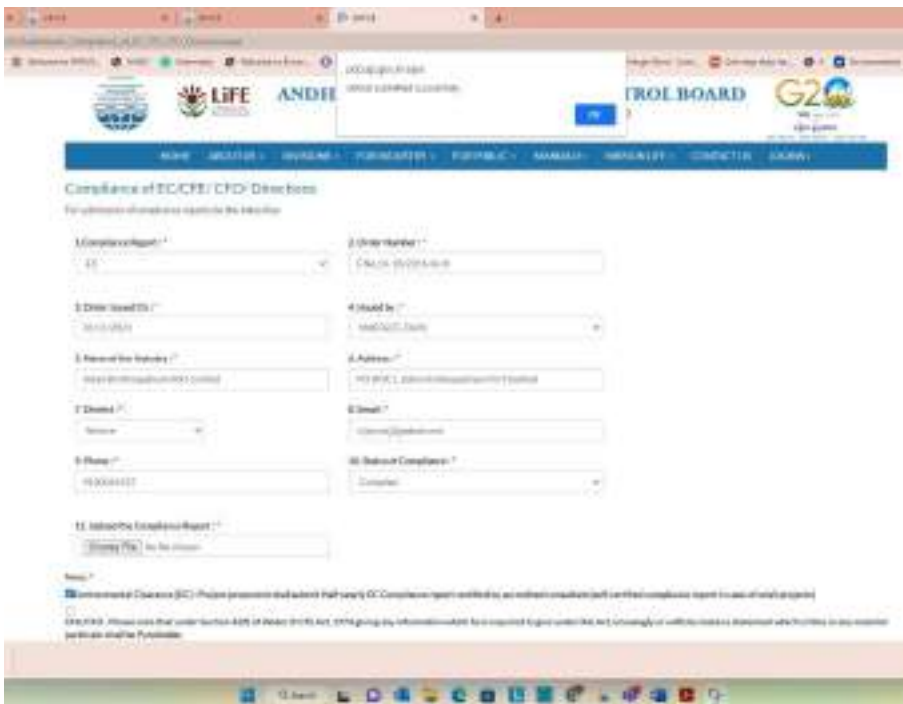
Andhra Pradesh Pollution Control Board,

## AKPL – Half yearly compliance submission October – 2022 to March 2023 – Evidences

NABL Accredited 3rd party certified Compliance on the conditions stipulated in EC & CRZ Clearances of MoEF & CC & APPCB issued CTE & CTO Compliance along with Monitoring Reports and necessary attachments for the period from October – 2022 to March 2023 were successfully uploaded through on 31.05.2023.

1. Compliance report uploaded on the website of Andhra Pradesh Pollution Control Board
2. Compliance report uploaded in Parivesh portal of MoEF & CC
3. Email notification sent to Mr. P Suresh, Joint Director, Integrated Regional Office, MoEF & CC, Vijayawada. And email notification sent to [eccompliance-ap@gov.in](mailto:eccompliance-ap@gov.in)
4. Email notification sent to Mr. Rajasekhar, Environment Engineer, Regional Office Nellore

### 1. APPCB website

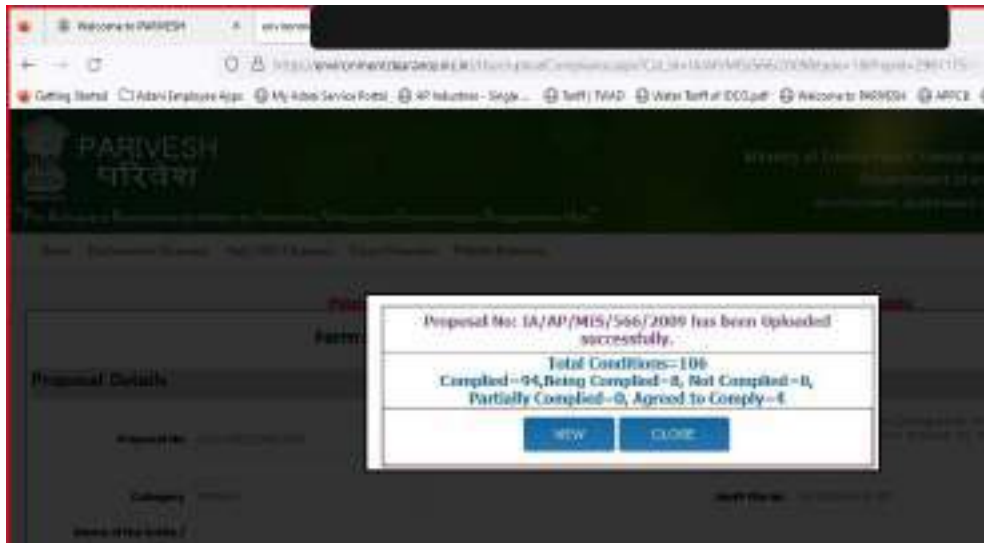


The screenshot shows the 'Compliance of EC/CFE/CFD' section on the APPCB website. The form includes the following fields:

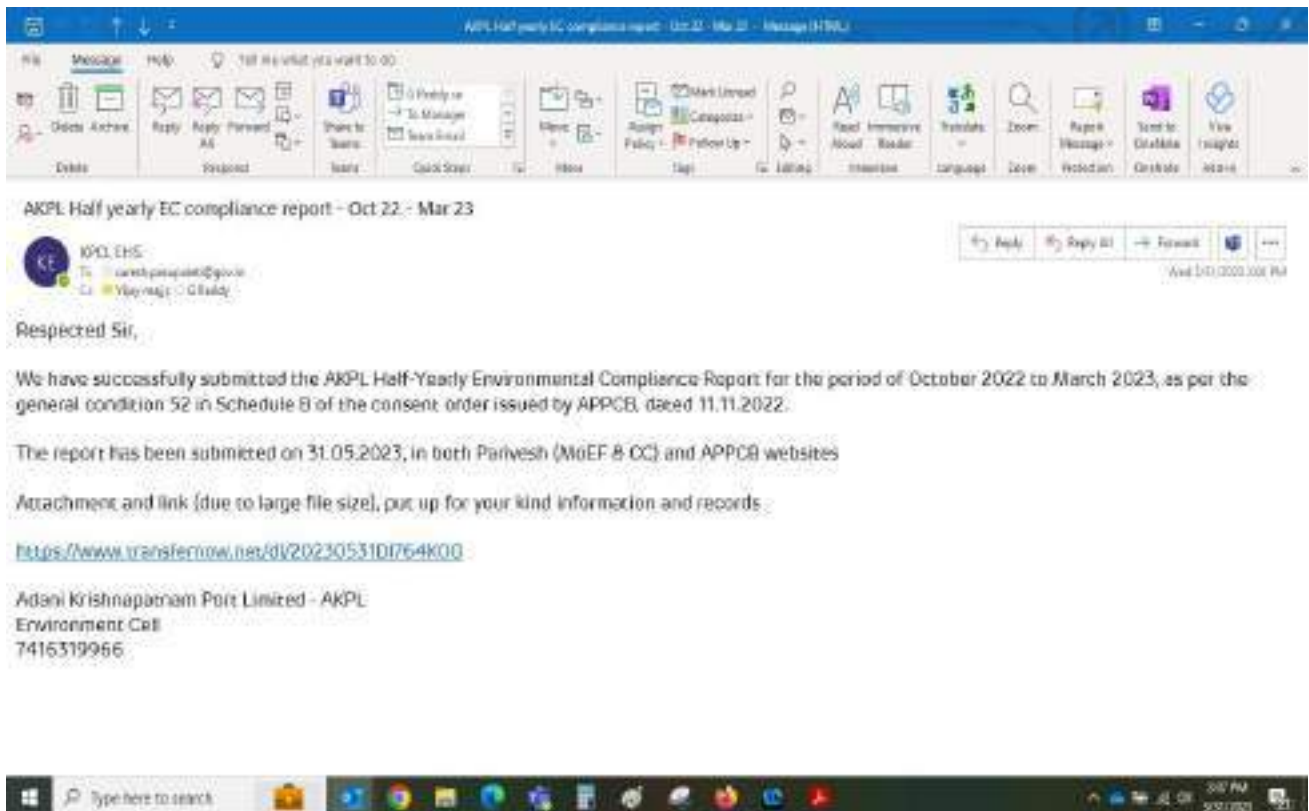
- 1. Compliance Report: [Dropdown menu]
- 2. Unit Name: [Text input field]
- 3. Date Issued To: [Text input field]
- 4. Issued by: [Text input field]
- 5. Reason for Issuing: [Text input field]
- 6. Address: [Text input field]
- 7. District: [Text input field]
- 8. State: [Text input field]
- 9. Plant: [Text input field]
- 10. Status Compliance: [Text input field]
- 11. Attachments Compliance Report: [Text input field]

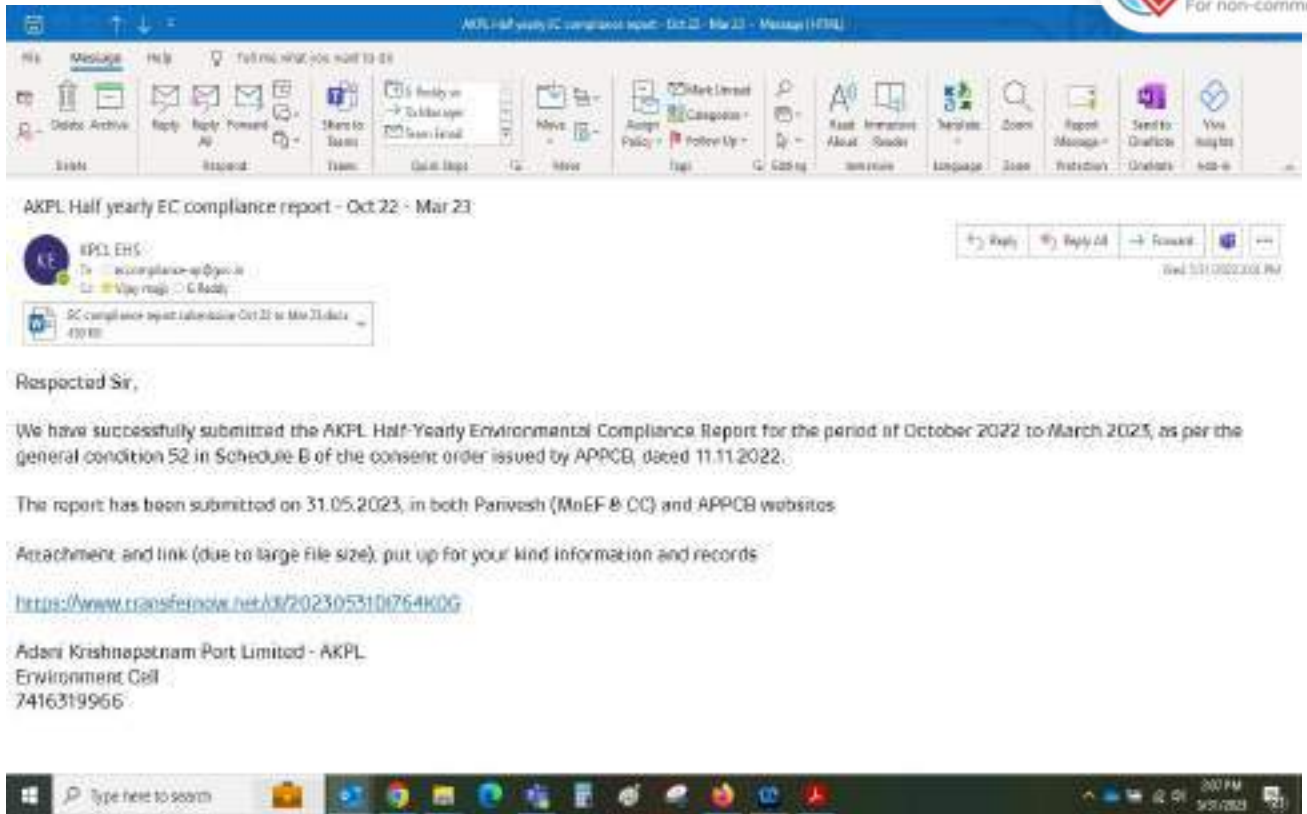
Below the form, there is a 'Notes' section with a blue header: 'Environmental Clearance (EC) - Please provide the latest half yearly CC Compliance report certified by an independent third party compliance report to all stakeholders.' Below this, there is a small text block: '© 2023. All rights reserved. All other trademarks are the property of their respective owners. All other trademarks are the property of their respective owners.'

## 2. Parivesh portal

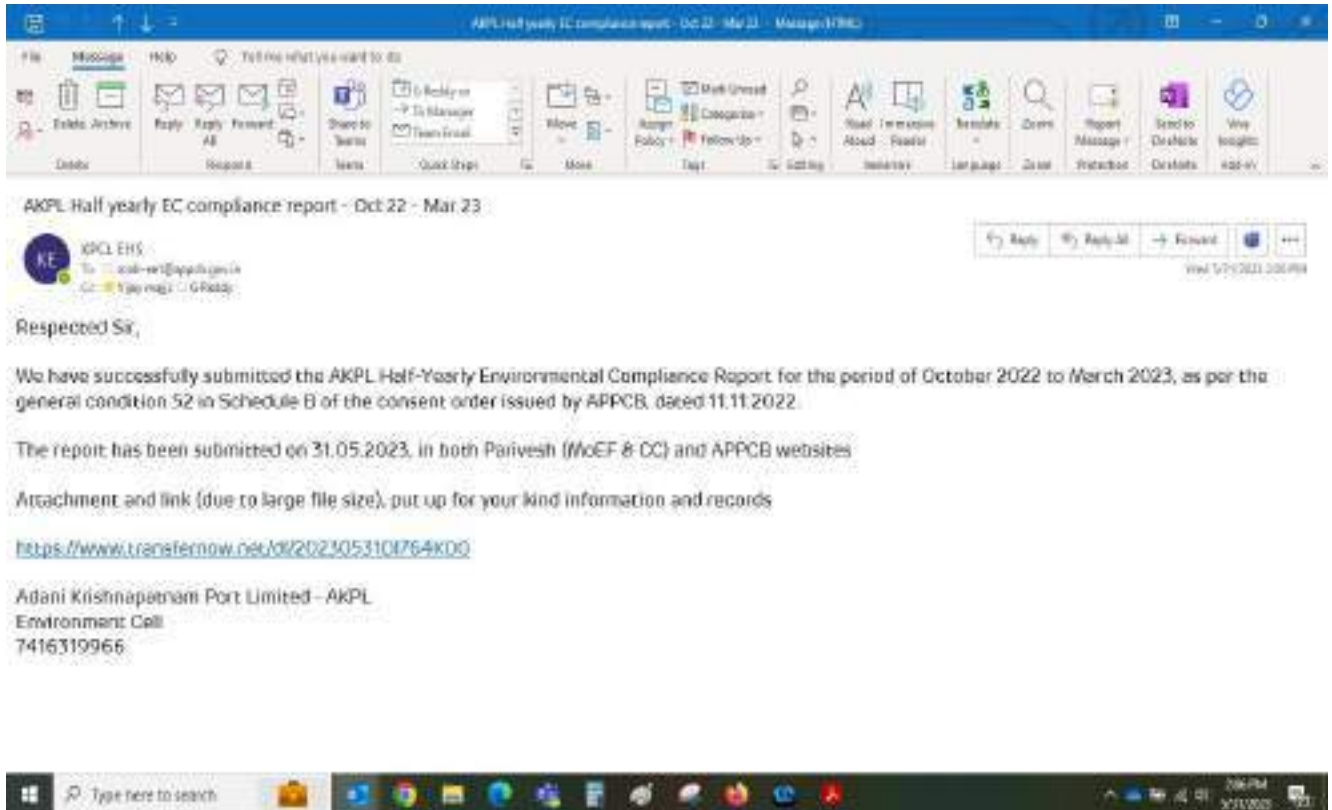


## 3. IRO, VJA – MoEF & CC and official email.





#### 4. APPCB RO – Nellore







# KRISHNAPATNAM PORT COMPANY LTD.

Ref.No.KP/MOEF/113

Dated: 29<sup>th</sup> August, 2012

To  
 The Director (IA-III)  
 Ministry of Environment and Forests  
 (I.A. Divison)  
 Paryavaran Bhavan  
 CGO Complex, Lodi Road  
 New Delhi - 110 003

Kind Attn: Shri Lalit Kapur

Sub: **Environmental and CRZ Clearance for the development of Krishnapatnam Port in Phase-II at Krishnapatnam, Sri Potti Sriramulu Nellore District, Andhra Pradesh by M/s. Krishnapatnam Port Company Limited - modification to Specific Condition 5 (vii) - Request - Reg.**

Ref: Your Letter F.No.11-62/2009-IA.III dated 13.11.2009

Dear Sir,

- (1). We invite your kind attention to Specific Condition No.5.(vii) of the CRZ & Environmental Clearance Order No.11-62/2009-IA.III dated 13.11.2009 of the MoEF above cited.
- (2). You may recall that during the public hearing held on the 20<sup>th</sup> February, 2009 at Krishnapatnam, Nellore District, Andhra Pradesh for Phase-II Development of Krishnapatnam Port, a request was made by one of the public (Jana Vignana Vedika) that a greenbelt of 100 m width may be provided **around the port** in lieu of the proposed 50 m width. KPCL clarified during the public hearing that as per the Phase-II development plan, a minimum of 50m wide Greenbelt would be developed all along port boundary and 20m along the stockyards. With these provisions the likely impact on the air quality was predicted using ISCST3 model and the results are within the standards stipulated by CPCB/MoEF. Our response on the Minutes of the Public Hearing was incorporated in the Final EIA report submitted to the MoEF vide KPCL's Letter dated 06.05.2009 (copy of relevant extract D-3 enclosed for ready reference as **Annexure-I**). In this context we submit that the MoEF in their CRZ & EC stated that "The greenbelt of 100 m width shall be developed **around the coal stack yard** as per the request in the public hearing", while the actual request made during the public hearing relates to "greenbelt of 100 m width **around the port**"





- (3). We further submit that the APCCB in its CFE for Phase-II development vide Order No.633/PCB/CFE/RO-NLR/HO/2010/390 dated 08.05.2010 (copy of relevant extract enclosed as **Annexure-II**) directed at Condition 24 that "Green Belt of width 100m shall be developed **along the boundary** of the industry as committed by the proponent". Accordingly a greenbelt of 100 m width is being developed along the boundary of the port and a 20 m wide Green belt around the iron ore and coal stack yards. The status of compliance was submitted to the Regional Office, MoEF, Bangalore in the first half-yearly compliance report dated 11.06.2010 (copy of relevant extract enclosed as **Annexure-III**). For ready reference, we are enclosing herewith (**Annexure-IV**) a pictorial presentation of the actual field Ambient Air Quality data from the monitoring stations along Port boundary for the period 2010, 2011 and 2012 (upto July) which confirms the findings of the model incorporated in the EIA Report and comply with the AAQ Standards.
- (4). During the recent visit of the Senior Officers of the MoEF, Southern Region, Bangalore to Krishnapatnam Port on 24.07.2012, we brought the above anomaly to their notice and they have advised that the MoEF may be addressed to modify the Specific Conditions 5 (vii) of the above cited EC to reflect the actual request made by the public during the hearing held on 20<sup>th</sup> February, 2009.

We accordingly request you to kindly issue an early order modifying the provision under Specific Condition 5 (vii) of the Environmental Clearance Order cited above as under:-

Existing	Requested
"The greenbelt of 100 m width shall be developed <b>around the coal stack yard</b> as per the request in the public hearing".	"The Greenbelt of 100m width shall be developed along the <b>port boundary</b> as per the request in the public hearing".

Thanking you,

Yours faithfully,  
for **KRISHNAPATNAM PORT CO. LTD.,**

(S.B. PURI)  
Director

Encl: As above

Copy to: The Director, MoEF, Southern Region, Bangalore.

Encl: As Above

copy to: CEO, KPCL, Wellore along with enclosures

**F. No. 11-62/2009-IA.III**  
**Government of India**  
**Ministry of Environment & Forests**  
**(IA.III Division)**

Annexure - XV

Room No. 534,  
Paryavaran Bhawan,  
CGO Complex, Lodhi Road,  
New Delhi-110003.

Dated: 2 March 2010

**CORRIGENDUM**

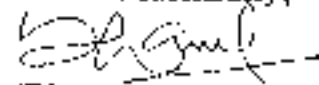
**Subject: Environmental and CRZ clearance for Phase II Development of Krishnapatnam Port at Krishnapatnam, Sri Potti Sriramulu Nellore District, Andhra Pradesh by M/s. Krishnapatnam Port Company Ltd - Reg.**

Sir,

This has reference to your letter No. KP/MoEF/PH-II/12 dated 19.01.2010 regarding change of the conditions. In this context, attention is invited to this Ministry's letter of even no. dt. 13.11.2009. The condition No. [xxii] be deleted and in condition (xxiii), the reference VOC be deleted.


The all other terms and conditions clearance letter of even no. dated 13.11.2009 remain unchanged.

Yours faithfully,

  
**(Bharat Bhushan)**  
**Director (IA)**

Copy to:

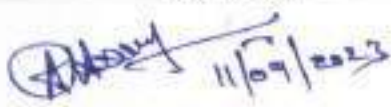

1. The Principal Secretary, Director (Environment), Forests & Environment Department, Government of Gujarat, Block No. 14, 8<sup>th</sup> floor, Sachyadaya, Gandhinagar - 382 010.
2. The Chairman, CPCB, Parivesh Bhawan, CBD cum Office Complex, East Arjun Nagar, Delhi - 32.
3. The Chairman, Andhra Pradesh State Coastal Zone management Authority & Additional Secretary, Government of Andhra Pradesh, Environment and Forests Science and Technology Department, Secretariat, Hyderabad - 500 022
4. The Member Secretary, Andhra Pradesh Pollution Control Board, Hyderabad.
5. The Chief Conservator of Forests, Ministry of Environment and Forests, Regional Office, Western Region, Kendrya Paryavaran Bhawan, Link Road No. 3, Kovishankar Nagar, Bhopal - 462016 (M.P.).
6. Guard File.
7. Monitoring Cell.

  
**(Bharat Bhushan)**  
**Director (IA)**

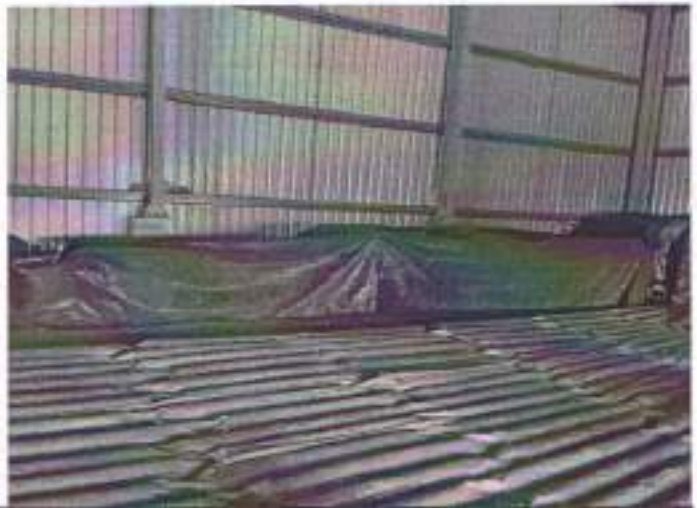
## MOCK DRILL REPORT

Annexure - XVI

Name of the Mock Drill	Oil Pollution Prevention Response & Cleanup Equipments.	
Type of Mock Drill	OPR DRILL	
Date	11/09/2023	
Location of the Event	OPR Shed at Port Craft Jetty	
Description of the event	Oil Pollution Equipments Maintenance	
Event	Oil Pollution Equipments Maintenance	
Mock drill conducted by	Sk. Junead	
Name of the Observers	Capt Padhi (HoD)	
	Capt Sahoo (HoS)	
Emergency declared at (Time)	1200	
All Clear declared at (Time)	1500	
Emergency Actions:		
Time	ACTIONS	
12:00	Schedule to carryout Oil Pollution Equipments Maintenance	
12:10	Equipments bought outside shed to carry out Maintenance and repairs	
12:15	Skimmer - 1 overhaul connected batteries and kept started	
12:30	Skimmer – 2 overhaul connected batteries and kept started	
12:40	Booms laid out cleaned washed with water and rearranged in proper manner.	
13:00	Power Pack - 1 overhaul, connected Batteries checked found in running condition.	
13:10	Power Pack - 2 overhaul, connected Batteries checked found in running condition.	
13:30	Floaters – 1 overhaul connected with powerpack and found in running condition.	
13:50	Floaters – 2 overhaul connected with powerpack and found in running condition.	
14:15	Oil Pollution related Equipments carried out maintenance.	
15:00	All the Oil Pollution Equipments rearranged and kept in OPR shed with tarpaulin cover.	
Items/ resource consumed	Thinner, Diesel, waste cloth etc.	
No. of persons reported at assembly point (Attach list)	10	
No. of persons inside the area/ building (Attach list)	N/A	

No. of vehicles/ equipment evacuated	N/A				
No. of vehicle /equipment inside the area	N/A				
No of persons sent outside at safe place from assembly point	N/A				
No. of victims rescued	N/A				
No. of people injured a. Minor injuries b. Major injuries c. No.of victim Hospitalized d. Fatal	None Injured				
No.of Fire/ Rescue team involved	Department		No.of persons		
	Nil				
Type of vehicle / equipment used in drill	Vehicle/ Equipment	No's	Reg. Number		
	NIL				
Time taken for the drill	: 3 hours				
<b>Task</b>	<b>People Evacuation</b>	<b>Vehicle/ Equipment Evacuation</b>	<b>Fire Extinguishing</b>	<b>Rescue Operation</b>	<b>Total</b>
Actual	N/A	N/A	N/A	N/A	3 hours
Observations	Observer-1: Resources mobilization delays				
	Observer-2: None				
<b>Sl. No.</b>	<b>Action Plan</b>	<b>Responsibility</b>		<b>Target Date</b>	
1	Periodical Maintenance to carry out to keep the Equipments in running condition	Port control		6 Months	
 Drill conducted by:		 In Charge Signature			

Pictures of the Event:





**ADANI KRISHNAPATAN PORT LTD.**  
*Muthukur Mandal*

# DISASTER MANAGEMENT PLAN



	Prepared by:	Reviewed by:	Reviewed by:	Reviewed by:	Verified by:	Approved by:
Signature						
Name	<b>Capt. Bibhupada Sahoo</b>	<b>Venkatesh Bhaskar</b>	<b>Mr. G. Venu Gopal Reddy</b>	<b>Capt N. P. Padhi</b>	<b>Mr. Sanjay Kotha</b>	<b>Mr. G. J Rao</b>
Designation	<b>HOS Marine</b>	<b>Head Security</b>	<b>Associate GM -EHS</b>	<b>HOD -Marine</b>	<b>COO</b>	<b>CEO</b>
Date	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023

**Disaster Management Plan**  
(Rev-06)

Sl. No	IssueDate	Rev. No.	Change Description	Page No. Affected	Approved By
1	01.07.2008	00	First release	All	GM (Marine)
2	01.09.2010	01	Organization structure, Roles and responsibilities	03-18	VP (Marine)& Dy. Conservator
3	07.12.2012	02	Updating of Mobile Nos of Committee members and designations	03-18	CEO
4	11.06.2018	03	Organization structure, designations and phone numbers	02-19	CEO & Director
5	01.01.2021	03	Organization structure, designations and phone numbers	02-19	COO & Director
6	01.02.2021	04	Changed due to Name change	All	COO
7	15.06.2021	05	Organization structure, designations, and phone numbers	All	CEO
8	27.03.2023	06	Name of signatory, emergency contact Numbers, designations and phone numbers, Port master Plan updates, Port navigation charts, inclusion of fire onboard ship checklist and fire onboard tanker ship checklist.	01-04, 11-13.61-62	CEO

**DOCUMENT CONTROL LOG**

**Audio Visual Alerting System-In case of Emergency**

**ALERT ALARM – Prolong Blast for 05 Sec with gap of 05 Sec for 01 min.**

**Termination of emergency – Continuous sounding for 45 Sec.**

**In Case of Emergency-Contact Numbers**

S. N.	Points	Tel. No.	VHF Channel
01	District Emergency	108	-
02	Dist. Fire Control	101	-
03	Port Control	8712615102	16,12,14
04	Port Security Control	8712615100	08
05	Port Fire Station/control	8712615101	08
06	Port Gate-NW	8712615100	08
07	Port Ambulance-Krishnapatnam	8712615104	-
08	Police Station-Krishnapatnam	8612377355	-
09	Dy Conservator & PFSO	9704123702	12
10	Dy. PFSO 1	9014209653	12
11	Dy. PFSO 2	7893982789	08

**Important Personnel Phone numbers:-**

S. No	Designation of person	Telephone Number
1.	CEO	+91 9600222654
2.	PA – CEO	+91 9989800789
3.	COO	+91 9157949500
4.	PA – COO	+91 7381690592



## Disaster Management Plan (Rev-06)

5.	HEAD BUISNESS OPERATIONS	N/A
6.	HOD MARINE	+91 9704123702
7.	HOS Marine	+91 9014209653
8.	HEAD SECURITY	+91 8179159777
9.	HEAD SAFETY	+91 8008199877
11.	HEAD EHS	+91 9866192789
12.	HEAD ADMINISTRATION	+91 9100217999
13.	HEAD DRY CARGO OPERATIONS	+91 9157949500
14.	HEAD CVR Foundation	+91 8008127896
15.	HEAD PUBLIC RELATION OFFICER(PRO)	+91 9701927555
16.	HEAD TECHNO COMMERCIAL	+91 7093984333
17.	HEAD ETS	+91 9704770789
18.	HEAD ELECTRICAL	+91 9893101146
19.	HEAD CCM	+91 9893101146
20.	HEAD ACCOUNTS	+91 8220054144
21.	RAC – MARINE	+91 9704123702
22.	RAC – SAFETY	+91 8008199877
23.	RAC – FIRE SAFETY	+91 8712615101
24.	RAC – SECURITY	+91 8179159777
25.	SECURITY CONTROL ROOM	+91 87126 15100

## Abbreviations

AERB	: Atomic Energy Regulatory Board
AICTE	: All India Council of Technical Education
AP	: Andhra Pradesh
ARG	: Automatic Rain Gauge
ASI	: Archaeological Survey of India
ASSOCHAM	: The Associated Chambers of Commerce and Industry of India
BIS	: Bureau of Indian Standards
CADA	: Coastal Area Development Authority
CDMM	: Centre for Disaster Mitigation and Management, Vellore
CFCB	: Central Flood Control Board
CGWB	: Central Ground Water Board
CIDC	: Construction Industry Development Council
CII	: Confederation of Indian Industry
CMG	: Crisis Management Group
CPCB	: Central Pollution Control Board
CRIDA	: Central Research Institute for Dryland Agriculture
CRPF	: Central Reserved Police Force
CWDS	: Cyclone Warning Dissemination System
CZMA	: Coastal Zone Management Authority
DAE	: Department of Atomic Energy
DCG	: District Crisis Group
DDMA	: District Disaster Management Authority
Deity	: Department of Electronics and Information Technology
DEOC	: District Emergency Operation Center
DGM	: Directorates of Geology and Mining
DM	: Disaster Management
DMP	: Disaster Management Plan
DoACFW	: Department of Agriculture, Cooperation and Farmers Welfare
DoAHDF	: Department of Animal Husbandry, Dairying, and Fisheries
DoPT	: Department of Personnel and Training
DRD	: Department of Rural Development
DRDO	: Defense Research and Development Organization
DRR	: Disaster Risk Reduction
DSJE	: Department of Social Justice and Empowerment
DSS	: Decision Support System
DST	: Department of Science and Technology
DWR	: Doppler Weather Radar
EHRA	: Earthquake Hazard and Risk Assessment
EIA	: Environment Impact Assessment
EOC	: Emergency Operations Centre
GSI	: Geological Survey of India

HAZCHEM	:	Hazardous Chemicals
HOD	:	Head of Department
HOS	:	Head of Section
HFL	:	Highest Flood Level
HLC	:	High Level Committee
HRVA	:	Hazard Risk and Vulnerability Assessment
IAEA	:	International Atomic Energy Agency
ICG	:	Indian Coast Guard
ICSE	:	Indian Certificate of Secondary Education
IDMC	:	India Drought Management Centre
IDRN	:	Indian Disaster Resource Network
IITM	:	Indian Institute of Tropical Meteorology
IMA	:	Indian Medical Association
IMD	:	India Meteorological Department
INCOIS	:	Indian National Centre for Ocean Information Services
ISRO	:	Indian Space Research Organization
ITI	:	Industrial Training Institute
IWAI	:	Inland Waterways Authority of India
IWRM	:	Integrated Water Resources Management
LBSNAA	:	Lal Bahadur Shastri National Academy of Administration
MoES	:	Ministry of Earth Sciences
MoF	:	Ministry of Finance
MoFPI	:	Ministry of Food Processing Industries
MoHFW	:	Ministry of Health and Family Welfare
MoRD	:	Ministry of Rural Development
MoWR	:	Ministry of Water Resources
MoYAS	:	Ministry of Youth Affairs and Sports
MPCS	:	Multi-Purpose Cyclone Center
NABARD	:	National Bank for Agriculture and Rural Development
NCFC	:	National Crop Forecasting Centre
NCMRWF	:	National Centre of Medium Range Weather Forecasting
NCT	:	National Capital Territory
NDMA	:	National Disaster Management Authority
NDMF	:	National Disaster Mitigation Fund
NDMP	:	National Disaster Management Plan
NDRF	:	National Disaster Response Force
NHWIS	:	National Hazardous Waste Information System
NIC	:	National Informatics Centre
NICMAR	:	National Institute of Construction Management and Research
NPDM	:	National Policy on Disaster Management
NSS	:	National Service Scheme
NWDA	:	National Water Development Agency
O&M	:	Operation and Maintenance

PG	:	Post Graduate
PRD	:	Panchayati Raj Department
PRIs	:	Panchayati Raj Institutions
PWD	:	Public Works Department
R&D	:	Research and Development
RAC	:	Response Activity Coordinator
SDMA	:	State Disaster Management Authority

### **BASIC DEFINITIONS**

**On-Site Plans** - address incidents originating within the port area

**Off-Site Plans** - address incidents originating outside the port area but affecting the port operations or from port to outside

**Risk** - The chance of an adverse event occurring in some period of time or in a specific circumstance, in the process of engaging in an activity

**Hazard** - A phenomenon which may cause disruption to persons and their infrastructure and is an undesirable outcome in the process of engaging in an activity

**Disaster** - An event which can cause immense damage and disruption to the (Port and its) infrastructure causing loss to lives and property.

#### **OR**

An event, either man-made or natural, sudden or progressive, the impact of which is such that the affected community must respond through exceptional measures Creating Opportunities. Managing Risk. IDRM Glossary of Disaster Risk Management Terminology

**Emergency** - Serious sudden situation or occurrence that happens unexpectedly and demands immediate action to correct or to protect lives and/or property.

**Crisis** - Unstable situation of extreme danger. and may lead to the following elements; - Surprise- -Rapid flow of events-Lack of or insufficient information-Internal conflict-confusion

**Disaster Management** - Set of actions and processes designed to lessen disastrous effects before, during and after a disaster.

**Preparedness** - Measures undertaken in advance to ensure that individuals and agencies will be ready to react, such as emergency plans, logistical support and resource, inventories, and emergency information & communications systems

**Response** - Those measures undertaken immediately after a disastrous or hazardous event has occurred and for a limited period of time thereafter, primarily to save human life, property, treating the injured, prevent further injury and other forms of property loss and to mitigate disruption. They include response plan activation, declaration and communication of emergency to the concerned potential population and facilities at risk, opening and staffing of emergency operation centers, mobilization of resources, issuance of warnings and directions and provision of aid.

**Mitigation** - Those measures and activities aimed at reducing or eliminating hazards or lessening the impact of the event.

**Prevention** - Mitigation of hazard effects through public education, early warning or detection systems, safety systems, building and land-use codes and regulation.

**Recovery** - Those measures undertaken to restore normal conditions. The time frame for recovery begins as soon as a reduction in critical response activities permits the re-allocation of resources. And could include physical restoration and reconstruction.

**All Clear** – Direction given by the incident coordinator (or authorized person) that the emergency situation has been revoked and that there is no further damage.

**Assembly Areas** – On decision of evacuation, the place where people will move first to assembly area where further instruction will be given.

**Suspect Device** – Any item that contains an explosive or mechanical device designated to explode by means of timer, touching, impact or by remote control a suspect device may appear suspicious by its placement, the circumstances surrounding its location or other information that may cause any person to become suspicious and decide that further investigation is necessary.

**Acceptable Risk:** Degree of human or material loss that is perceived by the community or authorities as acceptable

**All Hazards Approach:** Dealing with all types of emergencies/disasters that may impact on communities and the environment using the same set of management arrangements and includes both natural and man-made hazards.

**Chemical Hazards:** Hazards involving chemicals or processes which may realize their potential through agents such as fire, explosive, toxic or corrosive effects.

**Command:** The direction of members and resources of an organization in the performance of the organization's roles and responsibilities. Authority to command is established in legislation or by agreement and operates vertically within an organization.

**Communications:** Specifically, the means of communications, for example, roads, railways, telephone lines, radio, television, fax, internet. Broadly, dissemination of disaster management messages using a variety of means to people and organizations at various stages of the disaster cycle.

**Comprehensive Approach:** The development of disaster arrangements to embrace the aspects of prevention, preparedness, response and recovery.

**Control:** Control is the overall direction of the activities in a given operation.

**Coordination:** The bringing together of organizations and resources in accordance with the requirements imposed by the threat or impact of the emergency.

**Coping:** Coping is the manner in which people and organizations act, using existing resources within a range of expectations of a situation to achieve various ends. Coping capabilities are a combination of all the strengths and resources that are useful in reducing the effects of disasters.

**Disaster Management:** There could not be a single organization solely responsible for all aspects of disaster management. The management task is to bring together, in an integrated organizational structure, the resources of many organizations that can take appropriate action in times of disasters.

**Disaster Plans:** An agreed set of arrangements for preventing, mitigating, preparing for, responding to and recovering from a disaster. A formal record of agreed disaster management roles, responsibilities, strategies, systems and arrangements.

**Disaster Risk Management:** A development approach to disaster management, this focuses on underlying conditions of the risks which lead to disaster occurrence. The objective is to increase capacities to effectively manage and reduce risks, thereby reducing the occurrence and magnitude of disasters.

**Disaster Support Plans:** Refers to those plans, which are designed to address specific hazards and are used in support of national disaster planning arrangements. Aircraft crashes are an example of such plans.

**Disaster Risk Management Arrangements:** Linkages between the Office of the Prime Minister through the various levels of government disaster committees, community response teams, national disaster management office and emergency operations center (EOC)

**ECC/Emergency Coordination Center:** Facilities established to control and coordinate the response and support to an emergency.

**Emergency Management Team:** A group or team of disaster management personnel headed by an incident manager, which is responsible for the overall control of the emergency

**ESLO/Emergency Services Liaison Officer:** His/her task is the liaison and co-ordination of activities pre, post and during response.

**Fire prevention:** All pre-fire activities designed to reduce fuel quantities, remove known hazards, and prepare for the possibility of fire so that damage is mitigated

**Fire protection:** Provisions made to detect, suppress or limit the spread of fires, and particularly design building features aimed at limiting the spread of fire from the area of origin.

**Hazard:** A potential or existing condition that may cause harm to people or damage to property or the environment. The magnitude of the phenomenon, the probability of its occurrence and the extent and severity of its impact can vary. In many cases, these effects can be anticipated and estimated.

**Hazard Analysis:** That part of the overall planning process which identifies and describes hazards and their effects on the community.

**Hazard Mapping:** The process of establishing geographically where and to what extent particular hazards are likely to pose a threat to people, property and the environment.

**Lifelines:** Public facilities and systems that provide basic life support services such as water, energy, sanitation, communications and transportation.

**Logistics:** A range of operational activities concerned with supply, handling, transportation, and distribution of materials.

**Mitigation:** Measures, structural and non-structural, taken to reduce the impact of disasters. People-centered approach: While considering disasters as hazardous events, their occurrence is also viewed as the result of social, economic, and environmental conditions and practices. People, their livelihoods & welfare are the central concern.

**Preparedness:** Arrangements to ensure that, should a disaster occur, all those resources and services which are needed to cope with the effects can be efficiently deployed.

**Prevention:** Regulatory or physical measures to ensure that disasters are prevented, or their effects mitigated.

**Public Awareness:** The process of informing the public as to the nature of the hazard and actions needed to save lives and property prior to and in the event of a disaster.

**Recovery:** The coordinated process of supporting disaster affected communities in reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical well-being.

**Relief:** The provision of immediate shelter, life support and human needs of persons affected by a disaster.

**Resources:** Any asset, physical, human, economic or environmental which can be used to assist in achieving the objectives of the plan (people, equipment, relief supplies, water, roads, warehouses and money).

**Response:** Actions taken in anticipation of, during and immediately after a disaster to ensure that its effects are minimized, and that people affected are given immediate relief and support.

**Risk Reduction:** Selective applications of appropriate techniques and management principles to reduce either the likelihood of an occurrence or its consequences, or both.

**Search and Rescue:** The process of locating and recovering victims and the application of first aid and basic medical assistance as may be required

**Situation Report:** A brief report which outlines the details of the emergency as they become.

**Standard Operating Procedures:** A set of directions detailing what actions could be taken, as well as how, when, by whom and why, for specific events or tasks.

**Support Agency:** Agencies that provide essential services, personnel, or material to support a control agency or affected persons.

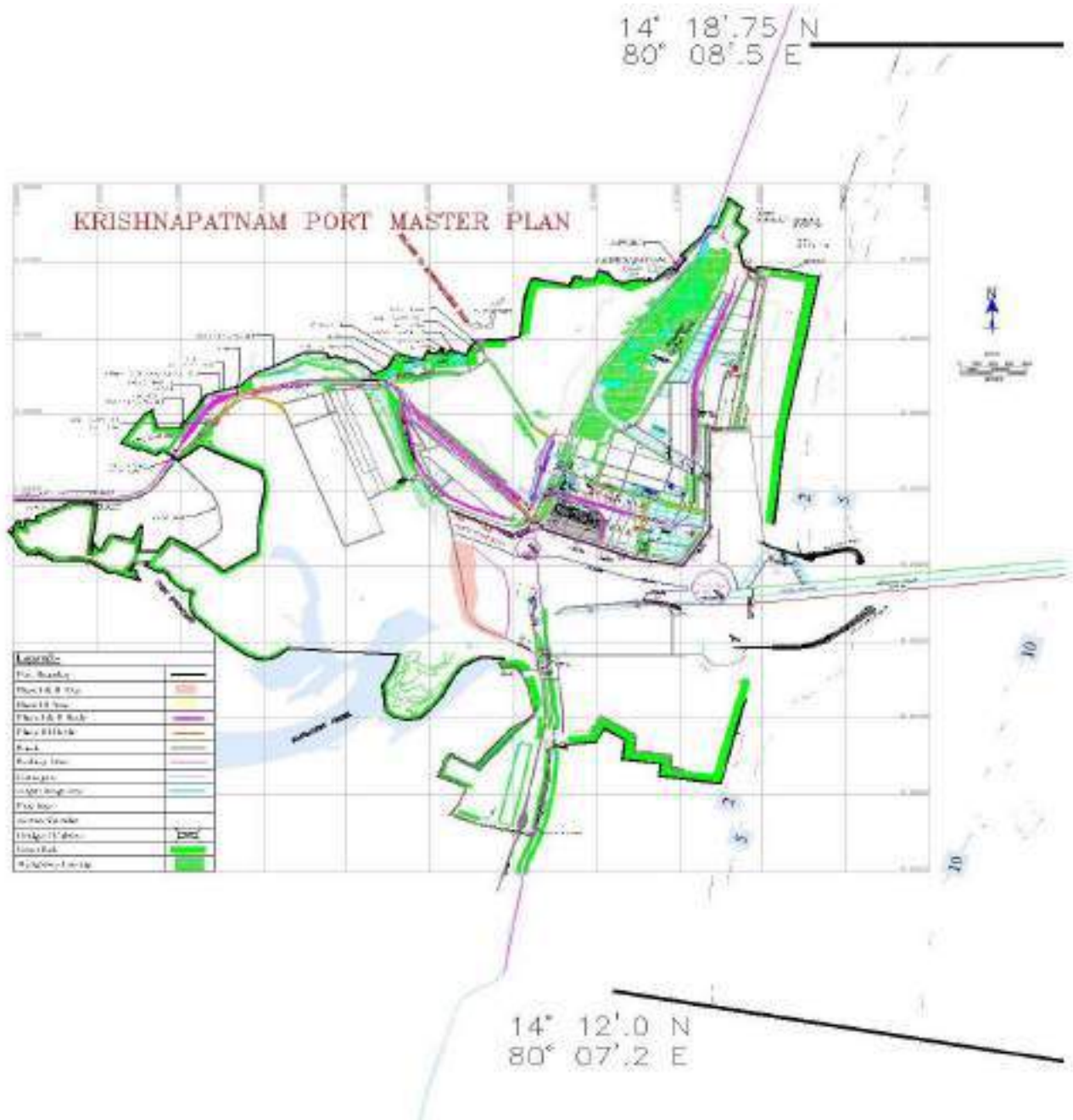
**Technological Disasters:** Disasters arising from other than natural disaster causes and include biological, chemical, nuclear, transport and terrorist instigated disasters.

**Technological Hazard:** A hazard of a technological origin (man-made), as opposed to a hazard of natural origin.

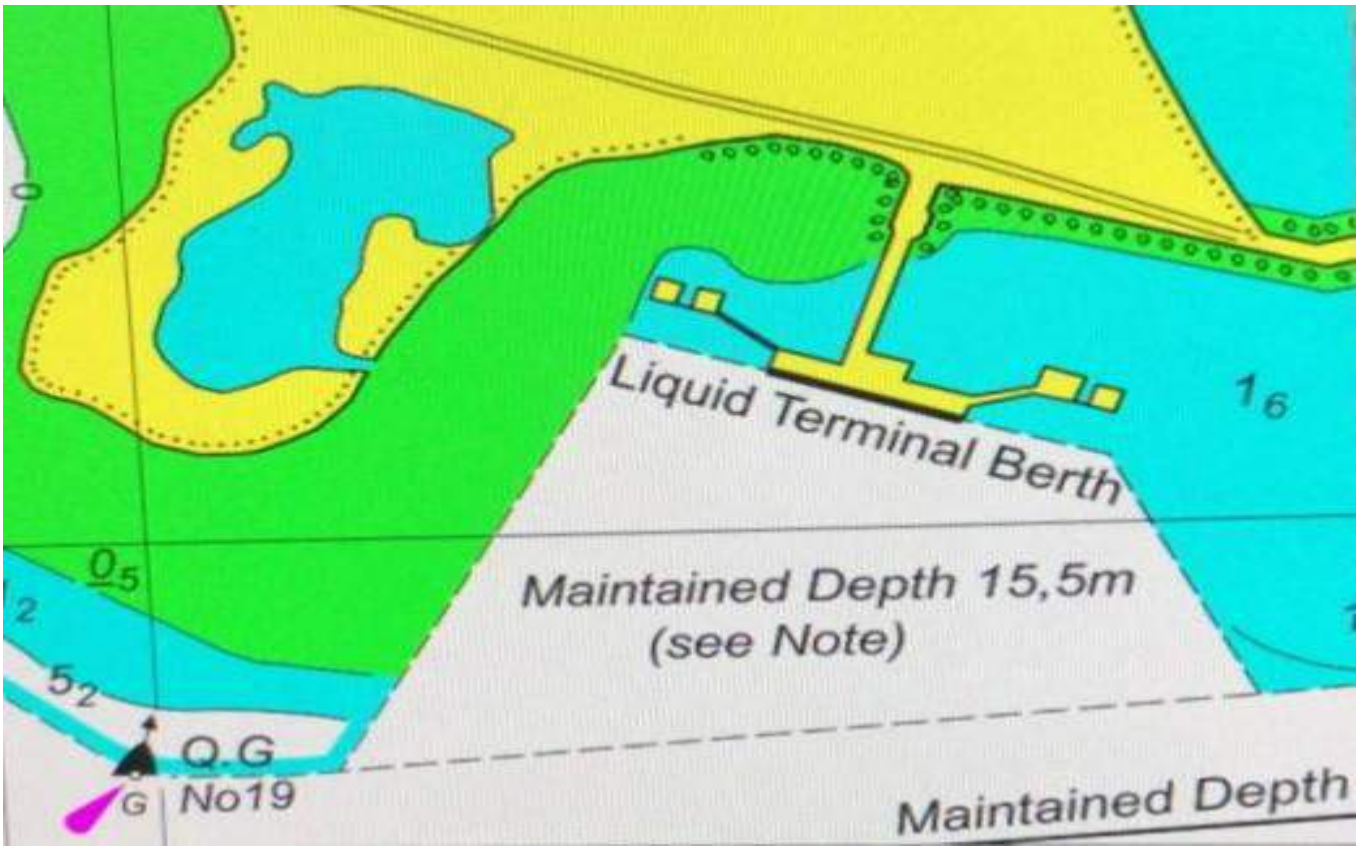
**Vulnerability:** A set of prevailing or consequential conditions composed of physical, socioeconomic and/or political factors that adversely affect the ability to respond to disasters. Vulnerabilities can be physical, social, or attitudinal and can be primary or secondary in nature. Strategies that lower vulnerability also reduce risk.

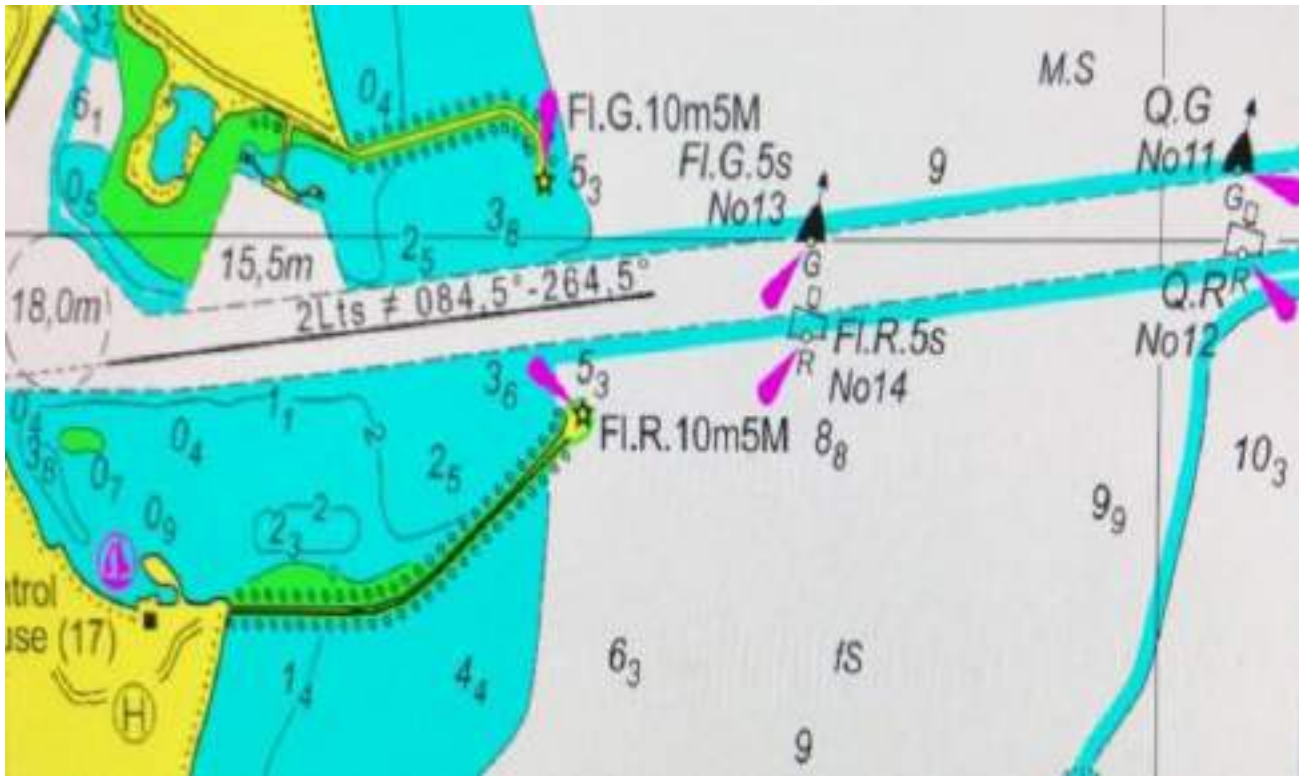
**Warning Systems:** The purpose of warnings is to persuade and enable people and organizations to take actions to increase safety and reduce the impacts of a hazard, which can be either quick onset i.e., cyclones, floods or slow onset, famine or man-made such as fires, explosion, chemical spills etc.

# Krishnapatnam Port Master Plan









## Port Navigational Chart

### **INTRODUCTION**

M/s. Adani Krishnapatnam Port Limited (AKPL), Nellore, Andhra Pradesh State has assigned Aarvee Associates Architects Engineers & Consultants, Hyderabad for the preparation of Disaster Management Plan, accordingly DMP has been prepared and presented below. Now the same is being updated and amended by the Adani Krishnapatnam Port Limited in a periodic interval and submitted to concerned regulatory authorities and other necessary departments.

**Disaster** - Disaster means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made cause, or by accident or negligence which result in substantial loss of life or human suffering or damage to, or degradation of, environment, and is of such nature or magnitude as to be beyond the coping capacity of the community of the affected area.

Disaster is defined as an undesirable occurrence of events of such magnitude that adversely affects Ports activities. Ports handle cargoes of various commodities including highly volatile and flammable nature of solid,

liquid and gaseous petroleum products. In spite of the fact that every port is expected to take adequate steps to assess, minimize and wherever possible eliminate risks, accidents and fire etc. still natural calamity may still occur. Proper planning can only mitigate them, and to large extent losses in terms of human lives, port assets, environmental damage and costs to resume working can never be minimized. In case of disaster is in minor nature, could be prevented with in-house arrangements for the safety of the port. In case of the disaster is major in nature, could be managed with the help of the following plan.

**Vision:-**

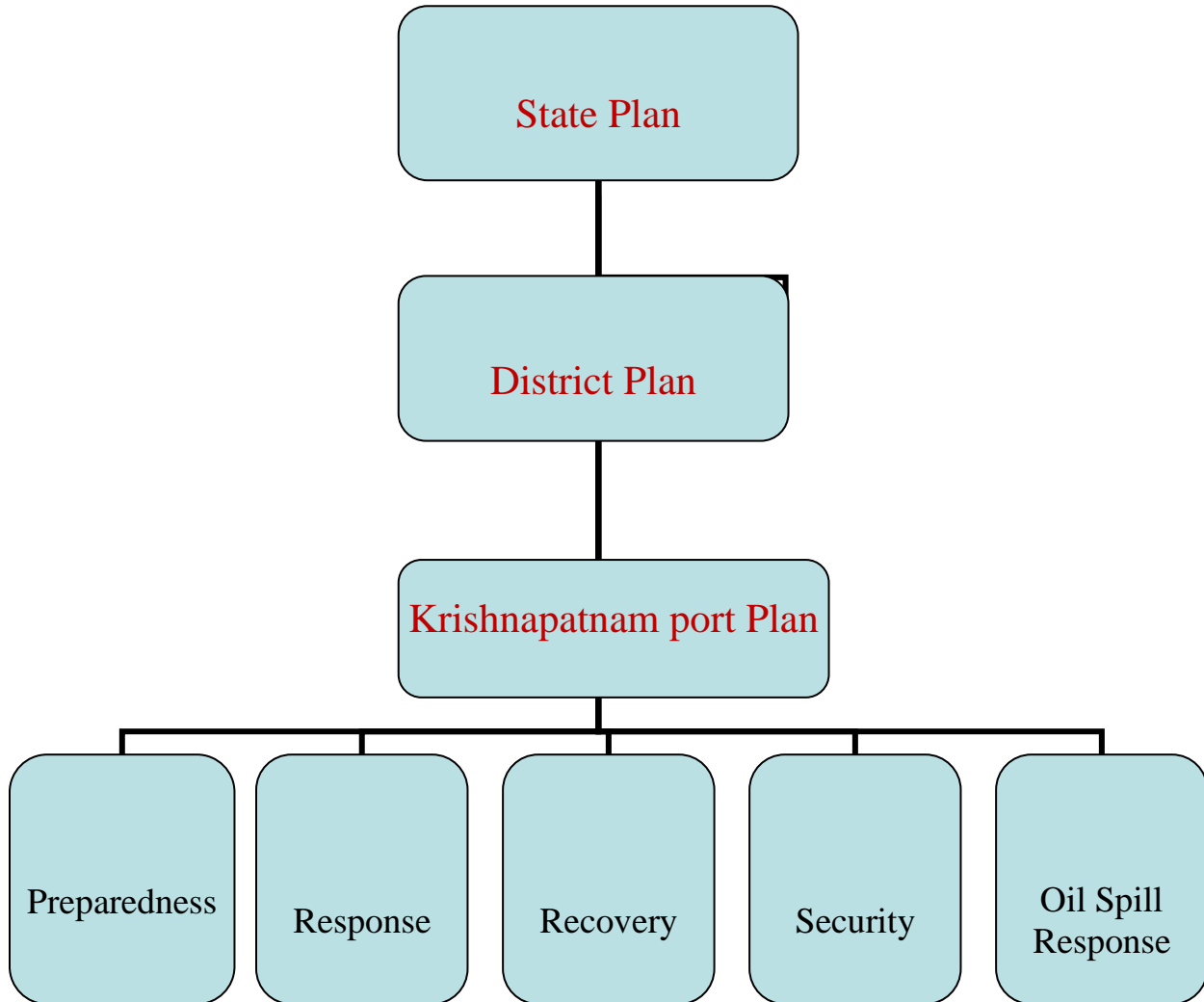
Make Krishnapatnam port disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets – economic, physical, social, and environmental – by maximizing the ability to cope with disasters at all levels of administration as well as among departments.

**Objectives**

The objectives of the DMP are:

- Improve the understanding of disaster risk, hazards, and vulnerabilities
- Strengthen disaster risk governance at all levels from Support level to Management Level.
- Invest in disaster risk reduction for resilience through structural, non-structural, and financial measures, as well as comprehensive capacity development
- Enhance disaster preparedness for effective response
- Promote “Build Back Better” in recovery, rehabilitation, and reconstruction
- Prevent disasters and achieve substantial reduction of disaster risk and losses in lives, livelihoods, health, and assets (economic, physical, social, and environmental)
- Increase resilience and prevent the emergence of new disaster risks and reduce the existing risks
- Empower both local authorities and communities as partners to reduce and manage disaster risks
- Strengthen scientific and technical capabilities in all aspects of disaster management
- Capacity development at all levels to effectively respond to multiple hazards and for community-based disaster management
- Provide clarity on roles and responsibilities of various HODs and Departments involved in different aspects of disaster management.
- Promote the culture of disaster risk prevention and mitigation at all levels.
- Facilitate the mainstreaming of disaster management concerns into the developmental planning and processes.

**HIREARCHY OF PLAN**



**Major expected Disasters in the port of Krishnapatnam.**

- A criminal / terrorist attack leading to siege, hostage situation, sabotage.
- Major public disturbance / riot / industrial unrest.
- Use of threats to use explosive or explosive situation.

## Disaster Management Plan (Rev-06)

- Explosion linked to hazardous cargo handling
- Fire
- Escape, intentional release, or threat to release due to – oil, gas, chemicals or radioactive, biological or flammable materials
- Accidents – Collision, grounding and sinking of ships, transport or workplace accidents.
- Natural calamities – Cyclone, Flood, and Earthquake, Storm Surge& tsunamis.
- Oil spill (As per oil spill contingency plan).

### **Main Component of Disaster Management Plan and Process.**

- 1. Pre-Disaster plan**
- 2. On Site Disaster plan**
- 3. Post Disaster plan**



**Disaster Management Plan**  
(Rev-06)



**Key Authorities:** Responsible Officers to Monitor Disaster at Head Office.

**Key Authorities:** Responsible Officers to monitor disaster at Port upon Concurrence from CEO

**Mode of Communication:**

1. VHF /Wireless network
2. Telephone line
3. Mobile phone
4. Alarm
5. Public address system
6. Others

**Important information for Disaster monitoring system**

1. Important Telephone/Mobile Nos. of controlCommand centre of AKPL
2. Wireless network system of AKPL
3. Alarm
4. Public address system.

**AKPL control house**

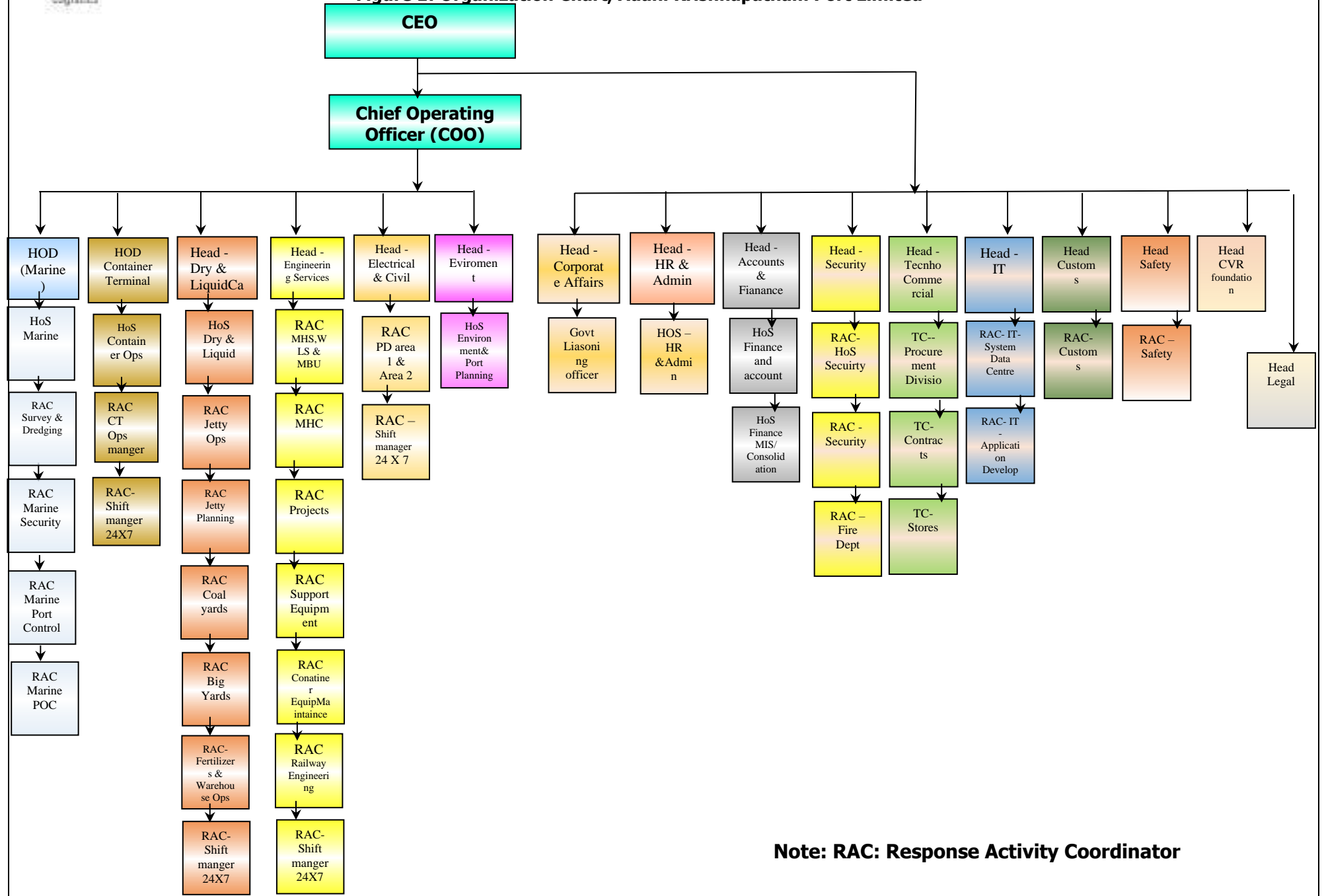
- a) VTMS (Vessel Traffic Monitoring System)
- b) Helipad
- c) Shelter means for food and water.
- d) Boat Jetty.

As far as Disaster Management is concerned, Organization Chart plays very vital role in systematic way of handling the emergency situations. A typical flowchart showing the Key persons responsible for disaster management is given in Figure 1. Role & Responsibilities of Key authorities at head office and port is discussed in subsequent paras.



# Disaster Management Plan (Rev-06)

## Figure 1: Organization Chart, Adani Krishnapatnam Port Limited



**Note: RAC: Response Activity Coordinator**

**Likely Occurrence of Disasters**

The disasters and risks/hazards identified in this section have been rated in accordance to the following criteria.

Likelihood Rating Scale			Consequences		
<b>A</b>	<b>Almost Certain</b>	The event is expected to occur	<b>1</b>	<b>Insignificant</b>	Little disturbance to the port activity
<b>B</b>	<b>Likely</b>	The event will probably occur	<b>2</b>	<b>Minor</b>	Minor disturbance to the port activity
<b>C</b>	<b>Possible</b>	The event should occur at some time	<b>3</b>	<b>Moderate</b>	Some inconvenience to the port activity
<b>D</b>	<b>Unlikely</b>	The event could occur at some time	<b>4</b>	<b>Major</b>	Noticeable impact on the port activity, some services could stop
<b>E</b>	<b>Rare</b>	The event may occur only in exceptional circumstances	<b>5</b>	<b>Catastrophic</b>	Port unable to function without significant support.

The likely occurrence of the disaster with respect to their likelihood and consequences are given in above Table.

**Table 2: Natural and non- natural Disasters/hazards Likely Occurrence in AKPL**

S.no.	Type of Disaster/Hazard	Attributes of Disaster	Likely-hood	Consequences
<b>I</b>	<b>Natural Risks &amp; Disasters / Hazards</b>			
<b>1</b>	<b>Meteorological</b>			
		a. Cyclone	C	4
		b. East Coast Low Pressure/Depression	B	3
		c. Storm Tide	D	3
		d. Severe Storms	C	4
		e. Fires	C	3
		f. Heat Wave	D	1
		g. Flood	C	3
<b>2.</b>	<b>Geological</b>			
		a. Earthquake	D	4
		b. Landslide and/ or Debris	E	2
		c. Erosion (With or Without Disaster Event)	C	1
		d. Tsunami	E	5

<b>II</b>				
<b>1.</b>	<b>Technological Origin</b>			
	a. Berths, Bridges, Break water collapses etc.	E		4
	b. Building Fire	C		4
	c. Hazardous Materials Accident (e.g. Coal & Dangerous goods, navigation, containers handling etc.)	B		3
	d. Failure in critical Infrastructure.			
	i. Administration & Warehouse buildings.	E		3
	ii. Cargo handling cranes	C		2
	iii. Dredgers and Flotilla	C		2
	iv. Navigational aids	D		2
	e. Port and Transport Accidents	C		2
	f. Oil spills	E		4
<b>2.</b>	<b>Human Caused (Consequence Management)</b>			
	a. Civil Disturbance/ Riot	E		1
	b. Bombing/ Terrorist Attacks	E		4
	c. Arson	D		3
	d. Communication Failure	E		3

### **MAJOR EXPECTED DISASTERS IN THE KRISHNAPATNAM PORT**

The credible major disasters identified in the port of AKPL are Cyclone, Floods, Fire, Hazardous cargo handling, Tsunami, Earthquake, Storm Surge, human Induced disaster, chemical fire in the containers in the yard. How far these disasters have an impact on port is discussed below:

#### **Cyclone**

In Krishnapatnam Port Area Cyclone is generally confined to the southwest & northeast monsoons equally between June to November. Normally warning is issued through weather forecasts from Indian Metrological Department to prepare for same. These effects may vary in intensity from heavy rain and little wind to high velocity wind and rain causing major structural damage and flooding over wide area.

Generally, these areas are not affected by cyclones. However, thunderstorms occur mainly during summer and southwest & northeast monsoons. Storms and depressions which originate in the Bay of Bengal during the monsoon and post-monsoon seasons and move west wards effects the weather in these areas causing

widespread heavy rain with strong winds. The frequency of occurrence of cyclones in Bay of Bengal for the past 51 years (**1970 to 2021**) is given in Table-2. Among the total occurrence of storms cyclones(114 times), Twelve of them occurred near to the Krishnapatnam Port Area. The depressions & storms observed to be Five times and severe storms observed to be Seven times as per World Meteorological Organization (WMO) Classification for cyclones.

Though tropical cyclones differ by name across regions, they are classified according to their wind speed. The classification, however, varies from region to region. The classification used in India<sup>8</sup> of these intense low-pressure systems (cyclonic disturbances) is given in Table-1

**Table 1: Classification used in India for tropical cyclones**

Type	Wind Speed	
	km per hour (kmph)	Knots
1 Low Pressure area	Less than 31	Less than 17
2 Depression	31 to 49	17 to 27
3 Deep Depression	50 to 61	28 to 33
4 Cyclonic Storm	62 to 88	34 to 47
5 Severe Cyclonic Storm	89 to 118	48 to 63
6 Very Severe Cyclonic Storm	119 to 221	64 to 119
7 Super Cyclone	More than 221	More than 119

Note: One kmph = 0.54 knots; one knot = 1.852 kmph

**Table 2: Frequency of occurrence of cyclones and cyclonic storms observed during 1970-2021 occurred over the Bay of Bengal( Data valid till May 2021)**

Month	Depressions & Strom (31 to 88 kmph)	Severe Cyclones (> 89 kmph)
January	1	--
February	--	--
March	--	--
April	1	--
May	3	7
June	7	--
July	4	--
August	6	--
September	7	--
October	27	7
November	11	20
December	07	6
<b>Total</b>	<b>74</b>	<b>40</b>

**Source: IMD, Mumbai & Delhi**

## **Fire**

The main sources of fire in Port area is collision of vessels, improper storage of Combustible consumables, cargo and Hazardous cargo (coal, fuel oils, lubricants etc.), overloaded electrical outlets, extension cords, mishandling of flammables, unsupervised cooking, and improper disposal of smoking materials on port premises. Adequate fire prevention measures are the key to ensure safety of the port.

### **Preventive measures:**

- Make certain that a copy of the "Fire and Emergency Procedures" is posted in a conspicuous location on each vessel and different divisions of the port.
- Have an understanding and knowledge of the contents of the "Fire and Emergency Procedures."
- Regularly observe emergency evacuation routes, fire extinguishers and emergency and exit lights.
- Immediately report any missing equipment or any other problems discovered to concerned in-charge.
- Encourage occupants to actively participate in fire drills that are conducted regularly.
- Report any tampering with the fire alarm, smoke detection and suppression systems to in-charge.
- Regularly observe fire doors to make certain they are closed at all times, report inoperable doors to maintenance department.
- Respect the "**No Smoking Policy**" in entire AKPL area.
- Periodical inspection of all electrical equipment and cords to ensure proper use and safe conditions. Improper use of electrical devices to obtain more outlet capacity can result in overloaded circuits and fire.
- In coal storage yards, where possibility of burning could be prevented using wet pipe sprinkler system. More care should be taken during summer (March to June) where there is every possibility of fire.
- In case of fire in vessels & port area, raise the alarm and commencing shutting down any discharging or bunkering operations which may be taking place.

## **Hazardous Cargo Handling**

Storage of Hazardous cargo and hazardous cargo Containers are the major Commodities to be handled at the Krishnapatnam Port. The magnitude of the hazard is low for a dry cargo like coal. The following sections present a broad hazardous materials management plan, which would be considered during the operation phase of the Krishnapatnam Port. In order to mitigate the risks due to the storage and handling of the material. The attributes are:

- Screening of the materials
- Hazardous materials management program
- Material Safety Data sheets of Hazardous Cargos
- Awareness amongst the workers/employees

As per the updated seismic hazard map of India (in 2000) by the Bureau of Indian Standards (BIS), the project area (Nellore District) lies in **Zones III viz low hazard area**. As classified in BIS map, Zone V indicates the most seismically active region, while zone II is the least seismically active region.

### Storm Surge

Storm surge, a coastal phenomenon, is the inherent destructive aspect of cyclones the World over. Storm surge is an abnormal rise of water generated by a storm, over and above the predicted astronomical tides. It should not be confused with storm tide. The rise in water level can cause extreme flooding in coastal areas particularly when storm surge coincides with normal high tide, resulting in storm tides reaching up to 6 meters or more in some cases. The degree of destructive potential depends on the storm surge amplitude associated with the cyclone. Most casualties during tropical cyclones occur as the result of storm surges.

### Tsunami

Tsunamis also known as a seismic sea wave, are a series of very large waves with extremely long wavelength, in the deep ocean, the length from crest to crest may be 100 km and more. It is usually generated by sudden displacements in the sea floor caused by earthquake, landslides, or volcanic activity. Most tsunamis, including the most destructive ones are generated by large and shallow earthquakes which usually occur near geological plate boundaries, or fault-lines, where geological plates collide. When the seafloor abruptly deforms the sudden vertical displacements over large areas disturb the ocean's surface, displace water, and generate tsunami waves. Since the wave height in deep ocean will be only a few decimeters or less (i.e., a few inches), tsunamis are not usually felt aboard ships. Nor are they visible from the air in the open ocean. The waves could travel away from the triggering source with speeds exceeding 800 km/h over very long distances. They could be extremely dangerous and damaging when they reach the coast, because when the tsunami enters shallow water in coastal areas, the wave velocity will decrease accompanied by increase in wave height. In shallow waters, a large tsunami crest height may rise rapidly by several meters even more than 30 m causing enormous destruction in a very short time.

As seen on Indian Ocean shores in December 2004, tsunami can cause massive death and destruction. They are particularly dangerous close to their sources, where the first waves in the tsunami train can arrive within a few to tens of minutes of the triggering event. The earthquake and resulting tsunami in Indian Ocean on 24 December 2004 had devastating effects on India. Many people died and millions were displaced. The hardest hit areas were on Southern coast and the Andaman and Nicobar Island. Tsunamis have the potential of causing significant casualties, widespread property damage, massive infrastructure loss and long-term negative economic impacts. People caught in the path of a tsunami often have little chance of survival. People die from drowning or debris crushing them.

### Human-induced Disasters

#### ***Nuclear and Radiological Emergency (NRE)***

A nuclear disaster is caused due to an extraordinary release of radioactive material or radiation either in the operation of nuclear reactors or other nuclear events like explosion of a Radiological Dispersal Device (RDD) or Improvised Nuclear Device (IND) or explosion of a nuclear weapon. It is accompanied with a sudden release of harmful radiations or radioactive materials or both together into the environment.

Nuclear weapons, a major accident in a nuclear power plant or an accidental exposure of radiation, due to accident with the radioactive material during transportation, faulty practices, and mechanical failure in a

## Disaster Management Plan

(Rev-06)

radiation facility can lead to nuclear or radiological emergency. Even though such situations may not arise easily, everyone needs to be prepared to face such emergencies. All organizations dealing with nuclear and radiological material have an inherent culture of safety, follow best safety practices in the sector, and they apply high standards to ensure minimum risk. However, nuclear emergencies can still arise due to factors beyond the control of the operating agencies from human error, system failure, sabotage, extreme natural events like earthquake, cyclone, flood, tsunami or a combination of these. Such failures, even though of very low probability, may lead to on-site or off-site emergencies. To counter this, proper emergency preparedness plans must be in place so that there is minimum loss of life, livelihood, property, and impact on the environment.

A Nuclear and/or Radiological Emergency (NRE) is an incident resulting in, or having a potential to result in, exposure to and/or contamination of the workers or the public, in excess of the respective permissible limits (see NDMA's guidelines for NRE). These emergencies are classified into five broad groups as follows:

- An accident taking place in any nuclear facility of the nuclear fuel cycle including the nuclear reactor, or in a facility using radioactive sources, leading to a large-scale release of radioactivity in the environment
- A 'criticality' accident in a nuclear fuel cycle facility where an uncontrolled nuclear chain reaction takes place inadvertently leading to bursts of neutrons and gamma radiation (as had happened at Tokaimura, Japan)
- An accident during the transportation of radioactive material
- The malevolent use of RDD or IND by terrorists
- A large-scale nuclear disaster resulting from a nuclear weapon attack, which would lead to mass casualties and destruction of large areas and properties. Unlike a nuclear emergency, the impact of a nuclear disaster is beyond the coping capability of local authorities and calls for handling at the national level

In this context, it may be mentioned that the International Atomic Energy Agency (IAEA) classifies the above emergency scenarios under two broad categories – a) nuclear and b) radiological:

- A nuclear emergency refers to an emergency situation in which there is, or is presumed to be, a hazard due to the release of energy along with radiation from a nuclear chain reaction (or from the decay of the products of a chain reaction). This covers accidents in nuclear reactors, 'criticality' situations in fuel cycle facilities, nuclear explosions, etc.
- All other emergency situations which have the potential hazard of radiation exposure due to decay of radioisotopes are classified as radiological emergencies. Examples of such emergencies are the accidents that took place at Goiania in Brazil, San Salvador, Istanbul in Turkey, Panama, etc.

The overall objective is to prevent NRE, there is also need to adequately prepare for such emergencies. A NRE must be managed through very well planned and established mechanisms – structural and non-structural – in a manner that will minimize risks to health, life and the environment. Eight nuclear/radiological emergency scenarios envisaged in the disaster planning are listed below (see NDMA's guidelines on NRE for a brief description of each):

- Accidents in Nuclear Power Plants and other facilities in the Nuclear Fuel Cycle
- 'Criticality' Accidents
- Accidents during Transportation of Radioactive Materials
- Accidents at facilities using Radioactive Sources
  
- Disintegration of Satellites during Re-Entry
- Nuclear/Radiological Terrorism and Sabotage at Nuclear Facilities

State-Sponsored Nuclear Terrorism

- Explosion of Nuclear Weapons

### **Floods**

A flood is an overflow of water that submerges land that is usually dry. The Indian Met department (IMD) Floods Directive defines a flood as a covering by water of land not normally covered by water. In the sense of "flowing water", the word may also be applied to the inflow of the tide.

Rivers can overflow their banks to cause flooding. This happens when there is more water upstream than usual, and as it flows downstream to the adjacent low-lying areas (also called a floodplain), there is a burst and water gets into the land.

Floods have large social consequences for communities and individuals. As most people are well aware, the immediate impacts of flooding include loss of human life, damage to property, destruction of crops, loss of livestock, and deterioration of health conditions owing to waterborne diseases.

### **Role and Responsibility of External Authorities**

As this plan has an all hazards approach, the relevant active legislation lead agency and combating authority will differ dependent on the incident. The plan set the framework for roles and responsibilities regardless for cause of incident are enumerated below

### **District Disaster Coordinator (District Magistrate – SPSR Nellore)**

In the event of activation of Disaster Management Plan the District Collector SPSR Nellore is the first point of contact for managing the impact of an event on the community.

### **Indian Navy and Indian Coast Guard -Krishnapatnam**

The Navy & Coast Guard to assist as follows

- Sanitization of port channel, and anchorage area.
- Assist in evicting vessel in event of collision, grounding and explosive condition.
- Countering oils spill
- Assist with divers and diving equipment.

### **AP Police (Under Superintendent of Police – Nellore)**

The Police outpost – Krishnapatnam will be an early public and agency contact point and the first respondent to an incident scene first point of contact. The initial stages of response to an incident the DPS carries out the 'First Response Management' role.

The Krishnapatnam Police is responsible for coordination and security of an incident site including

- Establishing and manning incident onsite manning post.
- Establishing major incident center (on port Administrative building)



## Disaster Management Plan

(Rev-06)

- Security issue including security and security support for all involved agency.
- Crowd and traffic control.
- Rendering safe of explosive devices.
- Establishing victim registration.
- Controlling entry / exit points to and at relevant areas (i.e., incident scene, emergency situation specified area, potential evacuation area.
- Staging and marshalling areas off site for supporting agencies / resources.
- Coordination of public protection strategies including evacuation
- Intelligence collation and dissemination
- Investigation

### **Nellore Fire Station Service**

The Nellore Fire station service to assist on request by providing

- Adequate number of fire tender for fighting fires and controlling pollution.
- A senior officer will join the Base Control to co-ordinate the action.
- Incident control of all fire tenders.
- In the event of hazard material incident – establishing hazard material zone.
- Safety of personnel.
- Responsibility for operation within hazards material zone.

### **Health Services -Nellore Health Officer**

The Chief Medical Officer Nellore Dist. is responsible for

- On site medical care and clinic coordination arrangements
- Establishment of casualty collection, initial triage, treatment and transport areas.
- On site medical support to other incident responders
- Casualty treatment information to off-site health facilities
- To assist Port Health service on activation.

### **AP State Electricity Board (APSPDCL)**

To ensure continuous supply of electrical power in and around the affected area for emergency.

### **AP Pollution Control Board (APPCB)**

The authority will assist the port, in

- collection and analysis of spilled oil/chemical,
- Recommended the steps necessary to remove or disperse or otherwise deal with such articles.
- Assist with anti-pollution machinery and personnel.

### **Nellore Municipal Corporation (NMC)**

To ensure uninterrupted supply of water in the affected area and also help in rehabilitation of evacuated persons.

### **Mercantile Marine Department (MMD -Chennai)**

M.M.D will assist

- Evaluation of damages to the port
- Negotiating with ship owner regarding demurrage charges
- Finalizing penalty & clean-up charges regarding chemical/oil-spill contingency.

### **Ship Owners and Agents**

The Ship owners / agent will help

- Provide resources within their capacity in combating emergency
- Devising ways for early settlement of claims
- Inform Base Control about their cargo and crew which is stranded in the affected area.
- In case of Oil spillage arranging empty tanker for storing and transformation of fuel.

### **COMPONENTS OF DISASTER MANAGEMENT PLAN**

The main components of major disaster management plan are pre-disaster management plan, onsite disaster management plan, and post disaster management plan.

The primary focus of AKPL disaster management system is to mitigate the effects of disaster on port community wherever possible or practical, while preparing to respond when disaster occur. The role and responsibilities specifically for each phase being

#### **Specific responsibilities – Response Phase**

- Activate the disaster management response team and also crisis response team.
- Activate the relevant / workplace emergency team for the first strike response including traffic and pollution
- Thereafter assist emergency services to respond to the event.
- Assist with providing relief for persons affected by disaster.

#### **Specific responsibilities – Recovery Phase**

- Satisfy immediate, essential personal and port community needs to extent of port capability.
- Maintain liaison and timely communication with district disaster coordinator.
- Contribute to the recovery function coordinated by District Disaster coordinating authority.
- Coordinate the recovery of physical infrastructure.
- Coordinate activities with relevant Disaster district initiatives and plans.
- Participate in long term recovery, reconstruction, and rehabilitation
- Communicating regarding restoration of Port activities.

### **Disaster Classifications**

**Level 1:**

- Incident within port area
- Minor in nature,
- Low level of personnel injury,
- Business discontinuity up to 06 hours.
- Within Port community resources.
- Emergency Management group leader is Dept Head.
- Nature of Disaster - Building/Shed Fire, Electric Supply disruption, labor accident, vessel accidents.

**Level 2:**

- Incident within port area.
- Limited and moderate level of personnel injury, possible death(s).
- Business discontinuity from 06 - 24 hours.
- Damage to port infrastructure.
- Outside assistance may be required.
- The Crisis Management group leader is CEO.
- Nature of Disaster - Gas Leaks / Chemical discharge / Oil Spills / Terminal Fires / Explosions / Industrial unrest / Intrusion / Sabotage / Hostage situation / Collisions / Grounding

**Level 3:**

- Disaster of a severe and critical nature within and beyond Port area.
- High level of personnel injury (and deaths),
- Business discontinuity, damage to port infrastructure and loss of capability beyond 24 hours.
- Affecting port and contiguous areas.
- Besides Port resources, assistance from outside agencies is required.
- The Crisis Management Group leader is CEO.
- Information to external agency.
- Nature of Disaster - Gas Leaks / Chemical / Oil Spills, Fires / Explosions / Cyclones / Tsunamis / Terrorist attack / Sedition or mutiny by security personnel / Collisions / Groundings.

**Incident Scenarios**

<b>Incident/Requirement Scenarios</b>	<b>Level I – Action by</b>	<b>Level 2 &amp; 3 Action –by</b>
Vessel –Grounding- Shifting-Evacuation	Dy. Conservator( HOD marine) And HOS Marine	CMG + Salvage efforts + Navy + Coast Guard + Ship Agent
Casualties	Medical Team	Port + District + State
Fire & Explosion on Vessel or Terminal	Fire Team HM	Fire Team + District (Fire Station) + CMG
Fire & Explosion at Shed	Fire Team HM	Fire Team + HM + District (Fire wing) + CMG
Oil Spill	Conservator/HOS marine and Oil spill team/ Fire Team	HM + CMG + Coast Guard + Ship Agent
Toxic Gas leakage + Chemical spillage	Conservator/HOS marine and Oil spill team/ Fire Team	CMG + District / State + Ships Agent
Cyclone, tsunami, flood etc	Conservator/HOS marine and Oil spill team/ Fire Team	National disaster  Management group + CMG + District + state
Terrorist Attack + Hostage Situation	PSI	CMG + District + State

### **Initiation of Central Control Room-On Disaster Level-2 and 3**

Conservator AKPL will decide when members of the Central Disaster Management Group will operate from their respective dept control rooms and attend joint meetings at the Central Disaster Management Control Room or when total central control room attendance is required. Whenever the Central Disaster Management Centre takes over responsibilities the On-Site Action Group now reports to the Central control Room.

#### **Flow of Incident Stages**

**Response to major incident typically will move through following phases:**

#### **First Stage (CRISIS)**

This stage involves the initial crisis management response. This stage will predominantly involve the first response agencies Security, Fire, Rescue and ambulance. It will focus on

- Prevention of loss of life.
- Gathering of intelligence to give appropriate response.

## Disaster Management Plan

(Rev-06)

- Isolation and containment of the incident to prevent the spread of the hazard.
  
- Activation of the resources to the incident site.
- Establishing command control and coordination structure.
- Commencement of the combat of the incident.
- Evacuation of person at immediate risk.
- People who are affected by incident and not at immediate risk moved to shelter in place.
- Business as usual in unaffected area.

### **Second Stage (Immediate Consequences)**

It commences when the parameters of the incident are better understood. The incident is isolated and contained, and a Command and control structure is in place. Responses in the second stage involve:

- Coordinated Combat of the incident.
- Involvement of supporting agencies ( e.g. Inter Department, Police, Local Govt. Community groups and Media)
- Large scale evacuation
- Identification and triage of injured person
- Establishment of support to affected persons and responding agency personnel.

### **Subsequent stages**

It focuses on

- Resolution,
- Investigation,
- Recovery,
- Shelter,
- Rehabilitation and return.
- Evacuation of the affected area Completed.

### **Pre-Disaster Management Plan**

Pre-disaster plan includes disaster protective measures, resource identification, education & warning dissemination / information, and evacuation. The practical approach for the same is discussed in subsequent paras as given below:

### **Disaster Protective Measure (DPM)**

**Dy Conservator/HOD marine& Harbor Master/HOS marine is in-charge** for the overall establishment and maintenance of DPM. The DPM shall have reference to the following: -

- Directing, coordinating, and monitoring all port activities and their Response Activity Coordinators (RACs).
- Ensuring that all RACs (Marine, Fire safety, EHS, Security, Railways, Operations, Admin etc.) shall prepare, implement, and periodically test the efficiency of their DPM plans.
- Prepare QMS Manuals & SOPs for safe handling of cargoes.
- Prepare Hazardous waste handling and Fire safety plans/ procedures.
- Furnishing the port employees with disaster protective measures

- Initiating long-term disaster protective measures through the promulgation of laws, regulations, and legislative actions in case of a cyclone, flood, tsunami, and earthquake.
- Conducting yearly evaluation of adopted measures assessing operations, procedures, and effectiveness of DPM for continuous improvement of the system.

### **Resource identification**

**Dy Conservator/HOD marine & Harbor Master/HOS marine** shall appoint the Response Activity Coordinator, **Marine (RAC – who will be responsible for resource identification)** upon the concurrence from Chief Operating Officer (COO) of Adani Krishnapatnam Port Limited. In this capacity, the responsibilities of the RAC-Marine shall include:

- Providing advice in establishing priorities for the emergency allocation and management of critical resources (manpower, equipment, materials inventory etc.).
- Establishing and administering the process for allocation of resources essential to recovery efforts.
- Coordinating the emergency activities of agencies assigned with secondary and support functions to ensure the effectiveness of this activity.
- Ensuring the effective implementation of procurement, record-keeping and documentation procedures for emergency functions and activities.

### **Evacuation**

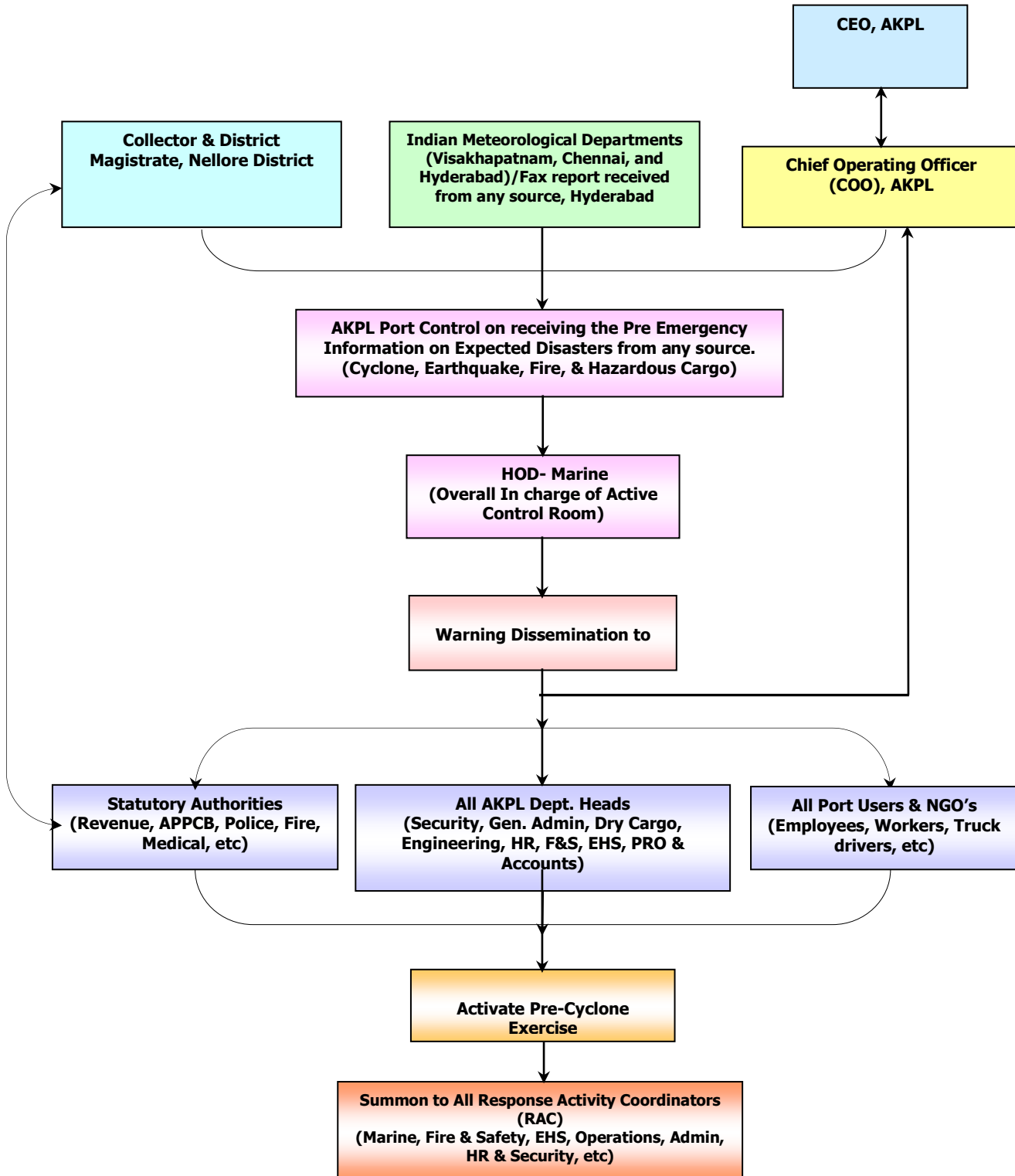
Evacuation involves removal of people working in port from disaster-stricken areas to safe areas and removal of movable machineries, vehicles and Cargo etc. Effective evacuation, before or after strikes, aims at saving lives, preventing injuries and accidents in port premises and protecting costly cargo handling cranes, dredgers, flotilla & goods etc. The President – Marine will appoint RAC Fire safety for this purpose. The **RAC – Fire safety** responsibilities shall include:

- Establishing and maintaining coordination of evacuation efforts, control and direction of liaisons, and close cooperation and coordination with RAC Security,
- Preparation of the Standard Operation Procedures (SOPs) for evacuation, in cooperation with the liaisons from agencies with secondary and support functions,
- Providing advice to the **HOD – Marine** on the need and priorities for evacuation,
- Establishing all preparatory plans for efficient evacuation of AKPL employees/workers, valuables and machinery,
- Making arrangements for taking persons to safe shelter, giving necessary first aid and further medical attention as required,
- Assigning responsibilities / duties of evacuation teams,
- Maintaining a Complete and up-to-date log of evacuation and protection measures to AKPL employees.

**Model Flow Chart for Pre-disaster Management Plan**

For Krishnapatnam Port, a typical flowchart while considering the critical activities during the pre-disaster is shown in Figure 3.

**Figure 3: Flowchart showing a typical Pre-Disaster Management Plan for AKPL**



**On-Site Disaster Management Plan**

On-site disaster management plan includes mainly Communication, search & rescue operations and safety of port mates, machineries, and Cargo. The sub-Components will be discussed in detail in subsequent paras as given below:

**Fire and Explosion Response Plan**

**The AKPL Fire Fighting Service is operated under Security & is assisted by firefighting teams which operates on a 8 hour shift round the clock. The location of the Main Fire Station is at SS-02. During discharge of fuel 01 Fire tender always to be stand by.**

**Methods of Dealing with Different Types of Fire& Leakages**

Fires from minor oil spillage on deck or jetty	Use dry chemical or foam extinguishers or water fog or water spray
Fire from large spillage of oil or burst hose on deck or jetty	Use large dry chemical appliance and follow up with foam or water fog/spray. Cool surrounding area/risks with water Spray
Fires from spillage of oil on surrounding waters	Emulsification of oil with water jets or apply foam coverage as appropriate
Ammonia Gas	Use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. from upwind position
Acids Like Phosphoric/ Sulphuric	Dry powder, carbon dioxide (CO <sub>2</sub> ), water fog or spray
-Electrical Fires -Fire in buildings-canteen	Switch off power-use CO <sub>2</sub> or dry chemical extinguishers
Fire in office involving Combustible material	Use dry powder fire extinguishers-water spray, Use Breathing apparatus.
LPG AND LNG Fires	Should not be extinguished until source of leakage is under control. Dry chemical is the most effective. Cover affected area with water spray to reduce radiant heat.
Fire in cargo tanks	Use foam or steam smothering.



**Departmental Action-Fire at the Jetty**

DEPT	ACTION
<b>Harbour Vessel</b>	<p>Port Control informs Dy Conservator/HOD marine &amp; Harbor Master/HOS marine and</p> <ol style="list-style-type: none"> <li>PSI on VHF16/14/12 / Land line / Mobile.</li> <li>Master of the vessel ceases all cargo or bunker operations close the manifold valves Disconnect hoses and consults with Dy Conservator/HOD marine &amp; Harbor Master/HOS marine for un berthing &amp; also ensures the immediate action of the vessels Fire fighting squad.</li> <li>vessels Fire fighting squad.</li> <li>If necessary Master may request for additional resources and/ or- evacuation of injured.</li> </ol> <p><b>Port Control</b> informs Conservator, Dy. Conservator/HOD marine, Harbour Master/HOS marine, PSI &amp; Fire station of the incident.</p> <p><b>Conservator / HOD marine</b> assesses works together with Harbour Master / HoS Marine , PSI and Master of vessel to ascertain the status and crisis level.</p> <ol style="list-style-type: none"> <li>HM/ HoS Marine Informs Crisis Management Group the status and Crisis level.</li> <li>Pilots on Stand by for shifting out vessel- directs fire fighting tugs -Keeps mooring crew and launch standby to un berth vessel.</li> <li><b>Deputy DC</b> maintains close liaison with HM and monitors progress and strategy of containment and extinguishing.</li> <li>Reconfirms stoppage of cargo operations.</li> </ol>
<b>Security Officer</b>	<ol style="list-style-type: none"> <li>Ensures that fire tenders are ready at the jetty and takes over Action group.</li> <li>Ensures area cordons off.</li> <li>Executes Search &amp; rescue with fire fighting team.</li> <li>Inform conservator and need for additional resources.</li> </ol>
<b>E&amp;M Dept.</b>	<ol style="list-style-type: none"> <li>Ensures isolation of the electric power on berth.</li> </ol>
<b>Medical</b>	<ol style="list-style-type: none"> <li>CMO keeps ambulance standby by at berth and provides. First Aid and burn treatment to the injured.</li> </ol>

**Administration Building Fire**

DEPT	ACTION
Administration	<p>First sight -Raises Alarm (break glass - Uses Fire extinguishers to extinguish fire).</p> <ol style="list-style-type: none"> <li>Head Admin supervises the action.</li> <li>Overall in charge of action group.</li> <li>Switch of Electric supply.</li> <li>Never throw water on electric box.</li> <li>Inform Fire station / PSI / Port Control / Conservator.</li> <li>Evacuate people in orderly manner</li> <li>Sr. most section head shall be last to leave premise.</li> <li>Muster all people and confirm head count for any missing People</li> <li>On incident termination arrange alternative office space.</li> </ol>
Security Officer	<ol style="list-style-type: none"> <li>Deploy Fire Tender.</li> <li>Assist transfer of sensitive documents.</li> <li>Assist in evacuation / search &amp; rescue of personnel.</li> <li>Cordoning off area.</li> <li>Apprise conservator of the area.</li> </ol>
Civ Eng Dept	<ol style="list-style-type: none"> <li>Assess cost to rectify damage portion of building.</li> </ol>
E&M Dept.	<ol style="list-style-type: none"> <li>Ensures isolation of electric power to admin building.</li> </ol>

**FIRE at Bulk Material Handling Area.**

<b>DEPT</b>	<b>ACTION</b>
<b>HARBOUR MASTER</b>	<ol style="list-style-type: none"> <li>1. BMH In charge raises alarm by informing Port Control &amp; Fire Station simultaneously uses Fire extinguishers to extinguish fire.</li> <li>2. Switch off power supply and all cargo operation cease.</li> <li>3. Informs on-site action Group, Conservator and PSI</li> <li>4. Shed I/c Mobilizes all manpower in the area surrounding the site to bring the firefighting appliances in the area, to extinguish the fire.</li> <li>5. The senior most Traffic official on site will mobilize all the work force, labour and cargo handling appliances available in the area.</li> <li>6. TM ensures the removal of all the unaffected cargo from the shed to a safe place.</li> <li>7. TM ensures that the details of types of cargo and quantity of cargo in the shed should be kept ready and given to of Port Fire Service who comes first to the scene of the fire.</li> <li>8. TM shall ensure that the labour working inside the shed is assembled for a head count.</li> <li>9. Keeps all tugs &amp; craft on stand by.</li> <li>10. Recall Pilots for movement of vessels.</li>   <li>11. Inform all vessels to be standby.</li> </ol>
<b>PSI</b>	<ol style="list-style-type: none"> <li>1. Arrives with fire tenders and resources and takes over Fire Fighting.</li> <li>2. Conducts search and rescue and evacuation of affected person.</li> <li>3. Cordon Off the affected area.</li>   <li>4. Apprise Conservator and resources required.</li> </ol>
<b>Civil Dept.</b>	<ol style="list-style-type: none"> <li>1. Survey &amp; assess the cost to rectify the damage portion of the Cargo storage shed.</li> </ol>
<b>E &amp; M Dept</b>	<ol style="list-style-type: none"> <li>2. Ensures isolation of the electric power to cargo storage shed.</li> </ol>
<b>Medical</b>	<ol style="list-style-type: none"> <li>3. Keeps ambulance standby by off Administration Building.</li>   <li>4. Provides First Aid to the injured.</li> </ol>

**Collision : port flotilla and vessels calling at  
Krishnapatnam port**

<b>SHIPBOARD-PORT EMERGENCY PLAN</b>	<b>COLLISION</b>	
<b>Action to be taken</b>	<b>ACTION BY PORT</b>	<b>ACTION BY VESSEL</b>
1.Slow down and stop main engines 2.Sound Emergency Alarm: 3.Check for possibility of oil pollution		Master
1-Establish communication with another vessel and exchange information 2-Advise other vessels to keep clear-Hoist NUC Lights 3-Advise port for assistance  4-Advise agents of status requests surveyors-Class-P&I-Salvage association- 5-Secure evidence and maintain adequate records	Harbour Master /HOS Marine - Along with on-site action group. - Inform Deputy Conservator/ HOD Marine - Inform COO - Inform IN + CG	
1-Inspects/assesses damaged area& in - case of oil leakage determine whether de-berthing of the vessels will increase oil spill rate. 2-Ascertain oil pollution-ascertain leak source 3-Harbourmaster and Master of vessel to inspect Vessels  4-Sounds all bilge, ballast and fuel tanks 5-Transfer oil from leaking tanks 6-Effects damage control and temporary repairs to stop oil leakage if any with the assistance of port action group and underwater welding team or salvage group	Harbour Master /HOS Marine with on-site action group  Inform Deputy Conservator / HOD Marine Inform Coast Guard + Salvage efforts	Vessel emergency action group team
1-Provides First Aid	Medical Officer	
1-Attend engine room controls and services 2-Investigate engine room for damages and water Ingress 3-Check steering gear 4-Reports status of the main engine and auxiliaries to Port Control		Vessel Engineering team.

**Fire / Explosion**

<b>SHIPBOARD EMERGENCY PLAN</b>	<b>FIRE / EXPLOSION OFF BERTH</b>	
Action to be considered	Port	Responsibility
<p><b><i>IMMEDIATE ACTION</i></b></p> <ul style="list-style-type: none"> <li>• Consider sounding Emergency Alarm:</li> <li>• Initiate vessel emergency response procedure:</li> <li>• Inform Port Control about nature of explosion.</li> </ul>	Port Signal Station	Informs PSI, HM & Deputy Conservator and vessels on jetty about incident
<p><b><i>INITIAL RESPONSE</i></b></p> <ul style="list-style-type: none"> <li>• Cease all cargo and / or bunkering operation:</li> <li>• Close manifold valves:</li> <li>• Fire squads to position deemed best for fighting the fire:</li> <li>• Inform terminal/loading master/bunkering personnel:</li> </ul>	PSI	<ul style="list-style-type: none"> <li>- Place fire tender next to ship</li> <li>- Cordon off jetty</li> <li>- Inform Conservator and assess resources required</li> <li>- Oil spill team stand by</li> </ul>
<p><b><i>SECONDARY RESPONSE</i></b></p> <ul style="list-style-type: none"> <li>• Stop air intake into accommodation:</li> <li>• Consider to stop non-essential air intake to engine room:</li> <li>• Determine the extent of the damage, and decide what damage control measures can be taken:</li> <li>• Determine whether there are casualties:</li> <li>• Contain the fire and prevent it from spreading to other parts of the vessel:</li> <li>• Assess health hazards from smoke:</li> <li>• If possible, position the vessel to minimize the wind effect:</li> <li>• Start recovering of any casualties:</li> <li>• Notify authorities and outside organization, as appropriate:</li> <li>• Evaluate evacuation of non-essential crew:</li> </ul>	HM	<ul style="list-style-type: none"> <li>- Keep Pilot &amp; tug ready</li> <li>- Stop all cargo operation</li> <li>- if required vacate ship from jetty.</li> </ul>
<p><b><i>FURTHER RESPONSE</i></b></p> <ul style="list-style-type: none"> <li>• Assess the possibility of pollution from leakage:</li> <li>• Fit scupper plugs if spillage on deck:</li> <li>• Check all tanks and Compartments:</li> <li>• Alter trim if necessary:</li> <li>• Transfer bunker internally, if required:</li> <li>• Require assistance as deemed necessary:</li> <li>• Comply with reporting procedures:</li> <li>• If required, obtain permission from local authorities and/ Or the terminal to continue normal operation</li> </ul>	Medical Officer	<ul style="list-style-type: none"> <li>- Ambulance and first aid team standby on jetty.</li> </ul>

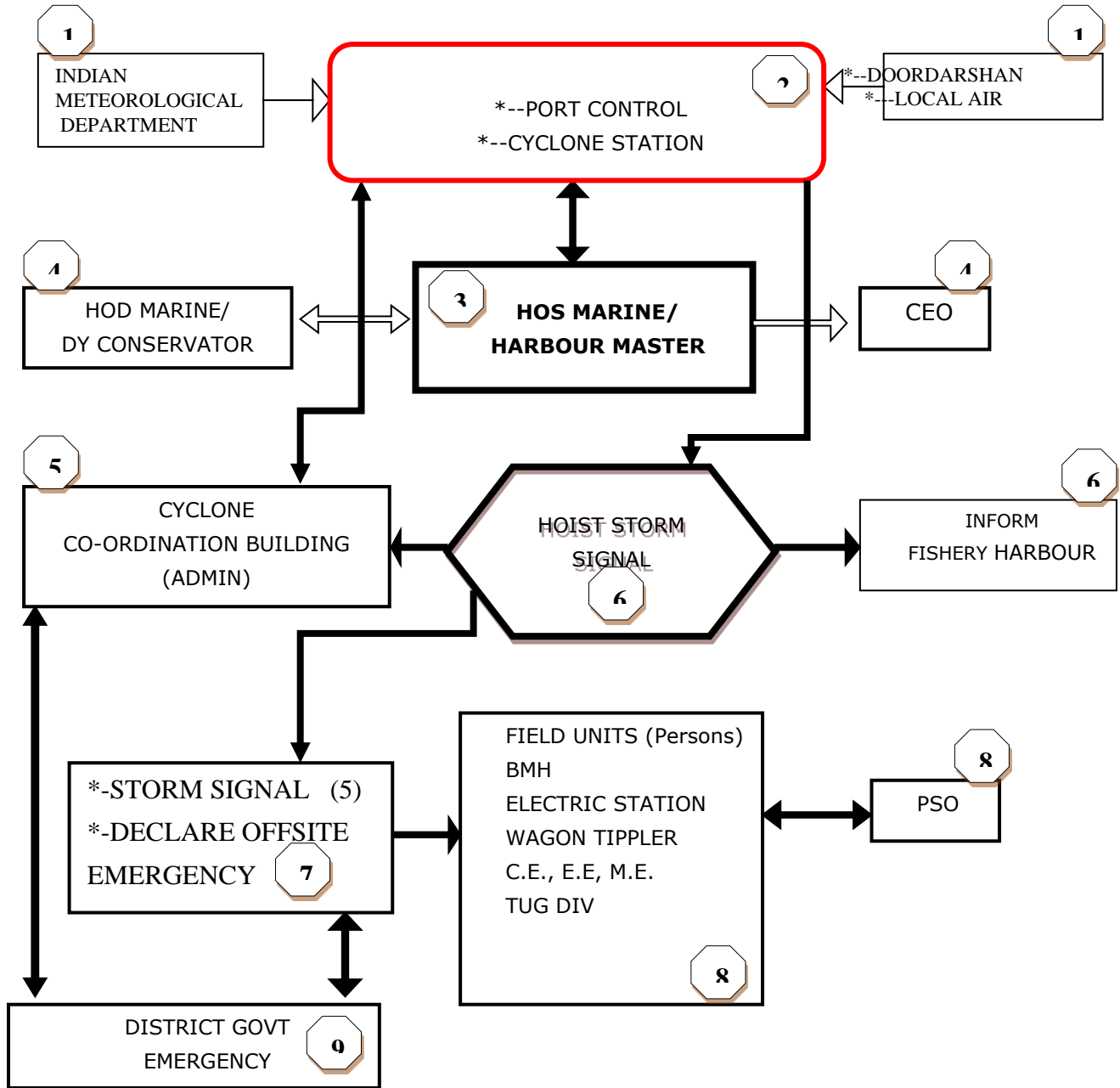
**Vessel Grounding In Port- Detailed Action By Port**

<b>ACTION BY MARINE DEPT</b>	<b>DETAILS OF SPECIFIC ACTION</b>
Master/Pilot	- Contacts Port Control on VHF Ch 12,16 or Ch 14 and informs position of incident
Port Control	- Informs Deputy Conservator, HM &PSI - Stop all vessel movement. - Deputy Conservator informs CEO and Crisis Management team who inform mutual aid agencies for assistance required. - All vessels arriving and departing AKPL port will be informed of the incident
Harbour Master / HOS Marine	- Activates the on-site action group and assesses the situation, tide, wind direction, & inform Deputy Conservator. - Through the Port Control Advises all Pilots to report on duty, all tugs standby.
Sr. Pilot	- Organizes available tugs, launches, and keeps crew stand by and awaits instructions of the Conservator
Sr Hydrography Surveyor	- Proceeds by survey launch to vessel and obtains soundings around the vessel by the echo sounder and the hand lead line.
Master of grounded vessel	- Records soundings of all tanks and also records draft, arrange soundings by hand lead around the vessel. - Examines the soundings and draft around the vessel for transfer of bunkers, ballast or shift cargo to refloat vessel. - Tow ropes to be kept ready
Master of vessel and Harbour Master	- Commence preparations for towing operations 2 hours before high tide. - Vessel engines to be kept stand by to assist in the refloating operations. - Takes all anti oil pollution measures.
Port , Navy or Coast guard & Salvage efforts	- Hull leakages to be attended to by underwater welding by the Navy/Coast Guard or other available diving firms.

**Sinking Of Vessel In Port**

<b>ACTION BY PORT Marine Department</b>	<b>DETAILS OF SPECIFIC ACTION</b>	<b>ACTION BY VESSEL</b>
Harbour Master	<b>Ensures vessel is cleared of the channel / turning basin or berths to suitable area for normal traffic.</b>	Activates the vessel action group
Port Control	Informs HM, Conservator &PSI of the accident.	
Deputy Conservator and Pilots	Proceeds to the area with Tugs and conducts Rescue operations.	Lower lifeboats
Deputy Conservator	Appraise the CEO and members of Crisis Management group about the incident.	
HM / Navy / Coast Guard	PSI to initiates the rescue operation of the person on board.	

**CYCLONE ALARM AND RESPONSE**



**CLASSIFICATION OF TROPICAL DISTURBANCES OVER THE INDIAN SEAS**

Classification Of Tropical Disturbances	Speed kmph	Speed knots
Low	< 31 kmph	< 17 knots
Depression	31 – 51	17 – 27 Knots
Deep Depression	52 – 62	28 – 33 knots
Cyclone	63 – 87	34 – 47 knots
Severe Cyclone	88 – 117	48 – 63 knots
Very Severe Cyclone	118 – 221	64 – 119 knots

**USEFUL WEB SITES FOR TRACKING CYCLONES**

- 1- [www.imd.gov.in](http://www.imd.gov.in)
- 2- [www.ventusky.com](http://www.ventusky.com)
- 3- [www.windy.com](http://www.windy.com)
- 4- [www.skymetweather.com](http://www.skymetweather.com)
- 5- [www.cwcvsk.gov.in](http://www.cwcvsk.gov.in)

### **Cyclone Contingency Plan**

The Cyclone Contingency Plan will come into force as soon as the storm **warning signal No.5** or higher is hoisted or when the Port organization has gathered enough data to **forecast that a cyclone threat is close.**

1. The Cyclone station will come into operation at the Port Control.
2. The Deputy Conservator will be in charge of the Cyclone Station.
3. Storm warning signals will be hoisted at the Cyclone Station.
4. Deputy Conservator will inform the CEO and Heads of Departments by telephone/Mobile the status of worsening weather conditions and storm signals.
- 5. A cyclone coordination center will be made functional in the Administrative Building headed by HoS HR / Administration.**
6. The Cyclone Coordination Centre will be in constant touch with Port Control and District, Local Administration for rescue and relief operation.
7. All other departments to operate their respective control rooms. Port Control, cyclone co-ordination center and control rooms will function round the clock and will be closed only after obtaining the necessary orders from the CEO.

### **Traffic Department**

Under the overall supervision and responsibility of the HM, the specific duties of marine personnel will be as below:

- 1-Responsible for the operation of the Port Control and will issue necessary standing orders for the purpose.
- 2- Close liaison with Radar Station, Police Wireless Station, Coast Guard, Indian Navy and Ships in Port regarding weather conditions.
- 3-Prepare special signals and promulgate them to the Masters of the vessels, dredgers, tugs and any other crafts in Port. He will inform the Masters of all vessels at the berths to double the moorings, put out insurance wires and to keep engine ready to proceed out to sea if situation warrants. Decision regarding sending ships to the anchorage will be taken depending on the strength of the wind likely to be encountered and number of vessels in the Port.
- 4-He will maintain a close liaison and co-ordination with the Tug Engineer for arranging staffs for manning the Port Crafts.

### **Port Control**

- 1-The staff of Port Control will remain on duty until they are relieved by next shift staff or till alternative arrangements are made or till the storm has passed or as per the Deputy Conservator instruction.



## Disaster Management Plan

(Rev-06)

2- Every two hourly barometer reading will be recorded after cyclone warning signal No.3 is hoisted but the same will be made hourly if further upward signal is placed. Any drop of 2 mb in barometer to be informed to Deputy Conservator / HM / PSI

3-One High Beam Torch with battery will be kept ready at Port Control.

4-The Port Control will maintain a continuous watch on channel 12 and 16. Port Control will keep Conservator, HM and PSI informed of all the messages received by telephone, VHF sets or by messenger.

5-Port Control will inform the Conservator / HM of any buoys or crafts are seen adrift or any Port installation is seen or informed to be in danger.

1. The staff on duty will have sufficient provisions to stay on duty for a period ranging from 24 hours to 48 hours.
2. Port Control receiving any weather-related facsimile report will pass on to the Conservator / HM / PSI.
3. Continuous watch to be kept on movement of depression. On receipt of any warning, the same shall be reported immediately to the cyclone co-ordination center.

### **Tidal Observatory-**

The Traffic office will record the range of tides, times and heights of high and low water who will in turn apprise the Conservator / HM and or Sr pilot on duty of the actual and predicted tides.

### **Hydrography Surveyor/Pilot**

The above officers will assist the Deputy Conservator at the Cyclone Station. One Pilot has to be kept standby to proceed on board anywhere in the Port as required.

### **HOS -Marine Operations**

1. Berthing Master will detail one berthing team to remain on duty as emergency duty squad unit being relieved by the next shift staff or until Head Marine instruction.
2. Berthing Master will take all necessary steps for the safety of the Port crafts and should ensure that all other crafts are placed at safe place and properly secured excepting one pilot launch and one stand by launch used for inspection and emergency duties.
3. He along with emergency squad will make frequent round to check the safety of Port Crafts.
4. Extra Fenders and Hawsers of ropes/wires will be kept ready so as to attend to any craft whose moorings may part.
5. Berthing Master will inform the cyclone station immediately in the event any craft is seen adrift or any other Port installation is seen in danger
6. He will also keep a listening watch on his walkie talkie set for information.

**Master Of Tug/Pilot Launches And Other Launches**

1. Masters of respective crafts will instruct their staff to remain on board until they are relieved by next shift staff or HM releases them from duty.
2. Masters will shift their respective crafts at suitable places as directed by the Traffic Manager and will secure them suitably with additional moorings. Masters of respective crafts will be responsible for proper securing and safety.
3. Masters will keep the engines of their crafts ready to proceed at short notice as per the instructions of the HM.
4. Extra fenders will be kept ready on board of the Tug for use as required.
5. If any craft is seen adrift or any other port installation is seen in danger, the Master of the crafts will immediately inform the cyclone station.

**Precautionary Measures**

1. Cyclone warning signals shall be Communicated to all field units from the control room.
2. The field units shall Communicate the signal to all the staff of the Divisions.

**General Functions Of Field Units**

1. All the equipment shall be properly secured.
2. Safety of workmen on duty shall be given priority during work
3. Operator's cabin doors of all the equipment and vehicles shall be kept shut.
4. Important documents/files/records at site must be stored well above the floor.

**SPECIFIC DUTY**

**1 - All Conveyors, Stackers, Stacker-Cum-Reclaimers, Reclaimers:**

1. Machine to be travelled to designated position
2. Tie down the belts, locking of travel wheel, locking of boom conveyor
3. Slewing locking bolts to be fitted.
4. Rail clamps to be tightened
5. Booms are to be properly clamped.
6. Power to be shut off - outgoing feeder from substation to be switched off
7. Control room of the machine should be properly locked
8. All conveyors should be tied down at the head end and tail end.

**2-Main Control Room:**

1. Power should be shut-off, breaker should be made-off and doors should be closed.

**3- Ship Un-Loader:**

1. Conveyors to be cleared of all cargo.
2. Belt to be tied down at the tip on both sides of the ship loader.
3. Blocking of travel wheels after latching of the booms.

## Disaster Management Plan

(Rev-06)

4. Diesel generating set should be tried and kept ready for supplying power wherever necessary.
5. Anchoring of the Ship loader at its parking position.
6. Rail clamp to be tightened

### **4. Site Store**

1. All the doors and windows should be locked up and power should be made off.
2. All the equipment's like cranes, etc. in working condition should be sent to Marine/Central Workshop for safe.
3. Welding generator should be kept inside the store and locked up.
4. Communication system should be tested for operation.
5. Battery charging point should be operated through a DG Set.
6. A vehicle should be available at the control room.
7. Head Store will have a temporary advance if required for contingency expenditure.

### **5. Port Electrical Division**

1. On receipt of directive about cyclone warning, the power supply of main sub-station to be made off Communication system from control room to the sub-station to be kept operative.
2. 132 KV Control Room will be manned during the cyclone.
3. Walkie talky handsets must be made available in all the substation for establishing Communication
4. Two emergency vehicles should be kept stand-by for attending to various duties.
5. Head Electrical Division will have a temporary advance if required to meet the contingency expenditure.

### **6. Marine Division**

1. Engine room entrance doors, sky lights etc. of all the floating crafts to be kept shut.
2. All the heavy earth moving equipment and vehicles must be stored in sheltered locations and operator's cabin must be kept shut.
3. Special care shall be given for securing the crane boom.
4. Marine Engineer will have a temporary advance if required to meet contingency expenditure.
5. Crafts are to be manned all time.

### **8. Tuqs**

1. EICs (Engineers in Charge) of all tuqs on receiving the cyclone warning must ensure that tuqs are in readiness for operation.
2. Tuqs will be operated as per the Traffic Manager Department's requirement.

### **9. Loco**

1. Loco engines to be parked inside the shed
2. The point to the shed line to be blocked.
3. All derailing equipment, batteries and tools shall be kept ready for emergency use.
4. Two groups of wagon staff to be kept as standby.
5. The cross and long travel of the EOT crane to be blocked and hook to be anchored.

**10. Engineering Services- Central Workshop**

1. The Centre Workshop shall be manned by one group of staff consisting of one Machinist, one Fitter, one Welder and three Helpers to attend to emergency requirement.
2. Power supply to all the machineries and equipment to be shut off.
3. Doors and windows of the Central Workshop to be kept shut.

**11. Cargo Handling Division**

1. All mobile cranes to be kept at stowing area with booms of cranes lowered and clamped. The cabin doors and panels to be kept closed.
2. All cranes on jetty are properly anchored on rail, slewing to be blocked and booms are secured. Booms are secured in the direction of the track.
3. Forklifts and all heavy earth moving equipment's are parked inside the shed.
4. 03 Crane operators and 06 helpers to be available on duty during cyclone period.
5. Head Cargo division will have temporary advance if required to meet the contingency expenditure.

**Engineering Department**

1. The staffs as per usual shifts are deployed at each of pump house during cyclone.
2. A sufficient quantity of bleaching powder, alum etc. and the water treatment plant is kept ready for water treatment during cyclone period.
3. As soon as the contingency plan is made operational all the water tanks should be filled up and standby arrangement for supply of water to be made with special provision for the hospital.
4. Position one Engineer exclusively to look after navigational aids, fenders; transit shed doors and roofs etc. along with necessary staff.
5. Position one Engineer along with necessary staff to look after the sea wall condition & if any breach is noticed along the side of the sea-wall, immediate steps should be taken up for it's repair.
6. Keep ready 3,000 to 4,000 empty cements bags for use.
7. All measures to be taken to minimize uprooting of trees.

**Marine Department**

**1- Operation**

1. All loading/unloading of cargo operations to be ceased.
2. All the cargoes under Port's custody, lying outside and likely to get damaged, will be shifted to Transit Sheds/Ware Houses.
3. Doors of the sheds will be closed and properly secured.
4. He will visit the site and inspect the arrangements.

## **2- Railways**

1. Yard Master personally takes over the charge of yard supervision instead of leaving the same to shift staff.
2. Movement of wagons is stopped when wind speed exceeds the operational limit (70 KM per hour).
3. All the rolling stock on tracks is clamped / chained both in Port area and exchange yard and the common actives are returned to the Loco Shed.

### **Administration Department**

1. The AGM Administration will remain overall in-charge of the Cyclone Coordination Centre.
2. He shall make a duty roster for the manning of the cyclone coordination center by the officers of Administrative, Finance & Accounts and Techno Commercial Department.
3. The Co-ordination Centre will keep constant touch with the Local & District Administration for rendering necessary assistance.
4. The port Public Relations Officer will ensure announcement by the mike in the township indicating the precautionary measures to be taken.
5. He will hire basic transport and will detail Officers to remain in-charge of various relief centers.
6. He will make necessary arrangement in coordination with the local administration for evacuating people from the low-lying area. They will be shifted to relief centers as indicated below:

Help of the following voluntary organizations may be taken for the rescue and relief operation

### **Finance & Accounts Department**

1. All the department may inform the Finance & Accounts Office the amount of cash required by them so that the same can be kept in advance and can be disbursed by one of the Officers of the Finance & Accounts Department as per need.

### **Medical Department**

- 1-The casualty ward is to be manned by one Specialist in addition to the regular Doctors attending.
- 2-The Ambulance has to be kept standby near the casualty ward.

### **Techno Commercial Department**

- 1- During cyclonic season sufficient stock of stores like Polythene, Hooks, screw hinges, gunny bags, tarpaulins, ropes and wires for Port Crafts, diesel oil, kerosene oil, petromax lamps, torch lights with batteries and bulbs, electrical items etc. are kept.
- 2- All the materials which are likely to get damaged with rain are covered with tarpaulin.
- 3- One Stores Supdt, one Store Keeper and the other minimum staff required to issue materials including POL are kept during emergency.

### **Port Security Officer**

1- Intensive vigil on stores/buildings which are likely to be affected by Cyclone.

1-Central stores  
2-Jetty AREAS  
3-COAL YARDS

4- CONVEYORS  
5-Transit Sheds  
6- Fuel Depot

6-Ware Houses  
7-Administrative  
Building

2- Thorough checks on all out-going vehicles to guard against pilferage.

3- A special task force to be set up for the rescue operation.

**General Instructions**

- 1- All dept. will ensure that the doors and windows are properly closed prior to leaving the office.
- 2- All important files are stored in secure cupboards

**Post Cyclone Duties**

1. All HODs are required to assess the damage and submit a detailed report indicating the estimate to the Conservator. A team may be formed comprising HM, EE (Elect, Mech., and Civil) and assisted by one representative from the Finance Department. The preliminary report is to be submitted within 48 hours and detailed report within four days from the date of normalcy.
2. Hydrography survey is to be conducted to assess the channel condition and ensure resumption of shipping as early as possible.
3. In case of any small craft sunk or grounded the same to be removed to make the channel/berth safe for navigation. Deputy Conservator will detail a salvage party headed by the HM.
4. A team of Officers to be nominated by the Administrative Department to supervise the rescue and relief operation and disposal of animal carcasses in coordination with the local and District Administration.
5. Preventive measures for epidemics to be taken by the Medical Department.
6. All the operating systems to be attended urgently and made operational as early as possible on a war footing basis to resume operation.
7. Water supply and electricity to be given priority. The electrical cabling network to be checked area-wise. The inspection team to be decided by the CE & ME for obtaining clearance to resume power supply.
9. All damaged temporary roofed houses in the port premises are to be attended.
10. The Techno Commercial Head will nominate a team for the procurement and supply of essential materials for repair of various structures and equipment as reported.
11. To assess the progress of repair works, HODs meeting will be held daily till normalcy is restored.

**Floods-Similar To Cyclone**

DEPT	ACTION
HM	<ul style="list-style-type: none"> <li>• Port Control passes weather message to HM and Deputy DC</li> <li>• HM places on-site action group alert</li> <li>• Deputy Conservator apprises CEO of weather developments who places CMG on alert if necessary.</li> </ul>
Civil Dept.	<ul style="list-style-type: none"> <li>• Drainage system of the port i.e. inside harbor area &amp; outside harbor area should made cleared.</li> <li>• Trailer mounted portable Diesel pump sets to be made standby with sufficient length of hose pipes.</li> <li>• Sandbags to be used around sensitive areas including water Supply</li> <li>• Pump stations electric sub stations</li> </ul>
E & M Dept.	<ul style="list-style-type: none"> <li>• All the outside installations and equipment shall be properly secured.</li> <li>• Cyclone field units to be made alert</li> </ul>
Administration	<ul style="list-style-type: none"> <li>• To make standby arrangements for transportation to evacuate population to cyclone centers and relief centers.</li> <li>• Arrange food and water.</li> </ul>

**Earthquake**

<p><b>EARTHQUAKE PREDICTIONS</b> Local earthquake are difficult to predict <b>AKPL is in Seismic Zone 1&amp; 2(lowest risk) which is quite safe as compared to Gujarat which is in zone 4 &amp; 5(highest risk)</b></p> <ul style="list-style-type: none"> <li>• Frequency of tremors as reported in the newspapers, TV and radio</li> <li>• Rattling of doors and windows</li> </ul>	<p><b>CHARACTERISTICS-QUAKE</b></p> <ul style="list-style-type: none"> <li>-Magnitude</li> <li>-Focal depth</li> <li>-location of epicenter</li> <li>-Rupture length</li> <li>-Rupture orientation</li> </ul> <p><b>PROPERTY-characteristics</b></p> <ul style="list-style-type: none"> <li>-Distance from focus</li> <li>-Soil conditions</li> <li>-Geology</li> <li>Are buildings constructed to</li> </ul>
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**Relief Work After An Earth Quake**

DEPT	ACTION
CEO	To contact the District Collector, Relief commissioner, Army, Navy, Coast guards and seek assistance for Port Town ship.
Administration	To assist the Chairman to assess relief requirements. Arrange Food, shelter & transportation
E & M Dept.	To provide and hire if necessary, earthmoving equipment's, cranes, forklifts, bull dozers etc.
Civil Eng Dept.	Deploy engineers to direct or guide earth moving equipment and cranes to remove the debris
Harbour Master	Ensure safety of cargo in cargo sheds and at rail siding. Ensure the safety of Port Marine craft and vessels alongside
PSI	To organize Search and Rescue of persons trapped under debris.
Medical	CMO to ensure provide of proper Medical Aid to the injured

- If outdoors, find a clear spot away from buildings, trees, streetlights, and power lines. Keep lying on the ground and stay there until the shaking stops. Injuries can occur from falling trees, street-lights and power lines, or building debris.
- If on vehicle, pull over to a clear location, stop and stay with your seatbelt fastened until the shaking has stopped. Trees, power lines, poles, street signs, and other overhead items may fall during earthquakes. Stopping will help reduce your risk. Once the shaking has stopped, proceed with caution. Avoid bridges or ramps that might have been damaged by the quake.
- If indoor – Go below bed / table until the shaking stops. Avoid lift and Staircase.

**Tsunami**

**CHARACTERISTICS-** Tsunamis are a series of enormous waves created by an under water disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. A tsunami can move about 500 miles per hour in the open ocean. Once the wave approaches the shore, it builds in height. The topography of the coastline and the ocean floor will influence the size of the wave. There may be more than one wave and the succeeding one may be larger than the one before. Tsunami waves and the receding water are very destructive to structures. The Tsunami warning is issued on earthquake having intensity of more than 6.5 on Richter scale.

**WARNING / CONFIRMATION**

- Met. Station
- TV and Radio News

<b>DEPT</b>	<b>ON SITE ACTION GROUP</b>
Harbour Master / HoS Marine	<ul style="list-style-type: none"> <li>• Through Port Control informs all the ship to evacuate from the berth to open sea. Port Control keeps in touch with all vessels on VHF.</li> <li>• Move tugs and launches to safe areas or deep water anchorages</li> <li>• Crew to wear life jackets.</li> <li>• Cease cargo operations immediately.</li> </ul>
ADMINISTRATION	<ul style="list-style-type: none"> <li>• Arrange transport to evacuate to safer inland areas</li> </ul>
Civil Engineering Department	<ul style="list-style-type: none"> <li>• Keep sand bags ready.</li> </ul>
E & M Department	<ul style="list-style-type: none"> <li>• Ensure proper secure of the cargo handling equipment and the shore cranes.</li> </ul>
PSI	<ul style="list-style-type: none"> <li>• Evacuation of Personnel and cordoning off the area</li> </ul>
CMO	<ul style="list-style-type: none"> <li>• Treatment of Injured personnel</li> </ul>

<b>CRISIS MANAGEMENT GROUP</b>	
CEO	Activates CMG
Harbour Master	Deputy Conservator to apprise the CEO of any developments and early Warning Systems.
Administration	Keep in constant touch with state Govt.

**Handling Violent Activities Of Workers**

**Normally violent activities arise out of anger on the spur of the moment and such violence exists for short time. The aim is to contain such activities at nascent stage & without any damage to property and person.**

1. The Security team confronting such elements to solve and defuse the situation, in an amicable manner.
2. If situation goes beyond control and show of force required then PSI to take action to meet the situation by forcible removal of person from site.
3. In the meantime the officer in charge of the spot will inform the commandant who will if necessary send additional man power by mobilizing off duty personnel.
4. Simultaneously control room will inform the local police.
5. Depending on the gravity of the situation alert following.
  - (a) Inform Deputy Conservator / Harbor Master / PSI / IR Officer
  - (a) AKPL Police Station
  - (b) Port Fire Station
  - (c) Port Hospital
  - (d) Industrial Relations Officer & Dept. Head - To be present at the scene of incident.

## Disaster Management Plan

(Rev-06)

- (e) The Security Shift In Charge will use PA system and siren to disseminate correct information with appeals for calm and reason.
- (f) The Security command center will record the riot for collecting vital information and pictures for use when the perpetrators of crime are prosecuted as per the provisions of the law.
- (g) All Head of Dept. to recognize the potential troublemakers and prepare list of such employee, keep them under constant surveillance and have frequent interaction with them. It is imperative to nip the evil in bud.

### **Ship Security Alert in Port Limits**

The **Ship Security Alert System (SSAS)** is part of the ISPS Code is a system that contributes to the efforts to strengthen maritime security and suppress acts of terrorism and piracy against shipping. The system is a joint project between COSPAS & SARSAT and the IMO. In case of attempted piracy or terrorism, the ship's SSAS beacon can be activated, and appropriate law enforcement or military forces can be dispatched. The alarm is a covert signal, which will have no sound and no flashing lights so that it is in no way obvious to any intruders on board the ship. When an SSAS alert is triggered:

- the Rescue Coordination Centers or SAR Points of Contact (SPOCs) for the country code the beacon is transmitting is notified discreetly
- National authorities dispatch appropriate forces to deal with the terrorist or pirate threat.
- SSA alerts are not transmitted to ships in vicinity.

### **ACTION**

1. PFSO will receive SSA alert from DG Shipping.
2. On receipt of alert inform – CEO / Deputy Conservator / Harbor Master.
3. Implement Security Level – III
4. Action should not jeopardize concerned ship security. All action to be discreetly taken.
5. Inform - Police / Navy / Coast Guard.
6. Vessels at Anchorage then keep under surveillance. Prevent vessel from entering the navigable channel.
7. Vessel at Jetty, then keep under surveillance till arrival of law Enforcement Agencies arrival.
8. All tugs, craft and Pilot to be stand by.

### **SPILLAGE OF HAZARDOUS SUBSTANCES**

1. Port's "Port Control" reports spillage of hazardous Substances on Port properties to Harbor Master / Deputy Conservator / PSI.
2. Deputy Conservator informs CEO.

### **Immediate Action**

1. Determine the nature of the substance and approximate quantities involved. Verify from Master of the vessel, ship agent.
2. If details of substance are unknown and spill gives toxic or noxious fumes
  - Inform Port Hospital.
  - Initiate evacuation measures.

## Disaster Management Plan (Rev-06)

- Notify Duty Pilot.
- Where applicable turn off Air Conditioning – ventilate to open air if possible
- Evacuation procedure to be upwind.
- Remove any ignition sources if the spill is suspected to be Combustible.
- Cut Off Electric supply.
- Seal off water approaches with launches and crafts.
- Seal off entry points and clearing the area of all personnel / Public.
- Evacuated persons are not to return to the affected area until all clearance given.

### **Spillage Of Hazardous Or Noxious Gas**

Port Control reports spillage of hazardous gas in atmosphere to Harbour Master / Deputy Conservator / PSI.

Deputy Conservator informs COO / CEO .

### **Immediate Action**

- Isolate the source of the gas – only if safe to do so.
- Alert Port Hospital & Emergency services.
- Shut down the air conditioning to prevent the spread of gases.
- Remove any ignition sources if the gas is suspected to be Combustible – only if safe to do so.
- Turn off the electrical supply.
- Inform Port Environmental Representative
- Assess the need to evacuate any personnel within port area, including ship's crew. Such assessment will be made with regard to wind speed and direction, the type of gas in the atmosphere, the characteristics of the gas.
- Stop all cargo work.
- The Masters and agents of all vessels in the vicinity should be informed of the emergency.
- Movement of all vessels should be stopped as necessary.
- All evacuation and assembly areas are in upwind directions.

## **Communication**

The primary mode of communication is sounding alarm in case of disaster; this will be helpful to alert the Port employees/ workers at faster rate than any other communications system. Use of the telephone or wireless system can be used as secondary means. RAC – Marine will be responsible for communication during all phases of disaster incident. The effective communication system involves the following:

- Directing, coordinating, and monitoring all functions and operations in matters of emergency communications.
- Preparing the Standard Operating Procedures for communications in close coordination with the liaisons from agencies with secondary and support functions.
- Providing advice and assistance to other Response Activity Coordinators in areas requiring inter-activity coordination,
- Maintaining an effective working relationship with and among designated secondary and support agencies & other RAC's,
- Maintaining a complete and accurate record of all operations,

## **Search and Rescue (SAR) Operations**

Search and Rescue (SAR) Operations play a major and vital role in saving lives, providing necessary first aid to the injured, and recovering critical supplies, their success is predicated upon efficient and expeditious operations. RAC – Marine is the responsible person for these kinds of operations under the supervision of President - Marine. SAR is primarily is responsible for:

- Directing, coordinating and monitoring all functions related to search and rescue operations.
- Efficient and timely conduct and deployment of the SAR squads.
- Coordinating the efforts of the Emergency Response Team during search and rescue operations.
- Conducting training programs for SAR squads and developing and maintaining reserve complete and accurate records of all events.
- Coordinating with other SAR teams.
- Maintaining constant readiness for mobilizing all equipment and means of operation necessary in conducting rapid and efficient operations.
- Preparing reports as per QMS manual.
- Providing assistance for the Safety of workers and their evacuation.
- Preparation of SOP's for effective implementation of SAR.

## Disaster Management Plan (Rev-06)

### **Safety of Port Mates, Machineries & Cargo**

Police is the main law enforcement agency in all situations. **RAC – Operations, RAC – Security , RAC-Safety and RAC – Marine are collectively responsible** for the safety of workers/employees and protection of valuable machinery and cargo.

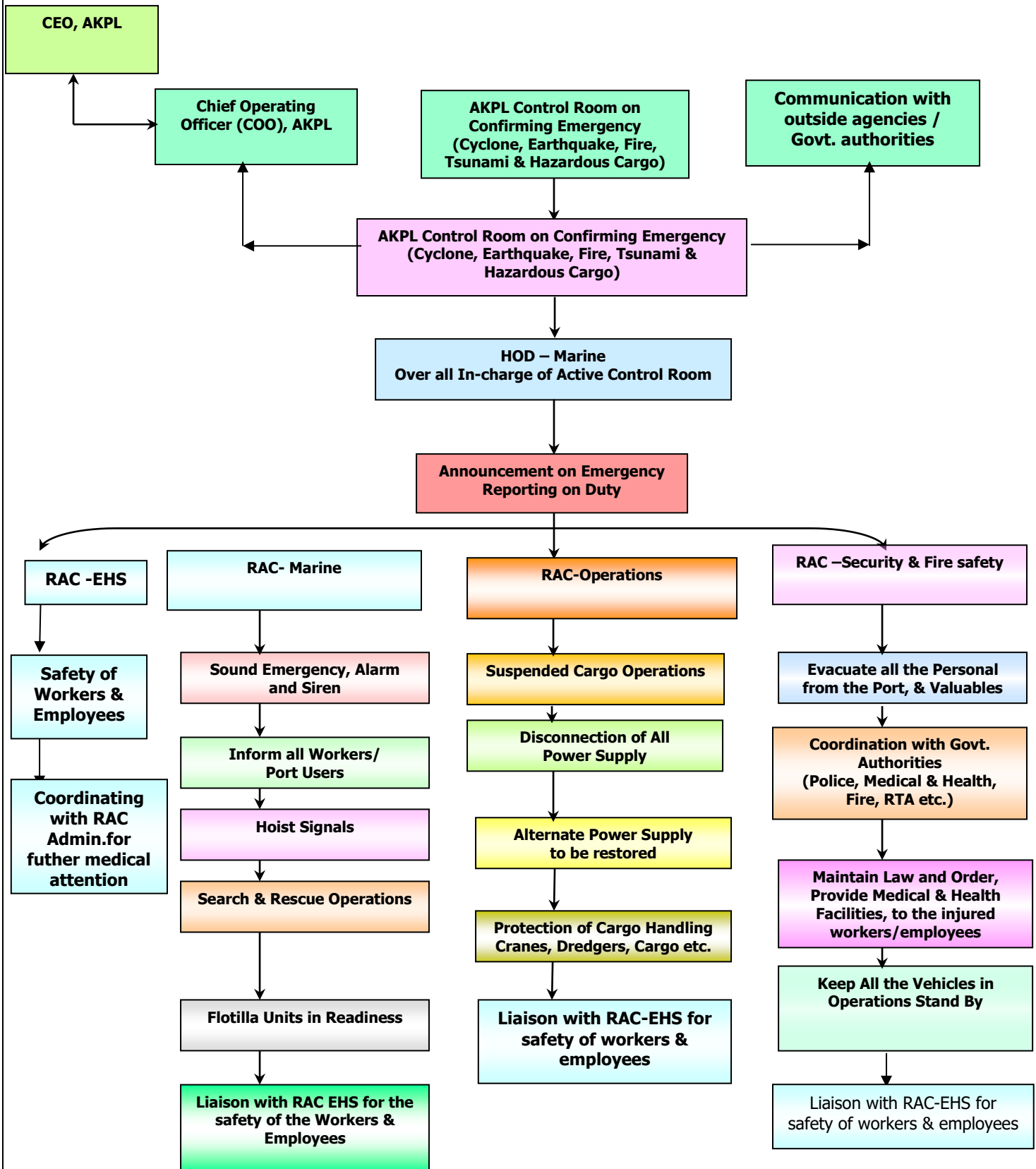
Safety of port mate, machineries & cargo primarily involves following:

- Directing, coordinating, and monitoring all functions related to AKPL employees/workers and port safety measures,
- Efficient and timely conduct and deployment of security forces wherever necessary,
- laying down & following Standard Operating Procedures for safety of Port mates, Machinery & cargo
- Preparation of Port Safety Manual.
- Maintaining accurate and timely record of all operational administrative and fiscal matters related to Port Safety measures during disaster response operations.
- Maintaining a state of readiness and acquiring all equipment and means of operations necessary in conducting fast and efficient operations with backup system if necessary.
- Preparing reports of all emergency operations conducted and forwarding these reports to Head - Marine as soon as possible and in no case later than 24 hours after the completion of the operation.

### **Model Flow Chart for Onsite Disaster Management Plan**

Onsite disaster management is very intricate and unpredictable phenomenon; however every care has been taken while preparing onsite disaster management plan. A typical flowchart showing the onsite disaster management plan for Krishnapatnam Port is given in Figure 4.

**Figure 4: Flowchart showing a typical Onsite Disaster Management Plan for AKPL**



**POST DISASTER MANAGEMENT PLAN:**

Post disaster management plan includes debris clearance & control, health and medical services, restoration of port activity, and damage assessment. These subcomponents are discussed briefly with respect to key responsibilities for their RAC's as follows:

**Debris Clearance and Restoration of port activities.**

Effective debris clearance and restoration activities are essential and necessary for the port following a disaster. **Under the supervision of head – Marine, Response Activity Coordinators – Engineering, Fire Safety, Operations, and Marine will perform their activity.**

The primary objectives of RAC's are:

- Coordinating and monitoring all functions related to debris clearance and restoration of port activities,
- Ensuring the efficient and timely conduct of all debris clearance teams, the development and maintenance of a Standard Operating Procedures for Debris Clearance and restoration of port activities,
- Liaison with agencies providing support functions in the response activity, to ensure the effectiveness of plans, programs and procedures related to debris clearance and restoration of port activities,
- Maintaining completed and accurate records of all activities,
- Conducting briefings following a disaster to review damage assessment analyze resource capabilities and plan for assignment and scheduling of available resources.

**Environment, Health and Safety (EHS)**

Environment, Health & Safety services involves: setting in-site hospitals if required, mobile medical units, ambulances and utilizing an efficient communication and transportation system, pooling all health and medical resources within the city coordinating hospitalization and outpatient services to the port employees / workers subsequent to a disaster.

The RAC (EHS) shall be responsible for:

- Coordinating and monitoring all functions involving the provision of emergency health and medical services.
- Ensuring the effective and efficient implementation of Emergency Health and Medical Services.
- Preparation of Standard Operating Procedures.
- Interfacing efforts in life-saving along with the removal and identification of bodies with the SAR and Evacuation.
- Directing the preparation of health and medical related information within the Response Activity providing such materials to the marine control / RAC for proper dissemination.



### **Restoration of Port Activity**

Coordinated response in emergency restoration activities is achieved by close cooperation and interface among various departments within the port premises and other Govt. Authorities to mitigate further economic damage of the AKPL. Restoration of port activity is **coordinated by HoD - Marine with the help of RAC's**.

The objectives of the Restoration of Port Activity are:

- Coordinating and monitoring all functions related to port utilities restoration, which brings the port to its original operation mode.
- Ensuring the efficient and timely conduct of all port utility restoration teams.
- Maintaining complete and accurate records of all operational, administrative and fiscal matters within the port utility restoration areas of responsibility.
- Conducting briefings following a disaster with RACs and liaisons to review damage assessment reports, analyze resource capabilities and to jointly develop priorities for the assignment and scheduling of Port utility restoration with reference to resources available.

### **Damage Assessment**

Damage Assessment is the process of collecting and evaluating information regarding the location, nature, and cost of damage incurred by a disaster stricken in the AKPL. It is carried out as soon as possible after the occurrence of a disaster. Timely estimation of damage caused by a disaster in sufficient, detail and accuracy to permit valid decisions concerning disaster response and claiming for insurance. On concurrence from the CEO, the President - Marine will prepare damage assessment plan with the help of RAC's.

The main objectives of the damage assessment are:

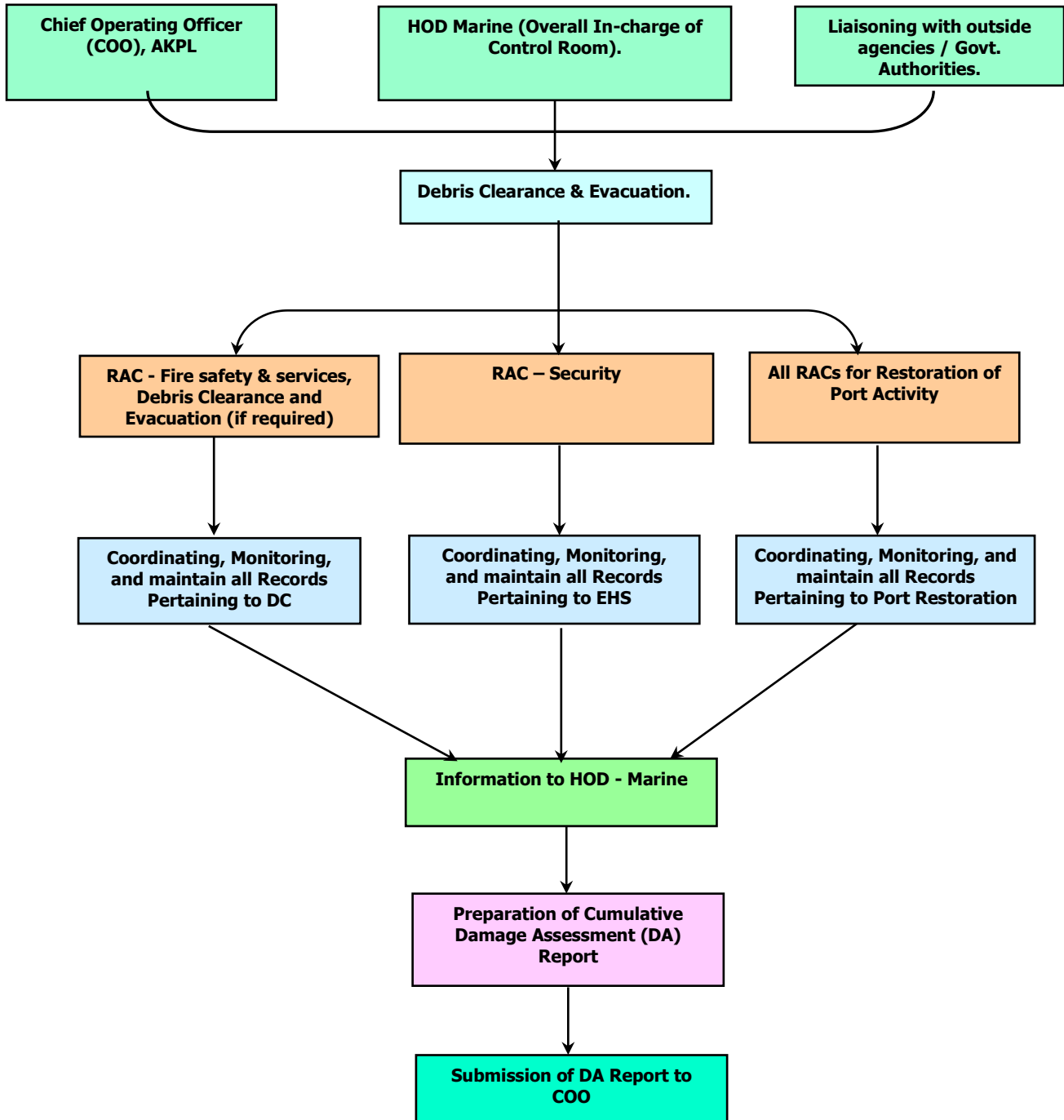
- Establishing and maintaining effective coordination for collecting and evaluating damage assessment information obtained from all sources of the port,
- Preparing a Composite Damage Assessment to accompany the recommendations from MD/CEO, and
- Maintaining complete and accurate records of all operational, administrative and fiscal matters within the damage assessment area of responsibility.
- Submission of complete damage assessment report
- Cumulative damage assessment should be claimed for insurance wherever applicable and get the assistance from them as early as possible to regain the original glory of the AKPL.

### **Model Flow Chart for Post Disaster Management Plan**

A typical Post Disaster Management Plan for AKPL is given in Figure 5.

**Disaster Management Plan  
(Rev-06)**

**Figure 5: Flowchart Showing a Typical Post Disaster Management Plan for AKPL**



## Disaster Management Plan

(Rev-06)

### **Key Authorities - Responsible Officers to Monitor Disaster at Head Office.**

- The MD & Board of Directors are the main responsible authority.

### **Key Authorities - Responsible Officers to monitor disaster at Port upon Concurrence from CEO.**

1. Chief Operating Officer (AKPL, DCO, EHS, Admin, IT & HR)
2. Head Marine – HOD Marine
3. Head Engineering services
4. Head CT (AKCTPL)
5. Head CVR Foundation
6. Head (Security)
7. Head (DCO)
8. Head Customer service
9. Head (Techno Commercial)
10. Head - Public Relations PRO
11. Head Electrical Division
12. Head ETS
13. Head Projects
14. Head Accounts & Finance
15. All Response Activity Coordinators

### **Mode of Communications: -**

- VHF (Wireless network)
- Telephone line
- Mobile phones & SMS
- Emailing network
- Alarm
- Public Address System
- Others

**Disaster Management Plan**  
(Rev-06)

**FIRE ON BOARD A VESSEL IN PORT –CHECK LIST (KRISHNAPATNAM PORT)**

- Port Berth..... Date.....
- Vessel.....Agent.....
- Fire fighting Facilities on vessel.....
- Location of Fire.....
- Substance(s)burning.....
- Nature of Hazard.....
- Details of Dangerous goods on board.....
- Likelihood of explosion .....
- Generation of explosive gas.....
- Generation of close area .....
- Krishnapatnam Port Emergency Coordinator.....
- Police advised and requested to attend .....
- Requested to close area .....
- Other action .....
- Agent advised .....
- Consulted with Master.....
- Fire Officer.....
- Need to move vessel .....
- Movement of other vessels stopped .....
- Cargo operations ordered to cease .....
- Tug company advised .....
- Port Launches ordered to attend .....
- Request to Master for stability data .....
- Intake of water, effect on stability .....
- Protection of shore property from fire .....
- Removal of plant etc.....
- Divers required .....
- Establish communications .....
- Impact on Environment .....

**Disaster Management Plan**  
(Rev-06)

**FIRE ON BOARD A TANKER IN PORT –CHECK LIST**

Port.....Berth.....Date.....  
 Vessel.....Agent.....  
 Fire fighting Facilities on vessel.....  
 Location of Fire.....  
 .....  
 Type of Cargo.....Quantity .....  
 Cargo operations ceased.....  
 Lines cleared.....Quantity.....  
 Likelihood of explosion .....  
 Krishnapatnam Port Emergency Coordinator.....  
 Police requested to attend .....  
 Area cleared.....Agent advised.....  
 Other action.....  
 .....  
 Consulted with Master.....  
 Fire Officer.....  
 Movement of other vessels stopped .....  
 Need to move tanker .....  
 Need to move other vessels .....  
 Tug company advised .....  
 Port Launches ordered .....  
 Communications established.....  
 Need to evacuate hazard zone .....  
 Oil pollution equipment positioned .....  
 Protection of berth .....  
 Protection of berth .....  
 Impact on Environment .....  
 Fire Extinguished  
 Precautions against re-ignition .....  
 Gas generation .....  
 Explosion .....  
 General Security .....

## Appendix -1

### The Following Fire Fighting Equipment's are Available in AKPL Fire Safety Department

1. Self-Contained Breathing Apparatus - 06 No's
2. Fire entry Proximity suits - 02 no's
3. B A set refilling compressor machine -01 No's
4. Fire men Axe (25000 volts tested)-10 No's
5. Fire Extinguishers Refilling machine -01 No's
6. Fire Extinguishers (various type) -1660 No's
7. Firefighting Hose's (various length's)200 No's
8. Firefighting Branches (nozzles)various types-50 No's
9. 35" Feet's Alloy aluminum Extension ladders -02 No's
10. Rescue manila Ropes (various length)-06 No's
11. Full body safety belt - 10 No's
12. Power saw machine -01 No's
13. Portable dewatering pump's Self priming electrical -03 No's
14. Life boy Jackets – 04 No's
15. Portable Dewatering pumps (Diesel) - 02 no's
16. Rubber hand gloves 20,000 volt's tested- 04 prs
17. Dividing breaching - 02 No's
18. Collecting Breaching – 02 No's
19. Pad lock remover -02 No's
20. Gum boots – 50 prs
21. AFFF 3% mechanical Foam compound -2000 Liters
22. Celling Hook -02 No's
23. Fire better – 02 No's
24. Section Hose's 100 mm (Dia)-04 No's
25. Section Hose's 75 mm (Dia)-04 No's
26. Small gears equipment's
27. Adapters male to male-02 No's
28. Female to female adapter -02 No's
29. Dragon emergency lights9 01 kms range) – 4 No's
30. Emergency torch lights-10 No's
31. Mobile VHF communication Sets -02 No's
32. Walkie-Talkies (Motorola-p 38) 05 No's
33. Large axe – 2 nos.

### **Fire Fighting Appliances**

1. Fire Tender (class B Type) -01 Nos
2. Fire Tender (multipurpose) -01 Nos
3. Firefighting Water Tankers (20KL)-08 No
4. Firefighting Water Tankers (10KL)-08 Nos

### **Fixed Firefighting system's**

1. Firefighting pump house (Admin Building)
2. Firefighting pump house (ETS Building)
3. Firefighting pump house (MUSS).
4. Fire Hydrant System (Admin Building)
5. Fire Hydrant System (ETS Building)
6. Fire Hydrant System (MUSS)
7. Fire alarm system (Admin Building)
8. Fire alarm system (All electrical panel)
9. Smoke detectors (Admin Building)
10. Smoke detectors (All electrical panel)

<b><u>Adani Krishnapatnam Port Limited</u></b>					
<b><u>Fire Safety Department</u></b>					
<b><u>Fire Extinguishers</u></b>					
<b>S. No.</b>	<b>Type of Fire Extinguishers</b>	<b>Capacity</b>	<b>Qty</b>	<b>Total Qty</b>	<b>Remarks</b>
1	Water	9 Ltr	107	107	
2	Foam	9 Ltr	58	105	
		50 Ltr	47		
3	Co2	2 Kg	81	430	
		3 Kg	12		
		4.5 Kg	285		
		6.5 Kg	7		
		9 Kg	45		
4	Dcp	4 Kg	78	514	
		5 Kg	206		
		6 Kg	147		
		9 Kg	29		
		10 Kg	25		
		50 Kg	29		
5	Abc	1kg	0	504	
		2 Kg	17		
		3 Kg	22		
		4 Kg	239		
		5 Kg	52		
		6 Kg	20		
<b>Total</b>				<b>1660</b>	



## Appendix -2

### **The following Resources are available in Dry Cargo Operations Department**

- |    |                    |          |
|----|--------------------|----------|
| 1. | Dewatering Pumps   | - 2 no's |
| 2. | Mobile Cranes 50 T | - 2 no's |
| 3. | JCB                | - 1no's  |
| 4. | Excavators         | - 2 no's |
| 5. | Dumpers            | - 2 no's |
| 6. | Mobile Generators  | - 2 no's |
| 7. | Hydra              | - 2 no's |

## Appendix -3

### LIST OF OIL SPILL RESPONSE EQUIPMENT IN PORT

S.No.	Pollution Response Equipment	Quantity
1.	Inflatable booms with accessories (Material / Neoprene / Rubber / Neoprene Rubber )	1000 with 3nos power pack
2.	Fence Boom (Material : Neoprene / Rubber /Neoprene / Rubber / PU/PB	600 mtrs
3.	Skimmer (20 TPH 50% weit type , 50 % brush type )	4 nos
4.	OSD applicator with Spray arms type along with 02 nos nozzles systems and 02 hand lancers	03
5.	OSD (Chemical Dispersants in liters)	2000 Liters
6.	Bio Remediation in liters	1000 Liters
7.	Flex Barge - 10 T (nos )	3 nos
8.	Weir Boom 100 meters with minimum 02 weirs with power pack and accessories (nos) OR Integrated containment recovery system with power pack and accessories (nos)	3 1
9	Sorbent boom Size Minimum 5 inch dia , Minimum length 5 feet (nos)	200
10	Sorbent pads Minimum 20 inch X 20 inch (nos)	1000
11	Shore line Clean Up Equipment (Mini Vacuum Pump Capacity 20 m3)	3
12	Shore line Clean Up Equipment (Portable Oil temporary Storage Facility Capacity 10 m3)	2
13	200 meters Shore Line Ceiling Boom with power pack and accessories (Material / Neoprene / Rubber / Neoprene Rubber )	2
14	VOC portable Monitor	3
	<b><u>Personnel Protective Gear - Level B</u></b>	
15	Positive pressure, Full face piece self contained Breathing Apparatus SCBA or Positive pressure , Supplied Air Respirator with escape self contained Breathing Apparatus (SCBA)	6
16	Inner Outer Chemical resistant gloves	6
17	Face Shield	6
18	Hooded Chemical Resistant Clothing	6
19	Overalls	6
20	Outer Chemical Resistant Boots	6
	Vessels	
21	Work Boats	3
22	Tugs	3

## **Appendix -4**

### **LIST OF COMMUNICATION EQUIPMENT IN PORT CONTROL** **FOR DISASTER MANAGMENT**

1. Main VHF base Set - 3 nos
2. Hand Held Portable VHF sets - 6 nos

तार- 'विस्फोटक', नागपूर  
Telegram: 'EXPLOSIVES', Nagpur  
Website : <http://peso.gov.in>  
Email: [explosives@explosives.gov.in](mailto:explosives@explosives.gov.in)  
दूरभाष/ Telephone : 0712-2510577  
फैक्स/ FAX : 2510577

कार्यालयीन उद्देश्य के सभी पत्रों को 'मुख्य विस्फोटक नियंत्रक' के पदनाम से भेजे जाए उनके व्यक्तिगत नाम से नहीं।  
All communications intended for this Office should be addressed to the 'Chief Controller of Explosives' and NOT to him by name.



भारत सरकार

GOVERNMENT OF INDIA

पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन  
PETROLEUM AND EXPLOSIVES SAFETY ORGANISATION

(पूर्व नाम - विस्फोटक विभाग)

(Formerly- Department of Explosives)

"ए-ब्लॉक , पाँचवा तल, केन्द्रीय कार्यालय परिसर.

"A" Block, 5<sup>th</sup> Floor, CGO Complex,

सेमिनरी हिल्स, नागपूर - 440 006

Seminary Hills, Nagpur- 440006



Annexure XVIII

संख्या /No.: G-22(47)180

दिनांक /Nagpur, dated: 23/02/2023

01 MAR 2023

To,

M/s. Adani Krishnapatnam Port Ltd.,  
PO Bag No 1, Muthukur Mandal,  
SPSR Nellore District,  
Andhra Pradesh - 524344

Sub: - Permission for commissioning of handling of LPG (Refrigerated Propane, Refrigerated Butane) and Petroleum Products at Liquid Jetty L-4 at Adani Krishnapatnam Port, Nellore District, Andhra Pradesh – Permission to operate regarding.

Dear Sirs,

Please refer to Dy. Chief Controller of Explosives, Visakhapatnam's inspection report memo of even no. dated 26/09/2022 on the above subject and inspection by the officer on 25/09/2022 & your letter no. nil dated 23/01/2023 and confirming the compliance of OISD 156 & other related statutory provisions satisfactorily.

Since the subject construction of L-4 Jetty for handling of LPG (Refrigerated Propane, Refrigerated Butane) and Petroleum Products has been completed in all respect as per approval granted vide this office letter of even no. dated 18/01/2021, there is no objection to your commissioning L-4 Jetty for handling of LPG (Refrigerated Propane, Refrigerated Butane) and Petroleum Products under Manufacture, Storage & Import of Hazardous Chemicals (MSIHC) Rules, 1989 are strictly complied with.

Adequate safety precaution and SOP's shall be strictly followed to prevent any accident.

Copies of "As Built" drawings duly approved are also enclosed herewith.

This approval/permission does not absolve you from obtaining necessary permission/clearances from other authorities or under other statutes as applicable.

Yours faithfully,

(K. THIAGARAJAN)

Jt. Chief Controller of Explosives  
for Chief Controller of Explosives

Copy forwarded to the Dy. Chief Controller of Explosives, Visakhapatnam.

for Chief Controller of Explosives

To  
The Collector & District Magistrate,  
SPS Nellore Dist.,

Respected Sir,

Sub: Development of Krishnapatnam Port – Expansion of KP Port (Phase – III) at SPSR Nellore District., Andhra Pradesh by M/s Adani Krishnapatnam Port Ltd., - Environmental and CRZ Clearance – Reg.,

Ref: File No. 10-18/2016 – 1A.III proposal No. 1A/AP/MIS/566/2009, dt. 11.01.2021 from the Ministry of Environment, Forest and Climate Change (Impact Assessment Division), New Delhi.

\*\*\*

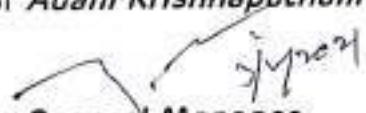
With reference to the subject cited, we bring to your kind notice that we have received Environmental and CRZ Clearance vide reference cited for expansion of Krishnapatnam Port (Phase – III) at SPSR Nellore Dist., Andhra Pradesh, from the Ministry of Environment, Forest and Climate Change (Impact Assessment Division), New Delhi.

This is submitted for favour of kind information, please.

Encl: Above reference.

With kind regards,

Yours sincerely,  
for **Adani Krishnapatnam Port Ltd.,**

  
**Dy. General Manager,  
Corporate Affairs.**

తేదీ : 03/02/2021.  
తమిళ సహాయకులు  
జిల్లా కలెక్టరు వారి కార్యాలయం  
శ్రీ పోస్ట్ క్రీడములు నెల్లూరు జిల్లా.

Adani Krishnapatnam Port Ltd  
(Formerly Krishnapatnam Port Company Ltd)  
PO Bag No 1  
Muthukur Mandal  
SPSR Nellore 524 344  
Andhra Pradesh, India  
CIN: U45203AP1996PLC023529

Tel +91 861 237 7999  
Fax +91 861 237 7046  
info@adani.com  
www.adaniports.com

Registered Office: 1st Floor, 4B-9-17, Dwarakanagar, Visakhapatnam 530 016, Andhra Pradesh, India

లేఖ నెం. కె.సి.సి.ఎల్/2021, తే.01.02.2021.ది

To

1. ది పంచాయతి సెక్రటరీ, గ్రామ పంచాయతి కార్యాలయము, ముత్తుకూరు.
2. ది పంచాయతి సెక్రటరీ, గ్రామ పంచాయతి కార్యాలయము, కృష్ణపట్నం.
3. ది పంచాయతి సెక్రటరీ, గ్రామ పంచాయతి కార్యాలయము, నారికేళ్ళపల్లి.
4. ది పంచాయతి సెక్రటరీ, గ్రామ పంచాయతి కార్యాలయము, పంటపాళెం.
5. ది పంచాయతి సెక్రటరీ, గ్రామ పంచాయతి కార్యాలయము, తమ్మినపట్నం.

అయ్యా!

**విషయము** : కృష్ణపట్నం పోర్టు, ఫేజ్-III, శ్రీ పాట్టి శ్రీరాములు నెల్లూరు జిల్లా, ఆంధ్రప్రదేశ్ - పర్యావరణ మరియు సి.ఆర్.జెడ్ క్రియరెన్స్ గురించి తెలియజేయుట.

**సూచిక** : నెం.10-18/2016 - I ఎ, 3, ప్రపోజల్ నెం.1ఎ/ప.పి/ఎం.ఐ.ఎస్/566/2009, తే.11.01.2021.ది మినిస్ట్రీ ఆఫ్ పర్యావరణ మార్పు, (ఇంప్యాక్ట్ అసిస్సెంట్ రివైజను), చూడండి.

=====

ఇందుమూలముగా తెలియజేయడమేమనగా, పై సూచిక ద్వారా, కృష్ణపట్నం పోర్టు, ఫేజ్-III, శ్రీ పాట్టి శ్రీరాములు నెల్లూరు జిల్లా, ఆంధ్రప్రదేశ్ వారికి పర్యావరణ మరియు సి.ఆర్.జెడ్ క్రియరెన్స్ వచ్చినదని తెలియజేయడమైనది. ఇందువంట పై సూచిక జతపరచడమైనది.

*[Signature]*  
Panchayati Secretary  
Gramapanchayati  
Pantapalem, Muthukur Mandal,  
SPSR Nellore Dist

*[Signature]*  
Panchayati Secretary  
GRAMAPANCHAYATI  
Narikellapalli, Muthukur Mandal,  
SPSR Nellore Dist.

*[Signature]*  
Panchayath Secretary  
Thaminnapatnam Gram Panchayath  
Chilakur Mandal, SPSR Nellore Dist.

ఇట్లు

భవదీయులు

*[Signature]*  
Panchayat Secretary  
Grampanchayat, Muthuku:  
Muthukur Md., SPSR Nellore Dist

Adani Krishnapatnam Gram Panchayat Secretary  
(Formerly Krishnapatnam Gram Panchayat)  
PO Bag No 1  
Muthukur Mandal  
SPSR Nellore 524 344  
Andhra Pradesh, India  
CIN: U45203AP1996PLC023529

Registered Office: 1st Floor, 4B-9-17, Dwarakanagar, Visakhapatnam 530 016, Andhra Pradesh, India

**GOVERNMENT OF ANDHRA PRADESH**  
**STATE DISASTER RESPONSE & FIRE SERVICES DEPARTMENT**

**From :**  
 The Director General,  
 State Disaster Response and Fire Services,  
 Andhra Pradesh, Vijayawada.

**To :**  
 The Management,  
 M/s Adani Krishna Patnam Port Ltd,  
 located at Muthukur (M), SPSR Nellore  
 District.

**Rc.No.8010/MSB/SR/NLR/2022, Dt: 12.10.2022.**

Sir,

**Sub:** A.P. State Disaster Response and Fire Services Department –MSB Section- Issue of No Objection Certificate for Occupancy to M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District - Regarding.

**Ref:** 1. AP Gazette Notification No. G.560 (W.No:2), Dated:18-01-2022  
 2. Application of M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District.

-oOo-

The Management has requested for issuance of No Objection Certificate for Occupancy to the Existing Building of M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District in the reference 2<sup>nd</sup> cited.

2) The Management constructed the Building with Ground + (05) Upper floors with a height of 18.90 Mtrs., with Built up area of 5424 Sq.Mtrs for Business Occupancy.

3) Previously, the Management has not obtained Provisional NOC from this Department and has now applied for No Objection Certificate for Occupancy.

4) **Particulars of the Building:**

a)	Address of the Building	:	M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District.
b)	No. of Blocks/Floors	:	01 Block/ Ground + (05) Upper floors
c)	Height of the Building	:	18.90 Mtrs
d)	Total Built up area	:	4670.866 Sq.Mtrs
e)	Type of Occupancy	:	Business Occupancy

5) The Management has provided the following Means of Escape

S.No.	Details of Staircases	Required	Provided
1.	Internal Staircase	01.50 Mtrs.	02.00 + 02.00 = 04.00 Mtrs
2.	External Staircase	01.50 Mtrs.	02.00 Mtrs
Total:			06.00 Mtrs

6) The details of Occupant Load per Unit and Exit Width required and provided are furnished as below:

Sl. No.	Floor	Built up are in Sq. Mtrs.	Type of Occupancy	Occupant Load	Means of escape Required in Mtrs.	Provided in Mtrs.
1.	Ground	1058	Parking	Parking	Required	Provided
2.	First	1034	Business	103	01.03	06.00
3.	Second	1034	Business	103	01.03	06.00
4.	Third	1034	Business	103	01.03	06.00
5.	Fourth	690	Business	69	00.69	06.00
6.	Fifth	574	Business	57	00.57	06.00
<b>Total:</b>		<b>5424</b>				

Contd...2p

7) It is submitted that as per instructions of kind Director General, State Disaster Response and Fire Services, A.P., Vijayawada vide this Office Rc.No.5708/MSB/2021, Dated: 16-11-2021 on Fire Fighting system, the following Fire safety Equipment suggested to the management for installation instead of conventional system keeping in view of practicality, maintenance and resilience.

S.No	Fire Fighting Equipment	Prescribed	Provided	Deficit
1	Fire Extinguishers	ABC/CO2 type	92 Nos.	Nil
2	Underground parking /Cellar / Basement	Temperature Sensors connected "Hooter" and that can give alerts through cell phone	NA	Nil
3	Manual Call point	One number per floor	36 Nos.	Nil
4	Under Ground Static Water Tank (or) Terrace Water Tank	10,000 Ltrs (minimum)	20,000 ltrs at Terrace Tank	Nil
5	2 HP (Pump + Electrical Motors connected) @ one per floor connected to normal plumbing system instead of down comer/special pipes.	One per each floor	03 Nos-2HP 03 Nos-5HP	Nil

8) The Management has provided the following Electrical Safety system:

(i)	All Electrical wirings in the building shall confirm the code of practise for Electrical wiring IS:732:1989 and also shall confirm for Fire Safety Wiring of the building Electrical Installations as per IS:1646:2015, Most common mistake is that the neutral wires to the three pin plugs are not of sufficient thickness to carry the current in case of any short circuits.	:	Provided
(ii)	Installation of Miniature Circuit Breakers, (MCBs) in all floors.	:	Provided
(iii)	No Overloading of power socket in any Existing Building.	:	Yes
(iv)	10 years old wiring to be changed specially where ever high power consuming appliances such as Air conditioners, shopping complex, Data Centers, etc.,	:	NA
(v)	Grounding /Earthing shall be done. For details refer IS 3043:1987.	:	Provided
(vi)	Lightening conductors may be provided for high rise buildings exceeding 5 floors.	:	Yes
(vii)	No High Tension Lines should run inside or in close proximity (6 meters) to any Educational institution buildings.	:	Yes
(viii)	All the above safety measures shall be certified by the authorized Electrical Engineer.	:	Certified

9) In view of the above and based on the affidavit submitted by the Management the No Objection Certificate for Occupancy is issued to the existing building of M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District for Business Occupancy that highest priority is accorded to Passive Safety measures such as ensuring two exits, not co-locating with highly inflammable shops having cloths, chemical or explosives and following Electrical Safety Checklist.

Contd...3p



10) It is informed that, the Management is requested to maintain the following conditions compulsorily for safety purpose.

Sl.No.	As Builder	As occupant	As Security Personnel
1	All the fire protection arrangements shall be maintained in good condition as seen during inspection.	All the escape/exit routes shall not be kept locked/blocked or encroached	All the occupants must trained in correct method of operation of the fire fighting system installed.
2	Any loss of life or property due to non-functioning of fire safety measures and other installations shall be the responsibility of the management.	All occupants shall be trained to operate the fire safety equipments during emergency.	Mock drills should be conducted once in 3 months for initial two years. Thereafter, once in every 6 months.
3	Addition / alteration, if any in the building may be verified by building authority.	Mock drills should be conducted once in 3 months for initial two years. Thereafter, once in every 6 months.	All security personnel shall be trained to operate the fire safety equipments during emergency.
4	This No objection Certificate for occupancy is issued from Fire safety point of view.	Raise the alarm if the fire cannot be controlled; Evacuate the area completely at once with nearest safe exit.	Attack the fire using available fire equipment only if you feel capable of controlling. If not, take all steps to isolate the area by closing doors and windows.

11) This No Objection Certificate is issued, subject to the outcome of O.As/W.Ps etc., if any, before Courts etc.,

12) This No Objection Certificate for Occupancy is valid for a period of Five years from the date of issue of this letter to the management of M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District. The Owner/ Occupier/ Builder/ Management concerned of the Building shall submit Self Declaration/Affidavit /Certification with regard to working condition of above Fire Safety System every year in the prescribed format and submit/upload the photographs of the Mock Drills conducted in the premises. It is the responsibility of the Builder to maintain the Fire Safety Equipment in good working condition at all times and apply for next Periodical Renewal of No Objection Certificate, duly remitting the User Charges as per G.O., two (02) months before expiry of this of No Objection Certificate.

13) The Management is hereby informed that this NO Objection Certificate is issued subjective to full compliance with provisions of Gazette Notification Vide No. G.560 (W.No.2), Dated.18-01-2022, including Mock Drills

Yours sincerely,

  
Director General,

State Disaster Response and Fire Services,  
Andhra Pradesh, Vijayawada.

Copy to the Management of M/s Adani Krishna Patnam Port Ltd, located at Muthukur (M), SPSR Nellore District.

**Note: In case of any emergency call to 101 or State Fire Control Room-9100108101.**



July 14, 2023

Annexure XXI

**Adani Hazira Port Ltd. (AHPL), The Dhamra Port Company Limited. (DPCL), Marine Infrastructure Developer Private Limited (MIDPL) and/or AdaniKatupalli Port Pvt Ltd. (AKPPL), AdaniEnnore Container Terminal (AECT), Adani Mundra Container Terminal (AMCT), Adani CMA Mundra Terminal Pvt Ltd. (ACMTPL), Mundra LPG Terminal Pvt Ltd. (MLTPL) AdaniKrishnapatnam Port Co. Ltd. (AKPL), AdaniGangavaram Port Limited (AGPL), AdaniKaraikal Port Pvt. Ltd. (AKPPL) and/or O & M contractors and/or sub-contractors at any level and/or vendors and/or suppliers and/or consultants and/or Subsidiary and/or Associated companies and/or Bank and/or Financial Institution for their respective rights and interests for all above.**

Adani House,  
Mithakhali Six Roads, Navrangpura,  
Ahmedabad, Gujarat, Pin-380009  
Pan No: AABCD0602P

Dear Customer,

**Sub: Port Package Insurance Policy No: 2999204131379802000**

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "**Insurance**" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from directly from you or through the Intermediary.

Name of the Intermediary: ACE INSURANCE BROKERS PVT LTD  
Intermediary Code: 201868857936

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website [www.hdfcergo.com](http://www.hdfcergo.com). To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours Sincerely,

Authorised Signatory



**Port Package Policy**

1	Policy No	<b>2999204131379802000</b>
2	Name of Insured	<p>Adani Hazira Port Ltd. (AHPL)                  The Dhamra Port Company Limited. (DPCL)                  Marine Infrastructure Developer Private Limited (MIDPL) and/or                  AdaniKatupalli Port Pvt Ltd. (AKPPL)                  AdaniEnnore Container Terminal (AECT)                  Adani Mundra Container Terminal (AMCT)                  Adani CMA Mundra Terminal Pvt Ltd. (ACMTPL)                  Mundra LPG Terminal Pvt Ltd. (MLTPL)                  AdaniKrishnapatnam Port Co. Ltd. (AKPL)                  AdaniGangavaram Port Limited (AGPL)                  AdaniKaraikal Port Pvt. Ltd. (AKPPL)</p> <p>and/or O &amp; M contractors and/or sub-contractors at any level and/or vendors and/or suppliers and/or consultants and/or Subsidiary and/or Associated companies and/or Bank and/or Financial Institution for their respective rights and interests for all above.</p> <p><b>ADDITIONAL INSURED:</b>                  Additional insureds are covered hereunder in respect of legal liabilities for fault or negligence in respect of services undertaken on behalf of an above named Original Insured for which that Original Insured would be covered hereunder.</p>
3	Address of Insured:	Shikhar, Near Adani House, Mithakhali Six Roads, Navrangpura, Ahmedabad – 380 009
4	Type	Port Operators Liability Insurance
5	Period of Insurance	From: 02July,2023 To: Midnight 01July, 2024 local standard time at the location of the interest insured subject to the attached policy review clause.
6	Intermediary Details	ACE Insurance Brokers Pvt Ltd
7	Premium	Premium: <span style="float: right;">INR 6,09,75,000.00</span> GST @ 18% ( for Non sez) <span style="float: right;">INR 69,75,000.00</span> <b>Total: <span style="float: right;">INR 6,79,50,000.00</span></b> (GSTN details shown as below Annexure)
8	Insured's Location	<p>Adani Hazira Port Ltd, at &amp; PO Hazira, Choryasi, Surat, Gujarat-394270 India.</p> <p>The Dhamra Port Company Limited, Dosinga, Dhamra, Bhadrak —756171 India.</p> <p>SEZ unit at Katupalli Village, PonerriTaluk, ThiruvallurDist.,Tamil Nadu, Chennai 600120 India.</p> <p>AdaniEnnore Container Terminal, Vallur Post, Chennai - 600 120 India.</p> <p>Adani Mundra Container Terminal, APSEZ                  Navinal Island, Mundra, Dist – Kutch 370421, Gujarat, India.</p> <p>ADANI CMA MUNDRA TERMINAL PVT LTD, APSEZ, Navinal Island, MundraDist – Kutch 370421, Gujarat, India.                  Mundra LPG Terminal Private Limited, at &amp; PO Mundra, Kutch, Gujarat-370421, India.</p> <p>Krishnapatnam Port Co. Ltd, Village Krishnapatnam, Muthukur Mandai, Nellore, Andhra Pradesh, India.</p> <p>Gangavaram Port, Gangavaram Port Project Site, Pedagantyada VUDA Colony, Gangavaram, Visakhapatnam — 530044, Andhra Pradesh.</p>



		KZHEZHAVANJOOR VILLAGE, T R PATTINAM, KARAIKAL, PONDICHERRY, 609602
9	Interest Insured	Section 1 (Liability): Insurance of the Insured's liability under the original policy. To indemnify against the Liability arising out of entire Port Operations including but not limited to Legal Liabilities for property damage & bodily injury; Contractual Liabilities; Port Blockage, Wreck Removal / Clean-Up, Stevedoring etc.; Liability for Property & Cargo held in Care, Custody and Control of the Insured.
	ADDITIONS:	Additional Ports to be covered subject to the approval of the Leader during the policy year under the same terms and conditions on additional premium for the volumes projected from the attachment date till the expiry of the policy as per adjustable rates.
10	Sum Insured Limits	SECTION I – LIABILITY INR 820,000,000 each and every event  For Adani CMA Mundra Terminal Pvt Ltd INR 890,000,000 each and every event
11	Deductibles	SECTION I – LIABILITY INR 2,050,000 each and every loss  For The Dhamra Port Company Limited. INR 8,200,000 each and every loss  For Adani CMA Mundra Terminal Pvt Ltd. INR 2,225,000 each and every loss
12	Conditions	<ul style="list-style-type: none"> <li>• Wavelength Ports &amp; Terminals Consortium - General Policy Provisions LSW 1524</li> <li>• Wavelength Ports &amp; Terminals Consortium Section 1 - Liability LSW 1510 but Section 2.3 and 3.4(i) deleted</li> <li>• Wavelength Ports &amp; Terminals Consortium - Fire Extension Liability LSW1511.limited to INR 82,000,000, For Adani CMA Mundra limited to INR 89,000,000.</li> <li>• Wavelength Ports &amp; Terminals Consortium - Advice and Information Extension LSW 1512. limited to INR 82,000,000, For Adani CMA Mundra limited to INR 89,000,000.</li> <li>• Wavelength Ports &amp; Terminals Consortium - Fire and Duty Extension LSW 1513. limited to INR 82,000,000, For Adani CMA Mundra limited to INR 89,000,000.</li> <li>• Wavelength Ports &amp; Terminals Consortium - Infringement of Personal Rights - LSW 1514. limited to INR 82,000,000, For Adani CMA Mundra limited to INR 89,000,000.</li> <li>• Wavelength Ports &amp; Terminals Consortium - Wrongful Delivery of Cargo Extension (Liability) LSW 1515. limited to INR 82,000,000, For Adani CMA Mundra limited to INR 89,000,000.</li> <li>• Seepage and Pollution Buy Back Clause, as attached and Limited to limit INR 82,000,000, For Adani CMA Mundra limited to INR 89,000,000.</li> <li>• Sanction Limitation and Exclusions Clause LMA 3100.</li> <li>• Claims Control Clause LMA 5073.</li> <li>• Institute Radioactive Contamination, Chemical, Biological, Bio-Chemical and Electromagnetic Weapons Exclusion Clause 10/11/03 CL 370.</li> <li>• Institute Cyber Attack Exclusion Clause 10/11/03 CL 380.</li> <li>• Marine Cyber Exclusion LMA5402 (Property)</li> <li>• Marine Cyber Endorsement LMA5403 (Liability only)</li> <li>• War &amp; Terrorism Exclusion Endorsement (NMA2919)</li> <li>• Communicable Disease exclusion (LMA 5396)</li> <li>• Excluding Terrorism, Strikes, Riots and Civil Commotions.</li> <li>• Excluding liability to owned cargo</li> <li>• Excluding any liabilities connected to the airport</li> <li>• Excluding any rail liabilities outside of port confines</li> </ul>



		<ul style="list-style-type: none"> <li>Warranted no rights of recourse or hold harmless agreements are given to any vessels either owned, chartered or third party.</li> <li>For Adani Hazira Ports Ltd (AHPL) Underwriters note and agree that Adani Ports waive any rights of subrogation in respect of following                         <ol style="list-style-type: none"> <li>Gujarat Maritime Board &amp;</li> <li>Royal Dutch Shell plc or Total SA (each the Ultimate Parent Entity) and any entity which is for time being either directly or indirectly controlled by Royal Dutch Shell plc or Total SA</li> <li>Any contractors or subcontractors related to the (1) &amp; (2) above or AHPL.</li> </ol> </li> </ul>
13	Special Conditions	<ul style="list-style-type: none"> <li>Neon and Advertising Signs Clause, as attached</li> <li>Car Park Liability Clause, as attached</li> <li>Indemnity to Principals, Directors &amp; Executive Clause, as attached.</li> <li>Non - Invalidation Clause, as attached.</li> <li>Legal Liability for False Arrest, etc., as attached</li> <li>Plant &amp; Machinery Clause, as attached.</li> <li>Non - Owned Vehicles liability, as attached.</li> <li>Tenant's &amp; Occupiers Liability Clause, as attached</li> <li>Cross Liabilities Clause, as attached.</li> <li>Sub-Contractors Liability Clause, as attached.</li> <li>Mechanically Propelled Vehicles Clause, as attached.</li> <li>First Aid Facilities Clause, as attached</li> <li>Food and Drinks Endorsement Clause, as attached</li> <li>Use of Sport / Recreational Facilities Clause, as attached</li> <li>Use of Lifting Machinery Clause, as attached</li> </ul>
14	Choice Of Law And Jurisdiction:	<ul style="list-style-type: none"> <li>This insurance shall be governed by and construed in accordance with the law of India and each party agreed to submit to the exclusive jurisdiction of the Courts of India.</li> </ul>



## Traffic Impact Assessment of Krishnapatnam Port

### Final Report

August 2023

Submitted to:

**adani**

Adani Krishnapatnam Port Ltd.

Submitted by:

**FP Project Management**

Formerly Frischmann Prabhu (India) Private Limited

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## Traffic Impact Assessment of Krishnapatnam Port

August 2023

### Final Report

REVISION RECORD - Service Order: 5702007598					
Document No. 225037 / TT / 002 / R0					
Rev	Description	Date	Originator	Checked	Approved
R0	Traffic Impact Assessment of Krishnapatnam Port	14/08/2023	AW/US	RR	SAJ

This report is to be regarded as confidential to our Client and it is intended for their use only and may not be assigned. Consequently, and in accordance with current practice, any liability to any third party in respect of the whole or any part of its contents is hereby expressly excluded. Before the report or any part of it is reproduced or referred to in any document, circular or statement and before its contents or the contents of any part of it are disclosed orally to any third party, our written approval as to the form and context of such a publication or disclosure must be obtained.

Prepared by  
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 Tel.: 00 91 22 6660 3901  
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**Letter of Intent**

**LOI No: AKPL/LOI/TC/EHS /Wheel Wash/1**

**Date: 29<sup>th</sup> Feb 2024**

To,  
M/s. Excel Combine,  
805, Sankalp-III,  
Pimpripada, Ahead of Dindoshi Depot,  
Film City Road, Malad (East),  
Mumbai – 400097

**Subject:** Contract for "Complete Design & Supply of ENYRON Premium Wheel [Tyre] Wash System. MODEL: XL - WW42OCT, TYPE: Concrete Tank for Recycling [Civil Work in AKPL Scope], VARIANT : Automatic"

Dear Mr. Harish Ghai,

With reference to the above subject and subsequent discussions, we are pleased to place this Letter of Intent in favor of Excel Combine (hereinafter referred to as "**Excel Combine**") for providing "**Wheel Wash System**" at AKPL, Nellore, Andhra Pradesh. System (SAP) generated Service Order to this effect will be issued shortly as per the agreed rate mentioned below.

**A) Scope of Work & Deliverables.**

Scope of work includes "Complete Design & Supply of ENYRON Premium Wheel [Tyre] Wash System. MODEL: XL - WW42OCT, TYPE: Concrete Tank for Recycling [Civil Work in AKPL Scope], VARIANT: Automatic"

**B) Deliverables:**

Vendor needs to deliver the materials at AKPL site by 20<sup>th</sup> March'2024 and commissioning to be done within 7 days from the date of site clearance/completion of civil structure.

Civil Drawing and BOQ to be provided by vendor within a day from the date of issue of LOI.

System Needs to operate at least 700 Vehicles per day without any issue.

**C) Commercials: -**

INR: 8,68,000 + GST including all.

Transportation is in the scope of M/s. Excel Combine





Ports and  
Logistics

**D) Payment Terms:**

90% against receipt of material at AKPL store within 15 days & the balance of 10% after installation & Commissioning

**Warranty:** - Warranty of 12 months from the date of Commissioning or 15 months from the date of dispatch, whichever is earlier, against any manufacturing defect or bad workmanship.

**Liquidated damages:** 0.5% of the SO price (along with the applicable GST), for each completed week of delay or part thereof, subjected to a maximum of 5% of SO price. Delivery date will be start from the date of issue of LOI.

**Compliance to Statutory Obligation:**


Excel Combine needs to comply with all statutory, legal, obligations, labor Laws, standard safety practices followed at the port as required for the work. Excel Combine will also comply with the security, safety, and HR norms of the port as applicable from time to time.

**Enclosures:**

- General Terms & Conditions (GTC)
- Safety Requirements
- Human Resources and Industrial Relations Requirements

**For Adani Krishnapatnam Port Ltd**

Name: Mr. Rameshbabu Vela

Signature: 

Email: rameshbabu.vela@adani.com

Adani Krishnapatnam Port Ltd  
(Formerly, Krishnapatnam Port Company Ltd)  
PO Bag No 1, Muthukur Mandal,  
SPSR Nellore District 524344  
Andhra Pradesh, India  
CIN: U45203AP1996PLC023529

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info@adani.com  
www.adaniports.com

Registered Office: Adani Corporate House, Shantigram, Nr. Vaishno Devi Circle, S. G. Highway, Khodiyar, Ahmedabad – 382421, Gujarat, India

# LOI-Wheelwash

Final Audit Report

2024-03-02

Created:	2024-03-02
By:	VINODKUMAR MADALA (vinodkumar.madala@adani.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAlm8635APPOcEdzTuWtp3jeussXGCpRI

## "LOI-Wheelwash" History

-  Document created by VINODKUMAR MADALA (vinodkumar.madala@adani.com)  
2024-03-02 - 4:09:05 AM GMT
-  Document emailed to Rameshbabu Vela (rameshbabu.vela@adani.com) for signature  
2024-03-02 - 4:09:24 AM GMT
-  Email viewed by Rameshbabu Vela (rameshbabu.vela@adani.com)  
2024-03-02 - 7:18:32 AM GMT
-  Document e-signed by Rameshbabu Vela (rameshbabu.vela@adani.com)  
Signature Date: 2024-03-02 - 7:20:04 AM GMT - Time Source: server
-  Agreement completed.  
2024-03-02 - 7:20:04 AM GMT



## **Environmental Monitoring of Phase II Development of Adani Krishnapatnam Port**

**Second Half-Yearly Report  
Submitted to the**



**Adani Krishnapatnam Port Limited (AKPL)**



**National Centre for Sustainable Coastal Management  
Ministry of Environment, Forest and Climate Change**

**February 2023**



Figure 10.4: Environmental Day Celebration at AKPL



# 11 MEASURES FOR ENVIRONMENTAL PROTECTION

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## 11.1 Existing Environmental Management Plan

### 11.1.1 Environmental Cell

- Environmental Cell has been set-up under the supervision of the Chief Operating Officer (COO). Environmental review meetings are being held regularly for effective implementation of stipulated safeguards.

### 11.1.2 Environmental Safe Guards

#### *i.To Improve AAQ*

Following environmental safe guards have been implemented so far in the port to improve the air quality:

- Installation and operation of Mechanical Dust Suppression System (MDSS) with 282 sprinklers at coal stacking and wagon loading areas.
- Deployment of 25 Truck mounted sprinklers for roads and transit areas.
- Deployment of 10 heavy duty Atomized Sprayers

- Deployment of Hoppers for unloading cargo
- Mechanized coal handling by means of
  - Conveyor System within the port boundary i.e., up to take off point of thermal power SEMCORB plants located towards North of the port i.e., power plants of APGENCO, NCC and
  - Conveyors are covered with hood.
  - Transfer houses are cladded and covered to prevent dust emission and provided with water spray systems
- Paved roads and mechanical sweeping of roads is preferred.
- Covering of coal transport vehicles and rail wagons destined beyond port with Tarpaulin covers
- Deployment of wind barrier and warehouses of 12 m height on west part of FTP- I coal yard and two more locations wind barrier construction is in progress
- 200.07 Ha of Green belt has been developed along port boundary, around coal yards and block plantation, avenue & median plantations.
- Monitoring ambient air quality at regular interval.
- The port has commissioned three CAAQM equipment in the port

#### *ii.To Improve Water Quality*

- Developed drains, collections pits, guard ponds for coal storage yards with provision for recycling for dust suppression.
- Developed truck wash with oil separator and settlement pits with provision for recycling for dust suppression.
- Developed 540 KLD STP and treated effluent recycled for dust suppression and green belt.
- Developed Oil Spill Contingency plan for Tier-I spills, procured necessary equipment and chemicals and deployed trained personnel.
- Monitoring of Marine water quality, Surface water Quality, Marine sediment quality and ground water quality at regular intervals through NABL accredited lab.

#### *iii.To improve occupational Health*

- Developed on site emergency plan duly reviewed by former DGFASLI and submitted to District administration for integrating with Off-Site Emergency plan.
- For all employees working in dust prone areas PPEs are provided and periodical health check is organized

iv. *ISO 14001 (Environment) Accreditation*

v. *Rain water Harvesting*

vi. *Deployment of firefighting contingency plan. The port has procured necessary fire tenders and other equipment and deployed trained personnel.*

vii. *Compliance to hazardous Waste Management Rules:*

- The port is taking all possible steps for prevention of oil spillages and carryover of oil.
- AKPL has an Oil Spill Contingency Plan and management measures based on the National Oil Spill Disaster Contingency Plan (NOS- DCP) for Tier 1 spillage. The port has tie up with the Indian Coast Guard for responding to any oil spill emergencies. The port is well equipped with response equipment, chemicals along with the team of trained professions.

## **11.2 Suggested improvisation for environmental protection measures**

### **11.2.1 Dust management - Mitigation Measures**

- Potential leakage zones along the closed conveyor belt should be identified and immediate measures should be taken to settle the dust, whenever required. Water sprinkler systems along the potential pollution sources are being used to avoid dust generation. Water sprinkler should be provided in the area of coal loading and unloading, storage and vehicle path/roads.
- There shall be routine check of conveyors to prevent spillage/dispersion
- Fogging/Atomization is performed by releasing very small droplets of water into the air. Airborne dust particles adhere to the water droplet and agglomerate. Once several have agglomerated together they become heavy enough to fall out of the air. The water droplet size is very important. If the droplet is too large, say 50 microns plus, the dust particle will bounce off the water droplet's surface tension and remain airborne. To achieve a useful dust suppression effect, the droplets need to have a mean diameter in the region of 10 to 15 microns, i.e. a similar size and mass to the respirable dust particles. If the fog is generated in the right way, by using pressurized water, the energy required can be very low – between 2 to 3 kW for a system requiring hundreds of nozzles, e.g. a large stockpile tripper conveyor – giving considerable operating cost savings when compared to other techniques
- Paved roads need to be maintained along the transport route to prevent dust generation due to vehicular movement.
- The construction materials need to be covered with sheets/enclosed during transportation and storage to avoid dust generation.

- Diesel generator and vehicles need to be serviced and maintained regularly to avoid the generation of dust and other air pollutants.
- Only vehicles with valid Pollution Under Control (PUC) certificate from CPCB authorized testing centre strictly be used for transportation purpose in the port area. Periodic emission check for vehicles should be done. Air quality may be impacted by emissions from trucks and diesel engines to a marginal extent. The transportation movement generates pollutants such as NO<sub>x</sub>, CO, particulate matter and HC. Therefore, the number of vehicles deployed will be kept to the minimum requirement. The acceptable emission factors are given in Table 10.1. Only vehicles having Pollution under Control certification will be deployed in the project site to keep the impacts minimum.
- Dust screens shall be extended along the port boundary of coal stack yards, with a height of 2 meter above the maximum stack height. Especially, towards the thermal power station, installation of dust screen should be considered.
- All the labourer's/employees working in and around dust generating area should compulsorily wear Personal Protective Equipment like dust masks and safety goggles to avoid respiratory ailments and eye irritation, respectively.
- There shall also be periodic health check-up (Pulmonary Disease) for workers.
- Systems should be provided for regular cleaning and wetting of the floor areas to restrict re-suspension of the deposited dust particle within the premises.
- Unloading and handling operations during unfavourable weather conditions (wind speed >17 m/s) shall be avoided. In general, international standards and port or terminal authorities both assume that ports are operational up to 6-8 Beaufort units. The present study recommends suspension of any unloading and handling operation(s) at Beaufort 8 or when gust wind speed exceeds 25 m/s. A gust wind speed of 25 m/s signifies a mean wind speed of  $25/1.5 = 17$  m/s.

### **11.2.2 Pollution Management**

Renewable energy options (e.g. solar/ wind energy) for the port operations shall be explored more intensively to reduce the energy footprint. Solar panels shall be installed wherever possible.

### **11.2.3 Wastewater and Storm water**

- The sewage treatment plant shall be maintained regularly so that treated wastewater and sludge (after appropriate processing) can be efficiently used for



horticulture/ green belt development. The details of the waste water treated shall be indicated in the public domain

- Oil/ grit or oil/ water separators in all runoff collection areas should be installed so that pollutants do not get washed into the surface waters. Locations of storm water drains must be recorded on the site map
- Regular maintenance of oil/ water separators and storm water drains. Periodic safe disposal of recovered contaminated solids or liquids
- The proponent shall collect the oil wastes in barges, vehicles, or central collection systems and storage tanks. The capacity of oil waste collection facility shall be established based on applicable MARPOL provisions
- Wastewater containing noxious chemicals from bulk tank should be managed through appropriate onsite or off-site treatment prior to discharge
- The proponent shall monitor the e-wastes and plastic pollution along the AKPL coast periodically
- The sewage from ships should be collected and treated onsite or off-site according to the recommendations provided in IMO's Comprehensive Manual on Port Reception Facilities (1999) and the Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities (Resolution MEPC.83 (44))
- Smaller vessels are often equipped with recycling and chemical toilets, and have holding tanks which can be safely discharged in the shore facilities; appropriate facilities must be made available for collection of wastes from such source.
- The proponent shall develop long term ballast water management and treatment systems in the port area in accordance with the provisions of Ballast Water Management Convention, IMO, 2004.

#### **11.2.4 Solid waste Management**

- The waste management plan should include minimization at source using three R's (reduce, reuse and recycle).
- All biodegradable wastes shall be composted and used for green belt development/ horticulture.
- Production of non-biodegradable material wastes should be minimized.
- The management of the different kinds of wastes generated should be done in a comprehensive manner and conform to the Solid Waste Management Rules (2016), Construction and Demolition Waste Management Rules, 2016, Plastic Waste Management Rules 2016 and e-waste (Management) Rules, 2016.

#### **11.2.5 Hazardous Materials Management**

General instructions on handling cargo: The proponent shall implement measures for proper screening, and transport of cargo based on local and international regulations, including the following elements:

- Establishment of segregated and access-controlled storage areas with the means to collect or contain accidental releases.
- Provision of personal protective equipment for those handling such cargo.
- Requesting dangerous goods manifesto for hazardous materials whether in transit, loading or unloading to and from ships, including safety data sheets and Hazchem code, proper shipping (technical) name, hazard class, United Nations number, and packing group.
- Training staff in relevant aspects of dangerous goods management including screening and acceptance of dangerous goods at the port. Delivery and storage areas for such goods must be clearly marked. Posters depicting safety measures as well as responses should be clearly visible.
- Emergency response procedures, specific to dangerous goods must be in place. First aid kits as well as other necessary equipment to respond to any such emergencies must be made available.
- Legal monitoring of Restriction of Hazardous Substances Directive (RoHS) compliance shall be implemented.
- The management of Hazardous wastes is governed by the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016

### **11.3 Conservation and Management**

The AKPL shall develop and maintain the green belt along the boundary as well as around the coal/iron ore storage yard as per the CFO accorded by APPCB in line with the direction of MoEF&CC based on the public hearing. The Port authority shall ensure the health and the growth of plantation through periodic monitoring exercises.

#### **11.3.1 Green Belt and Vegetation Cover**

Plants grown in such a way as to function as pollutant sinks are collectively referred to as green belts. They are also effective in noise and vibration mitigation apart from providing aesthetic appearance. Vegetation with broad leaves and rough surfaces can also be utilised as dust traps and when planted downwind of dust sources. This will help in abatement of dust pollution in addition to controls by spraying water.

- Green belt acts as effective natural pollution abatement measure. The optimal location and density of green belts can be determined using numerical mathematical models such as WRF-Chem, HYSPLIT-HYBRID and AERMOD models.
- The green belts are effective as a pollution sink only within the tolerance levels of the constituent plants and hence the pollution parameters are to be periodically monitored. The pollution Attenuation Factor (AF) gives the effectiveness of a green belt in attenuating pollution.

- Besides the indigenous species, promotion of plants with high potential to absorb pollutants shall be identified.

### **11.3.2 Guidelines for Green belt development**

Guidelines for developing green belts around an industrial area were issued by the CPCB in 2000. Some highlights are as follows:

- No forestland to be converted into non-forest activity for the sustenance of the industry (Forest Conservation Act, 1980) unless approved by the competent authority.
- The green belt shall be designed to have shorter trees and bushes/shrubs in the inner side close towards the port area and with increasing heights towards the boundary
- Three layers of the green belt vegetation of all growing trees shall be provided
- The selected species should be indigenous and as per the recommended list of CPCB. The species should have dust and noise tolerance and enhance the aesthetics of the port area
- Reclaimed (treated) wastewater should be used to raise green belt and to create water body for aesthetics, recreation and if possible for aquaculture.
- Lay-out and structure of the industry that may come up in the area must conform to the landscape of the area without affecting the scenic features of that place

### **11.3.3 Selection of plants for Green belt**

While making choice of plant species for cultivation in green belts, weightage has to be given to the

- Natural factor of bio-climate
  - Assimilation capacity of the ecosystem
  - Nature of the air pollutant
  - Adaptability of the plant under normal plantation conditions
  - Nature of the soil and its quality
- The proposed green belt at the project site will form an effective barrier between the plant and the surroundings. Open spaces, where tree plantation may not be possible, will be covered with shrubs and grass to prevent erosion of topsoil. Adequate attention needs to be paid for plantation of trees, their maintenance and protection based on the geology, soil condition and topography of the site area.
  - Planting of trees in each row will be in staggered orientation
  - In the front row, shrubs have to be grown

- Since the trunks of the tall trees are generally devoid of foliage, it is recommended to have shrubs in front of the trees so as to give coverage to the lower portion
- The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increase the effective height of the green belt
- Regular monitoring measures shall be carried out to identify any invasive alien species in the port area and appropriate management measures must be carried out to eradicate such species.

#### **11.3.4 Mangrove restoration to strengthen the green belt covers in AKPL**

- Mangrove restoration is to be considered as a viable option for enhancing the green belt cover. The proponent shall continue to restore mangroves in the suggested sites with species like *Avicennia marina*, a resilient and common species along the creek.
- Afforestation of mangrove cover along the creeks shall be continued and intensified.
- Raise awareness in the local community about the importance of mangroves and their importance.
- Measures should be taken for desilting the creeks for easy tidal water flow which will enhance the natural flushing leading to healthy growth of mangroves.
- Illegal cutting of mangroves during the construction and operation phase of port should be prevented.

#### **11.4 Summary and Recommendations**

From field surveys, it has been observed that AKPL complies with all the terms and conditions as stipulated in the Environmental clearance (EC) of the MoEF&CC. Nevertheless, it is important to ensure continued compliance to present day conditions and to strengthen the existing environmental management plan of the port area and the adjacent coastal areas. In order to maintain sustainable environmental conditions in the region, the recommendations given below shall be implemented and further monitored by AKPL within the Port limits. The State may authorize relevant agencies/ institutions for implementation and regular monitoring, outside the port limits.

- Installation and operation of heavy duty atomizer and sprinklers around the study areas is an effective method to minimize the suspended particulate matter.
- Assessment of air, water, sediment quality, ecological conditions and mangrove cover shall be carried out at regular intervals.

- Rain water harvesting techniques can be implemented in order to save groundwater
- Renewable energy options (e.g. solar/ wind energy) shall be explored more intensively to reduce the carbon footprint. Solar panels shall be installed wherever possible.
- The sewage treatment plant shall be developed so that treated wastewater and sludge (after appropriate processing) can be efficiently utilised for horticulture/ green belt development.
- The management of the different kinds of wastes generated shall be done in a comprehensive manner and conform to the “Solid Waste Management Rules, 2016”
- Green belt vegetation with three layer of Indigenous species shall be planted.
- Afforestation of mangrove cover with species like *Avicennia marina*, along the creeks shall be intensified.



Date: 09.09.2022

Ref: AKPL/APCZMA/2022-23/069

To,

**Member Secretary,**

Andhra Pradesh Coastal Zone Management Authority (APCZMA),

D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre,

Chalamvari Street, Kasturibaipet

**Vijayawada – 520 010.**

**Subject:** Compliance to specific condition no-viii given in CRZ recommendation letter granted by APCZMA for Phase-III expansion at Adani Krishnapatnam Port Limited (AKPL) – for information

**Reference:**

1. CRZ Recommendation letter granted by APCZMA for phase-III expansion at AKPL (Annexure – 1)
2. EC&CRZ clearance letter granted by MoEF&CC for phase-III expansion at AKPL (Annexure – 2)

Dear Sir,

This has reference to the above stated subject matter. In this connection, AKPL would like to inform on the status of compliance of specific condition no. viii granted in CRZ recommendation letter as below:

Condition No	Condition	Compliance Status
Part A: Specific Conditions -viii	The applicant shall ensure that continuous monitoring systems of all likely affected parameters including air/fish/flora/fauna/water quality/ wastewater discharges/solid waste disposal/construction material disposal etc., are installed and reports shared with the <u>National Institute of Oceanography (NIO)</u> on continuous basis and a monthly report submitted to	<b>Details of various environmental monitoring carried out at AKPL is as given below:</b> 1. AKPL is carrying out regularly monitoring of various environmental parameters viz., Ambient Air Quality, Ambient Noise, Marine Water Quality, Marine Sediment Quality, Surface water quality, Ground Water and Soil Quality in and around of the port area through M/s. SV ENVIRO LABS & CONSULTANTS accredited by MoEF & CC and NABL and copy of accreditation is attached as Annexure-

Condition No	Condition	Compliance Status
	<p>the APPCB by the <u>NIO</u>, all through construction period and at least for one year after commencement of operations.</p>	<p>3. Frequency of monitoring being carried out and submission to PCB is attached as <b>Annexure – 4</b>.</p> <p>2. Three CAAQM stations are already established and the same are connected to APPCB website. Screenshot of the three CAAQMs linked with APPCB portal is given in <b>Annexure-5</b>.</p> <p>3. In addition to above, as per MoEF&amp;CC, vide letter dated 2<sup>nd</sup> June 2016 and 22<sup>nd</sup> August 2016 "National Centre for Sustainable Coastal Management (NCSCM) together with Society of Integrated Coastal Management (SICOM) shall carry out the annual monitoring once in a four year. This survey was conducted in year 2018 and recently in 2022, it includes air and noise quality assessment, meteorological observations, analysis of the physicochemical parameters and Petroleum Hydrocarbon (PHC), assessment of plankton ecology and characterization of sediments in AKPL area including the coast. In addition, mangrove diversity and green cover of the AKPL were also studied and existing oceanographic conditions were documented. Copy of latest NCSCM report is <b>enclosed</b> herewith for your ready reference.</p> <p>4. AKPL is in process of engaging the SDMRI for Preparation of "<b>Biodiversity Management Plan on marine, brackish water and fresh water ecology and</b></p>



Condition No	Condition	Compliance Status
		<p><b>biodiversity for Marine &amp; Terrestrial for Krishnapatnam Port".</b> This report will also include comprehensive monitoring mechanism for effective implementation.</p> <p>This study will be carried out in compliance with other conditions given in Phase-III expansion of EC &amp; CRZ Clearance i.e., <b>EC &amp; CRZ clearance: Special Condition-(v &amp; viii), Part B: VII. Marine Ecology (ii &amp; iii).</b></p>

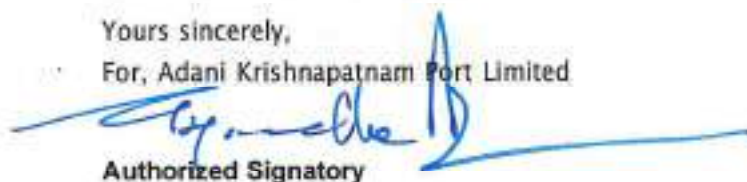
Further to comply with the above said condition, AKPL had contacted NIO and shared details on specific condition-viii as mentioned above to validate the monitoring reports as generated by accredited/reputed agencies and do necessary validation for monthly submission to APPCB.

In this regard, NIO refused to accept the data generated by any third party and proposed to generate data on their own for submission to APPCB as part of compliance. This is resulting into duplication of work and unnecessary cost to company. As explained above the monitoring is already being carried out by NABL & MoEF & CC accredited agency or reputed institutes such as NCSCM etc. and therefore validation of the data generated by such agency may not be required.

Hence, we understand that the above stated specific condition is being fully complied in letter and spirit and our above submission is in line with the requirements and therefore considered as fully complied.

Thanking you,

Yours sincerely,  
For, Adani Krishnapatnam Port Limited



Authorized Signatory